



W. Hill del.

Est. 1780

What ... *Spang vira* ... *tr. nji* ...
See healthful *INSTR* ...
See *BRITANNIA* ... if ... *Ufi* (*fvurj*)
W/iifrtntei-tt-tvrn Ail i. \ *VJSJh'rBttAhnTnTfi/tjJ*

Ecce ... *Pueri* ... *Calu* ... *liu* ... *PM* ... *plant* ... **VIRG.**

94 THE
GARDENERS DICTIONARY:

CONTAINING

The BEST and NEWEST METHODS
OF
CULTIVATING and IMPROVING

THE

Kitchen, Fruit, Flower Garden, and Nurseries;

Ad alfo fur Performing The

Practical Parts of AGRICULTURE:

INCLUDING

The MANAGEMENT of VINEYARDS,

WITH THE

Methods of MAKING and PRESERVING WINE,

According to the Practice of

The most skilful Vignerons in the several Wine Countries in Europe.

TOGETHER WITH

DIRECTIONS for PROPAGATING and IMPROVING,

From REAL PRACTICE and Experience

SORTS OF TIMBER

THE EIGHTH EDITION,

Revised and Altered according to the Latest SYSTEM of BOTANY; and
improved with several COPIES of PLANTS, which were first in fame by the Editor.

By PHILIP MILLER, F. R. S.

Gardener to the Worshipful Company of APOTHECARIES, at their Botanic Garden
in Chelsea, and Member of the Botanic Academy at Florence.

- . . . Digna manet divitiis gloria runs. VIRG. Georg.

LONDON.

Printed for the AUTHOR;

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and T. PAYNE.

M.DCC.LXVIII.





To the Most Noble

H U G H,

Duke and Earl of NORTHUMBERLAND,

E A R L P E R C Y,

Baron W A R K W O R T H of Warkworth Castle,

Lord Lieutenant and Cuflos Rotulorum of die Counties of
MIDDLESEX and NORTHUMBERLAND,

Of the City and Liberty of W E S T M I N S T E R ,

And of the Town and County of N E W C A S T L E upon T Y N E ,

V I C E A D M I R A L of all A M E R I C A ,

And of the County of N O R T H U M B E R L A N D ,

One of his M A J E S - T Y ' s Most Honourable Privy Council,

Knight of the Most Noble Order of the G A R T E R ,

And Fellow of the R O Y A L S O C I E T Y .

MAY IT PLEASE YOUR GRACE,



OUR Grace's kind Acceptance of two former Editions of this Work, has emboldened n[^] to Si] lay this at Your Grace's Feet, as a public Acknowledgment of the many **ufeful** Obfer vat ions and Instructions, which Your Grace has at few^{ral} Times communicated to me for its Improvement. If I have been fo happy as to employ them in fuch manner, as to merit Your Grace's Approbation, I (**hall** have **lefe** Reaibn to doubt that of the Public ; fincc the moll: (kilful **Peribns in this ufeful** Branch of Science, pay the higheft Regard to Your Grace's Judgmci^{it}.

The many Improvements which Your Grace is annually making fo happily upon Your various Eftates, **fufficiently** demonftrate Your Grace's fuperior Judgment; but more particularly in a Country almoft deftitute of Timber: Where, if Your Grace contini^{es} planting, fo ardently as for **feveral** Years paft, the whole Face of the Country will be much altered for the better, and Your Grace's Eftate thereby greatly improved.

That Your Grace may long live to continue thefe Improvements, and to be an Example to others, is the fincere Wifli of

Your GRACE'S

Moil obedient humble Servant,

CHI: 118.
AUnk i, ijfcS.

Philip Miller.



P R E F A C E

THE GARDENERS DICTIONARY having already gone through several editions, it may reasonably be supposed, the public are well acquainted with the nature of it, which renders it less necessary to enlarge on that subject. The author therefore thinks himself obliged to return his thanks for the kind reception his work has met with.

But as there may be some, who may think that the reprinting it is doing them an injury, especially those who have purchased a former edition, it may not be amiss to make some apology for this.

When the first edition was published, gardening was then much less known than at present, and therefore, as the knowledge of the art increased, it became more necessary to enlarge on the subject, by adding the new improvements to the former, without which it would have been deemed imperfect: for as the author's situation in life rendered him capable of being well informed of the progress made in the art, by his great correspondence both at home and abroad, he thought it would not be unpleasing to communicate those improvements to the public: in doing which, he has been careful not to publish any thing imparted to him, until he was fully satisfied of the facts by experiments.

Others have suggested, that printing the improvements separately would give ample satisfaction in this point; but the author had made trial of former purchasers some years past, by publishing several sheets of new articles, by way of Supplement, for which there was scarce any demand; so that the few which were sold, would not defray the expence of paper and printing.

As the number of plants now cultivated in England, are more than double those which were here when the first edition of this book was published, the mentioning of them, together with their culture, could not well be avoided in a work of this nature, therefore the author hopes his care in inserting them will not be censured.

From the title of this book it may seem to be only a Dictionary on the art of gardening, but all the branches of agriculture are included in it, in a more complete manner than can be found in any other book extant, though written wholly on the same subject. Nor are the instructions here given for performing the work in every part taken up hastily, or upon flight experiment; but most of them are the result of more than twenty years practice in different parts of England, where the author has been permitted to superintend and direct the whole: therefore he can assure the public he has been very cautious in recommending any thing, which he is not thoroughly convinced to be true.

It is amazing to see, in most of the books which have been published concerning husbandry, that scarce any of the compilers have taken the least notice of the common practice of sowing eight times the quantity of Corn upon land that is necessary, to the great expence and detriment of the farmers, who are so wedded to their old customs, as not to be convinced of the error; for so obstinate are they in this matter, that unless the whole ground be covered with the blades of Corn by the spring, they judge it not worth standing, and in consequence thereof frequently plough up their Wheat and winter Corn, to sow the land with Barley, or other Lent Corn; whereas, if the former had been left standing, it would have produced a better crop than any land can do where the blades are very thick, as the author has frequently observed. I have mentioned this to several farmers, but the answer has constantly been, that on rich ground a thin crop of roots will often produce a large crop of Corn, but on poor land it will not pay cost, which is a very great absurdity; for how is it possible, that bad land can supply proper nourishment to a greater number of roots than better ground? and where this practice is observed, seldom more than three or four bushels are reaped from one fow; whereas, where the same quantity is sown upon the same, or a like soil, and has room to grow, the produce will be at least six or seven bushels. Yet I have seen growing upon land apt very good, and uncultivated, for more than twenty years, which and was sown with

P R E F A C E .

lent plants, have been most of them, at least the fine sorts, greatly improved by culture, they are fully treated of under their proper genera.

On this article a long series of observations has been made by the author, who for near fifty years has applied himself closely to this subject, for as many former botanists have enumerated a great number of varieties as so many species, the study of botany was thereby rendered greatly perplexed; some of the modern writers on this subject, by going into the contrary extreme, have abridged the species almost as much. Indeed it must be allowed, that ascertaining the real specific difference of plants, would be of great service to the science of botany; but this cannot be done otherwise, than from many years experience in their culture, especially by observing the varieties which arise from the same seeds, as also the difference produced by different soils and situations, which is frequently so great as to perplex very good judges in this matter. There are likewise many other varieties which have arisen from seeds, sowed from plants, and grown near others of a different species, by which means they have partaken of both; but these hybridine plants rarely producing any seeds afterward, the alteration goes no farther.

E X P L A N A T I C N

O F T H E

T E C H N I C A L T E R M S o f S O T A N Y

Mentioned in this

W O R K.



A ROOT, *Radix*, is that part of a plant, by which it usually receives its nourishment. There are several sorts of this, as

A fibrous Root, *Radix fibrosa*, is that which consists of many small fibres. See plate i. fig. 3.

A tuberous Root, *Radix tuberosa*, is that which consists of an enlarged part of the stem, which is cut horizontally in the middle. See plate i. fig. 4.

A bulbous Root, *Radix bulbosa*, is that which consists of several coats involving one another, as the onion. See plate i. fig. 5.

A grumous Root, *Radix grumosa*, is a kind of tuberous root, with several knobs resembling the grains of Corn. See plate i. fig. 7.

A knotted Root, *Radix nodosa*, is a kind of tuberous root, consisting of two knobby knobs resembling a knot. See plate i. fig. 8.

An alveolate Root, *Radix alveolata*, is a kind of grumous root, whose fibres are knobby knobs* toward the bottom, resembling the dug of a comb. See plate i. fig. 9.

A gnarled root, *Radix grumosa*, is one which is composed of several knobby knobs ending in fibres. See plate i. fig. 10.

A Suck, *Cevsi*, is a part of a plant, receiving the nourishment from the root, and distributing it into the other parts which it is clothed, not having any of the qualities of the root. The ill of a tree is called the trunk or stem, i. e. *Caudex*.

A branch, *Ramus*, is the stem of a stalk. In trees it is general I called a bough.

A Pedicle, *Pediculus*, is that part of a stalk, which immediately sustains a leaf, a flower, or a fruit. Dr. Linnaeus has distinguished these. Those which sustain the leaves he calls *Pedunculi*, and those which sustain the fruit, *Pediculi*.

A Spike, *Spike*, is a part of a stalk which bears flowers or fruits, in such a manner as to form an anacutecone. See plate i. fig. 11.

A Thyrse, *Thyrse*, differs from a spike in that the flowers or fruits are far more loosely set on it, so that the spaces visible between them.

A Panicle, *Panicula*, is a stalk divided into several pedicels sustaining the flowers or fruits. See plate i. fig. 12.

An Umbel, *Umbella*, is the extremity of a stalk or branch, divided into several pedicels or rays, beginning from the same point, and opening in such a manner as to form an inverted cone. See plate i. fig. 13. When the pedicels are of the same length, it is called a simple umbel; otherwise it is called a compound umbel, and is subdivided into several orders, there or the same form, upon which the following terms are applied. The

first order (a) is called rays, the second (b) Pedicels. That umbel which consists of one pedicel only is called a simple umbel. See fig. 14. That which is composed both of rays and pedicels, is called a compound umbel, as fig. 15.

A Cymose umbel, *Cymose umbella*, is that the rays or pedicels are disposed in such a manner, as to form a sphere. See plate E. 6.

A twining stalk, *caulis volubilis*, is one which twines about any proper tree without the help of tendrils.

A climbing stalk, *caulis scandens*, is that which is supported by any other or neighbouring support by the help of tendrils.

A creeping stalk, *caulis repens*, is that which lies on the ground, and produces itself by emitting roots at the joints.

A trailing or procumbent stalk, *caulis procumbens*, is that which lies on the ground unless it is supported, but does not emit roots.

A Tendril, *Caupulus* or *Glomerulus*, is a part of a stalk, as a branch from the side of a stalk, placed opposite to the main stalk, which is supported by an adjacent body, and thereby supports the stalk, as in the Vine, &c.

A Node, *Node*, is that part of a plant which contains the seed with its covering. Of this there are many different forms.

A Cone, *Conus*, is a dry seed-vessel, consisting of several distinct parts, adhering closely together, and separating when ripe. Of this there are several sorts which differ in their form and texture, as in plate 1. fig. 1. is a cone of the Pine-tree, whose lignous scales find in their joints, which open by the warmth of the sun in the spring, and easily emit the seeds. Fig. 2. shows the cone of the Cedar of Libanus: whose scales are smooth, lying close over each other, and drop off leaving a brittle column on the branches. Fig. 3. shows a cone of the Fir-tree, whose scales are firm, and are set on in such a manner, that they are not so easily separated, emitting the seeds from between them. Fig. 4. plate 1. represents the cone of the Pine-tree, whose scales terminate in blunt protuberances.

Dry Set seeds, according to the number of cells into which they are divided, are called Unilocular, Bilocular, Trilocular, &c. See plate 1. fig. 1, 2, 3.

An Apple, *Pomum*, is generally understood to be a fleshy fruit, in which several hard seeds in the center; but it is very difficult to know what the ancients meant by the title Pomum, for this title is frequently used in their writings to express things of different forms, therefore the title Pomum should be only applied to those fruits which are umbellated, and contain many seeds. See fig. 11, 12. plate 1.



An EXPLANATION of the Technical Terms of BOTANY.

Acini ti by feme fojj^jfc'd to be the berries of
 j" 111 branches nw uted in a more exccrfive- Jci.lt:
 « in of 111c « who ! Ho the final
 pretuberances of Malberries, Strawberries, &c. fig.
 2. Anni.
 • plaa
 -A Clutter, tore,™, i s ; stalk divid.] or branched into
 titles, liilUiiung [he flowers a
 in tngellicr in an o Wong form. See fig. i i. plate 2.
 I he fira-ot chefc com ingoSitj it 'from a
 : tie.
 A Tod, ii- mucous iec'd-veficl
 « « " containing o>c oi
 Pk. « =, % 'i . ••• plate I. Some
a

AN :
Hell' u * M <e>vtr&d wJl a llard, dT, br, Hle
 *w, £«, is the organ, of t>(TsmM:son of ^
 r with
 itherfexfeparawly,
 w, if .(have my.
 The male flowers have stamina and funnits, i
 no ovary or style. Female flowers have an ov
 ary, but have no stamina or funnits. Here
 dice flowers have both organs of

leaves, w
 kr
Seer, fig.
 which
 The Summits, or Apices, wh... calli *stigma*,
 are those bodies which contain the farina fecundans,
 or prolific powder, analagous to the male sperm in
 animals; they generally terminate the funnits. See
 2, fig. 11. plate 3.
 Flowers, according to the number of their petals, are
 called monopetalous, dipetalous, tripetalous, tetra-
 petalous, &c.
 A regular monopetalous flower is that in which the pe-
 tal is not at all divided. See fig. 1. plate 3. or if di-
 vided, the segments are equal, as in fig. 2. plate 3.
 An irregular monopetalous flower, is that in which the
 parts of the petal are unequal, as in fig. 3. plate 3.
 tieie Dr. Linnartis calli L. inent flowers. Mr. Ray,
 Tournefort, and ^tiicrc, call all thofe monopetalous
 flowers, whose petals are connected at their base, and
 fall off without separating; but Dr. Linnartis
 calls them tetrapetalous or pentapetalous > when the] petal
 is divided into fo many parts near the bottom.

A reg' lar polypetalous flower, is then the petals arc
 equi; in size, and agree in position, as in fig. j. plate 3.
 An irregular polypetalous flower is when the petals do
 not agree together in figure and position. Sic fig. 9,
 late j.
 c.!, jr Lip-flower, Nij labiates, ••• an irregu-
 lar monopetalous flower, divided usually into two
 lips, as in fig. 6. pliw 3. Tlit: upper lip <7, ij called
 the Crest, Gaba, jnd the lower one the Beard,
 Somctomes the cre(t is wam ... , jig. 4.
 j. snii then the ftyle and ftamina luppy in
 place. Tl e called an tntlabiued Bower.
 A monopetalous Flower, *Papilionacea*, *Via*, in fomic
 nature resembles butterfly with ii wings ex-
 ended. See fig. 5. It ah
 ... , P, which compole
 the Gdes; no i the I which ti a concave
 ... nrtfmbing the bwer part of aboatj
 (the keel is ...)
 •mctmes of oncipeta! or fegment in
 lire; fonjettma it confilU of two petals or it
 adhering [jrectly clutcy together.
 A Flower, *Scissura*, is a little w... (ic expanded at the top,
 usually into five figments. Sec ii • 17. 30. plate j.
 and fitting UJ • i iryo of 1 fine I c feed a -, tfum
 the inner pantrf tla-fuirtt irft riveltamina /• , such
 uniting together form a (heath c; from the embrjo of
 ... riles a ftyle d, which patces through the
 sheath e, to which it is connected, and 15 terminated
 by a bifid fligni* which is generally refluxed, t. These
 are the ...
 A Semipinnate, *Scissura*, is tubulous at the base, ntiit
 afterwards expands, which ti a concave
 icdinform of a tongue. Set:
 : Theft generally form the rayj o: compound
 flowers, rnd are female.
 A ctimpoitwl Flowisr, *Fki coxtfastm*, is that whiich te-
 composed either of florets, fig. it) plate 3. n femi-
 Rorcu, fig. 15. plate j. or both together, fig. 16.
 and fig. ia.
 A Diflv, *Difitu*, ii an aggregate of florets forming, aj it
 wtce, a plain furiact, as in fig. tj. pUc j. Such
 Eoweia arc called difcous flowers.
 A Ray, *RnJixi*, is fevera) fcmiflorets fct round a diOu
 See fig. 1G. a, plate 3. in tarm of a rjd.int ftar. Such
 flnwrs are called r.idineti liiftott' rlwut-rs ; thofe
 which have no fitch ny, arc called naked difcoiu, ai
 fig. 19. pUre 3.
 A headed liiwer, j *capitatum*, is t, r which is com-
 poll'dafilorecs and fr mi floret!, collet ed into a round-
 sh h.v.d, and arc all inclotbd in one common icaly
 trmpnlemcr, as tit fig. 14. plate 2.
 A whorled P¹ ivcr, *Ffol vertici&itm*, Is when the flowers
 arc collected in whorls round the ftalluai the bafeof
 the *stigma*, as in fig. 20. plate 3.
 A Mofs Flwcr, which rifbona flencler foot-(talk iV
 the plane, fig. 17. plate 3. with the heat) (or *Cepne-*
turn); fig. 2S. and the cover (or *Cffypra*) which opens
 off when the feeds are ripe.
 A Cone cut rthrough the middle longitudinally to rprel-
 tent iiof the feeds are lodged between the ftiles. See
 fig. 32. plate j.
 Fig. 2+. pure 3. (hewi the parts of a flower, a is the
 empale men t, i tie germen, c the llylr, d rhc ftigma,
 c the (hmina, /the fummit, and^ tiic fame entire.
 Fig. 11. plate 1. ftews a flower with feveral neftari-
 umi which fit ctoft to thtgermert a.
 Fig. i j, a (hews a gerroen, i a ftyle, and c a ftigma.
 Fig. 26. flitws 1 grain of farini Kecuiilani m^uried.

P L A T E IV.

Contains the figures which explain the Syfiem of Dr. Linneus who classifies the plants by the number of flamina in their flowers.*

- F**IG. i. (shews a flower with one flamina and one fyle, which he titles *Monandria Monogynia*.
- Fig 2. (shews a flower with two flamina and one fyle, which he titles *Biandria Monogynia*.
- Fig. 3. (shews a flower with three flamina and one fyle, which he titles *Triandria Monogynia*.
- Fig. 4. shews a flower with four flamina and one fyle, which he titles *Pentandria Monogynia*.
- Fig. 5. shews a flower with five flamina and one fyle, which he titles *Pentandria Monogynia*.
- Fig. 6. shews a flower with five flamina and two fyles, which he titles *Pentandria Digynia*.
- Fig. 7. shews a flower with six flamina and one fyle, which he titles *Hexandria Monogynia*.
- Fig. 8. shews a flower with six flamina and three fyles, which he titles *Hexandria Trigynia*.
- Fig. 9. shews a flower with seven flamina and one fyle, which he titles *Heptandria Digynia*.
- Fig. 10. shews a flower with eight flamina and one fyle, which he titles *OSandria Digynia*.
- Fig. 11. shews a flower with nine flamina and one fyle, which he titles *Enneandria Monogynia*.
- Fig. 12. shews a flower with ten flamina and one fyle, which he titles *Decandria Monogynia*.
- Fig. 13. shews a flower with twelve flamina and one fyle, which he titles *Dodecandria Monogynia*.
- Fig. 14. shews a flower with more than twelve flamina, but less than twenty, and these arise either from the petals or the empalement, and with one fyle, which he titles *Icofandria Monogynia*.
- Fig. 15. shews a flower with a great number of flamina and one fyle, which he titles *Polyandria Monogynia*.
- Fig. 16. shews a flower with two long, and two shorter flamina, and one fyle, which he titles *Didynamia*.
- Fig. 17. shews a flower with four long and two shorter flamina, and one fyle, which he titles *Tetradynamia*.
- Fig. 18. shews a flower with five flamina, which are connected with the fyle in one body, which he titles *Monadelphbia Pentandria*.
- Fig. 19. shews a flower with ten flamina and one fyle, which are joined at the base into one body, which he titles *Monadelphbia Decandria*.
- Fig. 20. shews a flower with many flamina joined in one body, with a many-pointed fyle, which he titles *Monadelphbia Polyandria*.
- Fig. 21. shews a flower with six flamina joined in two bodies, which he titles *Diadelphbia Hexandria*.
- Fig. 22. shews a flower with ten flamina, nine of which are joined together at their base, and the other is separated, with one fyle. This he titles *Diadelphbia Decandria*.
- Fig. 23. shews a flower with many flamina, which are connected at their base into several clutters or bunches, which he titles *Polyadelphbia Polyandria*.
- Fig. 24. shews a single floret of a compound flower, these which are hermaphrodite have five flamina and one fyle, which are connected at their base. This class he titles *Syngeneia*.
- Fig. 25. shews a flower whose flamina are connected with, and seem to proceed from, the fyle, which is divided into two parts. This he titles? *Gynandria*.
- Fig. 26. shews a flower of the sixteenth class, which is of a different figure from those before represented. The flamina of this stand round the column formed by the fyle.
- Fig. 27. shews a floret of the compound flowers fitting upon the germen or embryo of the seed, with the two reflexed flamas on the top of the fyle.

EXPLANATION

OF THE

AUTHORS NAMES and WORKS

Referred to by the

ABBREVIATIONS in this WORK.

- A** C. P. Phil. The Philosophical Tianfaftiona of
 the R. v. il. Society.
 Aff. Reg. Se The Memoirs of the Rcyil Aca-
 demy of Scienc* at Paris.
- Aldin. A Dcription of fome Rare Plants which were
 cultivated in the Farnesian Gardens at Rome, by To-
 biii Aidinus, Printed at Rome 1612, fol.
- Alot. vlyjijt. Profpcr. Alpmu's Natural Hillary of
 Egypt, in two Para. Reprinted in no » Leyden,
 1732.
- Alma. Exot. Profpcr. Alpmu's MH ni Exotic Plants in two
 ks. fnnted in 4to at Venice, 1710.
- Ammon. Char.
 Printed in 1722.
- Printed in 4to 1729.
 Banther. A Catalogue of Plants observed in Virginia,
 by John Banther. Printed in Ray's History of Plants.
- Barrel. Icon. Jacob Barrelier's History and Figures of
 the Plants which he observed in France, Spain, and
 Italy. Printed at Paris in fol., 1674.
- Boc. Rac.
 • Inures and Ddcrip
 A by Paul Boccone in
 n 4to.
- Bocconrt Mofrwr
 of Rare Plants,
 at Venice, 1697.
- Boiss.
 4to. Incl. An In
 owing in the Phy-
 German Boerhaave.
 1719, in 4to.
- BOTH
 Cent. I. The first Century of Exotic Plants, by
 Dr. James Bryonia. Printed at Dantack, 1678,
 folio.
- Ercep. Prod. I & II. The fir & and second Prodromus
 to the Collection of Rare Plant
 1700. The first printed in 1700
 at Dantack, in 4to. Both reprinted at Dantack in
 1702, by his Son John Philip Bryonia.
- Bonny. Dec.
 Bonny's Decades of Rare African
 at Amsterdam, 1732.
- Burr.
 The lofin fc...
 Ha, C.ylon
- Bushport. Cent. I. & II. Inn, C. Christian B
 Century the First. Printed at Passelbor
 1709, both in 4to.
- Cantep. Andrew Cantepius of Plants. Printed at Flo-
 rence 1681, in 4to.
- Camer. Hort. Josias Cameron's Garden of Plants.
 Printed in 4to at Frankfort, 1728.
- Carr. Hill. Mark Carr's Nat
 "ramiilorynf Caro-
 In two L
 volumes, fol, with cuts. P
 inted at London in 10.
- C. U. P. Cijfir Baulinius's Pinax to his Theatre of
 Planrs. Printed at Bafil 1673, 4to.
- C. B. Prod. C. B. Prod. jomustohii Tl
 tre of Hants. Punted at Balil 1671, ifB.
- Claf. Exiii. Charles Clafius's Hiftory of Rate Plants,
 Printed at A on 1602, fol.
- Claf. Exiiii. Charles Clafius's Exotics, in icn Books.
 Printed at Ant- 1604, -oV.
- Column. Ecphr. I alms Columnna's Ecphrafw, in two
 lii; printed in jto at Rome, 1610.
- Comm. Uar. Defcripti
 J'knti, which were in the PhyAc-Garden at Ai
 dam, by C. ifparCommidin. Printed atLeycieniyof,
 1710.
- Commel. Pttel. Cjfpur Comrficlin's Prelude to Botany.
 Printed at Leydcti 1703, ^o.
- Corn. James Lornutus's Hiftory of Canada Plang.
- Dale. Samuel Dale's PiiarmacologiE, in two volumes
 Svo. Primed at London 1710, and reprinted in one
 volume in +to at LomL- 1732.
- Dale. Thom. Thoa in Dale's O ulcrvationson many'new
 Y^A; which ilcovered IO Amrcit. MS.
- D. 3 lech. Hilt. Jacob D3i« ha nip's General I itory of
 Plants. Primed at Lyons 1587, intwovob. fol.
- Dillert. Cat. John Jacob Dill en mi's Catalogue of the
 Plants which grow naturally about Giflam in Germa-
 ny. Printed at Frankfort 1719, Svo.
- Doi. Pempt. Dodonxuii'i Six Pempiedes. Printed at
 Antwerp |{>6, fol.
- Ducart. I)odart's Commentaries to the Hiftory of Plants.
 Kd at Paris 1716, fol.
- Ekhrodt's index 10 the Plant! in t. Garden at
 Carolii ithan. In three parts, tvo.
- FcTrar. Hcfp. John Baptilt ferrarius's Hefpc
 Prinurd ai Rome tfeiCi, fol.
- F*rrar. K. Cult. The Culture of Rowers, by J. Biptill
 Ferrarius. Printed at Rome 1633, 4^w.
- Feville. Ludovick t cuille's Physical, Mathematical, and
 ic*J Oblervations, made in South Ai
 Printed in three vols. 4(0, it Paris. The rirt and
 fecond in 1714, and the third 1722.
- Flor. Virg. li or. Virginia, -a Account of the Plsuics
 which have been obferved to grov, in Virginia, by
 John Clayton, Esq. utiitheti by Frederic Grono-
 vius at Leyden, in two para. -vo, 1739.
- Flor. Lugd. Floes Lugduno
 latava, or a Catalogue
 of thy Rate Plants which were Rowing in the Garucn
 acLeydim. Pritted in Bvoat Leyden, 1695.
- Flor. Z. Zeylar.lca, or a Catalogue tf the
 Plant? which wen eollcce' by Paul Herma 1 io the
 lli-ir.il of Ceylor), &On 1670 to 1677. Printed at
 Geylor, in 4to.
- Aiiiiliertlam in Svn. i^fi, by Dr. Linna^m.
 iy of tin; PUNH growtr
 about Aixin Provence, Printed at Paris 1719, fol.
 Ger.

An EXPLANATION of the AU THORS NAMES.

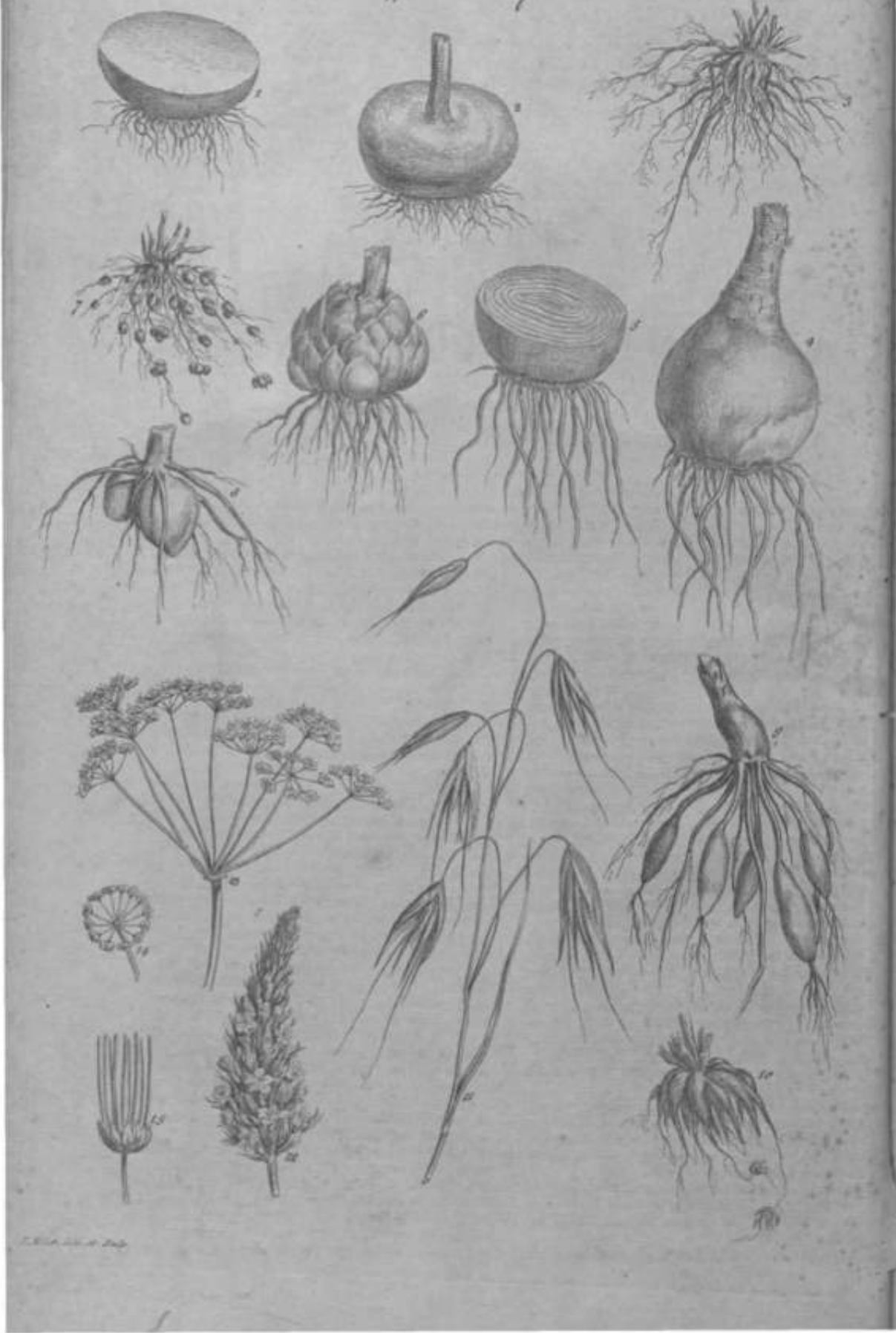
- Ger. Emac. Gerard's History of Plants, improved by Thomas Johnson. Printed at London 1633, *b^a^o^.
- Grew. Nehemiah Grew's Anatomy of Plants. Printed at London 1652, fol.
- Hort. Chelf. A Catalogue of the Plants in the Chelfea-Garden, by Mr. Ifaac Rand, F. R. S. Printed at London 1739, 8vo.
- Hort. Amft. The History of Rare Plants which were in the Phyfic-Garden at Amfterdam, by Cafpar and John Commelin, in two volumes, folio. Printed at Amfterdam 1^97, and 1701.
- H. Beaum. A Catalogue of the Exotic Plants which were in the Gardens of Mynheer Van Beaumont in Holland. Printed at the Hague 1690, Svo.
- Hort. Elth. Hortus Ekhamenlis, or a Defcription of the Rare Plants which were growing in the Garden at Eltham, by John James Dillenius, in two volumes, fol. with figures. Printed at London 1732.
- Hort. Mai. The Plants which grow naturally at Malabar, figured and defcribed by Henry Rheede Van Draakenftain, in twelve volumes folio. Printed at Amfterdam from 1679 to 1703.
- Hort. Maur. A Catalogue of the Plants in the Garden of Signior Mauroceni, by Anthony Tita, 8vo. Printed at Padua 1713.
- Hort. Cliff. Hortus Cliffortianus, or a Catalogue of the Garden of Plants at Hartechamp, belonging to Mr. George Clifford of Amfterdam, ranged according to the new Method of the fexes of Plants, by Dr. Charles Linnaeus. Printed at Amfterdam in folio 1736, with elegant figures.
- H. C. Hortus Catholicus, i. e. the Univerfal Garden, by Franciscus Cupani. Printed at Naples 1696, 4*0.
- H. Edin. A Catalogue of the Plants growing in the Phyfic-Garden at Edinburgh, by James Sutherland. Printed at Edinburgh 1683, 8vo.
- H. Eyft. Hortus Eyllettenfis, by Bafilii Belfer. Printed at Neurenberg 1613, fol.
- H. L. A Catalogue of the Plants growing in the Phyfic-Garden at Leyden, by Paul Herman, M.D. Printed at Leyden 1687, 8vo.
- H. R. Monfp. A Catalogue of the Plants growing in the Royr.l Gat den at Montpelier, by Peter Magnol. Printed at Montpelier 1697, 8vo.
- H. R. Par. A Catalogue of the Plants growing in the Royal Garden at Paris. Printed at Paris 1665, fol.
- Hort. Upfal. Hortus Upfalienfis, or a Catalogue of the Exotic Plants growing in the Garden at Upfal in Sweden, by Charles Linnaeus. Printed at Amfterdam in Svo, 1748.
- Houft. Houftoun, Dr. William, a Manuscript Catalogue of the Plants which he had obferved growing in the Iflands of Jamaica and Cuba; as allb at Campeachy and La Vera Cruz, in tije years 1728, 1729, and 1732.
- J. B. An Univerfal History of Plants, by John Bauhin, in three volumes. Printed at Embrun 1650, fol.
- Juff. Juffieu. Anthony Juffieu, Profeflor of Botany in the Royal Garden at Paris, who has publifhed fome Memoirs of Plants, in the Afts of the Academy of Sciences at Paris.
- Jnff. Bern. Dr. Bernard de Juffieu, Demonstrator of the Plants in the Royal Garden at Paris, who has delivered to the Royal Academy of Sciences many curious Obfervations on Plants which are printed in their Memoirs.
- Kemp. Ex. Dr. Englebort Kcempfer's Defcription of the curious Plants which he obferved in Japan. Printed at Limoguen in 1712, 4to.
- Lin. Gen. Plant. Charles Linnaeus, F. R. S. Doctor of Phyfic, and Profeflor of Botany at Upfal in Sweden, who ha* publifhed feveral Editions of his Method of ranging Plants according to their Parts of Generation. The firft at Leyden in 1737, and the fecond in 1754, at Stockholm, Svo.
- Lin. Sp. Plant. The Species of Plants by the fame Author in two volumes, 8vo. Printed at Stockholm in 1753, and the fecond Edition in 1765.
- I.in. Mat. Med.. Linnseus's Materia Medica, 8vo. Printed at* Stockholm 1749.
- Lob. Adv. Matthias Lobel's Adverfaria Stirpium Printed at Antwerp 1676, folio.
- Lob. Ic. Icons of Plants by Matthias Lobel. Printed at Antwerp 1576^ fol.
- Lugd. A general History of Plants by Dalechamp. Printed at Lyons 1586, two volumes in fol.
- Magn. Peter Magnol, his Catalogue of the Plants growing about Montpelier. Printed in 8vo at Mont^wier, in 1686.
- Magn. Hort. Peter Magnol, his Catalogue of the Plants in the Garden at Montpelier. Printed at Montpelier in 1697, Svo.
- Malp. The Anatomy of Plants, by Marcellus Malpighius. Printed at London in fpl 1679.
- Marcg. George Marcgrave, his Natural History of Brazil. Printed at Leyden 1648, fol.
- Martyn. Cent. John Martyn, Profeflor of Botany at Cambridge, his five Decades of Rare Plants. Printed at London 172S, 1729, &c* in large folio, with figures of the Plants in their proper Colours.
- Matth. Peter Andrea Matthiolus, his Commentaries on Dioscorides. Printed at Venice 1558, fol.
- Mentz. Chriftian Mentzelius's Indexes of Plants in feveral Languages. Printed at Berlin in fol. 1682.
- Michel. Peter Anthony Micheli, his New Genera of Plants. Publifhed at Florence 172^ fol.
- Morif. H. R. Robert Morrifbn, his Catalogue of the Royal Garden at Blois, to which is joined his Prelude to Botany. Printed at London 1699, Svo.
- Mor. Hift. An univerfal History of Plants, by Robert Morrifon. Printed at Oxford 1679, ¹⁶⁸⁰ & ^{and 1699} three volumes in folio.
- Munt. Aloid. An History of Aloes, by Abraham Muntingius. Printed at Amfterdam 1668, 4x0.
- Munt. Phyt. Muntingius's Phytographia. Printed at Leyden 1702, fol.
- Munt. Herb. Brit. Muntingius's true Herba Britannica, 4to, to which is frequently added his Aloidserum. Printed at Amfterdam in 4to, 1698.
- Niffol. Niffolle, his Memoirs of Plants. Printed in the Afts of the Academy of Sciences at Paris.
- Par. Bat. Prod; The Prodrumus to the Paradifus Batavus. Printed at Leyden 1998, 4to.
- Park.Parad. The Garden of pleafant Flowers, by Johri Parkinon. Printed at London 1629, &&*.
- Park. Theat. The Theatre of Plants, by John Parkinon. Printed at London 1649* fol.
- Pet. James Petiver, his History of the Englifh Plants. Printed at London in fol. with cuts, 1713.
- Pif.Braf. William Pifo, his Natural History of Brazil. Printed at Leyden 1648, fol.
- Pluk. Aim. Almageftum Botanicum, by Leonard Pluknet. Printed at London 1696, fol.
- Pluk Amal. Amaltheum Botanicum, by Leonard Pluknet. Printed at London 1703, fol.
- Pluk. Mantiff. Mantiffa Almagefti Botanici, by Leonard Pluknet. Printed at London 1700, fol.
- Pluk. Phyt. Pluknet's Phytographia, i. e. a Delineation of Plants. Printed at London 1691, and 1692, fol
- Plum. Cat. Father Charles Plumier, his Catalogue of American Plants. Printed at Paris 1703, 4to.
- Plum. Nov. Gen. New Genera of American Plants, by Father Plumier. Printed at Paris 1713, 4to.
- Plum. Pl. Am. A Defcription of American Plants, by Father Plumier. Printed at Paris 1693, fol.
- Pon. Bald. John Ponse, his Defcription of the Plants growing upon Mount Baldus and Verona. Printed at Antwerp 1601, fol.
- Ponted. Pontedera, his Anthologia, or Difcourfe on the Flowers of Plants. Printed at Padua 1720, 4to.
- Raii Hift. Ray's History of Plants. Printed at London 1686, and 1704., in three volumes, folio.
- Raii Meth. John Ray, his Method of claffing Plants improved and augmented. Printed at Lond. 1703, 8vo.
- Raii Syn. A Synopfis of the Britifh Plants, by John Ray, augmented by Dr. Dillenius. Printed at London 1724, 8vo.
- Rauw. Leonard Rauwclif 's Travels in the Eaft. Printed at London.

An EXPLANATION of the AUTHORS NAMES.

- Rei. Flora, Cerei, and Pomona, by John Res. Printed at London 1676, fol.
- Rivinus. Augustus Quirinus Rivinus, his Order of ranging Plants by tin: Figures of their f* lowers. Printed in five Classes; at Leipzig in *ilxjo*, 1691, and 1639, in fol. with figures.
- Roy. Flor. Leyd- Adrian Van Royen, 1Wefibr 01 Borary ai Leyden, his Frodromus, or Clicalogue of ilic Plants growing in the Phyfk-Gardrn at Ltydun. Prinrcti .it Lcydci! 174.1, Svo.
- Sauv. Flora Monfpcliends, by Fr. Sauvage. Hague, Svo, 1725.
- Schuch. John Jacob Schenchjer, his Observations of the Plants he clir, overcd growing on the Alps, in three Journies. Prints! atXryden, in tivo volumes
- Sloan. Cm. A-Catalagtie of the Plants growing in the Wand of Jamaica, by Sir Hans SJoantr, M. U. Printed at Londori jGnfi, Bvo.
- Sloan. Hist. A natural History of Jumica, by Sir Hans Sloanc, M. D. Printed at London 1707, and 1725, in two volumes, fol.
- Sivert, A Florilcgrum, or a Colle&ion of Flomr, by Sivert. Printed at Fritnckfert idia, lol.
- Tab. Ic, Icons of Pliats, by Tatiernxmoatanus. Printed at Franckfbrt 1590, tbl.
- Tourn. Intl. Inftiwitions of Botany, by Joseph PittoQ Toiirncbrt. Primed ai Paris 1716, 4m.
- Tourn. Cae. • C •• LI uytothe [nfitutui 1 s of ••otany, by J. l'itton Tournffon. Printed at Paris 1707, 4to.
- Trew, Chant. Jacob Trew, Doftr of Phj-fie, 1. R. S. and of the Academy of N-atunJ L •••••, who has publiflicd leven Decatlesof!; ••••• Plants, inrlyiHu.TiK naled, in folio, at Neurenlvrg.
- Triumf. John iJiptifl: Triumittw, I ••••• Observadons on the *Vesfimoa* oi Plants, with the History of the: l'fant(growing about *Il ync*. Printed at Rome 1681, Vc°.
- Triumf. Syl. John iiaptili Triumf(, ••••• his Syllabus of the Plants in the Phyfio-Gardn ••••• at Rome.
- Vaill. Sebftian Vaillhft, his New (irnen of Plant', Printed in the Memoirs of the Academy of Sciences.
- Vail. Dif. Sebaflian Vaillant's *Difcourfe* of the Structure of Flowers. Printed at Leyden 1711, 4to.
- Volte. Flora NeurenbersCTifis. An Accotin of Plants in the Ci-rdtnof Nturenberg, of Dr. VoUatncf. Printed at Scurcoberg [7110, 410.
- Zan. A History of Plants, by Jacob ZiEOnr. Printed at Bologna • 16/5i fol.

The different Parts of Plants

Plate 1.





T H E

GARDENERS DICTIONARY.

A B I



IBELEira. SCCPQFL-LLIS.

ABIESi the Fir-tree.

The name is derived from *abire* to extend or advance. Others say, it is derived from *aino*, to m away, because the bark, (plig, and, as it were, tails away, or is broke off casily.

The name is derived from *abire* to extend or advance. Others say, it is derived from *aino*, to m away, because the bark, (plig, and, as it were, tails away, or is broke off casily.

Abies in a *lmsc* *iiuiuh*, *fyruixz* its corolla, but manyframa, *joined mstna ef'ii column at ibfir liafc, tut siparvtt* afcor, having e>:i.O *fiammtu tt fmitle* *NWCTS* <*> *ehstmg tenl, tacbfiaf wfat&ng two,* *ne evalla, a fmail gtrvscn wiili afatgkfiig-liiii. Tbtft artluccatiti by iKnuüiraHtictws mmini ftds.*

Dr. Linn-us, professbr of botany *si* Upfal, whdfe iylcm is cencfally followed y prelent, nuig this genus in the ninth fession of his tw^ny-firll cjafs of *plau* us, which includes fudi *ca* have *me* [e md female Jlnwer:, placed *at* distances On the fame tree, whose feminairejoined tgether in for *me* of *acm* PUD.

To thij (^*em**) *Je* joins the *Jine*, *Cuijr*, and *l^aitli*-tree, fuppoftiig thieni only oir&rcnt fpecics of one genus i however, as then *a* great difference in the culture of thet tr'tf, we ilutl choofe to continue the former method of arranging them under tfcifr Jiffrent genera. It may not be amifc *h*w> *not to observe, that* in the former edition, of *Ltmueui'i* Genera I *hant*-n:m, thet pbnts were ranged under the article *Abiw*, but in the lift edition *III*- *lias* thought proper v> place them under *Pinus*.

The *Spruce*,, wliiib arc nt prfent i *be* found in the English gardens, are,

- i. *Abies (Picea) formis* *fubms* *argenteis* *apice* *emjirgi*-*IKIL*: *conis* etc.; *Pinus* • *jibeft* *tia-sei* *an vikitt* *tit thin* *under-filz,* and *induced* *at* *thev* *gnts,* *ifmnenfy* *called* *Silver* *Fir.* *Abies* *v* foliij, *iVucta* *furfum* *fpedante.* *Toum.* *Inf.* *K. 1.1.*

«* *Ani-is* [*Pitta*] *fnlis* *l'ubulatis* *mucronri-*; *Ixvibus* *bifariarfi* *ve* *I*. *The* *N*. *roof* *Fir** **r* *Pücht*-*tnt.* *Abies* *temu* *ire* *lulio,* *fmdliiz* *liefrum* *inflfx.* *Toum.* *Inf.* *R. P.*

Abies, [*Bdftitmts*] *fgliis* *fubtus* *argcircis* *ipicp* *fub-*

A B I

emarginata *tri&riam* *vtrfis.* *T&Baim* *cf'ititnd* *Fir.* *Abies* *tiixi* *fyllis,* *odoce* *biil&mi* *Gilciucnliis,* *K^ii* *Mill.* *A pp.*

4. *Aatri* (*Caiiodtttfai* *foliis* *linearibus* *obtufrnfcuili* *fub-* *membra* *nact* *the* *New* *Fir* *!<nd* *IVixte* *Spruce* *Fir.* *Abies* *foliis* *picca;* *brevioribus,* *conis* *parvii* *biuntili-* *bub* *lasas.* *Rani.*!

5. *ABIES* (*Mariana*) *foliis* *Unearibus* *aciicis,* *coiüi* *mini-* *mi!*, *fl'f* *Black* *Spritu* *Fir* *ef* *North* *America* *with* *-jtry* *[mail* *(en*?!.

6. *AEIES* (*jhmrm**) *foliis* *lineartbm* *obtufrnfcuili* *Li-* *fariiin* *verfu* *coni* *fubrot* *Aindis.* *fit* *Hcmbtk* *Sena* *fir.*

This is sillb another fort of Fir, which has bctn uf *ULL*- years tntroduceJ from Nordi America, by the title *Hed* *Spruce* *Fir* of *NewfounJiind*; but fo far as v the you *tig* *tret** now growing in the *gardens,* it appears to be only I v- nity of the *Black* *Newfoundland* *Spruce* *Fir.* [*ere* was alfo many years ^ft u tree of the *i* *hina* *Fir,* *Erowint* in thit (arden of *Mr.* *Morgan* of *Weltmin-* *fter,* whicli is mentioned by *Dr.* *Plukaet,* but being in a *bid* *GnJltwn* *ir* made little progrefs, the *Ci* *oke* of *London* being ver) hurt! | *all* *forts* of *ever-* *green* *I* *res,* but *wJieincrit* *iva* killed in that garden, or itmoved ta any otlter, I do not know, for the ground has been *Uith* upon many years,

The *nt*^ *an* *l* *ected* *forts* *or* *firs* are very toтираon in gardens and *phjitari* *on* of *evergreen* *trees.*

The *firt* *grows* *it* *gfeal* *Henry* *about* *Straßburgh,* and ether *paflyf* *G*-*rmany* *from* whence the turpentine is brought w *England.* *FLII* it is fuppled, that *moll,* *of* *u* *d!* of [*icic* *wc:t* *originally* *pi* *anted* *however,* *the* *molt* *bcaulitl* *o!* *^* *ic* *tree* *are* *anted* *now* *growing* *up-* *on* *mount* *11* *opus,* *from* whence I have received *cunet,* *wliith* *wen* *upwards* of a foot in length. *They* *are* *certainly* *nati...* *of* *the* *place.* *Dr.* *Tournefort,* *in* *hii* *travels,* *mentions* *the* *Fir* *of* *mount* *Olym*-*pin* *as* *the* *no* *(* *Irjuir* *ul* *n** *is* *in* *the* *Levant.*

The *fecund* *lbrt,i* *hach* *is* *very* *common* *the* *woods* *of* *Norway,* *n* *the* *etc.* *that* *affords* *the* *v* *hite* *dc*-*jls,* *intl* *(miv*^: *m* *the* *v* *llit*^ *where* *the* *foil* *is* *'en*^ *drtp.* *There* *are* *two* *varieties* *uf* *tins* *fpet;* *one* *greatly* *diner-* *ing* *in* *the* *length* *antl* *colour* *or* *their* *leaves,* *as* *alib* *the* *file* *of* *their* *cones;* *tint* *of* *which* *lias* *been* *dif-* *tinguihed* *by* *tnrfery* *giivknerj,* *under* *the* *t* *ilk* *of*

Long

Lbfig Coned Cornith Fir. The leaves of this are whiter, and much longer than the others *, the cones are also of a greater length than those of the common sort, so that by the appearance of the trees, any person might suppose them to be a distinct species. But from the seeds which were carefully taken from this sort, both varieties of plants have risen, therefore they must be only deemed varieties.

From this tree the pitch is drawn, and hence it had the title of Picea, or Pitch-tree*.

The third sort was formerly growing in the Bishop of London's garden at Fulham; and of late years there has been a great number of the trees raised from the seeds which have been brought from America. This sort makes very little progress after eight or ten years growth; the only place in which the trees have made any figure, is at his Grace the Duke of Bedford's at Woburn-abbey in Bedfordshire.

The fourth sort is a native of North America, from whence the seeds have been brought to England, and great numbers of the plants raised. This is called by the inhabitants in America, the White Spruce Fir. It grows naturally on the mountains and higher lands, and arrives to a much greater size than most of the other sorts. Those in the gardens of the late Duke of Argyle, at Whitton near Hounslow, are by much the finest I have seen: but there must be some trees of a greater age in Devonshire, unless they have been destroyed; for in the year 1724, I received some branches of this tree full of cones, from a gentleman of that county, who had several of the trees then growing, which were of a considerable size.

The fifth sort grows naturally on moist land, in many parts of North America, but rarely arrives to the size of the fourth: however, the inhabitants of America use the branches of both indifferently in making of Spruce-beer, from whence the trees obtained the title of Spruce-trees.

From both these species of Fir, exudes a fine clear turpentine of a strong scent, which the native Indians use to cure green wounds, and also for some internal disorders; and of late years the English physicians in North America, have likewise adopted it into their practice.

The sixth sort is also a native of America, from whence the seeds have been brought into Europe. This tree does not thrive well in any part of England, nor in many places of America; though in some particular spots I have been informed there are very large high trees now growing. It is a native of many parts of North America.

These trees are all raised from seeds taken out of their polyperamous cones. The way to get out the seeds is, by exposing the cones to a gentle fire, which will cause their squamous cells to open, and readily emit the seeds: but they should not be exposed to too great a heat, for the cones of all the Firs open much easier than those of Pines, especially those of the Silver and Balm of Gilead Firs, which, if permitted to hang late in the autumn, fall to pieces and scatter their seeds. This ought not to be done until the time of sowing them, which is best performed the latter end of March.

These plants should be all raised in a nursery, where they may be protected from the birds, otherwise they will be in danger of being destroyed when they first come up. For as they bring up the husk of the seed on the top of the plant, the birds, in picking off the husk, will break off the tops of the plants, whereby a whole bed may be lost in a few hours, if not carefully guarded from them.

The best time for sowing these seeds is about the latter end of March, or the beginning of April, according as the season is more or less forward, on a bed of light earth, covering the seeds about half an inch deep with the same mould. If this bed be netted over to keep off the birds, it will be a sure method of preventing them from destroying the young plants at their first coming out of the ground; it which time they should likewise be screened from

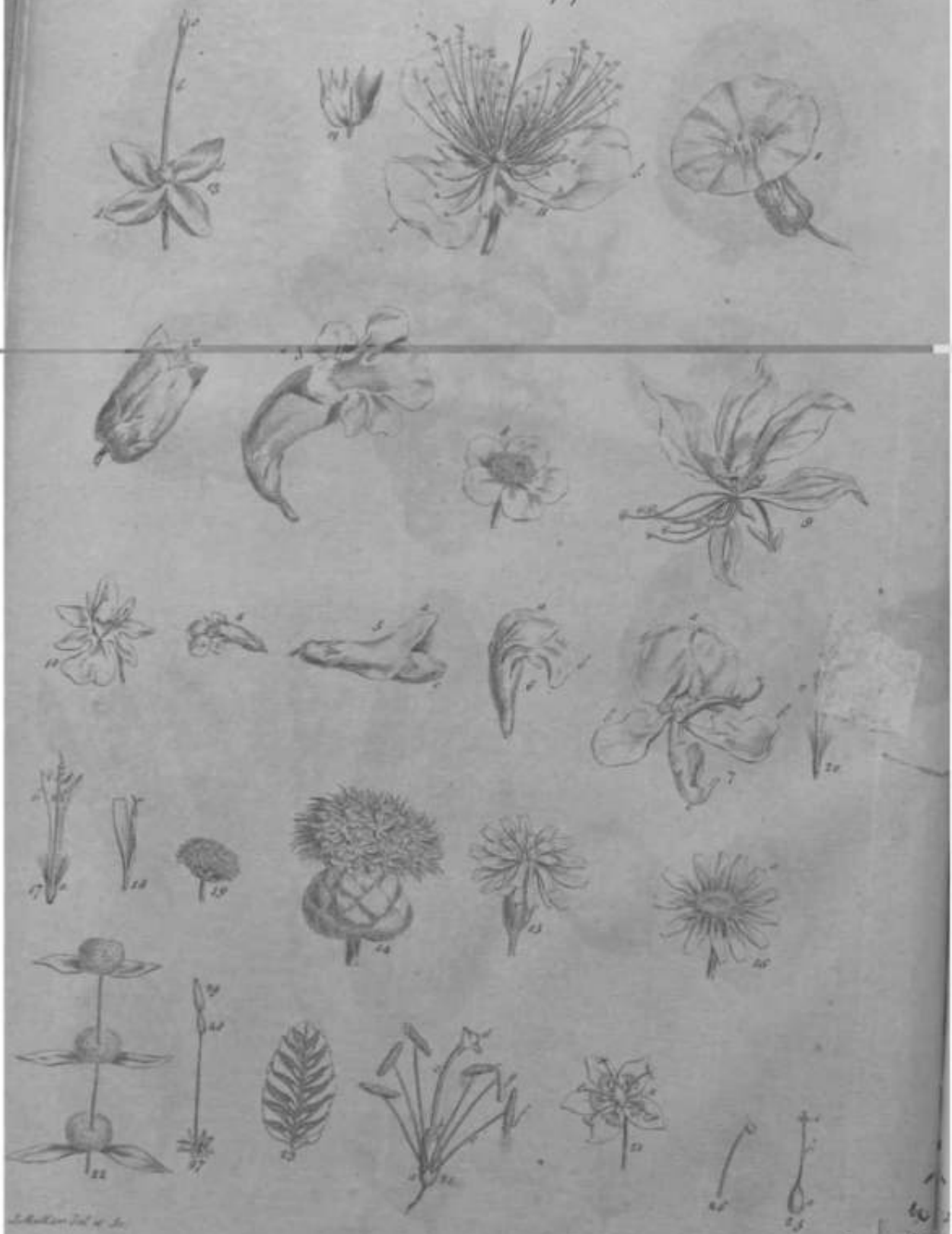
the sun in the middle of the day, by covering the beds with mats, because too much sun frequently destroys the plants when they are young. In this bed the plants should remain until the following spring when there should be a number of beds prepared in the nursery to receive the seedlings. In the beginning of April they should be transplanted into the beds, at the distance of six inches row from row, and in the rows at three inches asunder, setting them in a quincunx order. In removing these plants, they should be very carefully raised up with a trowel, so as not to break off the fibres of their roots; nor should they be kept long out of the ground. During the time they are out, their roots should be covered, to prevent the wind from drying their fibres; and in planting, the earth should be pressed close to their roots, to prevent the air from penetrating to them. If the season proves dry, it will be proper to water the plants every week once or twice, according to the warmth of the weather, the beds should also be covered with mats, to screen the plants from the sun, and drying winds, until they have taken good root; after which time they will require little farther care, than to keep them clean from weeds. In these beds the plants may remain two years, at the end of which they should be transplanted into an open spot of ground, for their roots will in that time meet quite over the beds. This ground, to which they are to be removed, should be well trenched and cleared from all noxious weeds, and made level. The beginning of April, just before the plants begin to shoot, will be a good time to remove them. In taking up the plants, great care should be taken not to tear off or injure their roots, nor should too many of the plants be taken up at one time, but rather plant them as fast as they are taken up, that they may be as little time out of the ground as possible. For the drying winds, which usually happen at this season, will greatly injure the roots of these plants, if much exposed thereto.

The distance at which they should be placed in the nursery, should be four feet row from row, and in the rows two feet asunder. This distance may by some be thought too great; but if it be considered how much their roots spread in the ground, as also that when they are planted nearer together, it will be very difficult to take up the plants again without cutting and tearing off their roots, especially if they are not all taken up clean at the same time: these considerations must have greater weight than that of the loss of a little ground, with all who have any regard to the future welfare of the plants. In planting them, it will be advisable to draw a line across the ground, and to dig out a trench of a foot wide, into which the plants may be placed at the distance of two feet asunder. Then fill the earth into the trench, covering the roots of the plants with the finest part of it, scattering it carefully between the roots; and when the whole trench is filled in, press the earth gently down with your feet, but by no means tread it too hard, especially if the ground be strong, or apt to bind too close.

When the plants are thus planted, if the season should prove dry, they ought to be watered, in order to settle the earth to their roots, and if this be repeated three or four times, (if the season should continue dry) it will greatly promote their taking new root, and secure them from the injuries of the drying winds. In this nursery the plants may remain two or three years, according to the progress they shall have made; and during this time, the ground between the plants should be constantly kept clean from weeds, and dug between the rows every spring, in doing of which, care must be taken not to cut or injure the roots of the plants: this is all the culture they will require during their continuance in the nursery. When they are transplanted into the places where they are to remain, the necessary care to be taken is, in taking them up, not to injure or cut off their roots, and to let them be as little time out of the ground as possible *

Different Structures of flowers.

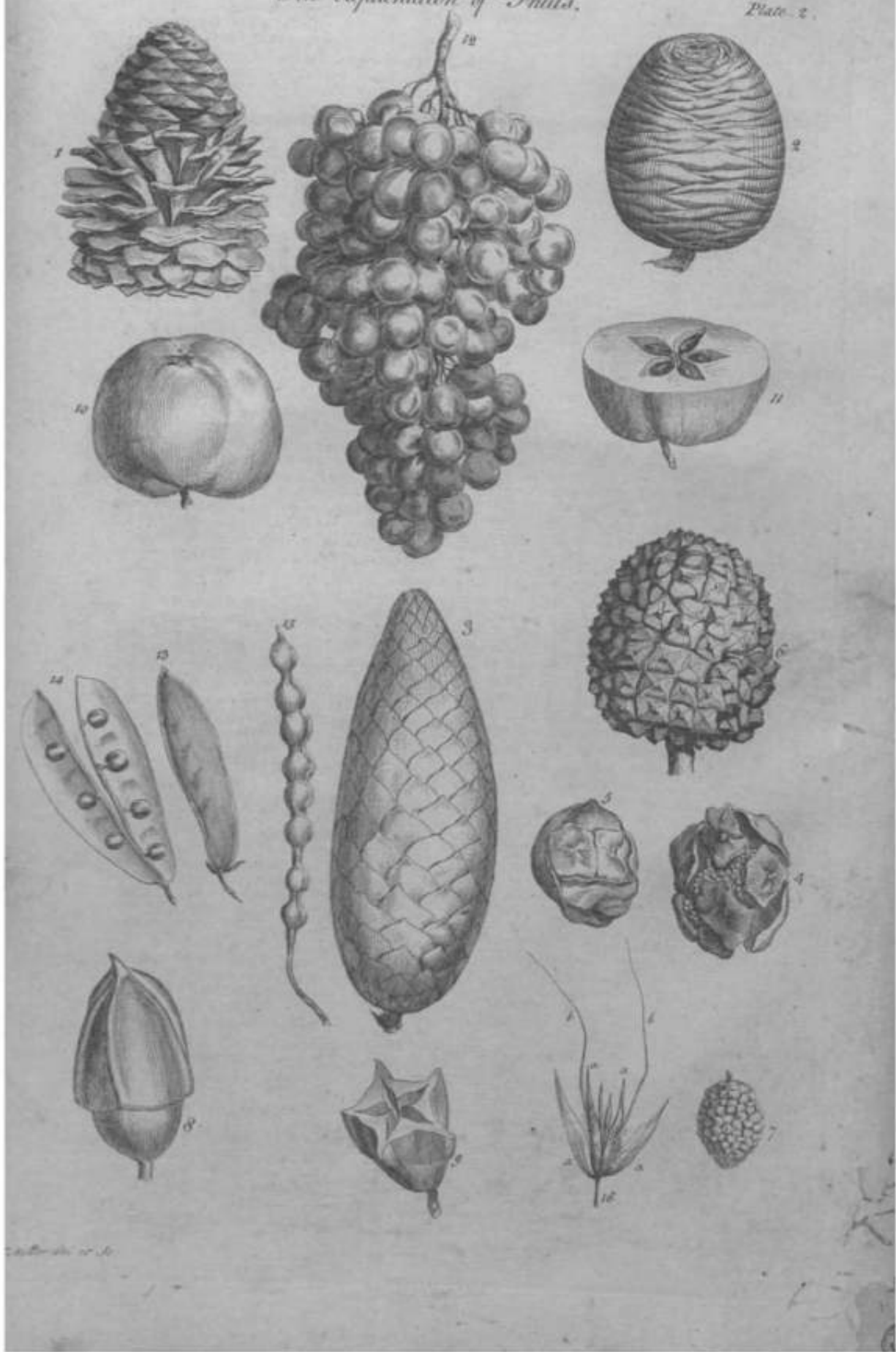
Plate 3.



W. H. & Co. del. & sculp.

An Explanation of Fruits.

Plate 2.



and while they are out, to guard their roots from the drying wind. The (urn time lor removing (felt trees is about the beginning of April; for though they may be, and often are, removed with success in Midwinter, yet the spring is the most sure season, especially in moist land.

Most of the kinds of Firs may be r^movKi! at the height of six or seven feet, but those of two feet high are much better to transplant, and will in a few years gain the ascendancy of taller trees: I would not, therefore, advise the transplanting of these trees when they are much above two feet high, especially if they have stood in the nursery untransplanted. For they, their root... will have extended themselves to a distance, and when great impediments are in taking them out of the ground; and when either lotheroorv or branches of these trees, the quantity of sap which com... which com... nearly issues from these wounds, will greatly weaken the trees. There is another advantage also in planting them when small, which is that of not requiring staking to secure them from being blown down by strong winds, which in tall trees is a gprar trouble at nqsei. And whoever will give them...

...and the trouble so observe, how much trees of two feet high exceed in growth those which are removed at a much greater height, will, I am sure, be convinced of the truth of what is here said.

The common Spruce Fir is what affords the white deal. The trees grow in the deep strong hills of Norway and Denmark, but will grow likewise in almost any soil or situation in England, provided it be not within the reach of the smoke of great cities, which is very injurious to all these sorts of trees, nor do they thrive not so well in damp land, as in fresh uncultivated lands. The difference these trees have been under for some years past, has been chiefly owing to their being planted too close to each other, or in too near other trees, whereby the air has been excluded from their branches, which has occasioned most of their under branches to decay; so that when viewed from the ground under these branches, they have a greater appearance of dead than living trees. But when they have been allowed a good distance, and planted in a strong fresh soil, they have had their branches quite feathered within six or eight feet of the ground, and that too in trees upward of forty feet high; therefore should not be planted nearer than twelve feet apart, nor should they be so near, when the plantation is more than three rows deep. In this case, eighteen or twenty feet consider will be full near enough, especially when the trees are designed to have their branches feathered near the ground, in which case of the beauties of these trees consist.

The Silver Fir requires a stronger land than the Spruce, for it grows in dry ground, and makes any great progress; and many times, even after they have arrived to a considerable size, are destroyed by very ill-contrived winds, when the soil is either too wet, or too dry. But when they are planted in a proper soil, they grow to a very large size, and are extremely beautiful, having the under side of their leaves white, and the upper side of a dark green color.

The last of Fir, however, is frequently injured by frosts, when they happen late in the spring, especially while the plants are young. For when these are planted in a warm situation, they are apt to shoot pretty early, and if by sharp frosts happen after they have issued, the young shoots are killed; but when they have had a year's growth, and are rendered very indurately, that many times they bear the winter out, and are thrown away. In cold situations, however, where they do not begin to shoot so early, they are not subject to this disaster; and, in many such places, these trees grow to a large size, and have their beauty. I have sometimes seen some fine trees of this sort of Fir, which grew upon natural heath, where, by extending their roots, they had drained the ground to a considerable distance round them. There were some trees of this kind lately growing in England, upwards of sixty feet high.

The method of raising the other sorts of Firs.

Aboi: the latter end of March, or the beginning of April (according to the forwardness of the season, by which every person must be guided) prepare a very moderate bed, in length proportional to the quantity of seeds to be sown, and where there are frames which can be spared for this purpose, these may be placed upon the bed; but where these are wanting, the bed should be covered over with hoops, that they may be covered with mats or canvas, then plunge the bed full of small pots, such as are commonly sold about London for four shillings and two pence per hundred. These pots should be filled with light unenriched earth,

and slices between the pots may be filled up with any other earth which is nearest to the place; then sow the seeds in these pots, covering them about half an inch with the same light earth. In drying winds the bed should be covered, to prevent the earth from being blown away; but should the seeds have too much wet, which would be equally injurious to them; therefore the earth should be last taken watered, and it must never be given in great quantities. When there is any appearance of frost at night, the bed should also be covered. With this management the plants will appear in five or six weeks time, when they must be carefully guarded from birds, as was before directed for the common sorts, and also freed from the fire in the middle of the day; but they must now have fresh air admitted to them at all times when the weather will permit. They may also be allowed to receive any gentle showers of rain, but they should not have too great plenty of moisture, which will frequently rot the young plants, and cause them to drop. Upon the judicious care of this, depends the whole success; for I have seen great numbers of these plants destroyed in one day, by being either too much watered, or by being exposed to too much wet.

It may, perhaps, seem strange to many, that I should direct the sowing the seeds of these trees which are so very hard upon a hot bed; but from many trials I have always found they have succeeded much better this way than any other, for the gentle warmth of the bed will not only cause the seeds to vegetate much sooner than they would naturally do in the cold ground, but the plants will also rise much stronger, and, consequently, be in less danger of rotting in their infancy. And as the warmth of the bed is only to bring up the plants, so there should be but little dung employed in making it; for after the plants are up, they must be treated as the common sorts, and treated as handsly as the common sorts.

Tjxre 1 may be others, perhaps, who will object to the directions given for sowing the seeds in such small pots, because, where there is any quantity of the seeds, it is usual to sow them in boxes, or large pots; but I can from many years experience aver, that most sorts of seeds succeed better when sown in small pots, than in boxes, or larger ones, and I therefore recommend this practice.

As the seeds of the Hemlock Fir will frequently remain in the ground four or five months, the pots, in which they are sown, should not be disturbed, if the plants come not up so soon as may be expected, for whilst upon stirring the ground, the seeds are found to be decayed, there may be hopes of their growing the second spring, for I have sometimes had the seeds remain a whole year in the ground, and afterwards come up very well; but, therefore, it gives us prevent the pots from being too huddled together.

The plants of these sorts of Fir must be treated in the same way as the common sorts, with this difference only, that they ought to be transplanted into a more shady situation and richer soil. For while the plants are young, they will not thrive if they are exposed to the sun, or in a dry soil; but when

when they are grown to a considerable size, they may be exposed to the sun, and in a dry soil, but when they are young, they will not thrive if they are exposed to the sun, or in a dry soil; but when

...] they have obtained [trength, they will bear tu-
 opcl l'uj very well, and in a moill toil will BUtk
 great progrri⁸; whercis in dry ground they frequent-
 ly Itinc, and produce plenty <i' male flowers and cones,
 by i he time they get to the height of ibyr or fiv-
 When the brunches of these rees are cut off to trim
 them up to have items, it Ihould be done gm 'uaily,
 never tutting more than one tier of branches in one
 year j for if t<> many wounds are made IL the fame
 lime on chef: refinous trees the turpentine will illie
 out in fucll quantities u to weaken and cheek their
 growth. The beft rime for pruning thele trees is in
 September, at which time they abound not (a much
 in turpentine a? in the tpring, ami, confcquently, do
 not bleed much. What flows out at that leafo'n, id
 feldom more than is nceHhry for covering the wounds,
 to prevent the wet and cold of the fucceeding winter
 from iieninitini; the wounded parts. Theft branches
 fhould be cutelofe to the trunk.

- Ali ROTANUM, or Southernwood. Esc ARTEMISIA.
- ABKOTANUM FEMINA. SeeSANTOUNA.
- ABRUS. See CLVCHII.
- ABEINT I] U M, Wormwood. See ARTEMISIA.
- AKUTLON. See SID*.
- ACACIA, Egyptian Thorn, or Binding Bean Tree.
See MIMOSA.
- ACALYFHA, three fe<d<l Mercury, This genus
of plants is by Dr. Linnrui ranged in die nindi fec-
 tiou of his twenty-firil clafi, which comprchejids fuch
 plants as have their male flowers tu milked with one
 let of united Ibininn.

The CHARACTERS are,

'Tht malijtowtri are in dujltri fituotei above tbeftmsU
 in tie font plant. Theft have m corolla: they have a
 fntr kawd empalmct wish fruerecljb:r: ft ammo, which
 art jittfd at their buft, bs-usng rtmndifb fitipm
 female JIKBO-S have a large empatemem, a three leaved cup
 *abith h fermeim;; they bmit no corolla. Aromdijl
 firmst with three branching fyles, end a £:
 'The cup afterwards tuna to a topfull with H
 tad> calemng ene reuidisjb feed.

The SrsciEs arc,

- 1. ACALYPIIA (Virgkxiu), involucris ftrmineiscordati! in-
 cisis, foliis ovato-lanceolatis petiolo longioribus. Hort.
 Uplil, 150. L e. Three feided Menury, lobeft femal
 Jlmn l>siie a heart piped empalcpievi, and evat spear-
 Jbaped Itimv, *xiib long fnt-JlaHi. Mercurial is iri-
 COCCM hermaphroditica.
- AtALvi'i/i (i'lrkata) fpecii fteEnitveii involucre CO
 dttis ferratis, nafitiliaphyllis di(UnfKifolia lajiceo-
 buo-ovatu. Amren. Ar<d-5.p.+io. I'brceftidiiMtr-
 tury, zskofe female fimers ktrjr em indattd itart-jbdpei
 impaltniHi, dijiinS from the malt.
- 3. AcALVhiia (Indica) involueris tixmincis cordrasub-
 Crvnatis, foliism'tttis petiolo brevioribus, Plnr. Zcyl.
 341. Mmiry, abfc fem<lt flerjiers have hiart-shapei
 crenated entpaUmtisti and O'jat cavti.

The Jin! naturally in Virginia, and ievera
 other parti of North America, from whence I rr
 enved the feeds. It il an annual plant, which
 dotn grows more than a foot high, ieniino out fe
 veral fide branchej towarch (lie bottom. The leaves ar
 Very like thofe of the broad leaved P'elitory nf C\
 will, snJ rrc pte^d itemaiely, having TM g
 ftalk^, from the jilce, or wings of the leaf The fow
 crj are produced in imall eluters, tie nuk alway
 being above- the female. Thele make but a poor ap-
 riararce, and tefemble tiofc uf the Pdliiory fo mutt
 that Si a find diftance, iny perfon mief- fuppoie
 them to be IU fiim<, till convinced by a
 fpectum.

If the feeds >f this fan are permitted to (atter, th
 plants tvill come up in the fpring, better thj
 by hnd; for if they are nmr put into thfl ground i
 Auwmm, they mre-lygrcw the firft year. All the cu-
 tureihiipljm required, ii :u keep it char from weed
 and let it urmain where it was town, for it doth no
 K-ar removing well, h fiowm-io Augtift, and th
 feerU ripen in O&ober.

J'hc fctond fort is a native <f tht warmdt countns

! revived tile feeds of this from Jantatcm where it
 in great plenty. This is nlijj tn amntj fi 1
 which in England lrklum exceedi the former Ion in
 ittntsi The Icavus of tht3 gnacally relcmble thofc
 of die annual Nettle, and [ling full us much when
 touched. IL is 100 tender to rliiw in the oprn air in
 EngLind, ilitirfore the feeds Iliould be ibwn in poti,
 plunged into a hoi the pLmti do not itonic
 up tlic firfl ytar, [which often happetsj the |>oti
 ftiould be puc in Ihelwt in winter, mid die following
 (jiring plungtd s^ain into a hoc-bed, which will 1 :
 up thi' plants. I bde nmut be tmfplamed into pots,
 and brought forwird fa hot-beds, nltirwite they wilJ
 not produce feeds ripe in England.

Thefe plants have no beauty tu recommend them, but
 as they ire prtftemd in feveml ^irdciis for th: fake
 ofvanety, [thought it necctHry to infcn them here.
 V C A N A C E O U S plants [lo cuilcii from xxni*,
 Cr. 1 thorn orprinklcjare fuch aahuve prmkiy headi.
 L A N T H U S [uat&, fa caJkd, m lumi- lay,
 from I. DSI, a thurdJ It ii'illb called francj Urfina,
 or Bear's-breech>

The CHAIUCMRS of this plant sic,

Tif tmfmletntnt si tompefid of (fjrtt pair t>f utitiquit
 kavet. Tbtjletvir is w-amil, ofnut leaf, "Jiib a j&trt
 tK&t, tht beard, or Imerr lip, foitg largt, plum, and
 creS. It hoi w> upper lip- 7be Jiamiaa and Jlyle
 ecciupy the flint of it. 'thft art archidaHdfretitieditii
 beyond the nupalmiM. 'That an txco lmg and too
 Jfjia-ter Jlamina, wln'ib dafily toalefce lo tbtjfk, which
 is infured open a Toux&jh irmat, end afitmxtids ht-
 an aval capftk, having nw alh, <fi mtaining

The SrsciEs of plants is by Dr. LinnrEus ranged in die
 fecond iirftion of his fourteentli Angiofpermiii, from die Mowers having iwo
 long, :> two Ihorter llamina, and til-
 ing in a cover.

The Sr-Eeds arc,

- 1. ACAMTHUS (Mliit) foliis finuatis incrniihvjs. Hort.
 Cliff. -Tht toiwit, cr fminlb garden Bear'i-iftKb.
 Acanthus Sativus vel Moltis Virgili. C It.
 nro« (Mrr») fclJB Qnuatu inermfr
 tucide virens. Portugal Htar's-brcebtymih jum-
 eted leasts of a lucid greeit.mhar. Atiianthus Lulitani-
 cus ariiplimmo, to)io lucido. Juffi
- 2. ACANIHUS (Difitridis) iuXU ancj; oliu; itt-egerrimij
 ruraiiie fpinofis. Gran, Ov. Middle Btar's-ercetb, -uuiib
 iusire 'tove>, having fpirsci in their fardiri,
- 4. ACANTHUS (Spine/a) fbiis oimnaufiitfpinofii. Hurt.
 Cliff! 316. Prtctf Btar'i-iitacb. Acanthus aoJlet-
 tus. C. U. P.

foliis repindis (ieitao-
 ejule fruLicolii tL-uluao. Olh. K. QI. li'tj li/isr'i-
 ireerti, nitb ftri
 agrioliiu iuliu. I'et. fif.

The ; what is ufed i medicine, and w
 ftipped to be the MoUa Acintliui 1
 of this plant arc cut upon (he Cafuulf of
 I nthiarr r>ilnr^.

iffglutts ; i
 about the plant, which is mentjojn
 by V in diarac-
 in diac-
 with them all. Many, therefore,
 opinion, th< there were two forts of the Adnd
 of them attri-, and the nhr an icrb. The iree
 die firft fort here mencaned ; thn there yet m u s
 a difficulty wi th regard to unv of ill
 to th plant, a; fidt, where it is tmfwiid to be an
 evergreen berry-bearing plant. Ercas vncp
 Zniu dndi

As to it

may
 be eaily coveted of our Acauthm,
 matec;" lu!) s for in England, wli n
 in warm Ecuadon, they jrr fckom !
 more tlnn fix weeks, u
 virc. We inay alii? fuppoie, that the felh
 vi-flth of tjiu pLuu might be taken for berries. But
 then with regirdto iti being a twmiiig plan:,
 ixtuiftem

Diff. A // > J//uJ//Y.t r//Z/f , Mrftt// //, //•) <>/'h/tW/.t .

Plate 4.



ACA

... vitm etamli, ir. will by no mean; agree with this, or the EgTP... bounitti in general nave agreed that the plant here mentioned is the Acanthus of Virgil, and there being feveral ctitirc columns of the Corinthian order yet remaining at Rome, upon ... of dtii plant arc fo well uxrphlCd, a* not to admit of any d ... r be inE deligned from our Auui thus, and thre colour u beinu as anicnt as the timed Vitruvius, there an be no doubt t!ut this ij die plint iroiil whole leaves Callirochl ... architect, comjiofed the capitals of the Co: ...

The fecond fort vat difeovered in Portugal by Dr. Bernard de Juflicu, demonfrator of plants in dv ... garden at Paris from whom I received the feeds in 17*5, which fucceded in the Chefei garden, and freely inly pcrfeftb feeds there) which being ibwn, conlbntty produce dt* ... is the parent, and therefore intift br ; ...

S
K

The thiid fort i • at pcciant very ... in England -, it grow* naturally in the caft, and is by Dr. Linnazus lupposed to be the Acanthus of Diofcorides, but with what certainty i cannot determine. This fort is not idy as either of the two former, fo requires lhcld-n die winter ; dicrefore the plants while young, flould be kept in pots, and placed under • commun frame, during trie winter feafon ; where they may enjoy the open air in mild weather, but Icefceni from hard frofts. When die pUnti liave acquired flmngdi, • y be mmed out of the pots, ind jibntcct in n border txu a luyiil wall, and in hard ... if they are covered with mm ... gkffia, dicy may be fecured, and ihrfc plants will more ccr- i rholi* in the

»
P

The lewts of die fourth fort are deeply jsgged, in very regular order, anil each fegment is ten ; a funrp fpinc, as arc allb the faor-Italks of the inpalcment of the (lower, which render* it troublefome to handle either of them. liltth fort grows naturally in both lndtcj ; I receivei he Spanilh Weft-Indies. There is a net's Phytographh,

This ... is tab. at', fig. £. under the following title, Frutex Indictu fpinotus, folia Agrifolii liliqua geminate brevj. is a flirub which riles about foui t. divided into many brunches, ^antfthed with Icavrs, very like thofe of the common l lolly, bodi in fize mid Uape, and are armed wtdi tpinu in the fame manner^ the flowers come out fingfy, which arc white, and i like :lofc of the common Acanthus, but imaller. After the flower i* pift, thegermen become; an oval birapfulur vccltl, having one oblong feed in each cell. Th « ihriil) ii evergreen, but is km . to thrive out of a ttovc in England, and can only be proRagated by feed; which do not ripen in Europe. The other forts ire lifting plants, which nuy be pro* ragated either by feeds, or parting of their roots-, it' - former method, the feeds ihould be lbwn in a list, Krwanb die end of March: if the .ijurable, the plants will appear in May, mid all the culture they requirc, h o • clean from weeds, and where the plants arc no in thin them, lo a* t-i n abou: fix . (er, which will be room en ; on to grow till autumn, warts border near a wall, and as their they a multiply fo fall by their roots, fo they do not than the athi but the fourth feet from a great diftance, therei require more room thi: . This being hardly in reppidititrooa toagre laated between florcmuit fill a vacant fpace, where it will thrive full enough, provided the ground be light, and not over wet, and when the plant is grown, will make an agreeable variety. If this fort is propagated by its root, it may be performed either in fpring or autumni i' the three fell root only be removed in th' rfring, ftu if

ACE

they are transplanted in the ... iiiwmn.; and the following winter prove cold, they will be in danger of being delloyed, Thelc plants take root very deep in the ground, (b that when they are phl ... their root) will rot in winter: I ban it.tjuenly traced them more than foui ittt, therefore they lhouUI not be ren oved after they have been growing i ... in a place, but the fide lhoots may be annually taken • ff, especially from the creeping kinds, othcrwifc the; will frcad fo far, to over-bear any of ihrir rieighUouring pin ... fhmb. V. hen the forts wic: creeping ruuts are once enal • lififd in a garden, they aw witi liirtltulty eradi- Cltfii, for t/cry root which' may happen to be kit, ti'ot Kgun, fo as to become troubtDbmc,

ACARNA. Sec CHI

ACAULE3, or AC A p LOS for a mg. and n ... a ftalk i ... i. e. without ftalk, a plant is ... to be a ... or without ftalk, whic: mta refb on the ground, having ...

ACER [fo called i ... his, from otrlj, L. hec; ... of the very great bunches of its wood J 1"hc Mjpic-tree.

The CHABACTSRI of this tree are,

The Xpaltment of tlxfxer is mmp ... colorid, and cm iitijfaejbarpfigmmti at tht tow, and is p;nmni. The ... '6aglsI ... lift h'gf perforate ... y'c is /ender, it ifjib Wi flora ... bang terminaidly

This is raised by Dr. Linnazus, i his twnty-thtrd clafs of plants, entitled Polygamia Moecia.

The SPICII are,

1. Acer (Platanus) foliis quinquelob. inaequaliter ferratis floribii necmolk. Lin. Spj. ... Ttt ... rrsjus (tul- us fabo plantae. J. ... The Sycamore-ircl'.
2. Acer (Campanula) foliis lobatis ob;ulb e margin at * Lin., Sp. Plant. 1055. Tie ftsaU, er «MJSW« Mxph. Acer campestre & mansu. C. B. P. 431. By the trench, ...
3. Acer (Nigella) foliis compafnis floribus riccmofu. Hort 1-4. The ... Wepji. Acer maximum foliistrifidii vd (juinqueiHtis Virginiinum. Pluk. Flur.
4. ACIB (Platanus) foliis quinquelobw •camim ... cu/e dentatis cibris Horibui corj'nbolis. Lin. Flor. Succ. 303. The Norway Maple, commonly called Opaki. Acer platanoides. Mant. ...
5. ACJ (Astragalus) foliis quinquelobis subdemar - fubrus elan. ... pedunculatis simpliciteris aggregatis. Lin. Sp. Plant 1 ... The forest flowering Maple of ... AcerVjrgininum tblio maiore fubtus irgrntto lii ...
6. A MR (SaabtriMMi) ibliis quiiiljuepimt^palmirk a-comitatis dentatis. Lin. Sp. f; ... TinVjn ...
7. Acer (Pentstemon) foliis trilobis ... sai-uininat' ...
8. Acer (Opulus) foliis lobatis, minimis incisifructu raccinofo, Tbt I...
9. Acer (Astragalus) foliis trilobis integris ... rrimi^ . Prod. Leyd. 477. ... Otr At. ... C. B. P. 431.
10. Acer (Opulus) foliis trilobis integris ... pubefcentibus. Opulus Maple with three entire lobes U th ... These trees are easily propagated by fowing their seeds, which fhould be done soon after th' v are ripe, in J be of common earth, covering them about ihalf an inch thick with light mould. The fpring following they will appear above ground, and, if kept clear from weeds, fome of the forts will grow above a foot high

the first fujnme. Tin: wOOWB following (if they arc CICJE in the feedrbed) it will be proper to trim-plant them in: o a nurlery, in rows a; threeSHI ditbutce, and two fecM&mdw in the rows; In which place they fray remain ibvte or luir War?, by which time they vili be large ciough to ptaniout for good.

If the seeds of any of the forts of Mapie are kept out of the ground L21 fpring, they rardy come up die fame year. . nfiny tkiusdo r^i grow; fo thai the iu re It method erf railing them is, to low the feeds a^ibonaa .b; when they are ripci and, if the feeds are to be tranfponed to^any diltant:, it will be proper to pot them^up inland, or cauls, whereby tlicir growing i^iall;v will be preferred.

The first and fourth forts arc very proper to make plantations near the leu, or to iclcler fuch plixntatiuns of trees a, arc too neatly Glutted thereto. For both theft fora thrive, and icfilbthc ipray, which is ufually blown from the fe.i, better thui molt other trees do. Tlic variegated foix a allb riifed from feeds of the In me kind; iind moft of the plants fo raifuii will be aa finely friped as die old plant from whence the feed* were uiktn, which is not common to many other va-ritgittd plants.

The common Miple is too well known to need any particular account, it growing, very frequenly, in hedge-rows in moft paru of England. It is raikd in the fame manner with the former.

The Virginian flowering Maple was raikd from feeds, which were brought from Virginia many years fince by Mr. John Tradefcant, in his garden at South I. in-ibrth, near Vauxhall, and fince, in the gardens or^ the Bifhop of London, at Kulham, where the ores have flowered tor (veral years, and produced ripe feeds, from which (even] trws have bwn raifed. It rmay be allo propagated by laying down the young brandies early in the fpring, giving them a little flit at a joint, by which means they will hart tken fvjticitnt root in tvo years, to be tranfphtned eUeffheie. They require a fixation a lit^c defended trwn the north-eaft winds, cfpecially while young-, and delight in a inoif light foil, in which they thrive much better than in a dry ground, and will produce more flowers, and better teed]. This tree commonly Havers in the beginning of April, and ihe feeds arc ripe in live or fix weeks

it'u . at rime tin.^ Cmüid be Gwedi fm ihrr arc very apt to periff, if kept long out of Uir (round. There is another variesy of the flowering Maplr, wlicli waa fent from America to Sir Cl; . . . and flouriffed feveral yrara in hb garden at Parfons-green, near ^ulham. This is by the gardeners tided Sir Charles Wager's flowering Maple. The flowen of this kind come out in large cluters, and iirround the .outig^r branches, fa as to iappear ^v taiu . . . It is now bctoint pretty cd&nbnon in fime uf tin- niiftries near Londun, fa that the former lbrt » not (a murh eikemed, being le& btautifitil i but it is doubifitJ if dtey are Jii'- tintft fpi.'^

The Afti-leaved Maple is a very ftrong (liootii: tree, and is, in Virginia, onv of the largrl] tci-M <d this kind, it mult be planted in places not too much expoftd to vioicnt winds, being fuhjeit to fplit thereby. Thus trte ripens feeds very wdFin EngSind, by which mean* it is talily proppted, or by cuttings planted in aurutmi.

The Norway Maple has a milky Iharp juice, lb that few infects care to prey theregn,^ by which means the ICJVCJ ;irr lrlrdom enen or tkfecct; and being fmooh, and of a Drinuig grwn, they hire a much be: . . . inclLhon thole of the Svcaimore; andin the fprinjj, the HoweH arc our, have great beauty. This tr« is jfo raifrd by . . . of which it :iHrds great quantities,*^hiti . . . and grow from the > iticed lecch 3B well n the coimn- : . . . will alfo grov, . . . are plantrd in rhr aity . . .

I

The variegated kind may alfi b . . . (lailarin; a bud of the friped ki . . . at prefent jure whether it . . . Maple, not taving

made the experiment; but I bdiervt it canfcirce fail. Maft, if not all tlic other forts of M.tplcs, take very well upon each other.

The American Sugar Mapte haa fome (cfemblance so the Norway, when the plants are youngs but as thry grow up the leaves .in: more deeply divided, and their iUtraces lei's fmaoth, io that they are then eafdy dilhu- gLiffhd. From thif. tree the itdutntanrj of Noi America mnkc a very good fort of fiig.;: in large quantities, by tapping the trees rarly in the ;: . . . and boiling the juke, which drawn out till the i.-. file.tsthefu^aTibut I am of Tapinion, that the people make lugar irom mure ilian one fort of Maple in AmericaTibr l h^ive found that the Alh-leaved Maple abounds with a faciharinc juice, in full p great pinny a3 any other fort. Mi, Ray and Dr. Lifter, pr^psn a tolerable good lbrt of fugar from our greater M.ipj by i: 'piling iiume Ol the tree* in their bleeding fral'n; and I have obfcnn . . . ntlics from

the lcailet Maple in February, » ereit quantity of a very fweet juice h^rh [lowed out Tbr fevetuL days i-j- gnuet.

The eighth fort of Maple is very common in mott parts of Italy, but particularly about Rome^ vl . . . ts one of the tinwft attt ot tint country, and i . . . effected for the tize of the b . . . Ba larj afbi-diflg a great flarlc; fo thai thefe trees, arc l . . . qucmly planted by the fides of roads, and ncir ha! . . . In England this tree is very rarely to be rite . . . hough it is hirtiyenough to bear the oprn air; but as the letds have not been brought over to Eng- Utid till litL-ly, there arc no huge pLints in the Eng* lifh garden) at PK . . .

The ninth fort is common in the fouth of France and ILAD); the leave) of this it faabk thole of the cotr . . . Maple, but art of s much thicker fitbltance, and not lo large, but are nt i iKiniirg green colour. They continue in verdure very late in the autumn, « . . . renders the trees- mort vituable. At prefent, this Ion: is not common in England. l raifed fevral plants trom fredt, fome of which have forievcral y . . . duced goi>-: . . . Chelfca garden, »' . . . im the fcattered fecdi the plants conic up . . . in plenty.

I he tenth fort hath fome rcfcmbance . . . niniii. The leaves of this lbrt are of a much tujinei . . . ture, and their fooi-(talks arc corrded witi a feft hiiry down, whert-i- dbove of the other arc fmooth and filf. This lbrt grows naturally in the Lev . . . M<>^ of the forts of M.iplc which come from Ame- rica, are very imj . . . of heat while young, their feeds therefore fhould be fown in ^ QjlttTed fauation, for if the plants are expofed to the full fun but one day, when they firft . . . fj Kir, few of thm wilt fi . . . it; but elpcicfally the Sugar Maple, of whkli Ion I . . . indy lolt mult of the plants 6U I had die pre- caution lo place the poti, in which xht feeds were fawn, entirely in the ttiide(for nu Conner ait they expoiectoti . . . but they are immediately attacked In- inftfte, whkh in one day will devour their feed leaves, after which the plants fudienly drop to the ground. This precaution thei . . . -ffarytobe ubfrvrd, in mfang Eiofi of ihe foru or Maple from feeds.

The timber of Uic comrnron I Maple is fa . . . (ipierior to the Beech for alt ufo of the turner, piuii;ularlydillir?, CAips.trnchen, and bowl;- andwhrm it aboundswith knots (as it very often doth), it is highly effected by the jowen for tuberyng, &c. and alfo for the light- nefs of the wood, is often employed by thofe that make medical inftruments; and for the whitenefs of its wood, it was formerly in great requeft for tables, &c. ACETOSA (of acetum, L. ennet, fmc.) The Sorrel is by Dr. Linnæus named . . . ro the gram of Dock, undt i . . . it ii alftlie known fpt- ces of Sorrel, have m . . . c flower; growing upilc, therefore by hii mrthod fhould be ranged in his twenty-f . . . mdcUh tided Dt- cember; therefore I have called the liberty to . . . | arate thofe from the Dock, rather to preferve their old title,

as the plants have been, long ufc. I both in the kitchen and thopa.

I Th t CHARACTERS SFC, // bath wMi aid fimak jbamt in diffirtut pmt... nalt flowers have a three leaved emf aliment, in lahith art inelndtdjx Jiamma, trowBidrafh fiat ebksq fummit; ket have no torolk: the female fanners bow alfi ,t thru Itwei impalemen, in the toiler tfwbkb ifituated a three tmtridgermen, fupprtiiig s triffid Jlytus. Tbt genim af- termard turns to a triaxtkur feed.

The SPZCHS are, i. Acrot* (fratajti) foliis fagttatis inferioribus pediculis caulinis fefillibus. Common or MtsAaw Sard Accroja pwrifis. C. B. P. 114.

: ACKTOSA {dutofi' (a) folis l, iceolato-lialtarb radice repente. Common Sbiefs Sore!. Actofa arvenfc lanceolata. C. B. P. 114.

3. ACLTOSA (SatSam) foliis corclato hafhris radice rpenrc. Roimnd tewed sr French Surrd. Acetofa rotuii- dilbli hoitenfu. C, B. P. 114,

4. ACETOSA (4 7 r ginaco. Luv> creeping Strrc' with a moti btdat Acciofi rotundifolia repens Eboriifcenfo folio in medio deliquium patienre. Mor. Hift.

5. ACETOSA (flpma) foliis cordaris acuminatis am; ca\i)ibiu. Alpine HtmI, with heart-jbsptd fcintr. • emhrodtg t)i i jalks. Acetoia montaiu lato ari rotundo folio. Bocc. Mtf.

6. ACETOSA (Lunnria', foliis fubcordata, caule arboreo. Svrrel-fre: vrith Tewidijb txart-fboped (anilt. Acctofa sbrcorfiens, fubrotundo folio. Flwk. Aim. S.

7. ACETOSA (Refcc) foliis erofis, valvula; aktrius ala maximi trembranicea riecUnata. Serrtl firm Etypi K-itiu bilkif trxvt1, anA large membrsnaiesm•sahn deeH> i t Aiv.

E. ACITOSA (StrriSs) foliis oblongis pedunculi* brtvif- iim': raih furec'; Northern barren Strrtl. Tfiii ii the Acetosa Mufcovica ferrilis. Mor. Hift.

The feaf of thefe forts, though but ill in the lidds, y«, when fwnn in gu dencs, will produce fair large Icaycs; 'iij is comrrori' culiv in gardens. Ii pringi in a lhady moiit border if tJn afterwarti removed inw another shady border, at the difknee of four or fix

boches Jquare, they will produce larger Icaws, and aue longer. Vliis is the cammon Sorrel ufed in medicine; but ihe Northern barren Sorrel is preferred to it in die kilt hen-garden, becaufc it rarely rum to feed, but is increafed by parting the roots either in firing or utturao, and isht for ufc all die

I he niund kavctI (or French) Som-1, is 3 moregte- ul »cif, lii by many pcrfons is [irefcrtd to the I wo forts for kitchen ufc; tJm is ilfb 1 medicinal plant, and fhiiiiild not he wanting in any "ood garden: ic is a great runner at the root, by which tncain it \ eaily propagate, and the roots planted at the it.

quare at leaf: it will agree better with I own (ituation dun the other two forts. And if die liuivtr-iiems and rambling bra^ in the beginning of July, the roots will loon put out

new jvts, which will be tender and much lx; for kiu mTi ufe.i, than the older k a b; cutting down thefli Eptuttttdifi - there will always be :t fupply of young travel, which i. the only ; part of the plant ufed in the kitchen. And this fort is much preferred to the common Sorrel for fops,

to many perfons have of late years cultivated it in their gardens; f; fmcc the iftr oj Sorrel has been greatly inercd in England, by the introduction of French cookery, it being an ingredient in many of their fauces and soups. Inasmuch that about Paris, Sorrel is cul- d in a great quantity as dmoft anyiothtr cf- iilient plant.

The Sheep's Sorrel is a common weed in moft parts of L: plant, growing upon d hanks and in gravelly lhibs : great plenty, for it propagate by its creeping roots, fo whocver it once gets poffeffion in the ground, it fmon muft] lies. This is curly ad- initu : to have a place in gardens, biK as it has long

been con t. r. Arias as a m t. ucial plant, fo n ;s hire inferred.

The low creejittig Northern Suml, n jirefervml in many gardens for tile fake ot varietj, but ufnnot been uted in the kitchen. This thiz grows wild in moft of the northern counties, as alfo in Wales. I luwe lefn it grow -v-itig in great picfiriryvY orkshire idWestmofe- land. The lesta of this fort have very iht>: foet- flalt, i, and are imkoted at bath ends. Tlic: grow near to the ground, and the flon ly rue abuve fix j. • are light. i he voon creep in the ground, whereby it multiplies exceed: I

As this fort grow naturally in shady moist places, fo whoever b dcfiroi to have it thrive in a garden, muft plant it in a north border aid in a moist foil, where it may be propagated in plenty, and be vJcd for I the purpofes 33 the CT

'I kc Alpine Sorrrl K fill as hir^y as the common, and as the leaf • are much br^er, To dwy art bettet for the ufe of the kitchen, having a pleafant in ac; dialc, and brine much more !accident. H;^ may L- iratrd either by fewls, 0 parting of their roots, in the iamt manner as the common fort; but ihi plants re: re mort room, f&r which rcaton ihey ought not to W nearer than a foot from cath other, elptcially >d ground.

ACETOSELLA. See OSALU. ACHILLEA, Milfoil Yarrow, or NofeHeed. The CHAM II (bath a tompmnd radiated ffav)e\ cznfjijling of many u finreis, u rmafkrvdiic, a d troupe; the dok of the fevity, the fca'ffs are raxted round the borders, H;f; hax their cordis pceding, rut c hie a luvpie, which rew/ the rre, all rre: ! in out tbi btmupkr^Jitt ffowrs have ttem, and refii upsm a t "rmtu . .cma ajfijj ecal fed, being a wrae offering ' ts > it.

The SERRIS are, 1. ACHILLEA (V;:; .1.; bipinnatJs nuili, Jaci- lktcsribug dentatis. Hort. Cliff. 413. Cmmon Itmfjt, tailed atfo Mitfal, Stratuta, and N- Of thil there a variety with purple Rowen, which ;n found growing natur.illy in t.nghnd.

2. ACHILLA (Santolija) foliis fctaceii dentatis, denticulis fubintegrii I dentatis reflexis. Hort. Cliff. 41a. Intern Sneezu:er/wilbaLavciidr-t6tte) leaf, ar., J

3. ACHILLEA (ttmmfd) foliis pint- bition puaia linearibus dentatis. Lin. Sp. Plant. 397. W' farrow with yellow flowers.

4. ACHILLEA (Pinnatis) foliis pinnarii, toiuii- lanceo- lais incilis serratis fobris lanuginis. Hort. Cliff. 413. Eaftern Sneezwort with heavy Yawfy leaves. and tbt rays of the flower of a pale yellow :lear.

5. ACHILLEA (Astragalifolia) foliis pinnatis fopra >COn- p, bcniis linfaribus diftantibiis, Mor. i level. Proii. Yawfy, iiajtnt Tarrm, with a W' rround leaf and yellow flowers.

6. ACHILLEA (Glaucosa) foliis pinnatifidis pl. mit obtufu tofis. L. Sp. Plant. 397. rard fopra andobfervat W' rround.

7. ACHILLEA (Yuccifolia) foliis pinnatis foliolis linearis lanceolatis basi furcatis acutis. Flac. Levd. Prod. 170. Eaftern Sneezwort with heavy Yawfy leaves, axd d j yellow flower.

8. ACHILLEA (Astragalifolia) foliis lanceolath obfiitb SCULC ftrata Hort. C. .: 41J. Cwamfyalltd S'xcit Mnd- la.

9. ACHILLEA (Egyptica) foliis pinnatis foljifu obtu- lanceolatis furcatis dentatis. Hort. Cliff. 413. /ftarj wari with violet flowers.

10. Achillea (Pinnata) foliis lanceolatis acuminatis argute ferratis. J in. Sp. Plant. 398. Common Pinnatis or Sneezwort. Of this fort there is a variety with double flowers which is preserved in gardens.

11. ACHILLEA (Marpurifolia) foliis pinnatis planis incis- serratis externis majoribus cordatis. Lin. Sp. Plant. 1165. Alpine Sneezwort with broad leaves.

12. ACHILLEA

12. *ACHILLEA (Nana)* foliis pinnatis dentatis hirfutiflomis floribus glomerato umbellatis. Lin. Sp. Plant. 2671. *Hoary /l/pinc Milfoil, with a spicuous flower.*
13. *ACHILLEA (Nobilis)* foliis bipinnatis, inferioribus nudis planis, superioribus obtusis tomentosis corymbis convexis confertiffimis. Lin. Sp. 1268. *Noble or Sweet Milfoil.*
14. *ACHILLEA (Alpina)* foliis lanceolatis dentato-ferratis denticulatis tenuiffime ferratis. Hort. Cliff. 413. *Alpine Sneezwort with leaves deeply ferrated, commonly called*

White Maudlin.
The first sort here enumerated, is the common Yarrow or Milfoil, which grows naturally on banks and by the sides of foot-paths in most parts of England, so is rarely allowed a place in gardens, but being an officinal plant, it is here mentioned to introduce the others. Of this there is a variety with purple flowers, which is frequently found wild in England, but the plants seldom continue to produce purple flowers long, when they are transplanted into gardens. The Yarrow creeps greatly by its roots, and also multiplies by seeds, so that it becomes a troublesome weed, where it is permitted to grow.

The third sort is often planted in gardens for the sake of variety. This is of humble growth, seldom rising more than eight or nine inches high. The leaves are finely cut, and are very hoary, the flowers are of a bright yellow colour, and continue long in beauty. It grows naturally in the south of France, Spain, and Italy, but will live in the open air in England. It is increased by parting of the roots, the best time for which is in October.

The fourth, fifth, seventh, and ninth sorts, are natives in the islands of the Archipelago. These were introduced into France by Dr. Tournefort. The ninth sort hath very hoary leaves, which remain all the year, and the plants growing close and low, make a pretty appearance at all seasons. The flowers are produced in umbels on the top of the stalks, which are yellow, these appear in June, July, August, and September, and are of long duration, so that frequently some of them continue the greater part of the winter. This sort must have a dry soil and a warm situation, where it will endure the cold of our ordinary winters in the open air, but in very severe frost they are often destroyed, a few plants therefore ought to be tied under a frame in winter, to preserve the kind. It is propagated by slips, which may be taken off and planted in a shady border, any time in summer, when they will take root in about six weeks, and then may be transplanted either into pots, or the borders where they are to remain. This sort rarely perfects its seeds in England.

The fourth, fifth, and seventh sorts, are of taller growth, propagating by their roots, and ripening seeds in England, so that they may be obtained in plenty, and as they require little care to cultivate them, being hardy enough to live in the open air, they may be allowed a place in gardens, where, by their hoary leaves, they will make a pretty diversity; and their flowers continuing long, though not the most beautiful, yet make a pretty contrail when intermixed with others.

The sixth sort is a very humble plant; the foot-stalks which support the umbels of its flowers, rarely rise above six inches high. As for the flowers themselves, they are near as large as those of the common Sneezwort, white, and growing in flat umbels; these appear in June and July. The leaves of the plant have some likeness to those of the common Wormwood, and are very hoary, growing close to the ground, decaying in autumn, so that in winter they make little appearance. This species of Yarrow is propagated by parting of the roots, either in spring or autumn, and should have a dry soil, for much wet in winter will rot them. It never perfects its seeds here, and therefore can only be multiplied the other way. This sort is a native of the Alps.

The eighth sort is commonly known by the title of Sweet Maudlin in the markets, it was formerly more used in medicine than at present, so that there is scarce

any of it cultivated in the gardens for sale; and when it is asked for, the people in the markets commonly give the fourteenth sort for it, which being a very hardy plant, and easily propagated, is now generally sold for the other. For though the true Maudlin is hardy in respect to cold, yet in wet winters the roots are often killed by moisture, especially those which are in good ground, but when the plants grow out of the joints of walls, or in rubbish, they will live many years without care. There are two other varieties of this plant which are found growing naturally in Spain, one of them having longer and more compact umbels of flowers, and the other hath broader leaves and smaller flowers, but these approaching so near to the common sort in every other particular, I thought it would be needless to enumerate them as distinct species. The common Maudlin is propagated by parting of the roots, either in spring or autumn, and as it ripens seeds very well, so it may be propagated by sowing the seeds in April. It flowers in June and July, and the seeds are ripe in September.

The tenth sort is the common Sneezwort; this grows wild in the woods and other shady places, in many parts of England, so is not admitted into gardens; this creeps greatly by its roots, so as to cover a large spot of ground soon. It is sometimes used in medicine, and in the spring the young tender shoots are put into salads, to correct the coldness of other herbs; and the roots are used for the tooth-ach, whence some have given the title of Field Pellitory to this plant. There is a variety of this with double flowers, which is preferred in gardens, and is commonly known by the title of double Maudlin. When this is planted in pots, so as to confine the roots from creeping, the stalks will grow closer together, and then they make a tolerable appearance when in flower; but where the roots have full liberty to run, the stalks grow farther distant from one another, in which case they make but an indifferent appearance. It flowers in July and August.

The fourteenth sort has some resemblance to the tenth, but the leaves are longer, deeper cut on their edges, and are of a darker green colour. This propagates fast enough by its creeping root and is very hardy.

The eleventh and twelfth sorts are natives of the Alps, and consequently very hardy, they multiply by seeds, and also by parting of their roots, and will thrive in almost any soil, but love an open exposure. The eleventh produces many stalks which rise near three feet high, having loose branching umbels of white flowers on their top, resembling those of the common Sneezwort, but larger. The twelfth sort hath hoary leaves, and the umbels of its flowers are more compact, the stalks of this do not rise more than a foot high. Both these deserve a place in gardens.

The thirteenth sort approaches near the first, but the leaves are of a pale green, and not so long, or so much cut as those of the first, and these have a strong sweet scent when bruised. It is equally hardy with the first, and therefore requires little culture.

A C H R A S. See SAPOTA.

A C H Y R A N T H E S.

The CHARACTERS are,

The empalement consists of five pointed rigid leaves which are permanent; the flower hath no petals but in the center of the empalement is situated the point of a bifid stigma attended by five Stamina, supporting small summits. The pointal afterward becomes a single round seed, inclosed in the empalement.

The SPECIES are,

1. *ACHYRANTHES (Apera)* caule erecto, calycibus reflexis foicje adpressis. Fl. Zeyl. 105. *Achyranthes with an upright stalk, and a reflexed flower-cup.* Amaranthus ficulus spicatus radice perenni. Bocc. Rar. Plant. 16. tab. 9.
2. *ACHYRANTHES (Indica)* caule erecto, foliis ovatis undulatis floribus reflexis. *Achyranthes with an erellfalky olverfe oval waved leaves and reflexed flowers**

2- ACKVRANTHKS (Lappaete) caule ercfto, fpka inter-nipti, floi-ibus aactai linam. Lin. Sp. Flint. 204. Aebyravtbiu uritb <m upright jiatk, a hofijipibe, aid the evtjide of the povxr w w \$,

4, Ai • ANANTHES (Lappaete) juie eteSo, fpicis ovatis lateralibus* c> lycibys Imaus, Lin. Sp. Plant. 204. Achy Tnr.tbii tnf0 menSji ...! spia tfjln-wen jmdstuf <m the (tu*jj of ibt Itrrvei, which are M Vcied with <t faft t

The first fort hath been long in the Engiiff garden, where it hath been prefervet mure (or the fil. of variety, chin for its beauty or use. It grows near three fret' high, with oblong pointed leaves in the ilovcra come mit in long i'ptkri from the ezCRmity of thit' branches, which in tomposed of an einpalenjent, with a fyle and live A3 mi si A, but hath nu peuh, lu may be rangal under the clafs of blink Soven. Thrplanu of thiii fort muft be raiitd on a hot-bed, and when they h>ve acquired lthength, they may be tranfp into the full ground, wfn.iv they will (lower in and their feeds ripen in September. It chefe arc kvyi



in pots, and put into a warm green-houfe in winter, they will live two or three yeait, where perform arc inclined to keep them fo long. This ibrt gi • natural in the uUuid* of America, and *Ub in India and Sic j

The feeds of the fecond fort I received from Mablnr. which (u < for fame yeirs flourillml at CheLS 3>iiiiullr produced ripe feeds, whktt bxn ne/er varied from the p"ir plait.



The third and fourth forts grow naturally at die Cape of Good Hope, from whence I rei l fijeds. Tfit efervwj in botanic garden) fur di of variety, but have no great beamy to mcoimend them, to thoi: who do not cult ivsre phaa for the iin-ovement or ijun rdence.



- nay ill be prupagawd in the Ikmc mannir as the hrit, and will perfeS: their feeds the lame year, but the piano of the three P1 throiigli the winter if placed in l they arc roo ttnder to be kept in » greet-houfe where there is BK ariitLial heir.

A C I N C S. Sce Tir.

A C I N U S, or A C I N I, by good authors is not ufed for the grtpe Hunt, bur she crape itelf, a) appears from the following paffage in C. B. P. 187.

feris wiaeta, q<x taxis ulailur. [1] only ofed ibt thole (mill grains growing in buncK. The manner of grjixrs, at LiguiUuni,

A C N I D A, Virginia H<

Tius plant grown naturstUv in Virginia, and in feme other parti of North Anienci, hut 15 rircly cuhivah-J in Europe, tferpt in fome ! botanic gardens, but the tkke of variet)!. It hath mile- and ftmah growing cpad ililfcrcm routs To ii ne< of kin to Li-Hemp, under which title it has been ringed by fome formerbomiib. But as it is l plant of littlr l and at. lrefent no ufc has Wen made of it, ii is to little nurndf to lay more of ;

A C O N I T U M, Wtffebancw MonWhood, [ofAw, or in, a dirt, becaufe the Barbarians tiled CO daub their dirts therewith ; othere of ibttht, to accelerate, btaule it hAflerw death].

T h C

The flywir b: >tb no eiipdtmen!, but amfflhef ptioh, which vary in different if W<IAM, aid -fctri tht otter parti of ll-ehtrre likt .t frim' <w/i the two lllerd petal, vebich mdafe ibt JI&mma and flylt art enun!; thefe tre tenunt endpigbir. mdaittA in iht middle. Tbt t <xv ierxer pttats art xlTrtr,i; end cblofy: at ibt htSlom of the Jiva.tr art p!tHi teffn... iieffatti; in!>• are tat, in others lbrte, and June l-forked, amfirdeb tml fa memtrui and irregular: after tbt fin memrntmcbk. Nrnrintti in a fin. and cosf.. -il ox; tfl, •which if

This penus uf plants is by Dr. Lmnidii nfrd inrltc tWrl ic5ion of lus thtrLeentii da&, enihldt foipn-

diia tng\ -nu, from the flowers having mmy (kniina, and three [tyle].

The SPLCIES are,

1. ACOKITL'.. (Lappaete) foliis, ... multilidis vil-lofts. ; in. Sp. Plant. 532. Taler W<fibus or Monk-JUoc, with painted hairy nerves juib divided. Acocitum lycocotum latram. C. B. P. 187.

'• Aco bunt, ttT/i nervous, fixsetb, pei-iltavu. ha % ampliort caille aniplioribuijue foliis. Dfjd. p. 441.

j. AcomTVM [t'iritgojxM) foiiiis multiidi; kdnuS fe-titistupercn lci*. II-jn. Cliff. 214. Lrffa- WetftsM with blue Jtoaierj, wbefe • under leaves art cut into many firti, md wboft upper bev kasda fepatnti. Acocitum ilcutnminus, (iv«napellu* minor. C. B. f.

4. Acocitum (Lappaete) fluribut prntagynis folio lacu latram. Lin. Sp. Plant. 1 5j2. iVI Acookum falurij five iuidiora. C. 1

5. Acocitum (NtiptUsu') folioruul licinii; linciribus fu-u Liis iuit-ie- Wetfs- ca'njeum, five napcllns. 1 C. B. Fin. tSj.

6. Acocitum (Pymant) folio amipartito, icH Bo-ibrttd, Acumitiii pjamidik mul-turum. K. J

7. AcomTUM (Ahiittm) foliorum liciniis pmnatifidis flure muinio. Largr jewtrrf Moni/hixij, nrWotfibrnnt, of, l Hit pur: sonitum era:en purpuream imfimo, five napUUS. 4 C. H. P. 183.

8. ACUNJTUM (Pynxtieaxi; full'u mull iniii li-nearii P-jresea MutkfstJ, er H^filcne, mtbjau c.it mham Pyterukvan luicum foliorum Jeg-mKntis iibi invicem incumlxrntibus. Rail Syll. ^67.

9. ACOMTUM (Cemmarum) floribus fubpentaginis, fo-Jiom laciniis cuneirbrmibus incifis acads, Lin. Sp. H int. 751. AfoxrleidizithJfa-yri, having ccmn:

10. Acocitum (Oriental; elacius, folio palmatis flore irtagno albo. EoJlem Mmkjbtw, ai'i' a tallja a l&jc wbitthmt. Acunium lycuctonura oricnoJe flort magno albo. Tourn. Cor.

Jilt- (aiz) is the moll common in the En^lim garden; this is cultivated for the beauty of long spikes of blue Bowers, which I brought to market in London, towards the end of Mty, when it Commonly (lo>-rs, fu dut tielc being intermixed with the Guelder Koiri and Other Btwen of the same fealbn, make an agreeable variety, which pi-uptrly bleas in iidoni hilli and O'ber apartm tits. But is most of thepec: of Monkhood are d: itly pdifun, nor only to men but to brutes alii, rht-y ought not thwefoic to be admitted into places where children or ignorant perions frequent, left by inciling to thec llowers, they EhouM draw liimc of the uritta into their noftriU, which may prove very hurefi' i) it, tlifm, as I tan from experience alltri for fact. We have an account of a man who was poisoned in the year 1732, by riting tome of thi?; plnnt, which by an Un- put into a laiUJ inficvd of Clery. This it icitubry mentioned in the Tranlu. lions of the !{)vnl Soqcn*, N Dodonous IHO relaWi a ftoiy of &x: badelfeii? or one fpfc: of Monk Blood, whkh wis recent in his time. Some unskilful perfyns had gathered the jounge H- of the Monkhood to eat in a fall, and all that eat of them were Jeized with terrible fymplonii, and foon died. Dr. Turner allb mciitTeins. thai id'wr l'rennhmen ar Ai t/c flitoti of this phin ti >r :IKJIC of Maiterwon, A

all of them died in two days, except two play- ho- them up byvomi I have known per >m who by fmelling o the R< have been fcar! with fwooning fits, and have loft their fight ibr moor three

The fourth fort is that which is made ufe of in medicine, and ii elteemed an intidoie to tln> which ire C poifonou].

poisonous. This is by some writers titled Anthora, and by others Antithora, as the poisonous kinds have been called Thora. Whenever therefore any of the species of this genus is ordered in medicine, this is the sort intended.

Most, if not all the other sorts are "steemed poisonous", but those with blue flowers are supposed to be of a much stronger quality, than the yellow or white flowered kinds. It is confidently affirmed, that the hunters on the Alps, who hunt the wolves and other wild animals, dip their arrows into the juice of these plants, which renders the wounds made by them deadly. The first sort is the first which flowers, this grows near four feet high, and the spikes of flowers are upward of two feet long, so that when it is in flower, it makes a pretty appearance; and being very hardy, growing in any soil or situation, and multiplying greatly by the root, has induced many persons to allow it a place in their gardens, for the sake of its flowers, who being ignorant of its dangerous qualities, have permitted it to spread and propagate greatly. It flowers in May and June. The seeds are ripe in September, but as this sort multiplies so greatly by the root, it is rarely propagated the other way.

The first and second sorts are the next which flower; these come about the middle of June, and if the season is not warm, will continue in flower till August. The first grows upwards of three feet high, and the second above four, the spikes of flowers too in this being much longer than the former.

The third sort flowers a little later than either of these, but seldom grows more than two feet high, and the spikes of flowers are much shorter than either of the two last.

The wholesome Wolfsbane flowers in the middle of August, and often continues in beauty till the middle of September, the flowers are not so large as those of some other sorts, but being of a sulphur colour, make a pretty appearance in the borders of the flower-garden. This sort will not thrive so well under the shade of trees as many of the other sorts, and therefore must have an open exposure.

The ninth and tenth sorts flower the beginning of July. The ninth usually grows about four feet high, but the tenth I have seen upwards of six. This sort is at present very rare in Europe. It was found by Dr. Tournefort in the Levant, who sent the seeds to the royal garden at Paris, where it was first cultivated in Europe, and from that garden, others have been furnished with the seeds.

The eighth sort flowers in July. This grows about four feet high, having a long spike of yellow flowers of a middling size, wherefore they may be allowed a place among shrubs, or in such parts of the garden as are not frequented by children.

The fifth, sixth, and seventh sorts flower in August, when they make a pretty appearance; and were it not for their noxious quality, would deserve a place in every garden. There are two or three varieties of the fifth sort, one with white, another with rose coloured, and a third with variegated flowers; but these are only varieties which often change. The *Napellus minor* is also apt to change in the colour of its flower, of this sort I have had some plants with variegated flowers, but they changed in two years and became plain, nor did their seeds produce any plants with variegated flowers. The seventh sort will grow to the height of five feet in good ground, the flowers are very large, but not many upon each spike. These are of a deep blue colour.

All the sorts of Monkhood may be propagated by seeds, which should be sown in the autumn, in a shady situation: the plants often come up the first year, if the seeds are sown in autumn, otherwise it is the second spring before they appear, therefore the ground should be kept clean from weeds all the following summer, and when the plants come up, they should be watered in dry weather until they are fit to transplant, when they are to be carefully taken up, and planted in shady borders, at the distance of four

inches each way, observing to water them until they have taken good root in the ground; after which time they will require no other care but to keep them clean from weeds, till the following autumn, when they may be transplanted to the places where they are to remain.

The common Monkhood will grow under the shade of trees, in wilderness or woods, and will increase fast enough by means of its creeping roots; but the most of the other sorts delight in shade, yet few of them will thrive under trees, for which reason they should be planted in shady borders which are not overhung by trees, where they will continue much longer in flower, and thrive better than in an open exposure.

A C O N I T U M H Y E M A L E . See HELLEBORUS.
A C O R U S , the Sweet Rush.

The CHARACTERS are,
It hath a simple cylindrical stalk, which is closely covered with small flowers, so as to form a sort of catkin (or iulus). These flowers have no empalement, but are composed of six concave obtuse petals. In the center of the flower is situated a swelling germen, attended by six stamina, which are extended beyond the petals, and are crowned with thick double funnels; the germen afterward turns to a short triangular capsule, having three cells, in which are lodged oval oblong seeds.

Dr. Linnaeus ranges this genus in his sixth class of plants, entitled Hexandria monogynia, the flowers having six stamina and one style.

We have but one SPECIES of this plant,
A C O R U S (*Calamus*) Roy. Leyd. 6. *The sweet smelling Flag or Calamus.* *Acorus verus*, five *calamus aromaticus*. C. B. P. 34.

This plant grows naturally in standing waters which are shallow, and is found wild in some parts of England; particularly in Norfolk, and also near Uxbridge in Middlesex, and in several parts of the north. In Holland this plant abounds in most of their ditches and standing waters. The leaves of this plant, when broken, lend forth a strong aromatic scent; the roots are much stronger, and have been long used in medicine. This may be transplanted into a garden, where if the ground is moist it will grow very well; but never produces its spike, unless it grows in the water. It loves an open situation, and will not thrive well under the shade of trees. The spikes of flowers (which are by many writers termed (Juli) appear toward the latter end of June, and continue till August. When this plant is fixed in a proper situation, it will multiply by its creeping roots fast enough.

A C R I V I O L A . See TROP/BOLUM.
A C T J E A , Herb Christopher.

The CHARACTERS are,
The empalement of the flower is composed of four concave obtuse leaves which fall off; the flower hath four petals which are much larger than the empalement. In the center is placed the oval germen, crowned with an oblique depressed stigma, attended by numerous slender stamina, crowned with erect double roundish funnels. After the flower is past, the germen becomes an oval or globular berry having one cell, in which are lodged four seeds, which are roundish on their outside, but angular where they are joined.

Dr. Linnaeus ranges this genus under his thirteenth class of plants, entitled Polyandria monogynia, the flowers having many stamina and one germen.

The SPECIES are,
1. *ACTIEA (Spicata) racemo ovato fructibusque baccatis.* Lin. Sp. Plant. 504. *Common Herb Christopher, or Bane Berries.* *Christophoriana vulgaris nostras racemosa & ramosa.* Mor. Hist. p. 2, 8.
2. *ACTIEA (Alba) racemo ovato baccis niveis, radice tuberosa.* *American Herb Christopher', with white berries.* *Christophoriana Americana baccis niveis.* Mor. Hist. p. 28.
3. *ACTIEA (Racemosa) racemis longissimis fructibus uncapularibus.* Lin. Sp. PL 504. *American black or wild Snakeroot.* *Christophoriana Americana procerior & Ion-giCs spicaria.* Hort. Elth. 79.

The first sort grows naturally in several places in the northern counties of England: I found it in pretty great

great plenty in a wood near Kirby Lonfdale, as also near Ingleborough Hill in Yorkfliire. It grows two feet and a half high, the foot-ftalks of the leaves arise from the root, these divide into three smaller foot-ftalks, each of which divide again into three, and these have each three lobes, so that each leaf is composed of twenty-seven lobes (or small leaves). The flower-stem which arises from the root, is garnished with leaves of the same form, but are smaller. On the top of the stalk appears the flowers, which grow in ramose spikes, and are of a pure white; these come out in May, and are succeeded by black shining berries about the size of Pease, which ripen in the autumn. This is propagated by seeds, which should be sown soon after they are ripe, for if they are kept out of the ground till spring, the plants will not come up till the year after, so that a whole year will be lost. They should be sown on a shady border, and kept clear from weeds. As the seeds seldom come up all at the same time, the border in which they are sown should not be disturbed till the following autumn, to see what plants may appear, when the plants should be transplanted into a shady border, where they may remain to flower. This plant hath a perennial root, which lasts many years, but the stalk is annual, and perishes in autumn, soon after which is the best time to transplant them.

The second sort grows naturally in North America, from whence I have received the seeds, the leaves of this are somewhat like those of the first sort, but are not so deeply indented on their edges. The flowers grow in a more compact spike, and the berries are very white and transparent when ripe; the roots of this is composed of thick tubers, or knobs. This is an abiding plant, and delights in a light moist soil, and a shady situation \ it may be propagated in the same manner as the former.

The third sort is a native of North America, where it is called Black Snakeroot, to distinguish it from the common Snakeroot. This plant hath large compound leaves, which rise immediately from the root, and are branched after the same manner as the first sort, which grow more than two feet high. The flower-stems frequently rise to the height of four or five feet, being terminated by a long spike of white flowers, which is reflexed at the top. This flowers in June, or beginning of July, but does not perfect seeds in England. During the time of its flowering, the plant makes a good appearance in a garden, and therefore deserves a place in the shady borders, or among shrubs; where, if it be not over-hung by them, it thrives very well, and being hardy, will require no other care than the shrubs themselves. It is generally propagated by seeds, which are annually sent from North America; it loves a moist light soil, and a shady situation.

The root of this plant is greatly used by apothecaries and physicians in America, in many disorders, and is supposed to be an antidote against poison, or the biting of the rattle-snake.

ADANSONIA, Ethiopian four Gourd, or Monkies Bread.

This plant is so named from one Mr. Adanson, a French surgeon, who resided some years at Senegal, in Africa, and during that time made several discoveries in natural history, and brought home a curious collection of seeds and plants.

The CHARACTERS are,

It hath a cup-shaped empalement, divided into five segments at the brim which turn backward, and the empalement falls off: the flower has five roundish petals, whose brims are reflexed; at the tail of these are situated many stamina joined in a tube, which spread horizontally above, and are crowned by kidney-shaped funnels. The germen, is oval, the styles are long and variously intorted, having many hairy stigmas. It hath a large ovalligenous capsul often cells filled with a farinaceous four pulp, inclosing many kidney-shaped seeds.

This genus of plants is ranged in the fifth section of Linnaeus's sixteenth class, intitled Monodelphia polyandria, the flowers having many styles which coalesce with the stamina in one house.

There is known but one SPECIES at present, ADANSONIA. This is the Baobab. Alp. Egypt. c. 27. f. 28. The young plants, and also most of the new branches, have single spear-shaped leaves towards their lower part, but at their extremities the leaves have some three, and others five lobes, of the same size and form as the lower, which are disposed like a hand; these are entire, ending in a point, and fall off in winter. The stems are large and woody, but of a soft texture, and have generally a large swelling near the root.

It is propagated by seeds, which must be procured from the country where it grows naturally (for it doth not produce any in Europe); these must be sown in pots, and plunged into a hot-bed, where, in about six weeks, the plants will come up, and in a short time after be fit to transplant, when they should be each planted into a separate pot, filled with light sandy earth, and plunged into a fresh hot-bed, observing to shade them until they have taken new root, after which time they should have free air admitted to them every day in warm weather, but must be sparingly watered, for as their stems are soft (specially when young) too much wet will cause them to rot. As the plants advance in their growth, they are to be shifted into larger pots, but must constantly be plunged into the bark-bed, being too tender to thrive in this country without this artificial heat, therefore they must constantly remain in the stove with other tender exotic plants: the plants when young make great progress in their growth, where they are properly treated; for in three years many of them have been more than six feet high, and have put out several lateral branches, their stems were also proportionable, but after four or five years growth, they are almost at a stand, their annual shoots rarely exceeding two or three inches.

The account which Monsieur Adanson gives of the trees he saw at Senegal and other parts of Africa, in regard to the size of them is amazing, several of which he measured round their stems from sixty-five to seventy feet in circumference, but their height was not extraordinary. The trunks of these trees were from eight to twelve feet high, dividing into many horizontal branches which touched the ground at their extremities, these were from forty-five to fifty-five feet long, and were so large in circumference, that each branch was equal to a monstrous tree in Europe; and where the water of a neighbouring river had washed away the earth, so as to leave the roots of one of these trees bare and open to sight, they measured one hundred and ten feet long, without including those parts of the roots which remained covered with earth or sand: for he describes the plains where the trees grow to be a barren moveable sand, so that from its being continually stirred by the winds, there are no traces discoverable, whereby persons can be guided in travelling over them.

Prosper Alpinus in his history of Egyptian plants, describes this tree, to which he gives the title of Baobab, so that it also grows in that country, but he does not mention any of them to be near the size of those described by Monsieur Adanson.

There were some plants of this sort in several gardens, which were raised from seeds obtained from Grand Cairo in the year 1724, by the late Dr. William Sherard, some of which were grown to the height of eighteen feet* but in the severe winter 1740, they were all lost, and since that time there has not been any of the seeds brought to England, till the return of Mr. Adanson to Paris in 1754, who sent some of the seeds over here, which have succeeded, and many of the plants are now upwards of eight feet high.

ADELIA, we have no Ertu title for this genus of plants.

The CHARACTERS are,

It hath male and female flowers upon different roots: the male flowers have an empalement of one leaf cut into five concave segments, but no corolla \ it hath many kidney-shaped stamens the length of the empalement, crowned by roundish funnels. The female flowers have a five leaved concave empalement which is permanent \ they have no corolla, but

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et roUndifhgermenwith three Jhort divaricated flyles, and torn ftigma. The capfule bath three cells, each containing one roundijh feed.

This genus of plants, is ranged by Dr. Linnaeus, in the twelfth fection of his twenty-fecond clafs, which includes thofe which have male flowers on diftindt plants from the female, whofeftamina joinat their bafe.

The SPECIES are,

1. ADELIA (*Bernardia*) foliis- oblongis tomentofis ferratis. Lin. Sp. Plant. 1473. *Adelia with oblongs woolly* lawed leaves.*
2. ADELIA (*Ricinella*) foliis obovatis integerrimis. Lin. Sp. Plant. 1473. *Adelia, with oval entire leaves.*
3. ADELIA (*Acidotori*) ramis flexuofis, fpinis gemmaceis. Amcen. Acad. 5. 411. *Adelia with flexible branches and prickly gems.*

Thefe plants grow naturally in the ifland of Jamaica, and are near a-kin to the Ricinus, or Croton, but the male flowers growing upon different plants from the female, has occasioned their being ranged in a different clafs. Dr. Houftoun confituted a genus, of them by the title of *Bernardia*, in honour to Dr. Bernard de Juffieu, demonftrator of plants in the royal garden at Paris 5 but Dr. Linnaeus has fixed the title of *Adelia* to them. The plants are propagated by feeds, when thefe can be procured from the countries where they grow, for they do not produce good feeds in England. The feeds muft be ibwn upon a hot-bed in the foring, and when the plants are fit to remove, they fhould be each tranfplanted into a fe>arate fmall pot, filled with light earth, and plunged into a hot-bed of tan, treating them in the fame manner as is hereafter directed for Croton. In the autumn, the pots fhould be plunged into the tan-bed in the ftove, where, if they are-kept in a temperate heat in winter, and not over-watered daring that feafon, the plants may be preferred, and the fummer following will produce flowers; but as thefe have little beauty, the plants are feldom propagated except in botanic gardens.

A DENANTHERA. Prod. Leyd. 462. *Baftard Flower-fence.*

The CHARACTERS are,

The empalement of the flower is of one leaf, lightly cut into five at the top; the flower is of the bell-fhaped kind, and is compofed of five petals, which are reflexed and concave on their under fide. In the center is fitted an oblong germen, fupporting a fyle crowned with a fingle ftigma \ this is attended by ten ereff ftamina of the fame length, which are crowned with roundijh fummits; after the flower is paf, the germen becomes a long comprreffed pod, containing many convex fsmooth feeds, placed at a dijfance from each other.

Dr. Linnreus ranges this genus of plants in the firft fection of his tenth clafs, entitled *Decandria monogynia*, the flowers having ten ftamina and one germen; but he feparates it from the *Poinciana*, becaufe the petals of the flower are equal, and the empalement is of one leaf, whereas the *Poinciana* hath a five leaved empalement, and the petals are unequal.

A DENANTHERA foliis decompofitis. Prod. Leyd. 462. *Baftard Flower-fence with decompounded leaves.*

There is another fpecies, or at leaft a variety of this kind, with fcarlet feeds, which is at prefent rare in this country. I received the feeds of it from India, from which many plants have been raifed, but they are of very flow growth in England.

The fort here mentioned grows to a very large tree in its native country, but it is fo tender as to require a ftove to preferve it through the winter in England, fo that there are no large plants in the Englifh gardens at prefent *, the young plants which are not more than two feet high, have large branching leaves, compofed of many equal divifions, garnifhed with fmall oval leaves, which are placed alternately on the midrib, and are of a bright green colour. The items of the plants are woody, the bark of a brown colour, and the leaves continue all the year-, but I have not feen any flowers produced in England as yet, but by fome dried famples which were brought from India, they

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feem to be/mall, and of little beauty *, the fine branching leaves of the plant, however, make a very handsome appearance in the ftove. The feeds are of a fhining black colour, and are fomewhat larger than thofe of the great Lentil, and nearly of the fame ftape. This plant muft be raifed on a hot-bed, and afterwards placed in the bark-ftove with other tender exotics.

A D H A T O D A. See JUSTICJA.

A D I A N T H U M, i. e. Maidenhair.

The CHARACTERS are,

This genus is diftinguihed from the other capillary plants by the fruification, being confufedly joined in ovalfpots, and the points of the leaves reflexed.

The SPECIES are,

1. ADIANTHUM (*Capillus Veneris*) frondibus decompofitis foliis alternis pinnis cuneiformibus lobatis pedicellatis. Lin. Sp. Plant. 1096. *The true Maidenhair. Adiantum foliis Coriandri. C. B. P. 356.*
2. ADIANTHUM (*Pedatum*) frondibus pedata foliolis pinnatis pinnis antice gibbis incifis fru&ificantibus. Lin. Sp. Plant. 1095. *American Maidenhair. Adiantum Americanum. Corn. Canad. 7. tab. 6.*
3. ADIANTHUM (*Trapeziforme*) frondibus fupradecompofitis foliolis alternis, pinnis rhombeis incifis utrinque fru&ificationibus. Lin. Sp. Plant. 1097. *The largeft black American Maidenhair with branching ftalks, and leaves Jhaped like the figure of a rhombus.*

There are many fpecies of this genus, which are natives of the Eaft and Weft-Indies, greatly differing in fize and form from each other. I have upwards of thirty diftindt fpecies in my collection of dried plants, which to enumerate in this place, would be fuperfluous, as they have not been introduced into the Englifh gardens. The three forts here mentioned, are all that I have feen growing in England.

The firft fort is the true Maidenhair, which is dire&ed to be ufed in medicine; but as it does not grow naturally in England, fo the *Trichomanes* is ufually fubftituted for it, which grows in great plenty in feveral parts of England. The other is a native of the fourth of France, Italy, and the Levant, from whence I have received the plants. It ufually grown Out of the joints of walls, and the fiffures of rocks, fo that whoever is inclinable to keep this plant in their gardens, fhould plant it in pots filled with gravel and lime rubbifh, in which it will thrive much better than in good earth -, but the pots muft be fheltered under a frame in winter, otherwife the plants are often killed by the froft.

The fecond fort is often preferred in gardens for the fake of variety; this may be preferred in pots, and treated in the fame manner as the former *, for altho* it will live through the winter in the open air in moderate feafons, yet in fevere froft it is fometimes deftroyed. This grows naturally in Canada in fuch quantities, that the French fend it from thence in package for other goods, and the apothecaries at Paris ufe it ?or the Maidenhair, in all their compofitions in which that is ordered.

The third fort grows naturally in very warm¹ countries *, I received it from Jamaica in a tub of earth among other plants. This fort will not thrive in England, unlfs it be preferred in a ftove, where its fhining black ftalks and odd fhaped leaves will afford an agreeable variety among other exotic plants.

A D N A T A, A D N E S C E N T I A, are thofe off-fets, or fmall bulbs, which are produced from the roots of bulbous plants, and are clofely connected to the parent root; of this fort is the *Narciffus*, *Amaryllis*, *Panocratium*, &c.

A D O N I D I S H O R T I, i. e. the gardens of Adonis, æ? plants, flowers, &c. in pots or cafes, fet on the outside of windows, in balconies, &c.

A D O N I S, or FLOS ADONIS, Bird's-eye, or PheafantVeye.

The CHARACTERS are,

The empalement of the flower is compofed of five concave, obtufe, coloured leaves which fall off the flower is compofed in fome fpecies offivepefak, aid mothers of twelve

wfyvrltH. In the first ... Ibrtrarc mmylgrminaaSeSidI in a btd, Civ-A arc alt Jlomüit, is'jüKa Jltwer h pajl, ihtgmtna

This genus is by Dr. Linnaeus ranged in the seventh section of his thirteenth class, entitled Polyandra Polyandria, the flowtri having many stamens and many gmrattt.

The S... 1. Adonis (Adonis) vernalis octopetala fructibus cylindricis Hort. Upsal. 16. ... mmsit A&rncjt

2. ... Adonis vernalis fructibus ovatis. Annual Adonis with pale yellow flowers. Adonis vernalis flore lutea foliis longioribus. C. B. l. 178.

3 APOV (Fernalis) flore duodecapetala, fructu ovato. Lin. S] Plant. 771. Perennial Adonis with yellow flowers, of four times four-lined black hollows. Adonis Hellebori radix Buchenbaum name. H. L.

There is a variety of the first kind, which hath been cultivated in the gardens, the flowers of this are larger, and the leaves shorter, than those of the first kind. But, from many repeated trials of sowing their seeds separately, they appear to be only accidental varieties arising from culture, and therefore may be properly esteemed as such.

The second kind is undoubtedly a distinct species. I have cultivated both these sorts above thirty years, and have never observed the second to vary either in the shape of its leaves, colour, or size of the flowers, or in any other particular. The first kind grows naturally in the woods, particularly by the side of rivers, between Manchester and Macclesfield, where it is found in great plenty in the fields which are sown with wheat; but in the neighbourhood of Macclesfield the seeds are permitted to fall on the ground, they generally succeed better than when sown by hand. The first kind grows naturally in the woods, particularly by the side of rivers, between Manchester and Macclesfield, where it is found in great plenty in the fields which are sown with wheat; but in the neighbourhood of Macclesfield the seeds are permitted to fall on the ground, they generally succeed better than when sown by hand.

Both these sorts are annual, and if die feeds SW liwn in autumn, the psna mil come up till following spring, but when die il-sda a; on luwn rill spring, they rarely come up the first year. As that which the seeds are permitted to fall on the ground, they generally succeed better than when sown by hand. The first kind grows naturally in the woods, particularly by the side of rivers, between Manchester and Macclesfield, where it is found in great plenty in the fields which are sown with wheat; but in the neighbourhood of Macclesfield the seeds are permitted to fall on the ground, they generally succeed better than when sown by hand.

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of lowinp the seeds in autumn, for these fields of fine corn it is inferred to be sown in the first year. The same years past, great quantities of the flowers of this plant have been brought to London, and sold in the streets by the name of Red Monarda.

JJgiththfcinnusi ... flowers in the beginning of June, and the seeds ripen in August and September; this will be untierfood nt tKok; plants which arise from seeds sown in autumn, or such as have fallen to the ground in any place, come up from the seeds sown in the first year; if they do not flower till July or August, aot these seeds seldom ripen before October.

These plants will thrive best in a light soil, but may be fit in a very firm soil, and will grow in a warm situation, and others in the shade. The plants will continue longer in flower, if they are not removed while the plants are very young; therefore they should be sown in pits in the borders of the flower garden, and when the plants come up, they should be thinned, leaving six or four in each pit, which will make a better spttanu than where they grow single.

The third kind hath a perennial root, and an annual stalk. This grows naturally on the mountains of Bohemia, Prussia, and other parts of Germany, where the root is often used as the true Black HiHebore, thfttl from the delicia. It gives a white colour to the thuploni, tlik by no means will agree with them; this hath been used in the cure of the stone. It produces

it flowers the latter end of March, or the beginning of April, according to the severity of the season; the stalks rise about a foot and a half high, and when the seeds are large, and have good improvement for some years, they will produce a great number of stalks from each; these are furnished with five slender leaves, which are placed in circles at intervals. At the top of each stalk, is produced one large yellow flower, composed of an unequal number of petals, the center of which is occupied by a great number of stamens, surrounded by many filaments; after the flowers drop, the stamens become naked seeds, closely adhering to the base of the stalk, forming an oblong spike. These ripen in August, and should be sown soon after, or in winter they seldom succeed.

When the plants come up, they must be carefully kept clear from weeds, and, in very dry weather, if they are new and thin, watered with water, will promote their growth. They should be sown in the place where they are sown until the second year, for they make but slow progress while young. The best time to transplant them is in autumn, when they ought to be planted where they are to remain, for if often removed, they will not produce many flowers, nor their stalks be so strong as on the plants which are sown there.

ADOXA, Lin. Gen. 400. Mollifera. Tournefort. Tuberosa Mollifera, or Hollow Root. This is ranged in Linnaeus's eighth class, entitled Oligandria Tetragynia, the flowers of which are four-lined, and four-lobed.

The Character is, The capsule of the flower is light and permanent, when which opens the seeds, the flower is of one leaf, which is cut into four equal segments. The seeds are situated in the center, forming four rows from each, each are attended by eight flowers, arranged in roundish joints; after the flower is past, the seeds become a black berry, which is the capsule, which hath four cells, each containing a single winged seed.

There is but one sort of this genus. ADOXA, Hort. Cliff. 172. tuberosa Mollifera, or Hollow Root. This is ranged in Linnaeus's eighth class, entitled Oligandria Tetragynia, the flowers of which are four-lined, and four-lobed.

This plant grows naturally in the woods of Jiver; parts of England; I have frequently gathered it on the top of Hampstead among the bushes, and it is a very low plant, seldom rising more than four or five inches high, the leaves resemble those of the herbaceous Primrose, the flower-stalk arises immediately from the root, upon the top of which is placed four or five small flowers of an herbaceous white colour; these appear the beginning of April, and the berries ripen in May, soon after which the leaves decay. There is little beauty in this plant, but as some persons are fond of collecting the several kinds of plants in their gardens, which are not commonly found, it is mentioned here. The roots may be transplanted any time after the leaves are decayed, till winter; they are subterranean, and shaped somewhat like a turnip; they must be planted in the shade, under a tree; for if they are exposed to the open sun, they will not thrive. The leaves and flowers smell like a musk, from whence it has been by some called Musk-Crosswort.

EGLOPS, Wild Pheasant, a sort of grass which grows naturally in many parts of Europe, it is rarely cultivated except in botanic gardens.

EGOPodium, Small Wild Amaranth, or Gourd; this plant grows naturally in several places near London, but the roots run to fall in a garden; it is considered a troublesome weed.

ESCHYNOMENE, Lin. Gen. Plant. 769. Substantive plant. This genus of plants is ranged in the third section of Linnaeus's seventh class, entitled Diadelphia decandria; the flowers of this class have ten distinct stamens, nine of which are united, and the other is separate.

The Character is, The capsule of the flower is four-lined, and four-lobed, the seeds are situated in the center, forming four rows from each, each are attended by eight flowers, arranged in roundish joints; after the flower is past, the seeds become a black berry, which is the capsule, which hath four cells, each containing a single winged seed.

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flower trifid; the flower is of the butterfly kind, the standard being large and Jheart-Jhaped *, the two wings are oval, and Jhorter than the standard; the keel is moon-Jhaped, and as long as the standard. In the bottom of the flower is situated an oblong hairy germen, supporting an arched fyle, attended by tenftamina, nine of which coalesce, and the other is separated from them; after the flower is past, the germen becomes a long, plain, jointed pod, which separates at the joints, in each of which is lodged one kidney-Jhaped feed.

The SPECIES are,

1. **IESCHYNOMENE** (*Afpera*) caule scabroleguminumarticulis medio scabris. Lin. Sp. Plant. 713. *Bastard Senfitive plant with a rough stalk, and a jointed pod. Mimofa non spinosa major Zelanica.* Breyn. Cent. 51.
2. **JESCHYKOMZKE** (*Americana*) caule herbaceo hispido, foliis acuminatis, leguminum articulis femicordatis, bradeis ciliatis. Lin. Sp. Plant. 1061. *Bastard Senfitive plant with a flinging herbaceous stalk, pointed leaves and the joints of the pods beart-Jhaped.* Hedyfarum caulihirtutumimofae foliis alatis, pinnis acutis minimis gramineis. Sloan. Cat. Jam.
3. **IESCHYNOMENE** (*Arborea*) caule lsevi arboreo leguminum articulis femicordatis glabris. Prod. Leyd. 384. *Bastard Senfitive plant with a smooth tree-like stalk, and fsmooth jointed pods.* Sefban caule simplici glabro, foliis pinnatis glabris. Monier.
4. **IESCHYNOMENE** (*Sefban*) caule herbaceo lnevi, foliolis obtufis, leguminibus cylindricis aequalibus. Lin. Sp. Plant. 1061. *Bastard Senfitive plant with a smooth stalk, obtufe leaves, and equal cylindrical pods.* Galcga Egyptiaca filiquis articulatis. C. B. P. 352.
5. **JESCHYNOMENE** (*Pumila*) caule herbaceo fcevi, foliolis acuminatis, leguminibus hinc ferratis medio scabris. Lin. Sp. Plant. 1061. *Bastard Senfitive plant, with a smooth herbaceous stalk, pointed leaves, and serrated rough pods.* Hedyfarum annum minus Zeylanicum mimofae foliis. Inft. R. H. 402.
6. **IESCHYNOMENE** (*Grandiflora*) caule arboreo, floribus maximis, leguminibus filiformibus. Lin. Sp. Plant. 1060. *Bastard Senfitive plant with a tree-like stalk, large flowers, and flender pods.* Galege affinis malabancarbofencens, filiquis majoribus umbellatis. Raii Hift. 1734.

The first fort rises to the height of four or five feet, having a fingle herbaceous stalk, which is in some parts rough. The leaves come out on every fide towards the top, forming a fort of head-, these are composed of a great number of fmall leaves (or pinnae) which are fsmooth, and of a glaucous colour. The flowers come out from between the leaves, two or three together upon long foot-ftalks; they are yellow, and fliaed like those of Peafe. After the flower is past, the germen becomes a flat jointed pod, about four inches long, which, when ripe, parts at the joints, and in each division is lodged a fingle kidney-fliaed feed.

The second fortfeldom rises more than two feet high, but fends out three or four lateral branches; these are clothed with narrow winged leaves, whose pinnae are placed alternate on the midrib. The flowers come out from the leaves upon branching foot-ftalks, five or six together *, these are much less than those of the first fort, and of a paler yellow colour. After the flowers are past, the germen becomes a jointed pod, having three or four fwelling divisions, in each of which is lodged a fingle kidney-fliaed feed.

The third fort grows to the height of fix or feven feet, with a fingle stem; the leaves are fsmooth, and come out towards the top of the stalk, as in the first fort they are composed of many pinnae, placed alternate on the midrib. The flowers come out from the wings of the leaves, two or three together, being of a copper colour, and as large as those of the first fort. After the flowers are past, the germen becomes a fsmooth jointed pod, each division being halfheart-fliaed, and inclofing a fingle kidney-flheped feed.

The fourth fort grows naturally in Egypt, and also on the coast of Guinea, from whence I received the feeds. This hath woody stems and branches, which

are garnished with fsmooth leaves, composed of many blunt pinnae, fet by oppofite pairs *, the flowers, which are fmall; and of a deep yellow colour, come out from the wings of the leaves in long fpikes, which hang downward. After the flower is past, the germen becomes a taper-pointed fsmooth pod, not jointed.

The fifth fort rises about three feet high, with a fingle herbaceous stalk, feldom putting out any fide branches. The flowers come out from the wings of the leaves, fometimes fingle, and other times two or three upon each foot-ftalk; these are fsmall, and of a pale yellow colour. After the flower is past, the germen becomes a long falcated pod, divided into eleven,* or thirteen partitions, each containing a fingle kidney-fliaed feed.

The sixth fort rises fix or eight feet high, with a woody stem, fending out branches towards the top, garnished with obtufe leaves *, the flowers are large, yellow, and fucceeded by large pods, including kidney-fliaed feeds.

The first, third, and fourth forts, will live through the winter in England, if placed in a warm ftove; but as their stalks are fucculent, they must be kept dry in winter, otherwife they are very fubject to rot. They should be plunged into the tan-bed, for when put into a dry ftove, the fibres of their roots soon grow dry, and their leaves hang and fade, which flies their want of moifture *, but when they have water given them, it caufes the tender fibres of their roots to perify and the plants soon after decay.

The fifth fort is annual, therefore the feeds should be fown early in March on a hot-bed, and the plants should be brought forward in the fpring, and afterwards placed in an airy glafs-case, or a ftove in fummer, for if they are expofed to the open air, the feeds rarely ripen in England.

The sixth fort grows to a large shrub in hot countries, but is with difficulty preferved through the winter in this country. The plants are propagated by feeds, which must be fown on a hot-bed in the fpring, and the plants, when fit to remove, should be planted in pots, and brought forward on a hot-bed, then fhould be plunged into the bark-bed in the ftove, where, if they are tenderly treated, they will live through the winter, and flower the fuimper following.

These are all propagated by feeds, which should be fown on a hot-bed early in the fpring, and when the plants have ftrength enough to be removed, they should be put each into a feparate fmall pot, filled with light earth, and plunged into a freth hot-bed, to bring them forward; and as they advance in their growth, they should be fhifted into large pots, but great care fhould be taken not to over-pot them, for if the pots are too large, the plants will not thrive. The first, fecond, and fifth forts are annual, therefore must be brought forward early in the year, otherwife they will not perfect their feeds *, but the third, fourth, and sixth forts may be preferved through the winter, and will flower early the following fummer, and their feeds will ripen in the autumn. The other forts usually flower in July, and their feeds ripen in Q&ober.

IESCULUS. Lin.Gen.420. TheHorfeCheftnut.

The CHARACTERS are,

The empalement of the flower confifts of one leaf, flighly cut into five fegments. The flower is composed of five roundijh petals, folded at their border, and waved; these are narrow at their bafe, and are inferted in the empalement. In the center is placed a roundijh germen, having a fingle fyle, crowned with a pointed stigma, attended by feven ftamina, which extend to the length of the petals, and arc declining, crowned with upright fummits When the flower is past, the empalement becomes a thick* roundijh, echinated capfuk, opening into three cells, in one or two of which are lodged globular feeds.*

This genus of plants, is, by Dr. Linnaeus, ranged in his feventh dais, entitled Heptandria Monogynia, the flower having feven ftamina and one fyle.

The SPECIES are,

1. **TESCULUS** (*Hippocastanum*) floribus heptandriis. Hort. Upfal. 92, *The common Horfe Cheftnut.* Hippocastanum

num vulgare. Tourn. -Inft. Caftanea equini. Cluf. Hift. i. p. 7.

ESCULUS (*Pavia*) floribus o&andris. Lin. Sp. 488. *Scarlet Horfe Chefnut*. Pavia. Boerh. Ind. Alt. 2. p. 260. The Horfe Chefnut was brought from the northern parts of Afia about the year 1550, and was lent to Vienna about the year 1588. It was called Caftanea from the fhape of its fruit, and the title of Equini was added to it from its being a good food for horfes when ground.

This tree was in much greater efteem formerly than at prefent, for fince it is become fo very common, few perfons regard it. What has occafioned its being fo feldom planted, is the decay of the leaves early in fummer, fo that where they are growing in gardens, their leaves frequently begin to fall in July, and occafion a litter from that time, until all the leaves are fallen; but notwithstanding this inconvenience, the tree has great merit, for it affords a noble fhade in fummer; and during the time of its flowering, there is no tree has greater beauty, for the extremity of the branches are terminated by fine fpikes of flowers, fo that every part of the tree feems covered with them; which are finely spotted with a rofe colour, and thefe being intermixed with the green leaves make a noble appearance.

The former method of planting thefe trees in avenues and ftrait lines, has allb been in fome meafure the occafion of their prefent difrepute, becaufe in fuch plantations great part of their beauty is loft; for when their branches are fo far extended as to nearly meet, moft of the flowers which are produced are hid from fight, and as the trees grow larger, their branches will interfere with each other, and produce few flowers; the leaves will alfo decay much fooner in clofe plantations, than on fingl'e trees: therefore the great beauty of them is, to ftand fingly at a diftance from nil other trees, upon lawns of grafs in parks, where their fruit will be of great fervice to deer, who are very fond of them. In fuch fituations, when the trees are grown to a good fize, there is not a finer obje&6l than they will afford during their feafon of flowering, which is in May, and when the weather is moderate, they will continue in beauty near a month.

As this tree is quick in its growth, fo in a few ye&8rs they will arrive to a fize large enough to afford a good fhade in fummer, as alfo to produce plenty of flowers. I have known trees which were raifed from nuts, in twelve or fourteen years, large enough to fhade two or three chairs under the fpread of their branches, and have been covered with flowers in the feafon, fo that few trees make greater progrefs than thefe. But as their wood is of little value, the trees fhould not be propagated in too great plenty: a few therefore of them placed at proper diftances in parks for ornament is as many as fhould be preferved, the wood not being fit even for burning, nor any other ufe that I know of. Thefe trees are propagated by fowing the nuts; the beft time for doing this is early in the fpring; but the nuts fhould be preferved in fand during the winter, otherwife they are apt to grow mouldy and rot. They may indeed be planted in autumn, but then they will be in danger of rotting if the winter fhould prove very wet, as alfo of being removed or eaten by vermin.

When the nuts fucceed, and have a proper foil, the plants will fhoot near a foot the firft fummer, fo that where they grow pretty clofe together, it will be proper to tranfplant them the following autumn, when they ought to be planted in rows at three feet diftance, and one foot afunder in the rows: in this nurfery they may remain two years, by which time they will be fit to plant where they are defigned to be continued; for the younger thefe trees are planted out, the larger they will grow. But there are many who will obje&6t to their being planted out young in parks, becaufe they will require a fence to fecure them againft the cattle-, which will alfo be neceffary, whatever fize they are when planted; and if large, they muft be well ftaked to prevent their being difplaced by ftrong winds: which is another expence, and when we con-

fidder how much f after a young tree will grow, than thofe which are removed at a greater age, there can be no excufe for planting large trees.

This tree is not very nice in its culture, for it requires little care in the management, and will thrive in moft foils and fituations, but in a fandy loam they make the greateft progrefs; and if the foil be inclining to moiiture, the leaves will continue in verdure much longer, than in very dry ground/

When thefe trees are tranfplanted, their roots fhould be preferved as entire as poffible, for they do not fucceed well, when torn or cut; nor fhould any of the branches be fhortened, for there is fcarce any tree, which will not bear amputation better than this* fo that when any branches are by accident broken, they fhould be cut off clofe to the item, that the wound may heal over.

There is fomething very fingular in the growth of thefe trees, which is the whole fhoot being performed in lefs than three weeks, after the buds are opened; in which time I have meafured fhoots a foot and a half long, with their leaves fully expanded: and no fooner are the flowers fallen, than the buds for the fucceeding year are formed, which continue fwelling till autumn; at which time the folding covers are fpread over with a thick tenacious juice, which ferves as a pigment to defend the tender buds from the froft and rain in winter; but upon the firft return of warmth in the fpring, this melts and runs off, whereby the bud is at full liberty to extend. And what is remarkable in this pigment, it is never fo far hardened as to injure the tender buds, which are always formed at the extremity of the former year's fhoot; a plain dire&6tion not to fhorten them, for by fo doing, the future fhoots are entirely cut off.

In Turkey the nuts of this tree are ground, and mixed with the provender for their horfes, efppecially thofe which are troubled with coughs, or are broken winded; in both which diforders, they are accounted very good. Deer are very fond of the fruit, and at the time of their ripening will keep much about the trees, but efppecially in ftrong winds, when the nuts are blown down, which they carefully watch, and greedily devour as they fall.

There are fome old trees now ftanding, which were planted fingly, at a great diftance from any other; thefe are grown to a very large fize, and their heads form a natural parabola, and when their flowers are in full beauty, there is not any tree yet known in Europe, which makes fo fine an appearance. I have meafured fome of thefe trees, whofe branches have extended more than thirty feet in diameter, and their heads have been fo clofe, as to afford a perfedl fhade in the hottelt feafons. Thefe were planted in 1679* as appears by fome writings which are in the poffeffion of the perfons, who have now the property of the land where they grow: fo that although they are of quick growth, yet they are not of fhort duration.

The Scarlet Horfe Chefnut grows naturally in North America, where it rifes to the height of twenty feet, but does not fpread its branches to any great extent, the flowers are wholly red, which are much fmaller than thofe of the common fort, they are tubulous, but want brims to expand, fo make but an indifferent appearance, when compared to the other: however for variety this fhould have a place in gardens.

It may be propagated by the nuts, if they are procured from the country where the trees naturally grow; for the feafons are feldom favourable enough to ripen them in England. The nuts fhould be ibwa in pots early in the fpring, and the pots plunged into a moderate hot-bed to forward their growth; toward the end of May, the pot fhould be plunged into the ground in a fourth-eaft border, and in dry weather the plants fhould be duly watered, whereby they will acquire ftrength by the autumn; when it will be very proper to fcreen the plants from early frofts which often pinch the top buds, and occafion their decay in the winter, for while the plants are young they are impatient, of frofts, but when they have obtained

ftwngt! it fcllon hurt! them: ilir spring following the plants should be carefully separated and planted afootdi • mee from each other in a sheltered situation; and th following winter, if it proves cold, it will be profm • to cover the plants with some light covering; ti) • after the second winter they will require further sheltering.
 • Ik, • ... method now practiced by the nursery- mm, who propagate these trees for sale, is by grafting or budding them upon stocks of the Hard Chest- nut, b • in the stacks greatly out-grow the buds of gala, they have J bad appearance, nur tio the trees 11. i long.

JETH E.R. [of *Abas*, Gr. ti burn or flame; some of the ancients having in yofcd it [o be of the nature of fire.] v is usually v. Ucrftuod in fit a dtin futUc matter or • sodium, much finer and rarer than i, j, . Tell, which came CM tVuill ti- limits of tie at- mphere, ind polfitt • the whole heavenly Ijlice. Sec AUSTRIAN; and ;IR.

AGAV! . Lin. Gen. 3383. American Akw. Thrfi

Thrfi • *... impakmtx*, is found *... end of ...*
 *JK kaf, •

fi *... which is extended ...*
... which are filled with fat seeds.

Dr. [• ... has separated the plants of this genus from the Aloe, to which they had been joined by former taxonomists, because the stamens and style in their blossoms are extended much longer than the corolla, and the corolla rest upon the germen, which in the Aloe are not so. We may also mention another difference in the growth of the plants, by which they may be distinguished. In the Aloe, which is all the plants of this genus have their center leaves closely folding over each other, and embracing the flower stem which is turned in the coil; in this I fe never flower until all the I civet BIT expanded, to give the stem its liberty to advance, uu! when the flower is fallen, the plants die. Whereas the flowers of Jit Aloe, is produced in one side of [In- I east or center of the plant, so they never • annually, and the leaves are always more expanded, than those of this genus.

The Seventh are,

1. AGAVE (*Americana*) foliis dentatis spinosis. *pini* lipu ramis. Gen. Nov. 1102. *The Great American Aloe*, with a long leaf. AW Americano run *vita*. J. R.
2. AGAVE (*Phytola*) foliis dentatis spinosis longis. *finv* planifolia. Lin. S. *Ant. 22. American Aloe with a long leaf.*
3. AGAVE (*Ferdia*) foliis integris. Gen. Nov. Sp. Pl. 123. *American Aloe with stiff whole leaves.* Aloe Americana viridi rigida foliis de serratis foliis per dicta phytola. Hort. Acad. 3. p. 25.
4. AGAVE (*Subergii*) radice tuberosa foliis longifloris marginatis spinosis. *American Aloe with a tubercle root and very long leaves, with teeth on their edges.* Aloe Americana radice tuberosa minor. Pluk. Alm. 19.
5. AGAVE (*Ferraria*) foliis reflexis, marginibus dentatis. *American Aloe with reflexed leaves, whose edges are indented.* This is by some called the Chaldian Aloe, from its producing young plants after the flowers. Aloe Americana foliolifera. Herms. H. Lang. 16.
6. AGAVE (*Karwinska*) foliis erectis latis verrucosis, marginibus foliis serratis serratis. *American Aloe with long deep green leaves, edged with brown, and very lightly serrated.* This is called in America Karwinska.
7. AGAVE (*Ferraria*) foliis oblongis marginibus spinosis serratis. *American Aloe with oblong leaves, whose edges are deeply serrated with black spots, resembling dried bread baked.* *Aloe from Ferraria.* Aloe Americana ex Ves Crux foliis laevibus & glaucis. H. L.
8. AGAVE (*Ferdia*) foliis linearibus lanceolatis integris serratis rigidis aculeo terminatis. *Narrow-leaved Aloe from*

i-cre C. m. Aloe Americana (It Vei-i) *Crux foliis angustioribus rtoniu glaucis.* Hort. Beau.

The first sort here mentioned, has been long preferred in the English gardens, whose of late years there have been several of the plants in flower. The stems of this which the plants are vigorous, generally rise upward of twenty feet high, and branch « • on every side, in an so form a kind of pyramid, the lowermost being furnished with greenish yellow flowers, which stand erect, and come out in thick clusters at every joint. They have six long stamens, crowned with yellow fimbriae, placed round the style. The pistil is also inserted in the same length as the stamens. After the flowers fall away, the green men, which is situated beneath the flower, becomes an oblong tritricoid, divided into three cells, the lowermost compressed seeds; but these do not come to maturity in England.

When the plants are young, they take in fine appearance, and continue a long time in beauty, if they are protected from the cold; in autumn, there will best succession of new flowers produced, for near thirty months, in the south of England. I have seen several of these plants, which were believed to be a hundred years old; but this is a great mistake, for the time of its flowering depends on the growth of the plant; so that in hot countries where it grows tall, and expands many leaves every year, it may outlast a hundred years, but in colder climates, where their growth is slow, it will be much longer before it shoots up their stem. There is a variety of this sort with striped leaves, which is now pretty common in the English gardens.

The plants of the second sort are so like those of the first, that they are distinguished from them, but by good judges. The principal difference is, the leaves of this are narrower, and grow to a pale colour; the stems of this sort do not rise so high, but the flowers are collected in a close head at the top, they are however of the limit shape and colour. There has been three or four plants of this sort, which have lately died in England, one of which was in the garden of a few years past. This is a very curious plant, which produces so many offsets as the common Aloe.

The seventh sort greatly resembles these; that many persons have supposed it to be the same; but the leaves of this are much thinner, the indentures on their edges absolutely other, and not like the former; the stamens are thicker. How this differs from the others in the south of England, having fifteen or more of their flowers produced in England. These three sorts are hardy; I have known plants of the first sort live in the north for many years in mild climates, but in colder winters they are almost killed, if not sheltered; they are propagated by offsets, which the first sort sends out in plenty, but the third seldom runs out any, so that it is increased by taking off some of the larger ones, at the time when the plants are lifted, planting them in pots filled with light sandy earth, which will root out and become good plants, as I have experienced. The second sort generally puts out suckers enough for propagation, though not in so great plenty as the first. All these should be planted in pots filled with light sandy earth, and shaded in winter with mats, myrtles, &c. and during this season, should have but little wet. In the summer they must be placed abroad in the open air, where they may remain till toward the end of October, when they should be brought again. The seventh sort being a little smaller than the other two, should be planted in pots not so large as the first, and may stay there a little longer in the spring. The third sort runs out many offsets, of a pale green colour, not indented on their edges, but frequently a little curved; the side leaves spread open, but these is the center held closely over each other, and finally narrowed toward the head. The plants of the second sort rarely produce more than three or four suckers, but the Bower brandies out much larger than the first.

that of the first, but more horizontally; the flowers are of the same shape, but smaller, and of a greener colour. After the flowers are pale, instead of feedveffels, young plants succeed to every flower, so that all the branches are closely beset with them. There was a plant of this kind which flowered in the Chelsea garden 1755, the stem of which begun to shoot the beginning of October, and by the end of that month was upwards of ten feet high, by the end of November it was near twenty, and the lower lateral branches were upward of four feet long, the others decreasing gradually, so as to form a regular pyramid. In December the stalks were closely garnished with flowers, and in the spring, when the flowers dropped off, they were succeeded by young plants, which as they fell off and dropped into the pots which stood near, put out roots and become good plants. This sort never produces offsets from the root, so that it cannot be increased but when it flowers, at which time there will be plenty enough. The old plant presently after dies.

The fourth sort hath leaves somewhat like the third in shape and colour, but they are indented on their edges, and each indenture terminates in a spine -, the root of this sort is thick, and dwells just above the surface of the ground, in other respects it agrees with the former. This sort hath not flowered in England, therefore I cannot tell how it differs in its flowers from the other. I have raised this from seeds which were sent me from America, but the plants never put out suckers from the roots, so that it can only be propagated by seeds. Dr. Linnaeus supposes it to be the same with the third species, but whoever sees the plants will not doubt of their being different.

The fifth sort never grows to a large size; the leaves of it are seldom more than a foot and a half long, and about two inches and a half broad at their base -, the end in a slender spine, being (lightly indented on their edges; they are also reflexed backward toward their extremity, and are of a dark green colour. The flower-stem rises about twelve feet high, and branches /rot toward the top in the same manner as the third sort; the flowers are nearly of the same size and colour as those of the third, and after they fall off, are succeeded by young plants in the same manner. A plant of this kind flowered in the garden at Chelsea, in December 1754. This never produces any suckers from the root, so cannot be increased until it flowers. The leaves of the sixth sort are from two feet and a half to three feet long, and about three inches broad, being of a dark green colour, ending in a black spine; the borders of the leaves are of a brownish red colour, and (lightly ferrated. These stand more erect than in the other species 5 but as this sort hath not flowered in England, so I cannot say how it differs from the other. The plants of it were sent me from St. Christopher's, by the title of Koratto, which I suppose is given indifferently to other species of this genus -, for I have frequently heard the inhabitants of America call the common great Aloe by the same name,

'the eighth sort hath long, narrow, stiff leaves, which are entire, and are terminated by a stiff black spine. These leaves are seldom more than two feet long, and little more than an inch broad, being of a glaucous colour. The side leaves stand almost horizontally, but the center leaves are folded over each other, and inclose the flexure-bud. This sort never puts out suckers from the root, nor have I seen any plants of this kind in flower, although there are many of them in the English gardens, some of which are of a considerable age.

The third, fourth, fifth, sixth, and eighth sorts, are much tenderer than the others, so cannot be preferred through the winter in England, unless they are placed in a warm stove 5 nor will they thrive if set abroad in summer, therefore they should constantly remain in the stove, observing to let them enjoy a great share of free air in warm weather. They require a light sandy earth, and (should have little wet in winter; but in warm weather, may be gently watered twice a week,

which is as often as is necessary, for if they have much water given them, it rots their roots, and then their leaves will decay and infect themselves. They (should be (lifted every summer into fresh earth, but must not be put into large pots, for unless their roots are confined, the plants will not thrive.

A GERATUM. Lin. Gen. Plant. 842. Bastard Hemp Agrimony.

The CHARACTERS are,

The flowers are included in one common oblong empalement, which is composed of many fiales. > These are uniform, tubulous, and hermaphrodite, and little longer than the empalement, each being cut at their margin into five segments, which spread open. These have five slender stamina, crowned with cylindrical juments: in the center of the flower is situated an oblong germen, supporting a slender style, crowned by two fine stigmas. The germen afterward becomes an oblong angular seed, crowned with its proper little cup, cut into five narrow segments, which spread open. The receptacle of the seed is small, naked, and convex.

This genus of plants is by Dr. Linnaeus ranged in his (eventcenth class, entitled Syngenesia polygamia aequalis, the flowers having their stamina joined together in a cylinder, and there being male, female, and hermaphrodite florets included in the same common empalement.

The SPECIES are,

1. AGERATUM (*Conyzoides*) foliis ovatis caule piloso. Lin. Sp. Plant. 839. Bastard Hemp Agrimony, with oval leaves and a hairy stalk. Eupatorium humile Africanum fenecionis facie folio lamii. Herm. Pars 161.
2. AGERATUM. (*Houstonianum*) foliis oppositis petiolatis crenatis, caule hirfuto. Bastard Hemp Agrimony, with leaves having long foot-stalks placed opposite, whose edges are bluntly indented, and a hairy stalk. Eupatorium herbaceum mellifae folio villosum flore coeruleo. Houft. MSS.
3. AGERATUM (*Altissimum*) foliis ovato cordatis rugosis floralibus alternis, caule glabro. Lin. Sp. Plant. 839. Bastard Hemp Agrimony, with rough, oval, heart-shaped leaves, flower branches growing alternate, and a smooth stalk. Eupatorium urtica: foliis Canadense flore albo. H. L.

The two first are annual plants. The seeds of these must be sown on a hot-bed in the spring, and when the plants are come up and are strong enough to remove, they (should be transplanted into another moderate hot-bed, observing to water and (shade them until they have taken root, after which time they must have a good share of air in warm weather. In June they (should be inured to bear the open air, toward the middle of which month, they may be transplanted into the full ground, where they will begin to flower in July, and continue flowering till the frosts in autumn destroy them. The seeds ripen in September and October, and when any of them scatter upon the ground, and the same earth happens to be put on a hot-bed the following spring, the plants will come up in great plenty, as they frequently do in the open air; but these plants will be too late to produce good seeds, unless the summer proves warm. The first sort grows naturally in Africa, and also in the islands of America, for in tubs of earth which I received with plants from Jamaica, Barbadoes, and Antigua, I have had plenty of the plants arise, from seeds which were scattered on the ground. The second sort was found growing naturally at La Vera Cruz, by the late Dr. William Houftoun, who sent the seeds to Europe, which have so well succeeded in many gardens, as to become a weed in the hot-beds. There is a variety of this with white flowers, which arises from the same seeds.

The third sort grows naturally in North America, but has been many years an inhabitant of the English gardens. This hath a perennial root and an annual stalk; the stalk will grow five or six feet high, and toward their tops put out side branches: the leaves are shaped like a heart. At the ends of the shoots the flowers are produced in large tufts, which are of a pure white and

lice appearing in October, at a season when there is a scarcity of other flowers, renders it more valuable. This sort is propagated by seeds, as also by parting of the roots, the latter method is commonly practised in England, because there are few autumns so favourable as to ripen the seeds: but the seeds are frequently brought from North America, where this plant is very common; for being light, they are easily wafted about to a great distance, where they come to maturity; so that where there are any plants growing, all the adjoining land is filled with the seeds of them. The best time for planting and transplanting the roots of this plant, is in autumn, soon after their stalks decay, that they may have good root before the drying winds come on, otherwise they will not flower strongly, or make a good increase. The roots should be allowed three feet room every way, for as they spread and increase very much, so when they are cramped for room, the plants starve, and in dry seasons their leaves will hang. They delight in a rich moist soil and open situation, wherethy they will produce many stalks from each root, which will grow so large as to form a considerable brush. This plant will bear the severest cold in winter.

AGERATUM, or MAUDLIN. See ACHILLEA.
 AGERATUM PURPUREUM. See ENIENUS.
 AGNUS CASTUS. See VITEX.
 AGRIFOLIUM. See ILEX.
 AGRIMONIA. Lin. Gen. Plant. 534. Agrimony.

The CHARACTERS are,

The empalement of the flower is of one leaf which is cut into five acute segments, and rifts on the germen. The flower has five petals, which are plain and indented at their extremity but are narrow at their base, where they are inserted in the empalement. In the center arises a double style, resting on the germen, which is attended by twelve slender stamina, which are crowned with double compressed summits. After the flower is past, the germen becomes two roundish seeds fastened to the empalement.

This genus of plants is ranged by Dr. Linnaeus in the second section of his eleventh class, entitled Decandria digynia, the flowers having twelve stamina and two styles.

The SPECIES are,

1. AGRIMONIA (*Eupatoria*) foliis caulinis pinnatis impari petiolato, fructibus bipidis. Hort. Cliff. The common Agrimony. *Agritaonia officinarum*. Tourn.
2. AGRIMONIA (*Minor*) foliis caulinis pinnatis, foliolis obtusis dentatis. The white Agrimony. *Agrimonia minor flore albo*. Hort. Cath.
3. AGRIMONIA (*Odorata*) altissima, foliis caulinis pinnatis foliolis oblongis acutis serratis. The sweet-scented Agrimony. *Agrimonia odorata*. Camer.
4. AGRIMONIA (*Repens*) foliis caulinis pinnatis, impari feffili, fructibus bipidis. Lin. Sp. 643. Eastern Agrimony with pinnated leaves and a thick creeping root. *Agrimonia orientalis humilis radice crassissima repente fructu in spicam brevem & densam congesto*. Tourn. Cor.
5. AGRIMONIA (*Agrimonoides*) foliis caulinis ternatis fructibus glabris. Hort. Cliff. 179. Three leaved Agrimony with smooth fruit. *Agrimonoides* Col. Echpr.

The first sort grows naturally in several parts of England, by the sides of hedges, and in woods. This is the sort which is commonly used in medicine, and is brought to the markets by those who gather herbs in the fields.

The second sort is the smallest of all the species, the leaves of this have not so many pinnae as the common sort, and the pinnae are rounder, and the indentures on their edges blunter. The spike of flowers is slender, and the flowers smaller, and of a dirty white colour. This sort grows naturally in Italy, from whence I received the seeds, and have constantly found that the seeds of this when sown never vary.

The third sort grows near four feet high, the leaves of this have more pinnae than either of the former, which are longer and narrower, ending in acute points; the serratures of the leaves are sharper than any of the other, and when handled emit an agreeable odour. The leaves of this sort make an agreeable cooling tea,

Which is a very good beverage for persons in a fever, in which disorder I have known it often prescribed by good physicians.

The fourth sort is of humble growth, seldom rising above two feet high; the pinnae of its leaves are longer and narrower than either of the former, and the spikes of flowers very short and thick. The roots of this are very thick, and spread widely under ground, by which it multiplies faster than either of the other; the seeds are also much larger and rougher than those of the common sort. This was sent by Dr. Tournefort to the royal garden at Paris, and from thence the other botanic gardens have been supplied with them. The fifth sort greatly resembles the other in the shape of its pinnae (or smaller leaves) but there are but three upon each foot-stalk; the flower of this hath a double empalement, the outer one being fringed. There are but seven or eight stamina in each flower, and the seeds are smooth, for which reason Fabius Columna, and other writers on botany, have separated it from the Agrimony, making it a distinct genus.

All these sorts are hardy perennial plants, which will thrive in almost any soil or situation, and require no other care but to keep them clear from weeds. They may be propagated by parting of their roots, which should be done in autumn, when their leaves begin to decay, that the plants may be well established before the spring. They should not be planted nearer than two feet, that their roots may have room to spread. They may also be propagated by seeds, which should be sown in autumn, for if they are kept out of the ground till spring, they seldom come up the same season.

AGROSTEMMA. Lin. Gen. Plant. 516. Wild Lychnis or Campion.

The CHARACTERS are,

The empalement of the flower is permanent, of one leaf, which is tubulous, thick, and cut into five narrow segments at the edge, the flower is composed of five petals, which are the length of the tube, but spread open at the top. In the center is situated an oval germen supporting five styles, which are slender, erect, and crowned with simple stigma. These are attended by ten stamina, five of which are inserted in the base of the petals, and the others stand alternately between: after the flower is past, the germen becomes an oval oblong capsule, having one cell opening into five divisions, which is filled with angular seeds.

This genus of plants is by Dr. Linnaeus ranged in the fifth section of his tenth class, entitled Decandria pentagynia, the flowers of this division having ten stamina and five styles.

The SPECIES are,

1. ACROSTEMMA (*Githgo*) hirsuta calycibus corollam quantum petalis integris nudis. Lin. Sp. Plant. 435 J Hairy wild Lychnis, whose empalement is equal with the corolla, and the petals entire and naked, commonly called Corn Campion. *Lychnis fegetum major*. C. B. P.
2. AGROSTEMMA (*Celirofa*) glabra foliis lineari-lanceolatis petalis emarginatis coronatis; Hort. Upfal. 115. Smooth wild Campion with narrow spear-shaped leaves, and the petals of the flowers indented at their brim. *Lychnis foliis glabris calyce duriore*. Bocc. Sic. 27.
3. AGROSTEMMA (*Coronaria*) tomentosa foliis ovato-lanceolatis, petalis integris coronatis. Hort. Upfal. 115. The Jingle Rose Campion. *Lychnis coronaria Diofcoridis fativa*. C. B. P. 203.
4. AGROSTEMMA (*Flos Jovis*) tomentosa petalis emarginatis. Lin. Sp. Plant. 436. Umbelliferous Mountain Campion. *Lychnis umbellifera montana Helvetica*. Zan. Hift. 128.

The first sort grows naturally in the corn fields in most parts of England, so is seldom admitted into gardens. The second sort grows naturally in Sicily, and being a plant of little beauty, is only preserved in botanic gardens for the sake of variety.

The Jingle Rose Campion has been long an inhabitant of the English gardens, where, by its seed having scattered, it is become a kind of weed. There are three varieties of this plant, one with deep red, another with flesh-coloured and a third with white flowers,

but these are of small esteem; for the double Rose Campion being a fine flower, has turned the others out of most fine gardens. The single sorts propagate fast enough by the seeds, where they are permitted to scatter, for the plants come up better from self-sown seeds, than when they are sown by hand, especially if they are not sown in autumn.

The sort with double flowers, which is a variety of the former, never produces any seeds, so is only propagated by parting of the roots -, the best time for this is in autumn, after their flowers are past; in doing of this, every head which can be flipped off with roots should be parted. These should be planted in a border of fresh undunged earth, at the distance of six inches one from the other, observing to water them gently until they have taken root -, after which they will require no more, for much wet is very injurious to them, as is also dung. In this border they may remain till spring, when they should be planted into the borders of the flower-garden, where they will be very ornamental during the time of their flowering, which is July and August.

The fifth sort grows naturally upon the Helvetian mountains *, this is a low plant, with woolly leaves -, the flower-stem rises near a foot high -, the flowers grow in umbels on the top of the stalk, which are of a bright red colour. It flowers in July, and the seeds ripen in September. It must have a shady situation, and will thrive best in a moist soil.

AIR [*Aer**, Lat. *Aer*], of *TS del pxy*, because it always flows j or as others, of *fopi*, to breathe.] By air is meant all that fluid expanded mass of matter which surrounds our earth, in which we live and walk, and which we are continually receiving and casting out again by respiration.

The substance whereof air consists, may be reduced to two kinds, viz.

*. The matter of light or fire, which is continually flowing into it from the heavenly bodies.

2. Those numberless particles, which is in form either of vapours, or dry exhalations, are raised from the earth, water, minerals, vegetables, animals, &c. either by the solar, subterraneous, or culinary fire. Elementary air, or air properly so called, is a certain subtle, homogeneous, elastic matter, the basis or fundamental ingredient of the atmospheric air, and that which gives it the denomination.

Air therefore may be considered in two respects; either as it is an universal assemblage, or chaos, of all kinds of bodies; or as it is a body endowed with its own proper qualities.

1. That there is fire contained in all air is demonstrable, in that it is evident, that there is fire existing in all bodies, and to this fire it is that air seems to "owe all its fluidity", and were the air totally diverted of that fire, it is more than probable that it would coalesce into a solid body* for it is found by many experiments, that the air condenses and contracts itself so much the more, the less degree of warmth it has; and, on the contrary, expands itself the more, according as the heat is greater.

2. In respect of exhalations, air may be said to be a general collection of all kinds of bodies; for there are no bodies but what fire will render volatile, and diffuse into air; even salts, sulphur, and stones, nay and gold itself, though the heaviest and most fixed of all bodies, are convertible into vapours by a large burning-glass, and are carried on high.

Those floating particles, thus raised from terrestrial bodies, are moved and agitated by the fiery particles divers ways, and are diffused through the whole atmosphere.

Of the matters thus raised in the atmosphere, those which come from fluid bodies, are properly called vapours, and those from solid or dry ones, exhalations. The cause of this volatility and ascent is the fire, without which all things would fall immediately down towards the center of the earth, and remain in eternal rest.

Thus, if the air be full of vapours, and the cold suc-

ceeds, these vapours before diffused are congregated and condensed into clouds, and thus fall back again into the form of water, rain, snow, or hail.

From the time of the entrance of the spring till autumn, the evaporation is constant -, but then it begins to fail, and in the winter ceases, to lay up fresh matter for the coming season.

And thus it is that frosty winters, by congealing the waters, and by covering the earth with a crust, and thus imprisoning the exhalations, make a fruitful summer.

And this seems to be the reason why in some countries, where the winter is severer than ordinary, the spring is more than ordinary fruitful; for in such places the exhalations being pent up along time, are discharged in the greater quantity, when the sun makes them a passage; whereas, under a feebler cold, the flux would have been continual, and consequently no great stock reserved for the next occasion.

This vaporous matter then being at length received into the atmosphere, is returned again in the form of rain, a forerunner of a cheerful crop.

As the sun retires, the cold succeeds, and thus the diversity of the seasons of the year depends on a change in the face of the crust of the earth, the presence of the air, and the course of the sun.

And hence we conceive the nature of meteors, which are all either collections of such vapours and exhalations, or diffusions thereof.

The subtiler oils are always rising into the air. Now two clouds, partly formed of such oils, happening to meet and mix, by the attrition, the oil frequently takes fire, and hence proceed thunder, lightnings, and other phenomena, which may be farther promoted by the disposition of the clouds to favour the excitation.

And hence arise great and sudden alterations in the air, inasmuch that it shall be now intensely hot, and raise the spirits perhaps to eighty-eight degrees in a thermometer and yet, after a clap of thunder with a shower, it shall fall again in a few minutes no less than twenty or thirty degrees.

It is therefore impossible to pronounce what the degree of heat will be in any given place at any time, even though we know ever so well the places and position of the sun and planets with respect to us, since it depends so much upon other variable things, no ways capable of being ascertained.

The lower the place, the closer, and denser, and heavier is the air, till at length you arrive at a depth where the fire goes out -, so that miners, who go deep, to remedy this inconvenience, are forced to have recourse to an artificial wind, raised by the fall of waters, to do the office of the other air.

Now, considering the air as such a chaos, or assemblage of all kinds of bodies, and a chaos so extremely liable to change, it must needs have a great influence on vegetable bodies.

3. Air considered in itself, or that properly called air. Besides the fire and exhalations contained in the circumambient atmosphere, there is a third matter, which is what we properly mean by air.

To define the nature of it would be extremely difficult, inasmuch as its intimate affections are unknown to us; all we know is,

1. That air is naturally an homogeneous similar body.
2. That it is fluid.
3. That it is heavy.
4. That it is elastic.
5. That it rarefies by fire, and contracts by cold.
6. That it is compressible by a weight laid thereon, and rises, and restores itself upon a removal of the same: all which circumstances should incline it to coalesce into a solid, if fire were wanting.

r. Air is divided into real and permanent, and apparent transient.

Real air is not reducible by any compression or condensation, or the like, into any substance besides air. Transient air is the contrary of the former, and is cold,

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cold, &c. may be consented into original water; the difference between permanent or permanent air, amounts to the same as that between vapour, and exhalation \ thtrmc, c. g. being i, and the ilic-r moiV Hence, as Sir Iſaac Newton ſays, it is, that as the particles of permanent air are gntikT, and arise from dens: r bod It', than ikefk of tranſient air or vapour, true ai is Inose jHmik'rjus Oiiin v:r, and I mout atmosphere lighter than a dry i.

Bui t] a real air no where conliiU in its purity, but that air which concerns us, and the properties and effects of which are chiefly to be considered, n that which has been extracted or refined, which Mr. Boyle acknowledges to be the most licterogencntis bod'ir the universe; and Dr. Baeduuvt ilievs it to be an unmcvra] chaos Old colhivies of all the kinds of created bodies in the univerſe, and in which may be found whatever fire can v ilatbe,

2: That the air is fluid Vom the eil; pafage it allords 10 bodies through it; is in the i opa-gatji, and other i liluvia, for these tilings flitw it a body that gives -way to any force impred, and in yielding are easily r loved among themselves, which nr the properties ofafhad} lb that force any body will call hi queftion, whether air be a fluid, and thence being always in motion, and al-W>y] moving of her bodies, for no surface of any liq-uid that is contiguous to the air, can be at rest.

3. As to the gravity or h winds of the air, that is like vile easily proved -, for that the air is heavy, follows from its being a body, weight being an cHI-nibl property of matter.

Se&K and otcpritnt i'uffitiently prove this: for, if a person lay his hand upon an open veill: placed on an air-pump, and the air be exhausted, hr will letifi-ly feel the load of the incumbent leroofbhere to in-crcife, and pfeft upon the upper part of his hand, as the air is cxaufing.

In like manner, .1 Eollo-v fphere of five or six inches diameter, divided into two (cgmems exactly fitting each other, after the air is txhauled out of them, are ptdlbi tO^jthei with a force equal to a hundred pounds weight, and require the lhnvngth of two fining perluus to pull them afunder; which, s' lioon as ever the if is let into them again, will fall alunderby the tnerc weight of tin' under In- spheres.

Mr. Boyle found that a lamb's Madder, containing about two thirds of a pint, and blown up, and well dried, loft about a grain and onr eighth, when it was pricked, and the KIT let out.

Mr. Grav; and loun; that the air in a gkfs ball of about two hundred i eighty-three inches capacity, weighed a hundred .ij; and iccoritingto Buvdict die Volder, a cubic foot of air vs in weight one ounce, and twenty-seven grains.

Mr. Boyle has computed, thit the weight of any quantity of air, near the iortace of the earth, is to water as 1 to 1000; and Mr. Halley, as 1 to 800; and Mr. Hawkhee, as 1 to 882; and the gn>ity of the same quantity of air to 1 die lanir iquantity of mercury, as 1 to 1000.

Air therefore may be considered, • jn univerſal oper-ations, or cases, which by its weight keeps all ter-restrial bodies down, and hns U>s them from trying off.

4. The air is elastic. Elasticity is 1 I qualiry whereby jk dy yields to any exten: ; inpreGiois by contract- ing into Inf coimafs, and U>an (cmoving or dimimJliii returns to its former Ipifc ur rigi. And by this quality, rlie air is distinguished from all other bodies in the JUNofpherc, nci: for fire and exhalations appear to be ebu- as lean in any sensible degree.

That in fact a quality in the air, is evident from innumerable experiments; and this property is inseparable from it. A bladder full blown being squeezed in the hand, the included air may be sensibly per-ceived to refill the watch, so that upon ceasing to com-press it, (he cavities, t' impressions, which were nude in its lirtace, we immediately ex- panded again, and filled up.

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Alfo thin glifs bubbles, or bladders full of air, and exafily cloied, and put into the receiver of an air-pump, the air bciiip; < exhausted out of the receiver, the glafs bubbles fly in pieces by the force of the air included in them.

From these experiments, and many others, it appears, that the air we breathe near die lurfacc of the earth is compressed by its own weight into at least 1679 pits or the (pace it would pofels in v<CUO; and if the same air be condenld by art, the {pace it will occupy, when moll dilated, will bu j-. 505000 to 1, to that which it podcfil, when com-ncd; and Dr. Walli: suggests, dial we arc far from knowing [lie uimolt it is capable of.

Nur docs th'sspov. appear capable by any means to be ddroyed or J' annihilated; for Mr. Boyle ms-J- verj] oterimenis to ilifcover liow long air, brought to the jirtatcl: degree of expanſion. Be could reduce it to in h air-pump, would retain its temp, and could never obli-rve an; I fide alonuncing, altho' I tie air was clogged ibi' mofa with a weight that one would imirchowit fhould tuppontonc mi< hant.

It is, indeed, a wonderful property in air, that it should v capable of being J' Jniraited and extended infinitely; bui, as hath been laid, it does not appear, by ill the ntpenments ye: tucl, that there at any time 1 of itse.omprefiiriMior expanſion, buttlill I by the addition of a new weight, a U TM:ittract Fartlicri and byuktngri: e weight away, will exi:nd farther.

5. Air rarifies by (ire, and conuafo by cold.

The colder the air is, the icls spaci; it tak« up; and, on the contrary, the uarmtr the air is, it pofels the larger space; and fo co-luse and comprefion h:vc die fame ttreCts upon air; and lb cold and tomprtfiun keeps air with « in iher.

The fame holds of wanning and dinoinlling of weight, or heat and eoapanſion, which go hand ID hand.

And to the fimcebftio pner iKfore-mentbncl, and its being expanded by heat, it is owing, that air in-cloies in glass eflck, at a time when it is much con-densed, when the heat of U comes to expand by alar-ther degree of heat, frojucmly burfts the bottles.

6. Air iscr: ptefible by a weight of mercury, and ril'ci and rftorr stand upon a removal of the Came. This property III5 bern liitv.vi-july liicwn by wlut has been laid before, and et'pccially under the licit I uf elasticity;

wherefbre, having conli-ered the properties of air, 1 (ball uke noti:c of fame or" its opinrions and effects as t' die biifinels of vegetation.

Air, by being heavy and fluid, invert- the whole darth, and l' has all the bodies thereof with a great force, equal to what tin would fallen from the preflure of a column ur it' inches depth of mercury, or 1 feet of water; and conſtrains and binds them down with a force amounting, according to the computation of Mr. Pifthai, to .u^ pounds weight upon every square foot, or upward] of 10 pounds upon every f]iare iuth. Hence it prevents, e. g. the arterial vessels of plants and animals from being too much diltenJed by the impel: of the circulating juices, or by the diffie fottcof il. air is principally: sed in the blood of one, and ti, at the top of the other. For, The air pfeftls equitl; every wif, ai is confirmed in what vrc obli-rve of loft bwliei luftaining this preflure without any change of figure, and brittle bodtei without their br:iking.

Air It a principal] cause of the veget-ation of plants, an iofiance (1 which we have from Mr. R-., in the Phi-lofo; and I can laftionu of P'ettuce-iced, that was sown in the glafs-receiver of the air-pump, iviitli wa? exhausted and O: ved from all air, wlucl grew not at all in eight days time; w JL-reas fume of thit fanK Ford that was sown in die lame time in the open air, wai rifeu to the height of an inch and a half in that time, but the air being let into the empty receiver, the seed grew up to the height of two or three inches in the space of one week.

That 1) tena-n portion of air is aecllkry to preſerve die growing qua-ty of seeds is m:iifclt, from many re-pe;

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repeated experiments; by putting up feeds in glass bottles, and failing the bottles hermetically, and in fix R: ... i have! jlt ihdr growing quality; whereas part of the fame feed* which were kept in .bags, grew at the ftge of two yearsj therefore it fluiulti caution perfons nut to exclude cheairfro:

if they intend they fhouldgn Another inftance of the uiefulnrfs of die »ir in vgje- tation, is :<i: Sedum, which will pulh out roots widl-out earth and water, anil live for il'ven months: and ... if hung up in a rrom entirely lecurCTJ from frufti, will remain frefti for feme years, dinug!) they will ienfibly loft in their weight.

Air IA capable of penetrating die ;> ... poncy part^ of plants, and being ... ititrafed, D ... lacing hj'elf again.

The air operates alfo within the bowels ... ("the eardi, and by its facility pertrating through the pores ... afUub in th- ... of the cradices of the earth, ... id in die, difpelling all fuperfluous moisture, entering into the very pores and veins of the trees, plants, herbs, &c. early ... along with itdwrft ... contained either in tilclft, or lodged in the earth ... which falls or juices, are there ... according to the li-veri; figures or ... ;men- tions of ... ent ItrainiTi w vellEcu <*.< ... thefe feveral filuntis which grow upon the fame fpot of earth, which ... is impregnated with thefe files: and thence thofe varieties in taste and fize proceed, notwithstanding they all receive ... thcii nun ... from die fame ftock that is lodged in the ... rth.

The air alfo affects the branch*, leaves, aid Bowers of trees, plants, and herbs, entering and pertrating through them, and even n through tjir bark and lxxiy of the tree; and by the fame kind of facility it does, by its refreshing !>r«wes, moderate the iment- ... of die fun-beams, cooling, chearing, blowing, opening and extending ... I i he offspring of ...

The air fixes and indurates its aerial fid ... into the ... and top of vegetables: and as all the ajitations to nature I rocced from die contrariety of pant inlu- lading together, m thii, ;;rial anj liquid fiibilinccs being mixed, caufe this agitation and motion in veg- mapes, or, mote properly, it: ii all into i ferment (whether it be in the roots, or in the &i ...) and it ... oo-opo ... of the fun (which is the liird agent in vegetation) ... as liquids rife by fire to the top of the ... vessel.

This air, we find, pro ... in fev- eral bodies ... air welfels thereof ... of lungs: for the ai ... tained in them, fometimes contracting, and fometimes expanding, according as the heat is increased or di- ... he vessels, and rule ... tion of their juices,

which could ... in) up to tile top of a: ... containing ... luces a vibratory mouij: ... ; and particularly in plants, die do tlic ofti. ... recon- -tim<

mtnifhed, prcQetl Vm again by nirm -, flnd thus promotes a circul: ... excellent mastic s be oherwtfc cffriled.

Air, liiys the Ieuned Dr. Hates, is a line elastic fluid, trith puticka of vtT) ilit:L'rtmnaures floaiL ... by it uadminibly fined by the great Aui ... of i be the breath or life of vegetables as well as gnimuls, -without which tJicy can no more live noi- thrive ihan animals can.

As a proof of the great quantities of ;iir ir'veg'. I he reters to die i!

-lie Staoes, where he iij-f, in the i ... the great quantify of air VIM \ ... which was continually ... that they are ... the.tjibet} whkh ... bews whatplcnn ... i in by vegetabSei, and i> perlpited of; ... in Apple braiuli. Apricot br... itber piano, ... And Dr. Grew fus obfrvred, thai tlic porci are Ib he tnlll^ of fotm jil.titi, :ts in the i ... of thick walknijT hlc to without a gbfa i but with a (jlift, tlv

. K pins, the skin . aiki ballot'the hand, jjl the leaves of Pinrs, thry fire lilcenili; ihrough a

A I R

g ... a verj- elegant shew, flindin^ atinofc eiaftly in tank and hie the ... igh the length or'the ...

Wh ... ice it may be though; probable, that [e air fredy cuter] plants, ... only with the principal rand of nourishment by the roots, but also close li the furface of didr trunks and it: ... especially nfnigh::, when they ... f changed f rum a p'rfpirmg, to a ftrongly ... >tag(liiie.

Dr. Hales likewifi tells us, that ... i nil thofc experimen- : ;'u: li(- cried to this pui ... he found diat the air entered very slowly at the bark of ... >-mgthoots and branches, but il nwcli inure freely drough old bark ... and that in different kinds of trees it had different degrees of move or left free ... entrance.

And likewise, that there is fome air body ... in an cliffic and unciutic lltv. ... mixed with the earth (what ... niay well ... iter dierooi. with the ... jutLilimniit., h^ found by feveral experim- icats, wiich he givei in the befrce- nstitutioned treatise.

The excellent Mr. Boyle, in making many exyeu- ments on die air, among other discoveries fouill, that a good quantity of air w is pro i . v t pe tab k s, by putting Grapes, l'Huibs, Goafberrii, Pealc, and feveral other sorts of ... ruirtud gr-. ... into exa- lulted and unexhausted receivers, where they continued for feveral days ... urig great uuantities <jf ail'.

This ... the curious Dr. Hales upon further: re- fearches to find out what proportion of air he could obtain out of the different vegetables, in which ii was ludged anti incorpomied, which lit- performed by di- vers chymical experiments, ... i he gives in many inlbrices ii!! in treatise ... the analyli of the air, plain], showing in wlmt manner he pertirmed them, and tni ... events of them.

That from half a cubic inch, or 1 ^ j grains of heart of Oah, irefli cm from a gro^Ming tree, ... were 108 cubic inches of nir g^r- rated, which is A t quantity equal to j iti times the i bulk of the pisee of Oaki diat the weight of k was above ... grains, one quarter part of the weight of 135 <vuus.

Ami !* adds, that he ... >yk the likr quantity pf dun (haw; ... iame piece of Oa hr>jrs, in which time they evaporated 44 grains of ... L'LL'CJ which 44 grains deducted from 135 grains, there re- mains 91 grains for the solid part of the Oa: ... ditii jo grains will ... it- one third uf the weigi of the folid! [Airt of the Oak.

He gives another experimenrof Indian Wheat, which grew in hii <v.n garden, that he took %\$\$ grainj of tr vih. ... it was ... coine to its fui! 0 ... that there wae generated from it 270 cubic i* hes of air; tlic weight of wl; ... air was 77 graini, viz, one fourth of theweigi. ... of the Wheat.

And agnin, that a coltC inth, or j i j grains of l'cuft ^cnCTAied 396 cubic inches of iit, or ... j grains, i.e. iomthing'more than one third of die weight of the Peafc.

Ar.d again, diat from one ounce, or 437 grains of Mufwrl (ted, a7ocu!iit: indies of air were generated, or 77 grains, which is more than one i mh part of the ounrc v night.

I le ii ... adds, ... that there is a ... plenty ... air incorporated into the substance of vegetables, ... iich, by the action of ... fermentation, is rooted into it, i-Utic tb'e, ... is evident from these experiments ... ^ng- On ti. ... day i March, he pourei 43 cubic ... ndxi of ale upon the tin, which had been there for Ti fer- ment 34 hours before into .1 bolt lies ... and from that time ID he gth of ... one, it generated 629 cubic inches < ... air, with a very unequal progression, more or less, as the weather was warm, cool, or ... r cold; and fometimes, upon a change from w ... re cold; and fometimes, in all 23 cubic inches.

From the 20 ... March to ... L- iftiti of April, 11 cu- bic inches of ... Rain, with ... re- cubic inches of a ... i and then water, generated 411 ... r three tokl

... HI 10 the ifth of May, it uenerpte! ... after which, the 9th of

F June,

June, it continued in a reforcing ftate, fo as to reforb 13 cubic inches: that there were at that feafon many hot days, with much thunder and lightning, which deftroys the elafticity of the ait: there were generated in all 489 cubic inches, of which 48 were abforbed. The liquor was at laft vapid.

On the 10th of Auguft, 26 cubic inches of Apples being mafhed, they generated 986 cubic inches of air in 13 days time, which is a quantity equal to 48 times their bulk*, after which they reformed a quantity equal to their bulk, in three or four days, notwithstanding the weather was then very hot; after which time they were ftationary for many days, neither generating nor abforbing.

From which before-mentioned experiments on Raifins and ale, the ingenious author concludes, that wine and ale do not turn vapid in warm weather by imbibing the air, but by fermenting and generating too much; by which means they are deprived of their enlivening principle the air: for which reafon, thefe liquors are beft preferved in cool cellars, whereby this adtive invigorating principle is kept within due bounds; which when they exceed, wines are upon the fret, and are in danger of being fpoiled.

Upon thefe, and many other experiments, which the learned author has given in his aforefaid treatife, he obferves, that this air which arifes in fo great quantities from fermenting and diftblving vegetables, is true permanent air, which is certain, by its continuing in the fame expanded and elaftic ftate for many weeks and months; which expanded watery vapours will not "do, but foon condense when cold.

Upon the whole, he concludes, that air abounds in vegetable fubftances, and bears a confiderable part in them: and if all the parts of matter were only endowed with a ftrongly attrafting power, all nature would then immediately become one unadtive cohering lump.

Wherefore it was abfolutely neceffary, in order to the aduating this vaft mafs of attrafting matter, that there fhould be every where mixed with it a due proportion of ftrongly-repelling elaftic particles, wjiich might enliven the whole maif by the inceffant adtion between them and the attrafting particles.

And fince thefe elaftic particles are continually in great abundance reduced by the power of the ftrong attrafters, from an elaftic to a fixed ftate, it was therefore neceffary that thefe particles fhould be endowed with a property of refuming their elaftic ftate, whenever they were difengaged from that mafs in which they were fixed, that thereby this beautiful frame of things might be maintained in a continual round of the production and diffolution of vegetables as well as animal bodies.

The air is very inftrumental in the production and growth of vegetables, both by invigorating their feveral juices, while in an elaftic adtive ftate, and alfo by greatly contributing in a fixed ftate, to the union and firm connexion of the feveral conflituent parts of thofe bodies, viz. their water, fire, fait, and earth.

To conclude, by reafon of thofe properties of the air before-mentioned, it is very ferviceable to vegetables, in that it blows up and breaks open the clouds, thofe treafures of rain, which fertilize the vegetable kind.

The air alfo helps to waft or difperfe thofe foggy humid vapours which arife from the earth, and would ©therwiie ftagnate, and poifon the whole face of the earth.

The air, by the affiftance of the fun, affumes and fublimate thofe vapours into die upper regions; and thefe foggy humid vapours are, by this fublimation; and the coercive power of the air and fun, rarefied and made of fecond ufe in vegetaticg.

And on the contrary, to the benign quality of the air, which is fo many ways fubfervient jo vegetables, it is alfo fometimes, and upon fome accounts, injurious and pernicious to them; not only to the ligneous, herbaceous, and flowery parts abc ve, but alfo to the roots and fibres below: for in th:at the air penetrates

into the earth, it is eafy to be concluded, that a dry, hufky, fcorching air, may be very prejudicial to the tender fibres of new planted trees.

It may be likewife fuppofed, that all bodies of earth are more or lefs capable of imbibing the fluid air, and of attrafting fuch falts as either the air can give, Or the earth is capable of receiving.

A I Z O O N. Sempervive.

This name Dr. Linnaeus has given to a plant near of kin to the Ficoidea, which has been called Ficoidea, by fome modern botanifts.

The CHARACTERS are,

It hath a permanent empalement of one leaf which is cut into five acute fegments at the top: there are no petals in the flower, but the five-cornered germen refts on the empakment, fupporting five ftyles^ which are crowned with fimplefigma\ thefe are attended by many hairy ftamina* which are infer ted into the empalement, and are crowned with fimple fummits.. The germen afterward becomes a /welling five-cornered capfule, having five cells, in which are lodged many roundifh feeds.*

This genus of plants is by Dr. Linnaeus ranged in the fifth divifion of his twelfth clafs, entitled Icofandria Pentagynia, the flowers of this clafs having more than nineteen ftamina, and in this divifion they have five ftyles.

The SPECIES are,

1. AIZOON (*Canarimfe*) foliis cuneiformi-ovatis floribus feffilibus. Hort. Upfal. 127. *Sempervive with oval wedge-jhaped leaves^ and flowers without foot-ftalks.* Ficoidea procumbens portulacae folio. Niffol. Adt. Par. 1711.
2. AIZOON (*Hifpanicum*) foliis lanceolatis floribus feffilibus. Lin. Sp. Plant. 488/ *Sempervive with fpear-jhaped leaves and flowers^ having no foot-ftalks.* Ficoidea Hifpanica annua folio longiore. Hort. Elth. 143.
3. AIZOON (*Paniculatum*) foliis lanceolatis floribus paniculatis. Lin. Sp. Pl. 448. *Sempervive with fpear-jhaped leaves and flowers growing in panicles.* Aizoon foliis lanceolatis fubtus hirtutis. Prod. Leyd. 221.

As we have no Englifh names for thefe plants*-fo I have adopted this of Sempervive, which hath been applied to the Aloe and Seduril, both which have been alfo titled Aizoon and Sempervivum.

The firft fort is a native of the Canary Iflands: this is an annual plant, which muft be raifed on a moderate hot-bed in the fpring *, and when the plants are fit to tranfplant, they fhould be carefully taken up, and planted each into a finall pot filled with frefh light earth, and plunged into another moderate hot-bed, obferving to fhade them from the fun until they have taken frefti root; after which they muft be hardened by degrees to bear the open air, into which they fhould be removed in June, placing them in a fheltered fituation, where they will flower, and ripen their feeds in September, foon after which the plants will periffh.

The fecond fort grows naturally in-Spain; this is alfo an annual plant, whole branches trail on the ground; the flowers have no beauty, fo thefe plants are only preferved by thofe who are curious in colledting rare plants for the fake of variety.

The third fort grows naturally at the Cape of Good Hope, from whence the feeds were brought to Europe, This is alfo of humble growth, and periffhes foon after the feeds are ripe.

Thefe may be propagated in the fame manner as the firft, and when the plants have acquired ftrength, they may be planted in the full ground *, but they require a poor fandy foil, for in rich ground they will grow very luxuriant in branches, but will not flower till late in the feafon, fo rarely perfed their feeds; but when they are planted in dry fand, or lime rubbifh, they will be more productive of flowers, and lefs vigorous in their branches.

A L A is the hollow of a ftalk, which either thctaf, or the pedicle of the leaf, makes with the ftalk or branches; or it is that hollow finus placed between the ftalk or branch and leaf, from whence a new off-fpring is wont to put forth, which the French call,

Aiffelles des Plantes. Sometimes it is used for leaves which consist of many lobes or wings.

Alae is also used to signify those petals of papilionaceous flowers placed between the Vexillum and the Carina, which the French call, *Les Ailes des Fkurselegumineuses*.

Alae is also used for those extreme (tender membranaceous parts of certain feeds; as is the Bignonia Plumeria, the fruit of the Maple, &c. which the French call *Semences ailes*. Again,

Alae is used for those foliaceous membranes which run the whole length of the stem; whence it is called, *Caulis alatus*, a winged stalk; in French, *Tige ailee*: but modern writers have styled *alae foliis decurrentibus*, or running leaves, because these alae or wings are connected with the leaves.

A L A B A S T R A, are those green herbaceous leaves that encompass flowers. Jungius explains Alabastrum to be the globe, or roundish bud, that is but just peeping out.

A L A T E R N O I D E S. See PHYUCA, CLUTIA, and CEANOTHUS.

A L A T E R N U S [called *EAαrpι], as though of iW-i, an Olive, and αrpTv&j an Ilex], or evergreen Privet.

The CHARACTERS are,

It hath male and female flowers in different plants in some species, and in others both sorts of flowers on the same. The male flowers are composed of an empalement of one leaf which is funnel-shaped and cut into five segments at their brim -, to the sides of the empalement are fixed five small petals; at the base of these petals are fastened so many stamina which are crowned with round funnels. The female flowers have a great resemblance to the male, but have no stamina. In the center is placed the germen, supporting a trifid styck crowned by a round stigma. The germen afterward becomes a soft round berry* containing three seeds.*

Dr. Linnaeus has joined this genus to the Rhamnus, to which he has also added the Frangula, Paliurus, and Zizyphus, and ranges them in his fifth class of plants, entitled Pentandria Monogynia.

THE SPECIES ARE

1. ALATERNUS (*Phylla*) foliis ovatis marginibus crenatis glabris. Common Alaternus with smooth leaves indented on their edges. Alaternus, i Clus. Hist. 56.
2. ALATERNUS (*Glabra*) foliis subcordatis ferratis glabris. Alaternus with heart-shaped smooth leaves which are fawed on their edges. Alaternus minore folio. Tourn. Inf. 595.
3. ALATERNUS (*Angujifolia*) foliis lanceolatis profunde ferratis glabris. Alaternus with smooth spear-shaped leaves which are deeply fawed. Alaternus monij>elica foliis profundius incis. H. R. Par.
4. ALATERNUS (*Latifolia*) foliis ovato-lanceolatis integerrimis glabris.* Alaternus with smooth oval spear-shaped leaves* which are entire. Alaternus Hispanica latifolia. Tourn. Inf. 566.

The varieties of these plants are, the first sort with variegated leaves, which is commonly called Bloatched Phillyrea by the nursery gardeners. And the third sort with leaves striped with white, and another with yellow; these are known by the Silver and Gold striped Alaternus: but as these are accidental Varieties, I have omitted placing them among the number of species.

The common, distinction of this genus from the Phillyrea, is in the position of their leaves, which in the plants of this are placed alternately on the branches, whereas those of Phillyrea are placed by pairs opposite, this is obvious at all seasons, but there are more essential differences in their characters, as will be explained under the article Phillyrea. *

The first sort has been long cultivated in the English gardens, but the plain sort is now uncommon here; the bloatched-leaved sort has been generally cultivated in the nurseries, and the other has been almost totally neglected.

These plants were much more in request formerly than they are at present, when they were planted

against walls in court-yards to cover them, as also to form evergreen hedges in gardens, for which purpose these were improper, for their branches illot very vigorously, and being very pliant, they are frequently displaced by the wind and in winter, when much snow falls in still weather, the weight of that which lodges on the hedges, frequently breaks them down: add to this the trouble of keeping them in order, which cannot be effected with less than three times clipping in a season, which is not only expensive, but also occasions a great litter in a garden: these inconveniences have justly brought these hedges into disesteem.

The third sort with silver-striped leaves, was also in great request some years ago, for planting against out-houses, and other buildings, to hide the brick-work, but as these required to be often clipped, and their branches frequently wanting to be fattened up to the wall, which was troublesome and expensive, and this sort of wall hedges being great harbour for vermin, there has been of late but little demand for these plants. The sort with gold-striped leaves is pretty rare in the English gardens, and is not so hardy as that with silver stripes, so that in severe winters they are often killed. But the taste for these variegated plants is almost lost in England, there being few persons now, who do not prefer the plain green leaves to those which are striped.

The second sort was formerly in the English gardens, in much greater plenty than at present. This was generally called Claftrus, or Staff-tree. The leaves of this sort are placed at greater distances than those of the first, so that their branches appear thinly covered with them, which may have occasioned their being disesteemed. The leaves of this are shorter than those of the first sort, and are rounded at their foot-stalks somewhat like a heart-shaped leaf, the edges are also fawed.

The third sort has been an old inhabitant in some gardens, but was not much propagated till of late years, the leaves of this are much longer and narrower than those of either of the other sorts, and the ferratures on their edges are much deeper; this shoots its branches more erect, and forms an handsome bush than any of the other, and is equally hardy, so may be allowed to have a place in all plantations of Evergreens. This grows naturally in the south of France, where the berries are gathered, and sold by the name of Avignon berries, for the use of painters, &c. for making a yellow pigment.

These sorts are by some supposed to be only varieties and not distinct species; but from many repeated trials, in raising them from seeds, I can affirm they do not vary, the seeds constantly producing the same species as they were taken from.

The second sort grows naturally about Turin, from whence I have been supplied with the seeds.

All these sorts are easily propagated by laying their branches down, as is practised for many other trees. The best time for this is in the autumn, and if properly performed, the layers will have made good roots by the autumn following, when they may be cut off from the old stock, and planted either into the nursery, or in the places where they are designed to remain. When they are planted in a nursery, they should not remain there longer than a year or two, for as they shoot their roots to a great distance on every side, so they cannot be removed after two or three years growth, without cutting off great part of them, which is very hurtful to the plants, and will greatly retard their growth, if they survive their removal; but they are frequently killed by transplanting, when they have stood long in a place. They may be transplanted either in the autumn or the spring, but in dry and the autumn planting is best, whereas in moist ground the spring is to be preferred.

The plain sorts may also be propagated by sowing their berries, which they produce in great plenty, but the birds are greedy devourers of them, so that unless the berries are guarded from them, they will soon be

bedevoured when they begin to ripen. The plants which arise from seeds, always grow more erect than those which are propagated by layers, for are fitter for large plantations, as they may be trained up to stems, and formed more like trees, whereas the layers are apt to extend their lower branches, which retards their upright growth, and renders them more like shrubs. They will grow to the height of eighteen or twenty feet, if their upright shoots are encouraged; but to keep their heads from being broken by wind or snow, those branches which shoot irregular should be shortened, which will cause their heads to be closer, and not in so much danger.

All the sorts thrive best in a dry, gravelly, or sandy soil, for in rich ground they are often injured by frost, when the winters are severe, but in rocky dry land they are seldom injured: and if in very hard frost their leaves are killed, yet the branches will remain unhurt, and will put out new leaves in the spring.

A L B U & A, Bastard Star of Bethlehem.

The CHARACTERS are,

The flower has no empalement, it has six oblong oval petals, which are permanent, the three outer spread open, and the three inner are connected) it hath six three-cornered stamina the length of the corolla, three of which are fertile, crowned with moveable summits, the other three, which are barren, have no summits. The nectarium is situated near the base of the three fertile stamina, it has an oblong three-cornered germen, with a broad triangular styk, crowned by a pyramidal three-cornered stigma, the capsule is three-cornered, having three cells filled with plain seeds.

This genus is ranged in the first section of Linnaeus's sixth class of plants, the flower having six stamina and one style.

The SPECIES are,

1. ALBUCA (*Major*) foliis lanceolatis. Lin. Sp. 438. *Star-flower with spear-shaped leaves.* Ornithogalum alutivirens. Indicum. Corn. Canad.

2. ALBUCA (*Minor*) foliis fubulatis. Lin. Sp. 438. *Star-flower with awl-shaped leaves.* Ornithogalum Africanum, flore viridi altero alteri innato. Herm. Parad. 209. *African Star-flower with a greenish yellow flower.* These plants have been generally ranged under the genus of Ornithogalum, but as their flowers differ in their form from the other species of that genus, Dr. Linnaeus has constituted this genus for them. The first sort grows naturally in Canada, and in some other parts of North America; the root is bulbous, from which shoot up eight or ten long narrow spear-shaped leaves. In the center of these arise a flower-stem a foot or more in height, garnished with a loose spike (or thyrse) of greenish yellow flowers, each have a long pedunculus, which turns downward, having pretty large spikes at their base, which are erect, and end in sharp points. After the flower is past, the germen swells to a three-cornered capsule* having three cells filled with flat seeds.

The second sort grows naturally at the Cape of Good Hope; this hath also a pretty large bulbous root, from which arise four or five narrow awl-shaped leaves, of a deep green colour: the flower-stem which comes from the center of the root, is naked, and rarely rises more than eight or nine inches high, having five or six greenish yellow flowers growing almost in form of an umbel at the top: these are rarely succeeded by seeds in England.

The Canada Albuca is hardy, for the roots may be planted about four inches deep in a border of light earth, where they will thrive, and produce their flowers late in the summer; but as the seeds rarely ripen in England, and the bulbs do not put out many offsets, the plants are not common in this country.

The African sort I raised from seed, a few years past; this generally flowers twice a year, the first time in March or April, and again in July or August, but has not produced any seeds. If the roots of this sort are kept in pots, filled with light earth, and sheltered under a hot-bed frame in winter, they will thrive and produce flowers, but the best method is to have

a border in the front of a green-house, or stove, where the roots of most of the bulbous flowers may be planted in the full ground, and screened in winter from frost. In such situations they thrive much better, and flower stronger, than when kept in pots.

ALCEA. Lin. Gen. 750. The Hollyhock.

The CHARACTERS are,

The flower hath a double empalement, of which one is permanent. The outer one is spread open, and cut at the top into six segments, the inner is larger, and flightly cut into five. The flower is composed of five petals, which coalesce at their base, and spread open at the top in form of a rose. In the center is placed the round germen, supporting a short cylindrical style, crowned with numerous stigma, which is attended by many stamina joined below to the pentagonal column, and spread open at top, these are crowned with kidney-shaped summits: after the flower is past, the germen becomes a round, depressed, articulated capsule, homing many cells, in each of which is lodged one compressed kidney-shaped seed.

This genus is ranged by Dr. Linnaeus in his sixteenth class of plants, entitled Monadelphica Polyandria: in this class the stamina and style coalesce and form a fore of column in the center of the flower, from whence Dr. Van Royen has given to this class the title of Columnifera, and in this division there are a great number of stamina.

The SPECIES are,

ALCEA (*Rosea*) foliis finuatis angulosis. Hort. Cliff. 348. *Hollyhock with angular finuated leaves.* Malva rosea folio fubrotundo. C. B. P. 315.

2. ALCEA (*Ficifolia*) foliis palmatis. Hort. Cliff. 348. *Hollyhock with handed leaves.* Malva rosea folio ficusj C. B. P. 315.

These are distinct species, whose difference in the form of their leaves always continues. The leaves of the first sort are roundish, and cut at their extremity into angles, whereas those of the second are deeply cut into six or seven segments, so as to resemble a hand.

The various colours of their flowers being accidental, as also the double flowers being only varieties which have risen from culture, are not by botanists deemed distinct species. I have not enumerated them here, therefore shall only mention the various colours which are commonly observed in their flowers, which are white, pale, red, deep red, blackish red, purple, yellow, and flesh colour. Besides these, I many years ago saw some plants with variegated flowers, in the garden of the late Lord Burlington, in London, raised from seeds which came from China.

Although these varieties of double Hollyhocks are not constant, yet where the seeds are carefully saved from the most double flowers, the greatest number of the plants will arise nearly the same, as the plants from which they were taken, both as to their colour and the fulness of their flowers, provided no plants with single or bad coloured flowers are permitted to grow near them. Therefore so soon as any such appear, they should be removed from the good ones, that their farina may not spread into the other flowers, which would cause them to degenerate.

The first species grows naturally in China, from whence I have often received the seeds. The second sort I have received from Itria, where it was gathered in the fields, but these seeds produced single red flowers only; whereas from some seeds of this sort, which were given me by the late Charles Du Bois, Esq; of Mitcham, in 1726, which he procured from Madras, I raised many double flowers of several colours.

These plants, although natives of warm countries, yet are hardy enough to thrive in the open air in England, and have for many years been some of the greatest ornaments in the garden, toward the latter part of summer; but since they have become very common, have not been so much regarded as they deserve, partly from their growing too large for fix garden, and their requiring tall stakes to secure them from being broken by strong winds. But in large gardens,

gardens, where they are properly disposed, they make a fine appearance; for as their spikes of flowers grow very tall, there will be a succession of them on the same stems, more than two months; the flowers on the lower part of the spike appearing in July, and as their stalks advance, new flowers are produced till near the end of September. When the plants are planted in good ground, their stalks often rise to the height of eight or nine feet, so that near six feet of each will be garnished with flowers; which when double, and of good colours, will make a fine appearance, especially if the various colours are properly intermixed.

They are propagated by seeds, which, as hath been already observed, should be carefully saved from those plants whose flowers are the most double, and of the best colours. If these are preferred in their capsules until spring, the seeds will be better, provided they are gathered very dry, and care be taken that no damp comes to them in winter, which will cause their covers to be mouldy, and thereby spoil the seeds.

The seeds should be sown on a bed of light earth, about the middle of April, which must be covered about half an inch deep, with the same light earth; some persons sow them in shallow drills, and others scatter the seeds thinly over the whole bed. When they are sown in the former method, the plants generally come up thick, so will require to be transplanted sooner than those which are sown in the latter. By the first, the seeds may be more equally covered, and kept clean with less trouble, because the ground between the drills may be hoed. When the plants have put out six or eight leaves, they should be transplanted into nursery-beds, at a foot distance from each other, observing to water them until they have taken good root; after which they will require no farther care, but to keep them clean from weeds till October, when they should be transplanted where they are to remain.

Some persons let their plants remain a year longer in the nursery-beds to see their flowers, before they remove them to the flower-garden, but when this is intended, the plants should be planted at a greater distance in the nursery-beds, otherwise they will not have room to grow. However, I have always chosen to remove my plants the first autumn, for young plants more freely grow, than those which are older, and if the seeds are carefully saved, there will not be one in ten of the plants come single or of bad colours.

ALCHEMILLA, Ladies Mantle.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is spread open at the brim and cut into eight figments. There are no petals to the flower, but the centre of the empalement is occupied by the oval germen* into which is inserted a long style, crowned with a globular stigma: this is attended by four erect stamina resting on the brim of the empalement and crowned with roundish funtits -, the germen afterwards turns to a single compressed seed.*

Dr. Linnaeus ranges this genus in the first section of his fourth class of plants, entitled Tetrandria monogynia, the flowers having four stamina and one style.

The SPECIES are,

1. *ALCHEMILLA (Vulgaris) foliis lobatis ferratis, segmentis involucri acuto. The common Ladies Mantle. G B. P. 319.*
2. *ALCHEMILLA foliis lobatis fericeis acutis ferratis, segmentis involucri subrotundis. Small silvery Ladies Mantle with lobed leaves sharply ferrated, and the figments of the involucrium cut into roundish figments. Alchemilla Alpina pubescens minor, Tourn. Inf. R. H., 508.*
3. *ALCHEMILLA (Alpina) foliis digitatis ferratis? Flor. Lapp. 61. Silvery Alpine Ladies Mantle with banded leaves. Alchemilla perennis incana argentea five ferice*, fatinum provocans. Mor. Hist. 2. p. 195.*
4. *ALCHEMILLA (Pentaphylla) foliis quinatis multifidis f. Shris. Lin. Sp. Plant. 123. Smooth five-leaved Ladies Mantle* cut into many figments. Alchemilla Alpina*

pentaplyllea minima lobis fimbriatis. Bocc. Mufc. 1. p. 18.

The first sort grows naturally in moist meadows in several parts of England, but is not very common near London: the roots are composed of many thick fibres, which spread greatly when they are in a proper soil; the leaves rise immediately from the root, sustained by long foot-stalks; they are roundish, and scalloped round the borders into seven or eight IOIKS, shaped somewhat like the Ladies scalloped Mantles, from whence it had its name. The flower-stems arise between the leaves about a foot high, which divide into many branches, and are at each joint garnished with one small leaf, shaped like those below; the flowers are composed of an herbaceous empalement, in the center of which is the style attended by four stamina, crowned with yellow funtits; so that the only beauty of this plant is in the leaves, which are used in medicine, and are esteemed to be vulnerary, drying and binding, and of great force to stop inward bleeding.

The second sort is much smaller than the first, the leaves are much whiter and appear silky; the flower-stems do not branch out so much, nor are the flowers produced in so large clusters: their empalement is broader, and the segments more obtuse than those of the first sort.

The third sort grows naturally on the mountains in Yorkshire, Westmoreland, and Cumberland, generally upon moist boggy places. It is also a native of Sweden and Denmark, the Alps, and other cold parts of Europe, and is admitted into gardens for the sake of variety. The leaves of this sort are very white, and deeply cut into five parts like a hand; the flower-stems seldom rise more than six inches high, nor do the flowers make a better appearance than the other sorts.

The fourth sort grows naturally in Sweden, Lapland, and other cold countries, so is only to be found in some few curious botanic gardens in this country. These are all abiding plants, which have perennial roots and annual stalks, which perish in autumn. They may be propagated by parting their roots; the best time for doing this is in the autumn, that their roots may be established before the drying winds of the spring come on. They should have a moist soil and a shady situation, otherwise they will not thrive in the southern parts of England. When they are propagated by seeds, they should be sown in the autumn, for when they are sown in the spring, they seldom grow the first year. They should be sown on a shady moist border, and when the plants come up, they will require no other care but to be kept clean from weeds.

A L D E R-TREE. See ALNUS.

ALETRIS.

The CHARACTERS are,

The flower has no empalement, but hath one oblong oval petal, cut into six figments at the brim and are permanent \ it hath six awl-shaped stamina the length of the corolla, whose base are inserted in the figments \ these are crowned by oblong erect funtits, and an oval germen supporting an awl-shaped style the length of the stamina, crowned by a trifid stigma. The germen afterward becomes an oval three-cornered capsule with three cells, filled with angular seeds.*

This genus of plants is ranged in Linnaeus's first section of his sixth class, the flowers having six stamina and one style.

The SPECIES are,

1. *ALETRIS (Farinosa) acaulis, foliis lanceolatis membranaceis, floribus alternis. Lin. Sp. 456. Aletris without stalks, spear-shaped membranaceous leaves, and flowers placed alternate. Hyacinthus caule nodo, foliis linguiformibus acuminatis dentatis. Flor. Virg. 38.*
2. *ALETRIS (Capers) acaulis, foliis lanceolatis undulatis, spica ovata floribus nutantibus. Lin. Sp. 456. Aletris without stalks, waved spear-shaped leaves, and an oval spike of alternate flowers.*

3. ALETRIS (*Hyacinthoides*) acaulis, foliis lanceolatis carnofis, floribus geminatis. Lin. Sp. 456. *Aletris without stalks, fiejhy fpear-Jhaped leaves* and flowers fet by pairs.*
4. ALETRIS (*Zeylanica*) acaulis, foliis lanceolatis planis ereftis radicalibus. *Aletris without stalks, and plain, fpear-Jhaped, ere fit leaves rifing from the root.*
5. ALETRIS (*Fragrans*) caulefcens, foliis lanceolatis amplexicaulibus. *Stalky Aletris, with fpear-Jhaped leaves embracing it.* Aloe Africana arborefcens, floribus albis fragrantiffimis. Hort. Amft. 2. tab. 4.

The firft fort grows naturally in North America *, it hath a tuberoie root, from which arife feveral fpear-Jhaped leaves, and a naked ftalk fupporting a fpike of flowers placed alternate, of a greenilh white colour 5 thefe appear in June, but are rarely fucceeded by feeds in England.

This plant is tolerably hardy, fo may be preferred thro' the winter, if flickered under a hot-bed frame -, but as the feeds do not ripen here, and the roots increafe but (lowly, the plants are at prefent rare in England.

The fecond fort grows naturally at the Cape of Good Hope. This is a low plant, feldom rifing more than a foot high -, the leaves are fpear-Jhaped and undulated *, the foot-ftalks of the flower arife from the root, which fuftain feveral white nodding flowers, in fhape fomewhat like thofe of the Hyacinth,

The roots of this fort muft be planted in pots filled with light earth, that they may be (heltered in a dry airy glafs-cafe in winter, being too tender to thrive in the open air in England *, therefore the pots fhould be removed into fhelter in Oftober, and during the winter fealbn, they fhould be fparingly watered. In May they fhould be placed abroad in a Ihehered fituation, and in warm weather muft be frequently refrefhed with water; with this management the plants will flower; but as they do not perfect their feeds here, nor do they increafe faft by roots, the plants are fcarce in England.

The third fort has been long preferred in the Englifh gardens, and has been known by the title of Guinea Aloe *, this hath thick flefhy roots like thofe of the Flag Iris, which creep far where they have room. The leaves arife fingly from the root, and are near one foot and a half long, ftiff, waved, and have no foot-ftalks, arifing immediately from the root, as do alfo the foot-ftalks of the flowers, which when the rdots are ftrong, are often a foot and a half high, garnifhed great part of their height with clear white flowers, fhaped like thofe of the Hyacinth, whofe brims are cut into fix fegments, which are reflexed; thefe feldom continue in beauty more than two or three days, and are never fucceeded by feeds here.

The fourth fort is alfo pretty common, in gardens where there are conveniences for preferring exotic plants. This hath flefhy creeping roots, which multiply greatly. The whole plant feldom rifes more than fix inches high: the leaves are plain and upright, arifing without foot-ftalks *, but as I have never feen any flowers produced on the plants, I can give no defcription of them, but have followed Dr. Linnaeus in ranging it, though I have great reafon to believe he has not feen the flower * for he fuppofes this to be a variety of the third fort, which no perfon who is acquainted with the two plants can ever admit. This has been always known by the title of Ceylon Aloe. The fifth fort rifes with an herbaceous ftalk to the height of eight or ten feet high, having many joints, and is adorned toward the top with a head of fpear-ftiaped thin leaves, which are of a deep green colour and reflexed at* their ends, embracing the ftalkr with their bafe. The foot-ftalks of the flower arife from the center of the heads, which are generally two feet high, branching out on each fide, and fully garnifhed with white flowers, in fhape fomewhat like thofe of the third fort; but thefe open only in the evening, when they emit a moft fragrant ododr, but clofe again in the morning, and are not of long duration; but thefe are fomecimes fucceeded by feeds, which, al-

though fair to appearance, yet I could never raife any plants from them *, but they are eaflly propagated from the fide heads, which they put out after flowering.

The laft three forts are too tender to live through the winter in England, unlefs they are placed in a warm ftove *, nor will the third and fifth forts produce their flowers, if the plants are not plunged into a tan-bed; for although the plants may be preferred in a dry ftove, yet thofe make but little progrefs there; whereas when they are in a tan-bed, they will advance as much in one year as the other will in three or four; the leaves will alfo be much larger, and the whole plant much ftronger. The third fort will fometimes flower in a dry ftove, but the flower-ftems will be weak, and do not produce half fo many flowers as when in tan; but the fifth has not yet flowered here when kept in the dry ftove.

The third and fourth forts propagate very faft by their creeping roots, which fend up many heads; thefe may be cut off in June, and laid in the ftove for a fortnight, that the part wounded may be healed over; then they fhould be planted in fmall pots, filled with light fandy earth, and plunged into a moderate hot-bed of tanners bark, giving them but little water till they have put out good roots; then they muft be treated like other tender fucculent plants, never fetting them abroad in fummer.

The heads of the fifth fort when taken from theftems fhould be laid in the ftove a week, for their wounds to heal, then fhould be planted in pots and treated as the other.

A L E S A N D E R, or A L E X A N D E R. See SMYRNIUM.

ALKEKENG I. See PHYSALIS.

ALLELUJAH. See OXALIS.

ALLIARIA. See HfcsPEKis.

ALLIUM [of *Allo*, Gr. to avoid or fhun, becaufe many fhun the fmell of it], Garlick.

The CHARACTERS are,

The flowers are included in one common fpatha, which becomes dry the flower is composed of fix oblongs eteff, concave petals, and fix awl-Jhaped ftamina, which extend the length of the petals, and are crowned with oblong fummits. In the center is fituated a fljort three-cornered gtrmen, fupporting afingle ftyle, crowned by an acute ftigma. Thegermen afterward becomes an obtufe three-cornered capsule, opening into three parts, having three cells, filkd with roundijh feeds.

The SPECIES are,

1. ALLIUM (*Sativum*) caule planifolio bulbifero, bulbo compofito, ftaminibus tricupidatis. Hort. Upfal. 76. *Common manured Garlick.* Allium fativuiru C. B. P.
2. ALLIUM (*Scorodoprafum*) caule planifolio bulbifero, foliis crenulatis vaginis ancipitibus ftaminibus tricupidatis. Hort. Upfal. 77. *The Rocambole.* Allium iatium alterum five allioprafum caulis fummo circumlocuto. C. B. P. 73.
3. ALLIUM (*Urfinum*) fcapo nudo femicylindrico foliis lanceolatis petiolatis umbellâ faftigiata. Lin. Sp. Plant. 300. *Broad-leaved wild .GarTick, or Ramfons.* Allium fylveftre latifolium. C. B. P.
4. ALLIUM (*Lineare*) caule planifolio umbellifero umbellâ globosâ ftaminibus tricupidatis corolla duplo longioribus. Lin. Sp. Plant. 294. *Great round-beaded Garlick of the Holm IjJands.* Allium Holmenfe fphaerico capite. RaiiSyn. 370.
5. ALLIUM (*Moly*) fcapo nudo fubcylindrico foliis lanceolatis feffilibus umbellâ faftigiata. Hort. Upfal. 76. *The yellow Moly.* Allium latifolium luteum, Tourn. Inft. 384.
6. ALLIUM (*Magicum*) caule planifolio umbellifero ramulo bulbifero ftaminibus fimplicibus. Lin. Sp. Plant. 296. *Great broad-leaved Moly with Lily flowers.* Allium latifolium liliflorum. Tourn. Inft. 384.
7. ALLIUM (*Obliquum*) caule planifolio umbellifero (h-minibus filiforrnibus flore triplo longioribus foliis obliquis. Lin. Sp. Plant. 296. *Umbelliferous Garlick jw.h plain leaves, Jtender flaming which are three times the length*

- g of the flower and ebliki kaou. Allium radice tunicaei foliis pUnb linearitibus caulinis capitulo umbellato. Flar, Siber. i. p. 49.
- ff. Au.ivi [RaiMficm] caule bulbosifolio • umbel-lifro fbininiibitii iibulatis longiaribus un : • with globose bulb linearibus fubconvexis. Lin. Sp. 1^o. 296. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*
- q. ALLIUM (Ryfum) fcipo nudn Limb brevibus, petalis aralibui, 0 • annuus brevifolius, fo- liis lineariWB. Lin. Sp: 297. *Garlek with 1 xafoi mab. ' &rtuj fia/i, firnr faf-fttlii, aval pttais to tin fivwrl very port jlmma, arj iker titvtt. Allium fytvefrc five mo'y mil •, rok • -plo iiorc. Mag- nol. rj.*
- co. AiLUfM {jir&ieritum) cnule plinifotiti bislbii-- • v- tfiniri cereribus (pi •) • • • • • H. Sem. 127. *Bulb-bearing C • • • • • a tapir vagina, end fbn*
- it. AIXIUM (Cariuainm) cau> • • • • • trulbiftnite- minibus fiubht:-. I in. So. PIME 2yf. Bs* • • • • • gat • • • • • srJiKt/ • • • • • Allium mont.imim bicorne anguftifolkmi rtorL-ililuii • • • • • C. B. 1'
- 12. ALLIUM (Ryfum) caule bulbosifolio umbellato, foliis linearibus, capitulo umbellato. H. Sem. 127. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*
- 13. ALLIUM (Ryfum) caule bulbosifolio umbellato, foliis linearibus, capitulo umbellato. H. Sem. 127. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*
- 14. ALLRtDJ (Sfnc/tnn) icipo niifio ancipiti ir>Vh !-nciribus fubciti tonvexis lic'i'ibus :mbelli fubratundi Ibtiniibitii iubuhus, llici; • • • • • *Oruier Ahmm.in GBrink atot • • • • • AUium ntonanum Foliis Narcitl: msgta. C. B. P. 75.*
- 15. ALLIUM (Ryfum) caule bulbosifolio umbellato, foliis linearibus, capitulo umbellato. H. Sem. 127. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*
- iS. ;UL;OM • • • • • :ifijlio Uittb • • • • • ioribus hifirms Ibtinibus fiibulatis. Lin, Sp. Plant. 297. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*
- v-j. AI.1. i u M (Viiloratis 1 :; 1 m] aca, ft-i minibus lanL'oktis tornl! • • • • • *VmbtSfrmu Garlkk •xith ratxd UK- bck, • • • • • (16011 <A- turtia, and d- lipkzi hosts. AUiuu montamini Iwifolium ni;ii- iamm. C. B. 1'*
- LS. AI i • • • • • (Im) caule fubteretifoiio nmbe pedunculo; • • • • • taminibft tr- cupiiititii. Lin. Sp. 417. *Cfaiellifenms (j;rlkk with a half ttrptr lenf, ar.l thru imttttifimtMU. Alliiim moly latifoiimm, c>pi • • • • • 0, florc pufp:ii™,*
- 15. A: • • • • • (Canada) capo nuio tirKti, foliis lirtci- ribi • • • • • *Expulfo bulbosif. N. Am. In Canada Garlek with a bulb 1870r bulb, broad leaves, and heads bearing bulb. Allium bulbosifolium Virginianum. Boedi. Inii. Alt. 2. 246.*
- 20. ALLIUM (Ryfum) caule bulbosifolio umbellato, foliis linearibus, capitulo umbellato. H. Sem. 127. *Umbr-lifiroas Garllek isitb brff plain Ivavts, hng met-Jbapid Jluuiri, gbular tnxitih, andnartrji (snvex lean*

science of botany, may not ... r<iii[y] turn ro (60C: articles, therefore we thail itii'en their culture unJcr their fuchscritles.

The r • • • • • species are easily propagated by plaining ilic da • • • • • or small bulbs, in the fpring. 1. bctit about • • • • • or five inches distance from each other, keeping them clear from weeds. About the beginning of June, the leaves of the first fort should be tied in knots, to prevent their fpanning, or running to feed, which will greatly enrage the bulb. In the middle of July, the leaves will begin to wither and decay, at whidinms the; should be taken out of the ground, and ha • • • • • up in a dry room, to prevent their rotting, ami mai • • • • • be thus preserved for winter use.

The roots of the second fort may remain in the ground till the leaves are decayed, when their bulbs may be taken up and dried, to be preserved for use during the winter season; but some of the roots may be at the same time planted again for the succeeding year; for this fort requires w • • • • • be planted in autumn, especially on dry ground, otherwise the bulbs will not be large.

The third fort was formerly in greater esteem than at present, it being rarely cultivated in gardens. It is found wild in much shady places in many parts of England; and may be cultivated by planting the roots in a moist shady border, at almost any time of the year; but the best season is in July, just as the green leaves are decaying.

The fourth fort grows naturally in the Hebrides, from whence it has been transplanted into several gardens, where it is preserved more for the sake of variety than for use.

The eleventh and thirteenth forts are very hardy, and may be removed in July or August, when their leaves begin to decay, and be rooted out of the ground.

The fifth fort was formerly preferred in gardens for the sake of its yellow flowers, but having a very strong garlic smell, it is now almost entirely rooted out of the garden.

The sixth fort is preferred by many persons in their gardens for the sake of variety, but as this is a very strong garlic, it is not so much preferred as the flower-ivort.

The ninth and twelfth forts are sometimes preferred to have a place in gardens for the sake of variety.

The seventh, eighth, and ninth forts grow naturally in Tartary and Siberia, from whence their seeds were first brought, and from thence some of the best gardens have been supplied with seeds; these are only preferred for the sake of variety.

The fourth, fifth, sixth, and seventh forts, have been planted in gardens for the sake of their flowers, but of late years most people have turned them out, to make room for better sorts. But the fourth multiplies so fast by itself, as to render it difficult to destroy them, when they have remained any time in a garden.

This produces large umbels of white flowers, sown in the month of April and May.

The nineteenth fort was brought from Virginia, and is preferred in some gardens for the sake of its flowers, but has no great beauty; it is very hardy, and will thrive in the open air very well, and is propagated by setting the bulbs, which are produced in plenty on the top of the stalk.

They are all of them very hardy, and will thrive in almost any situation, and are easily propagated either by their roots, or their seeds: if from the roots, the best time is in autumn, that they may take good root in the ground before the spring, which is necessary, in order to have them flower during the following summer. If they are propagated by seeds, they may be sown in any part of common earth, either in autumn, or after the seeds are ripe, or in the spring following, and will require no farther care, but to keep

keep them clear from weeds, in the following autumn, the plants may be transplanted into the borders where they are to remain for good.

The greatest part of these plants produce their flowers in May, June, and July.

The yellow Moly will grow about a foot high, and having some beauty in the flowers, is worthy of a place in such borders of the flower-garden, where few better things will thrive. These increase plentifully both by roots and feeds.

The sixth and seventeenth sorts grow upwards of two feet high, and when they are in flower, make a pretty appearance, and as they are not troublesome to keep, may be allowed a place in the borders of the flower-garden.

All the other sorts are equally hardy, and will grow in any soil or situation, but as they have little beauty, they are rarely preferred, except in botanic gardens for the sake of variety.

ALMOND-TREE. See AMYGDALUS.

ALMOND-DWARF. See PERSICA.

ALNUS. See BETULA.

ALNUS NIGRA BACCIFERA. See FRANGULA.

ALOE [Gr. ἄλκο].

The CHARACTERS are,

The flower is naked, having no empalement; // is of one leaf, having a long smooth tube, which is divided at the top into six parts, spreading open \ it hath six awl-shaped lamina, which are inserted at their base to the germen, and are extended the length of the tube, these are crowned with oblong summits \ in the center is situated the oval germen, supporting a five-angled style, which is of the same length with the flaming crown with a trifid stigma. The germen afterward becomes an oblong capsule, having three furrows, which is divided into three cells opening in three parts, and filled with angular seeds.

This genus of plants is by Dr. Linnaeus ranged in the first section of his sixth class, titled Hexandria monogynia, from the flowers having six lamina and one style.

The SPECIES are,

1. ALOE (*Mitriiformis*) floribus pedunculatis cernuis corymbosis sub-cylindricis. Lin. Sp. Plant. 319. i. e. *Aloe with dependent flowers, bowing foot-stalks which are ranged in a cylindrical corymbus.* Aloe Africana mitriiformis spinosa. Hort. Elth. 1. p. 21. Mitre-shaped Aloe.
2. ALOE (*Barbatenjis*) foliis dentatis erectis succulentibus fubulatis, floribus luteis in thyrso dependentibus. *Aloe with creft, succulent, awl-shaped leaves, and yellow flowers growing in a loofepike, hanging downward.* Aloe vulgaris. C. B. P. 386.
3. ALOE (*Arborefcens*) foliis amplexicaulis reflexis, margine dentatis, floribus cylindricis caule fruticosa. *Aloe with leaves embracing the stalks, which are reflexed and indented on their edges, flowers growing cylindrical, end affirubby stalk.* Aloe Africana caulefcens foliis glaucis caulem amplectantibus. H. Amft. Commonly called Sword Aloe.
4. ALOE (*Africana*) foliis latioribus amplexicaulis, margine & dorso spinosis, floribus spicatis, caule fruticosa. *Aloe with broader leaves embracing the stalks, whose edges and back are set with spines, flowers growing in spikes, and * Jhrubby stalk.* Aloe Africana caulefcens foliis minus glaucis dorfi parte supremâ spinosa, Com. Pnel. 68.
5. ALOE (*Difticba*) foliis latiflimis amplexicaulis maculatis, margine spinosis floribus umbellatis. *Aloe with very broad spotted leaves embracing the stalk, whose edges are set with spines and flowers, growing in an umbel.* Aloe Africana caulefcens foliis spinosis maculis ab utraque parte albicantibus notatis. Hort. Amftel. 2. p. 9. by some called the Sope Aloe, and by others Carolina Aloe.
6. ALOE (*Obfcura*) foliis latioribus amplexicaulis maculatis margine spinosis floribus spicatis. *Aloe with broad spotted leaves embracing the stalks, whose edge* have spines, and flowers growing in a pike.* Aloe Africana caulefcens foliis spinosis maculis ab utraque parte albicantibus obfcurioribus magis glaucis quam praecedens. Boerh. Ind.
7. ALOE (*Plicatilis*) foliis eniformibus inermis ancipitibus floribus laxè spicatis caule fruticosa. *Aloe with sword-shaped smooth leaves, standing two ways, the flowers growing in loofe spikes^ and a Jhrubby stalk.* Aloe Africana arborefcens montana non spinosa folio longiflimo plicatili flore rubro. Com. Hort. Amft. 2. p. 5.
8. ALOE (*Brevioribus*) foliis amplexicaulis utriusque spinosis, floribus spicatis. *Aloe with leaves embracing the stalks, which are prickly on every side, and flowers growing in spikes.* Aloe Africana caulefcens foliis glaucis breviflimis foliorum parte internâ & externâ nonnihil spinosa. Com. Prael. 71.
9. ALOE (*Variegata*) floribus pedunculatis cernuis racemosis prismaticis ore patulo aequali. Lin. Sp. Plant. 321. *Aloe with hanging floaters, having foot-stalks, and spreading equally at the brim.* Aloe Africana humilis foliis ex albo & viridi variegatis. Com. Prael. 79: commonly called Partridge-breast Aloe.
10. ALOE foliis erectis fubulatis radicatis undique inermis spinosis. Hort. Cliff. 131. *Aloe with erect awl-shaped leaves, set with soft spines on every part.* Aloe Africana humilis spinis inermibus & verrucosis obfita. Com. Prael. 77. commonly called Hedge-hog Aloe.
11. ALOE (*Vifcoja*) floribus feffilibus infundibuli formibus bilabiatis laciniis quinque revolutis fumma eredita. Lin. Sp. Plant. 322. *Aloe with funnel-shaped flowers, without foot-stalks, opening in two lips, and cut into five segments, which turn backward, and are erect at the top.* Aloe Africana eredita triangularis & triangulari folio vifcofo. Com. Prael. 82.
12. ALOE (*Spiralis*) floribus feffilibus ovatis crenatis segmentis interioribus conniventibus. Lin. Sp. Plant. 322. *Aloe with oval crenated flowers, without foot-stalks, and the interior segments closing together.* Aloe Africana eredita rotunda folio parvo & in acumen acutiffimum exeunte. Com. Prsel. 83.
13. ALOE (*Linguiforme*) feffilibus foliis lingui formibus maculatis floribus pedunculatis cernuis. *Aloe with dwarf tongue-shaped, spotted leaves, and hanging flowers, which have foot-stalks.* Aloe Africana flore rubro folio maculis albicantibus ab utraque parte notato. H. Amft. 2. p. 15. commonly called Tongue Aloe.
14. ALOE (*Margaritifera*) floribus feffilibus bilabiatis labio superiore erecto & inferiore patente. Lin. Sp. Plant. 322. *Aloe with Jewel flowers, gaping with two lips, the upper being erect, and the under spreading.* Aloe Africana folio in fummitate triangulari margaritifera flore subviridi. Com. Hort. Amft. 2. p. 19. commonly called large Pearl Aloe.
15. ALOE (*Vera*) foliis longiflimis & angustiffimis marginibus spinosis, floribus spicatis. *Aloe with very long narrow leaves, having spines on their hedges, and flowers growing in spikes.* Aloe Indise Orientalis, ferrata succotrina vera flore Phcenicio. Hort. Beaumont. The Succotrine Aloe.
16. ALOE (*Glauca*) caule brevis, foliis amplexicaulis bifariam versus spinis marginibus erectis floribus capitatis. *Aloe with ajhortstalk, leaves standing two ways, which embrace the stalk; the spines on the edges erect, and flowers growing in a head.* Aloe Africana caulefcens foliis glaucis brevioribus foliorum parte internâ & externâ nonnihil spinosa. Com. Prael. 71.
17. ALOE (*Arachnoidea*) feffilibus foliis brevioribus planis carnofis apice triquetris marginibus inermis spinosis. *Low Aloe with jhort, plain, fleshy leaves, triangular at their ends, and borders^ set with soft spines.* Aloe Africana humilis arachnoidea. Com. Prael. 72. commonly called Cobweb Aloe.
18. ALOE (*Herbacea*) foliis ovato-lanceolatis carnofis apice triquetris angulis inermis dentatis. Hort. Cliff. 131. *Aloe with oval, spear-shaped, fleshy leaves, having three angles at their extremities, which are indented and set with soft spines.* Aloe Africana minima atro-viridis spinis herbaceis numerosis ornata. Boerh. Ind. Alt. 2. p. 31.
19. ALOE (*Retufa*) floribus feffilibus triquetris bilabiatis labio inferiore revoluta. Lin. Sp. Plant. 322. *Aloe with flowers divided into three parts, the under lip being turned*

turxtJ back. Aloe Africans breviflora Cnallifitmoqik: folio floribus viridibus. Hvt. Anif. 2. p. 11. commonly called Cuthion Aloe.

lo- Ai.ot (Vartictifti) Ifflilis foliis carinatis utriusque verticillis bifariis vcrfis. Lfw AUt with l-ccl-fhaptil leaves, started as tvtry parti "»£ ffwidjtg IJIO frayi. Aloe Africans foliij Inngis coniugacil (upraeasri mar-garitifcris Bore rubro elegantissimo. Bocrh, Ind. Ak. p. 2. i^i. commonly called Pc.irl-tongue Aloe.

il. ALQS (Cer'mata) felElis foliis carinatis vrmicofis apice triquetris earnolis. Lsmi Aloe with flcfkf, kcel-jhapfd, fpotcd leava, which mt triangular at lhtir txtriiifia. This is the Aloe Africans fiord rubro folio triangular! verficus&abutraqueparte albicanribus notaio. Hort. AmU. 2. p. 17.

zz. ALOE (Ferex) fblis amplexcaulibus nigricantibus undique ipinofis. AUtrmb dsrkrgecit femes embracing jhuJijfc. ^ tuhib an bfet withfpitcs sn every fide. Aloe vera colb tpinoli. Munt. Phyt. commonly called Aloe ferox.

aj. ALOE (Uvarii) floribus scillibus reflexis Embricat primaticis. Lin. Sp. Plant, 313. jllcw aiiVi rifomi jtaiwj grewmg clefi to tUJiali, infirm vfa prifrn, fyng ever each ether UU tiles on a hcitft. Aloe Africana fo- iit) tri\nguLxvi lonsi JIimo & .ingufiflij IIO ilut ibus I inci fceitlis. Hort. AmL 2.. p. 23. commonly called Iris U wts.

The 5ft fort of Aloe grows with an upright fl: to the height of five or six feet, the leaves closely embrace the stalks; they are thick, succulent, broad at the base, growing narrower, and tend to a point, of a dark green colour, and imbricate on the edges, as alfo few on their upper furfices; the leaves (land creel, and draw together towards the tap, where they form the remembrance of a mitre, from whence it is called the Mitre Aloe. The flower-stem rises about three feet high, on the top of which the lowers come out in a fan of globular spikes, but afterwards is funned into a cylindrical spike: these have long foot-stalks, which come out horizontally, and the Bowers hang downward; they are tubulous, and cur into six unequal (segments to the bottom, these bring alternately broader than the others. There are six stamens, none of which are as long as the tube of the flower, the other three are shorter. The crown of the fruit is oblong funnel-shaped of a gold colour, the chalice-crowned germen is seated in the bottom of the Bower, surrounded by a single style, which is thicker than the stamens, having no stigma on the top. The tube of the Rower is of a reddish colour, and the brim is of a pale green, so that it makes a pretty appearance when the spike is shown at large.

This fort will live in a warm dry green-house in winter, and may be kept in the open air in summer, in a flickered duanpni but the plain should not have much water, lest it should rot their stems. "With this management the plants will not grow so fast, as when they are placed in a box (but they will be stronger) and their stems will support their heads much better.

The second fort is very common in the islands of America, where the plant is propagated from the poorest land, to obtain the Hepatic Alois which are brought to England, and used chiefly for medicines, being too coarse for medicine.

The leaves of it are about four inches long at their base, where they are near two inches thick, and gradually taper to a point, having a few incisions on the edges; the flowers are of a wa-green colour, and when young are spotted with white. The flower-stem rises near the chalice high, and the flowers stand in a slender loose spike, with very tubulous, hanging downward. They are tubulous, and cut into six parts, of a bright yellow colour, and the Aamina Hand but beyond the tube. This never produces seed in England, and is too tender to live through the winter of our climate, in a common green-house, therefore it should be planted in a moderate degree of warmth in the open air. I have known plants of this kind, which have had an unaltered kind about

their roots) and hang up in a warm room for two years, and afterwards plant in a pot, which will grow very well, from whence the plant is called Sempervivum by the inhabitant of Anierica. The third fort will grow to the height of ten or twelve feet, with a naked stem, the leaves stand at the top, which are closely embraced together; they are about two inches broad at their base, growing narrower to a point, and are reflexed, and stand on the edges, each being armed with a strong crooked spine. The leaves are of a green colour, and very succulent. The flowers are of a yellowish (pike, or turbid), and of a bright red colour. These are in beauty in November and December.

This fort will live through the winter in a good green-house, but they will not flower unless they have a moderate (share of warmth, therefore they should lie covered up in October, which should be kept above a moderate heat, in which they will not fail to flower.

The fourth fort is somewhat like the third, but the leaves are broader, and have several small tubulous flowers on the sides of the stem towards their extremities. The flowers of this grow in a loose spike, and the plant never put out any suckers, so that it is very difficult to increase.

The fifth fort is somewhat like the second fort high, the leaves are very broad at the base, where they closely embrace the stem, and gradually decrease to a point. The edges are fetid (spines, and the under surface is covered horizontally every way; these are of a dark green colour spotted with white, somewhat resembling the colour of soft soap, from whence some have given it the title of Soap Aloe. The flowers grow in umbels on the tops of the stalks, which are of a beautiful red colour, and appear in August and September. This fort is hardy, so may be kept in a common green-house in winter, and in the summer placed in the open air.

The sixth fort is somewhat like the fifth in its manner of growth, but the leaves are broader, of a lighter green colour, the edges and also the spines are of a Clippier colour, and the flowers are of a light green. This is as hardy as the former, it may be treated in the same manner. It flowers in September.

The seventh fort grows to the height of six or seven feet, with a strong stem, the upper part of which is produced two, three, or four heads, composed of loose, round, jointed leaves, of a feagreen colour, entire, and ending in obtuse points; these are placed two ways, lying over each other with their edges die same way. The flowers are produced in loose spikes, which are of a red colour, and appear at different times of the year.

The eighth (on an annual plant, seldom rising more than a foot high) the leaves are produced near the ground, which are broad at the base, where they embrace the stem, and gradually diminish to a point; they are of a feagreen colour, wide imbricate spots; their edges, and also their upper parts below and above, are hairy with pretty (spines, the flowers grow in loose spikes, the tubulous part being red, and the brim of a light green colour.

The ninth is a low plant, (scarcely rising above eight inches high). The leaves of this are triangular, and stand back at their extremities; the leaves are entire, their edges being very tightly fan-shaped. They are curiously variegated (potted, the leaves are like the feathers of a partridge's breast, from whence it has the name. The flowers grow in very loose spikes, upon stalks about one foot high; they are of a line red colour tipped with green. This will live in a good green-house through the winter.

I have raised a raney of this from the seeds which I received from the Cape of Good Hope, with broader triangular leaves, which spread much more than those of the former, and are not so beautifully (pictive the lower part of the leaves is of a low much taller.

The tenth is also a very low plant, never rising to have stalks, the leaves are broad at their base, but are tapering (to a point where they are triangular; they

they are Wet on their edges, and both surfaces* with soft spines, very closely, from whence this plant had the name of Hedgehog Aloe. The flowers grow in a loose head, on the top of the stalk which is very thick, but seldom a foot high: they are of a fine red colour below, but of a pale green above. This fort may be preserved through the winter in a good greenhouse, and placed in the open air in summer.

The eleventh fort grows near a foot high* and is furnished with triangular leaves, from the ground upward; these are of a dark green colour, and are placed in form of a triangle, the flowers grow thinly upon very slender stalks, and are of an herbaceous colour, and their upper part turns backward. This fort requires a moderate warmth in winter, so should be placed in a cool part of the stove.

The twelfth fort grows somewhat like the former* being beset with leaves from the bottom, but these are rounder, and end in sharp points, the flowers grow upon taller stalks, which branch out and grow in long close spikes. There is a variety of this fort which has been raised from seeds, which is much larger, the leaves thicker, and the flowers grow upon taller stalks, but this is only a female variety.

This fort may be preserved through the winter in a good greenhouse, but must have very little water given it during the cold weather.

The thirteenth fort grows with its leaves near the ground, which are about six inches in length, and shaped like a tongue, from whence it had the title of Tongue Aloe. The flowers grow in slender loose spikes, each hanging downward, of a red colour below, and green at the top. This is pretty hardy, so may be kept in a common greenhouse in winter, and set abroad in summer. There is a variety of this fort, with leaves much more potted.

The fourteenth fort is of humble growth, the leaves come out on every side without order near the ground, they are thick, triangular at their ends, and closely studded with white protuberances, from whence it was called Pearl Aloe. There is a smaller fort of this which hath been long preserved in the English gardens, but the manner of its flowering being the same, I suspect it to be only a variety. This may be preserved through the winter in a common greenhouse. It flowers at different seasons of the year.

The fifteenth fort is the true Succotrine Aloe, from whence the best fort of Aloe for use in medicine is produced. This hath long, narrow, succulent leaves, which come out without any order, and form large heads. The stalks grow three or four feet high, and have two, three, and sometimes four of these heads, branching out from it: the lower leaves spread out on every side, but the upper leaves turn inward toward the center; the flowers grow in long spikes, upon stalks about two feet high, each standing on a pretty long foot-stalk; they are of a bright red colour tipped with green: these generally appear in the winter season. This fort may be preserved through the winter in a warm greenhouse, but the plants so managed will not flower so frequently, as those which have a moderate degree of warmth in winter.

The sixteenth fort resembles the eighth in some particulars, but the leaves are much broader, and spread wide on every side, whereas those of the eighth are ranged only two ways, and are narrow. This flowers but seldom, whereas the sixteenth flowers annually in the spring, and may be kept through the winter in a common greenhouse.

The seventeenth fort never rises from the ground, but the leaves spread flat on the surface, these are plain, succulent, and triangular toward their end. The borders of the leaves, and also the ridge of the angle on their under side, are closely beset with soft white spines. The flower-stalk rises about a foot high, is very slender, and hath three or four small herbaceous flowers standing at a distance from each other. These are tubulous, and cut into six parts at the brim, which turn backward. This fort is tender, so should be placed in winter in a moderate degree of heat, and

thrust have little water. It seldom puts out offsets, but is generally increased by planting the leaves.

The eighteenth fort is also a small plant growing near the ground; the leaves of this fort are almost cylindrical toward their base, but angular near their ends, and are set with short soft spines at the angles: these leaves are shorter and of a darker green colour than those of the former fort, and the plants produce many suckers on every side. I have raised a variety of this from seeds, which hath shorter, whiter, and smoother leaves, but this hath not yet flowered. This will live in a common greenhouse in winter.

The nineteenth fort hath very short, thick, succulent leaves, which are compressed on their upper side like a cushion, from whence it had the name. This grows very close to the ground, and puts out suckers on every side: the flowers grow on slender stalks, and are of an herbaceous colour. This may be preserved through the winter in a good greenhouse, but should have very little water during that season, especially when it hath no artificial heat.

The twentieth fort hath long narrow tongue-shaped leaves, which are hollowed on their upper side, but kept whorled below: these are closely studded on every side, with small white protuberances, from whence the plant hath had the title of Pearl Tongue Aloe. The flowers of this kind grow on pretty tall stalks, and form loose spikes, each hanging downward: they are of a beautiful red colour, tipped with green. This fort produces offsets in plenty, and is so hardy as to live in a common greenhouse through the winter. It flowers at different seasons of the year.

The twenty-first fort hath some resemblance to the last, but the leaves are much broader and thicker, these spread out every way, and are not so concave on their upper surface, nor are the protuberances so large as those of the former; the flowers are of a paler colour, and the spikes are shorter. I have raised plants from the seeds of this fort, which have varied from the original, but none of them approached near the twentieth fort. This is as hardy as the former fort.

The twenty-second fort rises to the height of eight or ten feet, with a strong stem; the leaves grow on the top, which closely embrace the stalk; these come out irregularly, and spread every way, they are near four inches broad at their base, and diminish gradually to the top, where they end in a spine. They are of a dark green colour, and closely beset with short thick spines on every side. This fort hath not as yet flowered in England, nor does it put out suckers, so that it is difficult to increase. It must have a warm greenhouse in winter, and very little water.

The twenty-third fort hath very long, narrow, triangular leaves, shaped like those of the Bull-rub; the flowers are produced in close thick spikes, upon stalks near three feet high. They are of an Orange colour, having six yellow stamina, which come out beyond the tube of the flower, so that when the plants are strong, and produce large spikes, they make a fine appearance. It flowers in August and September. There is a variety of this with narrower leaves, and longer spikes of flowers.

The soil in which these plants thrive best, is one half fresh light earth from a common (and if the turf is taken with it and rotted, it is much better), the rest should be white sea sand and sifted lime rubbish, of each of these two, a fourth part; mix these together six or eight months at least before it is used, observing to turn it over often in the time.

The middle of July is a very proper season to shift these plants; at which time you may take them out of the pots, and with your fingers open the roots, and shake out as much of the earth as possible, taking off all dead or mouldy roots, but do not wound or break the young fresh ones: then fill the pot about three parts full of the above-mentioned earth, putting a few stones in the bottom of the pot, to drain off the moisture, and after placing the roots of the plant in such a manner as to prevent their interfering too much with each other, put in as much of the same earth, as

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to fill the pot almost to the rim, and observe to shake the plant, so as to let the earth in between the roots; and then with your hand fettle it close to the roots of the plant, to keep it steady in the pot; then water them gently, and set them abroad in a shady place, where they may remain for three weeks* giving them gentle waterings, if the weather should prove hot and dry.

Toward the latter end of September, in a dry day, remove them into the house again, observing to give them as much free open air as possible, while the weather is warm; but, if the nights are cool, you must shut up the glasses, and give them air only in the day; and, as the cold increases, you must not open the glasses, but observe to give them gentle waterings often, till the middle of October, when you must abate watering according to the heat of the house in which they are kept. For those plants which are placed in a stove, will require to be watered at least once a week, most part of the winter; whereas those which are kept in a green-house without artificial heat, should not be watered oftener in winter than once a month.

When these hardier sorts of Aloes are placed abroad in summer, they should have but little water given them; and if much rain should fall during the time they are abroad, they should be screened from it: for when they imbibe much wet in summer, they frequently rot the following winter, especially if they are not kept in a moderate warm air. Therefore, those who choose to treat these plants hardily, should be cautious of their receiving too much moisture.

The tender sorts should constantly remain in the stove, or be removed in summer to an airy glass-case, where they may have free air in warm weather, but be protected from rain and cold. With this management the plants will thrive and increase, and such of them as usually flower, may be expected to produce them in beauty at their seasons.

The hardier sorts thrive much better when they are exposed in summer, and secured from the cold and rain in winter, than if they are treated more tenderly. For when they are placed in a stove, they are kept growing all the winter, whereby they are drawn up weak; and although they will flower oftener when they have a moderate share of heat, yet in two or three years, the plants will not appear so fitly as those which are more hardily treated.

The twenty-third sort is hardy enough to live abroad in mild winters, if they are planted in a warm border and a dry soil, but as they are often destroyed in severe winters, it is proper to keep some plants in pots, which may be sheltered in winter under a frame, to preserve the sort. This is propagated by seeds, which the plants generally produce in plenty: (The seeds must be sown in pots soon after they are ripe, and in winter should be sheltered under a common hot-bed frame: in the spring the plants will come up, when they should be inured to bear the open air by degrees; and when they are large enough to remove, some of them should be planted in pots, and the other in a warm border, where they will require to be sheltered the following winter, as they will not have obtained sufficient strength to resist the cold.)

Most of these Aloes are increased by offsets, which should be taken from the mother plant, at the time when they are shifted, and must be planted in very small pots, filled with the same earth as was directed for the old plants; but if, in taking the suckers off, you observe that part which joined to the mother root to be moist, you must let them lie out of the ground in a shady dry place six or eight days to dry before they are planted, otherwise they are very subject to rot. After planting, let them remain in a shady place (as was before directed in shifting the old plants) for a fortnight, when you should remove the tender kinds to a very moderate hot-bed, plunging the pots therein, which will greatly facilitate their taking new root; but observe to shade the glasses in the middle of the day, and to give them a great share of air.

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Toward the middle of August, begin to harden the young plants, by taking off the glasses in good weather, and by railing them at other times with props* that the air may freely enter the bed, which is absolutely necessary for their growth, and to prepare them to be removed into the house, which must be done toward the end of September, and managed as before directed for the old plants.

The African Aloes, for the most part, afford plenty of suckers, by which they are increased; but those few that do not, may be most of them propagated, by taking off some of the under leaves, laying them to dry for ten days or a fortnight, as was directed for the offsets; then plant them in the same soil as was directed for them, putting that part of the leaf which adhered to the old plant, about an inch, or an inch and a half (according to the size of the leaf) into the earth, giving them a little water to settle the earth about them; then plunge the pots into a moderate hot-bed, observing to screen them from the violence of the sun, and give them gentle refreshings with water once a week: the best season for this is in June, that they may push out heads before winter.

The second sort produces the Aloes commonly sold in the shops for horses, and is called Aloe Hepatica* But it is from the fifteenth sort, the Succotrine, or best sort of Aloes, is produced; which is done by cutting their leaves transversely, and placing earthen vessels under them to receive the juice which drops from these cut leaves; which juice, when inspissated, becomes the Aloe which is used in medicine. But I believe in making the coarser sort of Aloes, they press the leaves, whereby a greater quantity of juice is obtained: but this is not near so fine as the other.

ALOE AMERICANA MURICATA. See AGAVE.

A L O I D E S. See STRATIOTES.

ALOPECUROS [C[^]/AAwito[^]], Fox-tail, a kind of grass.

ALPINIA,

This plant is so called after Prosper Alpinus, who was a famous botanist in his time, and travelled into Greece and Egypt, and has written two books in quarto of the plants of those countries.

The CHARACTERS are,
// hath a trifid empalement, upon which rests the germen.
The flower is of one leaf, which is unequally divided at the top into four parts, and resembles a perforated flower; the upper segment which resembles the helmet, and also the two side segments, are indented in the middle, and the lower one is divided into three parts at the brim; in the center is placed the round germen supporting a single style crowned with a three cornered stigma: this is attended by a single stamina fixed to the tube of the flower, which is crowned with a very narrow summit. After the flower is past, the germen becomes an oval fleshy fruit, divided into three parts, including several oval seeds, which have tails.

This genus of plants, is by Dr. Linnaeus ranged in his first class, which is entitled Monandria Monogynia, the flowers of which have but one stamina and one style.

We know but one SPECIES of this genus, viz* ALPINIA. Royen. Prod. 12. This is by father Plumier titled, Alpha racemosa alba Cannacori foliis. Nov. Gen. 26. i. e. *White branching Alpina, with leaves like the flowering Reed.*

This plant is a native of the West-Indies, from whence it has been brought into some of the curious gardens of Europe, where it must be preserved in a good green-house, and the pots plunged into a tub of water, otherwise it will not thrive in this country. The leaves decay every winter, and are pushed out from the roots every spring, like the Maranta; so may be propagated by parting of the roots when the leaves decay.

ALSINE [Gr. 'Aarfa], Chick-weed.

These plants are so well known to most persons, it will be needless to mention them in this place, unless it be to caution persons from permitting them to grow either in their gardens, or on dunghills, where they will soon shed their seeds, and become troublesome weeds;

w ^{eddi} but as they are annual, they may 'with little trouble be destroyed, if they do not Hand to produce feed.

AL TH / EA. [^{AX}0ai⁸] fo called from *ti&cuwe*, Gr. to heal], Marfmallow.

The CHARACTERS are,

*The flower hath a double empalement \ the outer is of one leaf, and is unequally divided into nine narrow segments at the brim *, the inner one is also of one leaf, cut into five broad acute segments at the top *, these are both permanent. The flower hath five petals which coalesce at their base, but spread open above and are Jhaped like a heart. There are many stamina joined below, and form a kind of cylinder \. but are loose above, and inserted in the column. In the center is placed the orbicular germen, supporting a short cylindrical style, crowned with numerous stigmata which are of equal length with the stamina. The empalement afterward becomes an orbicular depressed capsule, divided into several cells, each containing one compressed kidney-Jhaped seed.*

This genus of plants is ranged by Dr. Linnaeus in the third section of his sixteenth class, which is titled Monodelphia Polyandria, the stamina being joined together to form a fort of column.

The SPECIES are,

1. ALTH/EA foliis simplicibus acuminatis acute dentatis tomentosis. *Marfmallow with Jingle woolly leaves which are indented in sharp segments.* Althaea Diofcoridis & Plinii. C. B. P. 315. *Common Marfmallow.*
1. ALTH/EA (*Officinalis*) foliis simplicibus angulato-rotundioribus tomentosis. *Marfmallow with angular, woolly, round-pointed leaves.* Althaea folio rotundiori aut minus acuminato. Sutherl. Edinb.
3. ALTHJBA (*Hirfuta*) foliis trifidis piloso-hispidis supra glabris. Hort. Cliff. 349. *Marfmallow with trifid, hairy, pungent leaves.* Alcea villosa. Dalechamp. Hist. 594.
4. ALTH/EA (*Cannabina*) foliis inferioribus palmatis superioribus digitatis. Hort. Cliff. 205. *Marfmallow with the under leaves Jhaped like a hand, and the upper leaves more divided.* Alcea fruticoso cannabino folio. Cluf. Hist. p. 2. pag. 25.

The first fort is the common Marfmallow, which grows naturally in moist places in divers parts of England, and is frequently used in medicine. It hath a perennial root and an annual stalk. The plant grows erect, to the height of four or five feet, and puts out a few lateral branches on the side of the stalks, garnished with leaves which are hoary and soft to the touch, they are angular, and placed alternately on the branches; the flowers come out from the wings of the leaves, which are shaped like those of the Mallow, but are smaller and of a pale colour. These appear in June or July, and the seeds ripen in September. It may be propagated fast enough, either by seeds or parting their roots. When it is propagated by seeds they should be sown in the spring, but if by parting their roots, the best time is in autumn, when the stalks decay. It will thrive in any soil or situation, but in moist places will grow larger than in dry land. The plants should not be nearer together than two feet, for their roots spread wide on every side.

The second fort is somewhat like the first, but the leaves are not so long, nor do they end in a sharp point, but are angular, and rounder than those of the first. I have cultivated this in the Chelsea garden many years, and find it retains its difference.

The third fort grows naturally in Spain and Portugal *, from both these countries I have received the seeds. This is a low plant, whose branches trail on the ground, unless they are supported by stakes. The leaves and stalks are beset with strong hairs *, the flowers come out at the wings of the stalks, and are smaller than those of the common fort, having purple bottoms. The leaves are deeply cut into three parts, and have long foot-stalks; the stalks are woody, but seldom last more than two years.

If the seeds of this fort are sown in April, the plants will flower in July, and the seeds ripen in September.

ber. They should be sown in the places where they are to remain, for as the roots shoot deep into the ground, unless the plants are removed very young, they seldom survive transplanting.

The fourth fort has a woody stem, which rises to the height of four or five feet, and puts out many side branches. These are garnished with leaves of different shapes; those which are on the lower part of the stalks are like a hand, very (lightly cut toward their outside, but those which are placed on the upper part of the branches, are deeply cut into several parts; these are hairy, and grow alternately on the branches; the flowers come out from the wings of the stalks in the same manner as the other forts, but are not so large as those of the common Marfmallow \ they are of a deeper red colour, and the empalement is much larger. This fort seldom flowers the first year, unless the summer proves warm *, but when the plants live through the winter, they will flower early the following summer, and produce good seeds. This grows naturally in Hungary and Iliria, from both which places I have received the seeds.

It is propagated by seeds, which should be sown in the spring in the place where the plants are to remain; or if otherwise, the plants must be transplanted young, else they will not succeed. They should have a sheltered situation and a dry soil, otherwise they will not live through the winter in England. When these plants grow in a stony soil, or in lime rubbish, they will be stunted in their growth, but they will have less sap in their branches, so will better endure the cold of this climate. This fort seldom continues longer than two years in England, but as the seeds ripen here, the plants may be had in plenty.

ALTH/EA FRUTEX. See HIBISCUS and LAVATERA.

ALYSSOIDES. See ALYSSUM and LUNARIA.

ALYSSON ALPINUM LUTEUM. See DRABA.

ALYSSON SEGETUM. See VAGRUM.

ALYSSON SERPILLI FOLIO. See CLYPEOLAJ.

ALYSSON VERONICAE FOLIO. See DRABA.

ALYSSON VULGARE. See DRABA.

ALYSSUM, [^{Atomy}, of ^{αλυσσω}, Gr. to be mad; fo called, because it was believed to have the virtue of curing madnefs.] Madwort.

The CHARACTERS are,

The flower hath an oblong four-leaved empalement, which falls away. It hath four petals in form of a cross, which spread open above the empalement. It hath six stamina, two of which are shorter than the other four, crowned with broad summits; in the center of the flower is situated the oval germen, supporting a single style, crowned with an obtuse stigma. After the flower is past, the germen becomes a globular or compressed seed-vesicle, in which are lodged several compressed seeds.

This genus is ranged in the fifteenth class of Linnaeus, entitled Tetradynamia Siliculosa, the flowers of this class have six stamina, four of which are longer than the other two, and the seed-vesicles are short, in some globular, and in others they are compressed.

The SPECIES are,

1. ALYSSUM (*Saxatile*) caulibus frutescentibus paniculatis foliis lanceolatis molliflimis undulatis integris. Prod. Leyd. 331. *Madwort with jhrubby stalks, flowers growing in panicles, and whole, soft, spear-Jhaped waved leaves.* Alyffon Creticum saxatile foliis undulatis incanis. Tourn. Cor. 15.
2. ALYSSUM (*Halimifolium*) foliis lanceolato-linearibus acutis integerrimis caulibus procumbentibus perennantibus. Hort. Cliff. 333. *Madwort with whole, spear-Jhaped, pointed leaves, and trailing perennial stalks.* Alyffon halimi folio fempervirens. Tourn. Inf.
3. ALYSSUM (*Spinofum*) ramis floreis fenilibus spiniformibus nudis. Hort. Cliff. 332. *Madwort, whose older branches have naked spines.* Thlafpi fruticosum spindium. C. B. P. 108.
4. ALYSSUM (*Montanum*) ramulis suffruticosis diffusis foliis punctato-echinatis. Hort. Upfal. 185. *Madwort with jhrubby diffused branches and leaves, having prickly punctures.* Thlafpi montanum luteum. J. B. 2. p. 28.

5. ALYSSUM (*Incanum*) caule erecto foliis lanceolatis incanis integerrimis floribus corymbosis. Hort. Cliff. 332. *Madwort with an ereff stalk, hoary spear-shaped leaves which are entire, and flowers collected into round heads.* Alyfbn fruticofum incanum. Tourn. Inf. R. H.
6. ALYSSUM (*Clypeatum*) caule erecto herbaceo filiculis feffilibus ovalibus compreffib-planis petalis acuminatis. Lin. Sp. Plant. 651. *Madwort with an ereS herbaceous stalk, pods growing chfe to the stalks, which are oval and compreffed, and the flower leaves pointed.* Lunaria leucoii folio filiquâ oblongâ majori. Tourn. Inf. 218.
7. ALYSSUM^V (*Sinuatum*) caule herbaceo foliis lanceolatis dentatis filiculis inflatis. Lin. Sp. Plant. 651. *Madwort with an herbaceous stalk, Jpear-Jhaped indented leaves, and fwollen feed-veffels.* Alyffoides incanum foliis finuatis. Tourn. Inf. 213.
8. ALYSSUM (*Creticum*) caule herbaceo ere&o foliis incanis lanceolatis integerrimis filiculis inflatis. Lin. Sp. Plant. 651. *Madwort with an ereff herbaceous stalk, hoary, Jpear-Jhaped, entire leaves, and a fwelling feed-veffel.* Alyffoides fruticofum Creticum leucoii folio incano. Tourn. Cor. 15.
9. ALYSSUM (*Feficaria*) foliis linearibus dentatis, filiculis inflatis angulatis acutis. Lin. Sp. 910. *Madwort with linear indented leaves and fwollen pods, which are angular and acute pointed.* Veficaria Orientalis, foliis dentatis. Tourn. Cor. 49.
10. ALYSSUM (*Deltoideum*) caulibus fuffrutefcentibus profratis, foliis lanceolato-deltoidibus, filiculis hirtis. Lin. Sp. 908. *Madwort with trailing Jhrubby stalks, deltoide Jpear-Jhaped leaves, and hairy pods.* Alyfbn Creticum foliis angulatis, flore violaceo. Tourn. Cor. 15.
11. ALYSSUM (*Calycinum*) caulibus herbaceis, ftaminibus omnibus dentatis, calycibus perfittentibus. Jacq. Vind. 114. *Madwort with herbaceous stalks, all the ftamina indented, and a permanent flower-cup.* Thlafpi < Alyfbn didtum campeftre majus. C. B. P. 107.
12. ALYSSUM (*Campeftre*) caule herbaceo, ftaminibus ftipatis pari fetarum, calycibus deciduis. Lin. Sp. 909. *Madwort with an herbaceous stalk, and the flower-cup deciduous.* Alyfbn incanum, fcrpylli folio, frudlu nudo. Tourn. Inf. 217.

The firft fort is a low perennial plant, with a fleffy ftalk, which feldom riles more than one foot high, but divides into many lefs branches which grow near the ground, fo that a fingle plant will fpread to a confiderable diftance. The branches are garnifhed with long Jpear-shaped leaves, which are hoary and waved on their edges, placed on without any order. The flowers are produced in loofe panicles, at the extremity of every branch, and are of a bright yellow colour, confifting of four petals, placed in form of a crofs: thefe being numerous, make a fine appearance during their continuance. They appear the latter end of April, or the beginning of May, and if the feafon is moderate, will continue three weeks in beauty. The feeds ripen in July, but it is only from young plants that feeds can be expedted; for the old plants, or thofe which are raifed from flips or cuttings, rarely produce feeds in England.

This plant is hardy, and although brought from a more lbutherly climate, yet, if planted in a dry, lean, or rubbifhy foil, will endure our fevereft winters abroad. It is increafed by fowing the feeds in March in a light fandy foil, or by planting cuttings in April or May; which are very apt to take root, if kept lhaded in the heat of the day, and gently refrefhed with water.

The fecond fort feldom continues above two or three years with us, and muft therefore be often fown to preferve it; or if the feeds are fuffered to fall, and remain upon the ground, the plants will rife without any trouble. This plant fpreads itfeff upon the ground, and never rifes to any height. It produces, at the extremity of its branches, very pretty tufts of fmall white flowers; of which the plant is feldom detitute for fix or feven months fuceffively, for which reafon it deferves a place in the ffaivens of the curi-

ous. This will grow from feeds, and alfo from editings, if planted and managed as the former.

The third fort hath ligneous branches which rife about two feet high; thefe are armed with fmall fpines; the leaves are hoary, Jpear-flaped, and thinly placed on the ftalks without any order. The flowers are white, crofs-shaped, and grow in fmall clufters at the extremity of the branches. After the flowers are paff, the germen turns to an oblong feed-veffel, containing feveral round feeds.

This may be propagated in the fame manner as the firft fort, either by feeds or flips; and when the plants grow in rubbifh, or on old walls, they will laft much longer, and endure the cold of our winters better than thofe which are in a good foil. It grows naturally in Spain, Italy, and the fourth of France.

The fourth fort hath trailing branches, which lie on the ground; thefe are garnifhed with oblong hoary leaves, which are rough to the touch, and are placed alternately on every fide of the branches. The flowers are produced in fmall clufters at the extremity of the branches, which are of a dark yellow colour, and are fucceeded by feed-veffels flaped like thofe of the third fort. This grows naturally upon rocks and ruins, in Burgundy, and fome other parts of France, as alfo about Bafil. It may be propagated in the fame manner as the former forts, and when it grows in rubbifh, the plants will continue fome years; but in rich ground, they feldom live through the winter in England.

The fifth fort grows to the height of two feet, having ligneous ftalks, which divide into feveral branches toward the top. Thefe are garnifhed with hoary Jpear-shaped leaves, which are placed alternately on the branches: at the extremity of every fhoote, the flowers are produced in round bunches, which are fmall, white, and crofs-shaped; thefe are fucceeded by oval feed-veffels, which are full of brown feeds. It grows naturally in the lbuth of France, Spain, and Italy, chiefly on rocky or gravelly foils. When this is fown in a rich foil, it feldom furvives the winter; but in lime rubbifh, or upon old walls, it will continue feveral years. It flowers in June, July, Auguft, and September, and the feeds ripen foon after; which if permitted to fcatter, the plants will come up, and require little care.

The fixth fort is a biennial plant with an herbaceous ftalk, which is garnifhed with oblong hoary leaves, placed alternately, the flowers come out from the wings of the ftalks fingle, and are fucceeded by oval compreffed feed-veffels, shaped like thofe of the Lunaria, which contain many flat feeds. It grows naturally in Spain and Portugal, from whence I have received the feeds. It is propagated by feeds, which muft be fown upon dry ground, or lime rubbifh; for in rich land the plants will grow too vigorous in fummer, fo that in autumn they generally rot off and decay.

The feventh fort is a low fpreading plant, which divides into fmall branches; thefe fpread near the ground, and are garnifhed with oblong hoary leaves which continue through the year: the flowers are produced in fmall clufters at the extremity of the branches; they are of a bright yellow colour, confifting of four petals placed in form of a crofs. After the flower is paff, the germen becomes an oval fwelling feed-veffel, which is filled with roundifh feeds. This grows naturally in the iflands of the Archipelago, but is hardy enough to live in the open air in England, in a dry foil and a warm fituation. It is propagated by feeds, and feldom lafts longer than two or three years.

The eighth fort grows more erect, having an herbaceous ftalk, which fends out a few lateral branches toward the top, garnifhed with oblong hoary leaves. The flowers grow in fmall clufters at the extremity of the branches, which are fucceeded by oval fwelling feed-veffels like the former. This feldom continues longer than two years in England, it muft have a warm dry fituation, otherwife it will not live in the open air, and is propagated by feeds, which fhould

be fowri in Auguft, foon after they are ripe •, and if a few of them are potted in Oftober, and fheltered under a frame in winter, they will flower the follow-
 1 Ing June, fo good feeds may be obtained the lame year-, for thofe plants which arife early in the year, grow luxuriantly in fummer, fo do not often live through the winter, or ripen feeds.

The ninth and tenth forts have trailing ftalks, which fpread on the furface of the ground •, the plants produce their flowers toward the extremity of the ftalks in loofe fpikes, which are formed like thofe of the other forts, having four petals in each in form of a crofs ; thofe of the ninth fort are fucceeded by fwollen feed-veffels, but the tenth, which flowers early in the fpring, are rarely fucceeded by feed-veffels in this country. This is an abiding plant, which may be propagated from its trailing branches, which, if planted in April, will take root and become good plants by the following autumn, when two or three plants may be placed in a common frame for ihelter in winter, to preferve the fpecies •, for in hard winters, thofe which are expofed are fometimes deftroyed. The eleventh and twelfth are both annual plants, fo are propagated by feeds, which fhould be fown in a border of light earth in April, in fuch places where the plants are to remain; if thefe are thinned and kept clean from weeds, they will flower in July, and perfect their feeds in autumn.

AMARANTHOIDES. See GOMPHRENA.

AMARANTHUS [A^a^p*^ol *privative, and /^ani^w, Gr. to wither •, fo called, becaufe the flower of this plant being cropped, does not foon wither; but being dried, keeps the beauty of its colour a great while.] Flower-gentle.

The CHARACTERS are,

It hath male and female flowers in the fame plant. The flower hath no petals, but the empalement confifts of three or five pointed fpear-fhaped leaves which are coloured and permanent •, this is common to both fexes. The male flowers have in fome fpecies three, and in others five slender ftamina, which are of the fame length with the empalement, crowned with oblong fummits. The female flowers have an ovalgermen, fupporting three fhort awl-fhaped ftyles, which are crowned with Jimple ftigma. The empalement afterward becomes an oval coloured feed-veffel having one cell, in which is lodged a Jingle globular Jecd. This genus of plants is by Dr. Linnseus ranged in the fifth divifion of his twenty-firft clafs, entitled Monoeia Pentandria, from their having male and female flowers on the fame plant, and the male flowers having five ftamina.

The SPECIES are,

1. AMARANTHUS (*Tricolor*) glomerulis triandris axillaribus fubrotundis amplexicaulibus foliis lanceolato-ovatis. Lin. Sp. Plant. 1403. *Flower-gentle with roundih heads, placed at the wings of the ftalks embracing them, whofe flowers have three ftamina, and the leaves are oval and fpear-fhaped.* Amaranthus tricolor. Lob. Icon. 252. i. e. *Three coloured Amaranthus.*
2. AMARANTHUS (*Melancholicus*) glomerulis triandris axillaribus fubrotundis feffilibus foliis lanceolatis acuminatis. Lin. Sp. Plant. 1403. *Flower-gentle with three ftamina, roundih beads growing clofe to the ftalk, and acute-pointed fpear-fhaped leaves.* Amaranthus colore obfcuriori five mas. Tourn. Inf. 236. Amaranthus bicolor.
3. AMARANTHUS (*Triftis*) glomerulis triandris rotundatis fubpaticatis, foliis bvato-cordatis emarginatis petiolo brevioribus. Lin. Sp. 1404. *Flower-gentle with three ftamina, roundih heads growing from the wings of the ftalks in fpikes, and oval heart-fhaped leaves with fhort foot-ftalks.*
4. AMARANTHUS (*Caudatus*) racemis pentandris decompoftitis cylindricis pendulus longiaimis. Hort. Cliff. 443. *Flower-gentle with five ftamina, and very long, hanging, cylindrical fpikes.* Amaranthus maximus paniculii longa pendula femine rubello. Raii Hift.
5. AMARANTHUS (*Maximus*) racemis fubcylindricis pendulis, caule credo arboreo. *Flower-gentle with hanging almoft cylindrical fpikes, and an ereft tree-like ftalk,*

Amaranthus maximus. C. B. Pi 126. *Commonly called Tree-like Amaranthus:*

6. AMARANTHUS (*Lividus*) glomerulis triandris fubpaticatis rotundatis, foliis rotundo-ovatis retufis. Lin. Sp. 1404. *Flower-gentle with roundih fpikes offlozershaving three ftamina, and roundih, oval, blunt leaves.* Blitum pulchrum re&um magnum rubrum. J. B. 2. p. 966.
7. AMARANTHUS (*Flavus*) racemis pentandris compoftitis, fummo infimique nutantibus, foliis ovatis mucronatis. Lin. Sp. 1406. *Flower-gentle with a compound fpike of flowers having five ftamina, and oval pointed leaves.*
8. AMARANTHUS (*Blitum*) glomeratis lateralibus trifidis foliis ovatis retufis, caule diffufo. Lia. Sp. Plant. 990. *Flower-gentle with roundih heads at the joints of the ftalks, oval blunt leaves, and diffufed ftalks.* Blitum album minus. C. B. P. 118. *The fmaller white Elite.*
9. AMARANTHUS (*Gradzans*) glomerulis triandris axillaribus foliis lanceolatis obtufis. Lin. Sp. Plant. 1405. *Flower-gentle with flowers having three ftamina, which grow in clufters from the wings of the ftalks, and blunt fpear-fhaped leaves.* Amaranthus floribus lateralibus congeftis foliis lanceolatis obtufis. Flor. Virg. 116. *Commonly called Pellitory-leaved Blite.*
10. AMARANTHUS (*Ilybridus*) racemis pentandris decompoftitis congeftis nudis, fpiculis conjugatis. Flor. Virg. 148. *Flower-gentle with five ftamina, decomposed fpikes having double fpicuhe.* Amaranthus fylveftris maximus Novae Angliae fpicis viridibus. Raii Hift. 201. *Or Wild New England Blite with green fpikes.*
11. AMARANTHUS (*Hypocondriacus*) racemis pentandris compoftitis confertis ere&is, foliis ovatis mucronatis. Hort. Cliff. 444. *Flower-gentle with five ftamina, ereft cluftred fpikes, and oval-pointed leaves.* This is the Amaranthus fylveftris maximus Novae Angliae fpicis purpureis. Tourn. Inf. R. H. 235. *Commonly called Purple Flower-gentle.*
12. AMARANTHUS (*Spinofus*) racemis pentandris cylindricis ereftis axillis fpinofis. Hort. Cliff. 444. *Flower-gentle with five ftamina, upright cylindrical fpikes, and fpines at the joints of the ftalks.* Amaranthus Indicus fpinofus fpica herbacea. H. L. 31.
13. AMARANTHUS (*Sanguineus*) racemis pentandris compoftitis erectis, lateralibus patentiffimis, foliis ovato-oblongis. Lin. Sp. 1407. *Flower-gentle with compound fpikes, whofe lateral fpikes fpread out, the upper are ereit, and oblong oval leaves.* Amaranthus racemis cylindricis lateralibus terminalibufque cruciatim poftitis. Fig. Plant. 22.
14. AMARANTHUS (*Retroflexus*) racemis pentandris lateralibus terminalibufque paule flexufo villoib ramis retrocurvatis. Lin. Sp. Plant. 991. *Flower-gentle with five ftamina, fpikes proceeding from the wings of the ftalks, and alfo at their extremities, and flexible, hairy, re-curved branches.*
15. AMARANTHUS (*Oleraceus*) glomeribus triandris pentandrifque, foliis ovatis obtuffimis emarginatis rugofis. Lin. Sp. 1403. *Flower-gentle whofe globes have flowers with three and five ftamina, and rough, obtufe, indented leaves.* Blitum album majus. C. B. P. 118.
16. AMARANTHUS (*Viridis*) glomerulis triandris, floribus mafculis trifidis, foliis ovatis emarginatis, caule erefto. Lin. Sp. 1405. *Flower-gentle with globular heads whofe flowers have three ftamina; the male are trifid, oval, indented leaves, and an upright ftalk.*
17. AMARANTHUS (*Cruentus*) racemis pentandris decompoftitis remotis patulo nutantibus, foliis lanceolato-ovatis. Lin. Sp. PL 1406. *Flower-gentle with decomposed fpikes of flowers with five ftamina, the outer fpreading afunder, and oval fpear-fhaped leaves.* Amaranthus finenfis foliis variis, panicula fpiciofa patula. Cent. tab. 6.

The firft fort has been long cultivated in gardens for the beauty of its variegated leaves, which are of three colours, viz. green, yellow, and red •, thefe are very elegantly mixed: and when the plants are in full vigour, the Wives are large, and clofely fet from the bottom to ti e top of the ftalks, and the branches form a fort c^e pyramid 5 fo that there is not a more

beautiful plant than this, when it is in full lustre. From the leaves of this plant being principally coloured like the fathers of parrots, I should have separated this species from the others, and constituted a genus of K by the title of : *Parrotia*.

The second sort hath been introduced into the English gardens much later than the former. This grows to the lame height, and in the manner of its crowd greatly resembles it [but the leaves have only two colours, which are an obscure purple, and a bright crimson; these are blended as to let till each other, and when the joints are vigorous, they make a fine appearance.

The third sort hath no grown becometh it grows about three feet high with an upright stem, which is furnished with several branches toward the top, these are garnished with several lance-shaped leaves. The flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The fourth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The fifth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The sixth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The seventh sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The eighth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The ninth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The tenth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

And these feeds will remain in the ground several years, and as often as they are turned up to the surface, they will produce plants; so that when plants are suffered to stand till their feeds fall, there will be a summer crop of the plants for several years.

The twelfth sort grows about two feet high, putting out many side branches, so as to form a bushy plant, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The thirteenth sort grows about two feet high, putting out many side branches, so as to form a bushy plant, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The fourteenth sort is a native of North America, from whence the seeds were first brought to Europe, and is now become a common weed in many gardens near London, so is seldom allowed a place in the garden.

The fifteenth sort has many becometh it grows about three feet high with an upright stem, which is furnished with several branches toward the top, these are garnished with several lance-shaped leaves. The flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The sixteenth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The seventeenth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The eighteenth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

The nineteenth sort grows naturally in America, this is a plant of a moderate height, three feet high, the leaves are of a green colour, and the flowers are of a purple colour, and the wings of the petals in round spikes, but have very little beauty, but are not difficult to be raised in the garden. The young plants of this sort are not difficult to be raised in the garden, and are not difficult to be raised in the garden.

in wirn dry weatlier. The fifth fort ... not drive in pots, lb (1, ... be planted in a rich light soil, whhre, if it is ... flowered soon, and pleasantly watered in dry weather, thi: phnii will grow to a very large fize, ttnd make a Mn' Appearance*

The fifth fort is a] Co n-lder. iu whoever ... inclinably to cultivate the ... tail) 11 ... in the funny manner as is directed ftr the WTmer.

'i he othi ... forts are hardly enough to grow in "Itcftpoi ... to may be town on ... bed of light earth in tiec ... and when the plants are fit to remove, they may be cranfpknted into any pan i ... the garden, where they will thrive, an i produce plenty of seeds, which, if permitted to leaner, ... garden with p'ants.

The two firft forw muftbefown on a spoil ... bed in Febuary, or the beginning of Mai ... at first; and in about a fortnight's time, if the I bed is in good temper, the plants will rife; thun after which you mult prepare another hot-Lied, covered wi ... good, rich, light earth, afojut four indies chick.; then raife up the young I plants with your Bager, lb as not to break off rhJ tender roots, ajid prick them into your new hot-bed ... four inches dift ace ever) way, giv ing the til a gentle watering to fettle the i arth to chiir roots s butindoing this, be very cautious not to bear jlit young plants down to the ground by halty watering, which rarely rite ajain, or at kaft lo as to receive : heir former (Ircngthiji a long time, but very often rot in the flur ... s, anrl die quite avp'e.

In the middt of ... day keep thun ... firewood with ... jm die heat of tilt fun, and give them air by railing up thr glafies -, an i if the glafies ... re w, it will be proper to ... rn them every day, in good weather, that they may dry *, for iht moilhrre which ii peccationed by the rermei:nirin of the dunn, and the peTtpnrtion of the plants, is of a noifermqual ty, and very unkindly to plann . fo that if the weather happen to prove bud, that you cannot turn yourglullia, ifwill be of great Brvice to thr phinti town ... of all mofturtr two orthtve tin its a day wit It a wosl'-n doth to prevent ir, drojwinfl upon the plants. When the plants are firmly rooted, and begin to grow, you muEl obvie to give ... icoi air every day, more or It ... as Ure weather is hot or hot, to prevent ihrir it' wing up too fall, wtrkh grew ... weakens thro teou.

In about three we ... lts or % month's time, th Ie plants will have grown in fo as to meet, and will (tan) in need of another hor-bed, whicli fh... be of a moderate temper, and cover d with At iATTK rich earth about fix inches thick , in which thi ... should be removed, obftrving to talc them up ivth as much earth about their roots aj3 p'fTible, and i plant them fix or seven inches diftance every way, giving them fome water to fettle the earth about their roots, but be very careful not to wear them heavily, fo as to bear down the plants, as was before directed; and keep them shaded in the heat of the day, until they have taken fresh roots, and be fore to remove them often gently wit' water, and give them air in proportion to the heat of the weather, covering the glafies with mats rver, night, left the cold chaf your beds, and flap the apertures of the plants.

The middle of May you must ... provide another hot-bed, v... which should be co ... red widi a deep frame, and the plants may have ... room to grow. Upon this hot-bed you must fet as many three-penny pots as can stand within the compass of the ... frame; these pots must be filled with ... earth, and the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the frame with ... steam: when the bed is in good order to receive the plants, they should be carefully watered up with a sower, or some such instrument, observing to perfume at which earth to clear roots as possible, then place each single plant in the middle of one of the pots, filling the pot up with the earth before described, and settle it close to the root of the plant with your hands; water them gently, as before, and shade them in the heat of the

day from the violence of the fun, by covering die glafies with mats. In about three we ... these ... will have grown to a considerable size and strength, fo that you must now raise the glafies very much in the day time, and when the air is hot, and the sun is clearest, draw off the glafies, and expose them to the open ... i; and repeat this as often as the weather will permit ... whkh will harden them by degrees to be ... d abrtud into the places where they are to remain the ... feafon; but it is not advisable to fet these plitttain the open air till after the first week in July, ... hierv- ing to do it when the air is perfectly u>ft, and, if possible, in a gentle shower of ... nun.

Lfi 11 ... at first be fet in liidier for two or three day!, where diey mny bf fertned fraai rily violence of the ... lijn, and 1 ... wind ... to which they will be insured by degrees. These plants, when grown, to a pod ... perfome very freely, and must be very ... watered with water, if the weather proves ... and dry; otherwise they will flint, an ... 1 never p ... hot ... leava, ii tliofc which are finally trtm ... This is the proper manage ... -nr, in ontr to have fine Amaranth, which, if rightly followed, ... the ... plants are good, in a favorable season, will produce large fine leaves, and are the great ... orreument to i good garden ... tor upwards of two ... months in the biter ... part of summer. When persons ate curium in having thiec annual plants in great perfection, there should be a glafic made with upright and flaping glafies on every side, ... a pit in the bottom for air, ... which rhe pots should be plunged; if this is raised up itur ninu teat ... the ridge, and the upright glafies are live feet, there will be room and bright enough ... p raife the ... and other annual plim i i great pe rretjoo, nod in ... a btajdmg, many of theft: tender annual plants, which rarely pe ... feet seeds ... thii climate without such contrivance, may be every year brought lb forward as to ripen theii ... seeds.

day from the violence of the fun, by covering die glafies with mats. In about three we ... these ... will have grown to a considerable size and strength, fo that you must now raise the glafies very much in the day time, and when the air is hot, and the sun is clearest, draw off the glafies, and expose them to the open ... i; and repeat this as often as the weather will permit ... whkh will harden them by degrees to be ... d abrtud into the places where they are to remain the ... feafon; but it is not advisable to fet these plitttain the open air till after the first week in July, ... hierv- ing to do it when the air is perfectly u>ft, and, if possible, in a gentle shower of ... nun.

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AMANTHUS CRISTATUS. See COLONIA.

KYLLIS, Lily Daff

AM (...) Characters are, bdit

It bears an oblong compressed spathe, (or sheath) which includes the flower-buds, and upon file rays, becomes dry, ... persistent; the lower teeth are spear-shaped points. In the centre is placed the reniform perianth-germen, supporting a slender style, crowned with a three-angled stigma; this is attended by six anal-floret flowers, which are crowned with numerous bristles. After the flower is past, the perianth ... dm f ... appears in three parts, leaving three cells, which contain seeds. mud

This genus is ranged by Dr. Jiriniecti in the lrfst ic-r-tion of his fifth class of plants. Moutanica, from the flower ... liavmg fix ftsmnn ir:tl

The Species are,

- 1. AMANTHUS (Linn.) spathe ... cocolla equali, filamentis declinatis. Hort. Sto. 420. Lily Daffail with a single flower in each spathe, which is equal, and the filament declinat. Lilio Narcissus luteus acrommally-nunc. Tourm. Inst. 186. Commonly called amantus Narcissus.
2. AMANTHUS (Linn.) spathe ... unil, corolla ... b, petals declinatis. Hort. Cliff. 135. Lily Daffail with a single flower in each spathe, which has equal petals, and the petals declinate. Lilio Narcissus Indicus parvulus micranthus albus. Mar. Hist. 3. 266. Commonly called amantus Lili.
3. AMANTHUS (Linn.) spathe ... unil, corolla ... b, petals tribus generalibus declinatis. Hort. Cliff. 135. Lily Daffail with one flower in each spathe, which has unequal petals, and the filament declinat. Lilio Narcissus luteus acrommally-nunc. Hort. Blik. 195. Commonly called Jactatus Lili.
4. AMANTHUS (Linn.) spathe ... multiflora, corolla ... pediculis albis. Hort. Ur. 1. 75. Lily Daffail with

- with many flowers in one cover \ the petals equal, spread open, and turned backward, with broken stamina, commonly called *Guernsey Lily*.
5. AMARYLLIS (*Regina*) fpatha multiflora, corollis campanulatis aequalibus, genitalibus declinatis. Hort. Cliff. 135. *Lily Daffodil with many flowers in one cover, the petals equal and bell-shaped, and the stamina declined.* Lilio Narcissus polyanthos flore incarnato, fundo ex luteo albefcente. Sloan. Cat. Jam. 115. commonly called *Belladonna Lily*.
 6. AMARYLLIS (*Belladonna*) fpatha multifloracorollis campanulatis marginibus reflexis genitalibus declinatis. *Lily Daffodil with many flowers in one cover, the petals equal and bell-shaped, their borders turning backward, and declining stamina.* Liliim Americanum puniceo flore, Belladonna di&um. Par. Bat. 194. commonly called *Mexican Lily*.
 7. AMARYLLIS (*Longifolia*) fpatha multiflora, corollis campanulatis aequalibus, fcapo compresso longitudini umbellae. Flor. Leyd. 36. *Lily Daffodil with many flowers in one cover, the petals equal, and the cover compressed the length of the umbel* Liliium Africanum humile longifolium foliis polyanthos iaturato colore purpurascens. Par. Bat. 195.
 8. AMARYLLIS (*Zeylanica*) fpatha multiflora corollis campanulatis aequalibus, genitalibus declinatis fcapo tereti ancipiti. Flor. Leyd. 36. *Lily Daffodil with many flowers in one cover, the petals equal, and the cover opening two ways.* Lilio Narcissus Zeylanicus latifolius flore niveo externe linea purpurea striato. Hort. Amft. 1. 73. commonly called *the Ceylon Lily*.
 9. AMARYLLIS (*Ciliaris*) fpatha multiflora, foliis ciliatis. Flor. Leyd. 37. *Lily Daffodil with many flowers in one cover, and the edges of the leaves hairy.* Lilio Narcissus fphaericus iEthiopicus foliis guttatis & ciliis instar pilosis. Pluk. Aim. 220. commonly called *the African Scarlet Lily*.
 10. AMARYLLIS (*Fernalis*) fpatha uniflora, corolla asquali, ftaminibus ereftis. *Lily Daffodil with one flower in a cover, with equal petals, and ereSi stamina.* Lilio Narcissus luteus vernus. Tourn. Inf. 386. commonly called *Spring yellow Lily Narcissus*.
 11. AMARYLLIS (*Orientalis*) fpatha multiflora corollis inaequalibus foliis linguiformibus. Butt. *Lily Daffodil with many flowers in a cover, whose petals are unequal, and leaves shaped like a tongue.* Lilio Narcissus Indicus maximus fphaericus floribus plurimis rubris liliaceis. Mor. Hist. 2. 268. *Brunfwigia of Dr. Heister*.
 12. AMARYLLIS (*Capensis*) fpatha triflora corollis campanulatis aequalibus genitalibus declinatis. *Lily Daffodil with three flowers in each cover, whose petals are equal and bell-shaped, with declining stamina.*
The first fort is very hardy, and increases very fitly by offsets. The season for transplanting these roots is any time from May to the end of July, when their leaves are decayed, after which it will be too late to remove them -, for they will begin to push out new fibres by the middle of August, or sooner if the season be moist, and many times they flower the beginning of September *, so that if they are transplanted, it will spoil their flowering. This plant will grow in any soil or situation; but it will thrive best in a fresh, light, dry soil, and in an open situation, i. e. not under the dripping of trees, nor too near walR It is commonly called by the gardeners, the Yellow Autumnal Narcissus, &c. and is usually sold by them with Colchicums, for autumnal ornaments to gardens; for which purpose this is a pretty plant, as it will frequently keep flowering from the beginning of September to the middle of November, provided the frost is not so severe as to destroy the flowers *, for although there is but one flower in each cover, yet there is a succession of flowers from the same root, especially when they are suffered to remain three or four years unremoved. The flowers seldom rise above three or four inches high; they are shaped somewhat like the flowers of the large yellow Crocus -, the green leaves come up at the same time, like th^Saffron, and after the flowers are past, the leaves increase all the winter ^TJ^ roots are bulbous, and shaped like those

of the Narcissus, so are proper ornaments for the borders as are planted with Cyclamens, Saffron, Autumnal Crocus, Colchicums, and such low autumnal flowers.

The tenth fort is more rare in England than any of the other, at present. It was formerly in several curious gardens, but as it flowers at a season when there are many finer forts in beauty, it was neglected and cast out of the gardens, whereby it is almost lost in England: it grows naturally in Spain and Portugal, where it flowers early in January. This is as hardy as the first fort, and may be planted in the open borders, and treated in the same manner, excepting that this will not lose its leaves so soon, so should not be taken out of the ground to transplant, till the end of July, or beginning of August. It flowers in April or the beginning of May, but is not of long duration.

The second fort is a native of Virginia and Carolina, in which countries it grows very plentifully in the fields and woods, where it makes a beautiful appearance when it is in flower. The flowers of this fort are produced single, and at their first appearance have a fine Carnation colour on their outside \ but fades away to a pale, or almost white, before the flowers decay. This plant is so hardy, as to thrive in the open air in England, provided the roots are planted in a warm situation, and on a dry soil; it may be propagated by offsets from the roots. The flowers of this fort are almost as large as those of the small Orange Lily, but do not grow above six or eight inches high *, they appear the latter end of May, or beginning of June, and sometimes it flowers in August in this country.

The third fort, which is commonly called Jacobseal Lily, is now become pretty common in the curious gardens in England, the roots sending forth plenty of offsets, especially when they are kept in a moderate warmth in winter: for the roots of this kind will live in a good green-house, or may be preserved through the winter under a common hot-bed frame; but then they will not flower so often, nor send out so many offsets, as when they are placed in a moderate stove in winter. This will produce its flowers two or three times in a year, and is not regular to any season; but from March to the beginning of September, the flowers will be produced when the roots are in vigour. The stems of these flowers are produced from the sides of the bulbs, so that after the flowers produced on one side are decayed, there is another stalk arising from the other side of the bulb *, but there is no more than one flower produced on the same stalk. The flowers are large, and of a very deep red -, the under petals, or flower-leaves, are very large, and the whole flower stands nodding on one side of the stalk, making a beautiful appearance.

It is propagated by offsets, which may be taken off every year; the best time to shift and part these roots is in August, that they may take good root before winter; in doing of this, there should be care taken not to break off the fibres from their roots. They should be planted in pots of a middling size, filled with light kitchen-garden earth; and if they are kept in a moderate degree of warmth, they will produce their flowers in plenty, and the roots will make great increase.

The sixth fort, which is commonly called the Mexican Lily, is not so hardy as the former fort, so must be placed in a warm stove; and if the pots are plunged into a hot-bed of tanners bark, the roots will thrive better, and the flowers will be stronger. This is increased by offsets, as the others of this tribe *, and flowers usually the beginning of spring, when it makes a fine appearance in the stove: the flower-stems of this fort, seldom rise more than one foot high, each stem supports two, three, or four flowers, rarely more than that number. The flowers are large, and of a bright copper colour, inclining to red; the fpatha, or sheath, which covers the buds before they open* divides into two parts to the bottom, (landing on each side the umbel of flowers, joined to the small foot-stalks.

than those which are kept in pots, and will multiply faster.

The fourth sort is supposed to come originally from Japan, but has been many years cultivated in the gardens of Guernsey and Jersey, in both which places, they seem to thrive as well as if it was their native country; and from those islands their roots are sent annually to the curious in most parts of Europe, and are commonly called Guernsey Lilies. The roots of this plant, are generally brought over in June and July-, but the sooner they are taken out of the ground after their leaves decay, they are the better: for although the roots which are taken up when their flower-stems begin to appear, will flower, yet their flowers will not be so large, nor will their roots be near so good after, as those which were removed before they had sent out fresh fibres.

When these roots come over, they should be planted in pots filled with fresh, light, sandy earth, mixed with a little very rotten dung, and placed in a warm situation, observing now and then to refresh the earth with water: but by no means let them have too much wet, which would rot their roots, especially before they come up. About the middle of September, such of the roots as are strong enough to flower, will begin to show the bud of their flower-stem (which is commonly of a red colour); therefore you should remove these pots into a situation where they may have the full benefit of the sun, and may be sheltered from strong winds: but by no means place them too near a wall, nor under glasses, which would draw them up weak, and render them less beautiful. At this season they should be gently refreshed with water, if the weather be warm and dry, but if it should prove very wet, they should be screened from it.

When the flowers begin to open, the pots should be removed under shelter, to prevent the flowers from being injured by too much wet: but they must not be kept too close, nor placed in a situation too warm, which would occasion their colour to be less lively, and hasten their decay. The flowers of this plant will continue in beauty (if rightly managed) a full month; and though they have no scent, yet, for the richness of their colour, they are justly esteemed in the first rank of the flowery tribe.

After the flowers are decayed, the green leaves will begin to shoot forth in length, and if sheltered from severe cold, will continue growing all the winter; but they must have as much free air as possible in mild weather, and covered only in great rains or frosts; for which purpose, a common hot-bed frame is the properest shelter for them, under which if they are placed, the glasses may be taken off constantly every day in dry open weather, which will encourage the leaves to grow strong and broad; whereas when they are placed in a green-house, or not exposed to the open air, they will grow long and slender, and have a pale weak aspect, whereby the roots will become weak, so that it seldom happens that they produce flowers under such management.

These roots should be transplanted every fourth or fifth year toward the latter end of June, or beginning of July, and planted into fresh earth (but they should not be oftener removed, for that would retard their flowering.) The offsets should also be taken off, and planted into several pots, which, in three years time, will produce flowers; so that after a person is once stocked with these roots, they may increase them, so as to have a supply of blowing roots, without being at the trouble or expence of sending to Guernsey every year for fresh roots, and the roots preserved here will flower stronger than those which are usually brought from thence, for the inhabitants of those islands are not very curious in cultivating them. Their usual method is to plant them at a great distance in a bed of common earth, where they let them remain for many years: in which time they produce such a number of offsets, that many times one single cluster has contained above a hundred roots; by which means, those which grow on the inside are much compressed

by the outer roots, that they are perfectly flattened; and from the number of roots growing in each cluster; they are all rendered weak, and unfit to produce such large stems of flowers, as those which have grown single, and are of a spherical figure.

But when a person is possessed of a large number of these roots, it will be troublesome to preserve them in pots, therefore there should be a bed prepared of the following earth, in some well sheltered part of the garden, viz. Take a third part of fresh virgin earth from a pasture ground, which is light, then put near an equal part of sea sand, to which you should add rotten dung, and sifted lime rubbish, of each an equal quantity. With this earth (when well mixed and incorporated) you should make your bed about two feet thick, raising it about four or five inches above the surface of the ground, if the situation be dry; but if the ground be wet, it should be raised eight or nine inches higher. In this bed, about the beginning of July (as was before directed), you should plant the roots about six or eight inches asunder each way; and in the winter, when the frost begins, you should either cover the bed with a frame, or arch it over, and cover it with mats and straw, to prevent their leaves from being pinched with cold; but in the spring the covering may be entirely removed, and the bed kept constantly clear from weeds, during the summer, observing to stir the surface of the earth now and then; and every year, when the leaves are decayed, you should shift a little fresh earth over the beds, to encourage the roots. In this bed the roots may remain until they are strong enough to produce flowers, when they may be taken up and planted in pots, as was before directed, or suffered to remain in the same bed to flower.

The roots of these plants do not flower again the succeeding year (as in many other sorts of bulbs;) but if their bulbs contain two buds in their center, as is often the case, they very often flower twice within the compass of three years; after which, the same individual root does not flower again in several years, but only the offsets from it.

AMBROSIA [so called from *d* privative and *MOIS* mortal,] because feigned by the poets* to be the food of the gods*

The CHARACTERS are,

It hath male and female flowers on the same plant. The male flowers are composed of many florets, which are included in one common empalement of one leaf, which is plain, and extended the length of the florets: each floret is of one leaf funnel-shaped, and cut into five parts at the brim; in the center is situated the five small stamens, which are crowned with pointed ereb summits. The female florets are placed under the male in the same spike-, these have an empalement of one leaf, which is pointed and permanent: they have no-petals, but an oval germen placed in the bottom of the empalement, supporting a slender style, crowned with two long hairy stigma. The germen afterward becomes an oval hard capsule with one cell, crowned with the acute segments of the empalement, and inclining one roundish feed.

This genus of plants, is by Dr. Linnaeus ranged in the fifth division of his twenty-first class, entitled Monocia Pentandria, from their having male and female flowers in the same plant, and the male flowers having five stamens.

The SPECIES are,

- i. AMBROSIA (*Maritima*) foliis multifidis racemis foliatis pilosis. Lin. Sp. Plant. 988. *Ambrosia with leaves divided into, many parts, and single hairy spikes of flowers.* *Ambrosia maritima.* C; B. P. Sea Ambrosia.
- ii. AMBROSIA (*Elatior*) foliis bipinnatifidis, racemis paniculatis terminalibus glabris. Hort. Upfal. 284. *Ambrosia with double winged leaves, a smooth loose spike of flowers growing at the extremity of the branches.* *Ambrosia maritima foliis artemisifae inodori elatior.* H. L. 32.
- iii. AMBROSIA (*Trifida*) foliis trilobis & quinquelobis serratis: *IAN. Sp. 988. Ambrosia with leaves having three and five lobes,*

ht/rJ,vbich

... from either edge: An...
... plant originally from...
... An...
... An...
... An...
... An...

The first sort grows naturally in Cappadocia, &c. near the...
... divided into many pro...
... aftiong odour. The...
... hairy...
... divided with many m...
... After tUr flowers am puft, IJR- female, IIOBSTJ...
... This k an tinnuilplant, which feWum pirtrech iu...
... unlds the plants ire brought forward in the fprings therefore the feeds should be...
... in a warm border, and when the plants tame up in the fpring, they should be tranfplined into another warm...
... of poor ground, for when thefc plant! sre (An into rich moist land, illy grow 'cry W) usually, to do not flower till late in the feafon. Therefore the beft r...
... feeds, is to...
... j'bints in the...
... vibbifh, to prevent their luxuriant growth, which will caufe them to flower early, whereby good feeds may be obtained.

If the fteda ripen itid an' permitted to fcatcer, die pjntns will cu...
... KfkhouJ a...
... for when ilic feeds arc (own in the f'pring, thr j...
... an come up thefome year, but will rtmiin in ilit...
... mnd a yen- before they vegetate There ii noi much beauty in this plant, to it is not often admitted to have a jilartt in gardens, except in thole where a variety of plants are preferred.

The second sort ^ruws naturally in the iflands of America, as allb \\ Carolina and Virginia; li-orn the two tatter countries I have frequently received tin feeds, and in the tubs of earth which came with plant from the former, the pl...
... I we come up in |...
... fo is undoubtedly a...
... iimom weed there. This grows more than threeK-a high, dhd...
... into many branches, p...
... Qwd with winded leaves in fliape like thiofe iupa'Ort; ai the extremity of each branch, the looff fp'ike5 of Hovers are pro...
... duced, compofed of one long ipike in the middle, and three or r'jur fhortei lateral fpikes: thefe are fmooth, and have u- male anL female flowers ranged in the fame manner 15 the former; the female-fio> are fucceeded by feeds of the ituc fhape.

This Ion will ctir.c up mil thrive in the Open air in England, but the pki...
... to raised...
... ill not produce good feeds, unless the feaf...
... m is warm, therefore to obtuiti tlietn evi...
... y year, it is neccitaiy to cnl...
... tlicm in the following manner.

The feeds of this plant thguU be fown m i r moderate hot-bed...
... i March, and when the plant* are comcu| two inches high, they nn...
... be tranfplanted into another hot-bed, a liowhvg each plan: three or ttiir inches fquare i obfei'ninj io wner them pretty well, an M...
... the...
... lieve talien...
... w more, afterward they mull have a lat'r lharc ol' frifh air every day, when the weather is warm, and frequent waterin,

for they are very thirfty plants. When the plants are grown pretty ftrong, they mull be taken up with balls of earth to their roots, and planted in large pots filled with light earth; and if they are placed in a very moderate hot-bed until they are well rooted, it...
... Agready forward their flowering. Toward the latter...
... May they fhould be p...
... J abfoail

with other hardy annual plants, among which they will make a variety. These will flower in July, and their feeds ripen in September.

The third sort is a native of North America, where it is a very common weed. The stems grow eight or ten feet high, and if it is in a rich soil, or is often watered, it will grow much higher, and spread out into many branches. The seeds of this plant, when blown in the spring, seldom come up the first year, but frequently remain in the ground until the following spring; so that when the plants do not come up, the ground must not be disturbed till after the spring following. When the plants come

My fume of them may be transplanted into a rich foil, all...
... nxjm every way; \ \...
... are frequently watered in a year...
... they will grow to a brfpe Giiei bu; their blanches mu...
... be supported...
... otherwise they are very...
... fibbia to break w...
... a strong wind. The flowers...
... of this plant arc noi mon; conspicuous thin tluife of the Hemp, to whk;...
... there arc only preferred by fuch pmlbos a^ are curious in botany, for inh fake of varier;-
... If the feeds of this fort ripen audar...
... fuffered...
... icstctt, the plants will pomi: op ihi...
... following Spring, prw...
... d the...
... sound it tmt'diturbcd \ or it the fc...
... in autumn, the plants will coir.c up x/c following fpring, ami may be treated as above.

The fourth sort grows naturally in North America, from whence I have r...
... tived the feed t. Thk divides into many branches, tilt- f...
... w part of wtikl. are garnished with whole leaves, but the upper part hath compound l...
... ivrs rrlrmbiirig thofe d...
... the Icuond luri, the spikes of flowers are produced from i he winp of the falk i...
... in which it differs from difecond. This may be treated in the fame manner;...
... the...
... cond lbrt.

The fifth fort ii a nitiv<- of Peru, from whence i...
... the younger J>...
... feut...
... * iced^ to the royal g...
... tans, and by illl- generality of hii brother 'Dr. liar- j...
... d k- Juffiru, t was favoured with riis plant, whi h ILL...
... tilCcct-d in the thelfea garden, where it annually perfects its...

This grows to the height of ten or twelve feet, with a woody stem, divid...
... into several branches, garnilied with hairy leaves, compofed of feveral winged lobes, and are placed v...
... mainly upon the branc...
... vsti the spikes of flowers are fingle, hairy, and are produced at the extremity of the branches. The femii! ilowen (which...
... r fituated "below the nali...
... on the fame fpikss; grow in fmall chillers, at frapanite d'd t'incss, each having two long narrow frgments of the female...
... nient, whicS rift above the-canuJe or let...
... vrid.

This is a perennial plant, and may be pro-...
... cured by cuttings or feeds, tby the farmer, they fhould be phmidin a haily border, in chl...
... of the jmrne months; thrc will requirit; to be frequently watered in a roonth or live weeks they will...
... have good roots, thierfore lhoulk tien Iv [jktti up and potted; for when they...
... left...
... -n b the full ground, they will grow very luaurianc, and not (o foon rt...
... over the...
... removal, as thofe which are transplanted earlier. These plants are best, if they may be expofed to the open air in fummer, and in...
... the winter, if they are sheltered in a common green-house, with Myrtles and other hardy exotic plants, they will live feveral years. Ji mild winters, tat ro...
... of this plant have lived in the full ground-in a ivnm border, without any covering, but hard froft will kill them.

The seeds of this fort seldom come up the same year, when i they art...
... n in fpring, but thofe twhich have fallen in the...
... e uitimui, have pi own til- fi-J lowing 5...
... and to have...
... llhife n-dinh luive been fown st the Iamo...

AMELANCHIER. See CATOR urnu/i.

AMELUS, Six-flower.

The C...
... are.

The...
... is round and hairy...
... in of the...
... cultured land, the...
... fowers...

A M E

erose: the M/k, and the female tiv rjiti ...

The genus of plants is rang<R by Dr. Linnæus in the fecund ii-tium of h ...

- i. AMEU.1/S rfybiiulu) fullis oppofitis lanceoliti ...

The first fort grow naturally, it the Cape of G ...

This is a perennial plant, which is easily propagated by cuttings ...

The second fort grows naturally in Jamaica; this ...

- AMETHYSTEA ...

The CHARACTERS are, ...

This genus of plants is by Dr. Linnæus in the fecund ...

- AMETHYSTEA ...

A M M

from whence the seeds were first sent to the imperial garden at Petersburg ...

It is an annual plant with an upright stalk, which rife) ...

When the plants come up, they will require no other care but to keep them clean from weeds ...

- AMMANMA. Houft. Nov. Gen. L'n. Gen. ...

The CHARACTERS are, ...

- 1. AMKA.VMM ...

The first fort grows naturally in most places in Jamaica ...

- 2. AMMA ...

The first fort grows naturally in most places in Jamaica ...

The plant must be raised on a hot bed in the spring ...

- aftrwardftmora ...

light earth, and placed under a frame, obfer. i ng to fhatli: Lucm till diry have taken frefh ntut; then tiity lhoul! bepkkol in a...

The fecund fort grows naturally in Virginia and Carolina; this is an annual plant, which rices about a foot high, irith redfoecntnt ftafla, putting out fide branches, which grow uppoftite: the Howers utr produced lingli: from the wings on the lower pm & the branches, but toward the top they are in dufien -.

The third fjrt grows naturally in China; thlis is a very low plant, Ieldom ricing more than three inches tiigti; the leaves are placed oppofite on the branches, and the flowers grow in whorles from the wing-, of tile ihlk. As this plant has little beaury, it is rarely preferred in gardens. It mull be railed on a liot-bed m the fpring, and treated in the fame manner as the Rdt (art, won v.hicli management the feeds will ripen in England.

AMMⁿ | A_T, Cr.\ Bilhops-weed.

The CDHAFACTERS are. It is an xmtiltifirotu plant; tbt great ambtl is compesed cf maxj fmiilltr, which art difpofed like rap. Tit outer iinehcrum is compesed of mittf namnv-poiuled leaves, which are tsluejt the length of the tmbei. Thecmatt umbels have a Part mtari-leazed muokcrum. Tbcjimert are Jifftrm, each taring fut ptais, which art hearl-fhspii; theft in tbt oxtet rjtj being large and unequal in ijz, but thefi in the cinwr, *wbith comaft the iifk, aft nearly equal. Theflowers have fist fknldr jiamina, wW ait crowned cwf i rmwdijh fsmtnis. In tbt center of the mpakmfit is Jintsted the gmntn, fupporting two re-fowed fjila, crewmd j'fub obttft figma. The gennen afterward becomes a fmetti r&umd, firiattd fruit, empofed if two feeds, which are plain wthm and eenvat an their entfdt.

This genus of plants is by Dr. Linnaeus ranged in the lecond lection of his tilth clafs, entitled Pentandria Digynia, the flowers having five ftamiu and two fyles.

- The SPECIES are, 1. AnMI (Mejm) foliis inferioribus pinnam L-mceolatis fiTratis, fuperioribus. multiridis linearibus. Hott. Uptid. 59. Bifivpt-zeetd Kith under leaver -which are vrrnged, fptwr-flixipt, ami fated, and the upper Itaiiei art divided into many narrow figmtu. Tlis is the Ammi majus. C. B. P. 150. And the Ammi vulgogr. Dod.p. 415. GMM Bilbips-weed.

- 2. Amu (Glasfiam) folionim omntum laeinuV lan-ces: mi. Guetc, l. p. 433. i. e. Bijhepi-vfced j'itb ail its leaves cut in Jbapc of a fptm: Ammi petrscum pincubulum perenne. Mor. Hilt. j. p. zy. I'hr firft inn a uumalj of IJK there U a variew, which is mentioned by John Rauhian an a dirjii5t Ipo-cies, under the cde of Animi tnajus foliis plm • uum inciik k nonnihil trijpis; but I have frequeni i had this variety arife liom the feeds of the formtrj Ib I have noi ciuimcrattd k as a different Ibrt.

This plant i* projjgated by feeds, which fhoulk be fawn in thr Suttum in the place where it (s to rr-nuin -, aixl in il- fpring, th: ground (hould be hoed to cut up thic weeds, und Mo to rhin r the plants in the lime insnner as fo prt&iied for Car; ves, leaving them four or five inches t&tndet l or if i- ground is goTM where they grow, they mull be left at leal: fix indue, ft* tbevf vviu grow brgr ami cover the ground > after this they will require no farther cair, but to keep them clean from weeds. IJ* June they will flower, and their fiedi will ripen in !ugut, which boold be gathered a* it ripens, otlwrwife it wLU < oon fcazes. Theft iiti'< ii-f ul'eJ in nii.dttine, fo imty IK l. ad in plenty with this management •, for it will grow in any fituation that k open, bet thrive belt on lig II. landy

land. When die leeds art lown in the ifpring, they fcllowl coine up the fiuue year -, and if they Itiould, tholi.* plants will be weak snJ produce tew Ieeds. The ItTond fort is a perennial plant, which is pri-ferred in botanic gardens for vinery, but h-iving lit-tle beauty, is rarely admitted into other garit:-. It may be propagatd by feeds, whiofi lhould be lown in thit autumsii becaufe thiole fown in the fpring, fel-dom come up ihc fame year. It will grow in any optn fituacion, I, very hardy, and thrives belt on a l. soil

AMMI PERENNE. See Sicut. AMOMUMi'in. Gen. Plant. J. Zinzibtr. C. B. P. 35. Ginger.

The L'HARACTES⁵ arc. ^btflcKsers art cetkHed into afialyfpit, each buying a Juult (fpit&e) or jheeth -, tit outer jbtetb htfA tbeftale, and the iwtr ettcsmjijfi! it* titUf the power with the parti ef giaeri: In the fofem eftbt In the fofem eftbt hrcm tbt !*!*! sf tit ft i- . j . . Jiamina, wldi art crnai Under the r(cj)ta<; mut, fuppert'ng a fmgte gtriBta efmuard become: em ••&•• jtl. epmag in three parts, tmtain

This gcfiu> of plants is by Dr. L. mac-is rant in his fictt dais, entitled Mon:4ndria M'oiogyniii -, but it more properly belongs to lui Sxon, for the flowers of this have two ft.:mita, one of which is joined to the ii^per fegnvnt of the flower, and this Jbon IQIL-S it funnuts, to appear to be only a fig-ment. This I have confhnUy found in all the Bo*, ere whicf I have cxiiunited •, the flwcers have but one fyle.

- Thi? SPECIES are, 1. AMOMCM Icapo nudo fpicj ovatn. I Tort, Cliff. 3. ylmntum with a naked fittk and oval Spike offtsvuri. Zinzibtr. C. B. P. 35. L'inger. 2. AMOWUM fcapo niido fpica oblongS obtul Hort. t HL. j. Amama -xib a nahffalk 'cud en ebleng blunt fmver-fpth. Zinzibtr Isrifolratn lylvellrc. liorr. LugX. 616. Brtd-lesvtd wUCiiHger, alltd Zumber. 3. AJKQMVM fapo braiteis altcrnia Lutis, cault folio-nim alitTmitf. ranching aiterimttft t>tit very (. 2 leaf pads.

Thefrltt, which is the common Ginger, is • Ovaced for lale in molt or thr [Qaads of America, but is a native of the Eafi-Ioriiri, and ajlb of lbme puts of the Weft-Indies, v/here it is found growing oal I wthout culture. Tin: dried roots • i this lortrumifn a conficlerable t!^qJort from the Britiit colui- in America. The roots are of great ul'e in the kn then, « allb in mcc&tne l anii the green roots prfrved as a iwcittmeat, are ptefmUc to wery other Ibrt.

Tilt roots of this (brt art jointed, lad foread in tile ruid i tlwfr put otit many green tred-like [talks in the fpring, whkh rife to the lie ig he of twofeetanda half; garnifbed v,ith long narrow lesres, clodfyem-bracing the todks at their bale. The rWer-fems afterward arifi^bythe fide oftlicle, immediately from the root; thofe ar; naked, ending wthi in oblong fealy fpikes, frui l ea'h ol" thcie feilca ii produced l finglc blue flower, wlofe petals are but little longer than die fquamofc covering. The flowers appear in September, and in about a mpofa after the titlki cn-tirely decay. Ibtluit the roots remain iuative threeor four months.

The fecond fort grows natunily in India l tile mds of this are • uichkigerrh: in thole of the lift, but lire jointrd ii the lame tnanner. The Ihlkj grow from three, to ne.ir four feet high, garnifbed with oblong haves, jjiUiceJ ail ornamy, and embrace the llalka at tbcii l. The tower-lhrmE arile in-imedimey from the roots; thofe ar: • Btminated by • oblong, bluat, fealy heads, out of each feale b product-l a fmgle white flower, • • • poud^t extendu co

beyond their Italy covering. Thele appear in Srp-tembri, and in November all die ibilk* yt'rilh in the same manner as the (ginger).

The third • Ibrt i'lih thick Belhy roots, refembling ihofe or the large Flag Jris; in die fpring the > firth many gKen reed-like ftalks, which riic tj rhe htoffeavor ... narrow leaves, let ... at their bale. The 1U ... new wife from the rouu in die Iprinp. I ... bub nor produced any ... England, though chs roots dirve and increiic greatly whre they are properly managed.

All thic Jorfi ait-tender, and require a warn^l flave to prelerve them in this country. They ire eafily propagated by parting of their roots; the beft time ... (boots) ; for they (hould not be tr. ... in fummer when they are in MI vigour, nor do they ... ed ib well when they are removed in autumn, becaufe [they remain lonjj after in a; inactive itate ; ... and during that time, it wet comes to I ... roots, it often cauiw them to roc VYhtn the rooti arc parted, they [herald not be divided into I'mall pieces, efpecially it'trie)-are dengr-cii to have Rowers-, for ... the roots have lpprad to the lide of the pots, die; rarely put out {lower-Items, for which rcoibn diey mould not be planted in very large pot*.

The ft plant* thrive befr in a light rich ... th, fuch as may be found in the kitchen-garden ; wiif this the pou fhould be filled within two inches of the top, then the rout; liould be placed in the middle of the pot. obferwng chat their crowns ?re upwards, and du-pots lilled up with the fame rich e.irth; after this tile pots fhould be plunged into a hot-bed of tanners bark, and muft be ipfrrily watered, unii^l their ftalks appear above ground, when they will require a ... Micr flmre or moifture, efpectinly during the warm fiini-IJHT months; but in auuni:- the water: £5 muil not be a foe, ... vinter feafon, when the roots are inactive, very little water fhould be given them. The pots with thic roots fhould confiderly remain planted. j chc tan-bed, ibr if they are taken out ... IK! [Juced on (heivee in the fhove, their fibres frequilly (brink, which often occafion the roots to decay.

With this management all thic fTO have multiplied greatly with me, and the crmjnon Liinger hAi produced roots which Ji have weighed five or fix ounces, but the others have c baeo in'jr a jusiml weight.

AM' ... III. See SOLANUM. AMO^ ... Six LVCOPW. AMO RPHA. Lin. Gen. 1. art. 766. iiaftird

The CHARACTERS ARE. ?b> jBWT hiibh a pcrmdiKM tmpdemttst tf tut kef. •wbith ii tal/tit&us. (ylimlritiil, and cut into five finaS eithe parts at the beam. The flmre u of ibt bultrj! ... the upper petal, • fusJurJ, h fimili, CMarvt, and ... he t'vi vppttr figinmls of the emploiment. It hath ten j. •miaa, jsmtd et ibiirtife, pf i# ... and rrecoo td 'jjltb fusaitis j ... I rcuttdfozeniKa, juppir JhrfKil jkk, vibkh is the To)Eit/ »j the flmre, and (r>nr:td uiiili ajiagl fiiara; 3K gemv) ift&tem ... •jviKg em ctti, in n-hb <ti lodyii iv ... feeds.

This genus is by ... i hi* levcn-trench claf of pl ... nu, ciiiuuld Dud's ipUJ. • the flowers of this clafs have ten flamina, five of which are jointed, and one tfan.:

We knowbui one S?ic«f ?. ... MokPBA {I'ruticjrt. I-lort. Cliff. 353. BdflofJ />ijJ-to. Barba Jovii Ariiciciana pliuoacach; rolii* flof-CUH j li ... i >

This shrub grows naturally in Carolina, whre formerly the inhabitants made i tumrt for of I ... from the young fhoots, which occ. Fiona} their giving it the name of ... Indigo. It riic with ... ij irregular D ... ht of

twelve or fourteen feet, garnifhed with very long winged leaves, in fhape like thofe of the common Acacia. At the extremity of the lame year's fhoots, the flower ... are produced in long pendulous spikes, which are small, and of a deep purple colour; the flamina: ow beyond the petals, and are crowned with yellow ... after the flowers are past, the germen turns to a ... pod, htviog two kidney-shaped feeds, but ch ... do not ripen in England.

The leeds of thi qjplant were tent to England from Caroli;i,i, In Mr, Mark Camby, P. R. S. in 1714, from whit! many plants were raised in the gardens near Londoji; ii,le vn : of quick growth, and many or the plants produced flowers in three year: At prfcs: it is become very common ... S where it u propaatt ... (or[the otnament of [he Iliniberry. It is et-neraJly propagated by feedi, which »re mnuall sent to England from di lie rent parrs of Anic-rkj -, ... found HI many o; the notthem <> ; ... it may aljli b; propagated b) laying down ... the young branches, which ill OM yeai will make good ttxrs, and niny then be sakun off anil planted either is the owKety, w the places where they are de'igned xo remain. If they are pur intn vi narfery, they fhould not rcm'lii thre niore than one yew; for as the plan a niack laige lhoats, th=j' do not rcinoi'e well when they have remained lone in a place: they muil have a fhelrered fituodon, otherwrfc th< r btanchi iviil be bmktn by L< wind*. As thele (h ... are large and ...

Lppur parti arc goeotaly kilk-d by trolt in ... r, but they put out ihoocs a^in in plenty below ... id pirt die fprinu following,

A M P H I T H E A T R E r / i v ^ a y — a f ^ a r e a i i d , and 5(a'>f«i, n view, &•.) or term>lej of view created on a double rifi:]^, were effectted jjeate ornaments to a large anil noble garden. If this (till, < i I ... ground, ii of a (emkirtukr liyure, it will be Itill the better.

Iiiric iunphiihcatrw are fometime form I of Eter-greens, as Hollies, I'lilly: Laurufimilis, Box, See ... to plant the fhoreft growing thub'lL the front, and the tallest trees behind, as Pine, Fir, Cedar, &c. i on, ice.

They are alfo found of flopes on the We% of hills, and t ... with turf, but are nowgeneraUy es luded b^ill perlbnsoi (ruL- tftit, 'for ths natural eafy Hope at fuch hill^ is b ... more beautiful LIUI the [riF angular flujjci into which thefe smplitheatres are commonly cur.

AMYU. II AL US. Lin. G^m. Shut 5 + 5. p ... Jiaii") f^m] The AlnionJ-trec.

The CHA&ACTIU Me, /; bath tt txbutcut tnpalmmt of cur Itaf, •j.iitb is ... aJ Ibt him mioj-j ... mails-, tbrjicjcy h-.thfN ival,tib:uff, {OH-strjt piu- ... • • utfrtti in tfo em-paltBuiit; in lire tettttr • ... the outer flower is situated a rsuxdijh buiry grri<- ... , supporting a single file the length of the flmre, which is crowned by several stamens; this jj siltrdtit iy a great ajimler if'ji; ... for each flmre, ... I :ii manyffixuj ere net fi k:S as the petals of the I'raw, theft art trgandt teilb Jfohr, ... After the flower is past, the germen becomes an oval, unspined, large fruit, with ... • din, (agb, hairy covering, tmia% a longitudinal furrow; this opens and falls away, leaving an oval compressed nut, with ... I fur: ... and curled, ... a single file of the same form.

£)i\ L,iniueus h'i joined to this genus the Persica, or Peacli-trec, mukinif ilicm iiii\ different fpecim, ranging it in hij twehui 11 ... entitled hofandria MofogyOJSJ thc floweri having from Cwenty (a chd ... 1, wiitdretolencd cod ... emploiment.

T h S ... 1. Auraau-vri (Communi) foliis petiolatis serratis petulii florum emarginatis. ... if ... Amygillius Ijuivi. C. B. P. 441. Communi Almond-tree.

I, Aitvcu/Li'i {Ffikis) ftilis j petiolatis emarginatis crematis, tQtollw oij'ce vix I'ngoribus. Almond tree

vntb (rtfwüd Uevts, having fnl-Saih, smitbptehf tht faxirt its hoger I ban lie tnpüttmnt, Amygti;Kis data) pueamine m-;)lioi. L. H. 1'. +41. Camtalf culled 'Jordan Ahmmi.

1. A ktretULUF (Suttiut) foliis liiilL-iri4aiictol-vtii acuminatis, marginalibus serratis. *Almond-tree with pointed, serrated leaves four sides.*

4. Amygdal. r» (Oriolotis) foliis lanceolaris inregerri-mis, aigemm pccn;intirjm petialo brevKrrr. *Almond-trirviib Jpear-jbopiA fiyiry it ova, which an cul-irt, and attuime all nVIF, tin,} very Jbsn foot-Italks. Amygdala Orientalis foliis wrgentris Ij lendenabus. DuHameL*

AM>'. V.;, IJ .Vima) foliis perjohtii frrratis baft at-Knu 1. *Almond with green / AT-BU, to&rt orr Ksr-rem- / (ñ the fenl-fidk. Amygdalus Iruilica Oina. J. L. L. zS. tab. it. Dwarf Almond will. Jing<t ji^ctrs.*

Tlw lirtl is the common Almond, millich is addvsted more for the bc&ury of its flowers, than for iu fruit. There are two varieties of this, ow WIL, sweet, the other bitter k&...li, whidi otten urfc from tht liuit of the same tree.

The first I oft ii commonly known by the ride 'it' j...; the nuts df this kind are frequently I...;:IK!; thefe have a tender (hell, and a larger iweft Kcrnt-l. The lotws of this tree are broader, the... and jrow mudi do&r (han thofeof the common fort, in:l chtr edges are enaMdi The flowers, ait very fmal, and of ,l pfk colour, in... to white I have Several rima raift-d tiicfe treat From the Almonds... m... abr ad, ami alwari found the plant... p maintain ilieir difference 1" in the common Almond.

The third fort is; , narrow QurMOflrtwi leaves, which are fawed n didredgSij iheftowersarenwh smaller thE: of the cumaun Almond, .. and are white; thf Ihooa of this tr< are frpalkr, a ad the j<ni clofer than 1 theft of die common foit, nor is the trtc lu handy, 1 ., before should have the advantage of a warm situation, niln.Twill-it will DOC thrive. Tllis fort Bowm rariy in die Iprindir, ami rarely produces fruit in England.

ULC from an old tree which grew weft ifbeeced walli !'<...ve Some years h I iht* fruit rij, which I were well flavoured, Lint their kernels were small.

The fourth fort was found... ing near Meppo, fmin whence the fruit was sent 1 10 [he duke Ir... in France, who raised several of... his curious garden at St. Germaine, ... 11 was fo pootl as is> send me a share of them, which are flourishng in the Chelsea garden, where the have endured mi: J]>cn fir the same years, against a wall, without Lry covering. The leaves of this tree are... lilyery, am! very like those of the S-iPurfliee. Tbefecontimieioitt of the year... very fine... and i've not been exceeded by fruit yet in : igland. I can give no further account... digrence from the other forts.

The fifth fort is very common in the nurferiet tbour. London, and is usually... M wirth other lit, covering shrubs to adorn gardens: this Almond rises more than three feet high, sending out many lide brand. The moss of this are very subject to put out suckers, by which it may be increased in plenty, but if tin... are not annually taken away, there will... fcamiheoW, As these suckers are very... It m creep at th... root, and put out suckers again, the... plajiis which sre pp... guard by layers are much... ;... finable, 'rlj. These suckers in April, at which time all the young blouts are covered with sawets, which are of... each blou-son, and make a fine appearance... wlitn intermixed with shrubs of the same growth.

The common Almond is cultivated in all the nurseries, and the trees are generally planted for the beauty of their flowers. Their blossoms appear in February, when the spring is forward, but if frost comes about the flowers are soon destroyed, so that their beauty is of short duration, and in such seasons there are few of the Almonds which bear fruit; whereas, when the

tree do ant flwer BO M.irch,they il-Ljom fail CQ bear plenty ut fruit, many of which wil be very sweet, and in such seasons they will be green, but they will not kwp lung.

They are propagated by inoculating a bud of thcse trees into a Peach, Almond, or Peach stock, in the month of July. The manner of this operation for the SUBJECT JHI... The next spring, when Uu: buds fboot, yuu may train them mi i either for stani;itli, or liil'er thu-m to gr-ww lor h;ill' stand-arils, according CO... own fancy; these... ;:• ttful] mehod is to bud mem to the height the ('.im are intended to be i atsd the second ytir after buJdin^; the) may be removed to the places where they are to stand. Tht: belt icsfcen lor tr-mfplaJitir] lli-i; trees, ii for dry ground, is in OSober, as soon 33 the leaves begin to decay; but for a wet fdil, in February it is much preferable, and oUcrft always tu tiud ujjon fluiivb ftocki for wet ground, and Almonds and Peaches for dry.

ALMOND, the Dwarf, with double flowers. See ETTILM.

AMY 1115. See ToxicodiHtHtoN.

ANACAMPSE • ROS. See SniDM.

ANACARDIUM. I. b. r. in Plant. 467. Acajou, Tournefort. R. H. 54. tab. 435. The Cashew-nut, or &'

THE CHARACTERIS.

It is a tree... of the leaf, with a frejJ, a, ut tin... fre... joints at the... The lower h of the leaf, having a fine taste, is used for parts of the top, which are... and are longer than the... the lower part... which are as long as the... round with small... in the center is found a round... appearing as... shaped... round with an... The X<mm... becomes a large, red, fleshy fruit, having a large... nut... in its apex.

This genus of plants: 1 by Dr. Linnæus ranked in the 11th section 1 histentii dat, entitled Dttuitirii Monogj'nia; the flower) ut ttua having ten D... Ha and a single style.

We taavebut one SPICEL of this genus, . h.

ANACARDIUM (Orientalis) Hort. Cliff. 16 1, /& tecUcit-1111 Aacardisaii,er Ltjehew. Acajou. Pif. Hilt. Ural! 58, This tree grows to the feet... ur more, in i... ;;ry_n which ii bodi Indies, but in Engiam! die plunu arv with g... ferved... i though by I... it from the seeds, they appear in... and vigour, as to produce a much greater progrt!': th... they are ever seen to... naked,

They are easily raised from the nuts, which are annually brought from America in great plenty; cch of th'de (ould be plnsi... in a small pot filled with light sandy earth, and plunged into J food hoi-bed of wners!... being t^retul tu prevent tlici h;^inf» wet, till the plants come up, for the 1115 frequently rot with moisture. The reason of myadsiffig die nuts to be... is, because the young seedling are when they are 1 ir;:irplanted. If the nuts are fresh, the plants will come up in about a month after planting, and I in two months they will be four iuir or five ii'rites high, with large leaves; from this quick growth, many p... have been destroyed by supposing them hardy, and that they would continue the like progress... icreis they seldom advance much farther the same year.

The plants must be constantly kept in the shade, for they are too tender to live abroad in England, in the warmest season of the year, nor will they thrive in a common green-house in winter. As these plants alwund wrth ;i lilly aerial juice, they should have but little water, even in summer; and in winter, if they are sparingly watered once in a fortnight, it will be sufficient, for their roots are inn^c? and li>oj) perill with moisture.

When these plants are transplanted, it will be the best method to break the pots, for the roots do not put out many fibres to hold the earth about them, so that when they are taken out of the pots, earth will fall from the earth.

will idJ nviy, from their roov, and when this hs...
the pnts lldom furvive It; therefore in breac-
...mt5, LKC lame cauti:jij) tuut be luJ not to
ihlhub tiit earth more itan tan be a voided j then the
plant, wiiti the ball f earth 10 iw roots, should be
put into a pot one five larger than that in which it
had before grown, filling up the pot with light sandy
earth, and plunse the pots again into the hot-bed.
These pl.wcs HUM)J not be removed oftner than once
a year, nor Qiould they be put Into large poi. for
...s their roots arc confined, they will not thrive.
"With this management: I have kept thefc plants fev-
veral years, but ...:•• ire of (km ::iuwdi after the firil
leaf...; /a that I have not raifed any (if them more
than two fed End n half high, and it is very rare to
Qx them in England more thin half that lieight,
though I have (ten cwo of thieni in (lower, on; in the
lite Sir Charles Wager's garden at Farfoju-grctn, and
the other in Chelca garden.

The pulpy fruit, to whose apex this nut grows, is
u large as an Orange, and is full of an acid juice,
which U frequently mixed in the making of punch in
America. Many of rhete fruit liave been brought to
England, in csflu of rum for the fame pin...
The nut is of the fize and fbaje of a hare's kidney,
bus is much larger ac the end which is next the frmt,
thin iit the other. The outer [hell is of an Ash colour,
and very lhiooth i under this ia another which covers
the krnd, between theffi there is :i thick black in-
ferable oil, which is very caufbic \ thiis will raife
billes! on 11 it flin, and has dften been very trouhlc-
fjincto chob who have incautiouDy puc die trnts into
their mouths IO break the fhcll.

The milky iuke of this nee will Italn linen of a deep
blak; which cannot be wafed out again; but whether
thiis lus the firic ptowrty wirh that of the, aftem
Anacordium, hjs not fit been fully experimented -,
far (lie iaijUkted juic of that tre • is the bef! 'urt of
lac.

whkfi is deaffer Gaining of black in China and
Dr. Grew mentions the juice being nftd forftaining
of c. ctions, but it it doubtful which of the fpec'ics he
means i though Sir Hlans Sluane fupposes it to be of
the Acijnu here mentioned. However, it may be very
well worth [lie rri.il; if the inhabitants of the Britiffi
illtnda in Americ would tan a few of the nx-es in
the bleediii^ fialbn, and coileA the juice in earthen
pots, i repain it in a place fr -t from dijft, or covering
the pots over with K a hn-n doih, tu pit-vent dull from
eng will it, i ad when it is of a jiroper confidence,
fonic trials may be made with it, to ix- if it his [be
fame proj rty with the fapan hi, which if it has,
may t-r'vt- a valuable i oninodicy.

A N A C R L U S. Lin. Gtn. Want. 869. Sintoli-
oides. V. il Arad. Sci™.

The CHARACTERS are,
It hath compound leav. t. ... of fimah tx
... raniuea feak
... amA etbe fei*hliflerkly
... t ftrhd out uthefferm of a
... eiapeltmit. Tbt bermaphroAiiit ftercis
... laKjittJiii, and
... t fender fiammi, whicb
... tricofitiminiii is fit utMer is
... ftw a fcti&T
... lejkrtil bavi
... men, fufiporiix c Jltmtr Jhtk
... iffittxijipiui) tbi btrmtfifod-
... diu f.srits ere fucad&ly one ablottg cmxprejijifet). Tbi
... fialbn arty.: figft t bkitg fid VM i brtieii
... borders cr wittg, vsbub art inj(aftd at tbt tsf lltfi are
... placed ra a eon.

This prnus of plants is ranged by Dr. Lirmseus in the
third I tion of his nr ...centh rlaft, enrided Syngt-
nqfn l'uly^amw ... lse plant! of this tl:
have ... and herm ... flowers include: l in
the fame common a ...

The SPECIES are,
1. ANACARDIUM (Coccoloba) foliis decompositis linearibus
lacinjis divisis. Hort. Cliff 417. d

filvb nurrir-Jj dxmpeu/iJed have, <aibi>fe iUvlfims art
Cotula cctica minima elianiameii folio capite
inflexo. Tourn. Cor, j ^ .

AMACTICUS (Oritinaff) foliis compofitiis fetaccis acu-
tis reftis. Hurt. Cluf. 437. ...:b (fmpound,
iriftry, upright, pointed leaves. Chsunxmelum Orientle
foliis jinnatis. Tourn. Cor. 37.

AN^ever-i/s (yulattims) foliis decompositis linear [bus
lacinjis divid* trtiurculis acutis floribus flofculolu.,
Hort. Cluf. 417. /tnacyclui -with diimipatatJfd narrow
lmit, wbofi divifjms an taper an&peinlid, tmdjkjhultr
/ r t * Chryfanthemum Valentinum. CM Hilt. t.

The two hrft forts grow naturally in the [Hands of
the ArchipclaRo, from whence Dr. Tuurnefort fed
their feeds to the royal garden at Paris. I have alfo
received the feed) of both thefe plants from Portugal,
fo that it may alfo grow naturally [here, as do many
of thofe plants which were difcoveml by Tournefort
in [he Levant. Thefc are low plants, whole br...
croil on die ground. The firft ibrt has fine cut leaves
thole of ChancHnBe) the flowerfarefmall, white,
and grow fngle, with their heads declining. thefc
art like thofe of the common Mayweed. The fecond
hadi winged leaves like thofe of the Ox-cyc-, the flow-
ers arc white, and like thole of Chamomile.

The third lbrt crows naturally in Spain, from whence
I h.tve received the feeds. This grows a foot and
half high, fending out many fide branches; the leaves
are finely divided like thole of Chamomile, an...
hairy: the (lowers grow fngle at the extremity of die
brandits, and are of a bright yellow colour, with vi
filvery fealy empahment. Thefe are as large as thofe
of the Ox-eye.

AH thefc plants arc annual: the feeds fhould be fown
early in ilie ijiring in a border of light cartli, where
they arc defignrtl to Rinain, and rvijuire no oilier
care but to keep them dean from WCL; ... and thin
ill- plants when l • y are too thick. As thefe have
no great bf.iurj', a tew plgnp cilty may be i-
for the ukeof vxnetp. They flower in July and ;uguft,
and thdr Kad' ripen in September.

A N A G A L L I S. lin. Kp. Plimt 183. Pimpemel

The CHARACTERS are,
Tbt empalemati it permanent, cut injivtjharp figments,
which are hollow. The flower is of one Uaffread open, and
int into five parts as tbi trim; it baibfvt iril jlmniau
tpbth are Jli&rtr than iU peiills, and ait (r<rj.wd -xiib
fingh fvsumis. in tbt tour is pineal tbt gUhtlor nr-
mn, fufprrlng a JleitJer :itt/i'tiag Jlylt trmintd witi a
blunt figma. Tbc gerwa aftrvimrd brcmets a globular
wffurxiith ant nil, iiptning bericoxtalfy, in Jibkh are hdgd
... (angular finds.

This gt.nus of plants is by Dr. Linnaeus ranged in the
firft divifion of his fifth cltjs, entitled Pctitandria
Monogynia, the Bowers having five ftamina and one
ftyle.

The SPECIES are,

1. ANAGALLIS (Aruccifis) foliis indivifis caule procum-
bente. |;i.t. Gen. Plant. 14S. Pimpmu! urith un-
divided ... and it tralixg Jiili. Anagallis Phrx-niciu
Hore. C. B. P. %gi.

2. AVAOLLIS (l'-a-mina) foliij indivififi glaucis caule
procumbent flor caeruleo. Pimpemel with undivided
glaaims leava, a moling Jialk, tnd blue Jtsvitr. Ana-
gallis ^trujeo flor. C. B. P. J J J .

3. ANJIGALLIS (VioJiffi) fotij; iuidivilt's caule rrefro. Lin>
Sp. Plant. :+S. Pimpmd ruish an undivided leaf and
upright fidk. Anagaliis tenuifolia Monelli. CluC
App.

4. AHACALLIS (Latifolia) folii-; roniat is amplexiMiiUbus,
caulibui comprflis. Lin. Sp. Pbn.;. 140. Pimpemel
with benrt-Jbaped have, emirating IJJlafis tubh an
cemprffffii. An.tg.dlis 11 ... panica laci jlio flore cerulc-o.
Ho:

The hrft fort is very common in fields, and other
culciviid places, in m ... parts (' England. The
fecond furt is ibmeimes found wild in the fields, but
is lile com ... inn than the lirt in England. This is
fttpafed tbi be only a variety of the firft, but from
thirty

thirty years culdvsting, fe, lean affirm it never alters; and the plant before thly (new tlter (lowers are lu... bt i-jfly iliitwgulfed from the frit. There is a variety of this with a deeper blue flower, whole fee A; I received from Nice, and this hah re... i its colour for three year, during which time I have lown it in the Cheiica garden.

I hde we all annual plants whidiarife from feeds, and, if silled: i remain till their feeds fcatter, will become v'ctxls in ... place; • that they are never cultivated, exef, in botan' gardens for variety. The frit and [econil lores art directed by the College of Physicians for medicinal use.

The thWlbrt ha very beautiful, fmall, perennial plant, produdny, great marisiers of line blue flowers, in April and May: this may be propagated by feeds, which [bnuitl be (own faun after they are ripe i for if they sre kept till fpring, they do not always succed: tlii plant requir 9 :a Le flickered from extreme cold, •which will saneti nes liellcuy ii in winter.

The fourth far, was sent me from Spain by Mr. Hort-fga, intandam of the royal gardens at Madrid. This 13 a trilling annual plant, with broad leave:: iind blue flowers. It will iLisy rift from feeds, and requires no o'her care but to keep the plants dead from weed?.

There air two varieties of the first fort, one with a white, and die'other. a Befit-colouitd [lower •, but as they arc nor con font, I have not inferted them as different fpecits. There is also another with a warn-out purple Rower, which has several years continued the lame in the Chtifci garden j but as there is little difference in thlttave* of this and the first, I have noc enumerated k.

ANAGYRIS, Stinking Bean-trefoil.

The CHARACTERS are,

Il hatb a betfiafid tmptatmexl, which is cat mtjht parts at the brim, tbt tippir fegmnt being much deeper cut tbn the ctben. Tbefisvier is of the butterfly kind, tbejtadsruu beart-fbaped, upright, brtad, and indented. This is mn?b longer (ban the empalemt; tbt 'jsims art nblung, plan, and longer than sbi ptndsrD tL<< keel is long um; upright: it bctb ten fkamitw, which rife diftinf, and are equal, crowned wilt Jingle fumasiis. fa the center is placed art <bUmvgcmtm-fupportuig aJingle jlyle, having a bjin jScf ... rtrmt* afterward becomes a hrge ... n rfxial at the point, in which is ... (reds.

Dr. Linnæus ranks this genus in his tenth clafs of plan ... Decandna Monogynia, the flower having ten llamina, and one ityk.

The Smeiss are,

- 1. AvAcvitis [Faiida) folits ovatis floribua ... Stinking Rsem-lrcfuii with aval leaves, slid jluuer) pccading front th iitixts of the ftalks. Anagyris fvtida. L. B. P. 39 t.

- 2. AXAOVHIS (Crelirs) foliis oblongis racemis longioribus. Stixbing ISten-trf foil <x<ib sluing leaves, and longer fpika tiffa&crs. Anagyris icetida Cvetica oblongU tbiis lurus floribus. Barrel. Icon.

The fiift fort grows wkl in the fouth of France, in Spain anil Italy: thi, is a. fhrub which ufually rifes to the height of eight or ten feet, and produces its flowers in April and May, which arc of a bright ycl-low colour, growing in fpikes, Eomewhlt like thiofe of the Laburmirii: th ... never perfected in

R
I

this country, which is the ixafon of its prelent " in Engliau.

The other fort is a native of Candia, ami fame the Archipebgo, and at pccifiic vety ran. in i ... This fort hath longer former, and Bowers larcr in the fun,

never produces fecdi, fe may be boi tender br'i them in t! licin^

they begin to put out their leave?, and planted in a warm fitu.-ition; for if they are too much expoial to cold winds, they will be in danger of being destroyed in a hard winter. This method of propagating theft plants, is to fupply their defect in not producing ripe, leeds in thia country; for the plants which are produced from feeds, will be much handlbmer, and will rife to ft much greater height.

If you propagate thefe plane from feeds, you Jhould fow them on a moderate hot-bed the beginning of March. If the feeds are good, the plants will appear in a month after the Jccds are (own ; when they fhuid be inured by degrees to the open air, into which they fhould be removed toward the end of May, placing them in i filtered fituation; for this purpofc the feeds Jhould be fowed in pots, and plunged Iran a hot-bed, becaufe the plants do not bear Irani pi anting well till the fpring following: and as they are impattent of cold while young, fo the two liril winters ic will be proper to fhelctr them under a common frame, where the glades may be drawn offevery day in mild weather, that the plants nlay enjoy the open air, which will prepare them for planting abroad when they have acquired proper ftrength: it will be very proper to keep thcto plants in pots three years, in wEucb rime they will hsvt advanced to be in proper condition for planting them into the places whtre they are intended tu remain; the beft time for this is about the beginning of April, jult before the plants begin ra put out new leaves: at which time they would be turned out of the pots, prefcrving good balls of earth to their roots, planting fomi- or them againft warm alpeii ... where they will not be in [Linger of fullering by frail; and the others may be planted in WMa Duration*, where, if they are protected in fevrc winters, by covering the furface at thie ground about their roots with tanners buk, and freeing their heids with mats, they may be pr'derved fevera! years. The fourth year from feeds the'e plants will begin w produce their flowers, and will continue flowering every year after, fo will be very proper to intermix with othtr flowering flirubs of the fame growth in warm fituations.

ANANAS, the Pine-apple.

The CHARACTERS are,

The fhmrs confijis if ibrtt voal petals, "jibicb areprdriced from the p'oiubraxes of the pyramidal fruit, attd are firectbd sut lirpvd (be empalimtr. Thefe bale fix BWi-jhoptdfhmin!.; wbiibfiandWilbin th:j6ia.r, croanad with fpear-Jhaped fummits: the germen is jitHated tifaw jhefswtr, fuppiniisg afcenAr Jlyh, crowned with a trifid Jlignta. The gerrat afterward btmmnts a cell, in vbich is lodged federal angular fetid.

Dr. LinniEus has joined this to the Bromelia of father Plumier, to which he has also added the Karatas of tlw fame author, fuppoing them to be of the fame genus; which mi Sake he may have been led into by Plum fert figures, for he has joined the fruit of the Caraguata to the flowers of the Kimtas, and ra< vcrfa. The other differences will be exhibited under the article Karate.

The VAUIETIES of this are,

- 1. ANANAS (K/virus) nuculeatus, frufru ovato, earne atbida. Plum. Ovaf-fbaped Pine-appU, with a vibiiifb

- 2. ANANAS (Pymmidoiis) aculcatuj, frufru pyramidalis, came aurea. Plum. Pyramidal Pint-apple, -Jiitb a wijbfjib, called the Sugar-leaf Pine.

- 3. ANANAS (Glabra) folio vix ierrato. Boerh. Ind. Alt. 5- 83, Pim-apph with fmoftb leaves.

- 4. AMANAS (Lucid:is) lucide virens, folio vix ferrnto. Hort. Elth. Pitte-apple with fbining great leaves, and fcarce atfpinneton tbtir.

- 5. AKANAS iSerotix*) frufru pyramidaroliv* color*. intus aureo. Pyramidal Oli'-i-n.tixed Pine-apple, with

- 6. ANASAs^WMiu) aculearos, fruhi) pyramiitw ex viriLLi (lavJiente. The green Pine-n.

The ... arc fveral whet Mrieti ... of rait. Tome of h may %avi' b<n obtained from^'-i.-, and L

doubt not but if the feeds were fown frequently, in the countries where they are in plenty, there may be as great variety of these fruit, as there are of Apples or Pears in Europe. And this I have found true by some trials which I have made by fowing the feeds, which have always produced a variety of sorts from those of the same fruit.

This fruit (which is justly esteemed for the richness of its flavour, as it surpasses all the known fruits in the world), is produced from an herbaceous plant, which hath leaves somewhat resembling those of Aloe, and are, for the most part, fawed on their edges, but are much thinner, and not so juicy as the Aloe: the fruit resembles the cones of the Pine-tree, from whence it is supposed to have its name.

Where this plant is a native, I believe is hard to determine; but it is probably an indigenous plant in Africa, where, I have been informed, they grow in uncultivated places in great plenty. They have been long cultivated in the hottest islands of the West-Indies, where they are in great plenty, and extraordinary goodness; but they have not been many years in the European gardens, so as to produce fruit: the first person who succeeded in this affair, was Monsieur Le Cour of Leyden in Holland, who, after a great many trials, with little or no success, did at length hit upon a proper degree of heat and management, so as to produce fruit equally good (though not so large) as those which are produced in the West-Indies, as hath been often affirmed by persons who have lived many years there: and it is to this worthy cultivator of gardening, who did not spare any pains or expence to accomplish it, that all the lovers thereof are obliged, for introducing this king of fruits amongst them-, and it was from him that our gardens in England were first supplied, though we have since had large quantities brought from America. I cannot here avoid taking notice of a common error which prevails amongst many people, which is, that the plants brought from America are not so good as those which came from M. Le Cour; which is a great mistake, for were the people who send over these plants from America careful to send the best kinds, there would be found many better than those cultivated by M. Le Cour, who had his from thence at first, as his gardener assured me; and I have seen as good fruit produced from American plants, as any I have yet seen, and some three times larger than any I saw in M. Le Cour's garden.

The first sort is the most common in Europe; but the second sort is much preferable to it, the fruit of this being larger, and much better flavoured: the juice of this sort is not so astringent as that of the first, so that this fruit may be eaten in greater quantity with less danger. This frequently produces suckers immediately under the fruit, whereby it may be increased much faster than the common sort; so that in a few years, it may be the most common sort in England.

The third sort is preserved by some curious persons for the sake of variety, but the fruit is not worth any tiling. The sixth sort is at present the most rare in Europe, there being very few of the plants at present. This has been esteemed the best sort known, by some of the most curious persons in America, many of whom have thrown out all the other sorts from their gardens, and cultivate only this kind. The plants of this sort may be procured from Barbadoes and Montserrat, in both which places it is cultivated.

The sort with very smooth grass-green leaves, was raised from feeds taken out of a rotten fruit, which came from the West-Indies to the late Henry Heathcote, Esq., from whom I received one plant, which hath produced large fruit: this, I am told, is what the people of America call the King Pine. I have since raised some plants of this kind from feeds, which were brought me from Jamaica.

These plants are propagated by planting the crowns which grow on the fruit, or the suckers which are produced either from the sides of the plants, or under

the fruit, both which I have found to be equally good-, although by some persons the crown is thought preferable to the suckers, as supposing it will produce fruit sooner than the suckers, which is certainly a mistake. For by constant experience I find the suckers (if equally strong) will fruit as soon, and produce as large fruit as the crowns.

The suckers and crowns must be laid to dry in a warm place for four or five days, or more (according to the moisture of the part which adhered to the old fruit;) for if they are immediately planted, they will rot, especially the crowns*. The certain rule of judging when they are fit to plant, is by observing if the bottom is healed over and become hard; for if the suckers are drawn off carefully from the old plants, they will have a hard skin over the lower part, so need not lie so long as the crowns, or those whose bottoms are moist. But whenever a crown is taken from the fruit, or the suckers from old plants, they should be immediately divested of their bottom leaves, so high as to allow depth for their planting; so that they may be thoroughly dry and healed in every part, left when they receive heat and moisture, they should perish, which often happens when this method is not observed. If these suckers or crowns are taken off late in the autumn, or during the winter, or early in the spring, they should be laid in a dry place in the stove, for a fortnight or three weeks before they are planted, but in the summer season they will be fit for planting in a few days.

As to the earth in which these should be planted, if you have a rich good kitchen-garden mould, not too heavy, so as to detain the moisture too long, nor over light and sandy, it will be very proper for them without any mixture: but where this is wanting, you should procure some fresh earth from a good pasture; which should be mixed with about a third part of rotten neat's dung, or the dung of an old Melon or Cucumber-bed, which is well consumed. These should be mixed six or eight months at least before they are used, but if it be a year, it will be the better; and should be often turned, that their parts may be the better united, as also the clods well broken. This earth should not be screened very fine, for if you only clear it of the great stones, it will be better for the plants than when it is made too fine. You should always avoid mixing any sand with the earth, unless it be extremely stiff, and then it will be necessary to have it mixed at least six months or a year before it is used. And it must be frequently turned, that the sand may be incorporated in the earth, so as to divide its parts: but you should not put more than a sixth part of sand, for too much sand is very injurious to these plants.

In the summer season, when the weather is warm, these plants must be frequently watered, but you should not give them large quantities at a time: you must also be very careful, that the moisture is not detained in the pots, by the holes being stopped, for that will soon destroy the plants. In very warm weather they should be watered twice or three times a week; but in a cool season, once a week will be often enough: and during the summer season, you should once a week water them gently all over their leaves, which will wash the filth from off them, and thereby greatly promote the growth of the plants.

There are some persons who frequently shift these plants from pot to pot, but this is by no means to be practised by those who propose to have large well-flavoured fruit; for unless the pots be filled with the roots, by the time the plants begin to show their fruit, they commonly produce small fruit, which have generally large crowns on them, therefore the plants will not require to be potted oftener than twice in a season: the first time should be about the end of April, when the suckers and crowns of the former year's fruit (which remained all the winter in those pots in which they were first planted) should be shifted into larger pots, i. e. those which were in halfpenny, or three-farthing pots, should be put into penny, or

tt nwl three-hilfrnj- pots, according to th? fci of the plants, for you must • very oar/lul nw in over-
 pot them, nothing being more prejudicial to their
 plants. The second time for lifting is in the
 beginning of August, when you must take out
 the plants which are of a proper size for i u tin; the fill-
 ing being, into two penny pots, which are full
 I am enough for any of the plants. At each of
 these times of lifting the plants, the faai should
 be itirvul up, and (bint new bark added, to mile the
 bwl up to the heijh; i: was a; Eri: made; anil when
 the pots are planted, . 'lii into the bark-bed, tin-
 plants tho;M be watered gently all over their leaves,
 ra w[h oir] jhe filch, and ro fepde the eirth to the
 roots of th plants. If the bark-bed be wH
 and a quarter of good the 'li bark added to the bed,
 at this Berhirring, it will be of great service to the
 plants, and they rosy remain in the fame tan until
 the beginning of November, or sometimes later, ac-
 wrdinc w tiw miUndsoftheWon, ami will icquirt-
 but link fire before that time, -During the winter
 teiibn tilde plus will i • requir c to be watered
 oftener than once a week, iccorlina as you Anil the
 earth in tlic puts ro dry - nor lhould you give them
 too much at ritc timf, for it is much better to give
 them a little water often, thin tu over-water ihm,
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You must never to lutf thofc plants which
 lhew their fruit, inSa otter pursj for if they •• re-
 raovi : after the first appearance of the fruit, and
 prouin, and thereby c • • • limit to be fnialfer, and
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 nber or November before the fruit is r : e\ therefore
 you should be very careful
 vigorous growing time", from the first appearance of
 the fruit, becau' upon this Impends the g'rodnefs and
 fic of' t i i i • T • covr a check after cl As,
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When you have ctit off the fruit tram the plants,
 whole kind you are defirous to propagate, you fhould
 trim the leavw, *nd iilunge the jwts into a moderate
 hot-bed, observing to nveSh them frequently with
 water, which *l' Clumci t'icm to J'ul' m' l'v!!!
 plenty i (b that a peribn rti^y be jbon luplieu with
 (loms enough of any of the kind^ who will but ob-
 serve to keep the [llanis in health.

] here is not aiy thing which can hippen to these
 pLinj of a more danprius Bature, dun to have them
 attacked by the ill white infc&i, which appear <u lirll
 like ii white mildew, but Kion after have the appear-
 ance of lice: thic attack Lotii root and leaves at the
 ijmc- time, iiii if ther arc hot lbon tictroyed, will
 • LJ over a whole date in a llort time; and in n
 i ntnthy Hop th- growth of the plants,
 by ficktr • out the sun • • , juice, li) thjit rje lrsve:
 will appear yellow mid fitkly, and have gentrilly a
 great nun (ccl), iftr tl they are fully grown, ap-
 pear like bees, and adhere so clofly to the leaves, as
 not to be cailly washed off, and form as if they had
 ins lift in them. They were originally brocgi from
 America upon the pi which were imported from
 thence, a I believe they art ik same insects which
 have deft; oved the figs cases of late years in some
 of the Jjwiif.ird iflands. E ncc they have been in
 England, they have spread greatly, as fack (Qef)
 where ih- • has not been more than ordinar y care
 taken to destroy them. They have also attacked the
 Orange-tree in many gardens near London, and have
 (toil them terrible damage, but I do not find they
 will endure the cold of our climate in winter, so that
 they are never found on fack plants as low in the open
 air. The only method I have been yet able to dis-
 cover for destroying these insects, is by washing the
 leaves, branches, and stems, of these plants as they
 attack, frequently with water, in which there has
 been a strong infusion of Tobacco-tobacco, which I find
 will destroy the insects, and also preserve the plants.
 But this method cannot be practis'd on the Orange
 plant, because the insects will take them.

It was formerly the com-tuiipraftic of thofc pei
 who cultivated th-i fruit in Kuropc, to build dry
 h in which ihry kept their plant, n winter, plac-
 cng • c pson icillblds (alter die manner in wiich
 Ccgc-trses arc pberd in a green louse), and in the
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 being in ripe • in fuminer, nor *ere die fruit so
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 Thinking, to remedy this ^convenience, it is now
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 to the fancy of the contriver. Some persons build
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low between die leaves, that it is impoTthle to cmti-
 at ltem with a sporige to wnth them off; to that i<
 ;il thole which appear to fight an? cleared i ill, they
 will (bon he fuccoded by a rre(h liijaply from below,
 anil the roots will be also equally macted with them.

I here ore, verer their infets appear or die plinb,
 the fifelt method will be, w wke the plants out of
 the pots, and clear the earth from the roots; then
 prepare a large tub, which should be filled with water,
 in which there lias beeri a strong infufion of Tuhucco-
 ftalks; into this tub you lhoudt put tlic plants, placing
 some licks acrofi the tub, to keep the plants bo-
 meried in water. In thk water they shuulil remain
 twenty-four hours; then t;ke them out, and with a
 Luonge walh off ail the infets from the leave; and
 roots, which may be easily elfected when the :
 are killed by the infufion -, then cut off all the
 fibreJ of (hr rooc, and dip the plants into a rub
 of fair water, wafing them iercin, which is the mod
 • -IJJ way to clear them from tlic infc'db. Then
 you lhuulil pot them in fresh earth, and having ltrid
 up the bark-bed, and added ibmc new tan to give a
 fresh • eat to tlic bul, the pots thoudl be plung
 again, • ibfcvrtng to water them all over the Jcavo j
 was before directed) and this ihouW be rtf
 a week during the iimner lealb; fur I obferve
 the inlecb always multiply much fatter where the j
 arc kept dry, thin in inch place) where the plants are
 ibmetimes i'prinkled over with water, and I
 growing fiare. Ahd the lame is also observed in
 America, iior in h in long droughts that i
 make (itch tMtruttyn in tlic fugar Cinw. And
 thole:"hands where they hu • h«3 feveml vcrdy
 feafona of late, they have increased to filch a dt^rc
 as to deftroy the greatctt part of tlw canes in t
 idandi, rendering them nat only unfit for •
 but poiton tlic juice of the plant, fo as to difquaiify it
 ig rudi, whereby many planters have b
 ruined.

Ai thele inlecs lire frequently brought over from
 Ami'rica on the Ananas plants which come 6om
 them, thofe persons who procure their plants ram
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 receive them, to lie cley liave ilone of thTe inf
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high, so that there is just height enough for persons to walk upright on the back-side of the bark-bed. Others make but one dope of glasses, from the top of the stove down to the plate, which lies about six or eight inches above the bark-pit, so that in the front of this stove, there is no walk made between the bark-pit and the glasses, but the inconvenience of watering the plants, as also of coming near those plants which are placed in the front of the stove to clean them, has, in some measure, brought them into disesteem, so that few persons now build them, though the expence is much less than of the other kind of stoves, but of both these stoves the figures and descriptions which are hereafter exhibited under the article of stove, will be sufficient for any person to build either of the sorts. One of these stoves about thirty-five feet long in the clear, with the pit or the tan reaching from end to end, and six feet and a half wide, will contain about four score fruiting plants, so that whoever is desirous to have this fruit, may easily proportion their stove to the quantity of fruit which they are willing to have.

But it will be also necessary to have a bark-pit under a deep frame, in order to raise the young plants; in which you should plunge the suckers, when they are taken from the old plants, as also the crowns which come from the fruit, so that this frame will be as a nursery to raise the young plants to supply the stove: but these plants should not remain in these frames longer than till the beginning of November, unless the frame is built with brick-work with flues in it to warm the air (in the manner hereafter described and figured), which are very useful, as nurseries, to keep the young plants till they are of a proper size to produce fruit; so that you may keep these either warmer or cooler than the stove, according as the plants may require, so that the stove may be every autumn filled only with bearing plants, whereby a much greater quantity of fruit may be annually produced, than can be where young and old plants must be crowded into the same stove. But where there are no conveniences of this kind, the young plants, about the middle or latter end of October, must be removed into the stove, and being finally may be crowded in among the larger plants, for as they will not grow much during the winter season, they may be placed very close together. The beginning of March, where there is no nursery for the young plants, they must be removed out into the hot-bed again, which should be prepared a fortnight before, that the tan may have acquired a proper heat: but you should be careful that the tan be not too hot, for that might scald the fibres of the plants, if they are suddenly plunged therein. Therefore if you find the bark too hot, you should not plunge the pots above two or three inches into the tan, letting them remain so until the heat of the tan is a little abated, when you should plunge the pots down to their rims in the bed. If the nights should continue cold after these plants are removed into the bed, you must carefully cover the glasses with mats, otherwise by coming out of a warm stove, they may receive a sudden check, which will greatly retard their growth, therefore must be carefully avoided; because the sooner the plants are set growing in the spring, the more time they will have to gain strength, in order to produce large fruit the following season.

You should not plunge the pots too close together in this frame, but allow them a proper distance, that the lower part of the plants may increase in bulk, for it is on this that the magnitude of the fruit depends; because when the plants are placed too close, they draw up very tall, but do not obtain strength, so that when they are taken out of the bed, the leaves are not able to support themselves, but all the outward long leaves will fall down, leaving the fiddler middle leaves naked, and this sometimes will cause them to rot in the center. You must also observe, when the sun is very warm, to raise the glasses of the hot-bed, in order to let out the steam of the bed, and to admit fresh air. It is also neglected of this kind, in a very, hot

day, may destroy all the plants, or at least so fast, that they will not get over it in several months. It will be also very proper, in extreme hot weather, to shade the glasses in the middle of the day with mats; for the glasses, lying so near to the leaves of the plants, will occasion a prodigious heat at such times. During the summer season these plants must be frequently watered, giving them but little each time; and in hot weather, they must have free air admitted to them every day, from ten o'clock till four; for if they are kept too close, or have too much wet, they will receive a check in their growth, when the insects will immediately spread over them; for there are generally some of these insects on all these plants, which do not much injury to them while they are in a growing state, but whenever they are unhealthy, the insects multiply greatly, and contribute to their decay. There are some persons who regulate the heat of their stoves by thermometers in summer, but at that season this is unnecessary, for the outward air in hot weather is frequently greater than the Ananas heat marked on the thermometers, so that the heat of the stoves at that season will be much greater. The use of the thermometer is only in the winter, during the time the fires are continued, by which it is easy to judge when to increase or diminish the fires; for at that season, the stoves should not be kept to a greater warmth than five or six divisions above Ananas, nor suffered to be more than as many divisions below it. In winter the plants must have less water, but they will require to have it repeated once a week, giving them but little each time: when the plants are placed into the tan for the winter season (which should be done about the beginning of October) the tan-bed should be renewed, adding two thirds of new tan, to one third of the old. If this be well mixed, and the new tan is good, the bed will maintain a proper degree of warmth till February, at which time it will be proper to stir up the bed, and add a load or two of new tan, so as to raise the bed as much as it sunk since the autumn; this will give a fresh heat to the bed, and keep the plants growing, and as the fruit will now begin to appear, it will be absolutely necessary to keep the plants in a growing state, otherwise the fruit will not be large.

In April it will be proper to stir up the tan again, and if the bed has sunk since the last stirring, it will be proper to add some fresh tan to it; this will renew the warmth of the bed, and forward the fruit. At this time it will be proper to shift the young plants, which are designed to produce fruit the following year, the tan-bed into which these are plunged must be renewed, in order to forward their growth, that they may have strength enough in autumn to produce good fruit, for in this is the principal care required.

Those plants which flower their fruit early in February, will ripen about June, some sorts are at least a month or five weeks longer in ripening their fruit than others, from the time of the appearance of the fruit: but the season in which the fruit is in greatest perfection, is from the beginning of July, to the end of September, though in March, April, and October, I have frequently eaten this fruit in pretty good perfection; but then the plants have been in perfect health, otherwise they seldom are well flavoured.

The method of judging when the fruit is ripe, is by the smell, and from observation, for as the several sorts differ from each other in the colour of their fruit, that will not be any direction when to cut them; nor should they remain so long as to become soft to the touch before they are cut, for then they become flat and dead, as they do also when they are cut long before they are eaten, therefore the best way to have this fruit in perfection, is to cut it the same day it is eaten; but it must be cut early in the morning, before the sun has heated the fruit, otherwise it will be hot, observing to cut the stalk as long as the fruit is possible, and lay it in a cool, but dry place, preferring the stalk and crown unto it, until it is eaten.

That fort with green fruit, if fuffered to ripen well, is of an Olive colour *, but there are feme perlbn who cut them before they are rife, when they are not fit to be eaten, for no other reafon but to have them green: and although many perfons have much recommended this fort for its excellent flavour, yet I think the Sugar-loaf fort is much to be preferred to it. This Sugar-loaf fort is eafily diftinguifhed from all the other, by its leaves having purple ftripes on their infide the whple length. The fruit is of a paler colour than the others when ripe, inclining to a fraw colour. This fort was brought from Brafil to Jamaica, where it is efteemed far beyond the other kinds.

The next in goodnefs to this, is what the inhabitants of the iflands in America call the Montferrat Pine*, the leaves of this are of a dark brown, inclining to purple on their infide; the protuberances of the fruit are longer and flatter than thofe of the common fort. I raifed feveral plants of this fort from feeds which I received from the ifland of St. Thomas, where this fruit is in greater perfedtion than in any of the Britiifh iflands.

As fome of the fruit produce feeds in England, when the greater number have no appearance of any, I doubt not whether there are not fome with male, and others with hermaphrodite flowers-, becaufe thofe fruit which have feeds, are remarkably different from the others, when cut through the-cells in which the feeds are lodged, lying nearer to the center of the fruit than the abortive cells, which are chiefly clofe to the rind *, but not having diftinguifhed this difference till the fruit was cut, I had no opportunity of examining their flwers.

I have continued this title of Ananas to the genus, being the moft generally known and ufed, left by altering it, the pradtical gardeners fhould be rather confufed than inftrued: and I was the rather inclined to this, as Dr. Linnaeus has miftaken the chara&ers of the three genera, which he has joined in one. The different varieties are alfo enumerated, for the lake of thofe who cultivate the fruit, though they We not diftinf species, but vary in their fhape, colour, and flavour, the fame as other fruits. Therefore, as this work is intended to inftrudt the pradtical gardener, the mentioning thefe varieties is more excufable here, than in thofe books which are only intended for the improvement of botany.

ANAPODOPHYLLON. See PODOPHYLLUM.
ANASTATICA, Rofe of Jericho.

The CHARACTERS are,

// hath a four leaved empatementy which falls off the flower has four petals placed croffivife, which fpread open, whofe tails are the length of the tube of the empatementy and fix awl-jhaped ftamina > two of which are fhorter than the other four, crowned with roundijh fummitSy and a fmatt bifid germ fupporting an awl-jhaped fyk the length of the ftamina^ and is permanent\ crowned by a headed fummiu Thegermen afterward becomes a fhort bilocular pod* having an awl-jhaped partition placed obliquely to the pody and is longer.*

We have but one SPECIES of this genus in the Englifh gardens, viz.

ANASTATICA (*Hierocunticayfolns obtufis, fpicis axillari-bus breviflimis, filiculis unguatis fpinofis.* Lin. Sp. 895. *Rofe of Jericho with obtufe leaves, fhortfpikes of flowers at the wings of theftalksy and prickly pods.*

This plant grows naturally in Paleftine and Cairo, in fandy places near the fea. The ftalks are ligneous though the plant is annual 5 it rifes five or fix inches high, dividing into many irregular branches; the flowers which are fmall and white, are difpofed in fhort fpikes at the wings of the ftalks, and have little beauty; thefe are fucceeded by fhort prickly pods, having two cells, in each of which are two feeds.

It is preferred in botanic gardens for the variety, and in fome curious gardens for the oddnefs of the plant, which, if taken up before it is withered, and preferved entire in a dry room, may be long preferved *, and after being many years kept in this fituation, if the

root is placed in a glafs of water a few hours, the buds of flowers will fwell, open, and appear, as if newly taken out of the ground, to the great furprife of moft people.

The plant is annual, fo can only be propagated by feeds, which rarely ripen in England, unlefs the feeds are fown upon a hot-bed in the fpring, and the plants afterward put into pots, which fhould be plunged into another hot-bed to bring them forward, for although the feeds will come up in the full ground where the foil is dry, yet the plants rarely rife to any fize, nor do they perfed feeds unlefs the fummer is very hot and dry: but if the plants are kept in a frame, giving them free air in warm weather, they will flower in June, and the feeds will ripen in September.

ANATOMY pAriipcs ofAmity*** Gr. to difleft], a diffe&ion.

Anatomy of plants is a cutting, dividing, or feparating the parts or members of plants, in order to difcover the fize, form, ftru&ure, and ufes of their feveral veffels, for the better promoting their culture.

Anatomifts have obferved a great fimilitude betwixt the mechanic frame of plants and animals: the parts of plants feeming to bear a conftant analogy to thofe of animals; and the ceconomy, both vegetable and animal, feem to be formed on the fame model.

The parts of a plant are die root, the wood, the bark, and the pith.

1. The roots of the plants are fpongeous bodies, whofe parts are difpofed for the eafy admittance of certain* humid particles, which are prepared in the ground. The quality of the root is found much to depend upon the fize of its veffels and pores.

Monfieur Renaume fuppofes the root of a plant to do the office of all the parts in the abdomen of animals, which ferve to nutrition, as the ftomach, inteftines, &c.

Dr. Boerhaave confiders the roots of plants to be compofed of a number of abforbent veffels, which are analogous to thela&eals in animals.

The root, according to Dr. Van Royen, is that part of the plajit by which the nutriment is taken in, or that by which the aliment is attra&ed, as Theophrastus has defined it: but ix is not all that part, which is committed to the earth, to be nourifhed by the matter which is about it, which is properly to be called the trunk of the root *, this is to be referred rather to the ftalk or ftem, than to the root, in that it confifts of the fame implicated kincks of veffels *, but that part which is by its furface contiguous to the exterior matrix, which, being perforated with infinite little mouths, promotes the received moiftures, that they may be afterwards carried, by veffels not unlike to laftel ones, into the very body of the plant; this is properly to be called the root.

Which definition, although it may feem too ftri&, is the moft general, and applicable to all plants, for it agrees as well with them which have no root, as the vulgar opinion is, as to thofe which have a manifeft root, of the former kind there are but very few plants, but of the latter a great many.

As to thofe that want a manifeftroot, the fuperficies of them is found to be perforated on all fides with very fmall holes, by which they take in their nutriment, as in the Porno Aurantio, called Neptuni, or Pila Marina by fifhermen, and many other fubmarine plants; and in thefe the whole fuperficies ferves for roots, as is plainly feen in fome ftony plants that grow under the fea, and may be in fome fort proved to be deduced from the analogy of animals *, for thefe being become *fid generis** take in aliment, not only by the iBOUth, but alfo the whole furface, expofed to the moiffoir, feems to ferve to the fame defign. But although thefe fubmarine bodies have, by moft naturalifts, be^n ranged with vegetables, yet, by later difcoveries^ many of them have been found to confift of beds of infe&s, inclofed in fmall cavities of thefe incrufted bodies, therefore fhould rather be ranged with minerals.

But

But those plants that are endued with a conspicuous root, and more obvious to the senses, differ among themselves very much in this part: for some are bulbous, some are squamous, or tuberous, others grumous, others fibrous, and lastly, others nodous; which, as it will be sufficient to have taken notice of the primary differences of roots, I shall omit their particular definition in this place, and refer them to their several heads, where each of them shall be particularly described.

The first part of the root, which is called the Epidermis, or cuticle, is, for the most part, of a brown or dusky colour, very thin, and easily peeled off from the under skin (if it be first soaked in warm water); which being viewed by a microscope, shews its most tender structure much like a net pierced through with many small holes. And these little orifices of the epidermis being dilated, and filled with the received moisture, resembling vesicles, which, being exhausted yearly by the mutation of the air, become consolidated, and perish; to wit, this being driven out by a new cuticle growing under it, after the same manner as squamous animals annually cast the old epidermis, a new cuticle coming under it; so that these little vessels, fibrils, or by what name soever they are called, may not unfitly be compared to the veins of animals.

But the other part, which on the outside constitutes the cortex, or outer bark, and on the inside the liber, or inner bark, is called cutis; in which there are parts to be considered of a four-fold kind.

1. Certain strong fibres, cohering and elastic, stretched out vertically with the lateral fibres communicating among themselves, and compacting, or thrusting in the former, they form a hollow cylinder, or zone, under the epidermis; and this hath another under it, which also includes a third; and so of the rest, to the inmost inward of all, which luxuriates near the wood, and is by a peculiar name called liber, or inward bark. And these zones, or girdles, although they are most innumerable, may all be peeled off as the lamellae of bulbs, when the sap flows through them; and inasmuch as those fibres in the harder roots of trees are almost of a bony nature, they procure a firmness to the cortex or outward bark; and these fibres are in all plants, and appear as well in gnaws as in the Cedar tree, although they are more compact in trees, than in plants of a tenderer structure, which are more easily sustained.

2. In the areas, or spaces, which are between the fibres and their anatomies, there are every where membranaceous vessels full of moisture, or little utricles, which, in the areas, or intercepted spaces that are of a different figure, are found to be various, and accommodated to all the spaces; but all these utricles communicate among themselves, as is best seen in the greatercelandine, when we squeeze out that golden coloured liquor with which it is filled; and the middle spaces betwixt these zones have like utricles, and all the fibres constitute hollow canals; but the utricles have receptacles communicating among themselves.

3. Aerial vessels, or tracheae, are open from the lower to the upper part of the plant, and are twisted or curled after an admirable manner, and disposed round about with fibres and utricles in form almost of a spiral line, which in their cavities contain an elastic air; which being affected by the external air, first expanded, and afterwards condensed, will be changed after a like manner, and feel the same vicissitudes of cold and heat, and will undergo a reciprocal motion of cold and heat. This action is exerted in the vessels filled with moisture, which when they cannot be condensed, give place, and are driven up those that are higher, and are moved forward.

4. Lastly, besides fibres, utricles, and tracheae, a peculiar kind of vessels appear, containing the moisture, as it seems secreted by the organical disposition of the plant itself, which water, or moisture not only the cortex, but the wood, and the rest of the

part* of vegetables, and are turgid with a concocted juice, which seems far more elaborate than is the moisture contained in the fibres or utricles; and the mouths of these vessels being of a different figure, pour forth sometimes a various liquor, according to its peculiar nature, chiefly near the outward region of the cortex; so the Tithymalus and Cichory commonly distill a milky humour, and the Cypress, Fir, and Pine, a certain species of turpentine.

And by how much these circles are more outward, by so much the middle spaces between the two zones are greater; and are lessened always towards the more inward in a certain proportion, which seems to depend on this, viz. the outward air acting on all sides with an equal pressure, and by a certain power presses the second; and this also by this means, is pressed by its own condensed air, and presses together those which are more inward, because it cannot exert its force upon the external air; therefore the second circle is necessarily more compressed than the first, and the third more than the second, and so of the rest. And the utricles placed between the circles are pressed by the same proportion; which, by degrees, are more and more exhausted; thence the inner circle loses most of all the compressed and condensed utricles, and by degrees grows solid.

And this is properly called Liber (the inward bark), and is that circle, which, being middlemost by place and nature, between the cortex, or outward bark, and the wood, comes nearest to the nature of the wood, and in time passes into it, for the cortex loses every year one such circle, and becomes wood, which may be distinguished from the former circles of the root, stock, or trunk; and if they are cut horizontally, will shew the number of such circles, and how many years the tree is old.

And this successive mutation of the cortex into liber, and of liber into wood, is like to that we observe in the human body in the beginning of a callus; for a callus consists of (skin, but so compressed, that all the vessels are lost; and that skin, being become solid, is increased, and grows to a greater bulk. But besides these hitherto described, there occur certain peculiar vessels (of which mention has been made in describing the cortex), which are found full of turpentine, gum, or a certain concreted juice proper to them; the constant progress of which is not very conspicuous in all of them, by reason of the transparency of the moisture.

5. The fifth and last part is the most inward, the medulla or pith, disposed in the middle center of the root; and as it seems different from the former, seeing this is sometimes wasted, and that never, this appears more fungous, that more durable.

As to the manner of the root's performing its function, it may be observed, that the root having imbibed the saline and aqueous juices of the earth, and saturated itself with them, for the nourishment of the tree, those juices are put into motion by heat; which having entered the mouths of the arterial vessels from the root, they mount to the top with a force answerable to what lets them in motion; and, by this means, they gradually open the minute vessels rolled up, and expand them into leaves.

2. The wood; this is considered as consisting of capillary tubes, running parallel from the root throughout the stalk. Some call the capillary tubes arterial vessels, because the sap rises from the root through these. The aperture of these tubes are, for the most part, too minute to be perceived by the bare eye, unless in a piece of charcoal, cane, or the like.

Wood, says Dr. Grew, by microscopical observations, appears to be only an assemblage of infinitely minute canals, or hollow fibres, some of which arise from the root upwards, and are disposed in form of a circle; and the others, which are called inferdons, tend horizontally from the surface to the center, so that they cross each other, and are interwoven like the threads of a weaver's web.

fecides the capillary tubes, &c. before-mentioned, there are other larger vessels, which some call venal vessels, which are disposed on the outside of the arterial vessels, between the wood and the inner bark, and lead down to the covering of the inward root. These vessels are supposed to contain the liquid sap found in plants in the spring, &c.

The Rev. Dr. Hales tells us in his excellent treatise on Vegetable Statics, that, in order to find whether there was any lateral communication of the sap and sap-vessels, as there is of the blood in animals, by means of the ramifications and lateral communications of their vessels; he took a young oak-branch, seven or eight inches diameter, at its transverse cut, six feet high, and full of leaves; and having cut a large gap to the pith, seven inches from the bottom, and of an equal depth the whole length, and also cut another gap four inches above that on the opposite side, he set the end of the stem in water, and in two nights and two days time it imbibed and perspired thirteen ounces; while another like oak-branch, somewhat bigger than that, but with no notches cut in its stem, imbibed twenty-five ounces.

From this and many other experiments he there mentions, he says, we see a most free lateral communication of the sap and sap-vessels, those great quantities of liquor having passed laterally by the gaps; in that, by several experiments on cylinders of wood, little evaporated by the gaps.

The bark is the exterior part of trees, serving them for a skin or covering: it is generally of a spongy texture, and communicates with the pith by a multiplicity of small fibres passing through the capillary tubes, of which the wood consists: so that the roots having imbibed the proper nutriment of the tree, it is carried up by the warmth of the sun, through the fine arterial vessel of the tree, to the top of it, and being there condensed by the cold, it does, by its own gravity, return down by the vessels which lie between the wood and the inner bark, which perform the office of veins, and as it passes by, leaves such parts of its juice as the texture of the bark will receive, and requires for its support.

Some are of opinion, that that soft whitish rind, or substance, which lies between the inner bark and the wood, does the office of veins: and some call this a third bark, and suppose it to differ from the other in nothing but having closer fibres, and that it contains the liquid sap, gums, &c. which are found in the plants in the spring and summer months, which hardens by degrees, by means of the sap it transmits, and is imperceptibly conveyed into the woody part of the tree.

The bark serves for divers purposes, for it not only transmits the nutritious juices of the plants, but also contains divers fat oily humours, to defend the inner parts from the injuries of the weather. As animals are furnished with a panniculus adiposus, usually replete with fat, which invests and covers all the fleshy parts, and screens them from external cold; so are plants encompassed with a bark, replete with fat juices, ~~by means whereof the cold is kept out, and, in winter-time, the spiculae of ice prevented from sinking~~ and freezing the juices in their vessels; whence it is, that some sorts of trees remain ever-green throughout the year, by reason their barks are more compact, and contain a larger quantity of oil than can be spent and exhaled by the sun.

The pith is the inward central part of a tree or plant, answering to the medulla, or marrow of an animal. As for its substance, it consists of little transparent globules, chained or linked together, somewhat like the bubbles that compose the froth of liquor.

Some suppose, that the circulation of the sap is effected by means of the pith, others by the bark, and others by the wood.

Borelli, in his book De Motu Animalium, supposes the tender growing shoot to be distended like soft wax, by the expansion of the moisture in the spongy pith, which dilating moisture he concludes, is hindered

from returning back, while it expands by the springiness of the pith without the help of valves.

And the Rev. Dr. Hales is of opinion, that it is very probable, that the particles of water that immediately adhere to, and are strongly imbibed into, and attracted by, every fibre of the spongy pith, will suffer some degree of expansion before they can be detached by the warmth of the sun from each attracting fibre; and, consequently, the mass of spongy fibres, of which the pith consists, must therefore be extended.

And that the pith may be the more serviceable for this purpose, nature has provided in most shoots a strong partition at every knot, which partitions serve not only as plinths or abutments for the dilating pith to exert its force on, but also to prevent the too free retreat of the rarefied sap from the pith.

But a dilating spongy substance, by equally expanding itself every way, would not produce an oblong shoot, but rather a globous one, like an apple to prevent which inconvenience it is observable, that nature has provided several diaphragms, besides those at each knot, which are placed at small distances across the pith, thereby preventing its too great lateral dilatation.

These are very plain to be seen in the shoots of the Walnut-tree, and the same may be observed in the pith of the branches of the Sun-flower, and several other plants, where those diaphragms are not to be distinguished while the pith is full and replete with moisture; yet when it dries up, they are often plain to be seen. And it is farther to be observed, that where the pith consists of distinct vessels, the fibres of those vessels are often found to run horizontally, whereby they can the better resist the too great lateral relaxation of the root.

The trunk and branches of a tree, bear a resemblance to the exterior members and limbs of an animal, which it may subsist without, though the rotting and mortification of them oftentimes occasion a total destruction of it. Accordingly the like effects are found from the wounding or lopping of a tree, as from the wounding or cutting off a limb, an extravasation, callosus, or the like.

A leaf is part of a plant extended into length and breadth in such a manner, as to have one side distinguishable from the other. The leaves, according to Malpighius, consist of so many interwoven utricles, as to be not much unlike a pulmonary net, and serve instead of lungs to the plant. As the perspiration and respiration are chiefly performed thereby, those vessels are very conspicuous when the leaves are dried. In the day-time, when the heat hath rarefied the mounting juices, so as to become specifically lighter than the air, they flow out through the pores of the leaves, and evaporate, which is the occasion of the leaves becoming so flaccid in very hot weather; but in the night, when by the cold the juices are more condensed, then the leaves are erected again, and draw in a great share of nourishment from the air. These leaves we may observe to be of different textures on each side, the upper surface being for the most part smooth, the better to shoot off the redundant moisture, while the under surface is many times of a rough and cottony texture, by which it is capable of retaining the moisture; for which reason we find, if by bad management, &c. the shoots of trees are nailed to a wall, &c. so as to turn the surfaces of the leaves the wrong side upwards, the shoots will be at a stand, until the leaves have obtained their proper disposition. These leaves, as the learned Dr. Hales observes, are carefully distributed at small distances throughout the whole length of the shoots, and serve as so many jointly-acting powers, placed at different stations, thereby with more ease to draw plenty of sap to the extending root.

A flower is the more tender part of a plant, remarkable for its colour, or form, or both, cohering with the rudiment of the fruit, and contains the organs of generation, some of these flowers contain the male organs, as the stamens and apices, which are loaded

with the farina fecundants, which, when ripe, is scattered into those flowers which are female, and consist only of the ovarium, with the style and stigma, which are surrounded with the petals*. Other flowers there are, which have both sexes contained in the same flower; these are called hermaphrodite flowers. A fruit, *Kypwbs*, is not that part of a plant which is eatable, but rather the seeds, with their covering, should be called the fruit. This covering cherishes the seeds until they come to maturity, and defends them from the injuries of the weather, as that they are not hurt thereby; and also prepares the juices designed for their nourishment, that it may with ease enter their small bodies in a just proportion.

The motion of the nutritious juices of plants is produced much like that of the blood in animals, by the action of the air; and, in effect, there seems to be something equivalent to respiration throughout the whole plant.

Malpighius was the first who observed, that vegetables consisted of two series, or orders, of vessels.

1. Those which have been treated of before, which receive and convey the alimental juices, and which answer to the arteries, lacteal vessels, veins, &c. of animals; and,

2. The tracheae, or air-vessels, which are long hollow pipes, in which the air is continually received and expelled, i. e. inspired and expired, within which tracheae all the former vessels are contained.

Hence it follows, that the heat of the year, nay, of a single day, hour, or minute, must have an effect on the air included in these tracheae, i. e. it must rarefy it, and, of consequence, dilate the tracheae; and hence also a perpetual spring or source of action must arise, to promote the motion of the sap in plants.

For when the tracheae are expanded, the vessels which contain the juices, are, by that expansion, pressed; and, by that means, the juice contained is continually propelled and accelerated; and, by this propulsion, the juice is continually comminuted, and rendered more and more subtil, and adapted to enter into vessels still finer and finer y the thickest part of it being at the same time secreted, and deposited into the lateral cells, or loculi of the bark, to defend the plant from cold, and other external injuries.

The vessels, or containing parts of plants, consist of mere earth, bound or connected together by oil, as a gluten, or glue; which being exhausted by fire, air, age, or the like, the plant moulders, or returns again into its earth or dust.

Thus vegetables being burnt by the most intense fire, the matter of the vessels is left entire and indissoluble, notwithstanding its utmost force; and, of consequence, is neither water, nor air, nor fait, nor sulphur, but earth alone.

Juice is a liquid substance, which makes part of the composition of plants, and communicates itself to all the other parts, and serves to feed and increase them; and is that to plants that blood is to animals. These juices are of divers sorts; aqueous, grumous, bituminous, oleaginous, resinous, vinous, of all tastes and colours.

This juice or sap of plants, is a humour furnished by the earth, and changed in the plant; it consists of some fossil, or other parts, which are derived from the air or rain; and others, from putrefied animals, plants, &c. so that, consequently, in vegetables are contained all kinds of salts, oil, water, earth, and, probably, all kinds of metals too, inasmuch as the allies of vegetables always yield somewhat which is attracted by the loadstone.

The juice enters plants in the form of a fine subtil water, which by how much the nearer it is to the root, so much the more it retains of its proper nature; and the farther it is from the root, the more action it has undergone, and approaches the nearer to the nature of the vegetable; and, of consequence, when the juice enters the root, the bark of which is furnished with excretory vessels, fitted to discharge the excre-

mentitious part, it is earthy, watry, poor, acid, and scarce oily at all.

It is further prepared in the trunk and branches* though it continue acid still; as is perceived by the tapping or perforating of a tree in the month of February, when it distils a watry juice that is fenibly acid.

The juice being carried hence to the germs, or buds, is more connected; and when it has here unfolded the leaves, these come to serve as lungs for the circulation and further preparation of the juice; for when those tender leaves are exposed to the alternate action of heat and cold, moist nights, and hot forcing days, they are expanded and contracted alternately 5 and the more, by reason of their net-like texture.

By such means, the juice is farther altered and digested, as it is farther yet in the petals, or leaves of the flowers, which transmit the juice now brought to a further subtilty to the stamina; the stamina communicate it to the farina, or that dust which appears on the apices, where it undergoes a further maturation, and leads into the pistil; and there acquiring its last perfection, it becomes the original of a new fruit or plant.

ANCHUSA. Lin. Gen. 167. Buglossim. Tourn. Inft. R. H. 133. tab. 53.

The CHARACTERS are,

The empalement is oblong taper, and permanent, cut into five acute segments which are enff. The flower is of one leaf having a cylindrical tube the length of the empalement; at the brim it is cut into five upright segments, which spread open, but the chaps are ctofed, and have five prominent little fides. There are five port stamina in the chaps of the flower which are crowned with oblong summits. In the bottom of the flower are situated four germen, having a slender style, crowned with an obtuse stigma. The germen afterward becomes four oblong blunt seeds shut up in the empalement.

Dr. Linnseus ranges this genus of plants in the first section of his fifth class of plants, entitled Pentandria Monogynia, the flowers having five stamina and a single style.

The SPECIES are,

1. ANCHUSA (*Officinalis*) foliis lanceolatis spicis imbricatis fecundis. Hort. Cliff. 46. *Alkanet with spear-shaped leaves, and fruitful imbricated spikes, or greater Garden Bugloss.* Buglossum angustifolium majus. C. B. P. 256.
2. ANCHUSA (*Angustifolia*) racemis subnudis conjugatis. Prod. Leyd. 408. *Alkanet with conjugated half naked spikes.* Borago fylvetris perennis flare rufo kermefino. Zan. Hift. 49.
3. ANCHUSA (*Undulata*) fruticosa foliis linearibus dentatis pedicellis brevibus minoribus calycibus fructiferis inflatis. Laefl. Lin. Sp. Plant. 133. *Alkanet with narrow indented leaves, small foot-stalks to the branches* and a swelling empalement over the seeds.* Buglossum Lufitanicum echii folio undulato. Tourn. Inft. 134.
4. ANCHUSA (*Orientalis*) villosa-tomentosa, ramis floribusque alternis axillaribus, bracteis ovatis. Lin. Sp. 191. *Alkanet with branches and flowers growing alternately from the wings of the stalks, and oval bractea or floral leaves.* Buglossum Orientale flore luteo. Tourn. Cor. 6.
5. ANCHUSA (*Firginiana*) floribus sparsis caule glabro. Lin. Sp. Plant. 133. *Alkanet with flowers growing thinly, and a smooth stalk.* Anchusa minor lutea Virgiana Puccoon indigena dicta qua fe pingunt Americani. Pluk. Aim. 30. *Called by the inhabitants of Virginia, Puccoon.*
6. ANCHUSA (*Sempervirens*) pedunculis diphyllis capitatis. Lin. Sp. Plant. 134. *Alkanet with foot-stalks having two leaves.* Buglossum latifolium sempervirens. C. B. P.
7. ANCHUSA (*Cretica*) foliis lanceolatis verrucosis femi-plexicaulibus, floribus capitatis, calice procumbente. *Alkanet with warted and spear-shaped leaves embracing the stalk half rounds flowers growing in a head, and a trailing stalk.* Buglossum Creticum verrucosum perlatum quibudarn. H. R. Par,

J. ANCHUSA (*finfioria*) tomentosa, foliis lanceolatis obtusis, ftaminibus corolla brevioribus. Lin. Sp. 192. *Anchusa* with woolly, spear-shaped, blunt leaves, and the stamina of the flower shorter than the corolla, or true *Alkanet* of the *Jhops*.

9. ANCHUSA (*Azurea*) foliis longis hirsutis, floribus capitatis reflexis, pedunculis longissimis. *Alkanet* with long hairy leaves, and flowers collected into heads which are reflexed, and very long foot-stalks. Borago sylvestre Cretica flore azureo. Zan. Hift. 51.

The first sort is the Buglofs, whose flowers are ordered to be used in medicine. This sends up stalks about two feet high, having oblong rough leaves, placed alternately, at the extremity of the shoots. The flowers are produced in clusters; which are of a fine blue colour, these come out with foot-stalks from the wings of the leaves, and are collected into small heads. The flowers are of one leaf, having a long tube, spread open at the top in the shape of a funnel. After the flower is past, it is succeeded by four naked seeds, situated at the bottom of the empalement, which drop out as they ripen.

The roots of this sort seldom continue longer than two years, especially in good ground, for they are subject to rot in winter, unless when they happen to grow in rubbish, or out of an old wall, where they will live several years; for in such places the plants are stunted in their growth, so their branches are firmer and not so full of juice as those which grow in better soil. The plants may be easily propagated by seeds, which may be sown in the autumn, upon a bed of light sandy earth; and in the spring, when the plants are strong enough to remove, they should be planted in beds at two feet distance, observing, if the leafon proves dry, to water them till they have taken root, after which they will require no farther care but to keep them clean from weeds. If the seeds of this plant are permitted to scatter, the plants will rise in plenty, which may be managed in the same manner before directed. There is a variety of this with white flowers, but this will not retain its difference from seeds.

The second sort grows to the height of two feet when cultivated in gardens, but in the places where it grows wild, is rarely more than a foot. The leaves of this are narrow, and less hairy than those of the first, the spikes of flowers come out double, and have no leaves about them; the flowers are small, and of a red colour. The roots will continue three or four years in poor land.

The third sort is a biennial plant, which perishes soon after the seeds are ripe. This grows two feet high, and sends out many lateral branches, which are garnished with long, narrow, rough leaves, which are waved on their edges: the flowers are of a bright blue colour, and grow in an imbricated spike; and after these fall, the empalement turns to a swollen vessel inclosing the seeds.

The fourth sort is a perennial plant, with long trailing branches which lie on the ground, the under leaves are long, broad, and hairy, but these diminish as they are nearer the top, and those which come out on the spikes between the flowers are short and roundish. The flowers are yellow, and about the size of those of the common Buglofs; there is a succession of these on the same plants great part of the year, which renders them more valuable. This, though a native of the Levant, is hardy enough to live in the open air in England, if it hath a dry sandy soil. It may be propagated by seeds in the same manner as the first sort, and if the seeds are permitted to scatter, the plants will rise without care.

The fifth sort is a native of North America, where it grows naturally in the woods, and being an early plant, generally flowers before the new leaves come out on the trees; so that in some of the woods, where this plant abounds, the surface of the ground seems covered with bright yellow flowers. It is known in that country by the title *Puccoon*. It is a perennial plant which seldom rises a foot high in good ground, but not above half that height where the soil is poor, the

flowers grow in loose spikes, upon a smooth stalk. This is propagated by seeds, which, if sown in the spring, seldom grow the first year.

The sixth sort is a very hardy perennial plant, with weak trailing branches, garnished with broad, rough, deep green leaves; the flowers are blue, and come out between the leaves on the spike, like the fourth sort, the plants frequently grow out of the joints of old walls, in those places where any of the plants have been near, for when the seeds are permitted to scatter, there will be an abundant supply of the plants. The flower great part of the year.

The seventh sort is a low, trailing, annual plant, whose branches seldom extend more than six inches; these lie on the surface of the ground, and are thin set with spear-shaped, small, warty leaves, which half surround the stalk at their base. The flowers are small, of a bright blue colour, and are collected into small bunches at the extremity of the branches. The plants perish soon after their seeds are ripe, which if permitted to scatter, the plants will come up better than when they are sown. These do not bear transplanting, so should remain in the places where they come up.

The eighth sort rises near as high as the first, to which it bears great resemblance in its leaves and branches; but the leaves and branches are more woolly, and the stamina of the flowers are shorter than the corolla; the root also is red. This plant grows naturally in the south of France and Spain, but is equally hardy with the first species, and may be cultivated in the same manner.

The ninth sort is a perennial plant, with broad rough leaves, like those of the sixth; the branches grow more erect, and the flowers which are of a bright azure colour, are collected into spikes, coming out singly from between the leaves. This is a hardy plant, and may be propagated in the same manner as the former.

A N D R A C H N E , Bastard Orpine.

The CHARACTERS are,

It hath male and female flowers on the same plant. The male flower hath a five-leaved empalement, which is equal and withers. The flower is composed of five slender leaves indented at the top, which are shorter than the empalement. At the bottom of each petal is situated an herbaceous nectarium, to which the five slender stamina are joined; these are crowned with single summits. The female flowers come out from the wings of the stalk near the male. These have a permanent five-leaved empalement, but no petals; there are five nectariums as in the male, and a globular germen supporting three slender styles which are bifid, crowned with a round stigma. The germen afterward turns to a three cornered globular capsule, having three cells, in each of which are lodged two triangular obtuse seeds.

The SPECIES are,

1. ANDRACHNE (*Telephioides*) procumbens herbacea. Lin. Sp. Plant. 1014. *Herbaceous trailing Andrachne. Telephioides* Graecum humifusum flore albo. Tourn. Cor. 50.

2. ANDRACHNE (*Fruticosa*) erecta arborea. Ofb. It. 228. *Shrubby tree-like Bastard Orpine.*

3. ANDRACHNE (*Arborea*) foliis ovatis obtusis, subtus incanis, caule arboreo. *Bastard Orpine with oval blunt leaves, hoary on their under side, and a tree-like stalk.*

The first sort is a low plant, whose branches trail upon the ground. The leaves are small, of an oval shape, smooth, and of a sea-green colour. It is found wild in some parts of Italy, and in the Archipelago, from whence Dr. Tournefort sent the seeds to the royal garden at Paris: but being a plant of no great beauty, it is seldom cultivated, except in botanic gardens for variety. If the seeds of this plant are sown on a moderate hotbed in March, the plants will arise in about a month after, when they may be transplanted each into a small pot, and plunged into another very moderate hot-bed to bring the plants forward, but in mild weather they should have plenty of air admitted to them, and often refreshed with water: in June they will produce flowers, and the seeds will ripen in August

August and September, soon after which the plants will decay.

The second fort grows naturally in China, and also at La Vera Cruz in New Spain, where it rises twelve or fourteen feet high; the branches are garnished with spear-shaped, pointed, smooth leaves, under which the foot-stalk of the flowers are produced; these are pretty long and hang downward: the flowers are finally, of an herbaceous white colour, some of which are male, and others female, but when the latter are situated at too great a distance from the former, there is rarely any seeds within their covers; though they seem very fair to fight, yet upon being opened there will no seeds be found in them; whereby several persons have been deceived, who have sown them, without raising a single plant.

The third fort was discovered by the late Dr. William Houffton, growing naturally at Campeachy; this has a strong woody stem, which rises more than twenty feet high, sending out branches on every side, which are garnished with oval blunt leaves, hoary on their under-side, and having pretty deep furrows on their upper, placed alternately on the branches: the flowers I have not seen, for the plant which rose from the seeds in the physic garden did not produce any, though it grew upward of fourteen feet high, nor were there any flowers upon the trees at Campeachy, at the time Dr. Houffton was there, the seeds being then ripe; of these the doctor sent many to Europe which appeared very fair, but on being opened, no kernels were found within them, so that but one plant was raised from all the seeds.

These two forts are very tender plants, so that when good seeds can be obtained, they should be planted in pots, plunging them into a hot-bed of tanners bark, observing to water them as the earth becomes dry in the pots; and when the plants come up, and are fit to remove, they should be each planted in a small pot, plunged into a tan-bed, shading them until they have taken fresh root, after which they should have free air admitted to them in warm weather, but must be constantly kept in the bark-stove.

There is also another fort which I have raised from seeds, sent me from Jamaica; the whole form of the seeds agree with those of the third fort, as do also the plants, but the leaves are somewhat like those of the Laurel, but are much larger; this hath not as yet flowered in Europe.

ANDROMEDA. Lin. Gen. Plant. 485. We have no English name for this plant.

The CHARACTERS are,

**the empalement is cut into five small acute segments \ this is coloured and permanent. The flower is of an oval leafy oval bell-shaped, and divided into five parts at the brim; which are reflexed. It hath ten awl-shaped stamens, which are shorter than the petals to which they are fixed \ these are crowned with nodding summits having two horns. In the center of the flower is situated a round germen* supporting a cylindrical style, which is longer than the stamens, and crowned with a blunt stigma. The germen afterward turns to a round pentagonal vessel having five cells > which are filled with small round seeds.*

This genus of plants is ranged by Dr. Linnaeus in the first division of his tenth class, entitled Decandria Monogynia, the flowers having ten stamens and one germen.

The SPECIES are,

1. ANDROMEDA (*Polifolia*) pedunculis aggregatis, corollis ovatis, foliis alternis lanceolatis revolutis. Lin. Sp. Plant. 393. *Andromeda with aggregate foot-stalks, oval petals, and spear-shaped leaves growing alternately.* Polifolia. Buxb. Aft. 2. p. 345.
2. ANDROMEDA (*Mariana*) pedunculis aggregatis corollis cylindricis foliis alternis ovatis integerrimis. Lin. Sp. Plant. 393. *Andromeda with aggregate foot-stalks, cylindrical flowers, and oval entire leaves placed alternately.*
3. ANDROMEDA (*Paniculata*) racemis fecundis nudis paniculatis, corollis subcylindricis foliis alternis oblongis crenulatis. Lin. Sp. Plant. 394. *Andromeda with naked,*

fruitful, Uffe spikes, cylindrical flowers, and oblong crenated leaves placed alternately. Vitis idsea Americana, longiori mucronato & crenato folio, floribus urceolatis racemosis. Pluk. Aim. 391.

4. ANDROMEDA (*Arborea*) racemis fecundis nudis, corollis rotundo-ovatis. Lin. Sp. Plant. 394. *Andromeda with naked fruitful spikes, and oval roundish flowers.* Frutex foliis oblongis acuminatis floribus spicatis uno versus diffusis. Catech. Carolin. 1. p. 71. *commonly called Sorrel-tree in Carolina.*

5. ANDROMEDA (*Caesulata*) racemis fecundis foliaceis corollis subcylindricis, foliis alternis lanceolatis obtusis punctatis. Lin. Sp. Plant. 394. *Andromeda with leafy fruitful spikes, cylindrical flowers, and oval roundish leaves, with punctures placed alternately.* Chamaedaphne. Buxb. Aft. 1. p. 241.

The first fort is a low plant which grows naturally on bogs in the northern countries, but is with difficulty preserved in gardens, and having little beauty, is seldom cultivated except in botanic gardens. I received the seeds from Peterburgh, which came up in the Chelsea garden, but did not continue more than one year.

The second fort grows naturally in North America: this is a low shrub, which sends out many wood-stalks from the root, garnished with oval leaves placed alternately; the flowers are collected in small bunches: these are shaped like those of the Strawberry-tree, and are of an herbaceous colour. They appear in June and July, and sometimes are succeeded by fruit, which seldom ripen in England.

The third fort is also a native of North America. This shrub grows about four feet high, sending out several branches, which are clothed with oblong leaves placed alternately; the flowers grow in loose spikes from the ends of the branches; they are of the pitcher shape, like those of the Arbutus, but are a little longer, and appear in July, but do not produce seeds in this country.

The fourth fort grows naturally in Virginia and Carolina; in the latter it is much larger than in the former, the climate being warmer, so many of the trees and shrubs grow to a much greater height there. In Virginia, it is a shrub growing ten or twelve feet high, but in Carolina it rises twenty feet. The branches are very slender, bending downward; these are garnished with leaves placed alternately, which are oblong and pointed: the flowers grow in long naked spikes, coming out from the sides of the branches, which are of an herbaceous colour, and are ranged on one side of the stalk; they are oval, and shaped like a pitcher.

The fifth fort grows naturally in Siberia, and also in North America; it is a low shrub which grows on mossy land, so is very difficult to keep in gardens. The leaves are shaped like those of the Box-tree, and are of the like consistence, having several small punctures on them; the flowers grow in short spikes from the extremity of the branches: these are produced single between two leaves, they are white and of a cylindrical pitcher shape.

All the forts, except the fourth, are very hardy plants, which delight in moist ground, they increase by their creeping roots, which put up suckers at a distance, and may be taken off with roots, and transplanted where they are designed to remain, for they do not bear to be often removed.

The fourth fort requires to be sheltered from hard frosts in winter, but in the summer should be frequently watered. It is a difficult plant to keep in gardens, as it grows naturally on boggy places, and requires a greater heat than that of this climate. It may be propagated by seeds, which should be procured from America, where it is known by the name of Sorrel-tree.

ANDROSACE. We have no English name for this plant.

The CHARACTERS are,

the flowers grow in an umbel \ they have a many-leaved general involucre. Each flower hath a five-cornered empalement

faltniett ef tM leaf, flight!} wietfJ at tbt top in fivl acute fauns, ibis is permanent : I be ticker is of one kef, btm'ng tin nei tube, indofid by tbt enipahmcnt, bus ii plain et tbt i iris Jmidtt hit fist fotis. 1: bath fiv:e fatdl fitimhut ivitiin sifi tube, -Jibich art cr&n/ncJ *sxtb sil'wiy aril fu/mmls. h the teneris plaad f rans, jupprtt; aflwrtfUnderfytli., crowned ty a gk-nlarjigmas s the empdntnt tifferwetrd beemes a rirwJ rsfale ef ene tell opening in fut farts, which if j I feeds.

Dr. Linnæus tinges. t::s grms of plmt.i in the first DO of his titi; i.., entitled Pencanilria Monogynia, and an angular smplenxt jbsner than tbt piuls. The S pecies are,

- 1. AxpROSAot *Maxims* perianthiisruftuum maximi?. Hurt. Upfel. jti. *Androface* with the lorgfji eapnlmr.it la the frail. AndnjlaeevuWrislautbliaannua. Toiirn. JnV. R. H. 123.
- 2. ASPKOSALB I'StpeittrioKirlifj foills bncrobm dentatis gbbvis periuithiis an>ulatis corollii bttvioribua. 'lor. Succ. r6u. *Andrefctvi:sibfiumb, indnttd, fpear-Pieped leaves, and an angular smplenxt jbsner than tbt piuls.* Alilrn: veins Andnrfaces capitulli. C. B. P. »<t
- 3. ANDHOSACE (ViUafa) foliis pilofe pfriantiis hirfuris. Lin. Sp. flavn. 14a. *A* ... with -i? leaves and *empitcaait*, *Sedum Abinum* hirijtum lafteo flore. C.B. :h.
- 4. AsmtosACE (CatTitti) foliis rubuktis glabris, umbella in value rum axjuuic. Lin. Sp. 204. *Anirafacz* with *fmoob cfjit-SiFpei Itava*, and the *umbel ef firuvers equuil to the*
- 5. AKOHOSA, Wiis linear!bus gUbrl, umbelli involuoi multotiei longore. Lin. Sp. Plani.

The ilrft fort grows naturally in Auftria and Bohetnii mgft the corn : thii hath jr;id leaves which spread near the ground, ftwn the ct-ttr ef ilicfe the foot-ttalks aiié, which are terrouated by the umbel • rj, like thoft of the Auricubi under the umbel of flowers in a large compofition. A' lid in prrmanent; the flowers are jnpoled of five fmall wiiite peuls j thefe apper win April aii May, the feedi npen in June, and the plants ibon affCTpeiUb.

The other lbs are much fmfler than this, ftme of them fiddom growing matt ih.m diree inchrs high, hiring vci small ... In m, fci- little app BWlcc. Tnej grow naturally on the Alpi and Heh ... tii:li.Hi; , as allo • Siberia, from whence I have teavedth ... of finee or foar Ipecits. Hide are only preferred in botanic gardens for the fake of va ... and jll the 10: ts except &e firft flouki luvc a ... ma

AND liOS.'F.MUM. S<f HYPERICUM.

AND KY A 1. A. Lin. Gen. Kant. Szo. Downy Sow-thiMe.

The CUACTEIS axi, ii'iüy empalancni, cut iürtl ... flowers arc eompfed of ruin berme-pbredit ... Hit \$ texgne on «a fide. Tbt!' ... il.*fr tire ertwtid by cylindrical fax ... gersnen it fr, ... flutdr ... yermcn after-itiitrd; Tliis Kn, ... Dr. Linnæus / ranged in the tirll Jevivn

gencfia Polygamia equalis, there being many hermaphrodite flowers included in unc cummun empij-meat

The Sraciss are, ANDEVAL * (title%rifitilia) foltis integris ovato oblongN tomeniuft. I'iiii-it. Sump. a. p. 384. DownSwitbijk *xibtrjal, ollnxg, etit:rt,divvnyleaves. SonthusUuultu.i. Dilcch. Milt. int..

- 1. AN DRY A LA {Rogujfna) iolib lancniLitis irillivifis d<;n-ticulatb: acutis ttimenior^, dloribvu l'jji(iriui. Lin. Sp. J'lint. 11 v. Daatf Sssitbijli With indented, jftar-Oitpid, *zHjolk Uattt. Sontüivi' vtlloin luvivis minor. e. B. p. 114.

%c. /URHWALA !,Sint<ita) foliis runcin.itis. Lin, Sp. 1137, Dvomj Srwtbille rsüib plain-JhuptH Icaevei.

- 4. AKDRVALA {JjiffB/ajiolikoblongo-ovatis fubd?ntads luutis, peduncitlis Mmofii. A in ecu. Acad. 4, p. 288. Downy Sstotb/ik it-i/i waefy, cibng, aval Uevcs, and branching fevt-jlalks. Hicnfcium itiiuunimi comen-tollini. Hort, Elth. tab. 150, The firft is in annua] plant, which grows naturally in tht: Umili of France, Spain, and Italy, andispre-ferved in botanic garden5 for the like of' variety. This grows a foot and a half high, with wofil; rUlks, having leaves fmerimlj fa 00"th are oblong and dovtny. Thu flowers are produced in finall clutters at the top of tin : ... and like thofe 01 the isowthflc, fn do nnt mike ;ny great appearance. It is rafily nife; by feeds, which mould be ibwn in cite 'prin& in tlw pSfcc where the plants are to remain, ondwill require I-J i:L'ir culture but to thin thtri wirert- die/ arc too clofe, and keep ihcm clean from wscdt I Sowers in July, and the lccds riptn in it-picmber.

The fco'vi is a perennial plant, which grows naturally in Spain, torn whence I received the l<d;i, as I have alfo from the Cape of Good Hop?. The leaves of this plant arc extremely white, and are mudijn-denied on their edges; the flwer-ftalks grow about s toot high, henna iimall dufters of ydlo-w flowers, which appear in July; the- feeds ibmcrues ripen in England, but not every year. TIII- roots Crvtp, by wiieli the plants may be propagated. They luvé 3 high dry l'bil, in viti'ch they wilj jive in xht open iir in thii country.

The third fort grows naturally in Sicily, and alfo near Montpelitr-, the lowirr : arcs of th: (an are indented and woolly, but thole upon the Eblfel arc endrei this fcidom riles more thin a foot High, fupport-in; a lew yellow Bowers u the iup.

The fourth lbrt grows in i'piin and Portugal; the Seavci of this art broader, longer, and more downy, tluu either of the other Jbrts, tie flower-llalks rife mart thal a foot high, branching into feveral foot-ft^lka, MCH fuftainimj une large yellow iowcr, Qiaped like thote of Hiwkweed, which arc fuctceded by oblong black feeds crowned with down.

The two plants »re propagated by feeds, in the fame manner as the former, wuch lhoujd be fown in nucumn, for when they are fown in the fpring, the plants iildom rife iJie fame ytur.

ANKMUNK [-WIIJH, of SnpQ., Q., tlic wind ; (b called, keniilr the Bower is fuppced not to open, except the winil blow*.] Wind-lluwer.

The CBAUCTEM are, Ibi jawtr is naked laving no empahment, and ievjijls eftivs cr three orders of haves or petals, which art eifong, and difpofed in thret friti ever each other, It hatb a grlas nKKbtr cfjltxtlerftamimi whitb are jborier ibns the petals, end arc crmmtii by double fmm>ijf>bhb art trefc; between thefe artfituüei mam gtrnint, suüiVi are cfUSttl inln a bead, ftipporl'tn^ apo'mid Jhif muficd with e blunt fuipna. *J be gtrmrp cfizroard lecomt fit njurf fctf's in toe'i a dmn -z/bich adbrts to tbt foai-jhilk, and farms nrtabtyfe «w.

Dr. i.inilxus ranges this genus of plants in the fixch faction of his thirteenth cljts, entitled Poiyaodtta Tolygynia, from the flouen hving many iliimins and gino.

The SPECIES are,

1. ANEMONE (*Sylvestris*) pedunculo nudo feminibus fubrotundis hirsutis. Lin. Sp. Plant. 540. *Anemone with in naked stalk and a round head of hairy feeds.* *Anemone sylvestris alba major*; C. B. ? 176.
2. ANEMONE (*Nemorofa*) feminibus acutis foliolis incisis caule unifloro. Hort. Cliff. 224. *Anemone with pointed feeds, cut leaves, and a Jingle flower.* *Anemone nemorofa flore majore.* C. B. P. 1J6.
3. ANEMONE (*Apennina*) feminibus acutis foliolis incisis petalis lanceolatis numerosis. Lin. Sp. Plant. 541. *Anemone with pointed feeds, cut leaves, and many spear-Jhaped flower leaves.* *Ranunculus nemorofus flore purpureo-caeruleo.* Park. Theat. 325.
4. ANEMONE (*Virginiana*) pedunculis altis raris longiflomis frutibus cylindricis feminibus hirsutis muticis. Lin. Sp. Plant. 540. *Anemone with very long alternate foot-stalks, and cylindrical spikes of chaffy feeds.* *Anemone Virginiana tertiae Matthioli imilis flore parvo.* H. L. 645.
5. ANEMONE (*Coronaria*) foliis radicalibus ternato-decompositis, involucri foliofo. Lin. Sp. Plant. 539. *Anemone with lower leaves decomposed, and a leafy involucrium.* *Anemone tenuifolia simplicis flore.* C. B.
6. ANEMONE (*Hortensis*) foliis digitatis. Lin. Sp. Plant. 540. *Anemone with hand-shaped leaves.* *Anemone hortensis latifolia.* 3 Cluf. Hift. 1. p. 249.
7. ANEMONE (*Dichotoma*) caule dichotomo foliis sessilibus oppositis amplexicaulis trifidis incisis. Amaf. Acad. 1. p. 155. *Anemone with a forked stalk, and trifid cut leaves growing opposite, which embrace the stalks.*
8. ANEMONE (*Tbalifroides*) foliis caulinis simplicibus verticillatis, radicalibus duplicato ternatis. Lin. Sp. 763. *Anemone with simple leaves on the stalk, growing in whorles, and those at the root double ternate.*

The first fort grows naturally in many parts of Germany *, this approaches near to our Wood Anemone, but the feeds of it are round and hairy; the flower is large and white, but having little beauty, is seldom planted in gardens.

The second fort grows wild in the woods in many parts of England, where it flowers in April and May, making a pretty appearance in those places where they are in plenty. The roots of this may be taken up when their leaves decay, and transplanted in wildernesses, where they will thrive and increase greatly, if they are not disturbed; and in the spring, before the trees are covered with leaves, they will have a very good effect, in covering of the ground and making a pleasing variety at that season.

The third fort is found growing naturally in some parts of England, but particularly at Wimbledon in Surry, in a wood near the mansion-house, in great plenty; but it is not certain that they were not originally planted there, as they are not found in any other place in that neighbourhood. This fort flowers at the same time with the former, and when intermixed with them, make a fine variety. This may be transplanted from the woods as the former.

There are of these two forts, some with double flowers, which have been obtained from feeds. These make a finer appearance, and continue longer in flower than the single, but are only to be procured from the gardens, where they are cultivated. As these are only seminal varieties, I have not enumerated them with the others.

The fourth fort grows naturally in North America, from whence the feeds are frequently sent to England. This is a very hardy plant, and produces plenty of feeds in England, but having little beauty, scarce deserves a place in gardens, unless for the sake of variety.

The fifth and sixth forts are natives of the east, from whence their roots were brought, original *, but have been so greatly improved by culture, as to render them some of the chief ornaments to our gardens in the spring. The principal colours of these flowers are red, white, purple, and blue, and some are finely variegated with red, white, and purple. There are many intermediate (shades of these colours -, the flowers

are large and very double, and, when properly managed, are extremely beautiful. I shall therefore proceed to give ample directions for their culture, which, if duly observed, every person may have these flowers in perfection.

Take a quantity of fresh untried earth (from a common, or some other pasture land) that is of a light sandy loam, or hazel mould, observing not to take it above ten inches deep below the surface; and if the turf be taken with it the better, provided it hath time to rot thoroughly before it is used; mix this with a third part of rotten cow dung, and lay it in a heap, keeping it turned over at least once a month for eight or ten months, the better to mix it, and rot the dung and turf, and to let it have the advantages of the free air: in doing this be careful to rake out all great stones, and break the clods (but by no means sift or screen the earth, which is found very hurtful to many sorts of roots); for when this earth is made very fine, upon the first great rains of winter or spring, the small particles thereof join closely together, and form one solid mat, so that the roots often perish for want of some small stones to keep the particles asunder, and make way for the tender fibres to draw nourishment for the support of the root.

This earth should be mixed twelve months before it is used, if possible; but if you are constrained to use it sooner, you must turn it over the oftener to mellow and break the clods; and observe to rake out all the parts of the green sward, that are not quite rotten, before you use it, which would be prejudicial to your roots, if suffered to remain. The beginning of September is a proper season to prepare the beds for planting (which, if in a wet soil, should be raised with this sort of earth six or eight inches above the surface of the ground, laying at the bottom some of the rakings of your heap to drain off the moisture; but in a dry soil, three inches above the surface will be sufficient): this compost should be laid at least two feet and a half thick, and in the bottom there should be about four or five inches of rotten neat's dung, or the rotten dung of an old Melon or Cucumber-bed, so that you must take out the former soil of the beds to make room for it.

And observe in preparing your beds, to lay them (if in a wet soil) a little round, to shoot off the water; but in a dry one, let it be nearer to a level; in wet land, where the beds are raised above the surface, it will be proper to fill up the paths between them in winter, either with rotten tan or dung, to prevent the frost from penetrating into the sides of the beds, which often destroy their roots. The earth should be laid in the beds at least a fortnight or three weeks before you plant the roots, that it may settle *, and when you plant them, stir the upper part of the soil about six inches deep, with a spade *, then rake it even and smooth, and with a stick draw lines each way of the bed at six inches distance, so that the whole may be in squares, that the roots may be planted regularly: then with your three fingers make a hole in the center of each square, about three inches deep, laying therein a root with the eye uppermost *, and when you have finished your bed, with the head of a rake draw the earth smooth, so as to cover the crown of the roots about two inches.

The best season for planting these roots, if for forward flowers, is about the latter end of September 5 and for those of a middle season, any time in October; but observe to perform this work, if possible, at or near the time of some gentle showers *, for if the roots are planted when the ground is perfectly dry, and there should no rain fall for three weeks or a month after, they will be very apt to grow mouldy upon the crown, and if they once get this distemper, they seldom come to good after.

You may also reserve some of your Anemone roots till after Christmas, before you plant them, left by the severity of the winter your early planted roots should be destroyed, which sometimes happens in very hard winters, especially in those places where

they are not covered & them from froft: thefe late planted roots will flower a fortnight or three weeks after thofe which were planted in autumn, and many times blow equally as fair, efpecially if it prove a moift fpring, or that care be taken to refrefh them gently with water.

But then the increafe of thefe roots will not be near fo great as thofe of your firft planting, provided they were not hurt in winter; and it is for this reafon all thofe who make fale of thefe roots, are forward in planting; for although it may happen, by fharp pinching frofts in the fpring, that their flowers are not fo double and fair as thofe planted a little later, yet if they can preferve the green leaves of the plants from being injured, the roots will greatly increafe in bulk; but in fuch gardens where thefe flowers are preferred with care, there is always provifion made to cover them from the injuries of the weather, by arching the beds over with hoops, or frames of wood, and covering them with garden-mats or cloths, in frofty nights, and bad weather, efpecially in the fprings of the year, when their buds begin to appear; for otherwife, if you plant the beft and moft double flowers, the black frofts and cutting winds in March will caufe them to blow fingle, by deftroying the thrum that is in the middle of the flower; and this many times hath occafioned many people who have bought the roots, to think they were cheated in the purchafe of them, when it was wholly owing to their neglect of covering them, that their flowers were fingle.

In the beginning of April your firft planted roots will begin to flower, which will continue for three weeks or more, according to the heat of the weather, or the care taken in covering them, during the heat of the day, with mats or cloths: after thefe are jufly flowering, the fecond planted forts will come to fucceed them, and thefe will be followed by thofe planted in the fpring; fo that you may have thefe beauties continued for near two months together, or fometimes longer, if the feafon prove favourable, or proper care is taken to (hade them in the heat of the day.

The beginning of June, the leaves of your firft blown roots will begin to decay; foon after which time you muft take them out of the ground, clearing them from decayed (talks, and wafhing them, to take the earth clean from the root; then fpread them on a mat in a dry fhady place till they are perfectly dried, when you may put them up in bags, and hang them out of the reach of mice, or other vermin, which will deftroy many of the roots if they can come at them. Obferve alfo to take up the latter planted roots as foon as their leaves decay; for if they are fuffered to remain long after in the ground, and there fhould fall fome flowers of rain, they wuld foon put forth frefh fibres, and make new fhoots, when it would be too late to remove them: at the time when you take up the roots, is the proper feafon for breaking or parting them, which may be done by feparating thofe that you would choofe to make all poffible increafe from, into as many parts as you can conveniently, provided each one of them have a good eye or bud, but thofe, you intend to blow ftrong, fhould by no means be parted too fmall, which greatly weakens their flowering.

The principal colours in Anemonies are, white, red, blue, and purple; and thefe in fome of them, are curioufly intermixed; but the moft prevailing colour amongft our Englifh raifed Anemonies, are white and red; though of late we have received from France, great varieties of blues and purples, which are exceeding fine flowers, and being intermixed with the Englifh flowers, make a fine variety: we fhould therefore obferve, in planting the roots, to diftribute the different colours, ib as to make an agreeable mixture of each in every bed, which will greatly add to their beauty.

But fince all the fine varieties of thefe flowers were firft obtained from feeds, no good florift, that hath garden room, fhould neglect to fow them: in order to which, we fhould provide ourfelves with a quantity

of good fingle (or what the gardeners call Peppir Anemonies) of the beft colours, and fuch as have more leaves than common, and have other good properties; thefe fhould be planted early, that they may have ftrength to produce good feeds, which will be ripe in three weeks or a month's time, after the flowers are paff, when you muft carefully gather it, otherwife it will be blown away in a fhort time, it being inclofed in a downy fubftance. You muft preferve this feed till the beginning of Auguft, when you may either fow it in pots, tubs, or a well prepared bed or light earth: in the doing of it you muft be careful not to let your feeds be in heaps, to avoid which is a thing little underftood, and is what I have been informed of by the late Mr. Obadiah Lowe, gardener at Batterfea, who for feveral years raifed large quantities of thefe flowers from feeds. His manner was thus:

After having levelled his bed of earth, in which he intended to fow his feeds, he rubbed the feeds well between his hands, with a little dry fand, in order to make them feparate the better, then he fowed them as regularly as poffible over the bed; but as thefe feeds will ftill adhere clofely together by their down, he took a ftrong hair brufh, with which he gently fwept over the whole bed, obferving not to brufh off the feeds; this brufh will fo feparate the feeds, if carefully managed, as not to leave any entire lumps; then gently fife fome light earth, about a quarter of an inch thick over the feeds; and, if it fhould prove hot dry weather, it will be advifable to lay fome mats hollow upon the bed in the heat of the day, and now and then give them a little water; but this muft be given gently, left by haftily watering you wafh the feeds out of the ground; but be fure to uncover the bed at all times when there are gentle flowers, and every night, that the feeds may have the benefit of the dews; and as the heat of the weather decreafes, you may begin to uncover your bed in the day till alfo.

In about ten weeks after fowing the plants will begin to appear, if the feafon has proved favourable, or your care in management hath not been wanting, otherwife they many times remain a whole year in the ground. The firft winter after their appearing above ground, they are fubje& to injuries from hard frofts, or too much wet, againft both of which you muft equally defend them; for the froft is very apt to loofen the earth, fo that the young plants are often turned out of the ground, after which a fmall froft will deftroy them; and too much wet often rots their tender roots, fo that all your former trouble may be loft in a fhort time for want of care in this particular; nor do I know of any thing more deftructive to thefe tender plants, than the cold black frofts and winds of February and March, from which you muft be careful to defend them, by placing a low reed fence on the north and eaft fides of the bed, which may be moveable, and only fattened to a few ftakes to fupport it for the prefent, and may be taken quite away as the feafon advances, or removed to the fouth and weft fides of the bed, to fcreen it from the violence of the fun, which often impairs thefe plants when young.

As the fpring advances, if the weather fhould prove dry, you muft gently refrefh them with water, which will greatly ftrengthen your roots; and when the green leaves are decayed, if your roots are not too thick to remain in the fame bed another year; you muft clear off all the weeds and decayed leaves from the bed, and fife a little more of the fame prepared good earth, about a quarter of an inch thick over the furface, and obferve to keep them clear from weeds during the fummer feafon, and at Michaelmas repeat the fame earthing; but as thefe roots fo left in the ground, will comfup early in the autumn, the beds fhould be carefully covered in frofty weather, otherwife their leaves wuld be injured, whereby the roots will be weakened, if not deftroyed. If your roots fucceed well, many of them will flower the fecond year, when you may feed all fuch as you like, by marking them with a ftick * but you fhould not deftroy any of them

- mentori i. Lin. Sp. Plant. 893. *Chamomile with fey pinnat* 'laves, aid & branching trailing folk. Chat **niehim** iriiriiiim. C. B. P. 134.
7. **AHTHEMU** (*Tmeniofi*) foliis pUinatidii obtufti planis, pedunculis hiriutis, foliis calycibus Eomenw Gs. Hort. Cliff. 415. *Cbanunxilt w'ub plain Htr. r Its winged at tbt'r extremity, baity fee:-falim, and a I •stetty tnpakmt.* ChinKecium maritimum insa mini folio ablinthii craflo. Buerh. Ind. 1. p. 110.
8. **ANTHEKIS** (*Mixta*) foliis limpkibus dentafo-la.ini atis. Lin. Sp. Plant. 834. *CbammmU voitb JSnglt, in Hented, att leaves.* Chamxtnelutn Lufttanicum hui-foUuni liv* Coronopi folio. Breyn. Cent. 1. 49.
9. **AKTHEMIS** (*Pyrethrum*) cauh'biB Unifloris [iecumben- vibus fultu pinnato-multilidis. Lin. Hort. OifF. 414. *Cbiimmiilt •a/tb fuqlt flowers en the fnlii tying sit tie ground, and whrged ItKtS.* Pyrethrum flore be. C. B. P. 1+8. *PilUicryO/Spain,*
10. **AsTHIMii** (*ValeiitiHa*) caule ramofu foiiis pubdecr- ribus tripinnatis, calycibus villofts p&lun. Hort. Cliff. 414. *Chumoxih 'vib a brantbing,ilk, 1 baity iMVti-, and beiry fnt-falki.* Buph thai mum co- tute folb. C. B. P.

t

11. **ANTMIMIS** (*Tin3oria*) foiii bir'innais ferratis fub- tua totntiifis, caok corymbofo. Lin. Sp. ill. *Chamoinile with limed irin^fj; <jvt', Wfttf m:a &ni fewer! in a arytubtti.* Buphthalmum Taiwteti thinoris foliis. G. U. V. 134.
12. **ANTHEMIS** (*yh-shicii*) caule dKmpofitu calycibus tamifin'. Hurt. Cliff. 41 % *CbniMmite with a dtam- pauid folk, and a branching empalemM.* Alterficus nntius trianthoplorus Crani! Arabic us diftus. Shaw. **Aft 58-**

The firft fort is the tommon Chamomile, which grows in plenty upon commons and other walVe land. It is a trailing perennial plantj which puts out roots from the branches as they lie on the ground. Whereby it fpreads and multiplies greatly I fo that whoever I willing to Cultivate this plant, need only procure a sfunder, that they may lifvfroom to fprcad, and they wiK soon cover the ground. Formerly this plant was used for planting of walks, Vrllich, when mow'd and rolktl, looked wdl.for fome time, but as it was very fubjct: to decay in large patches, the walks became infinitely, f) which rtafon this was d'fuU-d. The flower! of this fort air ordered for nu'dicinal ufe, but the market people generally fell the ilouble Bowers, which arc much larger, but not fo lirong a< the fingle. The double fort is equally hsnly, and may be propagated in the fame manner.

The fecondfort is a common annual weed, which grows among corn -, it flowers in May, fo m called May Weed, though ibme have .ijpliitJ tint title improperly to tile Cotula ttcikla, which ririly ilowers lit! Lie in June.

The fourth, fifth, and eighth fort? are snnuit plants, whkfl prow namrally in Spain, Portugal, "uily, and the fourth of France, from whence their feed; have been brought to England, where the plants are preferred in botanic garlens for the fake of vancity. They !ilt fillily from foils lbwn in the fpr'ng, mid rrequir ni) Other culture but to thin the plants where they are to • doff, allowing them a foot and a half room L'idiw;iy.nncUleanthemfromthe weeds. They flower ill July, and their feeds ripen in September.

The fixth and feventh lbrts are perennial plants, which jro« n.uurilk* in Spain, Purtugal, and Greece, whence their fectis have been brought to Eng- b.rid, and the plants are preferred in fome curious gardens for the ; ikeof variety. They are hnrdy and may be propagated by fewls, which (ould be in the faring upon poor land, -where the plants will tue niueh longer than in good gruuul, and will t're but to keep dttni cl'im from »xtdi. Thefe)!;ii5 do not grow tall, bin .re bn fiuy, fo floukl fee nlloweti room to erow. Th.ir fiuwers arc white, and continue from July to October, and the fecsls ripen in autumn.

The ninth lore is the Pellitory of Spain, the toon of

which are used to: **tho** [: 'Ailil bellir WM) when they are applied (Pi the part aHL-; and, they show out the **uld ru-um,** and **arc otei** i; Uii* particular. This is 2 ptennial plsini.uidialonk r too like *Alai* a Carrot, which grows natuallym Spam atitPoriur.il, from whence die roots are brought ro Fnelsnd. The branches or this [nil upon the

I, unUjwcada foot or more each wif **I** thieie are gjmillied *whh* Bne winged leaves, Lke'tholi- of the common Chamomile; at tin- tjaremky of each branch is pproduct *one large nngle flower, iike Clia- momilt)* but much larger, "!!: rays of whi di are of.i pure white in. but purple on rieur outside. After the Howers are pail, the receptacle (well to a large icily cone ; Umwten theft Tealw are lodged the (ecu.. It flower in June and July; and the feeds are ripe in September; but under the -Son b dry, the lcccd. do not rijjen in England, (or the wet fills between **III0 Coles,** and • the feeds in embryo.

The eleventh fort *h* a perennial plant; which a prop- pagMtd byfttds; theft may be lbwn oti a bed of common eanh in the l'princ, and when the plants an: II rong enough to remove, fould be tranfplanred into large open borders, near ftiriuis, where they may have room to jirow, for rhey fprad very wide, [here- fore reqidn three feet libncefrom ordicr plants; in the iurge open fpts they will make a pretty variety from June to November, during which time they continue in flower; lbme of iheie are *whin,* others arc rf fa fulphuF, and lbme have yellow Rowers, but thefe vary from feed; the eartern forts grow taller, and the Bowers ire larger than the common, bu: in other particulars they are the fame, though many have iuppofed them different fpecies.

The feeds of the twelfth fort were brought from A- ftka by die late Dr. Shaw, which were diftributed to many curious bonniils in Italy, France, and England, where fame of the plants were raifed. This grows near two feet high, with an upright Item, having a (ingle Sower .it the top, from whoc empalemnt there arc two or three foot-IULks put out horizontally, about two inches lon#, each having a fingle flower fmaller than the (irt, like the Childing Marigold, or Hen and Chicken Daify. The feed3 of this fould be fowo in atirurun, and treated in the fame manner as b before duefted for fome other forts, otherwiic the lced* are fridom p'rtecVcd in England,

INTHKRICUM. Lin. Gen. Plant. 350. Spider- wort

The **CH^KACTEM** are, *Tbt!* *er* M e/Multaeitt, and it cumpofd if fix *ebbfg bhatptaU, aibnb fpr'vd open. It biUbjix up- right A-d-jb.tpctLjlam':>ia, itibkb ire crmmti by fmitlfum- miti, having four furrvint. the rirtmx vibrb it fiu- ;h:(ei-trii ibrts-tvmertd, fupportixg4Jmglt fljli vibicb is oi lwg a ibe famine, trowxd ly a thre- centrid Haul Jligma. Ybt germn aftru/ardctmos on <n*! fnum colftie, beving thru fvmuii, epang ja tbrtf ctStt which art filed wii> mgultr feids.*

This ^nus of plains is ranged in the firft fection of I .jnngw's [ixth tlaft, entitled Hexsndria Monogynia, from their flowers having GK thunina and but one llylc.

The **SPICIS** art,

1. **ArmteRrcuM** (*RnittuttK*) fbiii! planis ftapo ramofu *corillis revolutis.* LIII. Sp. Plant. 310. *ifKtbn •wib plain toots, a trmtbng jlulk, wbeji ottah turn bathxBrA.* Alphedeius rbiU compreflii liperis caule potato. Tourn. Irilt. R. I- **Aft 59-**
2. **AlTil** (jnw/wui) fofu planis fcapo ', *corotl; planis ttillo recto.* Lin. Sp. ! • 310. *jnlbincum siVi plain Uavet, a bra'tchis* fiskl, and flafu rejltxfj ptafi,* Piialangium parvo flottt ramo- fum. C. B. P. 19.

A ST: ptanis ft ipu fimplicifTi • mo corullis planis, pillillo declinato. Hart. [pfa. 83. *Aftfiftiatm tsitb fUin k w , aft>^Ujiatk, xnddt puinials.* Pljalngiam parvo floic non ramofu^-. C. B. f. io-

4. ANTHERICUM (*Mkfcens*) foliis carnofis. terctibus caue fruticofo. L[^]S p. Plant. 310. *Antbericum with flejhy taper leaves, and ajhrubby ftalk.* Phalangium capenfe caulefcens foliis cepitiis fuccofis. H. Elth. 31 o.
5. ANTHERICUM (*Aloeides*) foliis carnofis fubulatis planiufculis. Hort. Upfal. 83. *Antbericum with flejfy, plain, awl-Jhaped leaves.* Phalangium capenfe feffile foliis aloeformibus pulpofis. Hort. Elth. 123.
6. ANTHERICUM (*Afpbodoloides*) foliis carnofis fubulatis femiteretibus ftri&is. Hort. Upfal. 83. *Antbericum with awl-Jhaped, flejhy, half-taper leaves, growing clofe.* Bulbine acaulis foliis fubulatis. Prod. Leyd. 33.
7. ANTHERICUM (*Annuum*) foliis carnofis fubulatis terebtibus fcapo fubramfo. Hort. Upfal. 83. *Antbericum with awl-Jhaped, flejhy, taper leaves, and a branching ftalk.* Aiphodelus Africanus anguftifolius luteus minor. Tourn. Inf. 343.
8. ANTHERICUM (*Atifimum*) acaule foliis carnofis teretibus fpicis florum longiffimis laxis. Fig. Plant, pi. 39. *Tall African Spiderwort with taper flejhy leaves, and very long loofefpikes of flowers.*
9. ANTHERICUM (*Offifragum*) foliis enfiformibus filamentis lanatis. Flor. Suec. 268. *Antbericum with fword-Jhaped leaves, and downy ftamina.* Afpodelus luteus paluftris. Dod. Pempt. 208.
10. ANTHERICUM (*Calyculatum*) foliis enfiformibus periantliiis trilobis filamentis glabris piftillis trigynis. Flor. Suec. 269. *Antbericum with Jword-Jhaped leaves, an empalement with three lobes, fmoth ftamina, and three Jlyles.* Phalangium alpinum paluftre, Iridis folio. Segu.

The firft fort grows naturally at the Cape of Good Hope *, the roots of this are flefhy, and compofed of tubers joined at the crown like thole of the Afpodel -, the ftalk rifes near two feet high, and branches out on each fide, each branch being terminated by aloofe fpike of flowers, which are white, and the petals are turned backward to their foot-ftalk. The leaves of this fort are flat, and the root is perennial, but the fpikes decay in autumn.

The fecond fort hath a perennial root; the ftalks of this rife about the fame height as the former, fend- ing out many lateral branches in like manner, which are terminated by loofe fpikes of flowers, which are white, but the petals are plain, and do not turn back as in the other fort.

The third fort hath plain leaves and an unbranching ftalk, in which it chiefly differs from the former. The root of this is perennial.

The two next forts grow naturally in Spain, Portugal, and other warm countries, and were more common fome years ago in the Englifh gardens than at prefent; for the fevere winter in 1740, killed moft of their roots. Thefe flower in June and July, and their feeds are ripe in September. They are propagated by feeds, which fhould be fown in autumn *, for thofe which are fown in the fpring, never come up unt fame year, but remain in the ground till the following fpring, or often mifcarry. Thefe fhould be fown in a bed of light fandy earth, in a warm fituation, and when the plants come up, they muft be kept clean from weeds during the fummer *, and in autumn, when their leaves decay, they fhould be carefully taken up, and tranfplanted into a bed of light earth, at a foot diftance from each other. If the winter fhould prove fevere, the bed fhould be covered with ftraw, Peafe-haulm, or fuch light covering, to keep out the froft *, or if fome old tan from a hot-bed is fpread over the ground, it will prevent the froft from penetrating the ground, and will preferve the roots. In this bed they may remain one year, by wiich time they will be ftrong enough to flower *, therefore the following autumn they fhould be carefully taken up, fo as not to break their roots, and planted in the borders of the flower-garden, where they will laft feveral years, if they are not killed by froft *, to prevent which, fome rotten tan fhould be laid over the roots in winter, which will always fecure them.

The fourth fort has been long preferred in many gar-

dens near London, and was formerly known among the gardeners by the title of Onion-leaved Aloe. This plant produces many ligneous branches from the root, each fupporting a plant with long taper leaves, in fhape of thofe of the Onion, which are full of a yellow pulp very juicy. Thefe plants fend out roots, which run down and fallen themfelves into the earth, by which they multiply greatly. The flowers are produced on long loofe fpikes, are yellow, and appear at different times, fo that the plants are not long deftitute of flowers. Thefe are fucceeded by round fmoth feed-veffels, which have three cells, filled with triangular feeds j but as the plant multiplies fo faft by offsets, the feeds are little regarded. It grows naturally at the Cape of Good Hope, and requires a little fhelter in winter; but in fome mild feafons I have had plants live without any cover, which were planted clofe to a warm wall.

The fifth and fixth forts grow clofe to the ground, never rifing with any ftalk. The fifth hath broad, flat, pulpy leaves, refembling thofe of fome forts of Aloe, fo was formerly by gardeners called Aloe with flowers of Spiderwort. The leaves fpread open * the flowers are produced on loofe fpikes, like the former, but are fhorter: the flowers are yellow, and appear at different feafons. This is produced by offsets, which are put out in plenty, and muft be planted in pots filled with light fandy earth, and in winter placed in the green-houfe, and treated as other hardy fucculent plants, which come from the Cape of Good Hope, where this plant grows naturally. It muft be kept pretty dry in winter, and if it is fcreened from froft, it will require no artificial warmth.

The fixth fort hath long, narrow, pulpy leaves, which are almoft taper, but flatted on their upper fide; this fends out many offsets, by which it may be increafed plentifully. The flowers are yellow, and grow on long loofe fpikes, as the former-, thefe appear at different feafons *, thofe of the fpring and fummw are fucceeded by feeds in great plenty, fo may be eafily propagated thereby, which ripen very well. It muft be treated in the fame manner as the former.

The feventh fort is annual: this is a low plant growing clofe to the ground, having pretty long fucculent leaves which are taper, but flatted on their upper fide *, the flowers grow in loofe fpikes, which are fhorter than either of the other forts. They are yellow, and fucceeded by round feed-veffels, like thofe of the former forts *, the plants perifh foon after their feeds ripen. The feeds of this fort fhould be fown on a warm border of light earth in April, where they are to remain; and when the plants come up, they will require no other care but to keep them clean from weeds, and to thin them where they are too clofe. This fort flowers in July, and the feeds ripen in October.

The eighth fort never rifes to a ftalk, but the leaves come out clofe to the ground. Thefe are long, taper, fucculent, and of a fea-green colour, growing ereft; the flower-ftems rife between the leaves, and are near three feet long; the upper half being thinly garnifhed with yellow flowers, ihaped like thofe of the other fpecies. Thefe appear at different feafons, fo that the plants are feldom long deftitute of flowers. This fort doth not fend out offsets fo freely as fome of the others *, but as it produces feeds annually, it may be had in plenty. It muft be treated in the fame manner as the fourth, fifth, and fixth forts.

The ninth and tenth forts grow naturally on bogs in jnoft of the northern countries j the tenth is common in many parts of England, but particularly in Lancalhire, from whence it had the title of Lancashire Afpodel; it alfo grows on a bog upon Putney-heath. The other grows naturally in Denmark, Sweden, and Lapt^nd. Thefe are both low plants, having narrow leaves^ which grow clofe to the ground *, the flower-ftems life about fix inches high, being terminated by a loofe fpike of fmall yellow flowers. Thefe differ from each other, the ftamina of the tenth being woolly, whereas thofe of the other are fmoth. Thefe

plants, growing naturally upon bogs, are with difficulty preferred in gardens.

ANTHERS [from *ἄνθος* flowery,] are the fummits or little tops in the middle of a flower, supported by the stamina.

ANTHOLOGY [of *ἄνθος*, a flower, and *λόγος*, Gr. a word,] a discourse or treatise of flowers.

ANTHOLYZA. We have no English name for this plant.

The CHARACTERS are,

It hath an imbricated sheath growing alternate, which is permanent, the flower is of one leaf tubulous, and opens above with compressed jaws. The upper lip is slender long, erect, and waved the two jaws are short, and joined at their base, the under lip is trifid, short, and the middle segment turns downward, it hath three long slender stamina, two of which are under the upper lip, and the other lies in the under lip these are crowned by pointed fummits. Under the flower is situated the germen, supporting a slender style the length of the stamina, which is crowned by a slender, trifid, reflexed stigma. The germen afterward becomes a roundish three-cornered vessel having three cells, in which are lodged many triangular feeds.

This genus of plants is ranged in the first section of Linnaeus's third class, entitled Triandria Monogynia, the flowers having three stamina and one style.

The SPECIES are,

1. **ANTHOLYZA** (*Ringens*) corolla labiis divaricatis fauce compressa. Lin. Sp. Plant. 54. *Antholyza whose flower-lips spread asunder. Gladiolus floribus rictum referens coccineus suprema lacinia erecta & fistulosa.* Breyn. 21.
2. **ANTHOLYZA** (*Spicata*) foliis linearibus fulcatis floribus albis uno versus diffusis. Fig. Plant, pi. 40. *Antholyza with narrow furrowed leaves, and white flowers ranged on one side of the stalk.*

The first sort hath round, red, bulbous roots, from which arise several rough furrowed leaves, near a foot long, and half an inch broad; between these comes out the flower-stem immediately from the root, which rises two feet high, is hairy, and hath several flowers coming out on each side. These are of one leaf, cut into six unequal parts at the top: one of these segments is stretched out much beyond the other, standing erect; the margins are waved and closed together, wrapping up the three stamina. The flowers are red, and appear in June, and the feeds ripen in September.

The roots of the second sort are in shape and size like those of the Vernal Crocus, but the outer skin is thin and white; from this arise five or six long narrow leaves, which are deeply furrowed. Between these arise the flower-stem, which is a foot and a half high, bending on one side toward the top, where the flowers come out, ranged on one side, standing erect. These have each a sheath or sheath, of one leaf, divided into two, ending in points, which are permanent. The flower is of one leaf, having a long tube, but is divided into six unequal segments at the top, which spread open, their margins being waved and turned inward. The three stamina rise under the upper segment, which is larger than the others, and below is situated the trifid style, crowned with purple stigma. After the flower is past, the germen becomes a three-cornered feed-vessel, opening in three cells, which are filled with triangular feeds. The flowers of this sort are white, appear in May, and the feeds ripen in August.

These plants are natives of Africa, from whence their feeds have been obtained, and were first raised in the Dutch gardens, where one of the sorts has long been an ornament in the curious gardens of that country.

They are propagated by offsets, which the bulbous roots send forth in pretty great plenty; or by feeds, which are sometimes perfected in Europe. These feeds should be sown soon after they are ripe; for if they are kept out of the ground till the following spring, they often miscarry, or at least remain a year in the ground before they grow. If the feeds are sown in pots of light earth, and plunged into an old bed of

tan which has lost its heat, shaded in the middle of the day in hot weather, the feeds will come up the following winter) therefore they must be kept covered with glasses to screen them from cold, otherwise the young plants will be destroyed. These may remain in the pots two years, if the plants are not too close, by which time they will have strength enough to be planted each into a separate small pot filled with light earth: The time for transplanting of these roots is in July or August, when their leaves are decayed. In summer the pots may be placed in the open air, but in winter they must be removed, and placed under a hot-bed frame, for they are not very tender; but where any damp arises, it is very apt to occasion a mouldiness upon their leaves. The roots shoot up in autumn, and the flowers begin to appear in May; the feeds ripen in August, and soon after their leaves and stalks decay; when the roots may be taken up and kept six weeks or two months out of the ground, so may be easily transported from one country to another at that time. These flowers are ornamental when they appear, and they are plants which require but little culture, so deserve a place in every good garden.

ANTHOSPERMUM, Amber-tree, vulg6.

The CHARACTERS are,

It is male and female in different plants; the male flowers have no petals, but a coloured-empakment of one leaf, which is cut into four parts almost to the bottom. Out of the bottom arise four slender stamina, crowned with oblong fattare fummits, having a deep furrow through their middle. The female flowers have the same structure as the male but have no stamina; instead of which, there is an oval germen, situated in the bottom, supporting two recurved styles crowned with a slender stigma. The germen afterward becomes a roundish capsule having four cells, which contain several angular feeds.*

Dr. Linnæus has ranged this genus in his twentieth class of plants, but it properly belongs to his twenty-second, because the plants are male and female in different plants; whereas those of his twenty-third, have male, female, and hermaphrodite flowers on the same plant.

ANTHOSPEXMUM (*Mthiopicum*) foliis kevis. Hort. Cliff. 455. *Amber-tree with smooth leaves.*

This plant has been long known in the curious gardens, under the title of *Frutex Africanus*, *ambram spirans*, or *Amber-tree*.

It is preferred in most curious gardens which have collections of tender plants, and is easily propagated by planting cuttings during any of the summer months, in a border of light earth; which will take root in six weeks time, provided they are watered and shaded as the season may require: or if these cuttings are planted in pots, and plunged into a very moderate hot-bed, they will take root sooner, and there will be a greater certainty of their growing. Afterward they should be taken up, with a ball of earth to their roots, and planted into pots filled with light sandy earth, and may be exposed to the open air until October; at which time they should be removed into the conservatory, where they should be placed as free as possible from being over-hung with other plants; and, during the winter season, they must be refreshed with water, but should not have too much given them each time; and should have as much air admitted to them as the weather will permit, for if they are kept too close, they will be subject to grow mouldy, and generally decay soon after; so that if the green-house is damp, it will be difficult to preserve these plants through the winter.

The beauty of this shrub is in its small ever-green leaves, which grow as close as heath; which being bruised between the fingers, emit a very fragrant odour. These plants must be frequently renewed by cuttings, for the old plants are very subject to decay, seldom continuing above three or four years.

It is but of late years there have been any of the female plants in the gardens, for all those which were formerly in the gardens, were the male, which being

propagated by cuttings, had been continued, so that no feeds were ever perceived in England till within a few years past, when I received some feeds from the Cape of Good Hope, from which I raised many plants of both sexes, and a few among them with hermaphrodite flowers, which have produced feeds, from which many plants have been raised.

ANTHYLLIS. Lin. Gen. Plant. 773. Vulneraria. Tourn. Barba Jovis. Tourn. Ladies Finger, or Kidney Vetch.

The CHARACTERS are,

// bath a swelling, hairy permanent empalement of one leaf, which is divided at the top into five equal parts. The flower is of the butterfly kind, having a long standard reflexed on both sides beyond the empalement, the two wings are short, the keel is of the same length, and compressed. There are ten stamina which rise together, and are crowned by single summits. In the center is situated an oblong germen, supporting a single style, crowned by a blunt stigma: the germen afterward becomes a small roundish pod inclined by the empalement, having one or two feeds.

This genus is ranged in Linnaeus's seventeenth class of plants, entitled Diadelphia Decandria, the flowers having ten (lamina joined in two bodies).

The SPECIES are,

1. ANTHYLLIS (*Tetraphylla*) herbacea foliis quaternopinnatis floribus lateralibus. Hort. Upfal. 221. *Herbaceous Kidney Vetch with winged leaves, having four lobes, and flowers growing from the side of the stalks.* Vulneraria pentaphylos. Tourn. Inf.
 - fc. ANTHYLLIS (*Vulneraria*) herbacea foliis pinnatis insequaibus capitulo duplicato. Lin. Sp. Plant. 719. *Kidney Vetch with unequal winged leaves and double heads.* Vulneraria lupina flore coccineo. Rail Syn. Ed. 3. p. 325.
 3. ANTHYLLIS (*Ruftica*) herbacea foliis pinnatis insequaibus foliolis caulinis lineari lanceolatis floribus simplicibus. *Herbaceous Kidney Vetch with unequal winged leaves, whose lobes are narrow, spear-shaped, and single heads of flowers, called Ladies Fingers.* Vulneraria ruftica. J. B. 11. p. 362.
 4. ANTHYLLIS (*Montana*) herbacea foliis pinnatis aequalibus capitulo terminali fecundo, floribus obliquatis. Lip. Sp. Plant. 719. *Herbaceous Woundwort with equal winged leaves, terminated by the head of flowers, which are oblique.* Astragalus purpureus. Dalechampii 1347. *Purple Milk Vetch.*
 5. ANTHYLLIS (*Cornicina*) herbacea foliis pinnatis inaequalibus capitulis foliatis. Lin. Sp. Plant. 719. *Herbaceous Woundwort, with unequal winged leaves, and a single head of flowers.*
 6. ANTHYLLIS (*Barba Jovis*) fruticosa foliis pinnatis xqualibus floribus capitatis. Hort. Cliff. 371. *Shrubby Woundwort, with leaves equally winged, and flowers collected in a head.* Barba Jovis pulchre lucens. J. B. 1. p. 385. *Jupiter's Beard, or Silver Bush.*
 7. ANTHYLLIS (*Cytifoides*) fruticosa foliis ternatis inaequalibus calycibus lanatis lateralibus. Lin. Sp. Plant. 720. *Shrubby Woundwort, with three unequal leaves, and a downy flower-cup growing from the sides.* Cytifus incanus folio medio longiore. C. B. P. 390.
 8. ANTHYLLIS (*Erinacea*) fruticosa spinosa foliis simplicibus. Lin. Sp. Plant. 720. *Shrubby prickly Woundwort, with single leaves.* Genista Spartium spinosum foliis lenticulae floribus ex caeruleo purpurascens. C. B. P. 394.
 9. ANTHYLLIS (*Hermamiix*) fruticosa, foliis ternatis fupennuculatis, calycibus nudis. Lin. Sp. Plant. 1014. *Shrubby Woundwort of Crete, with ternate leaves, and naked flower-cups.* Barba Jovis Cretica, linariae folio, flore luteo parvo. Tourn. Cor. 44.
 10. ANTHYLLIS (*Heterophylla*) fruticosa, foliis pinnatis, floralibus ternatis. Lin. Sp. Plant. 1013. *Shrubby Woundwort of Portugal, with winged leaves, but false near the flowers ternate.* Barba Jovis minor Lusitanica, flore minimo variegato. Tourn. Inf. 651.
- The first sort grows naturally in Spain, Italy, and Sicily. This is an annual plant, with trailing branches, which spread flat on the ground; the leaves grow by fours at each joint, and the flowers come out in du-

ters on the sides of the stalks, having large swelling empalements, out of which the extreme parts of the petals do but just appear, these are of a yellow colour, and are succeeded by short pods enclosed in the empalement. It flowers in June and July, and the feeds ripen in September. The feeds of this sort should be sown on a bed of light earth in April, where the plants are to remain, and will require no other care, but to thin them to the distance of two feet, and keep them clean from weeds.

The second sort grows naturally in Spain and Portugal, from both which countries I have received the feeds, it also grows wild in Wales, and the isle of Man. This is a biennial plant, having single leaves at bottom, which are oval and hairy* but those which grow out of the stalks are winged, each being composed of two or three pair of lobes terminated by an odd one: the flowers grow collected into heads at the top of the stalks, these are of a bright scarlet colour, to make a pretty appearance: it flowers in June and July, and the feeds ripen in October. When the plants of this sort grow on poor land, they will sometimes continue three years, but in gardens they seldom last longer than two.

The third sort grows naturally upon chalky grounds in many parts of England, so is rarely admitted into gardens. Dr. Linnaeus supposes this and the former to be the same, but from having cultivated these for many years, I can affirm they are different species, never altering from feed. The leaves of this sort are much narrower than those of the former, and have generally one or two pair of lobes more in each. The heads of flowers in this species are single, whereas the other has generally double heads; add to these, the root being perennial, which makes an essential difference between them.

The fourth sort is a perennial plant with trailing branches, garnished with winged leaves, which have an equal number of hairy lobes at the extremity of the branches; the flowers are produced in heads, these are of a purple colour, and globular form. This sort grows naturally on mountains in the south of France and Italy, from whence I have received the feeds. It is propagated by feeds, which may be sown either in the autumn or spring: those which are sown in the autumn, will rise the following spring, and more certainly grow, than those which are sown in the spring, which seldom grow; the same year. When the plants come up, they must be kept clean from weeds; and where they are too close together, they must be thinned. The following autumn, they should be transplanted to the places where they are to remain, and will require no particular management afterward. This sort flowers in June and July, and the feeds ripen in October.

The fifth sort approaches near to the third, but the leaves are hoary, and the flowers are produced on the side of the branches; these are yellow, and collected into small heads. It is an annual, or at most a biennial plant; for when it flowers early in the summer, it commonly decays soon after the feeds are ripe; whereas those plants which flower later in the season, and do not perfect feeds, will abide another year. This may be propagated by feeds, in the same manner as the former.

The sixth sort is the Barba Jovis, or Jupiter's Beard, by many called Silver Bush, from the whiteness of its leaves. This is a shrub which often grows ten or twelve feet high, and divides into many lateral branches, garnished with winged leaves, composed of an equal number of narrow lobes, which are very white and hairy; the flowers are produced at the extremity of the branches, collected into small heads; these are of a bright yellow colour, and appear in June, sometimes they are succeeded by short woolly pods, containing two or three kidney-shaped feeds; but unless the season proves warm, they do not ripen in this country. It is propagated either by feeds or cuttings; if by feeds, they should be sown in the autumn, in pots filled with light earth, and placed under

a frame in winter to protect them from frost. The following spring the plants will rise, and when they are strong enough to remove, they should be each planted in a small pot filled with light earth, and placed in the shade till they have taken new root; after which, they may be placed with other hardy exotic plants, in a sheltered situation, where they may remain till October, when they must be removed into shelter. These plants are always housed in winter, yet I have had some of them live abroad three or four years, which were planted against a fourth-wall. It may also be propagated by cuttings, which may be planted during any of the summer months, observing to water and shade them until they have taken root. When the cuttings have taken good root, they should be planted in pots, and treated in the same manner as the former.

The seventh sort is a low shrub, seldom rising above two feet high, but sends out many slender branches, garnished with hoary leaves, which are sometimes single, but generally have three oval lobes, the middle being longer than the other two; the flowers are yellow, and come out from the side of the branches, three or four joined together, having woolly empalements, but these are rarely succeeded by seeds in England. It may be propagated by cuttings or seeds, in the same manner as the former sort, and treated as hath been directed for that. This has been an old inhabitant in the English gardens.

The eighth sort grows naturally in Spain and Portugal, from whence I have received the seeds. This is a shrub which grows nine or ten feet high, having the appearance of one sort of Gorse or Whin, but it hath round leaves growing single. It will live in the open air in mild winters, but hard frost will destroy it. It is propagated by seeds only.

The ninth sort grows naturally in Crete, and also in Palestine; this was formerly in some of the English gardens, but the severe winter of 17th destroyed most (if not all the plants) in this country, since which time I have not seen it. This shrub grows five or six feet high, the branches are garnished with oblong ternate leaves; the flowers, which are yellow, are produced in small clusters on the side of the branches; these appear in July and August, but are not succeeded by seeds in this country.

This is propagated by cuttings, which should be planted the beginning of June, and if they are closely covered with a bell-glass, and properly shaded, they will put out roots by the end of August, when they should be carefully taken up, and each planted in a small pot, filled with light earth, and placed in the shade until they have taken new root; when they may be placed in the open air till October, and then should be removed into shelter, and treated in the same way as other hardy green-house plants.

The tenth sort grows naturally in Portugal and Spain: this is a very low shrubby plant, whose branches spread near the ground, garnished with silvery winged leaves, which are acute-pointed; the flowers are produced toward the extremity of the branches; these are not succeeded by seeds in England, but the plant is propagated by cuttings in the same manner as the former, and the plants require the same treatment.

ANTIRRHINUM [which in composition sometimes indicates a likeness, Antirrhinum, of *ant* and *rhin*, the nostrils, because it represents a nose:] Snap-dragon, or Calves-foot.

The CHARACTERS are,

The empalements of one leaf, cut into five parts the two upper segments being longer than the lower. The flower is ringent, having an oblong tube, divided at the top into two tips, which are closed at the jaw. The upper lip is cut into two, and reflexed on each side; the under lip is divided into three obtuse parts: in the bottom situated an obtuse nectarium, which is not prominent. There are four stamens which are included in the upper tube, two being longer, and two shorter, crowned by short summits. In the center is placed a roundish germen, supporting a single style, crowned with an obtuse stigma. The germen after-*

ward becomes a round obtuse style, having two cells which are full of small angular seeds.*

This genus is ranged in Linnæus's fourteenth class of plants, entitled *Didynamia Angiosperma*, the flower having two long and two short stamens, and many seeds included in a capsule. To this genus Linnæus has joined the *Linaria* and *Afarina*; but as the flowers of the *Linaria* have spurs to their petals, and the nectarium being very prominent, which are not so in this genus, it should be separated from it.

The SPECIES are,

1. **ANTIRRHINUM** (*Minus*) foliis lanceolatis obtusis alternis caule ramosissimo diffuso. Hort. Cliff. 324. *Snap-dragon with obtuse spear-shaped leaves growing alternate, and a diffused branching stalk. Antirrhinum arvense minus.* C. B. P. 212.
2. **ANTIRRHINUM** (*Orontium*) floribus subpicatis, calycibus digitatis corolla longioribus. Hort. Upfal. 176. *Snap-dragon with spiked flowers, and fingered empalement longer than the flower. Antirrhinum arvense majus.* C. B. P. 212.
3. **ANTIRRHINUM** (*Majus*) foliis lanceolatis petiolatis calycibus brevissimis racemo terminali. Vir. Cliff. 61. *Snap-dragon with spear-shaped leaves having foot-stalks, and very short flower-cups, terminated by a spike of flowers. Antirrhinum majus alterum folio longiore.* C. B. P. 211.
4. **ANTIRRHINUM** (*Latifolium*) foliis lanceolatis glabris, calycibus hirsutis racemo longissimo. *Snap-dragon with smooth spear-shaped leaves, hairy flower-cups, and a very long spike of flowers. Antirrhinum latifolium amplum pallidum flore.* Bocc. Muf. 2. 49.
5. **ANTIRRHINUM** (*Italicum*) foliis linearilanceolatis hirsutis racemo brevioribus. *Snap-dragon with narrow hairy, spear-shaped leaves, and a shorter spike of flowers. Antirrhinum longifolium majus Italicum flore amplo niveo laefcente.* H. R. Par.
6. **ANTIRRHINUM** (*Siculum*) foliis linearibus floribus petiolatis axillaribus. *Snap-dragon with narrow leaves and flowers, with foot-stalks proceeding from the wings of the leaves. Antirrhinum ficulum linariae folio niveo flore.* Bocc. Muf.

The two first sorts grow naturally on arable land in many parts of England, so are seldom admitted into gardens, these are both annual plants, which come up from scattered seeds. They flower in June and July, and their seeds are ripe in September.

The third sort is not a native of England, but having been first brought into gardens, the seeds have scattered about in so great plenty, that it is become very common upon walls and old buildings in many parts of England. Of this sort there are several varieties, which differ in the colour of their flowers, some having red lowers with white mouths, some with yellow mouths, others have white flowers, with yellow and white mouths. There is also one with striped leaves. The last is propagated by slips and cuttings, which readily take root any time in the spring or summer. The different colours of the flowers are variable from seeds.

The fourth sort grows naturally in the islands of the Archipelago, from whence I received the seeds. The leaves of this are much broader, the flowers greatly larger, and the spikes longer, than in any of the other sorts. The colours of the flowers are as changeable in this sort as the former, when raised from seeds; but as this is the most precious kind, so it better deserves propagating than the common, especially as it is equally hardy.

The fifth sort has long narrow leaves, which are hairy; the flowers are large, and the spike is shorter than the former; there are some varieties in the colour of the flowers of this sort, but it is equally hardy with the common sort. *

The sixth sort is an annual plant, which seldom grows more than a foot high; the leaves of this are very narrow and smooth, the flowers come out from the wings of the leaves single, hanging on long foot-stalks; these are very white, with a dark bottom. If the seeds of this sort are permitted to scatter, the plants

plants will come up, require no other care but to thin them and keep them clean from weeds.

The third, fourth, and fifth sorts are raised from feeds, which should be sown in a dry soil, which is not too rich, either in April or May, and in July the plants may be planted out into large borders, where they will flower the spring following; or they may be sown early in the spring, for flowering the same autumn, but then they are not so likely to endure the winter; and if the autumn prove bad, they will not perfect their feeds.

These plants grow extremely well upon old walls or buildings, in which places they will endure for several years; whereas those planted in gardens seldom last longer than two years, unless they are planted in a very poor soil, and the flowers often cropped, and not fullered to feed, but any of these sorts may be continued, by planting cuttings in any of the summer months, which will easily take root.

All the sorts of Snap-dragons are pretty ornaments in a garden, and requiring very little culture, are rendered more acceptable. They are all hardy plants, and will resist the cold of our winters extremely well, especially if they are planted on a dry, gravelly, or sandy soil, for when they are planted in a rich moist soil, they will grow very luxuriant for a time, but are very subject to rot in autumn or winter; and are much more susceptible of cold, than when they are in a dry, hungry, rocky soil; so that these plants may be placed amongst stones, or they will grow in the joints of old walls, where they may be placed so as to render some adjacent part of a garden very agreeable, for they will continue in flower several months, and if the feeds are permitted to stand, there will be a continual supply of young plants, without any trouble.

Wherever these plants are designed to grow on walls, or on a rocky barren soil, the feeds should be sown the beginning of March, where they are designed to remain, (for if the plants are first raised in a better soil, and afterward transplanted into those places, they seldom succeed well.) When the plants are come up, they will require no other culture but to keep them clear from weeds, and where they come up too thick, to pull some of them out, so as to give them room to grow. In July these sorts will begin to flower, and will continue flowering till the frost prevents them. Those plants which grow on walls, will have strong woody stems, which will continue two or three years or more, and are rarely hurt by frost.

A P A R I N E [this plant is so called, because it is very rough; it is called Philanthron, of $\phi\alpha\epsilon\kappa$, to love, and $M\gamma\alpha\sigma$, man; because if a person walks in uncultivated places, the plant not only applies itself to his garments, but it holds them, as if it had a mind to bind man with an amicable band:] Goose-grass or Clivers.

The common sort grows wild almost every where, the feeds sticking to the cloaths of people that pass by where they grow: it is sometimes used in medicine, but it is too common a weed to be admitted into a garden.

There are some other sorts of this plant which are kept in botanic gardens for the sake of variety, which I shall beg leave to enumerate here.

1. **APARINE** femine laevi. Tourn. *Goose-grass with a smooth feed.* [This is under Gallium in Linnaeus.]
2. **APARINE** femine coriandri faccharati. Park. *Theat. Goose-grass with sweet feeds like Coriander.*
3. **APARINK** pumila pupina, flore caeruleo. Tourn. *Low trailing Goose-grass, with a blue flower.* The two last are included in Linnaeus's genus of *Vailantia*.

All these plants, if they are permitted to scatter their feeds, will maintain themselves in a garden without any other culture, than that of preventing other weeds from over-growing them, these being all very low plants.

The first sort grows wild in Cambridgeshire, as doth the third about Liphoeck in Hampshire, where I have gathered it.

A P E T A L O U S plants, [of $\pi\alpha\tau\epsilon\iota\sigma$ privative, and $\alpha\pi\epsilon\tau\alpha\lambda\omicron\upsilon\sigma$ a flower-leaf, *Gr.*-] are such as have no petals or flower-leaves.

A P H A C A. See **LATHVRUS**.

A P I C E S [of *Apex*, *Lat.* atop or point] these are called fummits by Vaillant, and are those little knobs that grow on the top of the stamina in the middle of the flower: which are generally supposed to be a kind of male sperm, which when ripe, diffuses itself to every part of the flower, and fecundates the ovarium and renders it fruitful.

A P I O S. See **GLYCINE**.

A P I U M [*Apium* is so called, as some say, of *Apes*, bees, because bees are said to be delighted very much with it,] Parsley.

The **CHARACTERS** are,

It is a plant with an umbelliferous flower; the rays of the great umbel are few, but those of the smaller are many; the involucrum is in some species of one leaf, and in others of many, the petals of the greater umbel are uniform, these are round, equal, and turn inward. Each flower has five stamina, crowned by roundish fummits. Under the flower is situated the germen, supporting two reflexed styles, crowned by blunt stigma; the germen afterward becomes an oval channelled fruit, dividing into two parts, having two oval feeds channelled on one side, and plain on the other.

This genus of plants is ranged in the second section of Linnaeus's fifth class, entitled *Pentandria Digynia*, the flowers having five stamina and two styles.

The **SPECIES** are,

1. **APIUM** (*Petroelinum*) foliis caulinis linearibus involucrellis minutis. Hort. Cliff. 108. *Parsley with very narrow leaves on the flower-stalks. Apium hortense vel petroelinum vulg.* C. B. P. *Common Parsley.*
2. **APIUM** (*Crippum*) foliis radicalibus amplioribus crispis caulinis ovato-multifidis. *Parsley with the lower leaves very broad and curled, the upper oval, and cut into many segments. Apium vel petroelinum crispum.* C. B. P. 153. *Curled Parsley.*
3. **APIUM** (*Latifolium*) foliis radicalibus trifidis, ferratis, petiolis longissimis. *Parsley with under leaves divided into three parts, which are sawed, and have very long foot-stalks. Apium hortense latifolium maxima craiffima fuavi & eduli radice. Bferh. Ind. alt. "The large rooted Parsley.*
4. **APIUM** (*Graveolens*) foliis caulinis cuneiformibus. Hort. Cliff. 107. *Parsley with the lower leaves fashioned like a wedge. Apium palustre five apium officinarum.* C. B. P. 154. *Smallage.*
5. **APIUM** (*Dulce*) foliis erectis, petiolis longissimis foliis quinque lobatis ferratis. *Parsley with upright leaves, having very long foot-stalks, and the smaller leaves composed of five sawed lobes. Apium dulce ceteri Italorum. Inf. R. H. 305. Upright Celery.*
6. **APIUM** (*Rapaceum*) foliis patulis, petiolis brevibus, foliolis quinque ferratis, radice rotundo. *Parsley with spreading leaves, having short foot-stalks, the smaller leaves having five lobes, and a refund root. Apium dulce degener, radice rapacea. Just. Celeriack, or Turnep-rooted Celery.*
7. **APIUM** (*Lufitanicum*) foliis radicalibus tribolatis, caulinis quinque-lobatis crenatis. *Parsley with under leaves having three lobes, and those on the stalks five, which are indented. Apium Lusitanicum maximum, folio trilobato flore luteolo. Boerh. Ind. alt.*

The first sort is the common Parsley, which is generally cultivated for culinary use, and is what the College of Physicians have directed to be used in medicine, under the title of *Petroelinum*; for when *Apium* is prescribed, the *Smallage* is always intended.

The second sort has generally been supposed to be only a variety of the first, but from many years trial I have always found, that if the feeds are carefully sowed from plants of the curled-leaved Parsley, it will constantly produce the faggie; but there are few persons who will be at the trouble to save the feeds so carefully, as not to have some of the common sort mixed with it for when feeds are bought at the

(hops,

{hops, there is generally a mixture of both: therefore the only method to have it good, is to separate all those plants which have plain leaves from the curled, as soon as they are distinguishable, leaving only such as are of the right kind; if this is duly observed, the feeds will constantly produce the same.

The third sort is chiefly cultivated for their roots, which are now pretty commonly sold in the London markets; the leaves of this sort have much longer foot-stalks, and their subdivisions are not so numerous as in the common Parsley; the lobes of the leaves are much larger, and of a darker green, so that it is easily distinguished from the common sort by its leaves, but the roots are six times as large as the common Parsley can be brought to with the utmost culture. I have sown the feeds of both sorts for several years on the same (pot of ground, and have thinned the plants when young, to an equal distance, and given the same culture to both; but when their roots were taken up, those of the common sort were not larger than a man's little finger, but the other were as large as full grown Carrots, which were very tender and sweet, whereas the other were stringy and strong, and this difference constantly holds, so it may be allowed to be specifically different. This sort was many years cultivated in Holland, before the English gardeners could be prevailed on to sow it. I brought the feeds of it from thence in 1727, and would then have persuaded some of the kitchen-gardeners to make trial of it, but they refused to accept of it, so that I cultivated it several years before it was known in the markets.

The fourth sort is commonly known by the title of Smallage. This is what the physicians intend when they prescribe Apium* Dr. Linnaeus has joined to this the Celery, supposing them to be the same, and the only difference to arise from culture, but herein he is greatly mistaken; for I have cultivated the Smallage in gardens forty years, to try if by art it could possibly be brought to the same goodness as Celery, but have not been able to alter it from its original; all that can be done by culture, is to bring it to a larger size than it naturally grows wild, and by earthing it, to give it a whiteness; but it will not grow tall as Celery, nor will it rise with a straight stem, but sends out many suckers near the root, and when it is blanched, retains its strong rank taste, which no culture can alter, therefore I make no doubt of its being a distinct species.

The fifth sort is the Celery before-mentioned, and the sixth sort was supposed to be a degenerate species from it, but I cannot agree to this opinion, for from many years trial I have never found it vary. The leaves of this sort are short, when compared with those of the other, and spread open horizontally; the roots grow as large as the common Turneps. The difference which I have observed to arise from the culture, has been only in the size of the roots, those on rich ground, which were properly cultivated were much larger than those on poorer land, but the leaves and outward appearance of the plants were never altered, so that I make no doubt of its being a different species.

The feeds of the seventh sort I received from the royal garden at Paris, many years since, where it had been long preserved, and maintained its difference, and from more than twenty years cultivating it in the garden at Chelsea, I have found the same, so that I cannot doubt of its being different from all the other species.

The broad-leaved Garden Parsley, mentioned by Casper Bauhin, and the round-leaved Portugal Parsley, mentioned by Tournefort, I believe are only varieties of the common Parsley; for if they are distinct species, all the feeds which I have received from different parts of Europe, under those titles, have been wrong, for the plants which have risen from those feeds, have always proved to be the common sort. As Tournefort, and many other botanists, have enumerated all the varieties of plants which were found

in the gardens, and did not distinguish which of them were specifically different, so Dr. Linnaeus has gone into the other extreme, and supposed many plants, which are permanently different, to be only accidental varieties, arising from culture. But as he is now cultivating as many plants as the inclemency of the climate where he is situated, will permit, there is no doubt of his reforming his error, in this particular, when he finds what plants retain their specific difference.

The common Parsley must be sown early in the spring, for the feeds remain a long time in the earth, the plants seldom appearing in less than six weeks after the feeds are sown. This sort is generally sown in drills by the edges of borders in the kitchen-gardens near London, because it is much easier to keep it clear from weeds, than if the feeds are sown promiscuously on a border, and the Parsley is much sooner cut for use: but when the roots are desired for medicinal use, then the feeds must be sown thin, and when the plants are come up, they should be hoed out single, as is practised for Carrots, Onions, &c. observing also to cut up the weeds: if this be observed, the roots will become fit for use by July or August, and continue so till spring.

There are some persons who are afraid to use Parsley in their kitchens, lest they should suffer by having the lesser Hemlock mixed with it, whose leaves are so like Parsley, that persons who are not (killed in botany, may be easily deceived, which being a noxious plant, several persons have been injured by eating it: but to prevent this, I have for many years cultivated the sort with curled leaves, which is so unlike the Hemlock, that no person, however ignorant, can mistake one for the other, and have constantly advised those of my acquaintance to do the same. The curled sort is equally good as the common Parsley, and I have constantly found the feeds, sown from the curled sort, to produce the same.

The common Parsley is, by some skilful persons, cultivated in fields for the use of sheep, it being a sovereign remedy to preserve them from the rot, provided they are fed twice a week for two or three hours each time with this herb, but hares and rabbits are so fond of it, that they will come from a great distance to feed upon it; and in countries where these animals abound, they will destroy it, if it is not very securely fenced against them, so that whoever has a mind to have plenty of hares in their fields, by cultivating Parsley, will draw all the hares of the country to them, and this will preserve them found.

The best time for sowing it in the fields is about the middle or latter end of February; the ground should be made fine, and the feeds sown pretty thick, in drills drawn at about a foot asunder, that the ground may be kept hoed between the drills, to destroy the weeds, which, if permitted to grow, will soon overrun the Parsley. One bushel of feed will sow an acre of land.

The great Garden Parsley is now more known to us in England than it was some years past. In Holland it has been long common in all their markets: they bring these roots in bunches, as we do young Carrots to market in summer; and the roots are much of the same size: it is called Petrofeline Wortle by the Dutch, who are very fond of it for water souce.

It may be cultivated by sowing the feeds in good ground early in the spring; and in April, when the plants are up, cut them out with a hoe (as is practised for young Carrots) to about five or six inches square, and keep them constantly clean from weeds; and in July the roots will be fit to draw for use, and may be boiled and eaten as young Carrots, and are very palatable and wholesome, especially for those who are troubled with the gravel.

But if these plants are cut out, to allow them more room, if the soil is good, the roots will grow to the size of a middling Parsnep, by September.

Smallage is a common weed by the side of ditches and brooks of water, in many parts of England, so

fo that it is feldon Mptivated in gardens; but if any perfon is willing to propagate it, the feeds fhould be fown foon after they are ripe, on a moift fpot of ground *, and when the plants come up, they may be either tranfplanted in a moift foil, or hoed out, and left fix or eight inches afunder, where they may remain for good. The feed of this plant is one of the leffer warm feeds *, both the herb, and feeds are ufed in medicine.

The feeds of the two forts of Celery fhould be fown at two or three different times, the better to continue it for ufe through the whole feafon, without running up to feed. The firft fowing fhould be in the beginning of March, upon a gentle hot-bed; the fecond may be a fortnight or three weeks after, which ought to be in an open fpot of light earth, where it may enjoy the benefit of the fun *, the third time of fowing fhould be the end of April, or beginning of May, which ought to be in a moift foil; and if expofed to the morning fun only, it will be fo much the better, but it fhould not be under the drip of trees.

The feeds which are fown in the hot-bed will come up in about three weeks or a month after-fowing, when the plants fhould be carefully cleared from weeds; and if the feafon prove dry, they muft be frequently watered; and in about a month or five weeks after it is up, the plants will be fit to tranfplant: you muft therefore prepare fome beds of moift rich earth, in a warm fituation, in which you fhould prick thefe young plants, at about three inches fquare, that they may grow ftrong; and if the feafon fhould prove cold, the beds muft be covered with mats, to fcreen the plants from morning frofts, which would retard their growth: you muft alfo obferve, in drawing thefe plants out of the feed-beds, to thin them where they grow too thick, leaving the fmall plants to get more ftrength before they are tranfplanted *, by which means one and the fame feed-bed will afford three different plantings, which will accordingly fucceed each other for ufe.

You muft obferve, if the feafon proves dry, to keep it diligently watered after it is tranfplanted, as alfo to clear the feed-beds from weeds j and after every drawing, keep them duly watered, to encourage the fmall plants left therein.

The middle of May fome of the plants of the firft fowing will be fit to tranfplant for blanching, which fhould be planted in a moift, rich, light foil, upon which the firft planted Celery will often grow to be twenty inches long in the clean blanched parts, which upon a poor or dry foil feldom rifes to be ten inches.

The manner of tranfplanting it is as follows: after having cleared the ground of weeds, you muft dig a trench by a line about ten inches wide, and fix or feven inches deep, loofening the earth in the bottom, and laying it level; the earth that comes out of the trench fhould be equally laid on each fide the trench, to be ready to draw in again to earth the Celery as it advances in height. Thefe trenches fhould be made at three feet diftance from each other; then plant the plants in the middle of the trench, at about four or five inches diftance, in one ftrait row, having before trimmed the plants, and cut off the tops of the long leaves; when they are planted you muft obferve to clofe the earth well to their roots, and to water them plentifully until they have taken frefh root; after which time it will be needlcfs, except in dry foils, or very dry feafons: as thefe plants advance in height, you muft obferve to draw the earth on each fide clofe to them, being careful not to bury their hearts, nor ever to do it but in dry weather, otherwife the plants will rot.

When the plants have advanced a confiderable height above the trenches, and all the earth, which was laid on the fides thereof, hath been employed in earthing them up; you muft then make ufe of a fpade to dig up the earth between the trenches, which muft alfo be made ufe of for the fame purpofe, continuing from time to time to earth it up, until it is fit for ufe.

The firft trf your planting out will, perhaps, be fit for ufe by the beginning of July, and will be fucceed- ed by the after plantations *, and if the latter fowings

are rightly managed, there will be a fucceffion of Celery for ufe till April 5 but you fhould obferve to plant the laft crop in a drier foil, to prevent its being rotted with too much wet in winter; and alfo if the weather fhould prove extreme fharp, you will do well to cover your ridges of Celery with fome Peafe-haulm, or fome fuch light covering, which will admit the air to the plants; for if they are covered too clofe, they will be very fubjeft to rot 5 by this means you may preferve your Celery in feafon a long time, but you muft remember to take off the covering whenever the weather will permit, otherwife it will be apt to caufe the Celery to rot; By this method of covering the Celery, the froft will be kept out of the ground *, fo it may be always taken up for ufe when it is wanted, which, if neglected, it cannot be taken up in hard froft. The Celery, when fulljr blanched, will not continue good above three weeks or a month before it will rot or pipe: therefore, in ordfr to continue it good, you fhould have at leaft fix or feven different feafons of planting-> fo that if it be only intended to fupply a family, there need not be much planted at each time, but this muft be proportioned according to the quantity required.

The other fort of Celery, which is commonly called Celeriac, is to be managed in the fame manner as is dire&ed for the Italian Celery, excepting that this fhould be planted upon the level ground, or in very fhallow drills, for this plant feldom grows above eight or ten inches high, fo requires but little earthing up; the great excellency of this being in the fize of the root, which is often as large as ordinary Turneps. I fhould be fown about the middle of March, upon a rich border of earth, and, in diy weather, conftantly watered, otherwife the feeds will not grow: when the plants are large enough to tranfplant out, they fhould be placed eighteen inches afunder, row from row, and the plants fix or eight inches diftant in the rows *, the ground muft be carefully kept clean from weeds, but this fort will require but one earthing up, which fhould not be performed until the roots are nearly groF/i. both thefe forts of Celery delight in a rich, iight, moift foil, where they will grow to a much larger fize, and will be fweeter and tenderer than on a poor or dry ground.

The beft method to fave this feed, is to make choice of fome long good roots of the upright Celery, which have not been too much blanched, and plant them out at about a foot afunder in a moift foil, early in the fpring *, and when they run up to feed, keep them fupported with ftakes, to prevent their being broken down by the winds: and in July, when the feed begins to be formed, if the feafon fhould prove very dry, it will be proper to give fome water to the plants, which will greatly help their producing good feeds. In Auguft thefe feeds will be ripe, at which time it fhould be cut up, in a dry time, and fpread upon cloths in the fun to dry; then beat out the feeds, and preferve them diy in bags for ufe.

A P I U M ANISUM DICTUM. See BIMPJ-NELLA.

A P I U M MACEDONICUM. See BUBO*.

A P I U M PYRENAICUM. See CRITHMUM.

A P O C Y N U M. Tourn. Inft. R. H. 91. Lin. Gen. Plant. 269. [Αποκνιν, οφαVoand xwós a dog, De- caufe the antients believed this plant would kill dogs.] Dogfbane.

The CHARACTERS are,

The flozver hath a permanent empalement of one leaf, cut into five acute feqrnents at the top -, it hath but one petal, which is of the open bell-Jhape, cut into five parts at the brim, which turn bachvoard; in the bottom of the flower are fituated five nettariums, which are oval, and furround the germen: there are five ftamina, fcarce vifibU, which are crowned by oblong ereft fummits, which are bifid \ in the center are two ovalgermfo, fupporting fmall Jlyles, crowned with globular ftigma, larger than the germen. The germen afterward become turn long pointed capji'les, opening in two valves having one ceil, which is filled with compreffed feeds, lying over each other ih Hies on a boufe, each being crowned with down.*

This genus of plants n r,ingiid in the ft... VnuntlimDigynia, **owers having five; fmnina and twottyks.**

The St

- 1. AFOCTWDH (*JfnJrnprniif/i'tim)cii^eTcBtkiJr>hcT-* bacto folks ovacis uirintjin.- Tiinali- bus. Lin. Sp. l'.
• **I ltava, fmvkb en both l**
• **vHxality abtd of fit/am. Api**
• **imtdcnfc felih i**
- 2. AFOCVNU (*Canadensis*) -ule re&iufculo herbncio foi its oblong p; i i nalibns. J
213. **Dog/miK *osith CM nv.? berbattew jji&. Mug**
• **1 terminated Ay jixotrs. Apocynum**
Caniilcnic maximum !lore minimo berbaccu,
Aln>
- 3. A pot; v Kim *Syoirltm*) caule rc&iulculo hrbaateo foli- liso- i'rod.Leyd.,'
'm upright btrbe-
Apocynum niariiri.'im veneuimu
pilicy, Tourn. li:1
- 4. APOCVNI (*Synanthemum*) folia ovata petiolata, su- pemii plabra, floribus amplis pediculis longis hirsu- tis caule frutico. **So. Dtfjlaxi**
art fmerth on tl-
hrinfxt-r-jink,
• **iiinercc-**
• **liLuicollim, I lore lureau niaxiniu fe ipeciortlimo.**
Sloa-iALir. J>m. 8y.

5. Apocynum (*Saxatilis*) folia ovata cordata, rigidis floribus lateralibus, caule fruticoso volubili. *Dejense with stiff, oblong, heart-shaped leaves, flowers*
an tl'fidtt ef thi fltt, tmd u firubiy twining fialk.
[A>wcynum fcanicns fotib titrii liliquis maculwis.
Plum. Cat a.

- 6. APCKTKUM (*Pmtfiens*) caule ercfto fruttfeena fblis lantcolattMJviiiilui ni: ollis acutis fauce villosis. Flor, Zi'yl. 114. **Begtham with on upright fists-**
fpur-Jlxifitii ttavt; amttplali, nmiiiay jutes. Apo- cynum (Mile en-fto arboreo foEA* **tivzza KUB. PHKL**
Leyd. +12.
• **Al'-or. SUM (R.-iicufj/Hiii)** raulc votibiji jiercane foli- lis ovatis venosis. Prod. Leyd. 418. *Dejense w taiff*
twining fialk, and oval round leaves.

7. APOCVNUM (*Oleagineum*) caule volubili foliis ovatis serratis cymis lateralibus tubo floribus longissimo. *Dejense with oval serr. imMi which area-*
<πJ **facers** the **fiat** of **tbl**
i t Afiocynum li,nu> **ns majis folio fubovun-**
da, ^ Cat. **Jm. B)**
• **fitutn) cxj'.r-fru**

8. Apocynum (*Carolinense*) folia oblongo-ovata, mucronatis sessilibus floribus lateralibus, caule scandente. *Dejense with rising heart-shaped leaves, which end in a point, flowers growing at the joints of the leaves, and a climbing stalk.* Apocynum scandens folia oblongis acuminatis floribus amplis patulis & lincis. Houil. MSS. Fig. Pl. num. 2. pl. 44. f. 8.

- 11. **A1** ocynum (*Flaylois*) folia cordatis: labris floribus Villi lateralibus petiolis longioribus caule scandente. *Dejense with smooth heart-shaped leaves, hairy flowers growing from the joints of the branches, and a climbing stalk.* Apocynum scandens annua flore villosa luteo: **Giiqui** nudis angulata. 1 **louft.** MSS. ^ **PI LuL**
44. fig. 2.

The **Srft** fiwt grow* **naturally in North America.**
I ii. • **hath a perennial root**; the stalks rise about three feet high, grow upright, and are furnished with smooth oval leaves, growing opposite. Their, as also the stalks, abound with a milky juice, which flows out when they are broken: the flowers are white, and collected in a kind of umbel, growing at the top of the stalks. The bottom in the bottom, hence a purplish call: these flowers are seldom succeeded by pods which ripen in England, but the plant is propagated by parting the roots. It is hardy, as well thrive in the full **om,i;** but the soil should be light or dry, otherwise the roots and apt to rot in winter. The best time to part the

raoa J in March, before they begin to put out new stalks.

The li'cotv: **fert** is a native of the Dune couna as the 6rft; ri, : **fert** creep far in the ground (o liat when it i planted in a garden. It is jgt to sprout fo mtidi iU to be trouuli.-ionic. I the stalks of oils **hn** arc bro. **toot** two fee Ilih, J'arr. shed with oblong; IhiDOli leaver, Jtc un bjr pairs, and abound with a milky juice ai the flower. Towards the upper part of the stalk, the flowers issue from the wings of the leaves, collected in small bundipi, which are of an herbaceous white colour, an: small, to make no great appearance, thiTdore .we teldom acitniti' d into garden, except (or ihe lake of variety. This is very hardy, and grows pagates coo fall iiy its creeping roots. Both these are flowers in July, and I in autumn their :

The thil sort grows upon small infant in i':- **ka,** near Venice, but it is supposed to have been brought from the original! brought tram 6>mc other country. There are two virti l. of this, one with a purple, and the other with a white flower. The roots of this creep-ertry much, by irkhk it ii pn pagated, for it leaves ever : • **cuts** any seeds either in the garden. **C It IS** cultivated, or at Venice •, where it grows without care, as I h.n.e been informed by i very curiuvu botanilV, who rvliih many years at Venice, and constantly went to the spot (evenj timts in the IK **to, to procure** : • **there tud been any produced;** but lie **aOind OR he never dcutd** End any pods formed on the plants. The ft*lks 01" tliii rise about two feet high, and are furnished with oval smooth leaves platttl upputiL-; [he **801ml** grow at d1- lop of the stalks in lin.ili umbel), (hoped JiLr thatc of the fatter lam, but are much larger, fo that tlic for: with purple **ovteit** m ik d a pretty appearance. It flowers in July and August. This fort will live in < • **can air,** pnvidoJ it is phuited in a warm litiuation inti 1 dry soil : for although the soil in which it grows vs with near Voice, B DUMt, yec in thi5 country ttw **ma** will rot in **vuxm**, when they are in a wet ground. The befrirrie to remove sul pLin: the roots is in j*prtiig, just before they begin to push out new stalks.

The iurth luct grows namriily in Jamaica, in the Savanna inaj, from whnce it hnd the title of Savanna Flower, by which it is chiefly known in diat island. This sort rises three or four not high, **having** < woody ltilks, which fend out 1 t'w IIUT.II briches, garnished with oval smooth leaves, placed by pairs opposite, of a shining ; **green col** or on 1 her upper side, but [alk and veart underneath; the flowers are produced* d titim iht A- of the branches, upon long root-stalks 1 ticru arc commonly i>u0r 01 five buds at the end - 1 cacia, but therc ii LL-1 Jotn more than o.ie of them which eonici to Boicyr, the orhi-r withering soon. The flower is very larjiti hiving a loiff; (ubc, which ii fpreaJs open wide at the top, 01 a brigi; w-l-low, fo make a fine appearance, especially inWif places irtiere tit- pknu trow natura%, being most part of thi- year in flower. I'hi plain is tou tender to thrive in EnjajanH without rhe affluence of aftovf- It is prop j; used by the da, which must be procured from |tm;uca, fur the plants do not perfect them in England, nor ire many of the seeds which are brought from thence good, either for their being unskillfully gathered before they are ripe, or being put up **mam,** for few of them have succeeded. Whn tfci^ediare obtained, they ihoukl be sown in poti fillcJ with light Janly earth, and plunged into a bog-bed of r • **mers** l>rk. If the feeds are g(nxl, the plants will appear in a month or five weeks after, when they ihou d be traiced in the ijmcnuniicr as other tenda plant from the fame country, with this difieti see only, to be (paring in e. use use them, for these plants, which abound with a milky juice, keep lite wry little wet. They must be constantly kirji in ilic tin-bed in the ftovc, and as they ailvai: in height, they will require torger yots, but tiiL-re must be great care not K>OVCT-pM them; for unless their roots are constant, the plants will not tiirve. The second year the plants

plants Will flower, if they have been skilfully managed, when they will make a fine appearance in die ltove ; the usual time of their flowering in England, is in July and August, but the plants retain their leaves through the year* which, being of a beautiful green, look very well at all seasons.

The fifth fort was discovered by father Plumier, in fote of the French. i(lands in America, who made a drawing of the plant. It was afterwards found by the late Mr. Robert Millar, furgeon, growing plentifully near Carthagena, in New Spain, from whence he fent the feeds, which fucceeded in feveral gardens. This plant hath twining ftalks, by which it mounts to the tops of very tall trees, garniſhed with ftiff, oblong, heart-fhaped leaves, which are fmoother, and of a (hining green colour, being of the fame thicknefs with thofe of the Citron-tree. The flowers are produced in fmall cluſters from the fides of the branches, and are of an herbaceous colour, fo do not make any great appearance. Theſe appear in Auguſt and September, but are not fucceeded by pods in this country.

The fixth fort grows naturally in India, Ceylon, and upon the coaſts of Guinea, from whence I have received the feeds. This plant rife with a woody ſtem to the height of five or fix feet, dividing into feveral branches, garniſhed with oblong, pointed, fmoother leaves, of a fhining green above, but pale underneath, placed by pairs oppofite. From the wings of the leaves the flowers are produced in looſe bunches. Theſe are fmall, tubulous, and of a purple colour, but are never fucceeded by pods in this country. It is a very tender plant, fo muſt be conſtantly kept in a hot-houſe, and plunged in the tan-bed, otherwife it will not thrive in England *, it may be propagated by cuttings during the fummer months, but they ſhould be laid to dry in the ftove, three or four days before they are planted; for as the plants abound with a milky juice, fo unleſs the ends of the cuttings where the wounds are made, are well dried and healed over before they are put into the ground, they are very fubjeſt to rot. This plant muſt be fparingly watered, eſpecially in winter, and ſhould be planted in light fandy earth.

The feventh fort grows naturally in India; I received feeds of this from Dr. Van Royen, profefſor of botany at Leyden. This plant hath a twining ftalk, by which it rife to a confiderable height, garniſhed with oblong leaves, which are much veined, and abound with a milky juice, which flows out whenever they are broken. This plant hath not yet produced flowers in England. It is tender, fo requires to be conſtantly preferred in the ftove, otherwife it will not thrive in this country.

The eighth fort grows naturally in Jamaica, from whence the feeds were ſent me by the late Dr. William Houfton. It hath a climbing ftalk, which fattens to the neighbouring trees, and rife ten or twelve feet high. The leaves are oval, ftiff, and oblique to the nbot-ftalk; the flowers are produced from the wings of the leaves, of a purplifh colour, and have very long tubes, but fpread open wide at the top. This doth not produce feeds in England, nor have I been able to propagate it, either by layers or cuttings. It is tender, 16 muſt conſtantly remain in the ftove, and ſhould have little water.

The ninth fort hath a climbing woody ftalk, and rife to a confiderable height, by the fupport of neighbouring trees. The leaves grow by pairs oppofite; they are oval, ending in a iharp point, and have many tranſverſe nerves from the midrib. The flowers come out from the wings of the leaves, each (landing upon a feperate long foot-ftalk; they are large, of a bright yellow colour, with very long tubes, fpreading open wide at the top -, theſe are fucceeded by long compressed pods, which have borders on one fide filled with long channelled feeds, which are crowned with long plumes of foft down. This fort grows naturally at Carthagena, in New Spain, from whence I received the feeds. It is tender, fo will not thrive in England, unleſs it is conſtantly preferred in the ftove. This is

propagated by feeds, which muſt be procured from the country where it grows naturally, for the feeds* do not ripen in this country. When the feeds *re procured, they muſt be fown in pots, and plunged into a hot-bed *, and when the plants come up, they ihould be treated in the fame manner as hath been before directed for the fourth fort. It flowers in Auguſt and September in England, but in its natural country it flowers great part of the year.

The tenth and eleventh forts were difcovered at La Vera Cruz, in New Spain, by the late Dr. William Houfton, who ſent their feeds to England. Theſe plants have both climbing ftalks, by which they mount to the tops of the tailed trees. In England they have climbed over the plants in the ftoves, and rife to upward of twenty feet high. The tenth fort has produced flowers, in England feveral times, but the eleventh, which grows more luxuriantly than the other, never had any appearance of flowers. Theſe are both propagated by feeds, which ſhould be fown as the fourth fort, and the plants muſt be treated in the fame manner afterward. All theſe ſpecies of Dogbane abound with a milky juice, which floors out from any part of their ftalks or leaves when they are broken *, and this is generally fupposed to be hurtful, if taken inwardly, for it doth not raife blifters on the ſkin, as the juice of Spurge, and other acrid plants, fo is not injurious unleſs inwardly taken. The pods of all the forts are filled with feeds, which are, for the moſt part, compressed, and lie over each other (*imbricatim*) like tiles on a houſe: theſe have each a long plume, of a cottony down fattened to their crowns, by which, when the pods are ripe and open, the feeds are waſted by the wind to a confiderable diftance; fo that in the countries where theſe plants naturally grow, they are fome of the moſt troubleſome weeds.

The down of theſe plants is in great eſteem in France, for fluffing of eaſy chairs, making very light quilks, which are warm, and extremely light, fo are very proper covering for perfons afflicted with the gout, frthe down is fo extreme light and elaſtic that it occasions no weight. This the French call Delawad, and in the fouthern parts of France, where fome of the forts will thrive in the open air, and perfect their feeds, there are many plantations made of theſe plants for the fake of the down.

As many of theſe forts grow plentifully in the uncultivated lands in Jamaica, this cottony down might be eaſily procured from thence in plenty, and might probably become a vendible commodity in England, which may turn to advantage, if once it becomes a faſhionable fort of furniture, eſpecially as the plants require no cultivation, the only trouble being to collect the down, which, in fome of the forts which have large pods, is produced in great quantity, fo may be colle&ed with little trouble.

The other forts which have been ranged under this genus, are now referred to the following genera, to which the reader is defired to turn, for fuch of them as are not here enumerated, viz. *Aclepias*, *Cynanchum*, and *Periploca*.

A P P L E - T R E E. See MALUS.

A P P L E S of Love. See LicoPERSICO and SoLANUM.

A P P L E S (M A D). See MELONGENA.

APRICOT, or ABRICOT. See ARMENIACA.

A U I F O L I U M. See ILEX.

AQUILEGIA [called alfo *Aquilina*, from *Aquila*, L. an eagle, becauſe the flower reſembles that bird]. Columbine.

The CHARACTERS are,

The flower bath no empakment, but is compoſed of five equal oval petals, winch are plain, and ſpread open, within which are five equal nellarii, ranged alternately with the petals, each of the born widening upward, the opening being oblique to the fide as it aſcends, and is faft* ened to the receptacle within, the ^wer part lengthening gradually into a long tube, hanging fa & blunt* <ncui xvf apex. It bath many awl-Jhaped ftamina* which are crowned by oblong upright fummits, with five bpd germtn, ſup~*

porting

porting aml-fhsptd Jyiles, which are kxgir than tbt ft a mina, crowned by erH jigma; the gemett afterward
* become five cylindrical vtjfelj, which fiend upright, art parallel, pointed, and open in one cell, which ere filled with oval jhining feeds.

This genus of plants is ranged in the fifth Jeftion of LiriniEus's thirteendi daft, entitled Polyandria Pen-tagnia, the flowers hiving many ftamina and riv-lytles.

The SPECIES are,

1. AQUILECU (*Vutgsris*) ne&aris re&is petalo lanceolati brevioribus. Lin. Sp. Plane 533, *Columbine with % eight wBarhtms fierier then its petal, which is fpear^jhapt.* Aquilegia Sylveltris. C. B. P. 144. *WiUCchmbote.*

2. Aquilegia (A<ipitEC[A(yllf, Jirt)neaaarisrei&ris, petalis ovatis longioribus. *Columbine with crctJ nellarii, ami longer ova fitrwer-kaves.* Aquilegia montana magno flore, C. B. P.

3. AHULEOIA (*Inverfe*) n&ctaritis incurvis. Hort. Upfal *Columbine with nelinrii toned iirjwd.* Aquilegia Hurt pleno invcrfo, J. B. 485. *Columbine with a double invertedjlsver.*

4. Aquilegia (*Catiadmfis*) n&ctaritis reftis flaminibus corolla longioribus. Hon. Uplai 153. *Columbine htiti eight neaerit, sndftianiina longer than the petals.* Aquilegia pumila pnrcox Canadenfis. Cornut. Cwiad. 60. *Earb/ dwarf Canada Columbia*.*

The firft Jon h found growing wild in the woods in fome parts of England j I have frequently gathered it in the woods, near Bexley, in Kent; and a lib lie-tween Mniditone and RochcJtr. The flowers of this are blue, the pctais are flort, and the nectarii ate very prominent, in which it differs from the fecond, whofe petals arc longer, and tile nectarii do not rife high. This I found growing naturally near Ingle-brough Hill, in Yorkihire. The flowers of this arc much larger than tiiofc of the Garden Columbine, and the feeds which I fowed of this in the garden at Chellea, produced the fame fpecies without the leat variation.

The third is the Garden Columbine, of which there arc great varieties, not only in the colour and funcls of their flowers, but aifo in their form. In fome there arc no vilible nedarii, but in place of them a multiplicity of petals, fo that the flowers are as double as limit ouIn.- Jnrkfpur. Thefe are commonly called **Rofe** Columbines; the colours of thefe are chefnut, blue, red, and white, and fojwe arc finely variegated with two colours.

There are others with [harp pointed petals, which expand in form of a (tar; of thcie there ire finale ami double Bowers, of the leveral colours as the former. JYom the different Iliape of theje flowers, any purlbn not Well (killed in the culture of plants, won't fup-poft they were diftinf from the others; bm having fecyal years fown their feeds, which were collected with great care, ! have found them always varying from one to the other: therefore I have not enumerated their varieties here, knowing they can never be preferved the fame from feeds, however carefully they arc fitted: however, as the forts with variegated flowers are efteemed the greateit beauties, k. I'm : cer- fon.S who are defirous to have them in perfection, ftould root out all thofc plants whofe flowers ire noi well marked* 01 N leftl tut on7 their (lemsfo 6 on as their flowers appear, leaving only the moil lx-wiiful to feed, that the fatina of the plain Mowers; may not impregnate the others, wlicreby thr plants raifed from their feeds may not be degenerated, of which 100 much can: cannot be taken.

These plants nre all raifed by lowing the feeds, or parting like old roots, but the former method is chic fly prattucdv for the old roots are very apt to degenerate after they have blown two or three years, Jo as to become quite plain.

The feeds Jhould fx (own in a nurfery-bed in Auguft ; tember, fo fch feeds which arc kept till fpring fcldm grow wel, or at lead remain in the ground a y.ii. "Of Spring following the plants will appear above (011 ml, therefore (hould be kept clear tivm vci-iy'i &nd if the faftun fhould be dry, they

(hould be refrefhed with water, that they may gatntf ftrength.

In die middle or latter end of May, thefc plants will be ftiong enough to tranipbnt; therefore fome beds of good frelh undungL-d earth fliond be prepared, planting them therein at eight or nine inches diltance every way, keeping them clear from weeds, and rc-ftitfhing them with a little water, as they may require it.

In the following autumn, by which time the plans will have acquired ftrength enough to flower the liiminer following, the roots fhould vx carefully taken up, and planted in the borders of the flower-garden; but ivliere their roots arc defigned to be preferved in perfection, all their fldwer-flems (lionld be cut off, as foon as the flowers are pair, to prevent their degenerating by the commixture of the farina from other flowers.

But in order to be fure of having no Jingle or bad flowers in the borders, you may tuffe the plants to remain in the nurfery-beds until they have blown 5 at which time you may put a Hick by each root you fancy 10 prclervc, or pull out all the Jingle or bad coloured ones, and rhrav them away, cutting off all the flowers from your beft roots as foon as they have Jliesn themfelvej, which will greatly atiti to the pre- lcrving them fair in their colours.

In order to keep up a fucccfion of good flowers, in Hi fecit fliond be fown cvty year; and if you enn meetwidia friend, at fome diftance, who is furniied with good flowers of diis kind, it will be very advantageous to both panics, to exchange feeds once in two years, by which they will not be fo apt to degenerate into phtn colours.

In laving the feed* of the variegated columbines, great care (hould be taken nor to funer any plain flowers to remain for lied, there being generally feme plain flowers intermixed with thr ftripeJ ones on the lame plant, and often in the lame branches; thefe Jhould be cut off, fir if they are permitted to feed, or if their farina mix and m the ftriped flowers, they will degenerate into plain cokunj fo thai there cannot be too much care laken in faving the kids, where the beauty of their Howers are-regarded.

The Canada Coiumbinc flowers a)molt a month before the other Jbrts; for which reafon it is preferved in the gardens of the curious, though there is no great beauty in the flowers. There is another variety of tjiij wet, mtk taller Bower S>ms, which flowers a little after the other, but do not diner, either in the fliape of its flowers or leaves from dm, fo I conclude they arc but one diitititf /iccies. The Canada Columbines flower Ill April, and their feeds ripen the beginning of Auguft. The en her firts flower toward (he end of May, and in cool frafons will continue to produce flowers till the middle of July, and their feeds ripen toward the middle or end of Srptcnijr, according as the fealbn proves more or left favourable.

The firft fort is that which is dircted for medicinal ule in the dupenlarics, but at prcfent is very rarely orderfil.

A RABIS. Lin. Gen. Plant 732. Balbid Tower Mallard,

The CHAKACTCKI are.

The fiercer belb a feur-lar-jed impalement, two of tbt op* pipe leir. -is being large, and lite ether fc# narrow; thefe full iff. jhe fiuvter bath fear petals is form of a crofti, vibich fspread open; at the bottom offtaib is finuated a re-flcxed ne(lsrjiumfi>tdt) the emptetnct, and btjfeen thefi arifejs upright jhmma, rain ofvibubettmo longer than the flowtr-tyv, the other four ore much bnger • thefmrt [Tutened with bcarf-Jb-ipedfummits. In the center ijf.tu- ntti a taper grmaty which is as long as the ftamlna, l/svi'ig nojlyle, but the sttufe figma. re/lt upon it. This afterward becomes a nrtcw, lung, <Impri!tdpad ofjfting longthens, having the taib, and a ihifi pertitun, it- twicH vi-iib is, 'sjged a rmn of fiat (teds.

A R A

This genus of plants hieratiged in Linnffus's fifteenth dais, entitled Tetradyamia Siliquola: fo ailed, be-cmlic the flowers lave four fitniiii longer EJMII the other two, and the feeds growing in long padl.

The SPECIES are.

1. ARABIA (*Tbaliana*) fbliu pctioJatu knceolstis mtegerimif. Vir. Cliff. 14. *Bajlard T<nser Majrard, with tebt fpcar-jhnptd leamu having faet-Jialk*. Burli paf-tovif firnilis GLquofa m:yor. C. B. P. 108.
2. JRJMITS (jyvMt) foliis artiplekkauliuideritatis. Hort. Cliff. 335. *Bajlard Twer Mufifrd., with indented litesves tmiraing ibt folks*. *Draba alba liliuula repens*. C. B. P.

3. AitAms (*Penduk*) foliis amplexicaulibus filiquis ancipitibus lincaribus cilydus fubpilofis. Hon. Upfil. 19 r. *Bajlard tantr Majlard-uritt limits embracing tbi fi/Ski, MtrrrKo "pads banging fsm ways, a>td baity flower caps*. Turritis latitblia turiuta filiquis pcdulli. Amman. Ruth. 58.

4. AKABIS (*Tirrita*) foliis amplexicaulibus fitiqui de-curvis planis lincaribus calycihui fubrugolis. Hort. Upfal. 102. *Bajlardtettr Mujfor.i. vilb7iarrirw, plain, hanging pads, and rmtgh fimir'tups*. *Leucoum helpe-ridis iofo*. Toum. fiift. Hi. Aitai *Gitkfew/er uilb a knfif Dame's Violet*.

5. ASJLBU (*Lyrata*) foliis gkbris, radicalibus lyraus, caulink lincaribus. Flor. Virg. 00. *Bsjlerd Txner Muferdn-ibt fsmztb leave, theft at tbt root fyre-Jbnptd, but m lbcjalis linear*.

6. ARABIS foliis caulinis lanceolatis dentatis glabris. Klor. Virg. 100. *Eeftard fincrr JI&fterd, viith fpcar-Jbaptd, itJMeJfiMti leaves*. *Eruca VirgttiLuia, Ullidis mMori* tblo. Pluk. Aim. 136.

The firft feit is a low Jilsiit, feldom rifingmore than tour or five inches high, fending out many fhort hr.inches on every fide, terminatt by I ma If white flowers growing alternately the moit pan of their lenph, each having four petals in term of a crofs, Which arc fucedditi by long (lender pods fil<dwth fmall round feeds. It grows naturally on fandy dry ground, in many p.irts of England.

The fecond fort grows nacurally in Efrta. from whence I received the feedj it a alb a native of the Alps, and many other mounrainous toum cries. This is a perennial plant, which increafes by its creeping roots, which run obliquely near the iirlatc α* the ground, and fend down roots at every joint. The leave; ire collected into heads, fprmding circularly tike thofe of the London Pride. Thde are oblong, whitifh, and indrteilon their edges t out of thefe heads arife ihc Rower-llaltU) which grow near a foot high, g^{ar}-nilht-J witi leaves placed altfrnaiely, which arc broatler at their bait: thin ttiofe which grow bebw, and clofely embee the (talks); the Rowers grow in loofe bunches on the top (theft are white, and have leaves inform of a crofs, which are fuceddcil by lung flat podj, opening lengthwiys, having two celts, whitn are C-paratctj by an intehndicx partition, each •liavino one row of Ait reddilh feeds.

This BJ very hardy plant, fo will thrive in any ij-niiiiin. It produces leedsin plenty, hut as it rtiuil-plici fo fad ay its creeping routi, few perfbm arc at the trouble to lbw the ferds. It flowers early in the jbring, and having mtmy ftalks rifing from one root, they make a pretty variety in cold filiations, where many finer plants will not thrive, fo may have place in rural plantations among lhrubs, where they will thrive with very little care.

The third fort grows nsturally in Siberia, from wlence the feed* were brought to Pctcriburgh. Tliii is a perennial plant, which grows near a toot high | the k-tyes are braid, hairy, and indented on their edges; tlieli clojely embrace the Itallw. Ttie flowers grow alternately in loofe (pike?, and are of a dirty white colour. There arc fucedded by long narrow pods, which are filled with [lit brown ieeda like the former, but the pods of tliii hang downwards two n. Rowera early in fpring, and petfecb feedi very neHi, byVhichtt may be propagated in pleniv.

i'bc fourth Ion grows naturally in Hungary, Sicily,

A R A

and France. I have allb found it growing wild uimH font-old walk at Cambridge and Ely, but the 6 might probably come out of the gardens wheri were firir. planted. The plants of this kind, • grow on walls or ruins, continue much longer thait thole whiff are (own in gardens, where they k-ldorit live longer than two years. The leaves of this fort are long, broad, hairy, and a little waved on their edges; of a pile colour, and l'pccad near the ground: from thiu center oi thde come out the ftalks, which rife about a foot and a hul' high, having livcral leaves growing alternately, which clofely embrace them. Toward the top of the [talks, thiry divide into feveral fmal branches, which arc terminated by long loofe fpikea of flower?, of a dirty white colour, each having four petals placed in form of 3 crofs. After the flowers are pall, the eermen becomes long Hat pods, which turn backward tt their extremity and open length-ways, having two rows of fUt-biirdced leeds, dt a dark brown colour, fep.trated by a thin intermediate partition.

This fort Ueafily propagated by feeds, which fould be fown in the autumn; for thofc which an: town in the fpring frequently mil carry, or lie in the ground a whole year before they grow. When the plants are flrong enough to remove, they may be tranfitant into a Hutty border, or in rural plantations, where no other care will be neceflary, but 10 prevent their bving overgrown by weeds. "It is plants flower in Mvty, and (heir feeds ripen in July. There is little Ix.iury in this plant, yet many perfons preferve it in their gnrdeni to make a variety.

Tlie fifth fort is annual, it grows naturally in North America; die leaves new the root are lycr-fhapM), but thofe on the Bower-ftalks are linear, placed alternately; both arc fitiooih; ihc flower-fbUkE rife near a foot high, and are terminated by white flowers, which are fucedded by (lender pods.

The fixth fort wii brought from Virginia •, this is, a biennial plant, whole lower leaves fpread on the ground, theft aredecply indented on their fidet tlower-ftulksrife afoot high, fufbuoingfevtzai Qowen placed fcatteringly at the top, which a Clced by pretty long flat pods, filled with ibtos.

The two lail fmentioned forLs hue little beauty to recommend them, nor are their virtues known, therefore they are rarely admitted into any gardens except for variety. They are eafily propagated by feeds, which if permitted CO (tatter on the ground, will produce plants in plenty on any foil, or in any fiiuation.

A R A C H I S, Earth, or Ground Nut.

The CHAKAKTBKS arc.

The tmpalemmt of the \$m;tr tfms in l<ms parts, the upptr bring tut into tirtc at tit extrmity, tht tmdtfeitt (i ending in apuim, m:dhigr thsn tbtather. The /w«r id of the htHcify kind, having fitir pitals \ the jlandord ii large, rtwRdijb, andpfax; tie telfff ere open mdfturter than tht Jlandurd, tbt kei! is HttkUngtr iban the tnptacwtintl, am turns back. Tbt Jbtotr bdtb ten Jluumi/w, nine of nbi >d tbt upper one Jla/tds iff; thift Off no nnger thaa the ktl, ercwxij ij round

U. In tbt caiter isftvdttil an oblong rmntn, fup-pwiingan a-j-t-Jhaped flylt, (rewind by a Jingle jJigma. Tbegermen aflemiard tumi 10 an oblungpd, containing two of three cthng blunt Jads.

This genuj of plants is ranged in Linmus'a feventeenh clafs, entitled Diarlelphia Decandria, from the Bowers having ten ttarojna, which are in two bodies.

We have but one SPECIH of this plant, vH. AUACHIS (*Hypog-rt.*) Lin. Hon. Cliff. 353. *Earth er Ground Nut*. Arachidna quadratibla villoU fiore luteo. Plum. Nov. Gen. 40.

The iitivc country of tills plant I believe is Africa, though at prefent, all the fettlements in America abound with it 5 but many peiftns who have refided in that country affirm, they we c oripnally brought by tht-lavc from Africa there, o'hetc they have been fpcrad all over the fetitlment.i \

It tmijjplie.i very fad in 11 wirm L,^!tr), but bniiij^ impatient of cold, \i cannot be propagated in die open

• in England; therefore whoever his an inclination
 > cultivate thw plant, mud plant the feeds in a hot
 'i the ipring of the year, keeping the glalfe over
 jians till the middk or end of Junc-j after which
 il-, if the weather prove warm, they may be ex-
 poled to the open air by degrees. The branches of
 this plant trail upon the ground, and the Rowers
 (which arc yellow) are produced Jingle upon long
 fbot-falks j and as loon as the (lower begins to decay,
 the germen b thruft under ground, where the pod is
 formed and ripened-, fo that unJef the ground is
 opened, they never appear: the negroes kept this a
 fecret among themfelves, therefore could lupply Jicm-
 tAgtt with chefc nuts unknown to their mailers. The
 routs of tlidē plants art; annual, but the nuts or Teed;
 iiffidi-ntiy flock the ground in a warm country, where
 they are not very carefully taken up. In South Ca-
 rolina there is great plenty of theic nuts, which the
 inhabitants roaft, and make ufc of as chcolate.

AH. At. IA. Bcny-bearing Angelica.

The CHARACTERS are,

Il o an umbtUifereus plant with a gk&utar umbel, having
 afnaUiifslumtm; tie empalement of the flower is fmall,
 ixdiniid in jive parts, and refii upon tht rermen, Tiir
 jlsixr hstb fiat emitpetals, which arc reflexed, it bath
 five owi-jhuptid ftamixa cremated by T&un&fo fummiis; tin
 rewul germen below the empalntient fupprtri fivi Jhort
 fytes, each of vib'teh is ertwmed by a Jhigle fiigma. The
 grmtx afterward tuna to a rsmiijib tbaimfild berry,
 Living fat tufri each ctmimiriiig eat el-hug tarJfeed.

This genus of plants is ranged in the fifth feel ion of
 Linn:tu?A fifth clafe, entitled Pentandria Pentagynia,
 the Hewers having live ftamina and five (ylcs.

The SPECIES are,

I. ARALIA [*Ractmafa*] caule foliofe herbaccobEvi. Hort.
 Uptal 70. *Berry/Uearing Angelica, inith on herbaceous
 leafy Jialk. Aralia Canadenfu, Tourn. Inft. R. II.
 300.*

1. AHAMA (*Nideaii/i*) amvc nuiofolOhicTnMis. Hort.
 Cl. 11 j. *Berry-bearing Angeiits with a naked Jialk.
 AralU caulc nudo radice repente. Cold. Noveb. 66.*

ALIA (*ipifit*) arborelix-na caule folioliqvie acu-
 leata. Viti Cl. 26. *Treē Bcrry-iearixg ffcgctica, whōft
 fiskand Uatut artgrickfy. Aralia arborefcens fpinola,
 Vail. Serm. jpig(tiea-tree, vulgo.*

The firft fort is lirecty common in many gardens near
 London, but the fecond is at prefent more rarely met
 with. Both theic plants grow naturally in North
 Aint-rlca, from whence their feeds were brought to
 Kuropc. They are perennial plants, whofctal a decay
 in autumn, ana new ones arife from their routs
 in the Ipiing. The (irft grows thretor tour feet high,
 and divides into many irregular branches, garniJhed
 with ramofe leaves, placed alternately-, at the wings
 of theft fee Bawep-ftaUcsait produced, which are ter-
 minaied by rouidumbd³ on¹ d^ fbw-^{cauc} d ftWci*,
 ot' whitifli colour; thefe are fucceded by round
 channelled berries, which when ripe, are black. This
 flowers in July, and the feds ripen in O> •

The fecond lbit rifes to near the lunc htiglit as the
 former j rhe k;ives of this have two trifoliate large
 lobes, which are fawed on their edges. The Howcr-
 Italks arife between thefe immediately from to
 being naked, and are terminated by round umbels
 of flowers, in flatx; and colour like the firli; thefe
 arefucceded byDerric; ivhkf i areimaller than thofe
 ci'the oshtr. This flowers toward the end of July,
 and the feeds ripen laic in the autumn. The routs
 of this fort were formerly brought over and fold for
 Sirfaparilla, and at this time leveralof the inhabitants
 of Canada make ufc of it as l'uch, but it ii fetj dif-
 fercent from the true fort.

Botli theic iorti are eafily propagated by feeds, which
 are generally produced in plenty. Thefe (hould be
 fown in the autumn &on after they are ripe, for thole
 which arc fown in t1* (prtg, never prow the fame
 year, ib that i: wfoak leafon is gained by the lowing
 he plants appear, they muft be
 I clean froni-Weeds during thi- fummer-, and in
 the autun: a following when their leaves decay, the

foouI may be taken up, and tranfplanted where drey
 are to remain. They are very hardy plums, fo may
 be planted in any fituation; and as they grow natu-
 rally in woods, Ib they may be planted in wildcrnrls
 quarters, under treeSj where, although they have no
 great beaury, yet they will add to die variety.

Thefe two forts may alfo be propagated by parting gf
 their roots; the beil time for doing thii \a in the
 autumn, foon after their leaves decay. Thefe fhouIJ
 be planted pretty far alunder, for their roots I
 w a confiderable difence, where they are left un-
 (ilturbed for lbme years.

The third fort rifes with a woody ftem to the i
 of eight or ten feet, dividL -a] brar

gainilhed with branching Iraves, which arc CO
 pounded of many divaricated wings; the lobes
 which arc oblong, and the ribs of the leaves, as I
 the branches and ftem of tie plants, are ained I
 flrong crooked fpinci, which renders the places w
 difficult to pais through vvhcre they grow in plcn.
 The flowew of this fort arc produced in large ioc
 umbels, at the extremity of tue branches, and arc u
 an herbaceous colour, lo make \w> great fji;i'-i-, but
 the planes ai-e prefervtd in molt of tile turious gardens
 in tngland. It flowcR in Auguil, but the Leeds do
 not ripen in this cotimry.

This is prop:gt.itcd by feeds, which are eafily pro-
 cured from North America-, but as they fddom ar-
 rive Acre till toward the fpring, fo the nlanrs never
 come up the firft year: therclbn: when the feeds ar-
 rive, llicy mould be fown in pots, filled with light
 earth, and placed in a lhady fituation, where they
 may remain until the next autumn,- being careful to
 wend the pots confantly •, othenvife if weeds are per-
 mitted to grow till they are large, they cannot be
 taken out, without drawing up the feeds with their
 roots. In die antunui, the pots fhouLI be \>I

icidcI into an old bed of tan, or in a warm
 under the fhelter of a hedge or wall; and if die wimer
 proves fevt-re, it will be proper ro cover the pots with
 fbuv or t'eaie-luulm, to [irevent the fro(t from pe-
 netrating deep into the ground. In \Ur di the pots
 fhould be plungcti into a moderate hot-bed, which
 will bring up the plants early, fo that they will hai-
 more D< length before the foDowing winter.

When the rjlwm conic up, they fhould be frequently
 refnJhed with waLcr, and conitunily kept clean from
 weeds; In May they (hould be inured to the open air,
 and when they are removed out of the bed, they
 fhould have n (hady fituation. Thicfe plants (houLI
 not be difturbed the Eiril li-afon, but as they arc often
 injured by froft when young, Ib in Odtncr tie poj
 fhould be placed under a frame, where they may be
 lcreendfrom hard frofts, but in mild weather mould
 be confantly opened to enjoy the free air.

Thicfe plants fall away in the autumn, fo that fame
 perfons have fupposed them dead, and hncv thron
 them • mi of the pots, which every one fhould be
 ed ag.iinf. In the fpring, before the pis
 bfcgin to pulh, they (hould be carefully lhaken out of
 the pots, and feparated; pirt of them fhould be
 I lamed llngly into fmall pots, and the other may be
 planted in 3 bed of light c.irth in a want) fituation.
 Ililiufc which arc planted in ilie finall pots are plunged
 in a moderate hot-bed, it will greatly forward their
 growth; but they muft be early inured to bear tie
 open air, otherwife they ml] dttw op weak. In the
 following Tummer ihry muft ktvc s (hatly firm
 and the next winter fhould be fliehertd aiain; the
 fprinc following they may be lhakfn out of the pots,
 and planted where they are ddigned to remain. Thofe
 plants which were planted in the bed, will require
 protection from the froft the lift winter-, therefore
 if tin: fuffice of the gruitid k covered with oid tan-
 ners bark, ir will prevent the froft from jjenctrating
 io dicir tiHitsi and if in hard frails, (ome draw,
 Pcafc-haulm, or any light covering is laid ow;
 twd, it will fecure their ftem from being injured.
 The plsmts in the bed may remain there two years, by
 whitth time they will be (trong enough to lil

to the phccs where they are designed to grow. As thefc plants do not **come** out very **truly** in the fpring. To they often continue growing pretty late in the **viu**umn, which caufo the extreme parts of their [hoo**ts** to be very tender, whereby they otter f«Fer from vht early fruits in autumn, which frequently kill the upper parts of the hoo**ts**; but a* their woody fcms are fcclom injured, fo I **bej pot** **OT** new **branches** below: **and** it* in very feveru winters the Items are dcroyed, yet the roou will remain, ami put our. new On< the following dimmer, therefore they ihould not be defreyed.

This plant may **glib** be propagated by its roots, for as thry lspread fir in the ground, fo if they arc bid open, and feme of the frongelt arc fepaiated from the plant and left in the ground, they will put out new items and make new plants. Or if part of the roots arc taken off and planted on a moderate hot-bed, they will puib out (terns in plenty, lu may be increafed with cafe,

A RBOR, a trie, is defined to be a gemirtiparous plant, with a Tingle trunk or flem, abounding with frees. Tliis is the only definition which conveys an idei whereby to diftinguilh a tree from a lhrub, which 13 a gemmipurous plant, -with many Items or trunk,.

AHBOK CAMIMIORIFERA, See LAUIUIS.

ARBOR CORAL. S« HUVTBIUN^

ARBOR IUD/5!, See CESLCIS.

AREORIOUS [*Jrjarita*, *Lai*. of, or belonging to, or of the nature of, trees.] An epithet which botanills apply to thole funt*ufes, or moffes wiiich grow on tries, in diffintion from thofc **chat** grow on the

Iround i as Agaric, Jews-ear, 8rc. **A**BOUHS [*Arksritu*, *ai Mor*, *Lot*. a tree,] Thefe were fbmwtly in greater elrcem with us th.in at pre-T-nt; *kv*; gardens were without covered nrhours, and] **fu**ny feats •, but of late they have **been** much red. And rhat not without good **reafon**; furbefidw **die** great xpence in their firll ercfting, they were a continual charge keeping repaired s for the wet foaking through the leaves of the trees to the wood-work, was, by the continual fludc, and for the want of **fit*** air, **detained** fo long as to rot the wood (which, ii wholly expo'd [O the weather, would lave lulled feven or eight; in two tir **three** years; befide, Uie feats are continually damp, *aml unhealthy: for which rcafan, covcril lean or alcoves, arc every where, at this time **puafared to them**.

Arbours are generally made of latticework, either **in** wood or iron, and covered **with** Elms, Limes, Horn-beam; or **with** **Creepen**, as Honcyfuckla, Jilmine*, or Paffion-flowers; j either of which will anfwer ihe purpofe very **well**, if rightly maroiged.

ARBUTUS, the Strawberry-tree.

The CHARACTERS are,

Tbt fitvtr balb afmall, fhtijfi, fiiirmaxait cmfdmmt wfeVi is cut into fvc parts, upon tebich tbt ztrmai Jiti. The jimstr is of me leaf, jbpapl Hie a pitdrer, ami divided into fivt parts tit tbt brin>t wbitb sum batbaxrii It batb tin Jbsri jtamina, vibich art joined at tbt bottom to lltfincar leaf; tbeft are trmesed'. vitb bifid fummits. At tbt bittern if the fn-j.tr is ftittialtd tbtglabuar i men, fupportiag a cylindrical JfyU, troiMtd ty " tiid ilt jligma. After thi fewer is ptsji, the imtn bnmel wt aval tr round terry, having fist cells, wbbk art JilUi Kith bard fitds.

This genus of plants is ranged in the tenth dafs of **Linieut**, entitled **Decandra** Munogynia, from the **Bowers** having ten (lamina and one ftyle.

The Si-tciE! arc,

1. **ARBUTUS** (*U* dlt>) foliis glabris ferratis, baccij polyfpennis, caule ercfto arborto. *Strazobrrry-trtt vjit fiiistb litted latva, herria* having atari feats, and at upright trunk. *Arbutus folio ierrato*. C. B. ?.
- a. **ARHJTUS** (*Andrachtte*) foliis glibi'is integerrimii, baccis polyfpermis caule ercfto arboreo, *Sir/nclwrrf-irt v::t!> fiontb cntrrt Itavti, bitriet full tfetAs, and a trt3 twrrf Jltm*. *ArbutM folio non ferrato*. C. B. P. t, i. *AndVidinc Thecoplralii*. Clut Hift. 4S. c *all jLiJrecbnt*.

3. **Arbutus** (*Aifidsenfts*) catlibus prociirfibentibuj i ovatis liibkmlis floribus fparfis baccis polyfiiirmi.. Lin. Sp. Plant. 395. *Arbutus xilb trailing ji't&s, vs/ liases, fomemat ittdcnlid, fivaicrs growing ktrfefy, and runty fids*. Vltia ida:a *Acadienfis fofius Aincmi*. Tourn. Inft.

4. **ARRUTLS** [*Alpha*] caulibus procumbentihisfoliisrugofis icrratis. Flor. Lap. t6r. *Arbutus viib trailing fialks and roughfawtd Status*. *Vitis Kaa foliis oblangt albicantibus*. C. B. P. 470.

5. **AKBUTUS** caulibus procumbentibus foliis integerrimis. Flor. Lap. J62. *Arbutus v/iib trailing folks mi tture itavts*.

6. **ARBUTUS** (*Uva Urfi*) caulibus difrkfis, foliis eii natbi. *Arhi-tis with dijftfid fitlb and ixjaset leave?*. *Uva urii*. CM. Hilt. i. p. 63. *Btr Btry*.

The firft fon grows naturally in Italy, Spain, and alfo in Ireland, and is now very common in the Englilh gardens. Of this fort there are the following varieties, viz. one with an oblong flower and oval fruivr another with a double flower, and a third with red flowers; but theft bring nlyfeminal varieties, I have not mentioned them as fpecies •, though, for the fake of the curious, J JhaJl **give** & farther account of them.

The fecond fort grows natundly in the Caft, particularly about Magnesia, where it is fo plenty, as co IK the principal fuel ufed by the inhabitants of the country. This grows to a middle fiird tree; the branches are irregular, and are garnifhed with large oval leaves, fomewhat like thole ol" the **Buy-tree**, but not quite fo long-, **theft** sic Imooih **and enure**, having no ferratures on their edges; the flowers are ihaptJ **like** thilili. of the common **Arbutus**, but grow thiny on dm branches. The fruit is ova), and of the liine colour and confidence with the common fort, but the feeds of **thiis** arc Hat, wliercas thofc of the common fort are pointed and angular. Tournefort emimeimcs thire other varieties of this tree, which he obfcrwed in thic Levant, one with fawed leaves, which **h** mnw in many Engiilh gmtem, and paffes for the **Ax** another with a large oblong fruit, and a rt large compreffed fruit: bui it is doubtful if tney arc not accidental varieties, which have been produced from feeds of the firft.

The common Strawberry-tree is too well known to require any ddcipfion of it here, being at prefent in **moftof tKEnHiQi** gujens, and a one of the **greateft** ornaments to them in the months of OAober and November, thiat being the feafon when the trees are in flower, and the fruit of the former year is ripe, for the fruit is a whole year growing to perfection; *fa* thiat the fruit whkh is produced from die flowers oP one year, do not ripen till ilie bloffoms of the fuccedding year arc fully hlown; (*a* thiu **#tei** iherr it plenty at fruit and flowers upon thr trees, they make a goodly appearance, and at a feafon when moftother trees are palt their beamy.

Thofc trees which liavc large oval fruk, make the **greateft** figure, the flowers **m** this being larger, and ohlning. The ion with **double** (lowers is a curiofity, but as the flowers have only two orders of leaves, fo they make no great appearance, nor do the trees praducV thiiit in any plenty, **therefore** the other is more preferable. The fort with red flowers makes a pretty variety, when **intermixed with the otho**; *fat* thieoucdc of them are of a fine red colour at their firft nppcarance, and afterward they change to purple before they fall off. The fruit of this is the Jame with the common fort. All thde **varieties** **axe** prderved, by inarching or grafting then) upon die common **Arburus**. fortheleeds of either do not **produce** the **fiime** kind-, though from the feeds nfiln-oval fruit, thicrr is generally many more *oi* the lame produced, than from the feeds of the common fon.

The bed method to propagate the **Arbutus** is from ieedsi therefore when the wuit is **perfected**, **jpe**, it iliould be gathered and mint with dry **faf4**..ro preserve them till the time for fowuig **them**, the **bed** method of raiing the plants, Uuo fow **d** feeds in

pots,

pots, which should be plunged into in old bed of aimers bark, which has bit its hr:il. i overring the bed with pluffs, &c. to keep out froft; this should be done in December, if the fit-ii are weak, and if the bring advances, the pots are rcr'rehrtr will inter, the plant will cjttr.e up the beginning of April, when the ihoul be foqucnily but (pinugly watered, and confbntly kept clean from weeds.

As tilt- fummtr idvara, &c. ; bnr* ire (hid in II:L- heat of the day, it will ga-atly primate llicir growth; but in wirm weather they mud be open all night to receive thir dew, fo Ihonld only fac covered in ihi- middle oi the i'y.i with this n management, the plnts will rife ui the ticjeUt of five or fix inches the lirl fummcr. The beginning of Odaber, these plants m?y IK fhaken out of thit* poti, and their roots carefully separa- < J, planting them fingly in fin all pots filk-IJ with lip lit earth; then plunge the pots into an old bed of tanners bark, under a common frame, obferving to fnside than from the lun in the middk of i:c day, and to give ihtrm water as thtj¹ may require: in this bed [lit: pots fhoiM retrain during the winter, ob&mng to expofe the pbuu to [l. open air, at nil times when the (feather is favourable i W in Frofty weather they mull br coveted, otherwife they will be in d.niger if the fcafan prove- ; cover. The fpring following the pluti may be itmo ad to i very gentle hur-bni, which will requirt no other covering but matt. This will enable them to mike Arong (houts early in the fummcr, whereby thiy will be in a better condition to bear the cold of the fucceeding winter: in chit bed the plants may continue moil part of the fummcr, for ir the pots a- taken out an it let upon the ground, the finaJJnds of their fize will occafion the earth in them to dry fo fall, thai watering will I ai i dly preferv- the plnts alive; but if thw^{ty} are kept growing all die Jumiut, they will be more than a loot high by the nrxt autumn: I jut it will be adi'ifuk to lereen them from ;le froft during their continuance in pots, bj" plungrng them into the ground in s wdrn pi-ice, ind covering them with mats in be : weather.

When die plants are grown to be two or three feet hi"th, you may fhake them our of the pots ami plant them in the open ermdw in the places where they are to remain, in R thifhould be done in April, that they may have iken good root bctbre the winter, »!)*(?) would IM apt to damage them if newly planted, and as all the earth about their roots niLy bt; thu) preferved, there will be no L of the feeding at this It.i;

These plants are tolerably ha• dy, witl <re fcidam hurt, rcept ip exocme hinl win ten, which many times killthe young mi tender branches, boirarclydctroy die roots, if• afore, hom over deA they mii' appear after a haid winter, yet I wmld advif- the fctring them remain till 'lic (ucceeding fummcr has diffidently demonftrat ed what are livbtg and wlmtare de-; for the winters sinno (/^S-o, an d 1739-40, 1741, us great rva'un IU believe niot of LIC n ocs of this kind were destroye;:; and many peoj he were fo hally, A; : : dig up or eUTdOWb, many of ihtir trees; whereas all these people who had paine• • to let them remain, fuwid il:jt Icarte om- in fUt hundred failerl to come oi' again the next liimmer, and many of theiil made ban'dfcrac plants that reafott This tree delights in a moist soil, for when they art planted in dry ground, they fel! >m predua much fruit - : the flowers of this tree being produceil in autumn, if the winter proves severe, are generally destroyed, which has occasioned their producing very little fruit in England for sever• l years; therefore, in order to obtain faiii • trees, thoulk W. plant in a warm Bra; non; and where tht ground is not naturally moist, there fhould be a good quantity of loam anJ rotten man's dung laid iboul dicir • ocs; and if the spring should prove dry, they must be plaitifulty watered, in order to have plenty of fruit.

The wry best season for transplanting of the Arbutus is in Scprn»-jet, at which time the woUbins art be-

growing to appear, and it thai nfon, if it should prove very dry and they are kept moist, they will take root very soon; but toward the beginning of November, their roots should be well covered with sand, to keep out the frost.

The third sort grows naturally in Acaha, and other parts of America, upon swampy land, which is frequently overflowed with water; this is a low bushy fferub, with tender trailing branches, which are garnished with oval leaves, a little fringed on their edges, the flowers come out from the joints of the leaves, growing in thin loose bunches. The fruit of this sort is never produced in England, and it is called Jiliiailty II: e I: ocs are kept alive here.

The fourth sort grows naturally on the Alps, and the Helvetic mountains. This never rises high, but sends out from the root many slender branches, which lie close to the ground, garnished with oblong rough it&vi, of a pale green colour, which are produced from the wings of the leaves, upon long slender foot-stalks, and are succeeded by berries about the size of the common black Cherry, which are first green, iftrn-ard mil, and when ripe they are black.

These are of a pleasant taste, so are frequently eaten by the inhabitants of these countries where they grow naturally. This is also a very difficult plant to keep alive in gardens, for it is an inhabitant of bogs, growing among moss, where the ground is never dry.

The fifth sort grows naturally upon the mountains in Spain, and in most of the northern parts of Europe. The branches of this trail an die around, which are closely garnished with li IIII! u thick leaves of a oval form, placed nllt-mately; the flowers are produced in iiiiiiilLiinctiri toward the extremity of the branches, which are shaped like thofeof the tominon fort, but alt tmalltr; jimi are futtediled by berries, of the same size with thofe of die former ibrtj wliidb ire red when ripe.

There are ftwof thefe plami in the Engliflig:ir rams, for aa they are inhabiajiw of very cold LOW rams, wherr (hqf are ooi-en-ta with fnow all die winta, and growing itjmn bogs among inols, fo when they nrerou^ht into a garden, they fcdcen continue long, nor Jo the; thirc with the utmost care; for in places where artificial bogs have been contrived, to receive these plian:, th' have been preserved two or three years, and then have perihid; so that unless the place • vhcirtJtcy nrripLintLd is naturally boggy, there is no hope of their succeeding long.

The sixth sort grows naturally upon Mount Cervin in Italy, and upon some mountains in Spain, it is hath woody liii;:; win: rite two or three feet high, dividing into many divided branches, closely garnished with roundish fleshy leaves, which are indented at the nip-, tin' (lower) arc produced in I racorus toward the • nl i>f the braneh's, which are shaped like those of the Stru• lierrj'-tree, of an li rubeaceous colour, (h-ipped with purple. The plants of this kind art very rare in Enpland, nor is this Ijwe tmsh known among botanists, most of whom have supposed the first to be the sort mentioned by Clufius, in which they are really mistaUea,

The seventh sort is very rare in England, and is this may be procured in the pagaietfciie liime manner upon the direct road to the hamori Album-, Inn as there are several plants in thii country whidb produce it; priV: it, the seeds must be procured from the Levant, whert they may be had in plenty. As the leaves of this tree are larger than those of the common Arbutus, the tree makes a late appearance, therefore observe • >ur tait 10 culti ate them, especially as they will bear i' < open air when the plants are become woody, for while they are young, they are impatient of much frost, therefore should be preserved in pots three or four years, till they have obtained strength, and may then be planted in a warm situation and on a dry soil, for this sort will not thrive in wet ground.

ARC IIUM. Lin. Gcrn Sjo. Lappa. Toun: last R. H. Burdock.

The CHAKACTHIR are, Tbt mpalmat <>fti >cfinairifscolf,ca (bft:ak cxJhig in a lagn thern jühüb : r... topsail. Tbt jiovitr is ... f?J of Hiny fiords. Tvtuci are xiahut, m ... dud of one ttaj-'. The table is u% auljUn&tr, a ... uirmi fipmi's m rbetett theft bint emb Jhcfitr: Jladc ...

The genus is situated at the bottom of the table, bearing a heavy top, supporting a long slender style, crowned by a light ... LiniKELis's ferentecnnii i!;ih, entitled Syngenefia l'o-lycania ... there bdng on equal number male and hcnrüitsiürüüEc [lov.cri itiduded in out com- mun ciripa k'jnenc.

- 1. ARCTON (Lappa) foliis cordatis inermibus petiolari capitulo mucronato ... 2. ARCTON (Lappa) foliis cordatis inermibus, capi- tulli mucronato ... 3. ARCTON (Lappa) foliis cordatis inermibus, capi- tulli mucronato reticulatis. Surface with four-fingered ...

The two first sorts are common weeds, growing on the sides of roads and foot-paths in most parts of England, and are not admitted into gardens. The first is indeed for medicinal use by the college of physicians, therefore I have inserted it here: the second is by many supposed to be only a variety of the first, but I have for several years seen the seeds of both sorts in the Chelsea garden, where they have constantly retained their difference, so may be allowed to be distinct species. The first is cited by Caspar Bauhin ...

The third sort is not a native of England, but grows naturally on the Apennine mountains. The leaves of this are like those of the common sort, but are white on their under side; the heads are more compact, and the flowers are of a bright red colour: but die grejttel di3< ... id in Haver.

This is also supposed to be only a variety of the common sort, but I have cultivated it above forty years, during which time it has never varied, so that it is certainly a distinct species. This is by Caspar Bauhin titled, Lappa major montana capitulo pinnatis. Pin. 113. Greater Mountain Bardach and usually heads. As these plants are seldom admitted into gardens, it is needless to say any thing of their culture; but where they are troublesome weeds, it may not be amiss to mention, that their roots last but two years, so may be destroyed with less trouble than such as have perennial roots; for if they are cut up before they root, in i<1 of these years they may be entirely rooted out; for the plants which come up from seed, do not flower all the second year, and when the seeds are perfected their roots decay.

ARCTOTIS. This hath been usually known under the title of Anemoneperennis, from the circumstance the seeds of these plants have to that of the Anemone.

The CHAKACTHIR are, The various mountain is roundish and leafy, thick at the lower part are soft and ... The flower is composed of many female parts which are ranged in the border; they have ...

Tat mMUerdiJi of tbcjlirvfr is composed of Term p- ratic fiarii, w/kb sri fñüict-jl. ... lip imfve parts, wtt-i art rtfextd; tbcfi bayiji: ... mnta, cretefxd byfiwrt fmmüts; in tbt aster ii ... a fms.- *porting a Qlin&icai JtyU viüb a Jingle ... Thifc fit:

This genus of : ius is ranged in trie fourth I ... of Linnæus's seventeenth class, entitled Syngenesia Polypetala Necessaria, the flowers of this ... ui-ho I hermaphxlic Bi ... s in the uli/k art : "trills, and in others they are firrile.

The ^•Etits are, I. ARCTOTIS (Trifoj) rtoftnlis rac'iaitibus vicnis tripar- tita. Lin. Sp. i^o6. /Artlois'xilbsf ... tairpejtd sf sfrrti aii in<i tbra figments. Aticmorij- fpni i.iriüiti uicanis. Brtyu.

i. ARI. ttfife&a) fiofcuLU radiüttbiis fertili- bus, foliis lanceolatis mucronatis. Lat. Sij. 1306. ... fertilt, a»J/star- flojed, ... - raifis Afr,

j. Aiti (Apera) Botralis r.tilantibii; fero'Hbus, foliis [..]i.UO-iinu.lt? VIUGi i ... iron fertile and woody, with four-angled, winged, ... «. A- tofpennos Afr, folio Jacobaræ tenuiter in- iniatio. Bochr. 1 nil. Alt. t. p. LOO.

4. ARCTOTIS (Columba) foliis trilobis raiijñitibus Hirilibu. tbiis lyralia njgro iletuicubtin. Lin. Sp. i 1306. ... m.iritjrna; JTolüs thre iuh'ureu. Com. Rar. 36.

5. ARCTOTIS (Panicum) foliis ... -Kiüandbus frrrHi- bus, foliis lanceolatis ... -plexkauHbos. Lin. S] 1306. ... titki. Ant' mon> ; Afr, folio plantagineo, florum radiis interis ... Bochr. Ind. 1. p. 100.

6. ARCTOTIS (Fusca) pedunculis radicalibus, foliis ram Lin. Sp. . 1306. ... ft nrs est': ... ft nrs est':

7. ARCTOTIS foliis pinnatis: iniAtis crispis ci ...

These plants are natives of the Cape of Good Hope, from whence tltej •

The first sort here mentioned is an annual pliuuT which may be sown upon a warm border of light earth in the open air, in the middle of April, where they are designed to remain; these flower in August, and if the seeds prove farious bl<2, they wilJ perfect seeds very well, ad (he JILJUCS will grow much stronger than those raised upon a hot-bed; but, as in cold seasons will be a better method to raise some upon the hot-bed, which never fails to perfect seeds, provided they are not treated too tenderly.

The second, third, fourth, and seventh sorts, grow to the height of five or six ft. 2, finding rth mjny betaceous, therefore will require to be frequently pruned, to keep them so tall, but order, especially the fifth, which sends forth many slender ... i tie pou. but more fo when they are duly watered.

Thebeare feldom ... in die green-lioiife ; and whi ... plants are let abrcml in fummer, their I ;

The (brubby ... cutting, in ulxd ot' jig hi frdbt ... they will Uiooi very vigoroufly; but when their roots are corn >T, bj *

All thefe plana fiiov:ld W frequently renew ... then.Firt* if young plants are twt annually ... the Tjn-cis may Coon be loft.

R C U A T I O N [fnmMw, T^/.to <end or bow like an arch ; | the methi ... to procure firing mother plants, which are usually called ... The ; to be dom

It is n matttrwj therwili-deform tier ii cokr. This trench, will throw out a green ... the Michaelmas following:

The border niuul be well crtn i. dads, ftoi ... trunks or IIIKIU Lxng planted in ... a, which may be ... in order to this, the ... ol liimil b ... and pia into die ground abom three ... dcej; and to ktqi them in this fin. rtiould ... tli-ue into the gJOUld 0V< ... i nmerC4> turaii ... i krep

When and: peg: fun* ; ... I. anil ... [lit iuch <J: ... *hich is

About the end of September following they may be opened and examined, to fee if they have taken root or not, which it is very probable they will have done, but if not, they muft be let alone, to be till the next autumn, wjcn di'y .. to be taken up, and planted in the nurfery.

This may be done to the Dutch, Wick, and Eng- iiii Elms-, the Abbe, Lime, Alder, Plane, and many forts of evergreen trees and flowering shrubs.

A R E A is the internal capacity or content of any given boundary or liij lii ., of what figure or fhape soever it be.

A K C i E M O K E ffo called from 'Afym, a fiftick in the ... caQ ... mu chrumbia a Fig, and thus in allegory J Pocky Poppo.

The CHARACTERS are, The flower hath a three lobed calycement, which falls off; it hath five trumpet petals, which spread open, and are larger than the calycement; in the center is fixated an oval five-angled germ, covered by a large shell of figus, which is perforated, divided into five parts, attended by a great number of fermen, covered by oblique oval fermen; the germes afterward become an oval leaf, having five veins, and as many ribs, which are filled with foft rough feds.

This genus of plants is ranged in Linnæus's thirteenth class, entitled Polyandria Monogyna. The flowers having many flamina and one germen.

We have but one Species of this genus, viz. AGRICOLA (Adonias) capitata quinque lobata, foliis bipinnis. Lin. Sp. 707. Agricola, which is called both for water, and the leaves are prickly, or Pocky Figs. Papanus spinosum. C. B. P. 171.

This is an annual plant, which is very common in moft parts of the Weft-Indies, and is, by the Spaniards, called Fico del Inferno, or the Devil's Fig; there is no great beauty or use in this plant than I know of, but whoever hath a mind to cultivate it, fhould low it on a bed of light earth, in the Spring, when it is ten inches high, and if it comes up too thick, the plants muft be thinned to four inches diftance, where, when once it has fixed its feed, there will not want a fupply of plants for feveral years after. I have been informed that gumbuga is made from the juice of this plant, but how true I cannot take upon me to lie ten nine.

ARGILL. [Argilla, Lat. a fort of white earth like chalk, but moft brittle.] Pocky Clay.

AR [A THEOPHRAS II. SecC DAY EGES.

ARISAKUM. See ARSH.

ARISTA, of corn, is that inarp-pointed needle that ftands out from the husk or hofe of the grain, called the beard or awn of corn.

ARISTO1, OCHIA, [Aristocchia from Aristoc, beet, and ochia, Child Birth, because fuppofed to be of fertility.] Birthwort.

The CHARACTERS are, The flower hath an empoment, it is of one leaf, which is covered; the leaf is fixated and glandular, afterward is attended into a cylindrical tube, which spreads at the kirm, where the down part is provided as like a tongue. It hath no flamina, but there are fix fermen, which are lii u; the part of the figus; the whole circular germus fus ut... the fermen, supporting a conical glandular figus, divided into five parts; the germes afterward become a large oval leaf, having five veins, which veins in fix th, which are filled with feds, for the next year's crop.

This genus of plants is ranged in the fifth section of Linnæus's twentieth class, entitled Gynœcia Hexandria, the flowers being male and female in the same species, having fix flamina or petals, and fix flamina, which rest on the receptacle.

The Species are, i. Amaranthus (Amaranth) folio cordato, foliis bipinnatis, caule inferno, floribus foliatis. Lin. Sp. Plant. 904. Birthwort with three heart-shaped or spreading leaves, a round head, and flowers growing high.

- fingly*. *Aristolochia rotunda* flore ex purpurâ nigro. C. B. P. 307.
2. ARISTOLOCHIA (*Longa*) foliis cordatis petiolatis integerrimis obtusifuculis, caule infirmo floribus folitariis. Lin. Sp. Plant. 962. *Birbwortwih entire, heart-Jhaped, blunt leaves* having foot-ftalks, a weak ftalk, and flowers growing fingly*. *Aristolochia longa vera*, C. B. P. 307.
 3. ARISTOLOCHIA (*Clematitis*) foliis cordatis caule erecto floribus axillaribus confertis. Hort. Upfal. 279. *Birbwort with heart-Jhaped leaves, an upright ftalk, and flowers growing in clusters from the fide*. *Aristolochia clematitis re&a*. C. B. P. 307.
 4. ARISTOLOCHIA (*Piftolochia*) foliis cordatis, crenulatis petiolatis, floribus folitariis. Lin. Sp. Plant. 962. *Birbwort with beart-Jhaped indented leaves, haying foot-ftalks, and flowers growing fingly*. *Aristolochia piftolochia difta*. C. B. P. 307.
 5. ARISTOLOCHIA (*Sempervirens*) foliis cordato-oblongis undatis, caule infirmo, floribus folitariis. Lin. Sp. Plant. 961. *Birbwort with oblong, heart-Jhaped, waved leaves, aweakftalk, and flowers growing fingly*. *Arif-tolochia piftolochia difta Cretica foliis fmilacis fem-pervirens*. H. L.
 6. ARISTOLOCHIA (*Serpentaria*) foliis cordato-oblongis planis, caulibus infirmis flexuofis, teretibus. floribus iblitariis. Lin. Sp. Plant. -961. *Birbwort with plain, oblong, heart-jhaped, flexible, weak ftalks, and flowers growing fingly*. *Aristolochia piftolochia five ferpentaria Virginiana*. Pluk. Aim. 50. *Virginia Snakeroot*.
 7. ARISTOLOCHIA (*Arborefcens*) foliis cordato-lanceolatis caule eredto fruticofo. Lin. Sp. Plant. 960. *Birbwort wih fpear-Jhaped leaves in farm of a heart, and an upright Jhrubby ftalk*. *Aristolochia polyrrhizos auriculatis foliis Virginiana*. Phik. Aim. 50.
 8. ARISf OLOCHIA (*Indica*) foliis cordato-oblongis caule voliibili pedunculis multifloris. Flor. Zeyl. 323. *Birbwort with oblong heart-Jhaped leaves, a twining ftalk, and many flowers upon each foot-ftalk*. *Arifto-lochia fcandens odoratiffima floris labello purpureo femine cordato*. Sloan. Cat. Jam. 60. *Contrayerva of Jamaica*.
 9. ARISTOLOCHIA (*Hirta*) foliis cordatis obtusifuculis hirtis floribus folitariis pendulis recurvatis fuftruncatis. Lin. Sp. 1365. *Hairy Birbwort with ohtuft heart-Jbaped leaves, and hanging recurved flowers growing fingly, formed like a lip*. *Aristolochia longa fubhirfuta folio oblongo flore maximo*. Tourn. Cor. 8.
 10. ARISTOLOCHIA (*Scandens*) foliis cordatis petiolis longiflimis, caule fcandente, floribus terminalibus pedunculis longiflimis. *Birbwort with a climbing ftalk, beart-Jhaped leaves with very long foot-ftalks, and flowers growing at the end of the branches upon very long foot-ftalks*.
 11. ARISTOLOCHIA (*Conferta*) foliis cordatis petiolatis, caule fcandente, floribus axillaribus confertis. *Birbwort with heart-Jhaped leaves, a climbing ftalk, and flowers growing in clusters from the wings of the ftalk*.
 12. ARISTOLOCHIA (*Repens*) foliis lanceolatis feffilibus fubhirfutis, caulp eredlo floribus folitariis longiflimis. *Birbwort with fpear-Jhaped hairy leaves growing clofe to the tranches, an upright ftalk, and very long flowers growing fingly*. *Aristolochia erecta flore atro purpureo foliis anguftis radice repente*. Houft. MSS.
 13. ARISTOLOCHIA (*Maxima*) foliis oblongo-ovatis obtuffis integerrimis, caule fcandente floribus terminalibus, fru&ibus hexangularibus maximis. *Birbwort with a climbing ftalk, oblong, oval, entire, blunt leaves, flowers growing at the ends of the branches, and very hrg fruit with fix angles*.

The firft and fecond forts grow naturally in the fourth of France, in Spain, and Italy, from whence their roots are brought for medicinal ufe. The roots of the firft fort are roundifh, and grow to the fize of fmall Turneps, in fhape and colour like the roots of the common Cyclamen *, the roots of which are frequently fold in the markets for thofe of the round Birbwort, which at firft may have been occafioned by the fuppofed virtues of the roots of the Cyclamen. This lends out three or four weak trailing branches,

which lie on the ground where they are not fupported, and extend to the length of two feet; the leaves are heart-fhaped, and rounded at their extremity; thefe are placed alternately on the ftalks, and clofe to the foot-ftalks of the leaves, the flowers come out fingly, at every leaf, toward the upper part of the ftalk. They are of a purpliih black colour, and fhaped like thofe of the other forts, and are frequently fucceeded by feed-veffels, having fix cells, which are full of flat feeds. The flowers appear in June and July, and the feeds ripen in autumn.

The fecond fort hath long tap roots, fhaped like thofe of Carrots; thefe fend out weak trailing branches, which extend little more than a foot; the leaves of f this fort are paler, and have longer foot-ftalks than the firft, placed alternately, and the flowers come out from the wings of the leaves like the other, which are not fo long, and are of a pale purple colour: they are fometimes fucceeded by oblong feed-veffels, having fix cells filled with compreffed feeds. The ftalks of both thefe forts decay in the autumn, and new ones are produced in the fpring.

They are both propagated by feeds, which fhould be fown in the autumn, in pots filled with light earth, and placed under a frame, to be fcreened from the froft; but the glaffes fhould be taken off at all times when the weather is mild. If thefe pots are put into a gentle hot-bed in March, it will bring up the plants much fooner than they otherwife would rife. As the feafon advances, the plants fhould be inured by degrees to bear the open air: when the pots are taken out of the bed, they muft be placed where they may enjoy the morning fun, but fcreened from it in the heat of the day. Gentle reffhings of water muft be in dry weather given to the plants during the fummer, but in the autumn, when their ftalks begin to decay, they muft have little wet. In the winter ^the pots muft be fheltered as before; and in March, before the roots begin to fhoot, they fhould be twnfplanted into feperate fmall pots filled with light earth, and fet under the frame, where they fhould rental till fpring; then they may be removed into the open air, and treated in the fame manner as in the former fummer, and fheltered alfo the following winter. The next fpring they may be turned out of the pots, and planted in a warm border, where, during the fummer, they will require no other care but to keep them clean from weeds; and in the autumn when their ftalks are decayed, if the border is covered with old tanners bark to keep out the froft, the roots will be fecured; but where this care is not taken, the roots are frequently killed by froft. With this management the roots will thrive much better than thofe which are kept in pots, and continue longer; and when they are three years old, they will flower and produce plenty of feeds, whereas thofe in pots feldom perfect their feeds in England.

When the feeds of thefe plants are fown in the fpring, the plants will not appear till the fpring following; fo that a whole feafon is loft, and many times they fail, therefore it fhould always be fown in the autumn.

The third fort grows naturally in France, Spain, Italy, and Hungary, but is preferved in fome of the Englifh gardens, becaufe it is fometimes ufed in medicine. This is a terrible plant for creeping at the root; fo that if once it has taken in a garden, it will be difficult to extirpate again, and will over-run whatever plants grow near it; therefore it fhould be planted in fome abjedt part of the garden by itfelf, for it will thrive in almoft any foil or fituation.

The fourth fort grows wild in Spain, Italy, and the fourth of France; but in England it is preferved, foi variety, in botanic gardens. The plants of this fart muft be planted in pots filled with iight rich earth, and fheltered from fevere cold in winter, otherwife they will not live; but they fhould have as much free air as poffible in mild weather. This produces flowers every year, but never perfects its feffils in this country.

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The fifth fort grows naturally in Crete. The root of this is perennial, and sends out many trailing branches, which extend one foot and a half in length, garnished with oblong heart-shaped leaves, which are waved on their edges, and are evergreen. The flowers come out singly from the wings of the leaves, which are of a dark purple colour, in shape like the others, but the plants never produce seeds in England, so is propagated by parting of the roots: this is too tender to thrive in the open air in winter; the plants are preferred in pots, and placed under a common frame in winter, where they should have as much free air as possible in mild weather, but screened from hard frosts; in mild winters I have had this plant live abroad in a warm border, but in hard winters it will be destroyed; therefore one or two plants should be sheltered to preserve the species.

The sixth fort is the Snakeroot, which is greatly used in medicine: these roots are brought from Virginia and Carolina, where there are two species of this plant, but this fort is the best for use. There are some of these preferred in the gardens of those who are curious in collecting rare plants, but as they are sometimes killed by frost in winter, so they are not very common in the English gardens. This is propagated by seeds, which should be sown in the autumn, in small pots filled with light sandy earth, and placed under a common frame in winter, and afterwards treated in the same manner as hath been directed for the two first forts, as should the plants also, with which management they will produce their flowers, and perfect their seeds every year.

The seventh fort grows naturally in North America, and is by some called Snakeroot, but is not near so strong as the former; the branches of this grow erect, and are perennial, whereas those of the other fort decay to the root every winter; this rises about two feet high, the branches are not very woody, but are strong enough to support themselves; the leaves are oblong and heart-shaped; the flowers come out singly at the wings of the leaves. This will live abroad in warm borders, with a little protection in hard frosts. It is generally kept in pots, and sheltered in winter; but those which are planted in the full ground will thrive much better, provided they are screened from hard frosts.

The eighth fort grows naturally in Jamaica, where it is called Contrayerva, the roots are there used as such: this hath long trailing branches, which climb upon the neighbouring plants, and rise to a considerable height; the leaves are placed alternately, and are of the long heart-shaped kind; the flowers are produced in small clusters toward the upper part of the stalks, which are of a dark purple colour; the seed-vessels are oblong and smooth. This is tender, and in winter should have very little wet, therefore must be constantly kept in the stove, otherwise it will not live in England.

The ninth fort was discovered by Dr. Tournefort in the Levant. This hath some resemblance to the second fort, but the leaves are hairy, and not so deeply eared at the bottom; the flowers are also much larger. This may be propagated by seeds, in the same manner as hath been directed for the first and second forts, and the plants treated so, will thrive very well in England.

The tenth fort sends out climbing stalks, which support themselves by fastening to the neighbouring trees, and thereby rise to a very great height, the leaves are very broad and heart-shaped, having several longitudinal veins; the flowers grow in loose bunches at the extremity of the branches, each having a long foot-stalk: this is tender, so must be kept in a stove, and treated as other exotic plants. It grows naturally about Tolu in New Spain, where it was discovered by the late Mr. Robert Millar, who sent the seeds to England.

The eleventh fort was discovered by the same gentleman at Campeachy in New Spain, from whence he sent the seeds; this fort seldom climbs above three

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or four feet high; the leaves are short and heart-shaped, in some measure like those of the first; the flowers come out in small clusters from the wings of the leaves, and are of a dark purple colour.

The twelfth fort was discovered at La Vera Cruz in New Spain, by the late Dr. Houtton, who sent the seeds to Europe: this rises with an upright stalk, to the height of three feet; the leaves are long, narrow, hairy, and grow close to the branches, having scarce any foot-stalk; the flowers come out singly from the wings of the leaves, which are near four inches long, of a dark purple colour, and grow erect; these are succeeded by slender vessels, about one inch long, which open into six cells, filled with flat heart-shaped seeds. This fort requires a warm stove to preserve it in this country.

The thirteenth fort was discovered by Mr. Robert Millar, near Carthagena in New Spain, who sent it to England, this hath strong climbing stalks, by which it mounts up to the top of the tallest trees; the leaves of this are four inches long and two broad, of an oval shape, rounded at their ends, and are nearly as thick as those of the common Laurel; the flowers come out in loose clusters at the ends of the shoots, each standing on a very long foot-stalk; the seed-vessels are four inches long, and as much in circumference, having six longitudinal ribs, which make so many angles, being very prominent; they open into six cells, which are filled with heart-shaped leaves.

All these forts, which are natives of the warm parts of America, are too tender to thrive in the open air in this country, therefore require a stove to preserve them. They are propagated by seeds, which must be procured from the countries where they grow naturally, for they do not produce any here. As the seeds are a considerable time in their passage, they should be brought over in their pods; for many of the forts have very thin light seeds, which are soon dried in a hot country, when they are out of their covers, which will prevent their growing. So soon as the seeds arrive, they should be sown in small pots filled with light earth; and if this happens in the autumn, or winter, the pots should be plunged into the tan in the bark-stove, between some of the pots with large plants, which will screen them from the sun; for as these plants delight in shade, so, by thus placing of the pots, the earth will not dry very fast, which will be of great advantage to the seeds, which should not be too often watered. Here the pots may remain till March, at which time they should be removed, and plunged into a hot-bed, under frames, where, if the seeds are good, the plants will appear in May; but if the seeds arrive in spring or summer, they must be immediately sown in small pots, and plunged into a moderate hot-bed, observing to shade them constantly in the heat of the day; but the seeds sown at this season seldom grow the same year, therefore if the plants do not appear, the pots should be plunged in the tan-bed of the stove in autumn, and in the spring following, treated as before directed, which will bring up the plants. When these are strong enough to transplant, they should be each put into a separate small pot, and plunged into the tan-bed in the stove, and treated as other tender plants from the same countries.

A R M E N I A C A, the Apricot.

The CHARACTERS are,

The empalement of the flower is bell-shaped, cut into five blunt segments at the top \ the flower is composed of five large roundish petals which spread open, whose base are inserted in the empalement; in the center is placed a round germen, supporting a slender style, crowned by a round stigma \ this is attended by upward of twenty awl-shaped stamina, which are crowned by short double summits. The germen afterward becomes a roundish pulpy fruit, having a longitudinal furrow inclosing a roundish nut, which is a little compressed on the sides.

Dr. Linnaeus has joined the Armeniaca, Cerasus, Laurocerasus, and Padus, to his genus of Prunus, making them only so many species of the same genus, and

ranges it in his twelfth class of plants, entitled Icosandria Monogynia; the flowers of this class have from twenty to thirty stamina fattened to the empalement, and a single style.

The joining of so many plants under the same genus, as Linnaeus has done, renders it much more difficult to ascertain their specific difference, than when they are ranged under different genera; and although most of them do agree in those parts from whence the characters according to his system are taken, yet if their fruits may be allowed as one of the characteristic notes (which surely ought not to be totally omitted) there will be reason for separating some of them, especially when we consider the boundary which nature has set between them, for it is well known that all fruits which are of the same genus, may be grafted or budded upon each other, but those of different genera will not take upon each other, nor will any two kinds of different genera impregnate each other. Now the Cherry and Plum cannot by any art be made to take when grafted or budded upon stocks of the other kind; nor will the Apricot take upon the Cherry, the Laurel, or Padus; but it will grow upon the Plum to which it is nearly allied, therefore these may be joined together according to the strict rules of botany: yet in a work of this kind, designed for the instruction of the practical gardener, were these fruits to be included under the same appellation, it would rather confound than instruct, those who had not applied themselves to the study of botany: therefore I shall continue this genus under its former title, and shall enumerate all the varieties of this fruit which are at present cultivated in the English gardens, ranging them according to the orders of their ripening. For although most, if not all those which are by the gardeners called different sorts, may have been produced by culture, so should be deemed as one species; yet as the differences may be continued for ever, by the method in which they are propagated, so it would be unpardonable in a book of gardening to omit them.

The specific title given by Linnaeus to the Apricot is, *Prunus floribus subsessilibus foliis subcordatis*. Sp. Plant. 474. i. e. *Plum whose flowers want foot-stalks* and bearl-shaped leaves*.

The VARIETIES are,

1. The Mafculine Apricot.
2. The Orange Apricot
3. The Algier Apricot.
4. The Roman Apricot.
5. The Turkey Apricot.
6. The Breda Apricot.
7. The Bruffels Apricot.

The Mafculine is the first ripe of all the Apricots; it is a small roundish fruit, of a red colour towards the sun, as it ripens, the colour fades to a greenish yellow on the other side. It is chiefly preferred for being the first ripe, and there is a quickness in the flavour of the fruit when it is not too ripe, which renders it agreeable; the tree is very apt to be covered with flowers, but as they come out early in the spring, they are frequently destroyed by the cold, unless the trees are covered to protect them.

The Orange is the next ripe Apricot; this fruit is juicy, it changes to a deep yellow colour. The flesh of this is dry and not high flavoured, it is better for tarts than for the table.

The Algier is the next in season; this is of an oval shape, a little compressed on the sides; it turns to a pale yellow, or straw-colour, when ripe; the flesh is high flavoured, and very full of juice.

The Roman is the next ripe Apricot; this is a larger fruit than the former, and not compressed so much on the sides; the colour is deeper, and the flesh is not so moist as the former.

The Turkey Apricot is yet larger than either of the former, and of a globular figure; the fruit turns to a deeper colour than the former; the flesh is firmer, and drier than those of the two former.

The Breda Apricot (as it is called from its being brought from thence into England) was originally brought from Africa: this is a large roundish fruit, changing to a deep yellow when ripe; the flesh is soft, full of juice, and of a deep Orange colour within side; the stone is rounder and larger than any of the other sorts: this is the best Apricot we have, and when ripened on a standard, is preferable to all other kinds.

The Bruffels is the latest ripe of all the Apricots, for when it is planted against a wall, it is generally the beginning of August before it is ripe, unless when it is planted to a full fourth aspect; which is what should not be practised, because the fruit is never well tasted which grows in a warm exposure. This fruit is of a middling size, rather inclining to an oval figure, red on the side next the sun, with many dark spots, and of a greenish yellow on the other side; the flesh is firm, and of a high flavour; the fruit often cracks before it is ripe. This is commonly preferred to the former sort by most people, but when the other is planted as a standard, the fruit is fuller of juice, and of a richer flavour than this.

Most people train these trees up to stems of six or seven feet high, or bud them upon stocks of that height; but this is a practice I would not recommend to the public, because the higher the heads of these trees are, the more they are exposed to the cutting winds in the spring, which too frequently destroy the blossoms; and the fruit is also more liable to be blown down in summer, especially if there should happen to be much wind at the time when the fruit is ripe, which by falling from a great height, will be bruised and spoiled; therefore I prefer half standards, of about two and a half, or three feet in the stem, to those which are much taller; or to plant them as dwarfs against an espalier, where, if they are skillfully managed, they will produce a large quantity of good fruit; and the trees in espalier may be more conveniently covered in the spring, when the season proves bad, whereby there will be a greater certainty of fruit every year.

These fruits are all propagated by budding them; Plum-stocks, and will readily take upon almost any sort of Plum, provided the stock be free and thrifty (except the Bruffels kind, which is usually budded).

3 sort of stock, commonly called the St. JULI which better suits this tree, as being generally planted for standards, than any other sort of Plum will.) The manner of raising the stocks, and budding these trees, shall be treated of under their particular articles, to which I refer the reader, and shall proceed to their planting and management.

These trees are all (except the two last sorts) planted against walls, and should have an east or west aspect; for if they are planted full south, the great heat causes them to be mealy before they are eatable.

The borders near these walls should be six or eight feet wide, at least, and if it were more, the better; but I would never advise the making of them so deep as is the general custom, for if the earth be two feet deep, or two and a half at most, it is enough.

If the ground is a wet cold loam or clay, the borders should be raised as much above the level of the surface as it will admit, laying some stones or rubbish in the bottom, to prevent the roots from running downwards; but if you plant upon a chalk or gravel, it will be better to raise the borders above either to a proper thickness, with good loamy earth, than to sink the borders by removing the chalk or gravel; for although these are removed the whole breadth of the border, which we may allow to be eight feet, and this trench filled with good earth, yet the roots of the trees will in a few years extend this length, and then meeting with the chalk or gravel, they will receive a check whereby the leaves will fall early in the season, and the fruit will be small, dry, and ill-flavoured, and the shoots of the trees will be weak. But where the borders are raised upon either to their full height, the roots will sink down

into

into the gravel or chalk, but rather extend themselves »rar the fufoc, when; they will meet with better foil: and as the trees are of long duration, ami old trees being not only more fruitful than young, but the fruit is alfo better flavoured, therefore the providing for their continuance is abfolutely neceffary.

The foil I would in general ait vile to be tiled for &££, and all other Tons of fruit-trees, is freth untried cart'i, from a pafure ground, taken about ten inches deep, widi the turf, anil laid to cot and mellow at Jeaft twelve months before it is ufrd, mixing a little rotten dung with it; this muft be often turned, to fweten and imbibe the nitrous panicles of the nir.

When the former foil of the border is taken away, tiis frich earth mould' be carried in the place; and if the borders are filled with it two months before the tree* are planted, the ground will be better fettled, and not fo liable to Jink after the trees are planted : b filling of the borders, the ground lould be railed four ur live inches above the level they are defigned, to allow for the fettling.

The borders being thus prepared, make choice of fuch trees as arc but of one year's growth from budding; and if the foil is dry, or of a middling temper, Oftuber is the befl feafon for planting, dpeoally having at that time a greater choke of trees from the nurierics, before they have been picked and drawn over by other people. The manner of preparing thefc tress for planting be in 3 the fame in common with odicr fruit trees, I (hull refer die reader to die article of FEACIIES, where he will find it largely treated of. At the time of planting no jxirt of the head of toe trees lould be cut olt, unlefi there are any frong fortnight (hoots which will not come to the wall, which may be taken quite away.

The trees being thus prepared, you muft mark out the diftances they an- to Hand, which in a good frong foil, or againft 3 low w.iil, flould be twenty feet or more ; but in a moderate one, eighteen feet is a good rcafonable uitancc; then make a hole where each tree is -0 (land, and fhut iii Ken) about four inches from the-wall, inclining the head thereto; and after having c—* die trte in die ground, nail the branches to die o prevent their fhaking, and cover the furtcc e ground round the root with rotten dung, to j out the froit i* in this tate let it remain till the d of February or the beginning of March, when if le weather is good, you muftunnail the branches of your trees, Co as not to dilurb dieir toots ; and, being ponded with a (harp knife, put your foot clofe to the item of the crec t and having placed your left-hand to the bottom of the tret, to prevent its being disturbed, with your right-liand cut orf the head of the tree, if it his but one fteit; or where it may liave two or more fhoots, each of them mull be iliortened, to about ibur or five eyes above the bud, iij that die Hoping lidc may be toward the wall.

In the fpring, if the weather proves dry, it will be neccillary to give the trees a gentle refrefhing with water ; in the duin^ of whi Ji, if tlicy Watered with a rofe to the watering-pot all over their heads, it will greatly liclp them -, anil alfu lay Tome turf, in the manner dirctcd for AppSes, Or fbmc other mulch,

Iround their roots, to prevent their dryip' during the fumrier iV.ion ; and in the fpring, as new branches are produced, obltrvc to nail them to the wall in i hoots • nul jiolition ; and Inch (lixit-, as arc produced fore-right, nouf be entirely displaced. This IE all be repeated as often as ii neccillary, to prevent their hanging from die wall. but by no incuts Hop any of the lboots in furruner.

At Michaelmas, when the trees have done growing, their branches flould be unnailtd, and (Horvn them jr proportion » » their th • ngthi a vigorous branch it-ay bt left eight or nine inches long, but a weak One /iould not be len «bovj; five or fix. J'. • • pole many i erfons will wnder at this direction, cfpecially having i lowed luca a diftmcebetween cbeccret, ai believing, • y this muling-mem, the will will never lie filled •, but my rejlon £K i';is, that I would have no part of

the wall left unfumilhed with bt-nring wood; Which muft frequently be the cafe, it 11 b anics arc left to a greater length at Krlt s for it lcldom hapns, that more buds than two or three upon each b Jhoot -, and thefe arc, for the molt part, fuch at or near the cicreme part of the laft year's wood I ftiur .ill the lower pare of the floocs btoinc naked, no will they rver after produce [hoots; and liis is tifi reafon, we fee £b many trees which have theirbi 1 rimp wood fituated only in the eKuenc part u/ the tree.

When you have Ihortncd the lbou«, be Turc to nail them as horizontally as poffible, for upon this it is that the future good of the tree chiefly depends.

The licond iimmer obltrve, as in the lift, ll fcf pkee all fore-right fhoots as they are produced, nailing in dirothcrclolcto the wall horizontally, lb that the middle of the tree may be keptopen; and never iliorten any of the llioots in fummer, unidi to fumiHi branches to fill vacant places on the wall, and never do tiis later than the ejid of April, for realons lien- aftT given in the article of Peaches. At Michaelmas ftorien thelc ihooB, as was directed for the fir/ yearj the frong ones may be left nine or ten inches, and the weak ones lix or feven at moft.

The following year's inanagement will be nearly the fame with this, but only obferve, diat Apricots produce their blofism buds, not only upon the lift yin's wood, bvit alia upon the curlbns, or lpurs, which arc produced from the two years wood; a great care mould therciore be had in the llunnicr management, not to hurt or difpiaee thefe ; obferve alfu to Ihurten the branches at the winter pruning, lb as to furnilh frch wood in every part of the tree-, and be fure lu cm uut entirely all luxuriant branches, or difplnce them as foon a3 they arc produced; which, if left 10 grow, would txhaul thenourifliment from tile bearing bunches, which in my opinion, cannot be too frong, provided they arc kindly i for the mure vigorous the l roe k, the more likely it is ro re lift the injuries of the weather) though we often fe trees brought to ib wcnlt a condition, tx lo be able onlj faintly to Wow their blofbms, and then moft of the bearing branches have died; which has liven occafion to the owner to imagine it was the cfikct u/ l blight in reality, it was only for want of right manage incut. And, I am fully ptrjmdcd, liaHtie blighti we hear complined of, proceed from nothing elie but this.

These few rules, well executed, together with a little oWervation and care, will be fulhcient, therefore to pretend to prefcribe particular directions for ail the diflerent neccitcntn, or manner of treating rniits, would be inppoJfible; Lut I believe the reader will Bnd what ha* been faid, if duly attended to, willanfwer his de-Cgn; for, without diligent oblcrvatkm, there can be no fuch thing M » Ikilivt nmngt-r, let him have ever lb many or gi»d inUrudioiii lid down to liim.

The Bruffls and Breda Apricots being, for the mnll part, planted tor (bndards, will require veiy little pruning or management; only obfinve to take out all dead wood, or luch branchei at crofs each other l thta muft be done early in autumn, or in the fpring, after the cold weather a pad, ihat the part may not canker where the incilion v; niide.

A R P I E R I U S, Swca-Waiiara. See Dunrra. A K M', A. Lin. Gen. Plant. 7S+. Doronicum. Uauh. Pin. 184. Leopardfbane.

The CtmKJiertHS are,

•Ti'i imam tuipniment is fi.ify, andficrtrr than A rrrr af lit Jleuxr, Si katb 11 taxpuitA Jto&tr, tbt ierJtr tr rays bring nmpfid ef manyfuitual florch, whiib (priaA <.pefit 4Ul into ihrtt porlt el liar md; ibt dijk, ermititUr^ has i... j'luTjh, "jbiib art tuhihxi^ cut into thru tntqsol fomens at tht brim ; tbfjt i>a"jt tab fist Jharl fiiititirM, trevnut aib i;>ie>ig fiamtuts. tftt fca... fircii have cte jive eait-Jitapat jlimuna, tut no Jitm::: i, in the bar ffortl !ht<itrmj) htlMteA Avim, the fawer, j' 'porting a jltxakrfi;cri flylt* i... by a bftidJugma. Tbtgertam *fttrvocri bcicmci tfmgit tlvng feld, trsvfittd tciib kngtfintUr d<am.

This genus of plants is ranged in the feonti ftion of Liti^us's riptctni.li claii, entitled SyngneGa Poly- gimia llijieriuii, the flower being cumimfdl ol her- niaphrodtu; and firmal florets-, andthe chiefrii(linetion (it ilus grius ii in the hermaphrodite and female towers being of die lame ft ape, and tlclcnuk having ftamina.

The SPECIES are,

I. AHMCA (AfaHlena) foliis ovatis inwgris, can [in^1; geminis oppufitis. Lin. !ip. Plant. 8S4. jirmtit wilb 01- tirt wal lewtt, sbsft en the ftialki p-twiii£ cpcfcitc ly fairs. Doronicum plantagink folio altenim. C. B. P. 185.

a. An MICA (Scsrpicids) foliis alternij ferratis. HaB. Helvct. 737. Antice with famiUsau rrvw'wg altr- totty. Uronicu; ; j. c. B. P.

3. Aasra (Crua) foliis ova);bus ferrato deniculatis, fubtus tumctofis. Liti. Sp. Plant. 12+G. yfrijirj ttri* waiitdxed leaves, 'JLboft nrdirfid: ere ttos% Dens konii enula: folio. l'ct, Mill". J93.

The firfc fort grows naturally upon the Alps, and five upon many of the mountains in Germany, and other Cold parts of Europe, and 'a greatly effeemed by the Gemmis for its mi: did nil tjualitls, where it is pre- tribcdby this title or' A m b . It is alfo ;nsed ,among the medicinal plants in many difpenftries, by thic tide given to it by Cafpor ISauhin.

1)10 rood of Liiti plant, when plated in a proper foil ami fituatiion, greaily increcafe_a tar they Tend out (hick ilefhy roots, which l'pread very fir under the furfacei tbfic put out miny oval entire leavi-;-, from h- which the Bower-flcmS arile, whi ch grow bom a foot and a half high, baviii^ two or three pair ofleava growing oijpoliu- upon cacti, ind [lit- tuji is [crininitul by a fi>gl(= now pr, cunipofcti of many flo- rers, like thofe of Daudl on. TWc arc fuccctud by oblong feeds, wliich me c>wncd whi down, whereby they art ditperltti to a confidrabk- diftance when npc. It flowers in April ind May, and the lccdi ripen in September.

This pi.tr: delicious in 4 mold (kidy fituarion, it maj gazed by par

in autumn, soon after they are r
bi; prup^: Ling of the root in autumn, when the ll-jlks l'igin to deety, or by thic lct'Js it luw; ipe, for thole fown in ihe l'pringol'ti;n f.ul; btiul •c [*r-

l'pring, ib that wlicn tine plant is obtained, it will propa- gate iii'di' rift enough witiout other uirc, but to k<cp it ck.in irom weeds. this fort

The fecond fart grows naturally on the mountains of Ikium.i, as .ilin in Sibcrii, t'imu whence I - fupcr- ibe feeds. Th tre much jointed, and divide into many irregular filthy ofTiets, mhith are vanouHy contorted; from wience man. It is lli.tious pcilons have been led 10 imigiite, that the ruuts wuuM expel cbc : urpiuns, and cure

the wounds nude by the by ever e fruit, a very haid/ plant, ;n. .jatcd in die (nxic mani'tr a^

'I lie tiird fort grows tnnirally at the Cape of Gocul M>H>, from whence the feeils have been I nought to Kurope. This will nor, live through the winter in the open air in this country, fo the plams initV be kep: in pan

hot>bal dramt In winn ih>gktriv'frowitlh fprtud bpm,end A all Bine?, when the wnthcr is opugates by roots and feeds ind plenty. This 'll tided by Dr. Bvinnan, Gorbrii f)nni'pland'<riiflotvpul'uitt., r. fl&ktc R'ermak... mt 249. "We have no if the l'apum for tills gemis.

if the l'apum for tills gemis. jbl ., h C iity 6

hlVi jfat Id.'h, whict art ere3, hctiri-fbupet!, and turned inward. That have cscb fins footer fit crwmeieitbrtmAiffimwiiU; rfofr jltxcers which com- te/\$ ikt 1 YdV, bsvz £ Jinalgtwrm ai bvtvi:.. (jppariety)<w Tifcxccl jlvh.; crvomedly a fmg'.ejligY)t. 1. germas afterward httmus s remdijh omiprtffifinat, wittb a Itajy border, 'isbicb Jffits into two, and csittami two lt ag fiedl, with five bcrdtrs.

This genus of plants is range J in the fecond Ir tion of Linnicuj's firth dafs, entitled Pentuidrht Digynia, from their flowers having five (lamina and two ftyles.

We liave but one SPECIES of this plan;., vii.

I. AITEDIA (Sqtainata) feminibus fquinn-Jtis. Hort. Cluif. 89. Aruiis 'dlb fquametu ftidi. Thapfia Orirn- Ullis anethi foli; lemine ekganter crenato. Tovim. Cor. 2:.

This is a native of the caft. Raitfvolf found it growing Upon Mottnt JUBUW*) it is in annual phnc, thole flalfcs ril> about tivo fret high, fending out a few lido branches, garniifcd with narrow comjwmd leaves refcnbliifl fl'jfc of Dill; thr extremity of the ftalk is fcrminatcd by a large umbel of white flowers, compofed of Eve unequal petals, thofc on the outfitt being much larger than the other. The'e arc Cc- ceeded by roinjifh cmnpirfbbd fruit, eich having tvJ feds, whofir border* arc fealy,

TJiis plant decays as foon as the feeds are perfefted, and many rimes bfore they arc ripe in England (tur unl'l the feeds tre lijwn i& auuuin, and the : plants conic up bt-ture winter, they rarely produce gooJ feeds here. The tecb ihould be town on a w^rm border where the plums sn: to n:n:n:i, fur they ivilt not hear tranCplamiii". All the carr th-ry require is to kft'p them clean trom we^j, and thin the plants to fix it eight inches diflaiifc. They flow in June, and their feeds r

AHTEM I SEA (Aquria, Gr. V. 'alkti, according to (bmc, from Arcemiliii, flrifc of Mautblos, king of Cans, who brought thi.t pLint into ufr, und ad orded it aihers; whereas, before, it wss called PirtK^nk, tin- rirgin godded being feigned to have giver that name to it. J Mug*on.

The L CHARACTERS are,

The rowWB empaitxat hfaih andrcuxd, m art till: >U feala. Tbt Jkicer it :• m<tfbteiiH,, melt forei.i. The feeds are ranged with the 'm/d(% u-bi:.. a small round at bottom, fupporting a tltsdw

Jfytt* around by a flid ftima • TbibrrwrphcdtferW tbfiare tbtdots, ultima Jcs rts el tit trim; IT r&t c<rrin- it plated tbr gmrKn, trftrt ibf lihilylf midpgma J: the fm<, efumpmkA ly jfet hairy fiamii:., cnvmai by cJbmHal fummif, vbirb are indented in five ptru. The feinen after- teard heemm a fixgle imtid fid, Jiltix' tips* a isleJ plaatita.

'This genus of pluttis is runcMI in the fecond feftion of Linn^us's ctghrrauh tlah, entitled Sjngeuefia Ho- Iygunia fupcrflua, the flower; of thic bang com- pofed of frmak and hcMtaphi whic here a, w hih ce tjuth fruitful.

The SPBCH are,

I. ARTEMISA (Polaris) foliis pinnatifida planis licicifis; fiibui tomentofis, rectonia limph. bus ftui-ibus ovalis mdiu qvii: . . v<4 TM

Jtmurli, :••••• tobsfe nys art impofed l'f:xt jusrut, Artomilii vulgaris nijjur. C. B.P. n,

z. JVtTumi^ Juttp-ifalia) foiiis lanceolate liibtui to- memofis in • i-quin- que floro. Lin. Sp, l'Int. [1B9. Mugaxir; with Jbapid tistirt L'irjfi, hdenfrjen

fidi an TETmlfy, i ssdibt rays tfrbtfoaxr amptifedyt jh' fonts. Arcemifia foliis prani! kf.teedlato-uncar Bi : inferior:bin fepc tz j p. 103.

3. ART regris; radicalibu 1 Lin. Sp. 11 My. A

A R T

etairi, theft at the root iiiiulyidi and tbret female flefcsles CDatpife tbrays of tieflower. Ablimlim maritimum lavcnduliC folio. C. B. P. 139, Lcveadff-ltavid Sea Wermueod.

- 4. ARTEMISIA (Draeumt/as) foliis lanccolacisghbris in tegerrimis. Hun. CliK +03. Mugavri with fpear L tflirt, JMMtb leaves, Abrolanum lini folio acris S Oilor.no. Toun Inft. [.59. Tarragon.
5. AKTEMISIA (Minima) foliis cuneiform! bus repandis caule proLumbfitic, fioribiii axillaribus fefilith Sp. 1190. MHgKeruDith-isdifjbdpedleMXs, strolling . fiali; and fle&ers growing at the -Mings ofkeftaik.
6. ARTEMISIA (Abrelanttin) foliis ramofiffimis ietisceis, -gule ereflo fuffruticoib. Horr. Cliff, 403. Artemifia oilb scry branching hrifily leaves andafhthby tret} fiik. Abrotanum tnas anguitifoliuhtn m.ijus, C. B. P.
7. ARTEMISIA IHumilis) folijs fetaccis pinnacididis. Caulc dccumbenn: fuffruticofo. Mugtact with brifliiy viing-tmttd leaves, mid a letc Jbrubfyflak. AbroiiMmu hxiiiiiltcorviribismajoribus aureii. Poun Inft. 459.
8. ARTEMISIA (Sotitenicim) foliis cauli.us linearibus pinn: iui-isi:iiiiticiis, rimi« indivifjs, Ipicii fecun I flexis, Zin. Goctt. 307- ArteniF:c uilb linear multi/m haves en tbe flaiks, undivided brambes, and fertile reflexed Jpries, Semen factum. Lob. Icon. 756.
9. ARTEMISIA (Campeftrh) foliis multifidU linearibus, caulibus procumbentibus vii^ads. Hon. Cv(f. 405. Arlemifia taib linear multifid icava, and to ... Abrounum Campeftrc. C. B. V. 1, Saaternwed.
10. ARTEMISIA (Ctiibmifitit) foliis compclitis diviricatis liiKiribus camolis glabris, caule afeondente p&-niculalo. Lin. Sp. 1156. jirtimifiawitb eowpmid, linear, fimtb, fiefby leaves, and a pstikUd afeatJiu* fialk.
11. AUTEMISM (Maritma) foliis mtdeputu tumf>tolis, racotnls cernuii, fiolculis fbeaneu ttaii Sp. 1186. Mugwrcr *siitb wnotfy divided leaves, *edding *ranchiSy and I bra female forth. Ablinditum icrip. 1 um Belgicum. C. b. P. IM. \$?c WORMWOOD.
12. .iIT.«45!A (Rtipejir'S) foliis pinn:uis, ciul; fit .ndentibus hiriitjs, fioribu) globofts cernuU, re'rcpiactilo pappofo. Her. Go . . . yuptomri icib magi . . . afcendingialh, and globular nodding flowers. Ablmduuin Alpinum incanum. C. B. 1. II0.
13. ARTEMISIA (Psntica) foliis multipartim lubnis tomemofis, fioribus fubrotundis nutanribus, reopat Culo tinda, Hort. Ujiful. 25^ . Artenufio with j: vidtd leaves, *wediy on their unltir fide, and nundifh nud-4ing flowers. Ablinihium l'onticun tenuifolium iucuum. C. B. P. 1 jS. Politick JfermwMd.
11. AN.m.MisiA (jbttaLi) foliis tiiplicjto-jiinnnatis ucrin- quc glabris, fioribus fubglubntis nutamibus, recepc riculo glabro conico. Hort Upfai. 257. sfrtemifit v:hhtriple winged havts, whubarefrneath mbetf:dae globular nodding fivwers, having fmemb conical receptacles. Abfinthium tanacetifolio ^doraiiflimum. "Anun. Ruth.
15. ARTEMISIA (Softhiana) foliis cernofis mudois. Hon bus fubglobofla pendulis, recept*culo villofo HoiX-Cliff. 4 4. .i-r-iiu-j-ii -i: !ib csmfssotdimilifridLaves gkbuhir banging flowers, and hairy recepladi. Abiin thiam vulgart. J. B. Cwnmon fFormwd.
16. ARTEMISIA (fnoda-a) foliis compofitij tommEafis, floribus fubglobofis, receptanih villob. Artemifia viitb inoeily cmspotuid leaves, glefaikr flowers, and hairy receptacles. Aofiwhinn iiiiifjidum Ablindio vulgaris fimik-. C. B. P. I . . . Bad.
17. AKTSMUU (rfr&tnfaiu) foliis compofitis multifidis iinc^ribus, fioribus fubglobofis, caule frutdcntc. jin. Sp. 1 IBS . . . f impound linear leavet, 'hbxlar firmer^ and a Jbrubfa fialk. Abfinthium ar- lortlcena. Lob. .y 11-7; 5. . . . Wemrnsd.
18. ARTEMISIA (Africana) foliis linearibus confenis •ninimb di . . . fiiu.uiln ionientofo. Lin. Sp. 1184. M.: . . . in bunches, ami . . . "jmliy jbfu . . . Abfintbium Africanum arbor- dcens, ylio ve/micul«o incano. Tourn. Inft. +53.
19. Ami:MiJ.*(glacialis) foliispalmatismuliinoj kri-

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cas, caulibus asficcantibus, fioribus, fioriuUw g neratis fubs multifid torocj, ifip&g fiskt, and g&mcr* . . . Ab- fynthim Alpiawn cwdjJum humikr. C. B. P

pinnii tranfvclr . . . racemis simpli- . . . L.,n. Sp. . . . with double-winged . . . their under file, . . . Single racemis of

JZts The &t fct grows naturally on banks, and by the rare con der roots creep far under surface of the ground, fo that unless they are stopped, they will soon spread over a large space of ground; but as this plant is here mentioned it. This time the herb is . . . ta (Wrefclioi for ufc

w Moxa, fa fitnus in the tafbrn count™. for «nng die gout b7 burning of the parr.fiefi, . . . the •aigo, or down, which is on the Wider part of liickMves, ufafonofMugwort, whid. is JuHuofid to be different from our common fort, but the dried fampi, . . . which I . . . w . . . U j . . . ht [Q H . . . bnd ^ tlwt, appearrt difSr in nothing but the (& of the ghnt, d.at bfiing niucJ. lefi, and I ftofc h fofi

r° the common fort, or of any other plant, will anfw the purpose full as well. The second . . . natural y i, Siberia; this rifrs . . . single . . . about two feet high. *Md> are gamified with plain, narrow, . . . CUt into acute segments

w&ofBwfihomPlanounj th?floWn come out from the wngs of the leaves in faall loofc li . . . and near the top tcy ar, oft^ fiakL. Aft M f Xtu: th r . . . of . . . This fort is as hardy as . . . common, and multiplies as fast, fo is only preserved in botanic gardens for the sake of variety. The third j, and France, but 13 hardy enough to live m

di7 (oil: it grow too feet high, hiving many ligneous branches, wMdfc Kmfwtd by ^kes ofS.y.m, TM>d> have lictle beaur-, therrfo^ ^ phms ate pr^ ferved m gardens for die fke of variety The fourth f,rt is the common Tajraimn, which is frequently ufcd b fklkls, efpedall; by the Frenth tbu n a rery haul/ plant, which propawna Bmrv by its creeprog roots, or may be multiplied fait by planting the young Jhoon the beginning of MB d the ffw rwipet u is praftiM jitr Mint, and ifd, . . . rftthwwa-indrywSr.wSfo^ fpnail ami meet

Tbe fiih fort grows naturally in Chma, but is hardy enough to thrive l, the open air here. It b an anni. J phm, which fcUotg com-, up the rrtf » j,- ne fcds arciown in the incine . therefore it I u

hand. . . . foft fown by I he fixth fort ,s the common Sooihemwood, vM h i> kept 11. gardwi, for Ae asrcwble ilont of it, *,J, it,salow,nder, . . . shrub, tall, often rising more than three or lour feet . . . out ktcal jhrubby branches growing ereft, aamift . . . | . . . i^ . . . fiavmg an agrteaRk fcent when bniifed: lve 1; ,

roduceain . . . (h branches bui unlesi the autumn provo warm and d7; V . . . open In jMiL, . . . Th«i|ipropaptcd hyiSp.andaii . . . nted in «Jn» . . . r, about tire beginning of A)ri| . . . ring ro wster them <U: . . . g in 15 border they may remain till the folcnrlw Mitumn, when luy Qroud I . . . i K (t fth mto pots or ihoft pam of the gardWwhcn d,cy are dcfignitii to rcniua.

feremh fort is a v^ry low under tlm.h. the br^cteb™,! KM th, ground, b m v a rftt mw

A R T

These two feet high; untill when they flowers for the spikes are generally more than a foot long, the flowers are yellow, and are propagated either by slips or (Linings in the same manner as the former, and is usually hardy.

The tenth fort produces the Semen Santonttufh, which is much used for worm in children. It grows naturally in the fields; from whence the seeds are brought to Europe; this hath the appearance of our Wild Mugwort; the stems are slender, erect, and garnished with linear winged leaves, and terminated by recurved linear spikes of flowers, which have naked receptacle*. This may be propagated by slips: cuttings in the like manner as the former but the plants should be planted in a dry soil and sheltered situation, where they will endure the cold of our ordinary winters pretty well, but it will be proper to liaw a plant or two in pot, which may be sheltered in winter under a common hot-bed frame to preserve the species.

The ninth fort is our common "Wild SaiuhrmwrH., which grows naturally in (bute parts of Norfolk, and is admitted into gardens.

The tenth fort COWS naturally in Portugal; this is a low under shrub, which grows more than two feet high, and is much of the aspect of our wild fort, and is rarely kept in gardens in this country.

The eleventh fort is the common Sea Wormwood, which grows naturally on the sea coast in most parts of the "En" land, where there are several varieties (if not distinct species) to be found. The most common is a low under shrub, which grows more than two feet high, and is much of the aspect of our wild fort, and is rarely kept in gardens in this country.

The twelfth fort grows naturally on the Alps; this is also a low under shrub, which grows more than a foot high, and is much of the aspect of our wild fort, and is rarely kept in gardens in this country.

The thirteenth fort is the true Roman Wormwood, though it has time never ultd in any of the floops; but is greatly preferred to the Sea Wormwood, because it is less nauseous: and a much pleasanter bitter, and may be had in as great plenty, provided it was cultivated by those who diligently the market with medicinal herbs. This is a low herbaceous plant, which dies in the root in autumn, and is not renewed in the spring; the stems are garnished with small divided leaves, whole underneath; and woolly, the upper part of the stalks are furnished with globular umbels which nod on one side, having naked receptacles. They appear in August, but are rarely succeeded by seeds in England.

This fort is easily propagated by its creeping roots, which may be parted in the autumn, and planted two or three feet asunder, that they may have room to spread; the best time for this is in the middle of October; it will grow in any soil which is not too wet.

The fourteenth fort grows naturally in Sicily; it is an annual plant which grows two feet high, garnished with smooth winged leaves, which have an agreeable taste; the stems are globular and nod on one side. If the seeds of this are permitted to scatter in the autumn, the plants will come up betwixt them if sown with care.

The fifteenth fort is the common Wormwood which grows naturally in lanes and uncultivated places in many parts of the island, and is not often cultivated in gardens. This is easily propagated by seeds, which should be sown in the autumn soon after they are ripe, or if they are permitted to scatter, the plants will come up without any further care.

The sixteenth fort has been supposed to be a variety

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of the common Wormwood: indeed the appearance of the plants are nearly alike, but the stems of the leaves of this are broader and whiter than those of the common and the whole plant is insipid, and continues so in winter.

The seventeenth fort is commonly known by the name of Tree Wormwood; this grows naturally near the sea in Italy and the Levant, and is a woody plant, which grows to the height of six or seven feet high, and is furnished with many small flowers, which are terminated by spikes of globular flowers in the autumn, which are succeeded by seeds here. This plant is easily propagated by cuttings, which should be planted in a shady border during the summer months, and duly watered, take root readily. In autumn some of the young plants should be potted, that they may be sheltered in winter; the other may be planted in a warm border, where they will live, and in winter prove favourable.

The eighteenth fort is a low shrubby plant; the stalk is woolly, sending out a few slender branches, garnished with small leaves growing in clusters; the flowers grow in a roundish bunch, and are (taped like those of Wormwood. This grows naturally in Ethiopia. It is propagated by planting the cuttings any time in summer, and the plants must be sheltered from hard frosts in winter.

The nineteenth fort grows naturally on the Alps; this is a low plant, which grows to the height of a foot and a half high; the stalks are clothed with small white leaves which are like a hand; the flowers are globular, and are produced in clusters at the end of the stalk; these are rarely succeeded by seeds in England. This plant may be propagated by planting the seeds in a shady border during any of the summer months, which, if duly watered, will put out roots, and in autumn they may be transplanted where they are to remain.

The twentieth fort grows naturally at Wedmore is an herbaceous plant, whose stalks die in the winter; and the flowers are produced in the spring, and are succeeded by seeds in England. This may be easily propagated by parting the roots in the autumn.

ARTICHOKE a variety of the Utins Cinara.

As this plant is much better known by its English title than the Latin, I shall treat of it under this head, and refer for its characters to the Latin title of Cinara, under which the other species will be exhibited.

We have two sorts of Artichokes which are cultivated in the English gardens, which we shall distinguish here only by the names they are generally known among the gardeners, and reserve their farther distinctions to their Latin titles.

The first is what the gardeners call the Globe Artichoke. This is a large hardy plant with broad brown scales, which turn inward; the fleshy part at the bottom of the stalks is very thick, and is much preferred to the other, which is called the French Artichoke. The stems of this fort are generally grown taller, and the heads are smaller, and more conical than those of the other sort. The scales are narrower, of a greener colour, and are more outward. The fleshy part which is eaten is not near so thick, and hath a disagreeable perfumed taste; this is usually sown in the English gardens in the month of May, when the greater part of the roots of the other fort are destroyed, and many of the roots supplied the following spring with plants from the French, where they cultivate the latter sort; but since die other has been increased again, this sort has been in most gardens rooted out, to make way for the Globe Artichoke.

The manner of propagating this plant is from slips, taken from the old roots, in February or March, which, if planted in a good soil, will produce large

fur fruit the autumn following; but a» thii U \plant whi i few gardeners, that live nut been iuirrueted in the kitcn-feardfns near London, underiland to mar.../x well, 1 t:ill be die more particular in my direct ions about it.

A: the latter end of February, or in Mwch, according to die earlinels of the icafon, or t'orwardncl* of the bid Artichoke roots, will be tlie proper time for drelling them, which muft be thK performed : with your fpade remove all the earth from nbou: your Itock, down below the part from whence tile y iliofTd five pi'udu^td, clearing the earth i: om between the (hoots with the hands, la la to be able to edge of the goadnels of each, with their proper pofition upon the flock; then make choice of two of the clearcil, ilriiicIV, and molt pmciif ing plants !UB are produced from the under pwt of the tlu^k, which as* much preferable to thr ibol).

which plants which generally grow upon the Irown of the roots; for their here hard woody firms, li) never produce gaodfruit, but are generally what the market people call hogues, which have very little but; on; the scales of their head i .ire irregularly placed; in nipping oil" the i plants youi mull be careful not to injure LvS,ii whkh are to remain (fg a. crop; then «... your thumb fctce off all the other plants and bud. also clofe to the head of the (lock, from whence they art: pasdoced, being very i arical not w ILJVU any of the buds, which will foil produce plants fo as to hurt ihoic which arc Idt: then with youi fold; Jr.iv/ tin- Mth tbot: the two plants which are kit, and with your hands dof ic fait rocach nt"i hem, kpar...Jngthem as faraiunder as they can conveniently be placii without bn. long them, obferving to crap offF the tops of the kavrs •wtiirh lung down with your h... m Mpnild being levelled between the Aocks, you may few ihewon a lmall crop of Spin.idi, which will be taken off be-

the Artichoke! will tovt-r the ground, and be ; co keep them clear from weeds; and toward ilic ter end rf April, or the beginning of May, when d plants begin co (hew their fruit, yniil muft iillylook over your Itocks, and draw up all young IB froi" them; wbi h may have been pm; ticed ince their dreffine and cur off all flickers which arc produced from tneftmuof the Artichoke, !aving only the principal head, Uy which means your fruit will be the larger-, when your Artichokes are fit t» (Other, you iimtt break or cut tli^i (liiwn di... to rhe Curtice 9/the gtwa d, that your flock may make frong frch fhogts before Lhe eml of 0 tober; the ieafon ibr canhinn, or, as the gurdent-rs; erm it, land-in^ them up, ia the midJJe or lies er end of N owni- btr, which ii thus done :

Cur off'all the young flioints quite dof to the iurrice ot'the ground i then Jig between every (lock, Tilling all the earth between etc !^ row of D... 11 idge, a* is done in rlic common method of trenching ground, fo as that the row of Artiel.-... I i' t^aftly ij; the middle of ciih ii: ;e, this will be iimic fit to guard them agtinf t&oftj »nd I would here recom-jnend it to tlic public, as infinitely prdrable to long dung, which B by the uiifkMM eftoi ufcd, and 5 the ocaGon of their fruit ix'iny ihiall, and almuil without any bottom* to them; for there is not any thing fu hurtful to thele, as new dung bein^ buried near, or laiJ abotit them.

Since we hzve exprrienced, that, in very kverv friffts thefe roots are lometiims deftroyed, therefore it is proper to give lhmC direftiona LO [irevent it; chough this rarely happens in dry ground, in which v. have had fTM iril.incts 0" lhetr being k^*d, except tin ilic hard fmls of i... and 1773. In thefe two winters ivnift til"the Acrcd... were deftroyed in EnsUnd; in the lult of tlicc irr.i'-r^, it happened from the lit-tle WK which was? taken of them, then; . . . no'froit fur ID many yeau before, whith h3.* i-jjur^d thtm, thai flw [-<0>k* oied Buy can: • preserve them; but Tint* that had t'roi', many people have r:•: into the otW-; TKt ffiiv of covering all thefe roots of Arti-(huk* witti long dung every winter, which is 3 very

(ad method, becaufe: i he •ing by tign nwr the root5, it very apt to rot the belt plants) : certain I would advi: the earthing (or as it is called by the garden-ers, landing) the Artichokes to be deferred till the lat- tetendi November, or the begining of December, provided the feafon continues temperate and towards Christmas, if there is any danger of fevere froits, to lay a t

quantity of long dung, Peafe-hulls, tanners bark, or any other light covering over the ridges of earth, which will keep out the froit; and this being at a dif- tance i from the roots, will not injure them; but this covering JtiouM Lc carefully taken 08" the 1x-gt' ending of February, or tofater, provided the feafon is mild, or at leaft fo lean as the weather is fo, otherwife the plants will be injured by iu lying too long i upon them.

k will alfo be r, good method, whenever, any roots are dug up in autumn, either to bury them deep in the ground to a pit till fpring, or to lay them in a heap, fo as that they may be eafily covered in hard frofts I a and their may be a fupply, if thofe in the gro: . are deftroyed.

When you Imvj that earthed them up, you have to- thing i' are to do till February or March, by which time thry will h. the green through the ridge of the earth; ... when the weather is proper, muft be dreffed . was before dreffed.

When you have a fized t >make a ntw ptan tium, after having dugged and beat down very . . . dung in the ground "you have allotted !•• that purpose, make choice of .-ich of jrour plane as wot taken from your old Hocks, which • clear, f mnd, and not woody, having feme (ibn to their bottom .li:; i with youir knife cut off that knobbed wood.¹ part, which joined them to the I Sack; and il" thai CutScrifp and render, it is a fgti of its gwdnefs, but if tough and ftrite)', throw it fway as gaud for nothing; then cut off the large outside leaves jretty low, and the middle or hc^rt leaves nay lie above them. Voui plants being thw preparitl (it'tlie weather Li <ry dry, or the pjants have been atiy timr taken from the flock, it will becoiivD to fet them upright in a tub of water for three or four hours before they are planted, wJjith will greatly refrefh them; you muft then proceed tt planting, which muft K clone liy ranging a line ll with the ground, in order to their being placed a&5 in a row; and, with y maining flick, plintther. at two feet diftance from ... other in the r iwt, and if defigned for a full crop, five feet u'll-incivv, . from the row, your plants muft be fet about four inches d rry, and the earth chofed irery filt to their roots, I ferving, if the feafon • va dry, to keep i c m witedred wo or dii e times a week, un- til they are L. . . after which they y leldom reu>

N. D. You rzzy low 3 dan crop of Spinach upon the ground! before you plant your t plants, obferving to Clear it from about them after it is come up. Tltefe plant •, in a kindly frai m, or a fnoit foil, y ill produce die largeIV Mii beft Arch... fime time in August and September, after all the • from the uIJ flockl vtr p.ul; fo : hat if you i: tfnd to continue your Artichoke's throu; h the whole feafon, you muft make a new |... every I .it, oilimvifc'you can- not ptu&fy have fruit longer than two or three monih.

If any of the piann which are planted in the fpring fhould nut fruit in autumn, you may, at the feafon of earthing up) the roots, tie up the leaves ., ith a fmall Willow twig, &c. and by the . . . u) • . . to it, ij iii. th • top of the plant ty be alive grmtd; and wj in the froit comes on, if you wiD cover the top with 1 Gi the fraie, or Peafe-hulls, to prevent their being killed by froit, thefe of PIS will produce fruh in winter, or early in the fpnj*.* But in thiofe pi,ini;utoni where you intend to plant oilier things bct»<n your Arrjebokcs, you muft allow nine or tea feet between the mwv as it often prafticed by; the kitchen-gardeners near I .odon, who low the ground between with K; Jilley or Spinach,

ami plant two town of Cauliflowers, at four fret difl incerovil from row, an.l two fttt and a half afiinder in the rows, lii thiut there arc always five feet allowed for clir Ardchofco to grow; and in May, when the RalEflie or Span h ire taken ofij U117 fow a raw of Cucumbers fur pickling, exa&ly between the *two raws of Cauliflowers, at three Ret distance from each other i .inj Ixrwcn the rows of Cauliflowers and the Artichokes, plant a row of Cabbages or Savoy's tor winter ufc, which, when the Cauliflowers an: drii . . . and ihc Artichoke! gufaered, will have full liberty to grow, and by this tncini the ground is fully employed through the whole fealbn. This has long been the pracllce of the kUcien-e-uti-iicrs near London, who pay large rents for their land, fii arc obliged to get is mmy crops in a year from it as poJiible.

In thole which arc planted at five feet distance row from row, you may plant in every othsir tow a line of Cabbages or Savoy's for winter ufc, which will be gone by the titiu; of landing them up ; in doing oi' whid you miilil lay the whok live feet of earth into one ridge, except the ground be extreme lifif, or the fitans young in botti which cafes you may lay only three feet and a half of the ground in the ridge over the roots, and the remainder may be laid in a IIMIII ridge between ; the feme compaTs of ground miff allii be allowed wlicrc the) arc planud at a wider iliflance.

Ami if in thie Ipring you find your (locks (hoot very weak, which may have been occilionefl either by land fruit, or too much wet, you muft then uncover them, an^ witiu your fpad lootin and break the earth about them i, rjifing a final] Mil about each Hock, levelling tilt refi between the rows, which will greatly help tlicm, and in three weeks, or a month's time after, they are commonly fit to (lip.

Thoiic Artichokes which are planted in a mold ricl foil, will always produce the largdt and belt fruit; lu that where Such a foil can be obtained, it will be proper to make .1 (refi plantation every fpring, to UKceed the old Hocks, (Ud fiupply the tabU' in autumn, Bui the roots will not live through the winter [in a moft foil, fo that your (locks which you intend OuHihl remain to fupply the table early, and lo furnitii plant-! (boVM he in a drier foil. You fould always obicrvc [0 plant thefe in jin open fuatation", and flM under the drip of trees, whT: they will draw up very tall, and produce fmall iirignificant fruit.

ARTICHOKEs of Jerufakm. See ii

ARTICULATION, la the conneaion of parti iliaii confill of joints, or knees, i'utt as arc the lili-qiEc (the linkv) of many plants; JS of the O mthopudhim, Coroiulli, v-hich are joined together by a "!!MIII- Iviot -, whence thiole parts ire called **articulation**. I unj aie Ika] to be connected arduktim, or geniculatira -, and filch plant* are called AmciddtGe, **whole root** 1, **although** :

the root of Poiygomilffl is lild to be ar-Uculofc, or genie Lib red.

ARUM, Wake Robin, or Cuckow Pine

The CHAitACTnas arc,

TT/tifcturr hath a lam cl>!n« foittbit, w'ub h chfei el ihi fattm, anfrffid in lit miJMc, and tokttml witi/in; ike fpaix 1) /wfc JbepM Hit a dab at tbt tup, anil jherta-tban tbejpilba Kpen vibiib the grmtx are jii-i-atc.I, It hath no ftak ncr Jlamma, hi man] fear-etr-nircd JummilS, Jilting (hit is the rerna, .. in a double row of bi-iri ktwtm them, vihitb adbrt it the fp.-i-Ex. Tlvert art nuny t'Jiii frma which n-n-i the uffrr part Of the jptuix, breug no Jijlt, kit bavt iIJJnigm* : ibt grmfn aftrward iccemt ghdtdsr bprriei, with «M fwi, hrsh% rcmid fieds.

This genus of . hints is ranged in the feventh lection of Linnteus's twentieth clai . . . i, n. iudria Polyandrii, thefi- pi . . . liowers joined, but have no (lamina nor Ityle, bui many iuramiis,

This plant is called **Wake Robin**, from the *Harp acriJ* Cafe, which, if eaten, will occafion a violent pain in every part, of the mouthand throat, attended commonly with a gteat ticiluxion ot ivartr.

The Si'icres are,

- i. ARUM (*Muchlsium*) acuale foliis haftmis integerrimis (pudice clavato. Hort. UplM. 454. *Arum* . . . *Arumvulgare maculatum* & non niaculatum, C. U. i'. . . .
- z. AJU (*Indicum*) f. . . hafhtk acutis jwriolis L . . . ipathi rruudmiereAi. *yixut*: . . . *jpitr-JtiaptJ* leavt), icilb lung fut-fiaiti, and *a targe up-right fpitha. *Arum venis albis halicum maximum*. 11. ft 1* r.
- j. Aiow (*PrJmfddimii*) aciale foliis hadatis *QpixM* declijjati filioimVi-l'ubi.hti, Lin. Sp. Plant. 966. . . . *Jbeptd fpaiba*. *Arifatum flore in tenucm caudam* abeunte. *Tourn.Inil*, 161. *irirtsdrjil*.
- + A i « (*Ariksrum*) acule foliis cordno-oblon]is Ijia- . . . intfirvo. Hort. CLST. 4*5. *Antm* . . . *Arilaruiri latifolium majus*. C. B. P. 1 pS. *Bmad-Utivtd Friers CtinL*
5. AHUM (*Tmuif*: . . .) acule . . . foliis lanccolatis letacco declinato. Hort: ClifK J45. *Jfxxm teitbo*, *fpitir-flaved leaves, mid a brifly dtrfinix fpadix*, *Ari-(arum anguftifolium Diofcoridis fuitc*. Boerh. InJ. alt. 2. p. 73.
6. AauM (*I'irginhtnx*) acule foliis hultato-cord ifiBCU- . . . angulis uJjujis. Horr. ClifF, 4*4. *Arum imiboxt Jliitk, pointed, fptw, /jcan-Jhapid lia-jgs, -xib cbtittf* . . .
7. ARUM (*Tripbyllian*) acuale foliis ternatis fioribus monoicij. Flor. Virg. U3. *fbret-toud Armiatboia fislk*. *Arum mium triphyllum arifarum pen** *Viridi Virginianum*. Mor. Hift. 3. p. 547.
8. A it CM *tpraauxulus* folij pi-vi-itis, foli . . . integerrimis atj . . . p p longk ens. Lin, Sp. Prod. Lejd. 7. *Arm v&& fiat-fui&d* . . . *ciutpejd nf fpoir-jbtyw, ultire, usual bits, aid tt- fpa- tb& uiUiit bmer tlru lit Jpadix*. *Dracunculus* (')ly-phyllus. C. ii. P. 105. *Common IJrtigoii*.
9. AkvM *Dracm* . . . foliis lanccolatis intMonmii fuperantibus (parham ipadice breviorcm. Prod. Leyd. 7. *Snm iniib foi-Jhtptd leaves, iti ttji- ptr I'tiitF rmpufid ef fpe-rr-fhaptd tntire hk,; and tbt fpalbaherter dux tfo fpadix*. *Arum polyphyUum minus & humiltus*. I!- L. *Sti*.
10. ARUM (*Trifoliatum*) acuale fo' . . . igittato trilobi: . . . fipra fefTle. Flor. Zeyl. 316. *Trifoliate jrum idthmt* . . . *JJlvier graving doft to tbt reel*, *Artim h.imile Zcylianctum larifblmm piftflo coccineo*. Hort. A mil. i.t.) 97.
- 1 j. AHUM (*Clocfld*) acuale foBi %JK' Itati 5 ovnt H re pandn baii fanhimdis. I tort Cliffl 434. *Arum vittist Jitlk, targt-jbirped ffvoJ leaves, waved and Jmueti at their borers, and tntnd, ! tuts me part; at their baf.* *Arum maximum* /Bgyptkcuni q^ . j , yjg] *Colocaiia. Cilttd CoUii* . . .
12. ARUM (*Beta folia*) ac exile il>1 its c^rdatis nrrrofw Horibus feflibus. *Arum without falk, nrrro u bart-Jhtfid Una, mid flowers tuithem pet.*; . j'rum Americanum betre folio. Caiefb. i . . . Car. . . ji. *Called i'aoui Wiid*.
13. Aki'M (*Divarication*) acavu . . . foliis cordatis angulatis divuicatis. Lin. Sp. I'aiir. SC6. *AntmwithoutJlokk, and beitri-jh&ptd /wgwfor leaves*. *Arum acauie folia tiibhalhiis*. Flor. Zeyl. J15.
14. ARUM (*Parvifolium*) acuale foliis cordatis angulatis . . . *milbait fiiilk, blunt* . . . *fm-wtdaad* . . .
15. ARUM (*Elo*) . . . xtemj jcauk- I . . . gerrimis b»B fiaitibifidto. Ho'-t. ClitT. +sj. *teubmt folk, <-:il targe'-fuitspid IA;* . . . *folic;* . . . *Jlentam*. Swan. Cat. Jam. 61.

16. AKUM (%rWcr folium) acule folili %itiatu trinn- gulis anguis divaricaris cutis. Hort. Cliff. 3.; Ar- mm <&iübsiti jleti, Uina-faaptä tavx otki are &uaga- Ur, BIH! I ... Arum maximum & gyjv ... i vulyo Colocacia caulculis rIL ... nbiis ZLylanica. IJ. L. B.

17. Anar.1 (Itrbrsfam) caulefceiv re&un'. folis figit- tatis, Lin. Sp. 1371. Anusuatb mtretl- mir-fatped tarns, immtf tailed Dumb Cent.

18. ARUM iAnriltm) caulefsemi radicans, fotiw tenw- th, Lucialib'um unilobirii. Lin. Sp. 1371. Arm finiii fend eu! roots, and Irfojint ItvtS- Ann ... deraceum triply Hum & aintum. Hum. Amer. + 1. tib. 55,

The first fort grows naturally i woods and on fl>aiy bank; ia moil part! of England, fo is feldom admit- ted into gardens ; but being a medicinal plan'.

There art two varieties of this, one with plain leaves, and the other hath leaves full of black spots, but these are only accidental varieties which srift from the fume feed;. The roots of this are ordered uj- the College of Phys' P-Jin? [o be ufed in a powder which bears rke title it: ... plants; but these art generally gathered in the fpring, when the leaves are in full vigour, fo that the roots fitrnl: and fron loft their pungent quality -, but tha& which are taken up in August, when their leaves decay, will continue good a whole year, and retain their pungency the fume as when firft taken 1. ... The ...: obferving this, has brought the medicine into tufrepuu'. It Bowers in April, and the feeds rijen a / ...

The fecond fort: grows nstur.illy in Italy, Spain, and Portugal, from whence I have received the feeds. The leaves of this fort rife a firt and a half high, an: very large, running out a& a point; theie are finely veincil with white, interfberled with black spots, which, together -with [lie fine ihining gtecu of iheir furfice, mate a pretty variety. The Borneo grow n: ax a foot high, and have very long upright fptuhai, w! ii h an of i pale green, inclining 10 white; ihrfe apir.irtlic end of April, or beginning of May, ami ... are ripe in Atiguli *, this jirogagaie very f-jt by oBietB from the root, ami will thrive in any Soil or Situation. I he beft time to tranfplant them b foon after tht feeds art ripe, ibr by the end of Oc- tober they will be putting out new fibre*.

The thir.l, fourth, and (S ...)enerally feparn- from this senu), and were tl ... distinguished by the title of Iri&rum, or Friar*! Cowl, firojn the re- loinlilarnv the Rowa ... has in fhape to the roots of ... n by the people of this order j thi i ... leaves of theft have lhort fifta I ... the flowers growing clofe in the ground. ... flower in April, but Jcdurn pro- dacefedl in I'nglanil *, however they,multipty fafi by offe B, and fh&ukl have 3 fhury lituation. The time for tnmfplandllg (be rood is the fame as for the former. They ate preferred in liimt- pardens for the fake of variety, but huve li: ic beauty to recoon- mend I hem.

The fifth and feventh forts grow natur.illy in Vit'r, nia and Carolina, from whence I have received their roots; the leaves arife immediately from the roots, havingfearcanyfo, ... cBowen come Up be- tween their leaves, v-iivli Sove lliort foot-Hall ... they ippsci ... in May, but have little beaulty, ... the plants are only kept ... II botanic g.nilitis tül- tic In' ... of vari- ety. They will live in the open air, if they are planted in .1 fiil-ltrred firtuation, or it die furface of (hi; gr> ... is cover <d "it! tan to keep out the froit in winter, and w; ; thrive better in the full ground than ... are propagated byoRitti.

I lie tu ... are common Dragon, which is ufed in medicine. ... lad has beM generally utged in a 'tujuric [jin ... from this under the title of ... alia, in which genus Tournefort has range: ill th'de ... which have compound leaves. ... una lljofr with single leaves he has placed ... Kr Aritni.

This fort is used in medicine, fo is preferred in gar- dens to fignify the mark; it grows naturally in moil

of the southern parts of Europe. This plant hath a large, tuberous, tlehy root, which, in the I ... fpring puts up a firft ... ilaik about ilire; s'<t liigh, wli ... it is tron- tel like the belly of a snake; at the top it fpreads out into ... avej, v.IIILJI are cut into fevo ... narrow fegments ... nult to rlie bottom, which fpread open like a band>at the top of the stalk the flower is produced, which is in fhape ... the cummen Arum, having a very long ... Ltha of a dark purple colour, ftanding erect. ... ih 3 krge piltil of the fame colour, fo that when it is in flower, a mikes no unjl ... the (lower haill f ... through a feat of carrion, tl.it few perfons enn endure it for which rfalbn it hath been bsniihed moit Burden, ... but was ii ... this, a few of the plants ... 'rit n place in jjanlcits, tor the oddnels of the flower. It is very hardy, fowill grow in any foil or finitiff..

to tranl'plant it is in autumn, when thr; ; ... decay. It flowers in June or July, s: ... their stalks de- cay in Setitemljer.

The ninth fort grows natrally in moil places in Vir- ffinia and ... England, but is very diiBcttt & pre- ferve long in a garden. I received lbne root', of thii from NewEnglan ... a few years ago, when i ... continued two years j but the foil being dry, they decayed in fummer: thefe fliolild have a much thady lituation, othei wilt th*y will not thrive. The lenwj of this fort are divided like thoife of the former, but are fmaller, ant! rarely grow more thin nine indies high i the flowers are like thoje of the commori Arum, bu the piltil is longer than the Ipatia. It Bawt; ... in June, and the ftalks deciy in autumn.

The tenth fort grows naturally in Ceylon, and fome other parts of India, fo it ver' impatient of cold : ir is rA plant of humble growth: the leaves come up from the root, having foot-Ltalks about four inches biil<j theft JIT divided into three lobrf, which itr- irinate in points; the flower rife immediudy from the root, ft/witling on a very ihort foot-Hilk ; ihe (ja- tha is long, erect, and of a fine fcarlet within, ... is alfo thr j-iftil. Thi* ufualty appears in M ... and the leaves ikc.ty in Akiguit, but new ones Toon after rife iWim the r^jt. Thii plant tnuil be placed in die tsn-bedof dttbuk-tove, otbenrileit will not thri-c in EngUnd. li'ts propagated by ... m the root, which come out in plenty when ife ... plants are in health.

The eleventh thirteenth, fo ... strength, fifteenth, and fixteeith fw ... , ... roots, which are eaten by the inJ ... inhabitants of all the hot countries, where they B ... ally, and fome of the forts arc en' ... if the inhibit ... of the fugar colonies, as ... culent plants, their roon hiring c.infantly P'aten, a ... the leas ... of some of the forts, part ;,ubrly the fif- teenth, which they oil Indian Kale: the leaves of this are boiled, and fupply the want of other greens.

As there is a confiderable quantity of riidi; all the ywr, a fmall fpot of Rtmind, planted with thr::; roots, will be fufficient to fupply a large ... family. It is cald, m^ / i wholfiane gteen, and in thole countries v. i-erc many of the ... I 1 iiropon vegetable ... are with diffi- culty procured, thij provej a pi ... of fuccedaneus; but they make little diftintti ... of the fpecies, but I have received the roots of three forts, by the com- mon title of Edder; but I terpose the fourteenth fort is the moil commonly cultivated there for their ufe. The fixteenth fort has not been many years introduced among them, but iircameotii' ... from the Spanish Weft-India, where it grows as a great plant. Both thefe have larger roots than the firft, for which reafon they are preterctt ...

All thefe forts are preserved in the garden is of thefe perions, V ... are curious in collecting exotie plants, for the variety or their Iwvei ; their flowers have very little beauty, nor do they often appear in this coun- try. I he plants are propagated eafily by offsets from dieir r'ititi, which they cut out v.entrally; thcle mull bepuuted in poti lil'lei win: light earth, and plunged into i hot-bed, to promote dim r taliinii root ... and

and if they are afterward continued in the bark-IWe, they will make great pragre's, and their leavtii will be larger. They may be kept in a dry (tovc, iijon fhcvu, after drey are well eltablifhed in iht pott, but they will nut be fo frong as the other.

The twelfth fort I was favoured with by Mr. Peter Collinon, F- R. S. who procured the rout from North America, where it natural I¹ grows. ThU requires a moilt foil, and a fludy (kunnoa, but a hardy in re- ppeft of cold. It flowered two veaiS in the garden al Chclfa, but in a very dry liilin decayed. The flowers came vip before there was any appearance of leaves; the fpatha was large, and the piitil fhoit and blunt; the female flowers were ranged each between a fort of cheque work, which was diagonal to the piitil) the Rawer decayed without any appearance of Feed.

The fivenwcnth fort rifesto the height of fix or fcyen feet, with a green jointed (lullt as krge as a walking, flick; the leaves arc placed irregularly at the top of the flalks, growing in a clutter; tiefr arc oblong, and of a light green colour; from between the leav, the flowers come out on the liile ufthe flalk, having a long fpatha of a pale green colour, marked widi white foots, fitting clofe to the ftem of theplant; at their Brft appearance they find erefl, Coon alter thty art horizontal, anil in a little time they decline downward; their lower part h fwdling fo tar as the flowers we ranged on the pitil, above wliicli it is greatly contracted, and toward the top enlarges again, where it is a little open, fo as to ihew the naked part of the pill il, but is twilled again at the top. All the lower pan clofely fulds over the piitil, Jo that it is fcarce difcernible, unlrf the I fat III is opened, which can only be done on one Qde, the other adhering dofelfj to the pitil, fo far upward as the flowers extend tht, naked part of the pillil only being feparated from it; fo that the female (lowers and ftamina are ranged only upon one fide of the piitil, in which it differs from al the other fpeciei which I have ftn.

It grows naturally in the fugar i(lands, and odier warm parts of Ann-rica, chiefly in the low grounds; the whole plant abounds with an acrid juice, lb that if a leaf or part of the (talk is broken, and applied to tin tip of the tongue, it caufcs a very painful Jenfation, and otafuiuu the falivary duels to iwcll, and brings an a great defluuian of faliva; the (talks of this plant arc fometimes applied to the mouths of die at grocs by way of puniflimenc, which is indeed bad enough. This lort is propagated by cutting off the (talks into Itjiuthof threeor four joints, which mull be laid tt dry fix weeks or two months; for if die woundei part h not perfectly heakd over before the cutting, art planted, they will rot and decay: thele ihouTi be planted in linnl pots filled with light, tiidy earth, and : hmp i-i into a moderate hot-bed of tan, being careful tint they have little wet, until they have made good roots; when they are well elVablillicd at bottom, tome of them may be placed in a dry ftove, and others plunged into the uui-bed in the txark-ftove, when they will make the greatfl progrcis, ami produce more (lowers than tile odienu tt'u a cender plant, fo mull be confantly kept in the ftove, and fhwild havi very liwle wet in winter.

The eight a nih Lje is a ft indent plunt, feuding ou jooti from iht IUni and bnnche*, ae leaves Arc large, licort-ihaped, having thrtc lobts or can -. thi; flennen are indented in a lar^c Ipatha i but dwfe tie not Grun- ful In Englanti I¹hii is a tender plant, tij requ&c to be tonilantly kept in the bark ftove, and Btatec at other tender exotic plants, which come from hu countries. It h propagated by cutimji off the bran^ hei which readily put out rooM, fut all meie f)j)ie3 whic are natives of hoc countries, never produce foals in England.

ARUM ^THIOPICUM. See CALLA.
ARUM SCANDENS. See DRACONTIUM.
AKU-NDO. Lin. Gen. Plant. 76. The Reed.

The CMB*crick-> arc.

It ii ef lie Graft tribt; the fLavxrt grew in Ifika, and

<!7t hidudcd 111 a chflff wbfj' b il oblong-, pcinisi tnd fpcxs
•wish favo vshst. Tkt pilalt of the jRearms art L
and longer than the empaicmHK

out, crcwwd 'J/itb bonwi jaauxi
ftutititl an ablang itrmitti, fupprth

• air hairy and reflexed, ezezmia vnik a faxj
inn. Tbt gfreien sftrysard bcisme; ax (toW-
luilh hug dsrum adhering to its bifc,

This genus of plants is ranged in the focpnH ;
of Liunwus's third cluis, entitled Triandria Digynia,
tile Sowers having three flmihia anil two |

The SPIOH arc.
1. ABIIM>O (Pbragmili) calycibus quinqueflorU pani-
cuKi IAXL Prod. I*yd. 6b'. Reed with jfor/ctsert in
itxb tup, griming m leefe panicla, Arundo vulgaris pa-
lulbis. J. B. z. +M5. The cmmice Mtrrh XeU

>. AKUNDO (Danax) calycibus triHoris panicull dirhisii.
Prod. Leyd. 66. Reedy/iftbthree flvmert huhdtii :a emb
tup, grmiix^ iv difftfid fanidts. Ariniilo lativa qua:
Donax Diolijoridis. C. B. I. 1.; This is iijnv
caUed by gardeners the Ever-green Reed, bui for
what recaln I cannot imagine, becaufe the ftalks decay
every autumn, and new Ilioots arife from die roots v
the fpring.

3. Aausno (Verfienlor) Indica Laconic-i vi-ficolor. Mor.
Hill. 3. p. lit), adim Reed with variegattd ktrvts,
Anindrj Indica variegata feu .Laconic* Theophrasti.
Cornut. Can. 55.

4. ARLJIDO (RMiiboa) calycibus multifloris, fpidsternis
UTilibus. Lin. Sp. nu. Herd with many fleaxri in.'vt
cap, svdfcffele fpikii, ctnammfy lalltd Bamia. Betftia.
Hurt. Mai. Vol. V. p. 119. and the Bantbu aiitra fpc-
cia. Kaii llifl. tjiG.

5. A«UKUO (Arbm-ea) ciuile arboreo folib utrinque acu-
mirutis. Ritd with a trrt-likf ft all; end Icw mtkb
art pntitd at bath fads. lly. Hort. Mai. Vol. I. p. 45.

C. AHUNDO (ipritualii) tenuifolia caule pleno ex qua
Turca: calamus parant. Totltu. Cor. jy,
•with a namrs> laf and a full Juulk, of-ubicli.
maktbdr writing pens.

The firft fort is ID very common by the G
and large Handing waters in divers parts of I,
[liar it K ntdlels for me to; iay any I
culture. This is em in autumn, when the
bigin to fall, and the Hems arc changed brov,
making hedges in kitchen -gardens, and for many
other ufej.

The fecood fort, although native of a warm coun!r>-,
yet will bear the cold of our winters in the open
ground, provided it is plumed in a loil not too wet •,
and it' the winter (houkl pruve very ievcre, a little
mulch be kid over die TOOK; it dies to the :•rface
in autumn, and rifcs again the fucceeding fpring;
and if kept fupplied with water in diy weather, will
grow ten or twelve feet high the fame lummer; mid
is very proper to intermix with trees nnd (hrubs, or
tali plants and flowers in bofquets, where, by the
od. Inefi of in appearance, it will have a g>oi effect,
:n adding to che variety. This is propagated by par:
ing the roots early in die fpring, before they begin
ro floot, and will, in a year or two, if your groin *
be good, make very large ftoots, fo that from I each
ftool you may hvvt eight or ten canei prodm • • , but
tlu, never produce* any fpikts of flowers in England.
Thettalki of this fort are brought from l'omn and
Spain, and are ufcd by the weaver*, »s allb to make
filling-rods.

The third fort is fupposed to be a variety of ihe ft-
cond, differing tjierfrom only in having variegated
leaves. But this I much doubt, becaufe die tort with
variegated leaves is much tenderer than the OII
mult be thekend from tlc ftoft, otherwie it wilrn-l
live through the winter in England. The plant n vr •
grows to a third part of ih : height of the other, in I
the leaves are narrower and much Ihorwr; \ I
thet differences may not be occafoned by the m • •
nefs of die plant, I cannot take upon me to
mine; for it is well known, th>t all thofc flants wliii
hive variegated leaves, are much weaker than the

plain, and do not grow large, nor will they resist the cold so well. But is chit a Uipped in be i native of a different country, mil by all the writers who have mentioned it luppoted 10 be different, I have enumerated it among the species-

The two of our offlamby art-of great service to the inhabitants of India, who make mull of ilitirtoitimon Ucnlls of die Items of ihelc canes, which grow to a prodigious magnitude in thiof countries.

We have planu of the fourth fan in the t'nsl'Hi g*r-dena, which are more than twenty fees high; and if lie lrtivei in which they are kept were high enough to admit them, they would, according to appearance, rise to nvice that height. The floou of thij plant are of quicker growth than any other yet known, which rises with an upright stalk j for a strong floot in the COM will rise to twenty feet in five or six weeks, as f have for several years obfervd. Some of thefc items are as large as a man's writ, but in general is big as walking-fticks and when dried nans fit for that purpose as thofc which are imported. The Itavea of this fort are much broader than thofe of the fifth, particularly at their bale-, theft U-avcs are generally put round the tea cherts in their pa, and are fattened together !b as to form * kind of irut.

TJu fifth fort is more rare at jirefent in t'urope, dio' it a the inoft common on the coalt of Mililwr.

They are both tender planu, fo will not live in this country, ualrls they are preferved in a warm ftove; and as their roots freat! very wide, they mould not be confined: therefore to have them produce frong (terns, they muft be planed in large tubs, filled with rich earth, and plunged into the hot-bed in the bark-ftove i and as they naturally grow in marmy low places, they require plenty of water, efpecially when the roots have filled die cubs in which they were planted. When the tubs decay, the brairds may be removed, and the plants permitted to root into the n, which will entourage them io grow to a larger :e-, but thru there mult be care taken when the bed refrdldc with new tan. 10 leave a fufficient quantity if the old tan about thir ram of rlic plants; for they are too much bared, and the new tan laid .. At th'm, whei that heiB, it will fcorch their roots fo that the plants are fmetfraet dcllroml by it. Both lorts are propagated by Hips tVom the foots, which fould be tjkeu off in the bring, that thij- imy be

Established before the winter. The fifth fjt is what the Turks mskr ihcir writing with !t this grows in a valley near mount ilfo on the banks of the rivrr Jordan, but here are nm;c of ilic planu in England. This fon may I .. a' the Uambu.

ARLJNDO SACCHARIFERA. See SACHARUM.

ASARINA, Toum, Inf-t-ILH. 171. tab. 70*: Baf-tanl AUrum.

The CHAK*CTJ:M arc.

..- cmpatmon it eft><(Uaf, <obieb is tut into fivt total meats alawji 10 tht betsm. Theftvtr is of me kif, 'tbt griHüüg kind, bevtHg & long lylixArini ti .. d'rd its lbt tup into IVK lips, tbt uppr ox? bting divided vo parts, wbefeexeiartreflixel. 'fix Stiver tip is i int irriüi ibr;/parti Kiln'ib eftebetif\the two lips .. :btr, fo si to firm a kind offiUMI. It bath .. :i/b are longer thin the other; in .. : 1 placed a rotmd^ermatfuppirtng a JtHgüjkh .. -rmsnd fa s* ohuff juema. I'be grmitit aftirwüird turn; .. into tv.v cilh, •oibitb are jull if ..

This genus of I Kinti is by Dr. Linnatu joined to his genus of Anthriscum, which is i .. inged in tii. Second edition of his furmcs .. ill clafs, titled Didyni .. the IM3 baving tw> long .. and two .. shorter It .. the loeds having a cay: ..

The .. ASARINA (Persiana) caul: decumbenti: foliis oppoiiiit .. RajlerdAjitrum .. W Udmny-fim/td Uava ..

which are taken .. sn their «!><::: fljirina hed Ikkxatilk l.ob. tOM. Cot. sfariaa, or Rock C ..

2. ASARINA (Persia) caul: (v.) folii? lan .. aphicaulibus panicoli dichotoma. Upright Barkard .. ah:tb embrace tjrftfidks> and spikes of flowers coming out from the decuss: :/ the ..

moil. Mitch. (Jen. 14.

The riri; fort is a low trailing annual plant, the branches extend little more than afoot each way, and arc weak, fo that unclj thty arc fuppoted, tcey lie upon the ground; thefe aro garnitied with UMVCI like thoft of Gtound-ivy, which grow bypiirs; at the wing of the leaf .. a the flowers, mmt ciursifmly on each fide the (mll; which are lluped like thole of .. a l.wg tube; [they are of a worth-om purple colour .. Uic top, but below .. f an herbOceatl colour. Thefe cum out in June, and the feds ripen in September, which flionKI be fawn foon after or pttmittw to fi>F, when they arf fi>wn in 1 he luting they fldom grow: 1 .. hould remain where rjey are fown, and require no other care bill to keep them clean from weedj, tnd thin them where thty ^tow too ciole. As there h nor much beauty in ihn plant, twi> or thrti.' of them will be enough in a gürdtn, for the fake of variety. It mrowa naturally in TaSy ami the fojuh of trance.

The fecond fort grows naturally in North America. This plan! hath upright lblks, which grow afoot and a half high, and put out feveral fidr hmoelwt, pirimied with oblong fpear-flwped leavci ending in a point, ivhich;row oppofite, and embrace the fhilks at their bafe; the flowers conic out in ftiof loofc fiiikes firm the divifions of the (talks, which are (imped like thofc of ihc former, but arc Ic6, and of a purple colour. The/ appear in June mid July, and their iceds ripen in September.

The fe«b oHhb fort fiould be lbwn in the aurum,' for thofc which are Town in the Tprin^, fekiom grow the fime year, but remain in the ground till the following fpring. "WHen the plants m- grown (trong enough to rnnovc, they fould be tr. Ill (planted into a fhadv border, which will prevent their (towering the faineyeur-, and in rhe autumn thty may bep'anted in ihe bonlers of shr Bower-garden, where they will add tu 1 lie variety. The roots li-ldom lull above two or three years, fothit young plmtihould be annually railed.

A S A RIIM [from « privative, and Oujii, Cr. to tdorn, astnach as 10 hiy, a ptani not tic for ornotent,] Aiar batca.

Tliir Cn.inj(t.TRR3 are.

The fleTi bulb it thick bti-ftaped tnpalmtnt of ant ltef, vibi<b is esl&urtd, and Jlightfy cut at tbt brim inn lbret farts, tt;b;<b are rrfixcd, it bath no pit ah, bit! .. jhsrt isw'.-fhaptd jicmwüi, crtmj by «UW fumtuits, wbith ere fnfaiaed it the middle to ibt faaana; at the ietleju of the asptihucnt ;j iaehtid it thick germer), fitp-perlixl a fbart tjBUriCdl Jlyle, (roamed by a rejfexcJ JHgm, rut into fis p,nli. i'tgermen aftirviord turns is n thnk ciffjtU bavingfix utts, containing fiviral wel firth.

This genus r>{ plants is ranged in L a m m 's eleventh clafs, erided Dodecandm Monoecnia, the flouen having twelve lbtina and one ft .. The SfcciEi arc,

1. A f- A it IM (Eitrop, n • iromii bu s o btufu binis. Lin. Sp. Pl. 442. Ajirattta .. xitbki&uy-jhapa! .. uirum. C. B. P. iij.

C .. f s/fb .. 2. ASAHUM (Oikintiff) r .. raiformibus monozonia. Lin. Sp. Hint 44a. .. faves mHxg is a point. Afimni C .. Canad. 24. Censda Aferabiices.

3. ASARUM (Persiana) folis cordatis obtufis • labris .. iitis. Flor. Virg. 16.; djarebatea • .. Irm-ts taving feat-jiatii. A- .. Joctiia: folij iubrjiur-d.; cyclaminia mote nutculini- Ptufc. Aim. £j.

The first fort hath thick fleshy roots which are jointed, and fend out fibres from every part; the leaves growing upon the first fort-ftalks, arising immediately from the root, these are kidney-shaped, eared at the foot-stalk, and rounded at the top, where they are indented; they are smooth, and of a shining green colour: the flowers grow upon very short foot-ftalks close to the ground, and are hid under the leaves. They are composed of a bell-shaped empalement, of a worn-out purple colour, which is cut into three at the top, where it turns backward: in the bottom is situated the germen, attended by twelve short stamina, which afterward turns to a leathery feed-veffel, divided into six cells, which contain several roundish seeds.

The leaves of the second fort are much larger than those of the first, and stand on longer foot-ftalks, these are pointed and hairy. The flowers are like those of the other fort, growing close to the root, but are somewhat inclining to green on their outside, in all other respects they agree.

The third fort hath smooth blunt heart-shaped leaves, standing on longer foot-ftalks; these are veined and spotted on their upper surface like those of the autumnal Cyclamen, the flowers of this are shaped like die others, but stand on longer foot-ftalks, and are of a darker purple colour. These flowers in April and May, and their seeds ripen in July and August.

The first of these forts is very common, and hath been found wild in some parts of England, though but rarely; it delights in a moist shady place, and is increased by parting the roots in autumn. This is the fort which is used in medicine.

The Canada fort is equally hardy, so will endure our common winters in the open ground, being rarely hurt by frosts, if planted in a dry soil, for too much wet often occasions the roots to rot in winter. This is propagated as the other.

The third fort will also live in the open air in England, being seldom injured by frost; but if the plants are too much exposed to the sun in summer, they seldom thrive well; therefore they should be planted in a border where they may have only the morning sun, in which situation they will spread and increase. These two last grow naturally in several parts of North America.

ASCLEPIAS [so called from Esculapius the first inventor of physic, it is also called Vincetoxicum, from vincere, to overcome, and rogiā, poisons, q. d. a plant overcoming poisons,] Hirundinaria, or Swallow-wort.

The CHARACTERS are,

The empalement is of one leaf, which is cut into five acute segments; the petal of the flower is also of one leaf divided into five oval parts* which are reflexed; in the center is situated five neclarii which encompass the parts of generation these have horns which turn toward the stamina, and are joined in a truncated body inclosed by five scales, which open every way. There are five stamina which are scarce visible, which have five summits, situated between the neclarii, and inclosed by the scales of the truncated body. It hath two oval pointed germen, supporting two short styles crowned by a single stigma. The germen after several branches the large, oblong, swelling seeds ending in a point, together one end, which opens into five valves filled with compressed seeds, lying over each, other like tiles on a cube, and are crowned with a soft dozyfi.

This genus of plants is ranged in Linnaeus's second method of his fifth class, entitled Pentandria Digynia, the flowers having five stamina and two styles.

The SPECIES are,

1. ASCLEPIAS (Alba) foliis ovatis basi barbatis caule erecto umbellulis proliferis. Lin. Sp. Plant. 314. Swallow-wort with oval leaves bearded at their base, an upright stalk, and a proliferous umbel. *Asclepias albo* flore. C. B. P. 303;
2. ASCLEPIAS (Nigra) foliis ovatis basi barbatis caule superne subvolubili. Lin. Sp. Plant. 216. Swallow-wort with oval leaves bearded at their base, and the upper part of the stalk twining. *Asclepias nigro* flore. C. B. - P. 303.

3. ASCLEPIAS (*Littea*) foliis ovatis acutis caule infirmo, umbellis simplicibus. Swallow-wort with oval pointed leaves* a weak stalk, and single umbels. *Asclepias angustifolia* flore flavescente. H. R. Par.
4. ASCLEPIAS (*Verticillata*) foliis revolutis linearibus verticillatis caule erecto. Lin. Sp. Plant. 217. Swallow-wort with narrow twisting leaves growing in whorles, and an upright stalk. *Apocynum Marianum* erectum *linariae angustifoliae* foliis umbellatum. Pluk. Mant. 17.
5. ASCLEPIAS (*Syriaca*) foliis ovalibus subtus tomentosis caule simplicissimo umbellis nutantibus. Lin. Sp. Plant. 214. Swallow-wort with oval downy leaves, a single stalk, and nodding umbels. This is the *Apocynum majus Syriacum* erectum. Corn. Canad. *Greater upright Syrian Doglance*.
6. ASCLEPIAS (*Amama*) foliis ovatis subtus pilosifolius caule simplici umbellis nectariisque erectis. Lin. Sp. Plant. 214. Swallow-wort with oval leaves, hairy on their under side, a single stalk, with upright umbels and nectarii. *Apocynum floribus amene purpureis corniculis furectis*. Hort. Elth. 31.
7. ASCLEPIAS (*Purpurascens*) foliis ovatis subtus villosis caule simplici umbellis erectis nectariis reflexis. Lin. Sp. Plant. 214. Swallow-wort with oval leaves, hairy on their under side, a single stalk, and upright umbels with inclining nectarii. *Apocynum erectum Novboracense* foliis minus incanis flore ex obsoleto dilute purpurascente. Par. Bat. 33.
8. ASCLEPIAS (*Variegata*) foliis ovatis rugosis nudis caule simplici umbellis subferrilibus pedicellis tomentosis. Lin. Sp. Plant. Swallow-wort with rough, naked, oval leaves, a single stalk, umbels growing close to the stalk, having woolly foot-ftalks. *Apocynum vetus Americanum Wifank* dictum. Hort. Elth. 32.
9. ASCLEPIAS (*Incarnata*) foliis lanceolatis caule superne diviso, umbellis erectis. Lin. Sp. Plant. 215. Swallow-wort with spear-shaped leaves, the upper part of the stalk divided, and erect double umbels. *Apocynum minus reum Canadense*. Corn. Canad. 9.
10. ASCLEPIAS (*Decumbens*) foliis villosis caule decumbente. Lin. Sp. Plant. 216. Swallow-wort with hairy leaves, and a declining stalk. *Apocynum Carolinianum aurantiacum pilosum*. Pet. H. Sic. 90.
11. ASCLEPIAS (*Tuberofa*) foliis alternis lanceolatis caule divaricato piloso. Lin. Sp. Plant. 217. Swallow-wort with spear-shaped leaves growing alternate, and a hairy divided stalk. *Apocynum Novae Angliae hirsutum tuberofa radice floribus aurantiis*. H. L. 649. commonly called *Orange Apocynum*.
12. ASCLEPIAS (*Glabra*) foliis lineari-lanceolatis glabris caule fruticofo umbellis lateralibus. Swallow-wort with smooth, narrow, spear-shaped leaves, a shrubby stalk, and umbels coming out of the sides. *Apocynum erectum Africanum villoso fructu falcis folio glabro angusto*. Par. Bat. 23.
13. ASCLEPIAS (*Fruticofa*) foliis lanceolatis glabris umbellis simplicibus lateralibus caule fruticofo. Swallow-wort with smooth spear-shaped leaves, single umbels coming from the sides of the branches, and a shrubby stalk. *Apocynum erectum Africanum folio falcis lato glabro fructu villoso*. Par. Bat. 24.
14. ASCLEPIAS (*Fillofa*) foliis lanceolatis villosis acutis umbellis simplicibus erectis caule fruticofo. Swallow-wort with hairy spear-shaped leaves, single upright umbels, and a shrubby stalk. *Apocynum erectum Africanum villoso fructu falcis folio lato subhirsuto*. Par. Bat. 24.
15. ASCLEPIAS (*Rotundifolia*) caule erecto fruticofo, foliis subrotundis amplexicaulibus, umbellis congestis. Swallow-wort with an upright shrubby stalk, roundish leaves embracing it, and close umbels. *Apocynum erectum fruticosum folio subrotundo glauco*. Par. Bat. 37.
16. ASCLEPIAS (*Nivea*) foliis lanceolatis glabris caule simplici umbellis erectis lateralibus foliariis. Lin. Sp. Plant. 215. Swallow-wort with a single stalk, smooth spear-shaped leaves, and upright single umbels, proceeding from the wings of the leaves. *Apocynum Americanum foliis Amygdali longioribus*. Plum. Cat. 2.
17. ASCLEPIAS (*Ctirajavica*) foliis lanceolatis petiolatis glabris caule simplici umbellis erectis foliariis. Lin. Sp.

Sp. Plant. 215. Swt!!m>-VKri withfm&tb
big fxt-ft&s, ajinghiltik, and upright JB%U
irmlix. Apocynum radice fibrosa, pet::
eanucutis croceis. Hort. Elih. 34, ceamexo called
Bighard Ipcumant.

18. ASCLEPIA (Gigantea) foliisamplexicaulis oblongo-
ovalibus. Flor. Z. yl. 111. Ss
embruiHg the fiidh. Apocynum
inajus latifolium Indicum. Pluk. Aim, 3: tab. 175.
f. a.

iy. ASCLEPIAJ (Scandals)foliisobbfigo-lanteo!iic i fub-
otule fruticofa feintrtnte umbellis Interlibus
congeltis. StonSmf-wtrl svith iithae, fptxr-Jbapoi, hairy
Uazw, ajhmtUj thmi/ixg fialk, mi& wntait umbels pro-
traji% JTVBI ibfid.

*The iirli fort h the common Swallow-wort of the
(hops. This is called Vincetoxicum & Birundinana,
in Tu^tilh Swallow-tron, or wme poitbn, from its
fuppoled virtue, being account! i i mighty counter
poifon. The root it tlic on!- part v. i i uled : it
U compofed of many ftung blades, hkh are con-
n lifted at the top, like th of A ptragiw, from
which .trife many uioi-bl!-:, in iimber proporti-
onal to the f7e of the root!; which grow near
two feet high, are veiy flencir ai th« : >, tin
leaves are oval, ending in a point, and placed by pairs. The
flowers Me white, j^ruv ing in the Ie near the top of
the folk, from which arc ! an our smaller umbels,
the are of one left, cut into five parts, in the
Center of which arc pl< ed five horned neccars, among
which the (himina and rtylc, after A. this
flower is pall, the two gcrmtn become two bn^
pointed pods, incioGiip many comprfct!
The flowers are crownwd with a 5ft white down. The flowers
appear in June, and the feeds ripen in September.
Tiis fort grwi omurally in the feutli
of France, Spain, and lialy.

The fecond fort agrees with the fird, in the fl:
of its roots, leaves, and flowers, but the Italki l
to : greater length, and toward their u]pcr psrt cwid
r^tii or other j)lants near then!, and rlic
of this arc black. This [lowers at [fu
time with the li:li, anil fddom Jiilj to ripen its feeds
in England.

The third diifera from both the otheT in the narrow-
neli of its leaves, and weakneft of its tlalks i the um-
bels of flowers are fingle, and of a yellow colour.
This flower nt fiae time with the two former
fort»,anJ generally perfect* tceils in England. There
is a variety of hb with broader lnm, which may
have come from the feeds of ilii-;
Thiefe piano are comin in the English p:rtlens
and - nWes of Lie fame countr:!. I'Lr , are gene-
rally propagated by parting t
first fort, which seldom produces feeds in England.
The bell rimi for this b> IE autumn, when their lilks
begin to dewy. They {hould not be planted ;
together till the third fort, I^OR^clic Sbres of t!;cir roots
extend to a confidmble diltinec. Thiy are very
hudy ptev.' fe will thrive in any lituadon, but love
a dry ioi. Their (alkv die in uutumn, and net
rife in the (p

The fourth fort, !XAVJ taatnly in North America,
thi riles iv
veiy nan
fialk •, at the v i> of which grow
white, flary flowers. These app
in July, b
necvn
pogated by pods in England, they are only pro-
pagated b) parting their : >)ts; which {hould be
done in the fpring, before they put out new florets.
Thie mnts (nutki be :
border mif
foil is
ground. to pre-
vent
The fifth
at the root, fo that it
will foon
ground, the
four feet high, which
have
ri rier
under (UK)
be if l
of a
nod

rwanJ (bmetimra theft are fifseeded by large
ovai poiis, fillwi with Sat feds, r r
v.cn in Juir. Th
though by its creeping root, and will grow in any
foil or fion. It may l: transplanted any time
after Ar :
ring.

I lie Ax:h fort hath a perennial root, which (ends up
fever:!
high, garniflied with oval leaves growing oppofite;
at the top < of the flalks the umbels of flowers are pro-
tuccd, which arc of a bright p
aprti-;
this muft be treated as the fourth
Ibrt. I woi t'avouiv
F. R. S.

The feventh (bit grows naturally in North America.
This hath a perennial roat, which (bids <_ fingk
ihdks neinhifecet high, garniflied with oval!
liary o\ their under fide, pla-
era grow in erect umbe: at the top, and the ite^irii
are declining. Thry are of a worn-owt purple co-
lour re •emblit: tholi: of [he fifth, it is 'try hardy,
and III-
prudu
The eighth
Tin- eignli :
are rousrh, and the uiubsh • if flowrs are mnrt cum-
pact, and come Dit on t!e fide of the :
are of an herbaceous
loin*, ami me no
by pods in this country, but is pny
agsttd by root3as
the former fort.

The ninth fort came firft from Canada, but hath
been found growing naturally in feveral other parts of
America. This hath a perennial root, which puts out
feveral upright flalks about two feet high, which have
oblong fmooth leaves placed by pairs; at the top are
produced clofe umbels of purple flowers; thofe ap-
pear in Auguft, but are not fucceeded by feeds here,
lb is
ctriae i

The tenth fort is a native of North Ar-rico, bur is
fandy enough to live abroad in England, if it is
planted in a warm lituation and a dry foil. This hath
declining flalks, which are hairy, 4 foot and a half
long; the i
the nr^bek grow at the exre,!
are of
brigh-
It i
bt- liwn in p> ;
Lictltohr: :
the open l

The eleventh fort is a native of North Ar-rico, bur is
fandy enough to live abroad in England, if it is
planted in a warm lituation and a dry foil. This hath
declining flalks, which are hairy, 4 foot and a half
long; the i
the nr^bek grow at the exre,!
are of
brigh-
It i
bt- liwn in p> ;
Lictltohr: :
the open l

The eleventh fort is a native of the fame countries,
it much like the former, but differs in having up-
right flalks, and the leaves growing alternate. The
of this grow to a large fize, fe will not bear
ruoo

tranplanting after the plants are two years old. It is propagated by feeds, which should be treated in the manner directed for the former. These flower the latter end of July and in August; and in warm seasons, sometimes ripen their feeds in England. Neither of these plants will live long in pots, for which reason I have recommended their being planted in the full ground; but they should have a warm situation.

The twelfth, thirteenth, and fourteenth sorts grow naturally at the Cape of Good Hope. I have all received feeds of the thirteenth sort from Alexandria; and Mr. Peter Collinson, F. R. S. gave me some feeds of it, which were sent him from Minorca, but it is not certain that it grows naturally there, but may have been carried thither from Africa.

These rise with upright shrubby stems to the height of seven or eight feet, and divide into many branches; those of the twelfth sort are garnished their whole length with long, narrow, smooth leaves, ending in a point; from the wings of the leaves the umbels of flowers are produced, upon long foot-stalks; the flowers are white, and grow loosely on the umbel; these are frequently succeeded by short, thick, swelling pods, ending in a point, which are thick set with hairs, and filled with compressed feeds, crowned with a foot down. These flowers from June to October, and the feeds ripen in winter.

The thirteenth sort differs from the twelfth, in having much broader leaves, which are of a darker green; the umbels of flowers are smaller, grow upon shorter foot-stalks, and the single flowers are larger. This flowers at the same time with the former.

The fourteenth sort doth not rise so high as either of the former, and the branches grow at a much greater distance, the leaves are shorter, and are covered on both sides with short hairs. The flowers grow in small loose umbels, and are white; these appear in the same season with the former.

These are propagated by feeds, which may be sown in April on a bed of light earth in the open air, and when the plants are three or four inches high, they should be each planted in a small pot filled with light earth, and shaded until they have taken new root, then they may be placed with other exotic plants in a sheltered situation till October, when they must be removed into the green-house, and during the winter should have but little water; for as they abound with a milky juice, much wet will rot them. The only care these will require, is to shift them into larger pots as they advance in their growth; but care should be taken not to put them in pots too large, and in the summer to place them abroad with other plants from the same country.

These three sorts may also be propagated by cuttings, which if planted in July or August, in a shady border, will soon take root, and may soon after be taken up and planted in pots, and managed as the seedling plants. The thirteenth sort hath lived in the open air in mild winters in the Chelsea garden, but in cold winters they are constantly destroyed.

The fifteenth sort grows with an upright shrubby stalk to the height of six or seven feet, dividing toward the top into three or four branches, garnished their whole length with stiff roundish leaves, which closely embrace them. Toward the upper part, the flowers are produced on their sides, growing in short compact umbels. These are of an herbaceous colour, so make but little appearance; they come out chiefly in autumn and winter. This grows naturally at the Cape of Good Hope, and requires the same culture as the former sorts. There is a variety of this with deep green leaves, which some have supposed to be a different species, but I have raised it from the same feeds. The sixteenth sort grows naturally in the warm parts of America, the feeds were sent me from La Vera Cruz. This rises with single stalks four feet high, garnished with smooth spear-shaped leaves, ending in a point; toward the top of the stalk the umbels of flowers are produced from the wings of the leaves,

which are white, and stand erect; these are succeeded by oblong pointed pods, filled with compressed feeds, crowned with foot down. It flowers in June and July, and the feeds ripen in October.

This plant is tender, so must be raised in a hot-bed, and transplanted into pots filled with rich earth, and plunged into the tan-bed in the stove. It must have but little water, and constantly remain in the stove, otherwise the plants will not thrive here.

The seventeenth sort is also a native of the warm parts of America, the roots of which have been sent to England for Ipecacuaná, from which it may be easily distinguished by its form, this being composed of a great number of small fibres; whereas the true Ipecacuaná hath jointed roots, which run deep into the ground, and are fleshy. There have been many accounts of the bad effects of the use of these roots, as also of the poisonous quality of the plant; so that the public should be cautioned not to make use of it, and also to be careful not to let the milky juice of the plant mix with any thing which is taken inwardly.

This plant rises five or six feet high, with upright stems, garnished with smooth oblong leaves, placed opposite; toward the top of the branches the umbels, or flowers come out, which are single, and grow erect 5 the petals of the flowers are of a scarlet colour; and the horny nectaries in the middle are of a bright saffron colour, which make a pretty appearance; these are commonly a succession of these flowers on the same plant from June to October. The flowers are succeeded by long taper pods filled with feeds, crowned by a foot down, which ripen late in the autumn.

It is propagated by feeds, which must be sown on a hot-bed in the spring, and the plants should be treated in the same manner as is before directed for the former sort; the roots of this may be continued three or four years, but after the second year the plants grow naked, and do not produce so many flowers as before; so that it is much better to raise young plants to succeed the other, especially as they produce plenty of feeds in England.

The eighteenth sort rises with upright stems six or seven feet high, which are garnished with thick oval leaves placed opposite. The umbels of flowers are single; the flowers are white, of a star figure, having five points 5 the pods of this sort are very large, in shape like an ox's testicles, and are filled with flat feeds, lying over each other like tiles on a house. I received the feeds of this sort from the Right Hon. the Earl of Northumberland, who procured it from India.

This plant is tender, so must be preserved constantly in the stove, and treated in the same manner as the two former sorts, and should have very little wet, especially in the winter.

The nineteenth sort I received from Carthage; this hath climbing stalks, which fasten themselves to the neighbouring plants, and rise to the height often or twelve feet; the joints of the stalks are pretty distant from each other; at each are produced two oblong, spear-shaped, hairy leaves, growing opposite, upon very short foot-stalks; the umbels of flowers come out from the wings of the leaves, which are very compact, and the flowers are of a sulphur colour. These appear in August, but have not been succeeded by feeds in England.

This plant is tender, so must be constantly preserved in the stove, and treated in the same way as is directed for the former sorts.

A S C Y R U M. Lin. Gen. Plant. 737. Hypericoides. Plum. Nov. Gen. 51. tab. 7. St. Peterwort.

The CHARACTERS are,

The empalement is four leaved the two outer being narrow and opposite, the two inner are broad, heart-shaped, and erect. The flower hath four oval petals, the two outer are large and placed opposite, the two inner are small. In the center is situated an oblong germen, with a very short style, crowned by a single stigma. This is attended by a great number of busily stamens, which are joined*

joined at their base into four bodies; and are crowned with round funmits. *The germen afterward becomes an oblong pointed feed-yeffel, opening in two valves, and filled with small round feeds. The feed-veffel is inclosed by the two large leaves of the empalement.

This genus of plants is ranged in the third section of Linnæus's eighteenth class, entitled Polyadelphia Polyandria, the flowers having many stamens, which are joined in several bodies.

The SPECIES are,

1. ASCYRUM (*Crux Andre**) foliis ovatis caule teretipaniculâ dichotomâ. Lin. Sp. Plant, 787. *St. Peterwort with oval leaves, a taper stalk, and flowers growing in loose spikes from the divisions of the branches.* Hypericoides ex terra mariana floribus exiguis luteis. Pluk. Mant. 104. called *St. Andrew's Crofs*.
2. ASCYRUM (*Villofum*) foliis hirsutis caule tereti &c. Lin. Sp. Plant. 788. *St. Peterwort with hairy leaves and a stiff slender stalk.* Hypericum Virginianum frutescens pilosifolium. Pluk. Aim. 189.
3. ASCYRUM (*Hypericoides*) foliis oblongis, ramis ancipitibus. Lin. Sp. 1108. *St. Peterwort with oblong leaves and a flattened stalk.* Hypericoides frutescens erecta flore luteo. Plum. Nov. Gen. 51.

The first sort is a low plant, whose (talks seldom rise more than six inches high, garnished with small oval leaves, placed by pairs -, the stalks are slender, and divide into two toward the top. From between the division of the branches, the loose spikes of yellow flowers are produced very small, to make no appearance; therefore the plant is scarce worthy of a place in gardens, except for the sake of variety. The root is perennial, and the plant may be propagated by laying down its branches; it loves a moist soil and a shady situation. This grows naturally in North America; I was favoured with this plant by the Right Hon. the Earl of Northumberland, who procured it from thence.

The second sort grows about three feet high, with upright stalks, garnished with hairy oblong leaves; the flowers are produced at the ends of the stalks, which are of the shape and colour with common *St. Johnswort*, but have only four leaves. This hath a perennial root, but the stalks decay every autumn. It may be propagated by parting the roots in autumn, when the stalks decay, and should be planted in a loamy soil; this some years will produce feeds in England. It grows naturally in Virginia.

The third sort grows naturally in South Carolina, from whence I received the feeds. This plant rises a foot and a half high, with flat stalks, garnished with oval smooth leaves growing opposite; the stalks are terminated by three or four yellow flowers, growing close together* which are larger than those of the common *St. Johnswort*, and the petals of the flowers are hollow. This sort rarely produces feeds in England, but it may be propagated by cuttings made of the young shoots in May, which, if planted in pots, and plunged into a very moderate hot-bed, will take root in five or six weeks, when they may be transplanted into a warm border, where they will endure the cold of our ordinary winters; but in severe frosts they are frequently destroyed, unless the roots are covered with tan to keep out the frost.

These plants have little beauty, so are seldom cultivated but in botanic gardens for the sake of variety.

ASCYRUM BALEARICUM. 7
ASCYRUM MAGNIFLORE. J. CUM.
ASCYRUM VULGARE. J. CUM.

ASH-TREE. See FRAXINUS.

ASHES are esteemed a good superficial dressing for corn and meadow land, as they give a new ferment to such lands as are in any degree sluggish and inactive, and enrich those which are jejune and flow, being endowed with singular qualities to make them prolific.

All sorts of ashes, indeed, contain in them a very rich fertile fait, and are the best manure of any to lay upon cold wetland; but then they ought to be kept dry, that the rain may not wash away their f^ok. Ex-

perience has shown, that the ashes of any sort of vegetable are very advantageous to land, by the improvement that has been made in moist places in England, by burning bean-stalks, fern, furze, heath, fedge, itraw, stubble, &c.

Coal ashes, or such as are made of Newcastle, Scotch, and other pit-coal, are much recommended for fomes; but the first are most approved of, because they contain a greater quantity of nitrous and sulphureous matter than the others, though the rest are good.

There is no dressing so good for grass ground as the sea-coal ashes, especially for cold wetland, and where it is subject to rushes or mosses; for these will destroy both, and occasion the grass to be much finer: but this dressing should be laid on the land early in winter, otherwise they will do harm the first summer; for when they are laid on the ground in the spring, they will cause the grass to burn as soon as the warmth comes on; whereas those that were put on early enough to receive the winter's rain, will be washed into the ground before the warm season, whereby the grass will have the benefit of it the first year. Where the land is poor and sour, producing rushes and mosses only, there should be at least twenty loads of ashes laid upon each acre; for a light dressing will not answer the design of killing weeds and mosses, nor will it be sufficient to enrich land which is cold and sluggish, therefore it will be better to lay a good dressing at first, than to do it at several intervals; for one substantial dressing will continue the land longer in heart than three light ones, besides the advantage before-mentioned.

But these ought to be applied superficially, and not too near the roots of plants; and if so, there are few plants but will receive benefit by them, by their nitrous and sulphureous qualities being washed down by the rain, which will open by the strength of water, and cause it to heave, in some degree, as lime will do when water is thrown upon it.

Wood-ashes are commended as the principal of superficial dressings for land, in that they contain a vegetative kind of fait.

Kiln-ashes, i. e. such as are made of straw, furze, &c. are, by some, accounted as good as any of the spirituous improvements of lands that are lightish; but for such as are heavy, they are looked upon as scarce solid and ponderous enough. These ashes the millers in the west country sift over their corn and grass, which are supposed, by their heat, to cause a fermentation, a hollowing and loosening in the mould; by which means the rains enter it the more easily, and dispose the earth for giving up an augmentation of its vegetative augment.

But these being light, ought never to be sowed nor sited in windy weather, because they would be blown away; and if it could be so ordered as to be done just before snow or rain, it would be the better.

Soap-ashes (i. e. after the soap-boilers have done with them) are very proper for lands that are very cold and sour, and to kill weeds of all sorts: and Sir Hugh Plat mentions one at Ware, who having a piece of land over-run with broom and furze, manured it with soap-ashes, and had an incredible crop of wheat for six years successively.

Pot-ashes, after the pot-ash men have done with them, are esteemed good for moist sorts of land; but as they have been wet, and most of the fait drawn off by the lee, they ought to be laid on much thicker than other ashes.

Turf-ashes are very good for all sorts of land, but especially for clay lands, but will be much better if mixed with lime.

But all these ashes ought to be kept dry, from the time they are made till they are used, else the rains will both wash away their goodness, and all make them clod, especially some of the last mentioned, which will prevent their spreading.

And besides, one load of ashes that has been kept dry, will go as far as two that have been exposed to the rain: and coal-ashes, if moistened with

chamber-lye or soap-suds, will greatly add to their strength.

All calcined vegetables cause a fiery heat and vegetation, and, when wet comes, set the ground to work, by a subtle insinuation unlocking the clods, and quickening the sluggishness of the earth, according to that established maxim among naturalists. That all fermentation is caused by the interposition or mixture of different qualities one with the other.

It is after this manner that coal-ashes operate so admirably in loosening and mouldering stiff clayey grounds, and, as it is usually termed, making it rough, ashy, or sandy-like: and after the same manner, sand mixed with clay does well, especially when it is impregnated with saline qualities.

ASPALATHUS. Lin. Gen. Plant. 767. African Broom.

The CHARACTERS are,

The empalemtis of one leaf which is cut into five equal segments at the top; the flower is of the butterfly kind. The standard is hairy, compressed, and blunt-pointed, the wings are blunt, moon-shaped, and spread open, being shorter than the standard; the keel is bifid, and of the same length as the wings. It hath ten stamina, nine of which are joined and covered by the standard, the other standing separate; these are crowned by oblong single stamens. In the bottom is situated an oval germen supporting a single style, crowned by a pointed stigma. The germen afterward becomes an oval oblong pod, inclosing one or two kidney-shaped seeds.

This genus of plants is ranged in the third section of Dr. Linnæus's seventeenth class, entitled Diadelphia Decandria, the flowers having ten stamina joined in two bodies.

The SPECIES are,

1. ASPALATHUS (*Cbenopoda*) foliis confertis subulatis mucronatis hispida floribus capitatis, Lin. Sp. Plant. 711. *Aspalathus with rough, pointed, awl-shaped leaves, growing in clusters, and flowers in heads. Genista Africana lutea, floribus hirsutis in capitula lanuginosa conglobatis foliis corrodæ aculeatis puberulis.* Hawn. Cat. 11. *Yellow African Broom.*

2. ASPALATHUS (*Indica*) foliis quinatis sessilibus pedunculis unifloris. Lin. Sp. Plant. 712. *Five-leaved Aspalthus growing close to the branches, and one flower on a foot-stalk. Dorycnium Indicum floribus singularibus rubris in pedicellis oblongis filiquis perexiguis.* Raii Supp. 47¹.

3. ASPALATHUS (*Argentea*) foliis trinis Knearibus fericeis stipulis simplicibus mucronatis floribus sparsis tomentosis. Lin. Sp. Plant. 713. *Aspalathus with three narrow silky leaves, single-pointed stipula, and woolly flowers growing thinly. Cytisus Africanus angustifolius fericea lanugine argentatus spica lagopode.* Pluk. Mat. 63.

These plants grow naturally about the Cape of Good Hope, from whence I have received their seeds. The first is a low shrub growing about three feet high, with slender branches, garnished with many trifoliate leaves growing in clusters, which are awl-shaped, pointed, and rough, at the ends of the branches the flowers come out, which are yellow, collected in woolly heads; these are rarely succeeded by pods in England. It is propagated by seeds, which must be obtained from the country where the plants grow naturally, and should be sown in pots filled with light earth as soon as they arrive: if this happens in the autumn, the pots should be plunged into an old tan-bed, where they may remain till spring, when they should be removed into a moderate hot-bed, which will ripen the plants. But when the seeds arrive in the spring, the pots in which the seeds are sown should be then plunged into a moderate hot-bed, and in warm weather the glasses must be shaded in the middle of the day, and the pots frequently refreshed with water. Those seeds which are sown in the spring, seldom grow the same year, therefore in the autumn the pots should be put into an old tan-bed, as was directed for those sown in autumn, and afterward put in a hot-bed the following spring.

When the plants come up, and are strong enough to remove, they should be each planted into a separate small pot filled with light earth, and plunged into a moderate hot-bed, to encourage their rooting again; and as soon as they are established in the pots, they should by degrees be inured to the open air, into which they should be removed in summer, placing them in a sheltered situation, where they may remain till autumn, when they must be carried into the green-house, and in winter should have but little water.

The second sort grows about five feet high, with slender branches, garnished with leaves growing by fives close to the branches; the flowers come out singly upon long foot-stalks, which are of a pale red colour; these appear in August, but seldom are succeeded by pods here. This is propagated as the former, and requires the same treatment.

The third sort rises about four feet high, with a shrubby stalk dividing into slender branches, garnished with silky leaves, coming out by threes; the flowers are purple, downy, and grow thinly on the branches. This is propagated as the two former, and must be treated in the same way as is directed for the first sort. It flowers late in the summer,

ASPARGUS, the first sprigs of herbs before unfolded into leaves, and the young and tender branches that are eatable, are called Asparagus.

ASPARGUS [*h&iri.a.i*], Gr. signifies a young shoot putting forth, Asparagus, Sparagus, corruptly called Sparrowgrass.

The CHARACTERS are,

There are male and hermaphrodite flowers upon different roots; the male flowers are tubulous, composed of six narrow petals, which do not spread open, having six short stamina, but no style or stigma; these are barren: the hermaphrodite flowers have six petals which spread open, six stamina surrounding the germen, and a short style crowned by an obtuse stigma which is prominent. The germen afterward becomes a round berry, having three cells, each including one or two seeds, rounded on their outside, but angular where they join.

This genus of plants is ranged by Dr. Linnæus in the first section of his sixth class, titled Hexandria Monogynia, but with more propriety should be placed in the second order of his twenty-first class, which includes those plants as have the Polygamia on different roots.

The SPECIES are,

1. ASPARAGUS caule herbaceo erecto, foliis fetaceis, stipulis duabus interioribus, una exteriore. Floh. Suec. 272. *Asparagus with an upright herbaceous stalk, bristly leaves, having two inner and one outer stipula. Asparagus fativa.* C. B. P. 489. *Garden Asparagus.*

2. ASPARAGUS (*Maritimus*) caule inermi herbaceo foliis teretibus longioribus falciculatis. *Asparagus with a smooth herbaceous stalk, and longer taper leaves growing in clusters. Asparagus maritimus crassifloro folio.* C. B. P. 490.

3. ASPARAGUS (*Acuticulus*) caule inermi fruticoso, foliis aciformibus rigidulis perennantibus mucronatis asquahbus. Lin. Sp. 449. *Asparagus with a shrubby smooth stalk and rigid leaves, with points which abide in winter. Asparagus foliis acutis.* C. B. P. 490.

4. ASPARAGUS (*Albus*) fipinis retroflexis, ramis flexuosis, foliis falciculatis angulatis muticis deciduis. Lin. Sp. 449. *Asparagus with flexible branches and chaffy leaves growing in clusters, which fall off in winter. Asparagus aculeatis fipinis horridus.* C. B. P. 490.

5. ASPARAGUS (*Retrofractus*) aculeis foliariis ramis reflexis retrofractisque, foliis falciculatis. Lin. Sp. Plant. 313. *Asparagus with single spines, reflexed branches, and leaves growing in clusters. Asparagus Africanus tenuifolius, viminalibus drgis, foliis laricis ad instar ex uno pulchro numerosis stellatis positus.* Piuk. Aim. 40. tab. 375.

6. ASPARAGUS (*Aphyllus*) aphyllus fipinis subulatis triatis inaequalibus divergentibus. Hort. Cliff. 122. *Asparagus without leaves, and awl-shaped: unequal spines which spread from each other. Asparagus aculeatus*

tlter, tribu; ant niatusr fbinis aJ eundem cxoitum. :. B. I.

• ASPARACIUS (Umlixaw;) caule incrjni rsmis • aculicis foliis lctacris. Prod. Lcyd. 1<- stfbarapu • miib a fimatb jialk, ikiSiniitg Vr.

2. Asparacus (jftaliatt: aculeis foliis caule erecto fclii falcuatis lirtibus, filif t: . St. Plant.

113. Asparacus with single stems, upright stalk, leaves turning in clusters, and very slender branches.

9. Asparacus (Cepeda) fcaulis foliis falcuatis. Lin. Sp. PL111: 344- Jjppoggiu viih

and mals O/ (ht Armcim, Hfki Sw, [twiig out in tluficri.

10. AIIIMKAUUS (Sanr.tnhfus) tyliis folicariis linear! Ian-cobiis caule Sracufo aculeij rec P. c. ZeyL

124. Hporagui • with single, narrow, spear-shaped leaves, a JfariMt jialk, ... and several stems. Asparagus aculeatus Zeylanicus maximus Lamourouze, H. L. 64.

The lirit fort is the common Asparagus, which is cottmed for the ulc E the table, and may have probafaWbccfibuuvtit by tukurc LU da perfection; it nuw a, li DWS n. icuriJly in hire, whict tht llioots ire no larger than draws i but if (b, it in ul have been fr<n very long ailture and goo l management : tir a friTMJ of mine, » no processed some beds of the w J fort, which he cultivated wiih grea[caru, in \<... rich ground, yet could not bring the roots w \oduce moots niori- tiin half the size of the garden kind, which mew ornhe inncngromi i; i but he always found the wild fort came up 3 week or ten days earlier in the spring, and tie fhooos were exceeJin- f

1 have lately had lome tlouli whether the fort of Af-jaragiis which grows naruri in England, was the time wiili that nicniuncj by Cljilp Toume fon and Vaillam both cStat that they had cultivatd that wild fort in [he royal

garden at Paris several years, and it had never altered, therefore I procured specimens of that, which I find to be extremely different from the English fort. The leaves are much finer and : rarer, and are induced in • ch larger clutters; UK branch^ grow mud cloier together, and the foot-stalks of the flowers are longer; therefore i believe it to be a distinct species from our wild fort, which appears to me undoubttkd the same as the Giakn /Ujtaragus.

The Garden Asparagus is propagated by feeds in tin-procuring of w b £ laTfdliiii hii

in for his choice of ilit (foots, and inti • ty in fap-ping wiil the best feeds. Hut d

in potTidHn of I have good beds of Asparagus, it is much the btl

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tc i run uji i the feeds; because those which are cut after the -ibn for cutting die At

nerly ijr ib backw.irtC as nui to ripen the feeds which the funnmer is wann, and the aununn vtry favour-

able. If the choice of the beds to be sown the feeds, there imift be great regard had to their size and roundness, never leaving any that are inclinable to be Hat, or th

that soon grow open headed, always choosing the rJWirleft, ami fucn .1 • . the choicest tops. Bur l

are barren, a greater numbi of beds should be KI. than might be necessary, if there could be a certainty of their being all fruitful. When the beds are left, it will be proper to thr• a flick down by ea

, but there mult bi- 'nv iinl in or injure L! the crown of the root. These beds will serve as marks to distinguish them from the others when they are all run up.

Toward the end of September tiw berries will be fully ripe, when the stalks (haul be cut • , and the berries stripped into a tub, in which they may remain three weeks or a month or more, by which means the outer hulls will be rotten, then fill the tub with water, and wash your hands

tin. • all the hulls by squeezing them between your

hands. Their hulls will all swim upon the water, but the feeds will sink to the bottom; to thereby parting off the worst quality, the hulls will be carried along with it, and by pouring fresh water two or three times, and stirring your seed about, you will make it entirely clean: then spread the seed upon a mat or cloth, and expose it to the sun and air in dry weather, until it is perfectly dry, when it may be put into a bag, and hinged up in a dry place till the beginning of February, which is the proper season for sowing it; so which time you must prepare a bed of good rich earth made very level, whereas you must dig your l

pLins to be firm; then tread the bed all over to tray the feed in the ground, and make it even smooth. The following summer keep the ground constantly cleared from weeds, which will greatly add to the strength of the plants; and toward the latter end of October, when the haulm is quite withered, you may (pread a little rotten dung over the surface of the ground, about two inches thick, which will preserve the young buds from being hurt with the frosts, &c.

The i ring following the plants will be fit to plant out in good (the plants of more than one year's growth are unfit to remove, as I have often experi- rtdCii for young plants are much better than old, ill produce their roots;) you must therefore and n your ground by treading it well, burying therein a good quantity of rotten dung at the bottom of each trench, that it may be at least six inches below the surface of the ground; then level the whole plot very exactly, taking out all large lumps; but

must not be done long before you intend to plant your Asparagus, in which you must be govern- ed according to the nature of your soil or the season; for if your soil is dry and the season forward, you may plant early in March; but in a wet soil, it is better to wait till the end of that month, or the begin- ning of April, which is about the season that the plants are beginning to shoot. I know many people have advised the planting of Asparagus at Michaelmas, but this I have experienced to be very wrong; for in two different years I was obliged to transplant large quantities at that season, but I had better have thrown away the plants; for upon examination in the spring, I found most of the roots were grown mouldy, and decaying, and I am sure, not one in five of them successful, and those which did were so weak, as not to be worth their breeding.

The season being come for planting, you must, with a narrow pointed dung-fork, carefully dig up the roots, shaking them out of the earth, and separating them from each other, observing to lay their heads down, for the more convenient planting them, which must be performed in this manner:

The plot of ground being levelled, you must begin at one side thereof, treading a line very tight with the pick, throwing out a trench exactly straight, by the line about six inches deep, being careful not to turn up the dung; into which trench you may lay your roots, spreading them with your fingers, and placing them upright against the back of the trench, that the heads may stand forward, and be about two inches below the surface of the ground, and at twelve inches distance from each other, then with a rake, draw the earth into the trench again, laying it very level, which will preserve the roots in their right position; then remove the line a foot farther back, and make another trench in the like manner, laying therein your plants as before directed, and continuing the same distance row from row, only observing between every four rows, to leave a distance of two feet four inches for an alley to go between the beds to cut the Asparagus, &c.

The plot of ground being levelled and levelled, you may sow therein a small crop of Onions, which will not hurt the Asparagus, provided the Onions are not too close, and tread in the feeds, taking the ground level.

There are some persons who plant the feeds of Aparagus in the place where the roots are to remain, which is a very good method, if it is performed with care. The way is this: after the ground has been well trenched and dunged, they lay it level, and draw a line across the ground (in the same manner as is practised for planting of the young plants;) then with a dibble make holes at a foot distance, into each of which they drop two feeds, for fear one should miscarry; these holes should not be more than half an inch deep, then cover the feeds, by striking the earth in upon it, and go on removing the line a foot back for another row; and after four rows are finished, leave a space for an alley between the beds, if it is designed to stand for the natural season of cutting; but if it is to be taken up for hot-beds, there may be six rows planted in each bed, and the distance in the rows need not be more than nine inches. This should be performed by the middle of February, because the feeds lie long in the ground; but if Onions are intended to be sown upon the ground, that may be performed a fortnight or three weeks after, provided the ground is not stirred so deep as to disturb the Aparagus-feeds, in raking the Onion-feeds into the ground.

As the roots of Aparagus always send forth many long fibres which run deep into the ground, so when the feeds are sown where they are to remain, the roots will not be broken or injured, as those must be which are transplanted; therefore will shoot deeper into the ground, and make much greater progress, and the fibres will push out on every side, which will cause the crown of the root to be in the center; whereas in transplanting, the roots are made flat against the side of the trench.

When the Aparagus is come up, and the Onions have raised their feed-leaves upright (which will be in six weeks after planting) you must with a small hoe cut up all the weeds, and thin the crop of Onions where they may have come up in bunches: but this must be done carefully, and in dry weather, that the weeds may die as fast as they are cut up, being careful not to injure the young shoots of Aparagus, as also to cut up the Onions which grow near the shoots. This work must be repeated about three times, which, if well done, and the season not too wet, will keep the ground clear from weeds until the Onions are fit to be pulled up, which is commonly in August, and is known when their greens fall down and begin to wither. When you have drawn off the Onions, it will be necessary to clean the ground well from weeds, which will keep it clean till the alleys are dug to earth the beds, which must be done in October, when the haulm is decayed; for if you cut off the haulm while green, the roots will shoot fresh again, which will greatly weaken them. This young haulm should be cut off with a knife, leaving the stems two inches above ground, which will be a guide for you to distinguish the beds from the alleys; then with a hoe clear off the weeds into the alleys, and dig up the alleys burying the weeds in the bottom, and throw the earth upon the beds, so that the beds may be about four or five inches above the level of the alleys: then a row of Coleworts may be planted in the middle of the alleys, but never sow or plant any thing upon the beds, which would greatly weaken the roots, nor would I ever advise the planting of Beans in the alleys, as is the practice of many; for that greatly damages the two outside rows of Aparagus. In this manner it must remain till spring, when some time in March, the beds should be hoed over, to destroy all young weeds; then rake them smooth, and observe all the succeeding summer to keep them clear from weeds, and in October dig up the alleys again, as was before directed, earthing the beds, &c. The second spring after planting, some persons begin to cut some of the buds of Aparagus for use, though it would be much better to stay until the third year; therefore now the beds should be forked with a flat-pronged fork made on purpose, which is commonly

called an Aparagus-fork: this must be done before the buds begin to shoot in the spring, and should be performed with care, lest you fork too deep, and bruise the head of the root; then rake the beds over smooth, just before the buds appear above ground, which will destroy all young weeds, and keep your beds clean much longer than if left unranked, or if done so soon as forked. When the buds appear about four inches above ground, you may then cut them; but it should be done sparingly, only taking the large buds, and suffering the small to run up to strengthen the roots; for the more you cut, the greater will be the increase of buds, but they will be smaller and the roots sooner decay. In cutting the buds, you must open the ground with your knife (which should be very narrow-pointed, and long in the blade, and filed with teeth like a saw) to see whether any more young buds are coming up close by it, which might be either broken or bruised in cutting the other, then with the knife saw it off about two inches under ground. This may appear a very troublesome affair to people unacquainted with the practical part, but those who are employed in cutting Aparagus, will perform a great deal of this work in a short time; but care in doing it is absolutely necessary to be observed by all who cut Aparagus.

The manner of dressing the Aparagus-beds is every year the same as directed for the second, viz. keeping them clean from weeds in summer, digging the alleys in October, and forking the beds toward the end of March, &c. only observe every other year to lay some rotten dung (from a Melon or Cucumber-bed) all over the beds, burying some in the alleys also, at the time for digging them up. This will preserve the ground in heart to maintain the roots in vigour, and by this management, a plot of good Aparagus may be continued for ten or twelve years in cutting, and will produce good buds, especially if it is not cut too long each season; for when it is not left to run up pretty early in June, the roots will be greatly weakened, and the buds will be smaller: therefore, in those families where Aparagus is required late in the season, a few beds should be set apart for that purpose, which will be much better than to injure the whole plantation, by cutting it too long.

I cannot help taking notice of a common error that has long prevailed with many people, which is, that of not dunging the ground for Aparagus, believing that the dung communicates a strong rank taste to the Aparagus, which is a great mistake, for the sweetest Aparagus is that which grows upon the richest ground; for poor land occasions that rank taste so often complained of, the sweetness of Aparagus being occasioned by the quickness of its growth, which is always proportionable to the goodness of the ground, and the warmth of the seasons. In order to prove this; I planted two beds of Aparagus, upon ground which had dung laid a foot thick, and these beds were every year dunged extremely thick, and the Aparagus produced from these beds was much sweeter than any I could procure, though they were boiled together in the same water.

The quantity of ground necessary to be planted with Aparagus, to supply a small family, should be at least eight rods, less than that will not do; for if you cannot cut one hundred at a time, it will scarcely be worth while, for you must be obliged to keep it after it is cut two or three days, especially in cold seasons, to furnish enough for one meal; but for a larger family, sixteen rods of ground should be planted, which if a good crop, will furnish two or three hundred each day in the height of the season.

But as there are several people who delight in having early Aparagus, which is become a very great trade in the kitchen-gardens near London, I shall give proper directions for the obtaining it any time in winter.

You must first be provided with a quantity of good roots (either of your own raising, or purchased from such

uch gardeners as plant for EJC.) filch ss have been
 no or three years planted out from the <...>
 and having fixed upon tin- ; one you would willingly
 have: your Afrtragu- fit to cut, about six weeks be-
 fore, you ihon- prepare a quantity of new fiddle
 hirc-dung, which liiouUl be th... in a heap for
 i Jays or more, to femr... making these into a
 after with i ;[-, thien it . ovei
 re it muft lie anothei week, when :* will
 : ht for lift. Then dig out it trench in the ground
 :id to matt the bed, the width of the
 nes tfo . • defigned :- cover it, and the length
 tion co the quantify you intend to have
 (which is defigned only to fupr . • * Im ill family, three
 or four lights at a time will be fufficknt,) but for a
 larger family, (x)r tight lights will nmlx* too much :
 i lay i lung into the trench, working
 : very regular
 norc, when the beds are made in December; then
 earth thereon noon' fix inches ;lick, break-
 ing the clods and • Ing it level; and 3E one end, be-
 gin laying your roots againft a. little ri Jgc • of earth,
 raised ab air tour inches high: your rrmrt inquit be
 mid as cluli; as }ofTibk' ont t to the other, in rows, with
 their buds flanding upright; and between every row
 ay a fmmll quantity of fine mould, obferving to keep
 the crown of the roots exoBXY lev! . VVhen you have
 nifhed I... your bed with roots, you muft lay
 bine itiff'i-lu-th up to the roots, 01... the outfides of the
 bed, whi b are bare, to keep them from drying;
 and I thruft two or three fharp-pojKcd (ticks, about
 two feet long, ' JVTI between the roots, in the
 F the bet!, at a difcance from each other. The nfc
 of thfe fticks is to inlurm j... what temper of heat
 de bed b in, which you may find by drawing up the
 fticks, and... and if, after the
 d hit. been nwdi... a week, you find it doth not heat,
 you may lay a little draw or liner round the fticks,
 and alfo upon the top, - • I will greatly help it; or
 if you find it very hot, fo as to endanger the decay
 of the roots, it will be ad... to let it remain
 wholly uncovered, and to thruft a large ftick into the
 dung, on each fide of the bed, in two or three places,
 to make holes for the great ftream of the bed to pafs
 off, which in a fhort time will... deduce the b :
 to a moderate heat.
 After the bed has been made a fortnight, vml... muft
 cover the crown of the roots with fine earth, about
 two inches thick; and when the buds begin to appear
 above ground through their earth, you muft again lay
 on a frefh quantity, about three inches thick; fo that
 in the whole, it may be five inches above the crown
 of the root, which will be fufficient.
 When you mud make a band of ftraw for Ion...
 about four inches thick, w ;.iJimuftbe... around
 the fides of the bed, that the upper part may be level
 with the furface of the ground: this muft be fattened
 with ftreak fticks about two feet long, fattened at
 the points, to... and upon this band
 you muft fix your frames, and put your glaffes there-
 on; but if, after your bed hath been made three
 weeks, you find the frame declining, you muft lay a good
 lining of ftraw... the fides of the bed,
 which will alfo... and in bad wea-
 ther, to alfo every night... keep the glaffes covered
 with mats and ftraw; but in the day time, let it be
 all taken off, especially whenever the fun appears;
 which... being through the glaffes, will give a good
 colour... w Alparagus.
 A... us made, if it works kindly, will begin to
 do for cutting, in about ii. fvc or fix...
 which, [•...
 r to !
 bed th
 produce bu...
 beginning of Mard...
 f... made: tor if A...
 that timr, about...
 io that where A"]...
 until the feifon of...
 bed (koutd be i

in March, it •.l. left till the feifon of "nature!
 ragus; for the El... beds will chine a fortnight earlier
 tooitaftermzking, ihantiaai.- macit . about Chriftmas;
 and the buds will be br... and better coloured, as
 they will then enjoy a greater fhare of the fun.
 When this method of forcing early Alparagus is in-
 tended, there Ihou... be every year fuch a quantity
 pinnted, w]... which you fhall judge neceffary (unlefs you
 intend to buy the r... from fome other garden); the
 quan.:- of roots neceffary to plant one light, is com-
 monly known by the n... of the ground where they
 grow; for when there is a good cry... and few roots
 are miffing, one re... of ground will furnish enough
 for a light; but this calculation is made from the
 ground pLar, i... with some, which are defigned to be
 taken up after two or three years growth for forcing,
 in which there are fix roots in a bed, or but ten inches
 dlftanee... and the plants might be nine inches afunder
 in the row; bin... where there is a greater fpace be-
 tween the rows, and fewer roots in a bed, then there
 muft be a greater quantity of ground allotted for each
 light. Many of the kitchen gardeners about London,
 take up their Alparagus roots after two years growth
 from planting; but when the land is not very good,
 it is w... to let it have three years growth, for
 if the roots 2... week, the beds of Alparagus will be
 very fimll, to not want the trouble of forcing. The
 be ft ground... the planting Alparagus, to have large
 roots for hot... beds, is a small rich fill, but for those
 that are to remain for a natural produce, a middling
 foil, nt... other top wet not too dry; but a frefh fandy
 loin-. when well dunged, is preferable to any other.
 The forced lot is propagated to grow naturally in
 Wales, and alfo near London: I have received feeds
 from the Ifland of Portugal, which have fucceeded
 in the Chelsea garden, by which I am convinced it
 is a different fpecies from the Garden Alparagus; and
 alfo from the wild fort which grows naturally at Gibral-
 tar, and alfo near Montpellier, is different from both.
 Mr. Stappol, of Montpellier, was alfo of the op...
 nion... that it was a different fpecies, for he fays, the con...
 wild Alparagus and this grow near each other...
 in die neighbourhood of Montpellier, and the young plants
 of the former were fweet, whereas thofe of the latter
 were bitter. The fame has been confirmed to... by
 feveral gardeners, who have related many years...
 at Gibraltar and Minorca, where the forced lot g...
 naturally in plants.
 This fort is propagated by feeds in the fame manner
 as the garden kind, but muft have a warmer fituation;
 and the roots fhould be well covered in winter, to
 prevent the froft from penetrating the ground, which
 will deftroy it.
 The third fort hath white, crooked, ftrubby ftalks,
 wiitli... • four or five feet high, but have 90 ftints
 <jil til*... the leaves come out in clufters from...
 the lower part, like thofe of the Larch-tree; the... are
 very fhort, and end in fharp prickles, fo that they
 are unpleafant to handle. This fort grows naturally
 in the South of France, Spain, and Portugal. It is
 propagated by feeds as the former fort, but is too
 tender to live abroad in England, fo the roots fhould
 be planted in pots, or near a ftone wall, and fheltered
 in winter.
 The fourth fort grows with fliruliby (bills th... or
 four :... high, with very white buds, and are armed
 with thorns which are fingle, coming out juft below
 tacli I... of leaves. These ftalks continue feveral
 years, and put out many bunches, garnifhed with
 narrow fhirt leaves. These continue green all the
 winter, if the plants are fheltered from fevere froft.
 It is propagated by feeds as the former, which may
 be procured from the Mediterranean, where it grows
 naturally; fome of the plants fhould be kept in pots,
 that they may be fheltered in winter, and the others
 may be planted in the full ground in a warm fituation,
 and in hard froft covered, otherwife it will not live
 abroad in this country.
 The fifth fort grows naturally at the Cape of Good
 Hope. This hath very crooked irregular ftalks, which

are thrubby, and rise eight or ten feet high, putting out several weak fide branches, garnished with long narrow leaves, coming out in clutters like those of the Larch-tree, under each of these clutters is placed a single sharp thorn. The stalks continue several years, and the leaves keep green all the winter. This is commonly propagated by parting the roots, because the plants rarely produce seeds in this country, the best time for this is in April. The roots must be planted in pots, and removed, into the green-house in the autumn, for these plants will not live abroad in England.

The sixth fort grows naturally in Spain, Portugal, and Sicily, generally in rocky places. This sends up many weak irregular shoots, which have no leaves, but instead thereof, are armed with short stiff thorns, which come out four or five together from the same point, and spread from each other every way. The flowers are small, of an herbaceous colour, the berries are larger than those of the common fort, and are black when ripe. This is tender, so must be treated as the third fort.

The seventh fort grows naturally at the Cape of Good Hope. This sends up from the root several tender stalks, which put out weak branches, declining downward; these are dolefully garnished with brittle leaves, like those of Garden Asparagus, which continue green through the year. It hath not produced any seeds in England, so is only propagated by parting the roots, as the fifth fort, and the plants should be treated in the same manner.

The eighth fort grows naturally at the Cape of Good Hope, this sends up many weak shoots growing in clutters, which are armed with sharp spines, both on the side and ends of the shoots, the leaves come out in small clutters, which continue green all the year. This doth not produce seeds in England, so is propagated as the fifth fort, and requires the same treatment.

The tenth fort sends out from the root many weak climbing branches which rise five or six feet high, garnished with narrow spear-shaped leaves coming out single, the shoots are armed with short crooked spines, which render it very troublesome to handle the plants, for they are so closely set on, that it is difficult to touch the branches. This is propagated by parting the root, but the plants must be placed in a moderate stove, otherwise it will not thrive in this country. It grows naturally in the island of Ceylon.

These plants are preferred in the gardens of the curious, where they add to the variety; being not difficult to manage, where there is conveniency to house them in winter. They should have a place among other exotic plants.

ASPARAGUS SCANDENS. See MEDEOLA.
ASPEN-TREE. See POPULUS.

ASPEHIFOLIUS plants [asperifolius, of asper, rough, and folium, Lat. a leaf] are such plants as are rough-leaved, having their leaves placed alternately, or without any certain order, on their stalks: the class of plants so denominated by Mr. Ray, have a monopetalous flower, cut or divided into five parts; after every flower there succeed commonly four seeds. Of this class are Bugloss, Borage, Comfrey, Hounds Tongue, &c.

ASPERUGO, small Wild Bugloss.

The CHARACTERS are,

The empakment is of one leaf, cut lightly at the top into five equal parts \ the flower is of one leaf, having a short cylindrical tube, cut at the top into five small fluted parts, which are closed at their base: it hath five short stamina, pwnned by cblong fummits \ in the center there are four con-prefed germen, supporting a short slender style, crowned with a blunt stigma. The germen are four, and the seeds are four, enclosed in the mpalemi

This genus of plants is ranged in the first section of Linnaeus's fifth class, entitled Pentandria Monogynia, the flower having five stamina and one fruit?

We know but one SPECIES of this gen, which is, ASPERUGO. Fior. Lapp. 76. *S. arvensis* L. *S. arvensis* L.

Goose Grafts, or German Madwort. Buglossifolium fylestifum caulibus procumbentibus. C. B. P. 257.

This is an annual plant, which is found wild in some parts of England, as near Newmarket, at Boxley in Suffex, and in Holy Island. It is preferred in botanic gardens for variety, and may be easily propagated by seeds, which should be sown in autumn; for if the seeds are kept out of the ground till spring, they do not succeed so well. When the plants come up, they require no other culture but to keep them clear from weeds, and in May they will flower: in June their seeds will be perfected, which, if suffered to scatter, will grow again in autumn; so that when this plant is once brought into a garden, it will maintain itself, provided it be allowed a place.

ASPERULA, Woodroof.

This plant grows wild in shady woods in many parts of England, and flowers in April or May, and is sometimes used in medicine.

Dr. Linnaeus has joined to this genus the *Gallium album*, *Gallium montanum*, and *Rubia fyanthica Saxatilis*. C. B. But as these grow wild in England, and are rarely admitted into gardens, I shall pass them over with just mentioning them.

ASPHODELUS [*Asphodelus* Gr. by Pliny it is called *Asphodelus*, or *Baccillus Regius*, because when it flowers, the stalk resembles a royal scepter.] *King's Spear*.

The CHARACTERS are,

The flower has no empakment \ it is of one leaf cut into six parts, which spread open; at the bottom is inserted a globular nectarium, having six valves; it hath six awl-shaped stamina, which are inserted in the valves of the nectarium, and are crowned by oblong fummits, which are prostrate, and turn upward \ between the nectarium is placed a globular germen, supporting an awl-shaped style, crowned by a club-like stigma: the empalement afterward becomes a fleshy globular seed-vessel, having three cells, which are filled with triangular seeds.

This genus of plants is ranged in the first section of Linnaeus's sixth class, entitled Hexandria Monogynia, the flower having six stamina and one style.

The SPECIES are,

1. ASPHODELUS (*Luteus*) caule folioso, foliis triquetris fistulosis. Hort. Cliff. 127. *King's Spear with a leafy stalk, and triangular fistular leaves.* *Asphodelus luteus* & flore & radice. C. B. P. 28,
2. ASPHODELUS (*Ramosus*) caule nudo foliis ensiformibus carinatis laevibus. Lin. Mat. Med. 172. *King's Spear with a naked branching stalk, and smooth, sword-shaped, carinated leaves.* *Asphodelus albiis ramosus* mas, C. B. P. 28.
3. ASPHODELUS (*Albus*) caule nudo simpliciter foliis lineari-ensiformibus. *King's Spear with a single naked stalk, and narrow sword-shaped leaves.* *Asphodelus albus non ramosus*. C. B. P. 28,
4. ASPHODELUS (*Fistulosus*) caule nudo foliis frigidis subulatis triatis fistulosis. Hort. Cliff. 83. *King's Spear with a naked stalk, fistular awl-shaped leaves, and an annual root.* *Phalangium parvo flore ramosum foliis fistulosis annuum*. H. L.

The first fort is the yellow Asphodel, which is used for use in medicine, this hath roots composed of many thick, fleshy, yellow fibres, joined into a head at the top; from whence arise strong, round, single stalks, near three feet high, garnished their whole length with long triangular leaves, which are boat-shaped, of a sea-green colour the upper part of the stalk is adorned half way with yellow star-shaped flowers, which begin opening from the bottom, and are followed by others above; so that on the same spike, there is often a succession of flowers for a month. It flowers in June, and the seeds ripen in autumn;

There is a variety of this with a larger flower, mentioned in the catalogue of the Royal Garden at Paris, by the title of *Asphodelus spiralis luteus*. Italicus magno flore, the seeds of which I received from the garden at Pisa, some years ago, and the first year of the plants flowering in Chebea garden, the flowers were larger, and the spikes longer than those of the common

A S P

Common fort -, but in two years time, they were [a like the common fort as not to be distinguished from it, as were also the young plants which were raised from the feed sowed at Chelsea, therefore it should be esteemed an accidental variety.

The second fort hath roots composed of many thick fleshy fibres *, to each of which is fattened an oblong tuber, as large as small potatoes *, the leaves are long and flexible, having acute edges; these grow in irregular clutters, from the crown of the root *, between these come out the stalks, which rise more than three feet high, sending out several side branches, which are naked; the upper part of these are adorned with many white star-shaped flowers, consisting of one leaf cut into six parts, each having a purple line running lengthways on the outside of each segment. The flowers grow in long spikes, flowering gradually upward. They appear the beginning of June, and the feeds ripen in autumn.

The third fort hath roots like the second, but the leaves are longer and narrower; the stalks of this are single, never putting out any side branches; the flowers are of a purer white, and grow in longer spikes. This flowers at the same time with the former.

The fourth fort is an annual plant, the roots of this are composed of many fleshy yellow fibres, the leaves are spread out from the crown of the root, close to the ground, in a large cluster; they are convex on their under side, but plain above, and hollow like a pipe; the flower-stalks rise immediately from the root, and grow about two feet high, dividing into three or four branches upward, which are adorned with white starry flowers, with purple lines on the outside. These flower in July and August, and their feeds ripen in October, soon after which the Plants decay. It grows naturally in the south of France, Spain, and Italy.

The first fort grows naturally in many of the islands of the Archipelago, and also in Sicily. The second, third, and fourth forts grow naturally in Portugal, Spain, and Italy; the third fort is not quite so hardy as either of the other, so in very severe winters it is sometimes killed, unless the roots are covered in winter. The yellow fort multiplies very fast by roots, and will soon overpread a large border, if suffered to remain unremoved, or the side roots are not taken off; but the other forts are not so productive of shoots from their sides, and are much better kept within bounds.

The second and third forts do not increase very fast by their roots, nor should they be often transplanted, for that will weaken them, so that their flower-stems will not rise so tall, or produce so many flowers, as when they are left undisturbed for some years * therefore the best way is, to propagate these by feeds.

These three forts of Asphodel are very pretty ornaments for a flower-garden, and, requiring very little trouble to cultivate them, are rendered more acceptable. They may be all propagated by feeds, which should be sown soon after they are ripe, on a warm border of light fresh earth: in the spring the plants will appear, when you should carefully clear them from weeds, and in dry weather they must be frequently watered: if this be duly observed, the plants will have acquired strength enough to be transplanted by the Michaelmas following; at which time you must prepare a bed of fresh earth in the flower nursery, into which you should plant the roots, at about six inches distance every way, observing to plant them so low, as that the top of the roots may be three or four inches under the surface of the bed; and some old tan, or dung, should be spread over the surface of the ground, to keep out the frost: in this bed they may remain one year, during which time they should be kept clear from weeds; by which time, the roots having acquired strength enough to produce flowers the following year, they should, in autumn, when their leaves are decayed, be carefully taken up, and transplanted into the flower-garden, observing to place them in the middle of the borders, amongst

A S T

other hardy kinds of flowers, where being properly intermixed, they will make an agreeable variety, and continue a long time in flower.

The fourth fort is an annual plant, so is only propagated by feeds *, these should be sown in the autumn, when they will more certainly grow than if sown in the spring: when the plants are up, they will require no other trouble but to keep them clean from weeds, until they have put out four or five leaves, when they should be carefully removed to the places where they are to remain for good. If the feeds of this plant are permitted to scatter, the plants will come up without care, and those which are not removed, will be the strongest plants, and produce a greater number of flowers.

ASPLENIUM, or Ceterach [is so called from a privative, and *Asplen* the spleen, because good against diseases of the spleen.] Spleenwort or Miltwaffe.

The CHARACTERS are,

The leaves are like those of the Polypody, but less and pretty round* notched toward the side* downy on their under side, having aqueous dust* in which* by the help of a microscope* membranous capsule* or seed pods* lying close to one another* are perceived* every one furnished with a little round cord* which by its contraction opening the fruit into two parts* pours forth certain very small seeds: the root is fibrous. This plant thrives in stony places* as in walls* 67r.*

This plant is of the Fern kind, and grows upon old moist shady walls in divers parts of England; but is never cultivated in gardens. There are several species of this plant in America, but they have not been introduced into England.

ASTER [*Astris*, Gr. a Star-, so called because the flower is radiated with little leaves after the manner of a star.] Starwort.

The CHARACTERS are,

It hath a compound flower composed of several female and hermaphrodite florets* included in one common scaly empalement; the rays or border of the flower is composed of several female florets* whose upper parts are stretched out on one side like a tongue* and indented in three segments at the end the hermaphrodite florets form the disk or middle 1 which are Jewel-shaped* and divided at the top into five parts* spreading open* and have each five short slender juncos* crowned with cylindrical Juncos* in the bottom is placed a crowned germen* supporting a slender style* crowned by a bifid stigma* the germen afterward becomes an oblong feed* crowned with down: the female flowers have a germen supporting a slender style* crowned by two oblong stigmas, which turn backward. These have no stamina* but in other respects are like the hermaphrodite flowers.*

This genus of plants is ranged in the second edition of Linnaeus's nineteenth class, entitled Syngenesia Polygamia superflua, from the same flower having female and hermaphrodite florets included in the same empalement.

The SPECIES are,

1. **ASTER** (*Alpinus*) foliis lanceolatis hirtis, radicalibus obtusis, caule simplicifloro unifloro. Lin. Sp. Plant. 872. Starwort with hairy spear-shaped leaves* those at the root blunt* and a single stalk* having one flower. After montanus caeruleus magno flore foliis oblongis. C. B. P. 267.
2. **ASTER** (*Amellus*) foliis lanceolatis obtusis scabris trinerviis integris, pedunculis nudiusculis corymbosis squamis calycinis obtusis. Lin. Sp. Plant. 873. Starwort with rough* blunt* spear-shaped leaves* which are entire* having three veins* naked foot-stalks* flowers in a corymbus* and blunt scales to the empalement. After atiticus caeruleus vulgaris. C. B. P. 267. vulgarly called Italian Starwort.
3. **ASTER** (*Tripolium*) foliis lanceolatis integerrimis carnosis glabris ramis inaequalis, floribus corymbosis. Lin. Sp. Plant. 872. Starwort with smooth* fleshy* spear-shaped leaves* which are entire* unequal branches* and flowers in a corymbus. After maritimus Tripolium di&us. Raii Hilt. 270.
4. **ASTER** (*Linifolius*) foliis linearibus acutis integerrimis, caule corymboso ramofliformi. Hort. Cliff. 408. Star-

After Perice: folis fern. Ut gbris, floribus sparis pallijli caecri. Dillen Cat. Uxon.

11. ASTER (Trad./oans) folis oblongis tenuis half la-rii>ribu5 Ieraiaupi -... caule ramulis fl.ibus terminal'tbus pltxn 1...
 jiaJil, tt/hii for th nicjl p
 After Perice: folis fern. Ut gbris, floribus sparis pallijli caecri. Dillen Cat. Uxon.

19. ASTIR (Prttex) caul... [iito fulik oblongij acutu feabria acun-dencatis icmbimplexicaulibus ijo-ribus corynbofis, calj-cibus Kirluis erc:m. Slat... with a bciry upright fiaii, el/foiig printed rcugb law, jbarfh indented, half'mfoaimg iicifalks, atdfe^fn in a csrymbus 0itb hairy ertfi emprdnmti. ASUT I... IUELU9 ftaaa I^rcca-uico rajjori. II. k. Par.

20. AV... (Alyssum) caule strillu... liiri'itu limpiicil- lini) t'liii'dblongis acuosbai. ::... wulibus fioribm mbus kluiiilms tennkiaTJbu*. Star- 'jart with a very la!! , •... thlmg ponied tea-jci, ishich art... J fa\$J emhtan tbtfdki, tubich are terminated ly thrtt fwetri filliuritaj <kft.

11. AITIK (Rjunoiifumu) caule runoclflimo pituio, foliis Unnri-ltaceoUtii l'igick, lioribus li-iratim p>- Ctis pedunculis fo) aartvM a very brat... fpreadingfalk, KGrrixii, ffsarfapeJ, jlif l<-v<, Jlijji- tri placed tiK obese smhi

21. AiTiR ip'tr.idLilus) fol... caule Cmplkj fluribu> ui... Jialt, urmiZ
 lintarihai cm... iriluii trr.injljbus tjuali... fshaped, feinted, i)srj<>iti... AjfJlmmgrowHlg al>mj;

24. ASTER (Paral...) folis interioribus ivavti bail... unpleikaulibuj, fu; caule panicul'tto ramis ULI lions ;... \$t0tWrt Wt... baft half em- traca li'tjliilks, She upp... tail aiuiJpti^'fiaffJ, a foik trruitiifd by a... iit a fu;gU jk-vxr cr tafb hatch, tin J

15. ASTIU. [RigiJus;... 'iitia fulieirib' foliir lificaribui wtemifi. flo... rrvititbjKrU jltmtri at tbt end^ t>f six Wtwibeii snd-ztn narrow Itstua placed alternatly.

25. IKR [Ijiitfelitii'] foliis iineari-lmceolada ^labris crincrvii5 lioriGus toyinbofi.i t^rminaiibu*. 9; ttvti fniMtb jfi.:... :VJ, awii Jovi- ttatu, fl&wers m it toijtntiftis, wjebj . Uuilulus Tripolii note. H. R. Par.

27- Airraa (Dnwfnus) roliu linnribus intcgerrimis twnciiaato. Hort. Cliff 40K. ... aifVi tire^entire, <> a half pile of flowers. Afer Nova; Anlli:i: iuui.i foliis Chnstmelli flore. Par. Bat. Prod. yj.

iS. ASTER (Ama) folis lanceolatis olarilsteribus inferiorm crtnatia, ra lice aniuu, tiule corymb... pedunculis nudi^ Hort. Cili'. :... s, ihtftlts t-j... -i aim awtjt/iUs aiding -... ftu-jfiixs. iVlttr rair

29. ASTER (Frangula) folis lanceolatis falcicvatis punc- tatis, pi'dunculis unidoris n... caule fruticosa ru- pido. Hort. Cliff. 409. ... zwmgixiluftr.;

angullis & plcruniquc toni... p. 53.

3a. AsTrit {CbiiMjb; foliis 0... angulatis dentatis, orbolatis calyeb' ii tirmiclih.K... i lijrt. Clifi. 407. Sta^v:r/ •... iIavts, and tic entpalirmati Urnnan.i by spreading leaves. Afu • Chtntpodii fbiiu ntuuius, (lore iagetiti Ipi... Hart. Kiel). 38.

After Perice: folis fern. Ut gbris, floribus sparis pallijli caecri. Dillen Cat. Uxon.

11. ASTER (Trad./oans) folis oblongis tenuis half la-rii>ribu5 Ieraiaupi -... caule ramulis fl.ibus terminal'tbus pltxn 1...
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31. ASTER (*Aurantius*) foliis pinnatis. Hort. Cliff. 407. *Starwort with winged leaves.* After Americanus foliis pinnatis & ferratis floribus aurantis. Houft. MSS.
32. ASTER [*Procumbens*] foliis ovatis dentatis caule procumbente, pedunculis nudis axillaribus unifloris. *Starwort with oval indented leaves* a trailing ftalk* and naked foot-ftalks proceeding from the fide with a fingle flower.* After Americanus procumbens bellidis minoris facie. Houft. MSS.
33. ASTER (*Mutabilis*) foliis lanceolatis ferratis, calycibus fquarrosis, panicula fubfaffigiata. Lin. Sp. 1230. *Starwort with fawed fpear-fhaped leaves* rough flower-cup, and bundled panicles.* After Novi Belgii latifolius paniculatus, floribus faturate violaceis. H. L. 65.
34. ASTER (*Sibiricus*) foliis lanceolatis venofis feabris extimoerratis, caulibus ftriatis, pedunculis tomentofis. Lin. Sp. 1226* *Starwort with veined fpear-fbaped leaves* ftriaied ftalks* and woolly foot-ftalks.*
35. AftiR (*Divaricatus*) ramis divaricatis, foliis ovatis ferratis, floralibus integerrimis obtufufculis amplexicaulibus. Flor. Virg. 123. *Starwort with forked branches, oval fawed leaves* thofe near the flowers are outufe* entire* and embrace the ftalk.* After Americanus latifolius albus, caule ad fummum brachiato. Pluk. Aim. 56.

The firft fort grows naturally upon the Alps, where it feldom rifes more than niffe inches high, and when tranfplanted into a garden, not above fixteen. It fends up fingle ftalks from the root, which are thinly garnifhed with oblong leaves; at the top of each ftalk is one large blue flower, fomewhat like thofe of the Italian Starwort. This flowers in June; the root is perennial, but muft be planted in a fhady fituation, and a moift foil. It is propagated by parting the roots, which fhould be done in autumn.

The fecond fort is the Italian Starwort, which was fome years paft more common in the gardens than at prefent, for fince the great variety of American Starworts have been introduced into England, this fort hath nor been fo much cultivated, though it is by no means inferior to the beft of them, and, in fome refpe&ts, preferable to moft of them; for it is not fo fubjeft to creep by the root, as many of the American forts do, whereby they often become troublefome in fmall gardens, nor do the ftalks require fupporting as they do, for thefe feldom grow more than two feet high, and the ftalks are generally ftrong, foare very rarely broken by the wind. Thefe grow in large clufters from the root, and each of them branch at the top into eight or ten foot-ftalks, each of which is terminated by a fingle large flower, having blue rays, with a yellow difk. It flowers in October, and, in mild feafons, will often continue till the middle of November, during which time they are very ornamental plants in a garden. This fort is propagated by parting the roots, the beft time for this work is foon after they are out of flower, for thofe which are removed in the fpring v/ill not flower fo ftrong the fucceeding autumn. Thefe roots fhould not be removed oftener than every third year, wherethey are expected to produce many flowers.

It grows naturally in the vallies of Italy, Sicily, and Narbonne, and is generally fuppofed to be the Amellus mentioned by Virgil in his fourth Georgick, to grow in the paftures; the leaves and ftalks being rough and bitter, die cattle feldom browfe upon it, fo that whenever there are any of thefe roots in the fields, they fend up a thick tuft of ftalks, which, being left after the grais is eaten bare, thefe being full of flowers, make a fine appearance, and therefore might engage the poet's attention.

The third fort grows naturally in fait marfhes, which are flowed by the tides, and is feldom admitted into gardens. It flowers in July and Auguft.

The fourth fort is a native in North America, but has been many years in the Englifh gardens. It fends up many ftrong fhoots from the root every fpring, which rife between two and three feet high, garnifhed with oblong leaves, placed alternately, and half embrace the ftalk with their bafe; from the main ftalks,

many fide branches are put out, for near half their length, thefe are garnifhed with fmaller leaves, which diminifh in their fize to the top, where there is a fingle flower, terminating the ftalk, of a blue colour* This flowers in Auguft and September; it is eafily propagated by parting the roots, foon after the flowers are paft, and will thrive in almoft any foil or fituation.

The fifth fort fends up many ftalks from the root* which rife five feet high; garnifhed with fpear-fhaped leaves which are entire, and half embrace the ftalks, which are terminated by large purple violet flowers, growing in ajoofe panicle: it flowers in Auguft, and is very hardy, fo may be planted in any foil or fituation, and is propagated by parting the roots.

The fixth fort grows naturally in North America. This hath broad heart-fhaped waved leaves at the bottom, the ftalks rife between two and three feet high, which fend out fmall fide branches, upon which the flowers come out in loofe fpikes, which are of a very pale blue colour, inclining to white. This flowers in the fame feafon as the former, and may be propagated in the fame manner.

The feventh fort fends up feveral ftrong ftalks, upward of two feet high, which are of a purple colour, garnifhed with fpear-fhaped fmooth leaves, whofe bafe embrace the ftalks half round; the flowers grow upon fingle foot-ftalks, forming a corymbus at the top, and are of a pale blue colour, thefe appear the latter end of September. This comes from North America, and may be propagated in the fame way as the former.

The eighth fort rifes with flender ftalks, upward of three feet high; fending out many weak branches on every fide, garnifhed with very fmall leaves, the flowers come out on fhort foot-ftalks, on every fide of the branches, thefe are fmall, with white rays and a yellow difk. They appear in November, and often continue part of December. This comes from the fame country with the former, and may be propagated as is before direfted for them.

The ninth fort rifes near four feet high, having broad leaves at the bottom which diminifh gradually to the top; the flowers are produced in a loofe kind of umbel at the top of the ftalks, which are of a pale blue colour, thefe appear the latter part of Auguft. This is hardy, and may be propagated as the former.

The tenth fort grows naturally in the fourth of France and Italy; the ftalks of this divide into a great number of branches, which divide again toward the top into feveral fmaller, fully garnifhed with very narrow leaves their whole length; the flowers grow in large clufters at the top, forming a fort of corymbus; they are of a pale bluiſh colour, and appear the beginning of Auguft. This is hardy, and may be propagated by parting the roots, as the former.

The eleventh fort rifes four feet high, with a fingle ftalk, and oval leaves growing clofe to the ftalks, which are terminated by flender loofe fpikes of pale blue flowers, which appear about Michaelmas. This grows naturally in North America, and is propagated as the forts above-mentioned.

The twelfth fort fends up flender ftalks three feet high, which fend out flender fide branches moft of their length, fo as to form a thick bufh; thefe are garnifhed with very narrow leaves their whole length, and are terminated by fingle flowers.

The thirteenth fort grows about two feet high, having flender ftalks, garnifhed with oblong, pointed, heart-fhaped leaves, which are harply fawed on their edges; the upper part of the ftalks is divided into feveral fmall branches, which are terminated by white flowers growing in loofe panicles. This flowers in September, and may be propagated as the former.

The fourteenth fort fends up ftalks five feet high, which put out many flender fide branches, garnifhed with narrow fpear-fhaped leaves, and are terminated by fpikes of fmall white flowers, which appear the end of O&ober. This fort fpreads greatly at the root, fo is apt to over-run the borders.

The fifteenth fort hath narrow, oblong, liary leaves at the bottom; the stalks rife three feet high, garnished with flnsH, narrow, tough leaves, which mm backward; the stalks lend nut many ikle branches, each being terminated by a single large blue flower.

Tkii fort flows: i tin: end in Ocitol, and is iinus most part of November; when ic makes a Bre Ltiptar-ace. It d'jii nut multiply M by its i... fcn I may be propagated plenty, by cuttings nisue from the young shoots in i'-. which, if planted in a bed H EgjK MTib, and (hided from iln; inn, will take toot, ~anJ flnrcr the Sum year. It is commonly culled by the gardeners Gurityj Sturwort, from Mr. Catelby, who brought it from Virginia.

The fixic-ndi fort lends up ftvcal Italia u foot and a half high, garnished with rough (pear-flaped leaves, lending out many iite branches which diverge from the stalk: every way; thdfe art; terminated for the mod part by one large blue flower, (imcwhai like thole of the Italian Starwort, bilL paler, and comes earlier to flower. It grows naturally on the Alps, and is propagated by outing the root.

The fevntWHfi fore riles to the height of five feet, with branching ftulkt, gsmilhed with obkmg fpear-flwpcd team which arc (awed on ihuir trd'ces. Each of the tide branches are divided at the top into feve-iiHitflilk*, which are terminated by Sarge, pale, Mas flower, and are in beauty in October. This is prupigactd by parting the roots, as the forts beforementenciJ. It grows naturally in North America,

The eighteenth fort was brought from Virginia many years ago, by Mr. John Truk-tt snt, who was a great collector of rarities; ami from his garden it was foon dipried, and became commun. Jc is generally known by the title of Michaelmas Daifry, iVom its (lowering eixml old Michaelmas day. The ftalks of thisfon arc numerous, and lile about three feet and a liiif high, being fully garnilhed with ublong leaves ending in a point, whole bale linl embrace the ftalks. Thefc fhoat out many lateral brant lies, which are terminated by pretty large flowers, of a very pale bluilh colour, tending to white. The roots of this multiply very fait, and the (ceds often are blown about, to that it propagates lb much as often to be

...iildamc; it will thrive jc any iituation. The nineteenth lbrt lends ufi leucral (bone hairy (talks, which rife * foot and a half high, naving many oblong rough leaves ending in a poinr, whole bale half"embrace the (talks, which divide into many final branches ai dte top, forming n kind of corymbus, each being terminated by oiui large blue flower, hiving a very liary einpalement. This Bowers the latter end **; Juty. It grows naninilly on lite Alps, fo ia very hardy, bur mould have a nwift foil and a Qndy taaDDn. It is propagated by parting the roots.

The twntJeLi fon rifes with ltrong liary ibJks, do the height of etghr or nine ftef, which art upright, unbranchtd, anaginitihed wtli (jblong hairy leaves, agin* poiui; dicir baiehaif lurrjunili tin I stalks, which are for the molt part terminated by three large pi!rple flowers inclining to rat, and fit dole to the top of the iUlK, furroiroded by a few namv i... This lore Howcri in November, Ic came from Pht-Jadflphtf, where it naturally grows, and is propagated by parting die roots-, it dcligto in a niouli toil.

The twnty-firft fort liath (ender purpiih Mks, which rife about three t'ett hish, (ending out many fide branches almoU the whole length, which ipreaii horizontally, giimilhed. with narrow, fmall, (pt-ar-Diapcd l'itvsv the flower* are produced in a fort of looie fpikc, groving one t b m another en etch fide die talk. Thefe arc fmalr, of a \>zh: putplith CO-loin', and appear in NovemtKir. It grows naturally in North America, tuid U colily propagated by pnri-ina dKroob.

The twenty-Onond ton I received from Philadelphia, where it grows naturally. Tlvi; fends up (tiff char-

nished stalks about two feet high, garnished with rough lpear<ft>apeil>leave9 ending in i. point, plated atetii... only on every fide the stalks; the flowers are white, and grow in a fort of umbel u the top of the stalks. It flowers the end of September, ant) in (iro-pagated by parting the roots.

The twenty-third fort I received from Mr. l'cter Col-inton, I . K. v... it from Penfyhnuia. Thu bach much tbeaj... former... fort, but tht leaves arc narrower, vfuft... on their under fide, and have three longitudinal veins; the flowers are alfo larger and whiter. It grows about... fiefimc being... and liuwitJ at the (atuc time witi the tor-ten.

The twenty-fourth fort riles four feet high, the bot- tom leaves are ova) and half III mm ml the lilk nt their ha&t the upper leaves are fmall and tjtar flap- ed j the ltalks put out fide branches toward rh... which grow creel, forming a loofe fpikc, each being - terminated by one large blue flower, with a leaf... tbot- llilk; diis flowers allot ir EILL- end of October. It TMws naturally in North America, and is propagated by parting the roots.

The twenty-firth iort fends Dp from the met feveral flentcr Ualks near three feet high, jramilhed by many very narrow lores, and puts out iide branches, cath being terminated by one white flawrn This grows naturally in Philadelphia! it flowers iti November, and is cacity propagated by parting the roots.

The twenty-finji (brt riles about a foot and it half high; the (talks tire garnilhed with narrow, ipar- iliajicd, (mouth leaves: the end of theftlks are ter- minated by tiNji-thll. on every fide, rath having one pale blue Bower. This grow* morally in Ca- nada, and is propagated by pining the roots. It is tilled Alter Canjdenfis linarkc folio. Hort. R. Par.

(he iwenty-frventh fort grtws about rwofeit high, with ureft (talks, garniflicd with u... Siaped leaves, which cotnt out im'iiliirU' in iittllets; fVim the upper part of die l'talis, there are a few fide branches nmdecod, which arc guniilhed with tmrow leavsv the flowers are piDiUiceti !*... paficde, which are of n pale blue colour, and appear in Sept'... This is propagated by parting the roots.

The twenty-eighth lort is an mnual plant, which when once introduced into a garden, die iceds will (rather, and the pburtl conn* up wirlmuc care- This lends up (trait (talks about cwo iect hi^h, which are termi- nated by white Be infi in Sana of a corytn- bui. It flowers in Ausult, and the IK-ds rijen in Oc- tober, and grnws naturajly in North Awenea.

The iwenty-nimh fort grows natm-jly at the Cape of Good Hope. This rifes with a woody item about three feet high, (ending out fide branches which arc ligneous, garnilhed with narrow leaves coming out ill cluftcr! from one point, like thole of the Larch- tree; the flowers arc produced from tile fide of the branches, upon long (kmli-r tW-Ltalks Unely; thriu arcofapii!... r, and appear the beginning of March; as th... t produces &eds i... rope, it is only i... '.)' cuttings, which may be performed any time in fummer. Thele l'boiith be planted in imall pots rilled with light earth, end plunged into an old hot-bed; where.

... if they are thaded from the Gin, and genrij wtuctwi they will put DU roots in fix weeks, when they iuu be placed in the open air; uid iti about a month after ilwy flouJ be feparatei!, each planted into a fmall put filled with Ji^ht iamiv earth. In October theft mul be removed into tUti green-lioule, and placed where they may enjoy as milch free air us poffibie, but be fet u red from i ro; 'ithe r of w h ic h wi 11 d e- l'roy linrti; io ilui ihuy jre much cadcr prelerved in a glift-cife wlicr t'cy will enjoy more tight and ait than in a green-houfe -, but they mult not b< placed in a ftuve, for an... heat will loon ddiroy the plants. This ion is at prelent but ip few linglifli gardens.

The thirtieth fort is a native of China, from whence the feeds were sent to France by the missionaries, where the plants were first raised in Europe. In the year 1731, I received feeds of this, from which I raised plants with red, and some with white flowers; and in 1736, I received feeds of the blue flower, but these were all single. They came by the title of La Reine Marguerette or the Queen of Daifies, by which title the French still call it. In 1752, I received feeds of the double flowers both red and blue, and in 1753* the feeds of the double white fort, from my worthy friend Dr. Job Batter, F. R. S. of Zirkzee. These have retained their difference from that time without variation, yet as they are generally supposed to be only varieties, I have not inserted them as different species.

As these are annual plants, they are only propagated by feeds, which must be sown in the spring upon a gentle hot-bed, just to bring up the plants; for they should be inured to the open air as soon as possible, to prevent their being drawn up very weak: when the plants are big enough to remove, they should be carefully taken up and planted in a bed of rich earth at six inches distance each way, observing to shade them from the sun till they have taken new root, and if the season proves dry, they must be often refreshed with water. In this bed they may remain a month or five weeks, by which time they will be strong enough to transplant into the borders of the flower-garden where they are designed to remain; the plants should be taken up carefully, with large balls of earth to their roots, and the ground dug up and well broken with the spade, where the holes are made to receive the plants: after they are planted, and the earth doled about their roots, there should be some water given them to settle the earth. This work should, if possible, be done when there is rain, for then the plants will soon take new root, after which time they will require no other care but to keep them clear from weeds.

In August these plants will flower, by which time if the ground is rich in which they are planted, they will be two feet high, and furnished with many fine branches, each of which is terminated by a large radiated flower, some white, some red, and others blue. These are some of the greatest ornaments in the flower-garden in autumn, during their time of flowering. The feeds ripen the beginning of October, which should be gathered when it is perfectly dry; and in order to preserve the kinds with double flowers, those which grow upon the fine branches, which are commonly fuller of leaves than the flowers on the main stem, should always be preserved for feeds.

The thirty-first fort was discovered by the late Dr. Houtton in the year 1731, at La Vera Cruz in New Spain. This is an annual plant, which rises with an upright stalk about one foot high, garnished the whole length with winged leaves, each consisting of two or three pair of lobes, terminated by an odd one: each of these lobes are heart-shaped, and sowed on their edges; at the top of the stalk is produced one large Orange-coloured flower, having a single empalement, cut into many slender segments which end in points. After the flower is past, each floret is succeeded by an oblong angular seed, crowned with long down. This is propagated by feeds, which should be sown on a moderate hot-bed in the spring; and when the plants are fit to remove, they must be each planted into a separate small pot filled with rich earth, and plunged into the tan-bed, observing to shade them until they have taken new root, as also to refresh them with water, and in warm weather admit free air to the plants. When these pots are filled with their roots, the plants should be carefully shaken out* and after paring off the outside roots, put into larger pots, filled with light earth, and plunged into the hot-bed again, where they may remain to flower and perfect their feeds, for they will not thrive in the open air. This fort flowers in July, and the feeds ripen in September.

The thirty-second fort was discovered by the late Dr. William Houtton, in the year 1729, growing in plenty in the sandy ground about Vera Cruz, in America, where he drew the figure, and made a description of the plant upon the spot; which he sent to England with the feeds, some of which grew in the Chelsea garden, and the plants flowered the following summer, but did not perfect their feeds.

It hath bushy fibrous roots, which creep in the ground, and send out many slender round stalks, which bend and incline to the ground. These are about four or five inches long, destitute of leaves, each sustaining one flower, in shape and size of those of the common Field Daifey, of a whitish purple colour, but the rays are narrower. The disk is composed of several florets, which are succeeded by small feeds crowned with a pappous down. The empalement which includes the flowers, is fealy.

As this plant is a native of a warm climate, it will not live in the open air in England; therefore the feeds must be sown in a hot-bed, and the plants will require a stove to maintain them through the winter.

The thirty-third fort is a native of North America. This hath upright stalks about three feet high, garnished with spear-shaped sowed leaves; the flowers are produced in bunchy panicles, having rough empalements. It flowers the end of August, and is propagated by parting the roots in autumn.

The thirty-fourth fort grows naturally in Siberia; the stalks are striated about two feet high, sending out side branches, garnished with rough, veined, spear-shaped leaves; the foot-stalks of the flowers are woolly, each supporting one large blue flower. This flowers in August, and is propagated by parting the roots in autumn.

The thirty-fifth fort sends up rough stalks about two feet high, dividing toward the top into many forked branches, diverging from each other, garnished below with oval sowed leaves; but the flowering stalks have entire obtuse leaves which embrace them with their base; the flowers are growing almost in an umbel; these appear the beginning of September. It is propagated by parting the roots as the former.

A S T E R I S C U S. See BUPHTHALMUM.

A S T E R O I D E S, Bastard Starwort. See INULA.

A S T R A G A L O I D E S. See PHACA.

A S T R A G A L U S, Wild Liquorice, Liquorice Vetch, or Milk Vetch.

The CHARACTERS are,

It hath a butterfly flower, whose empalement is of one leaf cut into five acute segments at the top. The standard (or vexillum) is upright, blunt, and reflexed on the sides; the wings are oblong, and shorter than the standard; the keel is the same length with the wings, and bordered. It hath ten stamina, nine of which are joined, and one stands singly; these are crowned by roundish funnels. At the bottom of the flower is situated a taper germen, supporting an awl-shaped flye, crowned by a blunt stigma. The germen afterward becomes a pod having two cells, each having a row of kidney-shaped feeds.

This genus of plants is ranged in the third section of Linnæus's seventeenth class of plants, entitled Dialectica Decandria, from the flower having ten stamina joined in two bodies.

The SPECIES are,

1. ASTRAGALUS (*Gfycyphyllos*) caulescens prostratus leguminibus subtriquetis arcuatis foliis ovalibus pedunculo longioribus. Lin. Sp. Plant. 758. *Stalky prostrate Milk Vetch, with crooked pods almost triangular, and oval leaves longer than the foot-stalk. Astragalus luteus perennis procumbens vulgaris sylvestris. Mor. Hist. 2. 107. sometimes called Wild Liquorice.*
2. ASTRAGALUS (*Hamosis*) caulescens procumbens, leguminibus subulatis recurvatis glabris. Hort. Upfal. 226. *Stalky trailing Milk Vetch, with smooth awl-shaped pods bending inward. Astragalus luteus annuus M'upeliacus procumbens. Mor. Hist. 2. 108.*

- 3}. **ASTRAGALUS** (*Aldpecuroides*) caulefcens, fpicis cylindricis fubfeffilibus, calycibus leguminibufque lanatis. Lin. Sp. Plant. 755. *Stalky Milk Vetch with cylindrical fpikes-growing clofe to the ftalks, and woolly pods and empalements.* Aftragalus Alpinus procerior Alopecuroides. Tourn. Inft. 416.
4. **ASTRAGALUS** (*Cicer*) caulefcens profratitii, leguminibus fubglobofis inflatis riucronatis pilofis. Hort. Upfal. 226. *Milk Vetch with a profrateftalk, and a globular, fwelling, hairy pod) ending in a point.* Aftragalus luteus perennis filiqua gemella rotunda veficam referente. Mor. Hift. 2. 107;
- j. **ASTRAGALUS** (*Epiglottis*) caulefcens procumbens, leguminibus capitatis cordatis acutis reflexis complicatis. Lin. Sp. Plant. 759. *Milk Vetch with trailing ftalks, and pods growing in heads, which are heart-ftiaped, pointed, reflexed, and complicated.* Aftragalus Hifpanicus filiqua epiglottidi fimili flore purpureo major. H. L. 74.
- c. **ASTRAGALUS** (*Montanus*) fubcaulos fcapis folio longioribus, floribus laxè fpicatis ere&is, leguminibus ovatis acumine inflexo. Prod. Leyd. 392. *Low Milk Vetch with flower-ftalks longer than the leaves, and flowers growing in loofe upright fpikes.* Onobrychis floribus vicie majoribus caeruleo-purpurafcentibus five foliis tragacanthæ. C. B. P. 351.
7. **ASTRAGALUS** (*Bosticus*) caulefcens procumbens, fpicis pedunculatis, leguminibus prifmaticis reddis triquetris apice uncinatis. Hort. Cliff. 225. *Milk Vetch with trailing ftalks, fpikes of flowers with foot-ftalks, and upright triangular pods Jhaped like a prifm pointed at the top.* Aftragalus annuus maritimus procumbens latifolius floribus pediculo infidentibus. Tourn. Inft. 416.
8. **ASTRAGALUS** (*Arenarius*) fubcaulefcens procumbens floribus fubratemofis ereftis foliis tomentofis. Lin. Sp. Plant. 759. *Low trailing Milk Vetch with branching flowers growing ere&is, and woolly leaves.* Aftragalus incanus parvus purpureus noftras. Pluk. Aim. 59*
9. **ASTRAGALUS** (*Pbyfodes*) acaulos fcapis folia fequantibus leguminibus inflatis fubglobofis nudis. Lin. Sp. Plant. 760. *Low Milk Vetch with flower-ftalks as long as the leaves, and naked, globular, fwelling pods.* Aftragalus acaulos leguminibus inflatis fubglobofis. Amce nit. Acad.
10. **ASTRAGALUS** (*CbriftiaHus*) caulefcens ere&ctus floribus glomeratis fubfeffilibus ex omnibus axillis foliaceis. Lin. Sp. 755. *Milk Vetch with upright ftalks, and glomerated flowers growing clofe to them, proceeding from all the wings of the leaves.* Aftragalus Orientalis maximus incanus ere&ctus, caule ab imo ad fummum florido. Tourn. Cor. 29.
11. **ASTRAGALUS** (*Mgyptiacus*) caulefcens fcapis folio longioribus floribus laxè fpicatis ere&is, leguminibus arcuatis. *Stalky Milk Vetch with flower-ftalks longer than the leaves, upright flowers growing in loofe fpikes, and arched pods.* Aftragalus iEgyptius floribus fpicatis purpurafcentibus filiquis incurvis. Juff!
12. **ASTRAGALUS** (*Sefameus*) caulefcens diffufus capitulis fubfeffilibus lateralibus leguminibus ere&ctis fubulatis acumine reflexis. Hort. Cliff. 361. *Milk Vetch with diffufedftalkf, flower-heads growing clofe to the fides of the ftalks, and awl-Jhaped upright pods reflexed at their points.* Aftragalus annuus foliis & filiquis hirtutis plurimis in foliorum alis feffilibus. Pluk. Aim. 60.
13. **ASTRAGALUS** (*Galegiformis*) caulefcens ftri&us glaber, floribus racemofis pendulis, leguminibus triquetris utrinque mucronatis. Lin. Sp. 1066. *Milk Vetch with fmooth flender ftalks, hanging branching flowers, and three-cornered pointed pods.* Aftragalus Orientalis altiffimus folio galegae, flore parvo flavefcente. Tourn. Cor. 29.
14. **ASTRAGALUS** (*Uralenfis*) acaulos fcapo ere&cto foliis longiore leguminibus fubulatis inflatis villofis ere&ctis. Hort. Upfal. 226. *Low Milk Vetch, with upright fcoot-ftalks to the flowers longer than the leaves, and awl-Jhaped, upright, fwoln, hairy pods.* Aftragalus non ramofus villofus & incanus fpicatus floribus purpuro-violeis. Amman. Ruth. 167. p. 126.
15. **ASTRAGALUS** (*Carolinianus*) caulefcens ere&us laevis pedunculis fpicatis leguminibus ovato-cylindricis ftylo acuminatis. Lin. Sp. Plant. 757. *Smooth, upright, ft alky Milk Vetch, with fpikedftalks, and oval cylindrical pods ending injharp points.* Aftragalus procerior non repens flore viridi flavefcente. Hort. Elth, 45.
16. **ASTRAGALUS** (*Canadenfis*) caulefcens diffufus, leguminibus fubcylindricis mucronatis foliolis fubtus fubvillofis. Lin. Sp. Plant. y&sy. *Milk Vetch with diffufed ftalks, pointed cylindrical pods, and thefmall leaves hairy on their under fide.* Aftragalus Canadenfis flore viridi flavefcente. Tourn. Inft. 416.
17. **ASTRAGALXJS** (*Pilofus*) caulefcens ere&ctus pilofus floribus fpicatus leguminibus fubulatis pilofis. Lin. Sp. Plant. 756. *Milk Vetch with hairy upright ftalks, flowers growing in fpikes, and awl-Jhaped hairy pods.* Aftragalus villofus ere&ctus fpicatus floribus flavefcentibus. Amman. Ruth. 166.
18. **ASTRAGALUS** (*Procumbens*) incanus caulibus procumbentibus fcapis folio aequantibus floribus glomeratis. *Hoary Milk Vetch with trailing ftalks, foot-ftalks equal with the leaves, and glomerated flowers.* Aftragalus fupinus filiquis villofis glomeratis. ToUrn. Inft R. H. 417.
19. **ASTRAGALUS** (*Incanus*) caulefcens ineanus, leguminibus fubulatis recurvatis incanis. *Hoary ft ally Milk Vetch, with awl-Jhaped recurved pods which are hoary.* Aftragalus incanus filiqua recurva. Bot. Monfp.
40. **ASTRAGALUS** (*Capitatus*) caulefcens capitulis globofis, pedunculis longiffimis, foliolis emarginatis. Hort. Cliff. 360. *Stalky Milk Vetch with globular heads, very long foot-ftalks, and thefmall leaves crenated at their points.* Aftragalus Orientalis villoffiffimus capitulis rotundioribus floribus purpureis. Tourn. Cor. 29.
21. **ASTRAGALUS** (*Chinenfis*) caulefcens procumbens, capitulis pedunculatis, leguminibus prifmaticis re&is triquetris apice fubulatis. *Milk Vetch with trailing ftalks> the foot-ftalks terminated by flowers cotefted in beads* and three-cornered pods. Jhaped like prifms.*
12. **ASTRAGALUS** (*Uncatus*) acaulis exfeapus, leguminibus fubulatis hamatis folio longioribus, foliolis obcordatis* Lin. Sp. 1072. *Milk Vetch without ftalks awl-Jhaped hooked pods longer than the leaves, and the final leaves almoft heart-jhaped.*

The firft fort grows wild upon chalky ground in many parts of England, fo is not often admitted into gardens. The root of this is perennial, but ihe ftalks decay every autumn : it creeps at the root, fo that it is too apt to fpread where it is fuffered to grow. It flowers in June, and the feeds ripen in September.

The fecond fort is annual; the branches of this trail upon the ground, which are ftriated; the leaves are winged, compofed of about eight pair of lobes, terminated by an odd one; thefe are crenated at their points. The foot-ftalks of the flowers arife from the wings of the leaves, which are about three inches long, garnifhed toward the top with a few pale yellow flowers rifing one above another *, thefe are fucceeded by oblong pods, which bend in form of a fickle, being round on their outer fide, but flatted on the oppofite, ending in a point, opening in two cells, each having a row of fquare feeds. It flowers in June, and the feeds ripen in September. The feeds of this fhould be fown in April, in the place where they are to remain, and require no other care but to draw die plants out where they come up too thick, leaving them a foot and a half afunder, and keep them clean from weeds.

The third fort is a biennial plant, which grows naturally on the Alps. This rifes with an upright hairy ftalk near three feet high, garnifhed with long winged leaves, each having eighteen or twenty pair of oval lobes, terminated by an odd one. The flowers are produced in large cylindrical fpikes from the wings of the leaves, fitting very clofe to the ftalks, which are entirely covered with down, out of which the yellow flowers juft peep; thefe are fucceeded by oval

Pods shut up in the woolly empalements, having two cells, containing three or four square feeds in each. It flowers in June and July, and the feeds ripen in autumn, soon after which the plants decay. The feeds of this should be sown in April, on an open border, where the plants are designed to remain; and when the plants come up, they should be thinned, leaving them at least two feet asunder, and keep them clean from weeds; the second year they will flower, and produce feeds.

The fourth fort hath a perennial root, which sends out several striated stalks near three feet high, which, if not supported, prostrate themselves towards the earth. These are garnished with winged leaves placed alternately, at two inches distance, which are composed of about ten pair of oval small lobes, terminated by an odd one. The flowers arise from the wings of the leaves, upon foot-stalks two inches long, in small loose spikes, which are yellow* and shaped like the rest of this genus, and are succeeded by hairy, globular, swelling pods* ending with a sharp point, opening in two cells, in each of which are contained two or three hard reddish feeds. It flowers in July, and the feeds ripen in autumn. This grows naturally in the south of France and Italy. It is easily propagated by feeds, which should be sown upon an open border in the spring; and when the plants come up, they must be thinned and kept clean from weeds till autumn, when they should be transplanted to the place where they are to remain, and will afterward require no other culture, but to keep them clean from weeds. One or two of these plants in a garden by way of variety, may be admitted, but they have little beauty.

The fifth fort is annual. This sends off from the root two or three hairy trailing branches, which are garnished with winged leaves, composed of ten or twelve pair of blunt lobes, terminated by an odd one: the flowers come out from the wings of the leaves upon naked foot-stalks, four or five inches long, and are gathered into a round head. These are flapped like the others, but are pretty large, and of a deep purple colour, which are succeeded by short pods rough on their out-fides, and when opened, are shaped like a heart, ending in a sharp point, containing three or four feeds.

The feeds of this should be sown on an open border in April, where the plants are to remain, and treated as the other annual forts before-mentioned. It flowers in July, and the feeds ripen in autumn. It grows naturally in Spain and Portugal, from whence I have received the feeds.

The sixth fort is a perennial plant, which grows naturally upon the mountains in Spain, from whence I received it. This is a low plant, seldom rising with a stem more than three inches high, sending out winged leaves on every side, which are composed of many pairs of narrow lobes, set very close together on the midrib, terminated by an odd one. The flowers grow upon long foot-stalks, which rise above the leaves. These are large and of a purple colour, growing in a loose spike, and straggled, and are succeeded by oblong crooked pods opening in two cells, filled with square feeds. It flowers in June, and the feeds ripen in August. This is propagated by feeds, which should be sown, and the plants treated in the same manner as the fourth fort, but should have a shady situation and a stronger foil.

The seventh fort is annual. This sends out several trailing branches near two feet long, which are garnished with winged leaves, composed of about ten pair of blunt lobes, set thinly on the midrib, terminated by an odd one: at the wing of each leaf comes out a foot-stalk near two inches long, sustaining four or five yellow flowers at the top, which are succeeded by triangular brown juxts, shaped like a prism, growing erect, and open in two cells filled with greenish square feeds. It flowers in July, and the feeds ripen in autumn, soon after which the plants decay.

This may be treated in the same manner as the second.

The eighth fort is a perennial plant, which grows naturally upon hills in several parts of England, particularly in the North. This is a low plant, seldom rising more than two or three inches high, having many winged leaves composed of narrow woolly lobes, placed close on the midrib, the flowers are pretty large, of a purple colour, growing in loose spikes. It flowers in June, and the feeds ripen in August. This may be propagated as the fourth fort, and should have a shady situation.

The ninth fort hath a perennial creeping root, sending out leaves, which are composed of many pair of oval lobes, terminated by an odd one. The foot-stalks are as long as the leaves, which support a cylindrical spike of yellow flowers, which are succeeded by swollen pods, opening in two cells, containing several greenish feeds. This may be propagated as the fourth fort, and must have a shady situation. It flowers in June, and grows naturally in Siberia.

The tenth fort was discovered by Dr. Tournefort in the Levant, who sent the feeds to the royal garden at Paris, where they succeeded, from whence I was furnished with them. This sends up stalks near three feet high, which are large at bottom, and gradually diminish to the top; the leaves also at bottom are very long, and diminish upward, so as to form a sort of pyramid; these are winged, and composed of many large oval pair of lobes, which are placed thinly on the midrib, and terminated by an odd one; the flowers come out in clusters from the wings of each leaf, beginning near the root where the foot-stalks are the longest, and continuing upward, diminishing in their number. These are large, of a bright yellow colour, and are succeeded by cylindrical pods opening in two cells, filled with square yellow feeds. It flowers in July, and in very favourable seasons will perfect feeds in England. It is propagated by feeds, which should be sown, and the plants afterward treated as hath been directed for the fourth fort; with this difference only, to plant them in a warm border and a dry foil, otherwise the plants will not thrive well in this climate. The third year from seed the plants will flower, and continue many years in a proper foil.

The eleventh fort grows naturally in Egypt, from whence the feeds were sent to the royal garden at Paris, and Dr. Jussieu was so good as to send me part of the feeds: this is an annual plant, which rises with upright stalks a foot and a half high, thinly garnished with winged leaves, composed of about twelve pair of oval lobes, terminated by an odd one; the foot-stalks of the flowers arise from the wings of the leaves, and are extended beyond them; these are terminated by loose spikes of yellow flowers, which are succeeded by fickle-iliaped pods. It flowers in July, and the feeds ripen in autumn, soon after which the plants decay. It may be propagated by feeds in the same manner as hath been before directed for the annual forts, putting the feeds in a warm border and a dry foil, where the plants will perfect their feeds very well.

The twelfth fort grows naturally in Italy, and the south of France, from whence I received the feeds. This is an annual plant, which sends out several weak stalks without any order, garnished with winged leaves, composed of ten or twelve pair of lobes, and sometimes terminated by an odd one; these are hairy; at the foot-stalks of the leaves the flowers come out in small chillers, fitting close to the sides of the stalks, which are of a copper colour, and are succeeded by awl-shaped pointed pods growing erect, and reflected at their points. This is propagated by feeds in the same manner as the other annual forts before mentioned. It flowers in July, and the feeds are ripe in autumn.

The thirteenth fort was discovered by Dr. Tournefort, in the Levant, who sent the feeds to the royal garden

»t Paris, where they succeeded, and produced few feeds, so that many of the European gardens have been since supplied with it, this hath a perennial root, which sends out many upright stalks upward of five feet high, which are garnished with winged leaves, composed of about fourteen pair of oval lobes* terminated by an odd one, from the wings of the leaves the foot-stalks of the flowers arise, which are garnished with small yellow flowers-, growing in loose spikes, and are extended beyond the leaves; these are succeeded by very short triangular pods, ending in a point, which open in two cells, filled with ash-coloured square seeds. This flowers in June or July, and the seeds ripen in autumn. It is propagated by seeds, which may be sown in the spring, upon a border of light earth, and treated in the same manner as the fourth sort, till the following autumn, when the plants should be removed to an open situation and a dry soil, and when they have taken root, will require no farther culture. I have a root of this sort growing in the Chelsea garden, which is too old than thirty years old, and produces plenty of seeds every year.

The fourteenth sort grows naturally upon the mountains in Germany; this never rises with a stalk, but sends out divers winged leaves from the root, which are composed of many blunt lobes, placed by pairs, and terminated by an odd one the foot-stalks of the flowers arise immediately from the root, and are longer than the leaves, being terminated by spikes of blue flowers, which are succeeded by swelling awl-shaped pods, which are erect and hairy, having two tells which are filled with greenish seeds. It flowers in July, and the seeds ripen in autumn. The root is abiding, and the plant is propagated by seeds as the fourth sort, but should have an open situation.

The fifteenth sort grows naturally in Carolina, from whence I received the seeds, this hath a perennial root, but an annual stalk, which decays in autumn; from the root arise several upright stalks three feet high, garnished with winged leaves, composed of eighteen or twenty pair of oval smooth lobes, terminated by an odd one; from the wings of the leaves arise the foot-stalks, which are terminated by spikes of greenish yellow flowers, which are succeeded by oval cylindrical pods, to which adhere the style, which extends beyond the pods in a point. This flowers in August, but unless the season is warm, the plants seldom ripen their seeds in England. It is propagated by seeds, which should be sown upon a moderate hot-bed in the spring, and when the plants are fit to remove, they should be each planted in a small pot filled with earth from the kitchen-garden, and plunged again into the hot-bed, to forward their making new roots; and when they are established in the pots, they must be inured to the open air, into which they should be removed the end of May, placing them in a sheltered situation, where they may remain till October, when they should be placed under a common frame to shelter them in winter; and in the spring they may be turned out of the pots, and planted in a warm border, where they will thrive and flower; and if the winter proves very severe, a little old tan should be laid over the roots, which will effectually preserve them.

The fifteenth sort grows naturally in most parts of North America; this hath a perennial root, which sends out many irregular stalks about two feet high, garnished with winged leaves, composed of many pair of oval lobes, hairy on their under side, from the wings of the leaves come out the foot-stalks, supporting spikes of greenish yellow flowers, which are succeeded by cylindrical pods, ending in a point. This flowers in July, and the seeds ripen the beginning of October. It is propagated by seeds, which should be managed as those of the fifteenth sort, but the plants are hardier, so will live thro' the winter in a common bed of light earth without covering. The seventeenth sort rises With upright, hairy stalks

two feet high, garnished with winged leaves, composed of many pair of oval woolly lobes* terminated by an odd one -, from the wings of the leaves arise the foot-stalks, which are terminated by close spikes of yellow flowers, these are succeeded by hairy awl-shaped pods, having two cells, filled with brown seeds. This flowers in June, and the seeds ripen in autumn. It grows naturally in Siberia, from whence the seeds were sent to Dr. Amman, at Peterburgh, who communicated them to me. It is a perennial plant, and propagated by seeds in the same manner as the fourth sort.

The eighteenth sort is a biennial plant: the seeds of this were sent me from Spain, where the plant grows naturally; This sends out many trailing stalks, which are divided into many smaller branches, garnished with many pair of narrow lobes, terminated by an odd one -, the flowers are collected into heads, which terminate the foot-stalks, and are white; the foot-stalks are about the same length as the leaves, the pods are short and triangular, and the whole plant is covered with a silvery down. The seeds of this should be sown upon an open bed of light earth, where the plants are to remain, and the plants afterward treated in the manner directed for the annual sorts: the second year they will flower and perfect their seeds, after which they seldom continue.

The nineteenth sort grows upon the hills near Verona, from whence I received it. This sends up an upright stalk, seldom more than six inches high, garnished with small, winged, hoary leaves; the foot-stalks arise from the wings of the leaves, supporting three or four pale flowers, which are succeeded by fickle-shaped hoary pods. This is a biennial plant, and should be treated in the same manner as the last.

The twentieth sort was discovered by Dr. Tournefort in the Levant, who sent the seeds to the royal garden at Paris. This hath a perennial root, which sends up several erect stalks, garnished with winged leaves, composed of several pair of lobes, indented at the top, from the wings of the leaves come out long foot-stalks, supporting a globular head of purple flowers, these are rarely succeeded by pods in England. It flowers the end of July. It is propagated by seeds, which should be sown upon a moderate hot-bed in the spring, and the plants treated in the same manner as hath been directed for the fifteenth sort.

The twenty-first sort grows naturally in China: the plant is annual -, the stalks spread on the surface of the ground, which are closely garnished with winged leaves, composed of eight or ten pair of oval smooth lobes, fitting close to the midrib; these are slightly indented at their end. The foot-stalks of the flowers are produced from the wings of the stalk, two of them generally arising at each place, and are equal to the leaves in length, supporting a globular head of purple flowers, which are succeeded by three-cornered pods growing erect in a compact head, opening in two cells, filled with small triangular seeds. This plant flowers in July and August, and the seeds ripen in autumn.

The seeds of this sort should be sown upon a hot-bed in March, and when the plants come up and are fit to transplant, they should be each put into a small pot filled with light earth, and plunged into another moderate hot-bed, being careful to shade them from the sun until they have taken new root; after which they should have free air admitted to them daily, proportional to the warmth of the season, and frequently but gently watered, with which management the plants will flower and produce seeds.

The twenty-second sort grows naturally about Aleppo, from whence the seeds were brought by Dr. Ruffel. The plant is annual, sending out a few branching stalks which trail upon the ground, garnished with narrow winged leaves, whose lobes are broader at their points than their base, and are indented so as

to become almost hemispherical, the flowers produced in the wings of the ...

This is propagated by ... the plants treated afterward in the four manner as ...

LSTRANTI \ Mafamort.

The CHARACTERS are. It is a plant which grows in on tumb ...

This genus of plants is ranged in the second section of Linnæus's fifth class, entitled Pentandria Digynia, the flowers having five stamens and two styles.

The SPECIES are,

- 1. ATZANTIA (Major) foliis radicalibus ...
2. ATZANTIA (Minor) foliis quinquelobatis ...
3. ATZANTIA (Major) foliis digynis ...

The first fan hui innny spreading leaves rising from the root, which are composed of five large lobes, ...

The second one hntfa much tilted appearance of die fruit, (a has been supposed to be only a variety of it, ...

The third hrt frldom rift a foot high, the foot-stalks of the leaves are four inches long, die leaves are divided into eight segments at the bonom, ...

These plants are very hardy; they jny be propagated either by sowing their seeds, or parting their roots.

be sown in autumn, soon after they are ripe; on a sandy border, and when the plants are young they should be carefully weeded, and when they are too etofc, ...

Buidy fituani. The distance these plants should be placed, is three feet, for their roots will spread to a considerable width, if they are permitted to remain ...

ATHAMANTA L. Lin. Gen. Plant. 304. Meum. Thurm. Ind. H. 312. Spiguel.

The CHARACTERS are, It is a plum with 1 umbellated flower, the general umbel is composed of many small ones, the week ...

ATHAMANTA (Crotalaria) foliis linearibus ...

This genus of plants is ranged in the second section of Linnæus's fifth class, entitled Pentandria Digynia, the flowers having five stamens and two styles.

The SPECIES are,

- 1. ATK/IMAKTA ...
2. ATHAMANTA (Crotalaria) foliis linearibus ...
3. ATHAMANTA (Aster) foliis ...
4. ATHAMANTA (Crotalaria) foliis ...
5. ATHAMANTA (Crotalaria) foliis ...

The first fort is the Cimarron, which is very common in the mountains of New Mexico, and by the inhabitants there is called Bald-Money, or David-Money, by some it is called Meum.

This may be propagated by parting the roots, or from seeds sown soon after they are ripe, the plants should have a sandy situation and moist soil, it flowers in June, and the fruit ripens in August.

The second fort is the Daucus Crotaria, of which there are two sorts, which are differently used in the shops, one of which is annual, but that here mentioned is a perennial plant, which kinds are very common.

: stalks, garnished with slender narrow leaves like those of Fennel, irregularly disposed. The flower-stalk rises about two feet high, sending out many branches, garnished the whole length with the same compound capillary leaves, and at the top are terminated by compound umbels, composed of near twenty small ones, these have white flowers with five petals, which are succeeded by oblong, hairy, channelled fruit, divided into two parts, each containing one oblong hairy seed.

This sort is propagated by seeds, which should be sown in autumn on an open bed of light dry ground; and when the plants come up in the spring, they should be kept clean from weeds, and thinned where they are too close, so that they may have room to grow till the following autumn, when they should be carefully taken up, and planted at about a foot distance in a bed of light sandy earth, where the roots will continue several years, and annually flower and produce ripe seeds. It flowers in June, and the seeds are ripe in September. This grows naturally in Candia, but is rarely injured by cold in this country.

The third sort is a perennial plant; this sends up from the root several upright stalks, near three feet high, which are terminated by compound umbels, these, at their first appearance, are very close and compact, but afterward spread open, and divide into several smaller umbels; the foot-stalks or rays of these are short and hairy. The flowers are composed of five white petals, which are not quite equal, and are succeeded by oblong woolly fruit, divided into two parts, each containing one oblong channelled seed.

This may be propagated in the same manner as the former, and is equally hardy; it grows naturally in Sicily, and some parts of Italy.

The fourth sort is a perennial plant, which grows naturally in some particular parts of England, France, and Germany; the leaves of this are linear, and acutely cut into oblong segments; the stalks rise two feet high, dividing toward the top into three or four branches, each being terminated by an umbel of white flowers, which are succeeded by oblong striated seeds. It flowers in July, and the seeds ripen in autumn.

The fifth sort grows naturally in the south of France, and in Austria: this hath a perennial root, the stalks rise three feet high, garnished with winged leaves, which are cut into angular segments; they are terminated by umbels of white flowers, which are succeeded by naked seeds. This flowers in July, and the seeds ripen in autumn.

These two sorts are seldom admitted into any gardens but those of botanists, for the sake of variety, being plants of little beauty or use. They are propagated by seeds, which should be sown in autumn soon after they are ripe, and the plants will appear the following spring, when they will require no other care but to thin them where they are too close, and keep them clean from weeds. The second summer they will flower and produce ripe seeds, but the roots will abide several years where they are desired.

ATHANASIA. Lin. Gen. 943. Baccharis. Vaill. Aft. Gall. 1719. Goldylocks.

The CHARACTERS are,

The empalement is imbricated, oval, and the scales are spear-shaped; the flower is of the compound kind, the florets are uniform and longer than the corolla; the hermaphrodite stamens are funnel-shaped, cut into five segments, which are erect, they have each five short hair-like filamina, with cylindrical tubulose summits, and an oblong germen with a slender style, terminated by an obtuse bifid stigma, each floret has an oblong seed with a chaffy down between them.

This genus of plants is ranged in the first order of Linnaeus's nineteenth class, entitled Syngenesia Polygamia Equalis; the florets of this order are all hermaphrodite.

The SPECIES are,

1. ATHANASIA (*Dentata*) corymbis impositis, foliis in-

ferioribus linearibus dentatis, superioribus ovatis ferratis. Lin. Sp. 1181. *Athanasia with a compound corymbus, the lower leaves linear and indented, the upper oval and fawed.* Coma aurea Africana frutescens, foliis inferioribus incisis, superioribus dentatis. Com. Rar. Pl. 41.

2. ATHANASIA (*Trifurcata*) corymbis simplicibus, foliis trilobis cuneiformibus. Lin. Sp. 1181. *Athanasia with a Jingle corymbus, and wedge-shaped leaves with three lobes.* Coma aurea Africana fruticans, foliis glaucis & in extremitate trifidis. Hort. Amft. 2. p. 97.

3. ATHANASIA (*Crithmifolia*) corymbis simplicibus, foliis femitrifidis linearibus. Lin. Sp. 1181. *Athanasia with a Jimple corymbus, and linear femitrifid leaves.* Coma aurea fruticans foliis angustifimis trifidis. Burm. Afr. 186.

4. ATHANASIA (*Pubescens*) corymbis simplicibus, foliis lanceolatis indivisis villosis. Amcen. Acad. 4. p. 329. *Athanasia with a Jimple corymbus, and Jpear-shaped, undivided, hairy leaves.* Coma aurea Africana fruticosa, omnium maxima, foliis tomentosis & incanis. Hort. Amft. 2. p. 93.

5. ATHANASIA (*Annua*) corymbis simplicibus coarctatis, foliis pinnatifidis dentatis. Lin. Sp. 1182. *Athanasia with a Jimple corymbus, and winged indented leaves.* Elichryium inodorum glabrum, coronopi folio glabrum. Magn. Montp. 307.

6. ATHANASIA (*Maritima*) pedunculis unifloris subcorymbosis, foliis lanceolatis indivisis crenatis obtusis tomentosis. Lin. Sp. 1182. *Athanasia with Jingle flowers on each foot-stalk formed like a corymbus, and Jpear-shaped, obtuse, woolly leaves.* Gnaphalium vmitimum. C. B. P. 263.

The first sort grows naturally at the Cape of Good Hope: this hath a low, shrubby, branching stalk, which seldom rises three feet high; the branches are garnished with two sorts of leaves, those toward the bottom are linear and indented, but the upper arc oval and fawed on their edges: the flowers are disposed in a compound corymbus at the end of the branches; they are of a pale yellow, and appear early in summer, and if the season proves favourable, will be succeeded by ripe seeds in autumn.

The second sort is a native of the Cape of Good Hope: this rises with a shrubby stalk five or six feet high, dividing into many irregular branches, garnished with flat glaucous leaves cut at their extremity into three segments; these have an agreeable odour when bruised. The flowers are produced in a simple corymbus at the extremity of the branches; they are of a bright yellow colour, and appear in August, but are seldom succeeded by ripe seeds in England.

The third sort grows naturally at the Cape of Good Hope: this hath a shrubby branching stalk like the former; the leaves are linear, and divided more than half their length, some into three, and others into five narrow segments: the flowers are produced at the extremity of the branches in a simple corymbus, like those of the former sort in shape and colour, of which there is a succession on the same plant great part of summer, but unless the season is warm, they are rarely succeeded by ripe seeds in England.

The fourth sort rises with a shrubby stalk six or seven feet high; the branches are garnished with hairy, spear-shaped, entire leaves, the flowers are yellow, and produced in a simple corymbus at the extremity of the branches, but are not succeeded by good seeds in England.

These four sorts are easily propagated by cuttings during the summer months. If these are planted either in pots or upon an old hot-bed, and closely, covered with glasses, shading them in the heat of the day, and refreshing them with water when they require it, they will put out roots in five or six weeks; and in two months they may be taken up and planted in pots filled with light earth, and placed in a shady situation until they have taken new root; after which they should be removed to a sheltered situation, mixing them with other exotic plants, where they may remain till the middle or end of October, according as the season proves

proves favourable, then should be removed either into a green-house, or a glass case, where they may enjoy as much free air as possible, but secured from frost, with which management they will thrive and produce plenty of flowers, but where they are drawn weak in winter, they will not appear freely.

The fifth sort is an annual plant, which grows naturally in Africa. This hath an herbaceous stalk about nine inches high, which divides toward the top into three or four branches, garnished with smooth leaves, divided into segments like those of Buckhorn Plantain; the flowers are large, of a bright yellow colour, and are produced at the extremity of the branches in a compact simple corymbus; these appear in July and August, but are rarely succeeded by ripe seeds in this country.

- This is propagated by seeds when they can be obtained good, which should be sown on a moderate hot-bed the latter end of March; when the plants are come up they should have air in proportion to the warmth of the season admitted to them, to prevent their drawing up weak; and so soon as they are big enough to remove they should be transplanted on another gentle hot-bed, at three inches distance, observing to shade them until they have got fresh root; after which they must have air and water, and by the end of May, the plants will have acquired strength enough to be transplanted into the open air; when some may be planted in pots to place among other exotic plants in summer, and the others into warm borders, where they will flower all the autumn, but unless the season is very warm, they will not ripen seeds.

The sixth sort grows naturally on the sea coasts in the warm parts of Europe, and also in some parts of Wales, from whence I have received plants. The stalks trail on the ground, seldom growing more than seven or eight inches long, garnished closely with woolly leaves, which are spear-shaped, entire, and obtuse; the flowers are of a bright yellow, each produced on a single foot-stalk, forming a kind of corymbus; they appear in June and July, but rarely ripen seeds in the garden.

This may be propagated by planting slips or cuttings during the summer months, in the same way as the African sorts; some of the plants should be put into pots to be placed under a hot-bed frame in winter, the other may be planted in a warm border, where if the winter proves favourable they will live, but they rarely survive cold winters.

A T M O S P H E R E [of 'flippif, a vapour, and *fy a. 7g*** Gr. a sphere] is an appendage of the earth* which consists of a thin, fluid, elastic substance, called air, surrounding the terraqueous globe to a considerable height.

The whole mass, or assemblage of ambient air, is commonly understood to be the atmosphere.

But the more accurate writers refrain the term atmosphere to that part of the air which, is next to the earth, which receives the vapours and exhalations, and which is terminated by the refraction of the light of the sun.

Those spaces that are higher, and beyond these, are called aether; and, being supposed to be possessed by a finer substance, are called the aethereal regions, though these, perhaps, are not destitute of air.

This atmosphere insinuates itself into all the vacancies of bodies, and by that means becomes the great spring of most of the mutations here below, as generation, corruption, dissolution of vegetables, &c. to the pressure of the atmosphere, plants owe their vegetation, as well as animals do their respiration, circulation, and nutrition.

ATRACTYLIS. Lin. Gen. Plant. 837. Distaff Thistle.

The CHARACTERS are,
// bath a radiated compound flower, composed of many hermaphrodite florets* which are included in a common scaly unarmed empalement. // this hath a permanent involucrum* composed of several narrow plain leaves* which cavitybarjipnes on their sides. The hermaphrodite florets

which compose the rays* or border* are fireched out on one side like a tongue* and are slightly indented in five parts. Those which compose the disk* or middle* are funnel-shaped* cut at the top into five parts; these have both five slender filamina in each* which are Jhort* and crowned by cylindrical summits; in those of the disk is situated a Jhort crowned germen* supporting a slender style* crowned by a bifid stigma. The germen afterward becomes a turbinated* compressed seed* crowned with a plume of down* Jhut up in the empalement.

This genus of plants is ranged in the first section of Linnseus's seventeenth class, entitled Syngenesia Polygamia JEquis, from the florets of the border and disk being hermaphrodite.

The SPECIES are,

1. **ATRACTYLIS** (*Cancellaria*) involucris cancellatis ventricosis, linearibus dentatis calycibus ovatis, floribus floiculosis. Lin. Sp. Plant. 830. Distaff Thistle with a bellied netted involucrum* an oval* indented* linear empalement* and flosculous flowers. Cnicus exiguus capite cancellato femine tomentoso. Tourn. Inf. R. i }.
2. **ATRACTYLIS** (*Humilis*) foliis dentato-finuatis, flore radiato obvallato involucro patente, caule herbaceo. Lin. Sp. Plant. 829. Distaff Thistle with finuated indented leaves* a radiated flower strongly guarded by its spreading involucrum* and an herbaceous stalk Cnicus aculeatus purpureus humilior. Tourn. Inf. R. H. 451.
3. **ATRACTYLIS** (*Gummifera*) flore acaule. Lin. Sp. Plant. 829. Distaff Thistle with a flower without a stalk. Cnicus Carlinae folio acaulos gummifer aculeatus. Tourn. Cor. 33.

The first sort grows naturally in Spain, Sicily, and other warm parts of Europe. This is an annual plant which seldom rises more than eight or nine inches high, with a slender stem, thinly garnished with narrow hoary leaves, having spines on their edges; at the top of the stalk there are two or three slender branches sent out, each being terminated by a head of flowers, like those of the Thistle, with an involucrum composed of several narrow leaves, armed with spines on their side, which are longer than the head of flowers. The empalement is curiously netted over, and is narrow at the top, but swelling below, containing many florets of a pyrplish colour. These are each succeeded by a single downy seed; it flowers in July, and, if the season be warm and dry, it will ripen its seeds in September, but in cold years never perfects seeds here.

It is propagated by seeds, which must be sown upon an open bed of light earth, where the plants are to remain, and will require no other care but to keep them clean from weeds, and thin the plants where they come up too close together.

The second sort rises with a stalk near a foot high, which is garnished with indented leaves, having small spines on their edges; the upper part of the stalk is divided into two or three slender branches, each supporting a head of purple flowers, paving rays in the border, and florets in the disk, inclosed in a scaly empalement. The roots of this will live two or three years; it flowers in June, but unless the summer is warm and dry, it will not perfect seeds in England. The seeds of this sort should be sown where they are to remain, and will require no other culture than the former. It grows naturally about Madrid, from whence I received the seeds.

The third sort grows naturally in Italy, and the islands of the Archipelago, and is what the College of Physicians have placed among the medicinal simples, by the title of Carline Thistle; the root of this is perennial, and sends out many narrow leaves, which are deeply finuated, and armed with spines on their edges. These lie close on the ground, and between them the flower is situated, without stalk, having many florets, inclosed in a prickly empalement. Those on the border are white, but those which compose the disk are of a yellowish colour. It flowers in July, but never perfects seeds in England.

It U propagated by feeds, which mull be obtained from the countries where it grows naturally; these should be fown upon a border of light earth, in a warm situation, early in April, and when the plants come up, and are fit to transplant, they should be thinned, and those which are drawn out may be transplanted, leaving the other two feet asunder; after which the only culture they require is, to keep them clean from weeds in summer, and in winter to cover the roots with some old tanners bark, to prevent the frost from penetrating the ground.

The fourth sort grows naturally at the Cape of Good Hope; this sives with a shrubby stalk near three feet high, garnished with oblong leaves, indented on their edges, which have weak spines at each indenture, there are several weak branches sent out on the sides, each of which are terminated by a single head of flowers, inclosed in a common empalement, which spreads open, and are of a golden colour, but are never succeeded by feeds in England. This is propagated by slips, taken from the flower-stalks in June, and planted in pots filled with light earth, and plunged into an old bed of tanners bark, where the heat is gone, and shaded with mats in the heat of the day, until they have taken root; after which time they may be exposed in the open air till October, when they must be removed into shelter, and, during the winter, should have little water, and in summer exposed with other hardy exotic plants in a sheltered situation.

ATRAPHAXIS. Lin. Gen. Plant. 405. We have no English name for this.

The CHARACTERS are,

The flower hath a permanent empalement, composed of small coloured leaves placed opposite. The flower hath two roundish situated petals, larger than the empalement, which are permanent; it hath six capillary stamina, which are the length of the empalement crowned with roundish summits; in the center is situated a compressed germen, having no style, but crowned by two stigma-, the germen afterward becomes a roundish compressed seed, shut up in the empalement.

This genus of plants is ranged in the second section of Linnæus's sixth class, entitled Hexandria Digynia, the flower having six stamina and two stigma.

The SPECIES are,

1. ATRAPHAXIS ramis spinosis. Hort. Cliff. 138. *Atrophaxis with prickly branches.* Atriplex orientalis frutescens flore pulchro. Tourn. Cor. 38.
2. ATRAPHAXIS inermis. Lin. Sp. Plant. 333. *Atrophaxis without spines.* Arbutula Africana repens folio ad laterce crasso, ad Polygonia relata. Hort. Elth.

The first sort grows naturally in Media, from whence Dr. Tournefort sent the feeds to the royal garden at Paris.

This is a shrub which rises four or five feet high, sending out many weak lateral branches, which are armed with spines, and garnished with small, spear-shaped, smooth leaves, of an Ash-colour. The flowers come out at the ends of the shoots in clusters, each consisting of two white leaves tinged with purple; and are included in a two leaved empalement, of a white herbaceous colour; these appear in August, but the feeds never ripen here, so the plant is propagated by cuttings, and must be screened from hard frost, which commonly destroys those which are planted in the open air.

The second sort sends out many tender branches, which trail on the ground when they are not supported, garnished with small oval leaves, about the size of those of the Knot Grass, waved and curled on their edges, embracing the stalk half round at their base, and are placed alternate. The flowers come out from the wings of the leaves, and have much the appearance of an apetalous flower, being composed of four herbaceous leaves, two of which are the empalement, the other two the petals; in the center is situated the compressed germen, attended by six stamina, but the feeds are never produced in

this shrubby. It flowers in June and July. This is a native of the country about the Cape of Good Hope, from whence it was brought into the gardens in Holland, and has been several years in the English gardens, where it is allowed a place more for the sake of variety, than its beauty. It may be easily propagated by cuttings any time in the summer, and in winter the plants must be screened from frost.

ATRIPLEX, Orach, or Arach.

The CHARACTERS are,

It hath female and hermaphrodite flowers on the same plant. The hermaphrodite flowers have a permanent empalement of five oval concave leaves, with membranaceous borders; they have no petals, but five awl-shaped stamina placed opposite to the leaves of the empalement, supporting double summits. In the center is placed the orbicular germen, with a short bipartite style, crowned with a reflexed stigma. The germen afterward becomes an orbicular compressed seed, shut up in the five-cornered empalement. The female flowers have a two-leaved empalement, which are large, plain, erect, and pointed. They have no petals nor stamina, but in the center a compressed germen, supporting a bipartite style, crowned by a reflexed stigma. The germen afterward becomes an orbicular compressed seed, inclosed in the heart-shaped valves of the empalement.

This genus of plants is ranged in the first section of Linnæus's twenty-third class, entitled Polygamia Monœcia, the same plants having female and hermaphrodite flowers.

The SPECIES are,

1. ATRIPLEX caule erecto herbaceo foliis triangularibus. Hort. Cliff. 469. *Orach with an upright herbaceous stalk, and triangular leaves.* Atriplex hortensis alba live pallide virens. C. B. P. 119.
2. ATRIPLEX caule fruticoso foliis deoidibus integris. Hort. Cliff. 469. *Orach with a shrubby stalk and entire leaves, shaped like the Greek delta.* Atriplex latifolia five Hahmus fruticosus. Mor. Hist. p. 2. 207. commonly called Sea Purslane-tree.

3. ATRIPLEX caule fruticoso foliis obovatis. Flor. Suec. 829. *Orach with a shrubby stalk and oval leaves.* Atriplex maritima fruticosa, Halimus & Portulaca marina dida angustifolia. Rail Syn.

There are several other species of this genus, some of which grow naturally in England, but as they are plants of no beauty, they are rarely admitted into gardens, for which reason I shall not enumerate them here.

The first of these plants was formerly cultivated in the kitchen-gardens as a culinary herb, being used as Spinage, and is now, by some persons, preferred to it; though, in general, it is not esteemed amongst the English; but the French, at present, cultivate this plant for use.

There are three or four different sorts of this, whose difference is only in the colour of the plants; one of which is of a deep green, another of a dark purple, and a third with green leaves and purple borders. These are supposed to be only accidental varieties which have come from the same feeds, but in forty years which I have cultivated these sorts, I have never yet observed them to vary. But as there is no other essential difference, I have not enumerated them here.

These plants are annual, so must be sown for use early in the spring, or at Michaelmas, soon after the feeds are ripe; at which time it generally succeeds better than when it is sown in the spring, and will be fit for use at least a month earlier. These plants require no other culture, but to hoe them when they are about an inch high; to cut them down when they are too thick, leaving them about four inches asunder, and to cut down all the weeds. This must be done in dry weather, otherwise the weeds will take root again, and render the work of little or no use. When the plants are grown about four inches high, it will be proper to hoe them a second time, in order to clear them from weeds; and, if you observe the plants are left too close in any part, they should then be cut out. If this be well performed, and, in dry

weadicr, the ground will remain clean ttt all the plant is Te for uic. Where ihefc plants nre Town on • rich foil, and allowed a gooddi

ance, the leaves will be very large, in which the goodnefs of ihe herb confifts. This mift be eaten while it is young; for, when the ftallu become tou«ii, it is good for nothing. Some few plants uf cadl kind may be j i

rotted to ftud for lied, to preferve thier kind:, which will ripen in Auguft, and may then be cut, and lEKl on i cloth to dry •, after which the Iceds may be beaten out, and put up tor life. The nrlr fun is ordered by the College of l'hyfitians for medicinal life

The (econd lui i was forme dy cultivated in gardens as a •irub i and, by lame perlbn, they were l'urmed into hedges, and confantly fharcil, to kwp them diicl; but chia plant a by no mews fit tor iuch purpofes, on many iL^um?;, lor it grows too vigorous i the llirijis, in one mondt, at ihe growing feafon of the year, will be two feet long, provided they have a good loll - . To that u h<|> of this mi CMUKK be kept in tolerable order, nor will it tier Sana 4 thick hedge. BJt a worft inconvenience attends this plant i lbr, in very hard winter, i a often destroyed; as allb, in very dry fumujers. many of te plants will ilei

by, whereby thietc will become large gaps in the huige. But although this plantwillnotbc proper for hedg«, yet it may have a place Li wiUirmelk quarters, where it will i'crvetutii ckern, and the filver«V>urcd leaves will add to the variety, amoiif; uchr lbnbs of the lame growth. Tills wij; grow eighi or icn f<t ligh, and, if fuficred to grov wild, without pruning, will l'pri^il iei-cral fecc in coinpals, and will (bmctiinu produce Ek»ers. h may be propagated by cuttings, which may bt plantw in any d the fure am months, on 3 [had] border; where, if illy are duly watered, dx y will loon take root, and be fit i> transplant ihe Michaelmas following, irhin they l'hciculO be planted when: diey arc to icmain; for they dj tin; H^ivrJ wll in n.ir.jijilinting, clpcciolly wlien they an! grown pretty lir^c and woody.

The third furt gnjws wild in divers parts of I; gland, on p • • • • • hence the plants may be [p>ro-cured; or it may be propiL ated by cuttings, in the lame manner as the former IU:L. This is a l. under ill rub, fcldoni riCng above two feet and a bail, or at null three fa t high, but become) ver) bushy. The leaves of this kind art narrow, and of a whitilh colour, but are not fo white as thofe I th& former. This may have a place amongst odier luv l'brubs-, and, if planted on a poor gravelly lull, will abide le-verjl years, and make a pretty djverfity.

ATRO1 A, Lin Gen. ! Plant xxx. Belladonna. Tourn. Inf. R. 11. -; Deadly NighiJhide.

The Characters are, The flower bath apermiasettt empdtitKtttfetic iaf, tut into jiveparli; it il i>, hence the plants may be [p>ro-cured; or it may be propiL ated by cuttings, in the lame manner as the former IU:L. This is a l. under ill rub, fcldoni riCng above two feet and a bail, or at null three fa t high, but become) ver) bushy. The leaves of this kind art narrow, and of a whitilh colour, but are not fo white as thofe I th& former. This may have a place amongst odier luv l'brubs-, and, if planted on a poor gravelly lull, will abide le-verjl years, and make a pretty djverfity.

The Species arc, 1. A-:; ors. (Belladonna)faultherbacco,)->li«ovattintegri Lin. Sp. PUK 131. D'rfii Ni^lftjbudt willt an btrlicceits ftUk, aid cvd tnlrt leaves. B

2. ATR02 (Fruticosa) Liule fruticofopfdonculis conftni . folia confuso ovata obtusa. Lin. Sp. PUit. 152. Deadly Nightshade • JJlh a jhr: • • • • • begrt-Jbffd, titafi ieevu. Bci

lelenna fruteicena rotundifolia Hiquozia. Tourn. Inf. R. 11. 2. ATR02 (Herbosa) caule herbaceo, folis ovatis nervofw margi Deadly Nightshade with oval leafed leaves, and oval round berries next to their

't'le firil fi>rt grows wild in many pnrts ol England, but h not very iijivcm at.: London. I have obferved it in Woodjibck : in Uppaik in Mampli.

This plant hath a perennial root, whkh Itfid^ out II herbaceous ftalks ••lopurpli:; colour, which rife to the height ; tour w five (art, gamillicti with ofc

entire leaves, which mward autumn eluin^e to a jurr^ plith ••lour, die flower are large and come out between the lc upon long foot-ftalks, bell-l'aped, and oi'a dufky brown cul. on that u u.

fide, but in purple w bin. Aftci : flower is put, the germeu turns to a large round berry, a little Batted at tl t and is firft green, but when ripe roniftoa fliining bbtck, fit: clear upon the em-palment, and cijuiaini purple juice of a

ta&f, tod full of fine kidney-shaped feeds - I n tome places thlv [plant is called Dwaik, but in general Deadly Nightfhalk', from in quales. It is rarely admitted mo gardens, nor indeed fhould it be fut-

tered to grow in any places where children refort, for it is a ftrong poison; there have been feveral instances within a few years past, of its deadly quality, by feveral children being killed with eating the berries, which are of) fine black colour, and about the fize of a bktck Ciierry, and not iinpkaTant 10 ihr taftc.

Mr. 1W give: a gooJ account of the various : imp-torn- by whai hi to a Membrant Friz, upon his drinking a pjals of Mallow wine, in which this plant was mixed: in a fhort time he ix-carr.i delicious, foon after was feiz'd with a griming laughter, after that feveral irregular motions, and lo

bat a real madnefs fucceeded; and fuch a d; ;idity as dole tjai arc I drunk wch after all, was cu by a draught of vinegar.

Them is all o an instance of the direful effects of this plant revealed in Buchanin's History of • Dclond, vhercin he gives an account • the destruction of the army of Swedo, when he iavadt Scotland, ini*-in'r n quanritj of the juice of thofe berries with the drink which the Scou by dieir ttutv were to fupjly them witbt which (b intoxicated the Dane*, thai the S«i!^ fell ill"m ificm in tin: deep, and kill'd die

Hcftpan ofihem, lbtlut then- were fcarcely, mtii enough left to carry off their ling.

The fecond riles with a ihrubby Jmm to rhe height offivyr eighi feet, and divides into muuy bnufhes, garnifhed with round leaves, in fhape like thofe of the >oras tree; thofe are placed (tematdy on the branches. The flowers come out between (he leaves

vijcm ilwrt foot-ftalki, which are (haped iik- thofe of the former, bui much leCt, at a dufky yell'jwlh colour, with a low brown there are never fucceded by berries in lingland. h grow^ iuturally in Min, from •• feeds miy l> pro-cured.

It iit prtipagateil i by feeds, which fhould be fown in the l'wing upon a very moderate he: bed, juft u. bring up the planes; when ; they are fit to remove, they fhould be each put into a feparate fmiU pot, Hied with loamy earth, and Qued until they take root; then they mty be piaced with other hardy exotie

plant in a bell-glas ftuation, and in Octobr 1 they mutt be removed into the green-houfe, and treated as other plann from the inne cou. ry. It flow'n in July siil Augutl.

The feeds of the third fort were lent me from Cam-petachy; this hath a perennial root, which puts out feveral channelled herbaceous ftalks, which rife about two feet high, and toward the top divide into two or three f-ill br: ches, garnifhed with oval leaves four inches long and three broad, having !-viral

transverfe ribs on their under fide, which are promi-nent. The flowers come out fann between the leaves on their foot-ftalks; they are white, and fhould be ed like

them

P 1

A V E

ihofc of the common Ton, hut arc fmalcr. Etfa
 in July and Auguft, but feldom riyens Us fruit iii
 England. It is propagated by parting the roots in
 ihr Ipring, and the plutu* muft be kept m the bark-
 three to have the m thrive iffll iis this country.

A VENA. Lin. Gen. Plant. S.; Toum. Inf. R. H. Gats.

The Characters arc,
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The genus of OLWIB is ranged in the 11-cond feftion
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AVZKA (Difpms) dlyribus dirprmbus fminlbi« t*-vibu

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!iin, I (ull not enumerate them
 rhere - a nake IOat, which
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 b>it I: rca
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The -
 ! the moft commtm about London;
 black is more cultivated in the noitliem parts of
 England, and i^ esteemed a very hearty food for
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 chiefly cultivated where the inhabitants live
 upon Oat-cakes.

The naked Oat u left ctmmon than either of the
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bvit in the north of England, Scotland,
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ich cultivatnl in Derbyfhire,
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are a v-ery profitable grain, and abbiutely nec-
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i :ng apt to bind, which is injurious
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A V E

little or no iSHngc; the Irr.iw ami hufts being of fo
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 not h: ifrin tic mow, or become mouldy, u
 grain usually do; in i i>f great advantage in the nor-
 iliern parts of England, and in Scotland^ where thtii
 harvdt ij g<eraily late. nrn] the aurnunif wet
 The meal of this grain makes tole nbJe good broid,
 and is the common rood of the country people in the
 north. In (helbuth it 'n eftecmeJ ior jwitavr, and
 other me He s, and in fuuu- ptoccs they mjUt- br
 th:< "rain.

The belt time for fowing of Oaw is in February or
 Marclv, Ktording as the featn is eirly or la; and
 fntmchnes t have known it (own in April upon cold
 land, and has been early ripe. The bbek and ted
 Oatt may be lbwn R momh earlier than the white,
 bsaufe they are tardier.

Oau are often fown on land which has the former
 yeau produced Wheat, Rye, or il • ley. The com-
 mon method is to pto gh in the stubble abent the
 liL-girtnng of February, and fow tin- Otto, and har-
 row them in; but then they irmii :e harrowd the
 lame wsy as ilic furrows htv, for If it ix- done croiT-
 ways, the :ubble will be raised or i the filrfta; but
 Illl5 I 9d method of Iiu(bamir> for when
 people have mne to plough the stubble in autumit,
 It will rot in winter; and tin -i giving the land another
 ploughing and a gond harm- ing juft before the Oau
 are born, it will make the ground finer and better
 to receive th' grain. Mort people allow rour bufheb
 of oats to an acre, but I im Llinvired three bulheb
 arc mnre tltin enough; the nTual produce u ^buut
 twenty-five Liilhels to an acre, though I have fume-
 Dma known more than thirty tiufliiek on an acre.

Oats are alfo fown upon; land when it u hrj broken
 up, before the ground is brouplit caa iUUh fortlier
 grain, ami Is frequently fown upon the fwarti with one
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 tune la r"i before die <Jzxi are limn, for the roots of
 the graft will prevent thofe of the Corn from I striking
 down. and.

AVE N U E 5 are ivalki of trees leading to a houfe,

which are generally [cmiinitCL] by fame dij]jm ob-
 jets.

Thiefe were fornety much snore in requell tliiii u
 prefoic, there lie;tg fewoltl fcats 7, the crown T bur
 have one or more of thru: ivr:iuc* [ami fume have
 3,1 man¹ of them as there are views from the houfe;
 but vi btc theft arr, v. ths good traftion, dftu&dt for
 mulling can be more •bfura, than V) hive ifit light
 contratted by (•• or more lines o/trees, wh- h
 out tlic vicv. of the fdjseent ground^ whereby the
 vefdi are and natural beauties of the country are loft;

and wh«« the flvciiii- are of a confiderable length
 (even where their br both in proportion) they ap-
 pear at each end to be only narrow cuts through a
 wood, -which never CGH ptefe any pcrfon of real talc;
 ami, wht-n the rond t the houfe is through the ave-
 nue, notliing LTI. - mar • lay • • ble; fo ip iip-
 pton- hing to thi houfe, it is like going through a
 narrow liu • where the objecls on each fide t« fhut
 out from ll: view; and when it is viewed frjm the
 houfe, it-;: bed has only the appearance of i road,
 will: being extended to a length in a diltant line, is
 not near fo beautiful as a common row, which h
 loft by the -frange, that feems to be led to a great
 end: ll: bin as fuch avenues muft be made exactly
 ftraight, fo when the trees are grown to any h •, they
 entirely break the view, whatever way the fight is
 directed through them; and if this is in a park, die
 bwn ot' grafz througli which the avenue is planted,
 is thereby entirely dej'ced of the becautj which it
 naturally would: jiffora, if id: open and ill kept:
 t'-ereibre, whenever the defign of a houfe -ill ad-
 mit of a large li

in lawn in front, the road to the
 iioufe (houli be carried round at a proper diftance;
 and, if it be carried fomr. ees through trees, and
 it-ijmiin! in an any natural way, it will be much
 more beaivutl than any ftiff formal avenue, how large
 love; mad-

But as there may be some persons who are much wedded to the old way of laying out small plantings, as I prefer the avenue to the molt be...

The usual width of the avenues was generally as much as the width of the road, but if they are planted in a narrow way, they will be better...

And as to such avenues to woods or proficients, &c. they ought not to be more than thirty feet in width, and because such walks are a long time before they are shaded, it will be better to plant another row on each side...

As to the trees proper for planting streets, they may be the English Elm, the lime-tree, the Horse Chestnut, the common Chestnut, the Beech, and the Alder.

The English Elm is approved for all places where it will succeed, in that it will do in any soil, except in a very wet or cold situation...

Secondly, the Lime-tree: this is approved by others, because it will do well in any soil, and because of its regular shape it has in growing, and the beautiful colour of its leaves.

Thirdly, the Horse Chestnut is also to be used in such places as are very well defended from the wind, because wherever it grows freely, if it be not killed by any means now and then by cutting, the branches are subject to split...

Fourthly, the common Chestnut will do well in any soil, but wherever these are planted in a cold soil, they will not be so fruitful, and therefore they should be planted in a warm soil...

Fifthly, the Beech is recommended by some; but this kind is not so well as the other, and therefore it is not to be planted in a cold soil, but in a warm soil...

Sixthly, the Alder: this is indeed a very useful tree, and will grow in any soil, but it is not so beautiful as the others, and therefore it is not to be planted in a cold soil, but in a warm soil...

Seventhly, the Oak: but this is seldom used in plantings, because it is not so useful as the others, and therefore it is not to be planted in a cold soil, but in a warm soil...

As to the Aider, Ath, Etano*, and others, they are not so useful as the others, and therefore they are not to be planted in a cold soil, but in a warm soil...

It rarely suffices for planting avenues.

AURANTIA: T-IUM I this plant is so called from aurum, Lat. gold, on account of its golden colour, the Orange-tree.

The Orange-tree is small, of one leaf, divided into five parts. The leaves are green, spreading out, and many jointed in Juratjiparafa bediti 1:1...

This genus of plants is by Dr. Linnæus joined to the Citrus, to which he has also added the Lemon, making them a single species of the Eune genus, and ranges it in his eighth method, entitled Juratjiparafa bediti 1:1...

The SPECIES are, 1. Am ANTUM (Aur) foliis ovato-lanceolatis serratis, aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

2. Aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

3. Aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

4. Aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

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12. Aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

13. Aurantia, foliis ovatis, serratis, flosculis leucis. Aurantia, foliis ovatis, serratis, flosculis leucis.

vica produce fruit with a pale yellow fleth, and by confiantly railing thefe trees from feeds, they degenerate the fruit continually *, whereas, if they would bud from the good fort, they might have it in as great plenty as they pleafed; but there are few perfons in that part of the world who underftand the method of grafting or budding fruit trees, and if they did, they are fo negligent of their fruits, &c. as to leave the whole to nature, feldom giving themfelves any farther trouble than to put the feeds into the ground, and leave them* to grow as nature fhall incline.

In proof of what I have here faid, I cannot omit to mention, that a few years ago, I lent two fmall trees of the true Seville Orange to Jamaica, where this fort was wanting; and from thefe many other trees were budded, which have produced plenty of fruit, fome of which were fent to England a few years paft *, and although they were long ip their paffage, yet when they arrived here, they were greatly fuperior to any of thofe fruit which are imported hither from Spain or Portugal, one of thofe affording three times the quantity of juice, that a fruit of equal lize from either of thofe countries does.

All the forts of Orange-trees with ftriped leaves are tender, therefore muft be placed in a warm part of the green-houfe in winter, and muft be treated with more care than the common fort, otherwife they will not thrive. Thefe are varieties which fome perfons are fond of, but they never produce good fruit, nor are the flowers produced in fo great plenty, therefore a few only fhould be preferred for the fake of variety.

The horned Orange differs, from the other forts in # the fruit dividing into parts, and the rind expanding in form of horns: this and the diftorted Orange are preferred by fome curious perfons for variety, but are not fo beautiful as the common Orange. There is alfo a great variety of fweet Oranges both in the Eaft and Weft-Indies, fome of which are much more efteemed than thofe we now have in Europe; but as they are much tenderer, they will not thrive in this country with the common culture; therefore I (hall not enumerate them, but fhall proceed to give dire&ions for the management of Orange-trees in England.

Whene the trees are to be raifed for docks to bud Oranges, you fhould procure fome Citron-feeds which were duly ripened *, for the flocks of this kind are preferable to any other, both for qu cknefs of growth, as alfo that they will take buds of either Orange, Lemon, or Citron; next to thefe are the Seville Orange feeds. The beft feeds are ufually to be had from rotten fruits, which are commonly eafy to be procured in the fpring of die year *, then prepare a good hot-bed! of either horfe-dung or tanners bark; the laft of which is much the better, if you can eafily procure it. When this bed is in a moderate temper for heat, you muft fow your feeds in pots of good rich earth, and plunge them into the hot bed; obferving to give them water frequently, and raife the glaffes in the great heat of the day, to give proper air, left the feeds fhould fuffer by too great heat: in three weeks time your feeds will come up, and if the you:g plants are not ftinted, either for want of proper heat or moiiure, they will be in a month's time after their dpearance, fit to tranfplant into fingle pots: you muft therefore renew your hot-bed, and having prepared a quantity of fmall halfpenny pots (which are about five inches over at the top,) fill thefe half full of good frefh earth, mixed with very rotten cow-dunpr *, and then fhafce out the young plants from the large pots, with all the earth about tjem, that you may the better feparate the plants without tearing their roots *, and having half filled the pots with earth, put a fingle plant into t ach of the fmall pots; then fill them up with the fame earth as before dire&ed, plunging the pots into the new hot-bed, giving them a good watering to fix the earth to their roots; and obferve to repeat the fame very often (for this plant, when in a hot-bed, requires much water,) but be fure

to fcrcen them from the fun in the heat of the day, In this method, with due care, your plants will grow to be two feet high by July, when you muft begin to harden them by degrees, in railing your glaffes very high, and when the weather is good, take them quite off; but do not expofe them to the open fun in the heat of the day, but rather take off the glaffes, and fliaide the plants with mats, which may be taken off when the fun declines; for the violent heat in the middle of the day would be very injurious to them, epecially while young. Toward the end of September you muft houfe them, obferving to place them near the windows of the green-houfe, to prevent the damp from moulding their tender fhoots. During the winter feafon they may be often refrelhed with water, and in March or April, wafh their heads and ftems, to clear them from the filth that may have fettled thereon, during their being in the houfe; and you muft alfo give them a moderate hot-bed in the fpring, which will greatly forward them'; but harden them by the beginning of June, that they may be in * right order to bud in Auguft; when you fhould make choice of cuttings from trees that are healthy and fruitful, of whatever kinds you pleafe, obferving that the fhoots are round; the buds of thefe being much better and eafier to part from the wood, than fuch as are flat. When you have budded the flocks, you fhould remove them into a green-houfe, to defend them from wet, turning the buds from the fun; but let them have as much free air as poffible, and refrefh them often with water. In a month's time after budding, you will fee which of them has taken *, you muft then untie them, that the binding may not pinch the buds, and let them remain in the green-houfe all the winter-, then in the fpring, prepare a moderate hot-bed of tanners bark *, and, after having cut off the flocks about three inches above the buds, plunge their pots into the hot-berc, obferving to give them air and water, as the heat of the weather fhall require; but be fure to fcreen them from the violence of the fun during the heat of the day. In this management, if your buds fhoot kindly, they will grow to the height of two feet or more, by the end of July *, at which time you muft begin to harden them before the cold weather comes on, that they may the better ftand in the green-houfe the following winter. In the firft winter after their fhooting, you muft keep them very warm *, for, by forcing them in the bark-bed, they will be fomewhat tenderer; but it is very neceffary to raife them to their height in one feafon, that their ftems may be ftrait: for in fuch trees, which are two or more years growing to their heading height, the ftems are always crooked. In the fucceeding years, their management will be the fame as in full grown trees, which will be hereafter treated of: I fhall therefore, now, proceed to treat of the management of fuch trees as are brought over every year in chefts from Italy; which is, indeed, by much the quicker way of furnifhing a green-houfe with large trees y for thofe which are raifed from feeds in England, will not grow fo large in their ftems under eighteen or twenty years, as thefe are when brought over; and although their heads are fmall when we receive them, yet in three years, with good nagement, they will obtain large heads and produce fruit.

In the choice of thefe trees obferve firft, the difference of their fhoots and leaves (if they have any upon them) to diftinguifh their different forts, for the Shaddock and Citrons always make much ftronger fhoots than the Orange *, for which reafon, the-Italiaa gardeners, who raife thefe trees for fale, generally propagate thofe forts, fo that they bring few of the Seville Orange-trees over, which are much more valuable both for their flowers and fruit *, alfo prefer thofe that have two good buds in each flock (for many of them have but one, which frill always produce an irregular head:) the ftraitnefs of the ftem, frefhnefs of the branches, and plumpnefs of the bark, are nceffary obfervations.

A U ft

When you have furnifted yourfelf with a parcel of trees, you mud: prepare a moderate hot-bed of tanfers bark, in length and breadth according to the number of trees to be forced; then put your trees intp a tub of water upright* about half way of the items, leaving the head and upper part of the ftem out of the water, the better to draw and imbibe the moifture. In this fituation they may remain two or three days (according to tKeir plumpnefs when you received them;) then take them out, and clean their roots from all filth, cutting off all broken or bruifed roots, and all the fmall fibres, which are quite dried by being fo long out of the earth, and fcrub the ftems with a hard hair-bruff, cleaning them afterwards with a cloth; then cut off the branches about fix inches from the ftem, and having prepared a quantity of good frelh earth, mixed with very rotten neats dung, plant your trees therein, obferving never to put them into large pots; for if they are but big enough to contain their roots, it is fufficient at firft planting *, and be fure to put fome pottherds and large ftones in the bottom of each pot, to keep the holes at the bottom of the pots from being (topped with earth, that the water may freely pafs off, and wrap fome haybands round their ftems, from bottom to top, to prevent the fun from drying their bark; then plunge thefe pots into the bark-bed, watering them well to fettle the earth to their roots, frequently repeating, the fame all over their heads and items, being very careful not to over-water them, efppecially before they have made good roots; and obferve to fcreen the glaffes of your hot-bed from the fun in the heat of the day.

If your trees take to grow kindly (as there is little reafon to doubt of, if the direftions given be duly obferved,) they will have made ftrong fhoots by the beginning of June; at which time you ihould (top their fhoots, to obtain lateral branches to furnift their heads; and now you muft give them air plentifully, and begin to harden them, that in the middle of July they may be removed into the open air, in fome warm fituation, defended from the great heat of the fun, and from winds, that they may be hardened before winter. About the end, of September you ihould houfe thefe plants, fetting them at firft in the front of the green-houfe, near the glaffes, keeping the windows open at all times when the weather will permit; and about the later end of Odtober, when you bring in the Myrtles, and other leis tender trees, you muft fet your Oranges in the warmeft and beft part of the houfe, placing lower plants or trees in the front, to hide their ftems. During the winter, let your waterings be frequent, but give them not too much at a time; for now their heads are but fmall, and therefore incapable to difcharge too great a quantity of moifture, and take great care to guard them from froft.

In the fpring, when you begin to take out fome of your hardieft forts of plants to thin your houfe, wafh and cleanfe the ftems and leaves of your Orange-trees, taking out the upper part of the earth in the pots, filling them up again with good, frelh, rich earth, laying thereon a little rotten neats dung round the outfide of the pots, but do not let it lie near the ftem of the trees; then place them at wider diftances in the houfe, that the air may circulate round their heads, giving them air difcretionally, as the weather grows warm; but do not remove them into the open air until the latter end of May, that the weather is fettled; for mafly times, when they are removed out too foon, the mornings often proving cold, give them at leaft a great check, which will change the colour of their leaves, and many times kill the extreme weak part of the fhoots. Let the fituation for your Orange-trees, during the fummer feafon, be as much defended from the fun in the heat of the day, and ftrong winds, as poffible, by tall trees or hedges; both of which, if they are expofed thereto, are very hurtful to them.

As thefe trees advance, it will be neceffary in the

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fummer td ftop-ftrong fhoots where they grow irrègularly, to force out lateral branches to fill the head; but do not pinch off the tops of all the fhoots (as is the practice of fome,) whictwill fill the tree with fmall fhoots too weak to ilupport fruit; but endeavour to form a regular head, and obtain ftrong fhoots* taking away weak trifling branches where they are too clofe.

During the fummer feafon, your Orange-trees will require frequent waterings in dry weather, efppecially if they iare large; therefore you ihould endeavour to have the water as near the trees as poffible, to feve the trouble of carrying it, which, in a large quantity of trees, takes up much time. Your water ihould be foft, and expofed to the air, but never add dung of any fort thereto; which, although by many frequently recommended, yet has always been found deftrudlive to thefe, and ail other trees, if much ufed; it being like hot liquors to human bodies* which, at firft taking,, feem to add vigoifr, yet certainly leave the body weaker after ibme time than before.

Your Orange-trees will require to be ihifted arid new potted eveiy other year, therefore you muft prepare a quantity of good earth, at leaft a year before you intend to ufe it, that it may be well mixed and perfectly rotten. The beft feafon for this work is about the end of April, that they may have taken freih root before they are removed out of the green-houfe; and when this work is performed, it will be neceffary t* let them remain in the houfe a fortnight longer than ufual, to be well fettled.

In the performing this work, after you have drawn the trees out of the pots, you muft cut off alUthe roots round the outfide of the ball of earth, and take away all mouldy roots (if any fuch be;) then with a iharp iron inftrument, get as much of the bid earth from between the roots as poffible, being careful not to break or tear the roots; then fet the root of the tree into a large tub of water for about a quarter of an hour, to foak the under part of the ball of earth; and afterwards fcrub the ftems of the trees with a hard hair-bruff, cleaning them and the heads with water, and a foft woollen cloth. Your pots being prepared, with feme pottherds and large ftones in the bottom*, put fome of your frelh earth into the po(^ about three or four inches thick; and having placed your tree thereon, in the middle of the pot, upright, fill it up with the fame rich earth* preffing it down hard with your hands \ then water the tree all over the head, with a watering-pot that has a rdfe upon the fpout, to let the water fall light and thick (as in a ihower of rain;) and in watering thefe trees, do it in the fame manner, during the time they abide in the houfe after fhifting \$ this will greatly refreih their heads, and promote their taking freih roots.

When you firft fet thefe trees abroad after ihifting, jrou ihould place them near the fhelter of hedges, and fatten their items to ftrong ftakes, to prevent their being difturbed by winds, which fometimes will blow freih planted trees out of the pots, if too much expofed thereto, and thereby greatly injure their new roots.

If old Orange-trees have been ill managed, and their heads become ragged and decayed, the beft method to reftore them, is to cut off the greateft part of their heads early in March, and draw them out of the tubs or pots, and ftiake off the earth from their roots, cutting away all fmall fibres and mouldy roots; and then foak and clean their roots, ftems, and branches, planting them in good earth, and fetting them into a hot-bed of tenners bark, as was directed for fuch trees as came from abroad* managing them in the fame manner: by this method they will produce new heads, and in two years time become good trees again. But if thefe are large trees, and have grown in tubs for fcvtral years, your beft way will be to prepare a parcel of rough baikets (fuch as ire ufed for bafketing Evergreens, when fcntto adiftant place:) let thefe be fomewhat lefs than the tubs you defign to plant your trees into; then plant your trees

herein, plunging them into the hot-bed, and about the beginning of July, when your trees have made good shoots, you may remove them into the tubs, with their baskets about them, filling the empty space with the same good earth: this will preserve your tubs from rotting in the bark, and the trees will do equally well as if planted into the tubs at first, provided you are careful in removing the baskets, not to disturb their roots, and also let them remain in the green-house a fortnight or three weeks after planting, before you set them abroad.

These trees being new potted or tubbed every other year, those years in which they are not shifted, you must in April observe to take out as much of the old earth from the tops of the pots and tubs, and also round the sides of them, as possible, without injuring the roots of the trees, and fill them up with fresh earth & you must also wash and clean their stems and leaves from filth, which will greatly strengthen their flowering, and cause them to shoot vigorously the following summer.

In the management of Orange-trees which are in good health, the chief care should be to supply them with water duly, and not (as is sometimes practiced) starve them in winter, whereby their fibres are dried, and become mouldy, to the great prejudice of the trees; nor to give them water in too great abundance, but rather let their waterings be frequent, and given in moderate quantities. You must also observe, that the water has free passage to drain off for if it be detained in the tubs or pots, it will rot the tender fibres of the trees. During the winter season, they must have a large share of air when the weather is favourable, for nothing is more injurious to these trees than stifling of them, nor should they be placed too near each other in the green-house but set them at such distance, that their branches may be clear of each other, and that the air may circulate freely round their heads. In summer they should be placed where the winds are not violent, and to have the morning and evening sun; for if they are too much exposed to the mid-day sun, they will not thrive. The best situation for them is near some large plantation of trees, which will break the force of the winds, and screen them from the violent heat of the sun. In such a situation they may remain until the beginning of October, or later, according as the season proves favourable; for if they are carried into the green-house early, and the autumn should prove warm, it will occasion the trees to make fresh shoots, which will be weak and tender, and so liable to perish in winter; and sometimes it will occasion their flowering in winter, which greatly weakens the trees; nor should they remain so long abroad as to be injured by morning frosts. The best compost for Orange-trees is two thirds of fresh earth from a good pasture, which should not be too light, nor over stiff, but rather a hazel loam; this should be taken about ten inches deep with the spade, which should be mixed with the earth to rot, and one third part of neat's dung, these should be mixed together, at least twelve months before it is used, observing to turn it over every month, to mix it well, and to rot the spade, this will also break the clods, and cause the mould to be finer. Before you make use of this earth, you should pass it through a rough screen, to separate the great stones and the roots of the spade therefrom, but by no means sift the earth too fine, for this is very prejudicial to most plants, but particularly to Orange-trees.

Of late years there have been many of these trees planted against walls, against which frames of glass are made to fix over them in winter, and some few curious persons have planted these trees in the full ground, and have erected moveable covers to put over the trees in winter, which are so contrived as to be all taken away in summer: where these have been well executed, the trees have made great progress in their growth, and produced a much larger quantity of fruit, which have ripened so well, as to be extremely good for eating. If these are planted either against walls with

design of training the branches to the walls, or in borders at a small distance, so as to train them up as standards, there should be a contrivance of a fire-place or two, in proportion to the length of the wall, and flues carried the whole length of the wall, to warm the air in very cold weather, otherwise it will be very difficult to preserve the trees in very hard winters alive; or, if they do live through the winter, they will be so much weakened by the cold, as not to be recovered the following summer to a proper strength for bearing, so that wherever the trees are intended to be placed against or near old walls, the flues should be built up against the front, allowing four inches thickness of the brick-work on each side the flues, observing to fasten this with irons, at proper distances, to secure it from separating from the old wall: the manner of making these flues, is fully explained under the article of HOT WALLS. Where this contrivance is made, there will be no hazard of losing the trees, be the winter ever so severe, with a little proper care; whereas, if this is wanting, there will require great care and trouble to cover and uncover the glasses every day, when there is any sun; and if the wall is not thicker than they are usually built, the frost will penetrate through the walls in severe winters, so that covering and setting the glasses of the front will not be sufficient to preserve the trees, be it done with ever so much care & therefore the first expence of the walls will have great trouble and charge, and be the securest method.

If the ground is wet, or of a strong clay, so as to detain the moisture, the borders should be raised above the level of the ground, in proportion to the situation of the place & for where the wet lies in winter near the surface, it will greatly prejudice, if not totally destroy the trees, so that lime rubbish should be laid at least two feet thick in the bottom of the border, to drain off the wet; and the earth should be laid two and a half or three feet thick thereon, which will be a sufficient depth for the roots of the trees. In these borders there may be a few roots of the Guernsey and Belladonna Lilies and, Hsemanthus planted, or any other exotic bulbous-rooted flowers, which do not grow high, or draw too much nourishment from the borders; and these, producing their flowers in autumn or winter, will make a good appearance, and thrive much better than if kept in pots.

The management of the Orange-trees in these places, is nearly the same as hath been directed for those in pots or tubs, excepting that the borders in these places should be dug, and refreshed with some very rotten dung every year.

AURICULA MURIS, or Pansy. Mouse Ear.

This is a sort of Hawkweed with small hairy leaves, which are white underneath: the plant trails upon the ground, taking root at the joints, by which means it will soon spread over a large compass of ground.

This is very common in England; it grows chiefly on dry barren places, or upon old walls, and is too often a troublesome weed in grass-plats in gardens.

AURICULA URSI [i.e. Bear's Ear, so called because the ancients fancied it resembled the ear of a bear.] Bear's Ear, or Auricula.

Dr. Linnaeus has joined this genus to the Primula veris of Tournefort, making this one species under the title of Primula.

To enumerate the diversities of this plant, would be almost endless and impossible; for every year produces vast quantities of new flowers, differing in shape, size, or colour of the flowers, and also in the leaves of these plants there is as great a variety, so that the skilful florist is oftentimes capable of distinguishing many of the particular sorts thereby.

But as it seldom happens, that such of these flowers as are at one time in great esteem, continue to be regarded a few years after, (their being still finer or larger flowers produced from seeds, which are what the florists chiefly seek after) it would be needless to mention any of them; wherefore I shall proceed to give the characters of a good Auricula.

- i. *The stem of the flower should be lofty and strong.*
 1. *The foot-stalk of the flower should be short, that the umbel may be regular and close.*
 3. *The pipe or neck of each flower should be short, and the flowers large, and regularly spread; being no ways inclinable to cup.*
 4. *That the colours are very bright and well mixed.*
 5. *That the eye of the flower be large, round, and of a good white, or yellow and that the tube or neck be not too wide.*

All the flowers of this kind that want any of the above-mentioned properties, are now rejected by every good florist for as the varieties every year increase from seeds, the bad ones are turned out to make room for their betters, but in some people the passion for new flowers so much prevails, that, supposing the old flower greatly preferable to a new one, if it is of their own raising, the latter must take place of the old one.

In order to obtain good flowers from seeds, you must make choice of the best flowers you have, which should be exposed to the open air, that they may have the benefit of flowers, without which, they seldom produce good seeds: the time of their ripening is in June, which you will easily know, by their seed-vessel turning to a brown colour, and opening; you must therefore be careful to scatter the seeds out of the vessel, for it will not be all fit to gather at the same time.

The time for sowing this seed is commonly in August, but if it be sown any time before Christmas, it will be time enough.

The best soil for this seed is good, fresh, light, sandy mould, mixed with very rotten neat's dung, or very rotten dung from the bottom of an old hot-bed: with this you should fill your pots, boxes, or baskets, in which you intend to sow your seeds: and having levelled the surface of the earth very smooth, sow your seeds thereon, covering it very lightly with rotten Willow mould taken out of the stems of decayed hollow Willow-trees; then cover the box, &c. with a net or wire, to prevent the cats, birds, &c. from scratching out, or burying the seeds too deep; for whenever this happens, the seeds will remain a year in the ground before the plants appear, if it should grow at last; for which reason many persons never cover these seeds, but leave them upon the surface of the earth, in the boxes, for the rain to wash them into the ground, which is often the best method: let these boxes, &c. be placed so as to receive half the day's sun, during the winter season; but in the beginning of March, remove them where they may only have the morning sun till ten of the clock; for the young plants will now soon begin to appear, which, if exposed to one day's whole sun only, will be all destroyed.

During the summer season, in dry weather, often refresh them with water, but never give them too great quantities at once. In the July following, your plants will be large enough to transplant, at which time you must prepare a bed, or boxes, filled with the above-mentioned soil, in which you may plant them about three inches square; and (if in beds) you must shade them everyday, till they are thoroughly rooted, as also in very hot dry weather, but if they are in baskets or boxes, they may be removed to a shady place.

When the seedling Auriculas are planted in beds, there should be some rotten neat's dung laid about ten inches under the surface, and beaten down close and smooth: this will prevent the worms from drawing the young plants out of the earth, which they generally do where this is not practised. This dung should be laid about half a foot thick, which will entirely prevent the worms getting through it until the plants are well established in the beds; and the roots of the Auriculas will strike down into the dung by the spring, which will make their flowers stronger than usual: these beds should be exposed to the east, and screened from the south sun.

When you have taken all your plants, which are now come up, out of your boxes or pots, level the earth gently again; for it often happens, that some of the seeds will lie in the ground two years before they appear, especially if they were covered too deep when sown, as was before observed.

The spring following many of these flowers will show, when you may select such of them as have good properties, which should be removed each of them into a pot of the same prepared earth, and preferred until the next season, at which time you will be capable to form a judgment of the goodness of the flower; but those that produce plain-coloured or small flowers, should be taken out, and planted in borders in the out-parts of the garden, to make a show, or gather for nosegays, &c. the others, which do not produce their flowers the same year, may be taken up, and transplanted into a fresh bed, to remain till you see how they will prove.

The manner of propagating these flowers when obtained, is from offsets, or slips, taken from the old roots in April, when the flowers are in bloom: these offsets must be planted into small pots filled with the same sort of earth as was before directed for the seedlings, and, during the summer season, should be set in a shady place, and must be often (but very gently) refreshed with water; but in the autumn and winter should be sheltered from violent rains: The spring following these young plants will produce flowers, though but weak; soon after they are past flowering, you must put them into larger pots, and the second year they will blow in perfection.

But, in order to obtain a fine bloom of these flowers, you must observe the following directions.

First, Preserve your plants from too much wet in winter, which often rots and spoils them; but let them have as much free open air as possible; nor should they be too much exposed to the sun, which is apt to forward their budding for flower too soon, and the frosty mornings, which often happen in March, thereby destroy their buds, if they are not protected therefrom. To prevent which, those who are very curious in these flowers, place their pots in autumn under a common hot-bed frame, where, in good weather, the plants may enjoy the full air, by drawing off the glasses; and in great rains, snow, or frost, the plants may be screened by covering them. Where this method is practised with judgment, the flowers will be much stronger, and the plants will increase faster than when they are exposed abroad.

Secondly, In the beginning of February, if the weather is mild, you must take off the upper part of the earth in the Auricula pots, as low as you can without disturbing their roots, and fill up the pots with fresh rich earth, which will greatly strengthen them for bloom, as also prepare your offsets for transplanting in April, by causing them to push out new roots.

Those plants which have strong single heads, always produce the largest clusters of flowers, therefore the curious florists pull off the offsets as soon as it can be done with safety to their growing, to encourage the mother plants to flower the stronger; they also pinch off the flowers in autumn, where they are produced, and suffer them not to open, that the plants should not be weakened thereby.

Thirdly, You must cover your pots with mats in frosty weather, during this time of their budding for flower, lest the sharp mornings blight them, and prevent their blowing.

Fourthly, When your flower-stems begin to advance and the blossom buds grow turgid, you must protect them from heavy rains, which would wash off their white mealy farina, and greatly deface the beauty of their flowers; but at the same time observe to keep them as much uncovered as possible, otherwise their stems will be drawn up too weak to support their flowers (which is often the case when their pots are placed near walls) give them gentle waterings to strengthen them, but let none of the water fall into the center of the plant, or among the leaves.

Fifthly

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-fifthly, When your flowers begin to open, you should remove¹ their pots upon a stage (built with rows of shelves, one above another, and covered on the top, to preserve them from wet: this should be open to the morning sun, but sheltered from the heat of the sun in the middle of the day :) in this position they will appear to much greater advantage, than when the pots stand upon the ground, for, their flowers being low, their beauty is hid from us; whereas, when they are advanced upon shelves, we see them in a full view. In this situation they may remain until the beauty of their flowers is past, when they must be set abroad to receive the rains, and have open free air, in order to obtain feeds, which will fail if they are kept too long under shelter. When your feed is ripe, observe to gather it when it is perfectly dry, and expose it to the sun in a window upon papers, to prevent its growing mouldy, and let it remain in the pots till the season for sowing it.

AURICULA URSI MYCONL See VERBASCUM.

AXIS of a plant. Axis is properly that round smooth cylinder, about which a wheel is turned whence, by way of metaphor, that long, round, smooth part, placed in the center of the tuft, or cat tails, on Nut-trees, &c. about which the male organs are disposed, may be called the Axis. The French call it Ame, Noyau, or Poinçon.

AZALEA. Lin. Gen. Plant. 195. American upright Honeyfuckle.

The CHARACTERS are,

It hath a small coloured empalement which is permanent into five acute parts at the top. The flower is juncif-shaped having a long naked tube* cut into five parts; the two upper segments are reflexed backward* the two sides are bent inward* and the lower one turns downward. It hath five slender stamina of unequal lengths*, which have oblong erect summits. The round germen supports a long slender style* crowned with an obtuse stigma i the germen afterward becomes a roundish capsule* having five cells* which are filled with roundish small seeds.*

This genus of plants is ranged in the first section of Linnaeus's fifth class, entitled Pentandria Monogynia, the flower having five stamina and one style.

The SPECIES are,

I. AZALEA (*Vicofa*) foliis margine scabris, corollis pilofo glutinosis. Lin. Sp. Plant. 151. *Azalea with leaves having rough edges* the petals of the flower hairy and glutinous.* Cistus Virginiana flore & odore periclymeni. Pluk. Phyt. tab. 161. f. 4.

£. AZALEA (*Nudiflora*) foliis ovatis corollis pilq/is ftaminibus longiflimis. Lin. Sp. Plant. 150. *Azalea with oval leaves* hairy flowers* and the longest stamina.* Cistus Virginiana periclymeni flore ampliori minus odorato. Pluk. Mant. 49.

There are three or four other species of this genus, two of which grow naturally upon the Alps, chiefly on bogs; these are low plants, which have little beauty, and very difficult to keep in gardens. The others grow one in the east, near Pontus, and the other in India, but as neither of these are in the English gardens, I shall not enumerate them.

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The first of these here mentioned, is a low shrub, rising with several slender stems near four feet high. The leaves come out in clusters at the ends of the shoots, without order: they are spear-shaped, but narrow at their base, their edges are set with very short teeth, which are rough. The flowers come out in clusters between the leaves, at the extremity of the branches, which are white, with a mixture of dirty yellow on their outside: they have a tube an inch long, and at the top are pretty decaly cut into five segments, the two upper are reflexed, the two side ones are bent inward, and the lower one is turned downward. There are five slender stamina, which are a little longer than the petals of the flower, supporting oblong Saffron-coloured summits. The style is much longer than the stamina, and crowned by an obtuse stigma. These flowers have much the appearance of those of the Honeyfuckle, and are as agreeably scented. They appear the middle of July, but are not succeeded by seeds in England.

The second sort grows taller than the first, and in its native country frequently rises to the height of fifteen feet, but in England is never more than half that height. This sends out several stems from the root, which are garnished with oblong smooth leaves, placed alternately, having foot-stalks. The flower-stalks arise from the division of the branches, which are long and naked, supporting a cluster of red flowers, which are tubulous, swelling at their base like those of the Hyacinth, and contracted at their neck; they are divided at the top into five equal segments, which spread open. The five stamina and the style are much longer than the petals, and stand erect. This flowers about the same time as the former, but is not so well scented.

These plants grow naturally in shade, and upon moist ground in most parts of North America, from whence many of the plants have been sent of late years to England, and several of them have produced their beautiful flowers in many curious gardens.

They must have a moist soil and a shady situation, otherwise they will not thrive. They can only be propagated by shoots from their roots, and laying down their branches, for they do not produce seeds here; and if good seeds could be obtained, they would be difficult to raise, and a long time before they would flower. But when they are in a proper situation, their roots extend, and put out shoots, which may be taken off with roots, and transplanted. When any of them are laid down, it should be only the young shoots of the same year, for the old branches will not put out roots. The best time for this is 19 at Michaelmas, and if they are covered with some old tan, to keep out the frost, it will be of great use to them. The autumn is also the best time to remove the plants, but the ground about their roots should be covered in winter to keep out the frost, and if this is every year practiced to the old plants, it will preserve them in vigour, and cause them to flower well.

AZEDARACH. See MELIA.

AZEROLE, or L'AZAROLE. See MESPILUS.

B.

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B A C C A, i. c. a berry, is a round fruit, for the most part soft, and covered with a thin skin, containing seeds.

in a [i:]ly sibtaoej but, if it be harder, anti covered with a illicker fleshi, slecti Pomum, i. c. m Apple.

Ploughman's Spikenard, vulgu.
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efouin- if eemped ef wax y law.

This genus of plants is ranged in the second section of Linnaeus's plantarum class, intitled Syngnesia Polygamia superflua, the flowers being composed of hermaphrodite and female florets, which are both fruitful.

1. **BACCARIA (Trifolia)** foliis lanceolatis tongicudnalter dentato- serratis. Ljn. • lor., I. Inf. Ploughman's Spikenard with four-shaped leaves, which are longitudoinally indented and serrated. Senecio Africana serotinent folia serrata. Boerh. Ind. ab. v. 117.
2. **BACCARIA (Aurea)** foliis lanceolatis superne uno altero dentato- serratis. Hort. Cliff. 404. Ploughman's Spikenard with four-shaped leaves, which are longitudoinally indented and serrated. Senecio Africana serotinent folia serrata. Boerh. Ind. ab. v. 117.
3. **BACCARIA (Haloifolia)** foliis obovatis superne emarginato- serratis. Hort. Cliff. 405. Ploughman's Spikenard with four-shaped leaves, which are longitudoinally indented and serrated. Senecio Africana serotinent folia serrata. Boerh. Ind. ab. v. 117.
4. **BACCARIA (Folia)** foliis lanceolatis serratis dentatis, corymbis bifidis. Flor. Virg. 121. Ploughman's Spikenard with four-shaped leaves, which are longitudoinally indented and serrated. Senecio Africana serotinent folia serrata. Boerh. Ind. ab. v. 117.

The English name of Ploughman's Spikenard has been always applied to the *Coccyza naja*, or greater Pheasant, but since most of the modern botanists have applied the name of *Baccaria* to this genus, I have added the old English name to it; Ploughman's Spikenard, rather than leave it without an English title. The first sort was brought from the Cape of Good Hope, but grows naturally in Peru, and in other parts of America. This plain has been long preserved by the curious in their gardens. It grows to the height of five or six feet, and is a remarkable shrub, which may be propagated by cuttings, which should be planted in a shady border during any of the summer months, or by seeds sown in a common border in the spring of the year. These seeds ripen well in this country; and, if permitted to sower on the ground, the plants will come up the following spring. It is very hardy, and will live abroad in mild winters, if planted in a warm situation; but it is usually kept in green-houses, and placed abroad in summer; it requires much water in warm weather.

The second sort is also a native of Africa; it hath a soft fleshy stalk, which rises to the height of eight or ten feet, pushing out side branches toward the top, garnished with six four-shaped leaves, having a few indurated toward their tops; these are placed without order; the flowers are produced at the extremity of the branches in a close spike, consisting of female and

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bennapbrodte Sum included in the common emplacement they art- <ffan herl njr, C> m.ick ippewance, and arc not succeeded by seeds in England.

This plant is difficult to propagate, for the cuttings do with it with a difficulty take root; and it is very rare to find flowers near the root to lay down, so that in Uolhuui they lay down the entire head of young plants; flitting the (mallet branches in the same manner as is practised for Camassoot, laying them near the ground and forcing each down to prevent their rising; these when duly watered put out roots in six or seven years, when they may be taken off, and planted in small pots filled with light earth, and placed in the fire till they have taken new roots; after which they may be placed in a sheltered situation in summer, but in winter must be kept in a green-house.

The third is very common in the mountains of London, where it is usually called the Ground-Tell-ur; this is a native of Virginia and other parts of North America; it grows to be a shrub of five or six feet high, and flowers in October; the flowers are white, and not very beautiful; but the leaves continuing green through the year, by enclosing the stems into many small garden*.

This sort may be propagated by cuttings, which should be planted in the end of May, upon a shady soil, and in dry weather, and at Michaelmas, they will be so transplanted where they are to remain; they will live in the open air, and never is injured by frost of our tirdinury mnttr; but severe frost will sometimes deflmy it.

The fourth is found in North Carolina, and in other parts of North America; it rises with a lignous (i. e. six or seven feet high, garnished with long pear-shaped leaves, which are heavy in their under side, having a disagreeable smell when handled; the stalks are terminated by loose clusters of flowers, which appear late in the autumn, but are not succeeded by seed in this country.

It may be propagated by cuttings, which should be planted toward the end of May, which if sowed and watered will put out roots in two months; when they should be potted, that they may be sheltered under a frame in winter.

BACCIFEROUS (Baccifer, Lat. of Baccia, a berry, and ferre, to bear) is an epithet applied to trees, shrubs, or plants, that bear berries, as Briony, Lily of the Valley, Alparagus, Butchers Broom, Nightshade, Solomon's Seal, and many others.

BALAUUSTIA. See **PERSEA**.
BALAUUSTIUM is the cup of the flower of the wild Pomegranate.

BALLOTE (ballot, Gr.) Black Honeysuckle.
This is a common weed, growing on the sides of banks in most parts of England, or a frigid shewed a place in gardens; there are two sorts of it, one with a white, and the other a purple flower. As these are not cultivated, I shall not trouble the reader with a further description of them.

BALM. See **MEXINA**.
BALSAM • **INA**. The female Balfamine. See **MEXINA**.
BALSAMITA. See **TANACETUM**.
BAMIA • **THATA**. See **PLUMPER**.
BANANA. See **MEXINA**.

BANISTERIA. Houft. MSS. Lin. Gen. 509.
Acer Scandens. Sloan. Cat. 137. Plum. Cat. 18.

The CHARACTERS are,

It hath a small permanent empalement, cut into five acute segments to the bottom; the flower hath five petals, which are fhaped like thofe of the papilionaceous tribe, but fpread open, having infome fpecies one, in others two, and in feme, feveral neftarious glands. It hath ten fhort ftamina, crowned with fimple fummits. There are infome fpecies three, and, in others but one grmen, each fupporting a fingle flyk, crowned by an obtufe ftigma \ the germen afterward become Jo many winged fruit, likethat of the Maple, each containing a Jingle feed.

The title *6i* this genus was given by the late Dr. Houftoun, in honour to the memory of Mr. Banifter, a curious botanift, who loft his life in the fearch of plants in Virginia.

The Doftor ranged this genus in the clafs of papilionaceous flowers, to which 'it has great affinity by the form of its flower; but the ten ftamina ftanding feperate, induced Dr. Linnaeus to place it in his tenth clafs; but although he has put it under his third fection, yet it would with greater propriety come under his fecond, the greater number of fpecies having but two ftyles.

The SPECIES are,

1. BANISTERIA (*Angulofa*) foliis ovato-oblongis rigidis racemis terminalibus caule fruticofo fcandente. *Banifteria with oblong, oval, ftiff leaves, fpikes of flowers terminating the branches, and afhruddy climbing ftalk.* Sir Hans Sloane titles it, *Acer fcandens foliis Laurinis.* Qfcjam. 137.
2. BANISTERIA (*Fulgens*) foliis ovatis glabris, floribus corymbofis terminalibus, caule fruticofo fcandente. *Banifteria with oval fmoother leaves, flowers growing in a corymbus at the extremity of the branches, and afhruddy climbing ftalk.* *Acer fcandens minus Apocyni facie folio fubrotundo.* Sloan. Cat: 138.
3. BANISTERIA (*Brachiata*) foliis ovatis acuminatis floribus laxè fpicatis, ramis diffusis fcandentibus. *Banifteria with oval pointed leaves, flowers growing in loofe fpikes, and climbing diffufed branches.* *Banifteria fcandens & frutefcens folio fubrotundo, flore ex aureo Coccineo.* Houft. MSS.
4. BANISTERIA (*Laurifolia*) foliis ovatis nervofis fubtus incanis, floribus lateralibus, caule fruticofo fcandente. *Banifteria with nervous heart-Jhaped leaves, hoary on their under fide, flowers growing from the fide of the branches, and a Jhrubby climbing ftalk.* *Acer Americanum fcandens foliis fubrotundis fubtus pubefcentibus.* Millar. Cat.
5. BANISTERIA (*Benghalenfis*) foliis ovato-oblongis acuminatis rr.cemis lateralibus feminibus patentibus. *Flor. Zeyl. 1761 Banifteria with oblong, oval, pointed leaves, fpikes of flowers growing from the fide of the branches, and fpreading feeds.* *Acer fcandens foliis Citrei flore cseruleo fpicato.* Plum. Cat. 18.
6. BANISTERIA (*Aculeata*) foliis pinnatis, foliolis oblongis obtufis, floribus fpicatis caule ramofo aculeato. *Banifteria with winged leaves, whofe fmall leaves are oblong and blunt, flowers growing in a fpike, and a prickly branching ftalk.*
7. BANISTERIA (*Purpurea*) foliis pinnatis foliolis ovatis fpicis lateralibus feminibus eredbis. *Banifteria with winged leaves, whofe fmall leaves are oval, fpikes of flowers growing from the fide of the branches, and ereff feeds.* *Banifteria foliis ovatis fpicis lateralibus feminibus ereffis.* Lin. Sp. Plant. 427.

The firft grows naturally in Jamaica. This hath a woody ftalk, which twifts itfelf round the neighbouring trees, and riles to their top. It is garnifhed with leaves as large as thofe of the Bay-tree, and of the fame thicknefs, growing oppofite* the flowers are produced in long branching fpikes at the ends of the branches, which are yellow, compofed of five fmall leaves; thefe are fucceeded by two or three winged feeds like thofe of the greater Maple.

The fecond fort grows naturally in Jamaica, at Campeachy, and feveral other parts of America. This hath flender winding ftalks, which rife five or fix feet

high, and are thinly garnifhed with oval fmoother leaves; the flowers grow in a round bunch at the extremity of the branches, which are of a browniff yellow colour, and are fucceeded by winged feeds like the former, but fmaller, and have narrower wings.

The third fort was fent me from Carthage, where it naturally grows. This, fends out many branches, which divide again into others, gracing without order, and become very bufhy upward, fending out tendrils by which they fatten themfelves to the neighbouring trees, and mount to a grqat height; thefe are garnifhed with oval ftiff leaves, ending in a point. The flowers are produced in loofe fpikes at the ends of the branches, which are firft of a gold colour, and fade to a fcarlet. Thefe are fucceeded by feeds of the fame fhape with the former, but are flender, thin, and for the moft part fingle.

The fourth fort was fent me from Campeachy, by Mr. Robert Millar; this hath many irregular climbing ftalks, which fatten themfelves to the neighbouring trees, and rife to a great height, garnifhed with oval leaves, which are hairy on their under fide, where they have many tranfverfe ribs. The flowers come out thinly from the fide of the branches, which are of a pale yellow colour; and are fucceeded by large winged feeds, of which are double.

The fifth fort hath ftrong woody ftalks, which twine about the trees which grow near it, and rifes twenty feet high, garnifhed with oblong pointed leaves like thofe of the Bay-tree, growing oppofite; from the wings of the leaves the flowers are produced in loofe fpikes, upon long foot-ftalks, which are blue, and are fucceeded by flender winged feeds, which fpread open from each other.

The fixth fort was fent me from Tolu in New Spain, where it grows naturally. This hath climbing ftalks, which divide into many branches, garnifhed with long winged leaves, compofed of about twenty pair of fmall, oblong, blunt pinnae, each having a deep furrow on the under fide. At the wings of the leaves the ftalks are armed with fhort ftrong fpines, a little crooked. The flowers grow in long loofe fpikes at the end of the branches, which are fucceeded by fingle feeds, as large as thofe of the greater Maple.

The feventh fort hath ftrong ligneous ftalks, covered with an Afh-coloured bark, and divide into many branches, garnifhed with winged leaves, compofed of five or fix pair of oval fmall leaves, nearly of the fize with thofe of the common Acacia, but are whitiff on their under fide; from the wings of the leaves are produced flender bunches of flowers, growing in a racemus like thofe of the Currant-buff, of a purpliff colour; thefe are fucceeded by broad winged feeds, growing erect. It was fent me from Campeachy, where it grows naturally.

Thefe plants are all of them natives of warm countries, fo'c jnnot be preferred in England, unlefs they are kept in a bark-ftove. They are propagated by feeds, which muft be procured from the countries where they grow naturally. Thefe feeds fhould be fully ripe when gathered, and put into fand or earth, in which they fhould be fent to England, otherwife they will loofe their vegetative quality *, for from a large parcel of thefe feeds which were fent over in papers, as freffh as they could poffibly arrive here, there was very few plants raifed, and thofe did not appear till the fecond year *, for thefe feeds are not only in fhape like thofe of the Maple, but alfo are of the fame quality, requiring to be fown as foon as poffible when they are ripe, or preferred in fand or earth till they are fown, otherwife they rarely fucceed; therefore when die feeds arrive, they fhould be immediately fown in pots, and, if it happens in autumn or winter, the pots fhould be plunged into a hot-bed of tanners bark, where the heat is very moderate, and fe cured from froft and wet, till fpring, when they muft be removed to a freffh hot-bed, which will bring up the plants; but if they fhould not appear the firft year, the pots fhould be preferred till the next fpring,

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to see if the feeds will grow. When the plants come up, they must be planted in separate pots, filled with light earth, and plunged into the bark-bed, after which they must be treated like other tender plants from the same countries.

B A O B O B. See ADANSONIA.

BARBACAPRJE. See SPINARIA.

BARBAJOVIS. See ANTHYLLIS.

BARBARE*. See ERYSIMUM.

BARBARANA. See ARCTIUM.

BARLERIA.

The name was given to this genus of plants by father Plumier, in honour of Jacobus Barlier, of Paris, who was a famous botanist.

The CHARACTERS are,

*It hath a permanent empalement, divided into four parts, two large and two smaller, opposite. The flower is of the lip kind, of one leaf, funnel-shaped and divided into five parts at the top, the upper figment being broad and entire, the two side ones narrower, and the under one which turns downward is divided into two. It hath four slender filaments, two of which are very short, the two upper are longer, crowned by oblong summits. In the center is placed the oval germen, supporting a slender style, crowned by a bifid stigma. *The germen afterward becomes an oblong, quadrangular, membranaceous vessel, with two cells, which is very elastic, containing two or three roundish compressed seeds.*

This genus of plants is by Dr. Linnaeus ranged in the second order of his fourteenth class, titled Didymia Angiofermia, whose flowers have two long and two short stamens, and their seeds are included in a capsule.

The SPECIES are,

1. BARLERIA (*Solanifolia*) spinis axillaribus foliis lanceolatis denticulatis. Lin. Sp. 887. *Barleria with spines on the side of the branches, and pear-shaped indented leaves.* Barleria aculeata foliis angustioribus flore casruleo. Plum. N. G. 31.
2. BARLERIA (*Prionitis*) spinis axillaribus quaternis foliis integerrimis. Lin. Sp. Plant. 636. *Barleria with spines growing by fours from the side of the branches, and entire leaves.* Coletta-veetla. Hort. Mai. 9. p. 77.
3. BARLERIA (*Buxifolia*) spinis axillaribus oppositis foliatis, foliis subrotundis integerrimis. Lin. Sp. 887. *Barleria with spines at the wings of the stalk, and roundish entire leaves.* Barleria Americana spiniflora frutescens, buxi folio parvo flore. Amm. Herb. 104.
4. BARLERIA (*Coccinea*) inermis foliis ovatis denticulatis petiolatis. Lin. Sp. 888. *Barleria without spines, and oval indented leaves having foot-stalks.* Barleria foliis ovatis, flore coccineo. Plum. Nov. Gen. 31.

The first fort rises with upright square stalks three feet high, garnished with two oblong entire leaves at every joint, above which the flowers come out in whorls surrounding the stalks, and under each whorl there are six sharp spines, which are as long as the empalement of the flowers. These joints are about three inches distance; the flowers are blue, and have more of the form of the labiated flowers, than any of the other species. I received this from Panama.

The second fort has been long in the curious gardens in Holland, but has not been many years in this country. This sends out many slender stems from the root, which rise eight or nine feet high, garnished with oval pointed leaves, two growing opposite at each joint, which are attended by four long spines standing cross-ways. This plant hath not as yet flowered in England, though there are large plants of it in the Chthia garden.

The third fort hath shrubby stalks which rise five or six feet high, garnished with roundish entire leaves placed opposite, under which are placed strong spines; the flowers are produced in whorls toward the upper part of the stalk; these are succeeded by short seed-vessels, containing three or four flat seeds. This grows naturally in Jamaica.

The fourth fort grows naturally in the warm parts of America. The stalks of this are smooth, they rise

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four feet high, are garnished with two oval indented leaves standing opposite, the flowers are scarlet, and are placed in whorls at the joints of the stalks; these appear in July, August, and September, and are succeeded by short pods inclosing flat seeds.

The roots of the first fort will continue three or four years, but after the second year, the plants grow too rambling, and the lower part of the branches are naked, so are not so fitly as the young plants; therefore a succession of these should be raised, and the old ones turned out. They are propagated by seeds, which will sow themselves in the pots which are near them in the stove, when the plants are once obtained; but where the seeds are received from abroad, they must be sown upon a hot-bed in the spring; and when the plants are fit to remove, they must be each planted in a separate pot, and plunged into a hot-bed of tanners bark, where they must constantly remain, and managed in the same manner as other tender exotics from the same countries, giving them water frequently in summer, and letting the fresh air to them every day in warm weather, but in winter they should have less water and be kept warm. They flower from June to November, and their seeds ripen soon after.

The second fort hath flexible perennial stalks, which if cut off during the summer months, and made into lengths of six or eight inches, and planted in pots, plunging them into a hot-bed, and duly watered and shaded from the sun, will soon put out roots, so may be planted each in a small pot, and plunged into the tan-bed in the stove; for although this fort may be kept in a dry stove through the winter, yet the plants will not grow near so fast, nor will their leaves be so large as those which are plunged into bark. By this method the plants may be propagated in plenty, but as they rarely produce flowers in England, two or three plants will be sufficient to maintain the species.

The third and fourth forts will produce seeds in England, provided the plants are kept in the tan-bed in the stove, so these may be propagated by seeds, which should be sown in the hot-bed, and the plants afterward treated in the same manner as the first fort.

B A R O M E T E R [from *Barys*, a weight, and *metron*, a measure,] is an instrument or machine for measuring the weight of the atmosphere, or the minute variation of the weight or pressure of the incumbent air, in order to determine the changes of weather.

This machine is founded on the Torricellian experiment, so called, from the inventor Torricellius.

1. It consists of a long tube of glass, hermetically sealed at one end; and being filled with quicksilver, is inverted so as to have one end of it immersed in a basin of stagnant quicksilver, and the other hermetically sealed, which is exposed to the pressure of the outward air, out of which open end (after such immersion) the quicksilver in the tube being suffered to run as much as it will into the stagnant quicksilver, in which that mouth or open end is immersed, there is wont to remain a cylinder of quicksilver suspended in the tube, about twenty-eight, twenty-nine, or thirty inches high, measuring from the surface of the stagnant quicksilver perpendicularly, but more or less within such limits, according as the weight or pressure of the air incumbent on the external stagnant quicksilver exposed to it, is greater or lesser, leaving the upper part of the tube void, or at least empty of common air.

The phenomena of the barometer are various, and the causes assigned for them, by several authors, are various; nor is the use of it in predicting the weather, yet perfectly ascertained.

The greatest height the mercury has been known to stand at in London, is thirty inches three-eighths, and its least, twenty-eight inches: and though, as Mr. Boyle observes, the phenomena of the barometer are so very precarious, that it is very difficult to form any general rules about the rise and fall thereof, since

in thit which seems to hold most univerfally, vk. that when the liGH winds-Mow, tht mercury is the lower, they fometim.e fail ; as the following obllv-varium iffic been made by feveral authors.

Dr. Hstley obferves, th.i: in calm weather, when the air •3 iiclinu! to r.-in, the mercury h comi; usually low ; in fercne guod fettled weather, high.

That on great vrinils, clough the incompinied with rain, ilit; mercury u lowdt of all, with regard to the point of the compali the wind blows on; this , se-irit pariimi, the grtstcft heights of 11 it mercury arc oneiik-rlly aml north-carter! after great ftrms of wind, when the mercury his bten low, it lifts agnin vet; fall.

That in culm troffy weather it fhnds high.

That the more northerly places find greater ;:ltera-tions than the more fothern , and ili nt within the tropics, and near chcin, iliere bliafcornovari sion of the mercury at all.

Dr. B?il obfervei, that, e*firis paribm, the mercury is higher in cold weathw than in warm, and usually higher !n morning and even in p th >n ?s :i • < i • I ;iy.

That the mercury i; higher in iettled jfel i'ir we.nher, than either a link benire, or alter, or in tltit nun ; ami tltut I: generalW deteeads lower afrer win, than if it chance to rife higher after rain, it is ;ra% followed by a fetti

Th;it thsre arc frequ: I great changes in tte (Ur, withiout iBiv | acceptable ftrations f) tlic baramer.

As in the pord, ••• as from iht; barometer, Dr. Hnt-ky hi^ (bund,

That the r; ingof the mercury forebode* iair weather after fool, and an eafterly or north-tatkrlly wind.

Thai the filling of the mercury porrends fe- arly weitrllly winds, with i rains, or ltormy wind.i. or both.

That in a ftrnm tlic mercury beginning to riic, is a pretty fure ligh that it begins [OIEste.

Mr. Patrick obferves, that the falling of the in- cihotweath! perhaps thunder j that when foul wea-ther happens after trie i ill of the mercury, it Idom iiohk long) ^n d the lame is dbferved, if hir weather ftrceeds ;Fifty utter ii

Here • Mr. Pointer conceives, time the principal e-ife of rlv rife and fall of the mercury, is in the varu) y winds which are ftrted in the temperate zont-s, uul whose great iriconftant: here in England h molt notori

A iteond enufe he takes co be, the uncertain exhalation and perfp. tion of the vap- mrs lodging in the air, whereby It come] to be at one tim*¹ much more crowd d than at another, and conicqnc'ly heavier; but this latter, in a great meafure, depends • >n cic former.

And t'roni thec principles, he endravouj to explain tlic feveral phi-non'cni c* the baroiv

1. Tlic raercury J being bw, inclints it to nin; be- caufe the air being light, the vapours are no longer fup- ported thefdy, being become fpecifically heavier than the medium wherein they are floated; fo that they c'clend towards the earth, and in their fall rntet- ing with < air aqueous particles, they incorporate tughttth, a i i form little drops of i ijn , but ito mercury's being at Dre rimt lower than another, is the efieft of two con'ary winds blowing from the place where the barometer ftands , whereby ch

place is carried both ways from it, and confequently the incumbent cylinder of air is diminished, and ac- cordingly the mercury linloi. As • influence, if in rhe German occ.;; it fhould blow a gale of westerly wind, and lj the fame rime an L-iltterly wimi

in the Irish fea, or if in France . . • Ill blow n northerly wind , and in Scotland J fiju' rity, it muft be grant- ed, that that p n air l ft- atmol j'herc imjondc... over England, would thereby be rthaufted and atte- nuated, and the mercury would rife; and the vap- p mrs which before floated in Th'e part of thepif,

Of K! . lvo, would fink to the carrh.

••. The gw r h rfit of tlic barometer ii occaGoncd

by two contrary winds blow raj towards the plate of obfervation, whereby the air • other places is hrughr fufier and accumulated ; fo that the incumbent cy- linder of air being increased both in height and weight, the mercury prefied thereby muft needs rife and lli'Ui i> i' l' , •• long is the winds continue in d blo.v ; and then the air being fpecifically heavier, the vapours are better kept fufpended, fo that they have

110 in dination to precipitate and i Abr.vn in drops, which is the reafon of the fervat good weather, which attends the greater heights of the mercury.

% The mercury finkj tin- bwef of all by die very rapid wofon of r-x air in iorins of i mls.

For the tract of the region of the earth's furface, wherein tin ic winds rage, not exten • out a] round the globe, that ftagnant air which ii left behind, as it were that on the fides • cannot c • meinfofaiUsto fupply the evacuation made by li • meinfofaiUsto rtwit a current i fo tliati;

the air muft neceffarily be ftirred up and where the fide winds continue to blow, and thal more or lefs, according to their violence; add to which, that L: horizontal motion of the air being fo quick as it is, may, in all probability, take off fome part of die J- pendiculae pressure it exerts ; and the gre a g J- tation of its particles is the reafon why th • vapours are diflipatcd, .. d do not condense into drops, fo as to form rain, i ftrvice the natural confequence jf tlic air's rarefaction.

+ The mercury rids the high; uptm an eafterly or north-eafterly wind; becaufe, in the great Ath- latic ocean, on this fide the thirty-fifth degree of north latitude, the eafterly and westerly winds blow almoft always trade : fo that whenever here the winds come up at east and north-east, it is fure to be checked by a contrary gale as foon as it reaches the ocean ; whether, according to what is faid • out in the se- com i remark, the air muft needs be heaped over this ihu \ and CDiiletjueml , the mercury muft ftand high, as often as thec winds Wow.

5. In calm froiVf Meat tier, the mercury generally itanui high, beca • as he conceives, it seldom freezes bin: when : be winds come out of the northern or north-eaftern quarters, or at leaft, unlefs thofe winds blow at no great diftance of.

For the northern parts of Germany, Denmark, Swe- den, Norway, and all that tract, from whence north- eaftern winds come, are fubject to almoft continual froft all the irinrer, r.nd therdy the IOWL: air is very much conditced, and in that rate is brought higher- ward by thofe winds; and, being accumulated by the oppofition of the westerly wind blowing in the ocean, the mercury muft needs be perfid to a more ordinary height; and, as a concurring caufe, the ftirking of the lower parts of the air into better room by cold, muft needs caufe a defcent of the upper parts of the atmosphere, to reduce the cavity made by this contraction to an equilibrium.

6. After great ftorms of winds, when the mercury htut l rize very low, it generally rife again very fall: he fays, he once obferved it to rife an inch and a half in Idi thrji l' hours, after a long continued ftorm of i both-weH wind. The reafon is, ¹ becaufe the air being very much rare- fied by the great evacuations that fuch continued ftorms make thereof, the neighbouring air runs in more fwiftly, to bring it to an equilibrium, as we fee wate run the fides of having a greater density.

7. The variations are greater in the more northerly places, as at Stockholm greater than at Paris (com- pared by Mr. Falch); becaufe the more northerly parts have usually greater ftrms of wind ill in the more fotherly, whereby the mercury fhould fink low < Tin : air expanoixhe and rty be winds bringing

the condensed and pondicous air from the neighbour- hood of the pole, and that a gun being checked by a fotherly wind, at no great diftance, and fo heaped up, muil i' neceffary, make the mercury in fuch cafe land higher in the other extreme.

8. Th' remark, that there is little nr no variation ntai the ctju inctual, is : • , tbovcall other?, tuiinrm the

the hypothesis of the variable winds being the cause of these variations of the height of the mercury, for in the places above-named, there is always an easterly gale of wind, blowing nearly upon the same point, viz. E. N. E. at Barbadoes, and E. S. E. at St. Helena; so that there being no contrary currents of the air to exhaust or accumulate it, the atmosphere continues much in the same state.

Mr. Patrick gives us the following rules and observations for the rising and falling of the mercury, in order to foreknow the weather by the barometer.

1. It has been observed, that the motion of the mercury does not exceed three inches in its rising or falling in the barometer of the common form.
2. That its least alterations are to be minded, in order to the right finding of the weather by it.
3. The rising of the mercury prefaces in general fair weather, and its falling, foul, as rain, snow, high winds, and storms.
4. In very hot weather, the falling of the mercury foretells thunder.
5. In winter, the rising of the mercury prefaces frost; and in frosty weather, if the mercury falls three or four degrees, there will certainly follow a thaw; but if the mercury rises in a continued frost, it will certainly snow.
6. When foul weather happens soon after the falling of the mercury, you may expect but little of it; and you may judge the same, when the weather proves fair shortly after the mercury has risen.
7. When the mercury rises much and high in foul weather, and continues so for two or three days before the foul weather is over, you may expect a continuance of fair weather to follow.
8. When the mercury falls much and low in fair weather, and continues so for two or three days before the rain comes, then you may expect a great deal of wet, and probably high winds.
9. The unsettled motion of the mercury denotes uncertain and changeable weather.
10. You are not so triflingly to mind the words engraven on the plates, though for the most part they will agree with them, as the rising and falling of the mercury; for if it stands at much rain, and rises up to changeable, it prefaces fair weather, although not to continue so long as it would have done, if the mercury were higher, and so on the contrary.

These rules and observations are sufficient to instruct persons who are unacquainted with this instrument, how to make their observations; and with constantly remarking what alterations happen in the weather on the variations of the mercury, a person may nearly predict the great alterations of the weather a day or two before they happen, which is frequently of great use to the gardener and farmer, but particularly to the latter, who may begin to mow his grass when he finds there is a prospect of fair weather, or postpone it a few days until he foresees a likelihood of such. The same also may be of great moment in reaping his corn, as also in sowing his grain, and mowing his other business. Therefore the use of this instrument should be more generally known by the practical farmer and gardener.

B A R T R A M I A. See TRIUMFETTA.

B A S E L L A, or climbing Nightshade from Malabar.

The CHARACTERS are,

The flower hath no empalement; it is shaped like a pitcher, fleshy at the base and swelling, but closed toward the brim, where it is divided into six parts, two of which are larger than the others. It hath five awl-shaped Stamina, which are equal, fastened to the petal, crowned with roundish summits. The globular germs, which is situated in the center, supports three slender styles, crowned by oblong stigma. The petal of the flower remains, and incloses a roundish fleshy berry, including one round seed.

This genus of plants is ranged in the third section of Linnæus's fifth class, entitled Penwondria Trigynia, the flower having five stamens and three styles.

The SPECIES are,

1. BASELLA (*Alba*) foliis planis, pedunculis simplicibus.

bus. Lin. Sp. 390. *Bafella with plain leaves and finite foot-stalks.* Cicutia. foliis iuscordatis. Hort. CUE 39. *Climbing Nightshade.*

2. BASELLA (*Alba*) foliis ovatis undatis, pedunculis simplicibus folio longioribus. Lin. Sp. 390. *Bafella with oval waved leaves, and foot-stalks longer than the leaf.* Bafella Sinica, foliis & caulibus viridibus minus fuculentibus fructu minore. Just.

The first sort has thick, strong, succulent (talks and leaves, which are of a deep purple colour. The plant requires to be supported, for it will climb to the height of eight or ten feet, when the plants are kept in a stove or glass-case, and produce a great number of side branches: but if they are exposed to the open air, they will not grow so large, nor will they perfect their seeds, except it be in very warm seasons, when they are placed in the bark-stove, they will often live through the winter, and produce great quantities of flowers and seeds. The flowers of this plant have no great beauty, but the plant is preserved for the odd appearance of the stalks and leaves.

The seeds of the second sort I received from Dn Juslieu of Paris, from whence I have obtained two varieties, one of which hath purple stalks and leaves, and the other hath leaves variegated with white, but both of them retain their small stalks, and oblong; flaccid leaves, smaller flowers and fruit, in which they essentially differ from the first.

These plants are propagated by seeds, which should be sown in a hot-bed in the spring, and when the plants are fit to remove, they should be each planted into a separate pot filled with rich earth, and plunged into the tan-bed, where they must be treated in the same manner as other tender exotics. They may also be propagated by cuttings, which should be laid to dry a day or two after they are taken from the plants, before they are planted, that the wound may heal, otherwise they will rot. These cuttings must be planted into pots filled with light fresh earth, and plunged into a moderate hot-bed of tanners bark, where they will take root in a fortnight or three weeks time, when they should be treated in the same manner as the seedling plants. But as these rise so easily from seeds, it is seldom they are propagated any other way, because they are plants of short duration. These flowers from June to autumn, and the seeds ripen in September and December.

These plants will climb to a considerable height, and send forth a great number of branches, so that they should have a place near the back of the stove, where they may be trained up to a trellis, or fattened to the back of the stove, otherwise they will twist themselves about whatever plants stand near them, and be very injurious to the other plants; whereas, when they are regularly trained to a trellis, they will have a good effect in adding to the variety.

From the berries of the first sort, I have seen a beautiful colour drawn, but when used for painting, did not continue very long, but changed to a pale colour; though I believe there might be a method invented, whereby this beautiful colour might be fixed, so as to become very useful; for I have been assured, that the juice of these berries has been used for staining of calicoes in India.

BASILICUM, or BASIL. See OCYIMUM.

BASONS or fountains, &c. which serve either for the ornament or use of gardens, are made in divers forms, some round, some oblong or oval, others square, octangular, &c. but their most common form is circular; and, if the ground will permit, the larger they are the better, and when they exceed in size, they are called pieces of water, canals, fish ponds, pools, and reservoirs.

In making these, care ought to be taken to avoid both the extremes, and not to make them either too big or too little, that a water work may not take up the best part of a small spot of ground; nor to make too little a basin in a large spot. This must depend entirely on the judgment of the designer of the garden.

Some would have the fize of a bafon to be proportioned to the Jet d' Eau, that the water thrown up in the air, may not, by being blown by the air, be carried beyond the edge of the bafon, but all fall down without wetting the walk.

As to the depth of baibns it is ufually from two to three feet, this depth being fufficient to fecure the bottom of the bafons from froft, and to dip watering pots.

But if they are to fcp/e for refervoirs, or to keep fifh in, then they may be made four or five feet deep, which will both hold water enough, and be deep enough for the fifh to breed in, and alfo to bear a boat.

Deeper than this they need not be, and if they were deeper, they would be dangerous as to the drowning of perfons who might chance to fall in.

In making bafons, great care ought to be taken in making them at firft-, for die water always naturally endeavouring to run away, and by its weight and preffure in a bafon, making its way out at the lead cranny, it will grow confantly bigger and bigger; fo that if it be not well made at firft, it will be very difficult to repair it.

Bafons are made either with clay, cement, or lead; they are mod: ufually made of clay; in making fuch, at the marking out the dimenfions, the diameter ought to be four feet bigger on each fide, yet the bafon will not be the wider, for it will be taken up with the walls on each fide; and the clay-work, which is to fill the fpace between; the bafon muft alfo be dug two feet deeper than the depth of the water is defigned to be, becaufe it is to be laid over eighteen inches thick with clay, and fix inches with gravel and paving.

The clay ought to be well wrought with the hands and water, and when it is fspread, fhould be trodden in with the naked feet, that the water of the bafon may not dilute through it, and the roots of any trees that may grow near, may not penetrate into the outward wall, which may be made of fhards, rubble, or flints, with mortar made of the natural earth, and is called the ground wall, becaufe it is only made to refift the preffure of the ground about it. The inward wall ought to be made with good rubble ftones that will not fcale and come off in flafhes in the water, or elfe of flints and ftones from the hills, which will make durable work, but will not look fo neat as the pointed rubble *, and there ought to be laid here and there ftones, the thicknefs of the wall, to render it the more fubftantial.

The method of making bafons of cement is as follows: after you have marked out the dimenfions of the bafon, as before, if you enlarge it one foot nine inches, it will be fufficient, and the fame depth deeper at the bottom will be enough.

This being done, you muft begin to back up and raife againft the ground *, cut perpendicularly a wall of malbnry a foot thick, which muft go to the bottom, and fhould be built with fhards and rubble ftones laid in mortar of lime and fand.

When the wall is finifhed round the circumference, then the bottom is to be wrought .a foot thick with the fame materials *, and the folid work or lining of cement is to be backed up againft the walls nine inches thick, including the plaftering and inward furface. This folid ought to be made of fmall flints, laid in beds of mortar made of lime and cement.

When this folid is eight inches thick, it ought to be plaftered over the whole furface of the bottom with cement well fitted before it be tempered with lime *, and with this it fhould be wrought over fsmooth with the trowel.

The proportion of this cement fhould be two thirds of cement or powdered tile to one third of lime.

This cement has the property to harden fo underwater, that it will be as hard as fstone or marble, and the body will be fo folid as never to decay.

After the finifhing of the bafon, the plaftering fhould be for four or five days fucceffively anointed over with

oil, or bullock's blood, to prevent it from ttackirtg or flawing; this being done, the water fhould be let into the bafon as fcon as may be.

Thofe bafons which are made of lead, are to be thus wrought *, the outlines ought to be enlarged one foot of a fide, and digged half a foot deeper than the bafon is to be.

The wall muft be made a foot thick, that it may be able to bear up againft the earth lying againft it -, but the bottom will not require to be miffe than half a foot thick.

Thefe walls muft be built in rubble laid in mortar all of plafter, becaufe the lime will eat the lead, and then the lead muft be laid on the walls and bottom, and be feamed with folder.

But bafons of lead are not much in ufe, becaufe of their great charge in making, and the danger of the lead being ftolen.

Great care ought to be taken to keep the upper edge and fuperficies of a bafon upon a level, that the water may cover all the walls equally.

As to the wafte pipes of bafons, whether at the bottom or fuperficies, they ought not to be made too fmall, left they fhould be choked, notwithstanding the cawls that are drawn before them.

When this wafte water is only to be loft in finks iftd common fewers, it is carried away in drains or earthen pipes -, but when it ferves to pLy the bafons that lie below it, it muft pafs through leaden pipes.

Thefe bafons are now pretty generally rejected by perfons of good tafte, as being no ways ornamental; therefore where there is a neceffity to make refervoirs for water for the ufe of gardens, they are commonly dug in the loweft part of gardens, or where the fpot is moft convenient for receiving the water, which may run from the adjacent grounds in hard rains; thefe ponds fhould have their fides made very eafy, for, if they are too upright, the earth frequently breaks down by the water wafhing, and making it hollow below; the fides and bottoms of thefe ponds fhould be laid nine or ten inches thick with well wrought clay *, and, as the clay is finifhed, it fhould be well covered to prevent the fun arid wind from cracking it before the water is let in. The figures of thefe ponds fhould not be regular, for the fhape of the hollow, where they are made, fhould be followed, which will fave expence, and have a better appearance.

B A S T E R I A . Nov.Gen. All-fpice.

As this plant had no proper title given to it, I have given it this in honour of my worthy friend Dr. Job Bafter, F. R. S. of Zurick Zee, in Holland, who is a gentleman well skilled in botany, and has a fine garden ftored with rare plants, of which he is very communicative to his friends, as I have many years experienced.

The CHARACTERS are,
The empalement of the flower is Jhort, of one leaf, and cut into five narrow fegments at the top. It hath a double ftries of narrow petals, which fpread open, and turn inward at their extremity. Under the receptacle is fituated an ovalgermen, having noftyle, but five ftigma refiting upon it, and is furrounded by many Jhort Jiamina, crowned by obtufe fummits. Thegermen afterward becomes a roundijh fruit, compreffed at both ends, having cells, containing oblong feeds.

We have but one SPECIES of this genus at prefent in England, which is,

BASTERIA foliis ovatis oppofitis, floribus lateralibus caule fmitcofo ramofo. *Bacteria with oval leaves placed oppofite, flowers coming from the fides oftbeftalki, and a branching fhrubby ftalk.* Frutex Corni foliis conjugatis floribus Anemones ftellatae, petalis craffis rigidis coloris fordiderubente, cortice Aromatico. Catefb. Hift. Carol. Vol. I. p. 46. *commonly called in Carolina All-fpice.*

This fhrub grows naturally in America. *Mr. Catefby, who firft introduced it into the EngKfh gardens, procured it from the continent, fome hundred miles on the back of Charles Town, in Carolina.

It seldom rifts more than four feet high in this country, (finding into many kinder branches near the ground, which are garnished with two oval leaves placed opposite at every joint, which are entire; these have three foot-stalks). Uw (lowers grow Tingle at the extremity of the foot-stalk, which comes out from the iriogi of the leaves, they hav. two leaves > narrow thick petals, which sprai open, and iurn inward at the lop, like thole of the Starry Anemone, or the Virgin's Bona: there are of a fuilen purple colour, and have a disagreeable scent i they appur in May. The embryo fit* beneath the flower, and supports five figroa-, thu afterward appears to have five cells, but it never comes to perfection in this country, therefore I can only give a delciption of it from an imperfect rudiment, which a few years pall, was fairer than any I have before fern. The bark of this flrub is brown, and has a vtry strong atomatic scent; from whence tin-inhabitants of Cam Una gave it the title of Allfpic, by which it is generally known in the nurseries near Loton.

This Jirab will thrive in the open air in England, if it is pnted in a warm fiigaibn and a dry loil. It h propagated by laying down the young branches, which will take root in one year, and may tictn be taken from the mother plant, and planted where they are designed to remain, for they do not bear (ranplanting well, after they are grown to any fi-ve. When the layers are iranfpnrtti, the surfact of the ground should be covered with mulch, to prevent the drying winJs from pendrating the ground to their roots j and if the leafon proves dry, they mull be watered once a week, but ihould not have too much wet, for that will destroy their tender fibres.

The best time for laying down the branches, is in the autumn, but they shoud not be tranip! until the spring twelve months arier, for the iprii is the safest time to remove ride plants. Afta the "branchj arc laid down, there shoud be (bmc ukl tanners birti laid upon the; furt'ace of the ground, to keep out the tin It, which shoud abb be i every winter, while the plants are young, which will prevent the froft from pi-nerming to their root, and thereby ferure them.

This plant was very scarce in England, till within a few years nfti thate any of them have been brought from Carolina, where they have been greatly increased in the gardens near Charles Town.

Dr. Kcnpier has givrn a figure and deicriptdon of a phnt, in his Amrenitatea Exoticarum, which seems to be of this genus i but he mentiort i'ie fruit n> be composed of eight cells; whereat, th tar as I have been able to examine this, it appears to have but Jive; however, the flower and general fruftun; eff the plan: agrees very well with this, but I suppose it to be a distinct species, the leaves of this Wing much longer, and the flower stand upon naked foot-stalks, whereas thoi; of our fort have commonly n small leaves, which are nitrower, and more pointed than those upon the brandies: but I find Dr. Linnsua a'd Monfieur Du Hamel, both fuppofe dieyart tiejame plant.

After I had given a figure of tills plant, in plate LX. of my Figures of Plants, I received Monfieur Du Hamel's book of the tree* and flrubs, which will grow in the open air about Paris, in which he has given a bad figure of this plant, under die iit(- of Bateria; but as my plate was frft published, and I was not apprised of his title, I have continued my tick la n; not from my attachment to it, as being my own, but rather to avoid confusion, which must attend the frequent alteration of tic names of plants, which is too much in E^itanat pteicnt.

B A U 111 X 1 \, Mountain Ebony, -Jibb. This plant was fo named by falter Plumter, in honour of the boranifts, John and Cafpar li

"Die C... ore,

This... te fie&er is firxmen: fnhibia, ft into fiuep-... the... ii cempftd ef jkv pntls, tubkb its feme jfesitt art

... :stjand re/btrd, L- ... cmant: il hath tnjlsr: ... fume ftbfst are cnvutrj by vsel funnitj, tat ... ing a jkndtr dtdiang fyk, wii ... pthit, ertwntd fy eji ekiuft Jligma; the gerans after- vurd l'hemu a lexg taper p i, im'qji*, arwef round&jl cemprefsed fads.

... genbs of plants is nngevl in the nrft te i Linnsus's tenrij elife, entitled necandriaMum- the llower having ten fhmina and one fyle.

*I he S'm:EE are,

<> ^MttmtA aculeate Hon. Cliff. 156. Bothnia c- inia ac4ca>

>. Ptaju.Ni

>. BADSTHM (femntfi) ioliis eordai mior-bicularis tomentofis. Lin. Sp. 536. B<ul-iiiis vitt ... todfnti&maikrtBgtfy Uks. Bauhinja Hurt- lutcu fpicju folio fiubmurdo bicorni Houft.

J. BAITIISIA (Atvth ... ov.in lob is acua-natis ftmi-ovatis. l.:>. Sp. Plant. [75' Ritahjnia ... tffvts, e>J paut.i bba ... Etahnia non acile:m:i bicorai. l'um. Nov. Gen. 23.

4. BAcinsijt <Unuhi:,^ fjffijj, bbUpsraDelJj I. in Sp. 535. Bothnia ... ulcata folio nervob biconu, floibus nlbcicittibm. Houft.

5. BAURIMIA (Emocata) cao I acu'cito, t ... ris loots orbiculstis Inbuis nrmettoli ... aprickfyfialk. mi ... which art verify en tb ... acu- lcaza folio rolundo cmarginato dare mii'io ILLKJ. Houft.

6. BAURIMIA (Purpura) folio subcordatis bipartitis ro- tuilat' ... [iibtis tomei'. ... ariii aluteji lohj ... Baurimia non aculeata folio ... Houft.

J, E.H ... Baurimia ... (is. Beubini ... Houft.

S. JJAURIM.-I (Vttrir% Ain^trthib <antatis lobis condonatis obtusis. Lin. Sp. Hint. 375. Jj... Chomuw-ntantUru. Hurt. Mul, 1, p, <yj,

3. BAURIMIA (Stantij caue rirrdifenj. Lin. Sp. Plant. 374. Bahl... mdrih.

10. UAUHIMA (Dh ... Bitubinin wtib PDOJ Uavts, viboft Ubafonad Jiffrral r'nti. Bituhima foliis quin- quencn-ii! laLiitiiis acuminatis rcmoJiHini. Man, Clift. tf.

The first fort grows plentifully in Jamaica, and the Other fvpar iflands in Atnerk-j, where is riles u> the height of fikteen or eighteen fret, with a r ... ftem.and divides into r ... lar branJics, m med

Oiort frong fpiji: ... Wuni and indented at the top. The fl:ki are tel ... hv Icvcttil 1 ... ilow flown

... s long,whk!, ... ftunie (cent, IB haw

I rong miuur, fomewhaC rri^inbiing die common fecond lint was fent me fn I yv in by the h (lon, where he found ic growing naturally. 'II -welve or Te with J linotirli flettl, dividr

bnuicha, garniiled with hnrt-l!: ... lube-, the extn-!! ... ever! ; rniuiafcJ by a Ion ... v'licn theft trees arc in flower, they

B A U

...te a finr appearance. The poils arc ...
...loijj, each ton- ...
The third sort grows naturally, - in both Indiei, ...
...h icvtTil pretty frong, upright, i'mootti ...
...g out many flender Ur ...
The leaves come out without order, and have a long foot- ...
...ufthr (pecks ...
...lilt- fiowera come out ...
...he petals' are red, or fringed wiili white, ...
...plain upon the lam? branch i the llicnini ...
...and eye are white, and fluiid out *ryond the petals. ...
...This flower; are luccedfd by Ion" Sat ...
...vii colour, each containing five or Ax ...
...ompreifed feeds. The wxl of this nee ...
...tana of America call it Mountain Ebony. ...
The fourth sort grows naturally at Canjpeachy, from ...
...whence I received the feeds. This rifies to the height ...
...of twenty feet, with a smooth ; -n, dividi; ...
...and many small branches, gnrrnifeil with obi ...
...heart- ...
...shaped leaves, having two pointed ; v.riller lobes, ...
...which have a ... ! mgituina! vrii:i. Tiic laves ...
...are plac ... ; >n the tranches, which are ...
...terminat ... ly loole bunches of white Bowers-, tide ...
...are facced ... ;! very long narrow com ...
...refred pods, ...
...which have eight or ten co: ...
...refred luniliih iceds ...
...in each. ...
The fifth sort was sent me from Carthagea, in New ...
...Spain, where it grows in plenty. This fifteen rife ...
...uses them ten feet high, dividing into many i-guhir ...
...branches, armed with short hooked ... the ...
...leaves grow alternately, are heart-shaped, and have ...
...moundish lobes, they are woody on the " under fiic, ...
ami I have them i ii-falks, T!c fllowtrs grow at the ...
...of the bond ... ;: three tap ...
...they are large ... id oj a dirty white colour, and are ...
...facced by four flat pods, each containg fwoor ...
...three feeds. ...
The sixth sort grows naturally at La Ver* Crvii. ...
...It of twenty ...
This rife to the height of twenty, or thirty feet, ...
...with many irregular stems, which divide into many ...
...flender branches, garnished with heart-shaped leaves, ...
...having two moundish lobes. The flowers com ... (M) ...
...in loose spikes at every ... fr. on the wings of the ...
...leaves, with naked stem-falks, and are of a dirty ...
...white colour, and a\ succeded by oblong i ...
...ompreil-Ll pink, which are broadest u uicir extra dry, ...
...where they are ...
...Hided, each containing three or jbur ...
...compressed feeds. ...
The seventh sort grows naturally at Carthagea, in ...
...New Spain. This rife twenty feet high, with a frong ...
...straight stem, which sends out many branches toward ...
...the top, armed with spines growing by pairs, which ...
...are frong and crooked. The leaves are heart-shaped ...
...and grow alternately, having two moundish lobes. ...
...The flowers are large and white, coming out thinly ...
...at the end of the branches. The pttiits of thefe BK ...
...near two inches long, and spread open wide i thefla- ...
...mms and life are nearly of the same length. The ...
...flowers are facceded by long flat pods, which are ...
...narrow, each containing five or six feeds. ...
The eighth sort grows especially in both Indies. This ...
...rife with a thong stem, upward of twenty feet high, ...
...dividing into many tran^ branches, garnished with ...
...heart shaped leaves, having obtuse lobes which close ...
...together. The flowers are large and grow in loose ...
...panicles, at the extremity of the branches, of a ...
...purple and colour, marked with white, and have a ...
...yellow bottom. Their have a very agreeable scent. ...
...The flowers are facceded by compressed pods, about ...
...six inches long, and three quarters of an inch broad, ...
...containing three or four compressed feeds in each. ...
The ninth sort grows naturally in both Indies, where ...
...it rife with many flender stalks, which put out ...
...twigs, and takes themselves to the neighbouring trees, ...
...wherby they rise to a great height; the leaves come ...
...out alternately, are heart-shaped, standing upon long

B E L

foot-falks. Ilirfe are six ii;viii long, and three inches ...
...snii ii iiiili broad in the nutria, s: ...
...into two pointed lobes, each having three prominent ...
...rids running longitudinally. This hath not produced ...
How r ... in England, nor had I any account of their ...
...wiji i the feeds, which were sent me from Cam- ...
...pead y. ...
The tenth foit prow; naturjly b; great plenty in die ...
...north ... of the island of Jamaica. This is a low ...
...JluTib, Icldotn lifii ... more than five or six feet high, ...
...but divide* in; u ityL-rd ! ...
The flowers grow in loose panicles at the ... of thi: brwiche ... which are white, and have ...
...a vei ... It fotne. 'll, ... appear ... *****afclt ...
...ptt of fnaaner, luis one oftbe gr< tuautiea ol'ihc ...
...hor-h ... The flowers ... cceded lly taper ...
...pods ... about four inches lotig, each cur: ...
...ing four ... ur tm- roundidi comini-TR-d feeds, of a darkcoli ...
...JJI th die plants are natives of the warm ... -itries, ...
... (o will not thrive in England, unlcsfs they are kept in ...
...i warm fivcs-. They tin: propagiitd by ft-ds, vmidl ...
...[luit be groetJia! from ihe coustnci where they ...
...grow naturally, for they do not produce their feeds in ...
...England. ...
The fail fort hie several times produced pods in the ...
...Chellia garden, but they I have never come to ma- ...
...wriety. The feeds flould be bron ... out over in theii- ...
...pods, which will preferve them good. They mult ...
...tic- (own in pots fillet! i each light fresh earth, and ...
...pUl ... ed into a moderate hot-bed of tannet-bark, if ...
...the feeds are good, the plants will come up in about ...
...six weeks, and in a month after, will be at a i trant- ...
...plant; when they sho: ... be carefully shaken out of ...
...the feed pot, to ... not to stir of the root, and each ...
...plant d into i feparate l'mall pot fiUud wit> light ...
...toainy earth, and plunged into the hot-bed again, ...
...being careful to ... Je them until they have taken ...
...fresh root, after which, they Jhould have fresh air ...
...admitted to thum ivci ... day in warm weather. In ...
...the autun-i they must be placed in thebarli- ...
...and treated ui the finie v/ay as otn-r tmder i ...
...giving them but little water in winter. As th ...
...plants frequently flower, they are wor: ... of a place ...
...in the stove. ...
BAY. See LAI/HI:I. ...
B I. A N S. ! ...
BEA : S. (KIDNEY or FRENCH.) See] ...
BEAN-TBEFOIL. SeeCm ...
BEAR-EAR. See BMCBLA. ...
ii E A R i-i A11 S A N I C L E. i.e. VERRUCIN. ...
BEARY-FOOT. See HELLBERRY. ...
BECABUNG ...
Thii is a I- ... of Venetia; : Water Spouts)[-, of ...
...which there arc i ... m vriih a long leaf, and ...
...the otlier roini ... they are both very common in ...
...ditches, and watery ... licei, nlmoll ...
...England; ihe fecond tort i u'Vd Ln I ...
B E t, o GNAT-FLOW ... &. SeeO ...
BERCH TREE ... F/GVS, ...
BYI i. ADON A. £. ...
BELL-FLOWER ... SCCCAMI-AJ ...
BELLIS ... ilkd Bellue, Lot, ...
&c. ! ibt Uaify. ...
The CHARACTERS ...
...th a stalked ... flower, ... of many ...
...mepi- ... white feeds in the top, and female feeds in the ...
...r<yi. ... enclosed in a common ... with a double ...
...of ... The hermaphrodite ...
...fierts in the dijil ... see female-feed, and cut ...
...porli a! thi trim; lit ... male feeds are ...
...and male feeds are ... but as usual ...
...gmatfippi ... a female feed, ... in a ...
...the hermaphrodite feeds have a ...
...supporting a female feed, ... by a ...
...This is attended by ...
...cylindrical panicle. The ...
...solid feed placed vertically. ...

This genus of plants is ranged in the second section of Linnæus's nineteenth class, in the class Synsæcia. The Cygnia superflua, the flowers being compelled of female and hermaphrodite flowers, included in a common emp. i. k. m. -it.

The SPECIES are,

- 1. *BELLIS* (*Crucifera*) *scapo nudo unifloro.* Hor; *Chif. 418. Deify wi/ a naked fixii, having mrltxvrr.* *Bellis iylvitllru minor.* C. B. i. 167. *Smaller j>iU Deify.*
- 1. *BELLIS* (*Annona*) *tiulc lubfoliob.* Lin. Sp. Want. 857. *Daify's leave! at the hwt' part of befii*. *Bellis m... ur [rateniis caue foliofo. Boc: Mn: 2.* p. 16.
- 3. *ILLi** (*Ihr.-n/is*) *liortenfis flore pldno major**. C. B. p. 20. r. *Garden Daijy ta'tlb a larger*. *Double flower.* Thr fir fort is the commq Di ify, which grows naturally in pasture land in most parts of Luuroi, and is of... Il a troublelome weed in the graft of guldens, fo it never cultivated.

The second Ion is a low annual plant, which grows naturally on the Alps, and the hilly parts of Italy. This seldom rises more than three inches high, with an ill... which is garnished with leaves on the lower part, but the upper part U naked, lup... i single flower like that of the common Daily, smaller. This is preferred in some botanic gardens for the fake of its fragrance; it was few *mamm* Verona, near which place it grows wild.

The Garden Daijy is generally supposed to be only a variety of the wild form, which was first obtained by culture. Tiii* may probably be true, but there I'm not been any instance of late years of the wild Ion having been altered by culture I fur I have kept the wild tort in the garden upward of forty years, and have constantly parted the roots, and raised many plants from seeds, but they have constantly remained the same; nor have I ever observed the Garden Dsify to degenerate to the wild fort, where they have been some years ago, they have altered greatly with regard to the size of their leaves, and the beauty of their flowers. I have also observed the several varieties of the Garden Daijy vary from one to the other, therefore I should not confide in Linnæus's distinction, but should only mention the varieties, which have been observed in this climate.

1. The red and white Garden Daijy, with double flowers.

2. The double variegated Garden Daijy.

3. The double variegated Garden Daijy.

4. The Cord (tomb Dairy with red and white flowers). The Garden Daijy is generally supposed to be only a variety of the wild form, which was first obtained by culture. Tiii* may probably be true, but there I'm not been any instance of late years of the wild Ion having been altered by culture I fur I have kept the wild tort in the garden upward of forty years, and have constantly parted the roots, and raised many plants from seeds, but they have constantly remained the same; nor have I ever observed the Garden Dsify to degenerate to the wild fort, where they have been some years ago, they have altered greatly with regard to the size of their leaves, and the beauty of their flowers. I have also observed the several varieties of the Garden Daijy vary from one to the other, therefore I should not confide in Linnæus's distinction, but should only mention the varieties, which have been observed in this climate.

in which they are... served without water...

in a light sandy border, and a top... provided the roots are in the shade and sod is kept clear from weeds...

They were formerly planted in pots, but now they are fully exposed to the air...

in large patches, whereby the young become bald in many places.

BELLIS MAJOR. See CHRYSANTHEMUM.

BELLIS MINOR.

many varieties; it was named by father Plumier, in his memoirs, in 1696. It was first introduced into this country in 1697, by one of the names of the flowers, who has left it on natural history, &c.

THE CHARACTER

is a perennial impetuous plant with a cent leaf, but in part at the top...

Info. It is a... end twined by flert trill...

under a...

... H fillidw.tb

i
l
S

This genus of plants is ranged in the first section of Linnæus's fifteenth class, in the class Pentandria Monogynia. M. The flowers having five stamens and one pistil.

We have but one species of this genus, viz.

BELLONIA. Lin. Sp. Plant. 472. *Bellonia frumifera* Hi. folio nudo...

This plant is very common in several of the warm islands in America, from whence I have received the seeds.

It hath a lignous stalk, which rises ten or twelve feet high, sending out many lateral branches, garnished with oval rough leaves, pierced opposite; the Bowers are five in the wings of the leaves, in small panicles, which are of the wheel shape, of one leaf, divided into six parts, these are succeeded by oval capsules, ending in a point, which are full of small seeds.

It is propagated by seeds, which should be sown either in the month of March or April, in a hot-bed of pannes bark, observing to water it frequently, as the plants appear dry; but you must be careful not to wash the seeds out of the ground. When the plants are come up half an inch high, they should be carefully transplanted in a pot filled with light fresh earth, and plunged into the hot-bed again, observing to water and shade them until they have taken root, after which they may be removed to a cooler place, where they may be frequently watered. When the plants have attained to the height of six or seven inches, they should be carefully flaken out of them, and their roots trimmed, and put into a pot filled with light earth, and plunged into the hot-bed again. In warm weather they should have free air admitted into the hot-bed, but in autumn they must be plunged into the bark stove, and watered in the usual manner of tender exotic plants. The second year these plants will bear a cold winter, but they will produce good seeds in this climate; however, they may be propagated by emulsion in the summer months, provided they are planted in a moderate hot-bed.

The cure fitly watered until they have taken root. These plants must be constantly kept in the stove, and should have a free air in warm weather; but if they are taken abroad, they will not thrive in this climate.

! E L \ E11 E K E. See Cms...

BENZOIN, the Benjamin-tree. See LAURUS.

BERBERIS, the Barberry, or i'ppeilgc-buffi.

The CHARACTER is,

It hath a colored espousure, which spreads open, and is of five or six leaves, these are alternate, and are alternately JitrXerI on the sides, the flowers are of five leaves, which are five in number, and little larger than the petals; there are two colored stamens, followed to the leaf of the petals, in the air...

The fruit is round, and is called by an oriental name, because it is round like a berry.

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tiic root, to the height of eight or ten feet, which have a white bark, yellow on the inGde j the (talks nnd branches arc armed with fh.rip tKorns, which commonly grow by thtt&i the leaves are oval, optefe, and (lightly) awed on their edges. The llowers come oui from the wings of the leaves, in fmill ramofc bunches, like thole of the Currant-buffli, which arc yellow; rhec are fuccceded lay oval fruit, which are trft green, hut when ripe cum to a line red colour. The llowers appear in May, and the fruit ripens in September.

There nre two or three varieties of this ficrub, i which have been mentioned m diftinf (pecies; on; is the Berberci* fisitr nadco. C. B. P. *Barberry Witbml fiene*. The Second is Berberci fructu atbo. *Bsrbarr*; with *tattlefruit*. The third ii the Berberci orientialis proccnor fruffu nigro fufvjiliino. Touro. Cor. *Ea/erH Barbmy twit a betk Jigit frail*. The firft of thefr is certainly accidental, becauft the fuckers, taken from tholiibiihes twir.g tranfplanteti,-com-mont/ produce fruit with ftoiu-s i fo it is the age of the plant which occctSom ih.c rari^tnr The fecond with white fruit Iddom b u n ; the leaves of t ; are of a lighter green colour, and the bark of the arc whker than thofe of the common, which air the only differences between them, for the fruit is produced here. The third fort *ppear» die 6ny th; crminion, and only differs in d id flava-our of the fnik, fo is only a variety.

The common fort is generally propagate by fuckers, vhi : are put • mt in great plenty from the root j but thefc plants are vcryjiiibjctf to fend fiul fi in greater jiknty than tK&ic which are propagated by layers; thCTcivr the laoe mmi be prt-feireti. The brft time tor byinp d inches is in the autumn, WCB thefr iTMvts begin ec ihc young fliuota of the fame year art the belt fbi this |orpofe; thefc will be wctf rooted by the next Sttrmm, when, they may be taken off, and j planted where they are deligned to remain. Where this plant is cultivated for its fruit, it fliould be ckmtfd Tingle, (nnc in hedges, as was the old practice) and the fuckers every auwmn taken «ny, and ::\ d ihciw' : (inined ••• by this noedwd \w tni' will be m. I raircr, and in gre.utr plenty, ttUn trpon thofe vhjci i ire fijffisrd to gnnv wild. A few of thefe (hrubs may be allowed to have phec in wildcm-Ttcj, or plantatjiios of {hrubs, v here they will make a jjrtty variety, and the fruit wiil lx food for th; birds; but they llwuld not be planted in great (juantitits, near walks which art much frequented, becat;! their flowers emit a very (bong tiilageeable odour.

The Canada fort was more common in the Knrituj garlew, fome years paft, lhan at prelen: The leaves of th. I are much broader, and (liortcr (ban thilc of the common fort, and chr fruit ia hlack whrn rife, Th« m»y be prujtagatcd in the fame way as ihc rimmum fort, and i- iqijill'.¹ I only.

The Box-leaved :<it is at preftnt very rare in Eng-land-, tnd white ynung:, the piarts mvc somewhat riKk-r, fo have been killed ty fevere froil. This never rifei more than three or ton¹ foot high in Eng-land, but feeds our «-tnv llalks from the root, whirh arc ilrongly armcil with fpines at every joint-, the leaves are produced wkhout order, and are (Imped like : one of the :urnw-leavedBtiK-rreei the flowers comr out from between the k-aves, each upon a slender two-flalk; but Lltfe are not fucccedtd by fruit in England.

This; lart may be propagatcl by laying down the branches in the (hmc manner as the rirlt, hut when tin; "j'ounj; plants are taken off, thej' Ihuukl bt i • planted in pots, and befrer 3 under a fime >r the winter, till they have obtained fuch length, when they may be turned out of the pott, and planted in a w. m f. mation.

BERMUDIANA See Simtmcanw.

i BERNARDIA See CROTCV.

BESLERIA

This plmt was named after Eafilus Befler, an ipo-

theairy at Kv.rtrnbErg, who vraa the iwtlior of a bouky intur • d Hortus EyfctenliSi

The C-RjtBjbcrmu Tie folio- is if the furfsmtd or lip iinii, with . il ef tut leaf, mi at Iht brm : tin fewer it ef f; t|x fipntnl A»B; t linrcr hist* g, md tbt KW if per ttt kfi wwiw-. Jfiuiius in lbs tube of the fimsrir, ton tf •ushi^b tn. tban tbt n'-Ur^ trrvKsA hj fmall fuimiu. • ib* tvai ger-M fitffsr- jlivtxai this afh; celljitUd wil

This genu of plants is ranged in the ftrond Ceffion of lunasaa't twcllr.li clils, iiiiLidrr Uidynamia AngiorpermiE, the flower ha. • lliort (tjh'ina, mt) the [tedi being included in a capiule.

- The Spec M are, 1. BALSAMIA (MjfillifeStt) pedunculii ram(^js, folii ovaris, Lin. -i\ fltnt 615. Brfitriawith itls end aval team. Beilena Mclilije Tragi 2. BALSAMIA (Ijica) ptdunculis fimplicibus cenfenis, foliis lanceoiatk. Liti. Sp. Plint. <i>i. BALSAMIA (Ijica) ptdunculis fimplicibus foliis, involucris pentaplytis pappis. Lin. Sp. Plint. 619. BALSAMIA (Ijica) ptdunculis fimplicibus foliis, involucris pentaplytis pappis, and a few-leaved involucris. Belsleria icaridens cristata fructu nigio. Plum. Ni.' G<n, 29.

3. BEM (Ijica) pedunculis fimplicibus foliis, involucris pentaplytis pappis. Lin. Sp. Plint. 619. BEM (Ijica) ptdunculis fimplicibus foliis, involucris pentaplytis pappis, and a few-leaved involucris. Belsleria icaridens cristata fructu nigio. Hum. Nov. Gen. £9.

The 6rft fort hi a smooth woody flalk, iich a jointed * M each jo me air ; the flowers come out from the wings of the leaves, upon short branching root-flalks, each fullbini- lu flowers, which kand each ijtion a k (mail r moc-ic. These are ot' one leaf, of an anomalous figure, and tjuinquefk! ; »fier the : u pift, the germen becomes an o! J! loft ben ., with one cell filled with imall feeds.

The feetmd fort rife irith a ligneous ftem Gx or (even feet high, dividing towardth tap into many irregular branches, fiwrniihrd with (peir-rtmped fawed leaves, which ha i- many trantVcrie vein; • the flowers come out at tin--wings of the leaves, in large duflers, each having a .r.arate ft>ot-ftalk: the! rubulous, and of a p it yellow colour, and are fut-et'ciltit by i-oiwd fort berries, inclofuxg niany linad feeds.

The third fort hath a CKeping lblic, wis ch finds out roots at «cry joint, gnrrna od with «-M leaves placclt oppofite, which have itany tr.: iverfe rib, and arc liarjiljr Jawed on their cdRi laws canie out tlit ia

of the flalks of the flowers fingle, each containing one tubulous, irregular, hairy flower, divided at the top into five obtufe parts, with a five-le*™ 1 mvi involucrum, deeply laved on the borders; after the flower is puff, the germen becomes a hairy placenta, in the center of the empacement, containing many triall feeds.

These plants grow naturally ia the warm parts of America. The feeds fhould be fown on a hot-bed early sn the fping ; and when tj; plants are come op half an inch high, ri: they fhould be each tmjfel into a final! po' filled with light fresh earth, and plunged into a hot-bed of tanners bark, obferving to water and fhade them unti! • they have taken root, after which time they fhould have air and water in proponio! to the wannth of [he feaibn, ajd the heat of • bed in which th . are placed. When the plants have filled their final! pots with their roots, they fhould I - fhaker. nut of them, and their roots trimmed, and p • tt into larg- pots filled with light fi-fl earth, and plunged into the hoi bed again; where they fhould iiive .I lai^c ilian; of-; in warm weather, a : J muft be frequently wate red. Widththi manigeniwttlic plants will thrivevery well iofu:mer,

but

▷C in winter they muft be wnovd into the Itavi, where they muft be riaced in .l temperate warmth ant! /houLi be often, bur fpaHnglj- wnterod, Tli fecund Mi theli ptan will Bower, and fortimes diey will perfeil ilicr feeds in this country; but the mult be conltantly preerved in the itove, for die will not live inthc open air.

B E T A, die B»

The LIARACTEHS are, The firft kind „ Jm-kasti fa... I: balb tie p?.. timt, pieced oppofit la the k... rotti:J:Jb fininit. Tlx g/mitu si fittwtx... a cffine wtib cue cell, «ra'i

ipnu* of plants is ranged in the fetonO i of Liirna." inutlecl l'cnt'uidria Digynij the flower having Hvc itaniina and two 1:

The SI-CUES are, Liribus jKtit>li B b dli trintquUir Uavis havi rilircu, C. B. P. itfi.

BFTA (Herifso) ibtjts ra'iclibus i, cmiJinis lower k* < upm tkejstk! tti< out, aid ilbo vel pal-kfeciv, C. B. P. 118.

BETA (Betas) caule... to. LIII Sp. 323. CeismTK rdBsei. rsdke rapacea. C, B. P. 11S. Red Büt witti it Titrntp rest.

There an; several varieties of this genus, feme o] which are cultivated in the gardens for the kitchen, but as thefe have been improved by culture, fo they m d l not be deemed difinit pcciti. There an fome who have lupufeil ill die ;: cacs were only liminal variations, but from having cultivared them upward of forty ytzxm, I could Dever obf:ve, that either of the th... filtered fit in one fo the i... The only alteration which I have obltrvcd in the third (pecics, hat uetn in the colour of die leaves nnd roots, whitth will be hertil'r'rc mctionem.

Tlic firft fort growj naturally "n die banks of die fea, and in ftli madhn in (livera pans of Eti^and. This has beenfippoled by many, to be the fame wit h the fecond Ipecitsi but L hare broUEin the fecond (rom tl) 4 places whirre they grow n*tu ally, many times, as I have cuiltiv.. and the plants with care, but could not find any of the plants vary from their parent plan; in their characters, fo that I can make no doubt that being a diftinct fpecies.

; ctihiyatad in jrar:lin^ foritjleIVM, which are frequently v... Mom grows Inrpr than » nun's thumbj the lwlks grow crefit, and arc garnilh'ci with oblungj fpear-shaped leaves, growi... to the ftalk.

i pikes 01 COWCIS tome out from the v'ingj of die leaves, which are long, Did h?ve narrow ki va placed brtv.- on the flowers. The lower kaves < an-thick and fitcciJent, jinii tli- : fore-ftalks are brtvd. The varieties of this i<K, the White Beet, llic Grcirtt HL«, and the Sv/l' or Chard Beet. These v/iii vary iroin one to ibe otJier by cultur . as I have experienced, but never alter to die firft or third fort.

The third fort hath large, thick, fucculcnr tees, which are Jortlie moll part of a il:- red, or purple colour. The roots of it... deep red colour, on which th... for the larger thicfe roots g; w, the tenderer they will be-, and the i-jr tbvir colour, the more they nrc... The varieties of tin-... Timmn Red Beet, the Turnrp-roowd Kwl Beet, the Green-leaver: Red Beet, and the Yflow-roored Jject.

The fecond fort, which is cultivated in garden u fin- its leaves, which arc uliti in the kitch-ii, is commonly fownbyitfrlf, and ooi mixed nidi other crops.

TilL i down the beginning of March, upon an open fpot (... ground, not too cold; the feeds fhould be town th... because the plants require room to fpread; for when they are too thick, the leaves will be fmall and full of fibres, fo unfit for the purpofes defign'd. When the plants have put out four leaves, the ground fhould be hoed, as is praftis'd for Carrots, i

plants which they are too near each other, leaving them at leaft four inches ftander; if this is performed in dry weather, all the perfect weeds will be deftroy'd; but as young weeds will foon appear, fo in three weeks or a month's time, the ground fhould be a fecond time hoed over, to cut up the weeds, and thin the plants to a greater diftance, for by this time they will be full danger, fo fhould not be left more than

tuc inches, if r... of their leaves; and if it is of the third kind, with broad leaves, the plants fhould not be nearer than nine or ten inches, h tu- fecond hoeing is well performed, and in dry weatier, the ground will require clean a month longer, when it fhould be hoed over a third time; which, if properly done, will deftroy all the weeds; fo th!

after this, the plants will fpread, and prevent tlr WEI... from growing, therefore will want but little clearing for a confiderable time, and the leaves will loon t... when the outer large leaves fhould be cut gathered, leaving the fmall inner leaves to grow larger; fo that a fmall crop of ground will fupply a moderate family, and will furnish a new fupply of leaves for two years, provided the plants are not permitted to run up to feed, for after that, their leaves will not be good; therefore thofe who

ire cu v... in their herbs, muft fow a fufficicnt quantity of thefe, and although the roots may be continued longer, yet the leaves will not be fo large or tender upon their roots, ai uMj

The Reil Beet is frequently feen with Carrots, Parsneps, or Onions, by the kitchen gardeners near Londn, who <... up their Carrots or Onions when they are young, whereby the Beets will have room to grow, when the other crops are gathered; but when the crops are not timely removed from them, it will be A lwi... method to fow them feparately. This fort requires A >... light foil, for as their roots run deep in the ground, fo in shallow ground they will be flo.T... The feeds fhould be fown in March, and muft be treated in the fame manner as the former fort; but the plants fhould not be left

neai 1... than a foot diftance, or at good land a foot and . half; for the leaves will cover the ground at that diftance. The roots will be fit for ufe in the autumn, and continue good all the winter; but in the fpring, when they begin to fow, they will be hard and stringy. A few roots may be left for feed, or lbm; of the fecond fort transplanted in a furrow'd (ym' ground, where they may be defended from

many weeds, which frequently break down their ftalks, if they are not well fupported, efpccially when the feeds are fow'd, which becoming heavy as it increafes in bulk, it apt to weigh down the tender ftalks upon which they grow. The feed will ripen in September, when the ftalks fhould be cut off, and fpre: d on mats to dry, and afterward threfted out and cleant, and put up in bags for ufe.

RETONICA (or Venonice, is called from the Venetians, an antient people of Spain, who firt uled ihia plant), Herby.

The CHARACTERS are, It hath a perennial expofure of one leaf, which is re- fectus, cut at the base into five parts. The flower is of one leaf, of the lip kind, with a cylindrical recurved calyx; the upper lip is roundish, plain, veal, and entire; the lower lip is cut into three parts, the middle being long, broad, roundish, and indented at the end. It hath four... flowers, one long and two fhort, which in- creafe in the upper lip; thefe have roundish flowers. The grmen :> quadrangular, fupporting a ftalk of the length

B E T

AHd figure of the flaming crowned by a bifid stigma. The germen afterward becomes four naked oval feeds, lodged in the empalement.

This genus of plants is ranged in the first section of Linnaeus's twelfth class, intitled *Didynamia Gymnospermia*, the flower having two long and two shorter stamens, which are succeeded by naked feeds.

The SPECIES are,

1. *BETONICA (Officinalis) spica interrupta*, corollarum laciniâ labii intermediâ emarginatâ. Flor. Leyd. Prod. 316. *Betony with an interrupted spike, and the middle segment of the lower tip of the flower indented at the end.* *Betonica purpurea*. C. B. P. 235. *Purple or Wood Betony.*

2. *BETONICA (Danica) foliis radicalibus ovato-cordatis, caulinis lanceolatis obtusis spicâ crassiore. Betony whose under leaves are heart-shaped, those on the stalks spear-shaped and obtuse, and a thicker spike of flowers.* *Betonica major Danica*. Park. Theat. 615. Mor. Hist. 3. 365.

3. *BETONICA (Alpina) foliis triangularibus obtusis spicâ brevior. Betony with obtuse triangular leaves, and a shorter spike of flowers.* *Betonica minima Alpina Helvetica*. Park. Theat. 650.

4. *BETONICA (Orientalis) spica integrâ, corollarum laciniâ labii intermediâ integerrimâ. Flor. Leyd. Prod. 316. Betony with a whole spike, and the middle segment of the lower lip entire.* *Betonica Orientalis angustiflora & longiflora folio, spicâ florum crassiori.* Tourn. Carol. 13.

5. *BETONICA (Incana) foliis lanceolatis obtusis incanis spicâ florum crassiori. Betony with obtuse, spear-shaped, hoary leaves, and a thicker spike of flowers.* *Betonica Italica incana flore carneo.* Barrel. Icon. 340.

The first sort grows naturally in woods and on shady banks in most parts of England, so is seldom cultivated in gardens. This is the sort which is used in medicine, and is greatly esteemed as a vulnerary herb. There is a variety of this with a white flower, which I have often found growing naturally in Kent.

The second sort grows naturally in Denmark. This differs greatly from our common sort, the lower leaves being much broader and heart-shaped, those upon the stalks are spear-shaped and rounded at the end, and the stalks are larger, stand upright, and are terminated by thicker spikes of flowers. These differences are constant, for I have many years propagated them by feeds, and have never found the plants so raised to vary.

The third sort grows naturally upon the Alps, where it seldom rises more than four inches high, and when cultivated in a garden, not above seven or eight. The leaves of this are much broader at the base than those of the common sort, and are very different in their shape, being triangular and blunt at the end. The flowers grow in very short close spikes, on the top of the stalks. These differences constantly hold in the plants raised from feeds.

The fourth sort was discovered by Dr. Tournefort in the Levant. The leaves of this are very long, narrow, and hairy, and are neatly crenated on their edges. The flowers grow in very close thick spikes at the top of the stalks, which are larger, and of a lighter purple colour than those of the common sort.

The fifth sort grows naturally in Italy, upon the hills, from whence I received the feeds. The leaves of this sort are broader, and not so long as those of the common sort, and are hoary; the stalks are shorter and much thicker, as are all the spikes of flowers, than those of the common, and the flowers are larger and of a flesh colour. This sort constantly keeps the same from feeds.

There is another sort which Tournefort and others mention, by the title of *Betonica rubicundiflora flore montis aurei*; which differs but little from the fifth, except in the colour of the flower, so I doubt of its being specifically different from that.

All the sorts are perennial plants, which may be propagated by feeds, or parting of their roots. They are all very hardy, but require a shady situation and

B E T

a moist stiff soil, in which they will thrive better than in rich ground. The best time to transplant and separate the roots is in the autumn, but the feeds should be sown in the spring upon a shady border, and when the plants come up, they will require no other care but to keep them clean from weeds, and to thin them where they are too close.

These all of them flower in May and June, and the feeds ripen in August.

BETONICA AQUIJATICA. See *SCROPHULARIATA.*

BETONICA PAULL. See *VERONICA.*

BETULA, the Birch-tree,

The CHARACTERS are;

It hath male and female flowers, at separate distances on the same tree; the male flowers are collected in a cylindrical catkin, which is scaly, loose, and imbricated on every side, each scale having three flowers, which have two minute scales on the side. The flower is composed of three equal florets, fixed to the empalement by a single scale, each floret is of one leaf, divided into four oval segments which spread open, these have four small stamens, crowded by double stamens. The female flowers grow in a catkin, in the same manner as the male. The common catkin is imbricated, having three scales which are every way opposite, fastened to the central firing or axis, having two heart-shaped flowers pointing toward the apex, where it is situated. They have no visible petals, but a short oval germen, supporting two bristly styles, which are the length of the scales of the empalement, and crowned with a plain stigma. It hath no pericarpium, but the feeds are included in the scales of the catkin, which are oval and winged.

This genus of plants is ranged in the fourth section of Linnaeus's twenty-first class, intitled *Monoecia Tetrandria*, there being male and female flowers on the same plant, and the male having four stamens.

The SPECIES are,

1. *BETULA (Alba) foliis ovatis acuminatis ferratis.* Hort. Cliff. 442. *Birch-tree with oval fawed leaves ending in points \ the common Birch-tree.* 1

2. *BETULA (Nana) foliis orbiculatis.* Flor. Lap. 266. *Birch-tree with round crenated leaves.* *Betula pumila foliis subrotundis.* Amman. *Dwarf Birch.*

3. *BETULA (Lenta) foliis cordatis oblongis acuminatis ferratis.* Lin. Sp. Plant. 983. *Birch-tree, with oblong pointed, heart-shaped, fawed leaves.*

4. *BETULA (Nigra) foliis rhombo-ovatis acuminatis duplicato-ferratis.* Lin. Sp. Plant. 982. *Birch-tree with rhomboid, oval, pointed leaves, which are doubly fawed.* *Betula nigra Virginiana.* Pluk. Aim. 6j. *Black Virginia Birch-tree.*

The first is the common Birch-tree, which is so well known as to need no description. This is not much esteemed for its wood, but however it may be cultivated to advantage upon barren land, where better trees will not thrive; for there is no ground so bad, but this tree will thrive in it for it will grow in moist springy land, or in dry gravel or sand, where there is little surface: so that upon ground which produced nothing but moss, these trees have succeeded so well, as to be fit to cut in ten years after planting, when they have been sold for near 10l. per acre standing, and the after produce has been considerably increased. And as many of the woods near London, which were chiefly stocked with these trees, have been of late years grubbed up, so the value of these plantations have advanced in proportion. Therefore those persons who are possessed of such poor land, cannot employ it better, than by planting it with these trees, especially as the expence of doing it is not great.

The best method to cultivate this tree, is to furnish yourself with young plants from the woods where they naturally grow, and are generally found there in great plenty; but in places where there are no young plants to be procured near, they may be raised from feeds, which should be carefully gathered in the autumn, as soon as the scales under which they are lodged begin to open, otherwise they will soon fall out and be lost: the feeds are small, so should not be buried

B E T

deep in the ground The autumn is the best season to sow them, and in a shady situation, the plants will thrive better than when they are exposed to the full sun -, for in all places where there are any large trees their seeds fall, and the plants come up well without care ; so that if the young plants are not destroyed by cattle, there is generally plenty of them in all the woods where there are any of these trees. These wild plants should be carefully taken up, so as not to destroy their roots. The ground where they are to be planted, will require no preparation; but that is necessary to be done, is to loosen it with a spade or mattock, in the places where the plants are to stand, making holes to receive their roots, covering them again when the plants are placed, and doling the earth hard to their roots. If the plants are young, and have not much top, they will require no pruning; but where they have bulky heads, they should be flintened to prevent their being shaken and displaced by the wind. When, the plants have taken root, they will require no other care, but to cut down the great weeds which would over-hang the plants which may be done with a fickle, being careful not to cut or injure the young trees. This need not be repeated oftener than two or three times in a summer the two first years, after which time the plants will be strong enough to keep down the weeds, or at least be out of danger from them.

These may be planted any time from the middle of October till the middle of March, when the ground is not frozen, but in dry land the autumn is the best season, and the spring for moist. The distance which they should be planted, is six feet square, that they may soon cover the ground, and by standing close, they will draw each other up ; for in situations where they are much exposed, if they are not pretty close, they will not thrive so well.

If the plants take kindly to the ground, they will be fit to cut in about ten years; and afterward they may be cut every seventh or eighth year, if they are designed for the broom-makers only *, but where they are intended for hoops, they should not be cut oftener than every twelfth year.

The expence of making these plantations in places where the young plants can be easily procured, will not exceed forty shillings per acre, and the after expence of cleaning about twenty shillings a year more; so that the whole will not be more than 3*l.* and if the land so planted be of little value, the proprietor cannot make better use of his money *, for when the wood is cut, it will repay, the expence with interest, and a perpetual stock upon the ground. I have seen several of these plantations made upon land which would not let for one shilling per acre, which has produced from 10 to 12*l.* an acre, clear of the expence in cutting, and this every twelfth year. The broom-makers are constant customers for Birch, in all places within twenty miles of London, or where it is near water carriage; in other parts the hoop-benders are the purchasers ; but the larger trees are often bought by the turners, and the wood is used for making ox-yokes, and other instruments of husbandry.

In some of the northern parts of Europe, the wood of this tree is greatly used for making of carriages and wheels, being hard and of long duration. In France it is generally used for making wooden shoes. It makes very good fuel.

In some places these trees are tapped in the spring, and the sap drawn put to make Birch wine, which has been recommended for the stone and gravel, as is also the sap unfermented. The bark of the Birch-tree is almost incorruptible, In Sweden the houses are covered with it, where it lasts many years. It frequently happens, that the wood is entirely rotten, and the bark perfectly sound and good.

The second sort grows naturally in the northern parts of Europe, and upon the Alps; this seldom rises above two or three feet high, having slender branches, garnished with round leaves, but seldom produces either male or female flowers here. It is preserved in some

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curious gardens for the sake of variety, but is a plant of no use.

The third and fourth sorts grow naturally in North America, from whence their seeds have been brought to Europe, and many of the plants have been raised, which thrive very well here. In Canada these trees grow to a large size, where the third sort is called Merrier. The natives of that country make canoes of the bark of these trees, which are very light, and of long duration.

Both these sorts may be propagated by seeds in the same manner as the first, and are equally hardy -, some of the trees now begin to produce their catkins in England, so that we may hope to have plenty of their seeds of our own growth, for at present we are supplied with them from America. As these grow more vigorously than the common sort, and thrive on the moist barren ground, they may be cultivated to great advantage in England, for their wood is much esteemed in Canada, where the trees grow to a large size: and they are by no means an unprofitable tree in parks, for their stems are straight, the bark smooth, and their leaves are much larger than those of the common Birch, so may be planted in such places where few other trees will thrive.

BIDENS. Tourn. Inf. R. H. 362. tab. 262. Lin. Gen. Plant. 840. Water Hemp Agrimony.

The CHARACTERS are,

The common empalement is erect, and often equal, composed of finally oblong, concave leaves 5// bath a compound flower 5 the middle or disk is composed of hermaphrodite florets which are funnel-shaped and quinquefid. These have five short capillary flaming with cylindrical funnels, and an oblong germen supporting a single style the length of the flange crowned by two oblong reflexed stigma. The female florets which compose the border are naked these are all succeeded by a single, angular, obtuse seed, having two or more bristles or teeth, by which they fasten themselves to whatever passes by them when ripe.

This genus is ranged in the first section of Linnæus's nineteenth class, intitled Syngenesia Polygamia æqualis, the flowers being composed of hermaphrodite and female florets, which are succeeded by seeds.

There are several species of this plant, which are seldom admitted into gardens, some of which are common weeds in England, therefore I shall only mention those which are frequently preserved in the gardens of the curious.

1. BIDENS (*Frondoza*) foliis pinnatis ferratis feminibus erecto-constantibus calycibus frondosis corollis radiatis. Lin. Sp. Plant. 832. Water Hemp Agrimony with winged sawed leaves, seeds standing erect, a very bushy empalement, and radiated flower, Bidens Canadensis latifolia flore luteo. Tourn. Inf. 362. *
2. BIDENS (*Nodiflora*) foliis oblongis integerrimis caule dichotomo floribus foliariis sessilibus. Lin. Sp. Plant. 832. Hemp Agrimony with oblong entire, leaves, a forked stalk, and a single flower growing close to the stalk. Bidens nodiflora brunellæ folio. Hort. Elth. 52.
3. BIDENS (*Nivea*) foliis simplicibus subhastatis ferratis petiolatis, floribus globosis, pedunculis elongatis feminibus sessilibus. Lin. Sp. Plant. 833. Hemp Agrimony with single sawed leaves having foot-stalks, globular flowers with longer foot-stalks, and smooth seeds. Bidens scabra flore nivea, folio trilobate. Hort. Elth. 55.
4. BIDENS (*Frutescens*) foliis ovatis ferratis petiolatis, caule fruticoso. Hort. Cliff. 399. Hemp Agrimony with oval sawed leaves having foot-stalks, and a shrubby stalk.
5. BIDENS (*Scandens*) foliis ternatis acutis ferratis caule scandente floribus paniculatis. Three-leaved Hemp Agrimony, with pointed sawed lobes, a climbing stalk, and flowers growing in panicles. Chrysanthemum trifoliatum scandens, flore litteo femine longo rostrato bidente. Sloan. Cat. Jam. 125.
6. BIDENS (*Bullata*) foliis ovatis ferratis, inferioribus oppositis, superioribus ternatis intermedio majore. Lin.

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Sp. Plant. 833. *Hemp Agrimony with oval fawed leaves, the kwer ones growing oppofite, but the upper having three lobes, the middle of which is the largeft.* Cryfanthemum conyzoides nodiflorum femine roltrato bidente. Sloan. Cat. Jam. 126.

The firft fort grows naturally in Virginia, Maryland, and Canada, where it is often a troublefome weed. It rifes about three feet high, fending out many horizontal branches, garnifhed with trifoliate leaves, deeply fawed on their edges; the flowers are produced at the end of the branches in fmall clutters, which are yellow, and fucceeded by oblong fquare feeds, having two crooked horns, by which they fatten themfelves to the clothes of thofe who pafs near them. There are two forts of this, one whole flowers have a fhort empalement, which is Tournefort's broad-leaved Canada Bidens; the other hath a leafy empalement, and is by Juffieu diftinguifhed by the title of Capite foliofo. But I am not very fure of their being diftinct fpecies, though I have many years cultivated both; for their feeds when ripe fpread fo far, that in a fmall garden they cannot be kept feparate. It is eafily propagated by feeds fown in the fpring, in an open fituation, where, if the feeds are permitted to fcatter, the plants will come up the following fpring, and two or three of them may be tranfplanted where they are to grow, and after they are rooted, will require no farther care. This is an annual plant, fo decays foon after the feeds are ripe.

The fecond fort grows naturally in warm countries. This is an annual plant, which rifes near three feet high, dividing upward into feveral branches, which are garnifhed with oblong entire leaves; the flowers come out fmgle at the divifions of the branches, fitting clofe 5 thefe are white, and fucceeded by fmooth feeds.

This fort muft be fown upon a moderate hot-bed in the fpring, and afterward treated like other hardy annual plants, planting them into the full ground the latter end of May. They will flower in June, and their feeds ripen in autumn, foon after which the plants will decay.

The third fort grows naturally in South Carolina, and alfo at Campeachy. This is alfo an annual plant, which rifes three feet high, dividing upward into many flender branches, whole joints are far afunder; the leaves come out by pairs at each joint upon long flender foot-ftalks, which are oval, ending in a point. The flowers grow at the extremity of the branches in fmall globular heads, which are very white, ftanding upon very long foot-ftalks, and are fucceeded by fmooth feeds. This muft be fown upon a hot-bed, and treated as the former. It flowers and feeds about the fame time.

The fourth fort rifes with a fhubby ftalk to the height of fix or feven feet, dividing into many branches, whole joints are very diftant, at each of which are placed two oval leaves, flightly fawed on their edges, and have fhort foot-ftalks. The flowers are produced at the end of the branches in fmall clutters, each ftanding upon a long naked foot-ftalk; thefe are fucceeded by flat feeds, having two fhort teeth at their extremity. I received the feeds of this fort from Carthagpna in New Spain. This is propagated by feeds, which fhould be fown on a hot-bed in the fpring, and when the plants are fit to remove, they muft be each planted into a feparate fmall pot, and plunged into a freih hot-bed, and treated as other tender plants from the fame countries, and in autumn placed in the ftove: the following fummer they will abide fome years with proper management.

The fifth fort rifes with a climbing flender ftalk to the height of ten feet, dividing into many branches, garnifhed with trifoliate fawed leaves: the flowers grow in large panicles at the end of the branches; they are yellow, and are fucceeded by flat feeds having two teeth. This plant grows naturally in Jamaica, from whence I received the feeds. It muft be treated in the fame manner as the former fort, and will continue two or three years.

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The fixth fort is annual. This rifes about two feet high, and fends out feveral lateral fhoots, which at the bottom have oval leaves placed by pairs at the joints, but upward they are trifoliate, the middle lobe being very large, and the two fide ones fmall; the flowers are produced at the wings of the leaves upon fhort leafy foot-ftalks, and are yellow, but very fmall. It flpwers in July, and the feeds ripen in autumn; the feeds of this muft be fown upon a hot-bed, and treated as the fecond fort.

BIFOLIUM, Twyblade. See OPHRYS.

BIGNONIA. Tourn. Inf. 164. Lin. Gen. Plant. 677. [M. Tournefort called this plant Bignonia, in memory of abbot Bignon, librarian to Lewis XIV. king of France, he being a great encourager of learning.] The Trumpet Flower, or Scarlet Jafmine.

The CHARACTERS are,

"The empalement is cup-fhaped* quinquefid, and of one leaf "The flower is of the ringent, or grinning kind, tubulous, with long chaps, which are fwelling, and bell-fhaped, divided into five parts at the top; the two upper fegments are reflexed, and the under fpread open 5 it hath four awl-fhaped ftamina fhorter than the petal, two longer than the other, having oblong reflexed fummits. In the center is an oblong germen, fupporting a flender fyle, crowned by a roundifh ftigma. Thegermen afterward becomes a bivalve pod, with two cells, filled with compressed winged feeds, lying over each other imbricatin.

This genus of plants is ranged in the fecond divifion of Linnseus's fourteenth clafs, intitled Didynamia-Angiofpermia, the flower having two long and two fhort ftamina, and the feeds included in a capsule.

The SPECIES are,

1. BIGNONIA (*Radicans*) foliis pinnatis, foliolis incifis, caule geniculis radicatis. Lin. Hort. Cliff. 217. *Bignonia with winged leaves, which are cut on their edges* and roots coming out at the joints of the ftalk.* Bignonia Americana Fraxini folio flore amplo Phoenicio. Tourn. Inf. 164.
2. BIGNONIA (*Catalpa*) foliis fimplicibus cordatis, caule erecto, floribus diandris. Lin. Sp. Plant. 622. *Bignonia with Jingle heart-fhaped leaves, an upright ftalk* and flowers with two ftamina.* Bignonia Urucu foliis, flore fordide albo, intus maculis purpureis & luteis adfperfo, filiqua longiflima & anguftiflima. Catefh. Carol. 1. p. 49.
3. BIGNONIA (*Frutescens*) foliis pinnatis, foliolis lanceolatis acutis ferratis, caule erecto, floribus paniculatis erectis. *Bignonia with winged leaves, having acute fawed lobes, an upright ftalk, and flowers growing in panicles erect.* Bignonia arbor flore luteo Fraxini folio. Plum. Sp. Plant. 5.
4. BIGNONIA (*Pubescens*) foliis conjugatis cirrhofis foliolis cordato-lanceolatis foliis imis fimplicibus. Vir. Cliff. 59. *Bignonia with conjugated leaves having tendrils, the leaves fpear-fhaped, and the lower leaves Jingle.* Bignonia Americana Capreolis donata filiqua brevior. Breyn. Ic. 33.
5. BIGNONIA (*Unguis Cati*) foliis conjugatis, cirrho breviffimo arcuato tripartito. Lin. Sp. Plant. 623. *Bignonia with conjugated leaves, and port arched tendrils* divided inter three parts.* Bignonia Americana capreolis aduncis donata, filiqua longiffima. Tourn. Inf. 164.
6. BIGNONIA (*Mquinottiatis*) foliis conjugatis cirrhofis, foliolis ovato-lanceolatis, pedunculis bifloris filiquis linearibus. Lin. Sp. 869. *Bignonia with conjugated leaves, having tendrils* whole lobes are oval, fpear-fhaped, and linear pods.*
7. BIGNONIA (*Sempervirens*) foliis fimplicibus lanceolatis caule volubili. Lin. Sp. Plant. 623. *Bignonia with Jingle fpear-fhaped leaves, and a twining ftalk.* Gelfeminum five Jafminum luteum odoratum Virginiae fcandens & fempervirens. Park. Catelb. 1. P. 53.
8. BIGNONIA (*Pentaphylla*) foliis digitatis foliolis integerrimis obovatis. Hort. Cliff. 497. *Bignonia with fingered leaves* whole lobes are entire.* Bignonia arbor pentaphylla flore rofeo. Plum. Sp. Plant. 5.

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9. *BIGNONIA (LecutyUn)* foliis digitatis foliolis integerimis ovatis acuminatis. Lin. Sp. Plant. 870. *Bignonia with fingered leaves, whose lobes are oval, pointed, and entire.* Leucoxydon arbor filiquiosa, quinquefolia, floribus Nerii, alato femine. Pluk. Aim. 215. tab. 200. f. 4. commonly called in America Tulip Flower.
10. *BIGNONIA (Paniculata)* foliis conjugatis cirrhosis, foliolis cordato-ovatis, floribus racemosis-paniculatis. Lin. Sp. Plant. 623. *Bignonia with conjugated leaves, having tendrils, the lobes oval and heart-shaped, and flowers in branching panicles.* Bignonia bifolia scandens, flore violaceo odore, fructu ovato duro. Plum. Cat. 5.
11. *BIGNONIA (Carulea)* foliis bipinnatis foliolis lanceolatis integris. Lin. Sp. Plant. 625. *Bignonia with double winged leaves, which are entire and spear-shaped.* Arbor Guajaci latiore folio, Bignoniae flore cseruleo, fructu duro in duas partes diffilente feminibus alatis imbricatis. Cateb. Carol. 1. p. 42.
12. *BIGNONIA (Crucigera)* foliis conjugatis cirrhosis foliolis cordatis; Vir. Cliff. 60. *Bignonia with conjugated heart-shaped leaves, having tendrils, and a stalk having tendrils.* Pseudo Apocynumbiliculis maximis obtusis feminibus ampliflimis alis membranaceis. Mor. Hist. 3. p. 62.
13. *BIGNONIA (Capreolata)* foliis conjugatis cirrhosis foliolis cordato-lanceolatis, foliis imis simplicibus. Lin. Sp. 870. *Bignonia with conjugated heart-shaped leaves, having tendrils, whose lower leaves are single, growing in panicles, and long compressed pods.*
14. *BIGNONIA (Triphylla)* foliis ternatis glabris, foliolis ovatis acuminatis, caule fruticoseo. Lin. Sp. 870. *Smooth three-leaved Bignonia, with oval lobes ending in a point, and a brubby stalk.* Bignonia frutescens triphylla glabra, filiquis longis compressis. Houft. Cat.

The first sort grows naturally in Virginia and Canada. It hath large rough stems, which send out many trailing branches, putting out roots at their joints, which fatten themselves to the trees in their natural places of growth, whereby they climb to a great height, and in Europe, where they are generally planted against walls, they fall themselves thereto by their roots, which strike into the mortar of the joints so strongly, as to support their branches, and will rise to the height of forty or fifty feet. The branches are garnished with winged leaves at every joint, placed opposite, composed of four pair of small leaves, terminated by an odd one; these are sawed on their edges, and end in a long sharp point. The flowers are produced at the ends of the shoots of the same year, in large bunches, these have long swelling tubes, shaped somewhat like a trumpet, from whence it had the appellation of Trumpet flower. They are of an Orange colour, and appear the beginning of August.

This sort is very hardy, so will thrive in the open air, but as the branches trail, they must be supported, therefore are usually planted against walls or buildings, where, if the branches have room, they will spread to a great distance, and rise very high, so are very proper for covering of buildings, which are unfitly. They may all be trained up against the stems of trees, where they may be so managed, as to make a fine appearance when they are in flower.

This is propagated by seeds, but the young plants so raised do not flower in less than seven or eight years, therefore those which are propagated by cuttings or layers from flowering plants, are most esteemed, because they will flower in two or three years after planting. The old plants also send out many suckers from the roots, which may be taken off, and transplanted where they are to remain, for these plants will not transplant easily if they are old.

The necessary culture for these plants after they are established, is to cut away all the small weak shoots of the former year in winter, and shorten the strong ones to about two feet long, that young shoots may be obtained for flowering the following summer; these plants are of long duration. There are some in gardens which have been planted more than sixty years, which are now very vigorous, and produce flowers in plenty every season.

If the plants are propagated by seeds, they should be sown upon a moderate hot-bed to bring them up, which should be so managed to the open air, to prevent their being drawn up weak; and the first winter these young plants should be screened from hard frosts, which will kill their tender shoots; but the spring following they may be planted in the full ground, in a nursery-bed, at a foot distance from each other, where they may remain one or two years to get strength, and afterwards be planted where they are designed to grow.

The second sort was brought into England by Mr. Cateby, about forty years past, who found it growing naturally on the back of South Carolina, at a great distance from the English settlements. It is now very plenty in the English gardens, especially near London, where there are some of them near twenty feet high, with large stems, and have the appearance of trees.

This sort rises with an upright stem, covered with a smooth brown bark, and sends out many strong lateral branches, garnished with very large heart-shaped leaves, placed opposite at every joint. The flowers are produced in large branching panicles toward the end of the branches, of a dirty white colour, with a few purple spots, and faint tinges of yellow on their inside. The tube of the Mower is much shorter, and the upper part more expanded, than those of the former sort, and the segments deeper cut, and waved on their edges. The flowers are in America succeeded by very long taper pods, filled with flat winged seeds, lying over each other like the scales of fish. In England there has not as yet been any of the pods produced, but the seeds are annually brought over from South Carolina. These should be sown in pots, and plunged into a moderate hot-bed to bring up the plants, which should be sown to the open air by degrees; and, in the beginning of June, placed abroad in a sheltered situation till autumn, when they should be placed under a common frame to screen them from frost in winter but in mild weather they must be fully exposed to the open air. The following spring these may be taken out of the pots, and planted in a nursery-bed, in a warm situation, where they may remain two years to get strength, and afterwards planted in the places where they are designed to remain. These plants, when young, are frequently injured by frost, for they shoot pretty late, in the autumn, so that the early frosts often kill the extremity of their branches; but as the plants advance in strength, they become more hardy, and are seldom injured but in very severe winters. It is late in the spring before these trees come out, which has often caused persons to believe they were dead; and some have been so imprudent, as to cut them down on that supposition, before the tree was well known.

It may also be propagated by cuttings, which should be planted in pots in the spring before the trees begin to push out their shoots, and plunged into a moderate hot-bed, to serve to shade them from the sun in the middle of the day, and refresh them occasionally with water, which must not be given to them in too great plenty. In about six weeks these will have taken root, and made shoots above, so should have plenty of air admitted to them constantly, and hardened by degrees to bear the open air, into which they should be removed, and treated in the same manner as the seedling plants, and the spring following planted out into a nursery-bed, as is before directed.

As these trees have very large leaves, they require a sheltered situation, for where they are much exposed to strong winds, their leaves are often torn and rendered unfitly, and many times their branches are split and broken by the winds, their leaves being so large, as that the wind has great force against them. These produce their flowers in August. They delight in a light moist soil, where they make great progress, and in a few years will produce flowers. It is generally known in the gardens by the Indian title of Catalpa.

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The third fort is a native of the warmer parts of America, where it was discovered by father Plumier, who made a drawing of it, and gave the title of *Clematis* to it, which he afterward altered to *Bignonia*, when he became better acquainted with Tournefort's System of Botany. This rises with an upright stem, to the height of twelve or fourteen feet, sending out many side branches, garnished at every joint by two long winged leaves placed opposite; the small leaves which compose these, are long and spear-shaped, ending in a point, and lightly fawed on their edges, each leaf being composed of six pair, terminated by an odd one. The flowers are produced in loose panicles at the ends of the branches, and are shaped like those of the other species, but (spread open more at the top.) These are yellow, and succeeded by compressed pods about six inches long, having two rows of flat winged seeds, like those of the other species.

I received this fort first in 1719, from La Vera Cruz, in New Spain, where the late Dr. Houffton found it growing naturally in great plenty; since which time I have received the seed from the island of Bermuda, by the title of Candle Wood.

It is propagated by seeds, which must be sown on a hot-bed, and the plants afterward transplanted into separate small pots, filled with light fresh earth, and plunged into a fresh hot-bed to bring them forward, that they may obtain strength before winter; in the autumn they must be removed into the bark-stove, and during the winter should have but little water, but in summer they must be frequently refreshed with it, but not given in too great plenty. The plants should constantly remain in the bark-stove, and be treated in the same manner as other tender plants from those countries. The third year from seed, they will flower, but they do not produce seeds in England.

The fourth fort grows naturally in Virginia, and several other parts of America; this hath very slender trailing (stalks, which must be supported; in the places where it naturally grows, the branches fatten themselves by their tendrils to whatever plants are near them, and extend to a great distance. In this country they require the assistance of a wall, and to have a good aspect, for they are impatient of much cold, so should be sheltered in severe frost; the branches are garnished with oblong leaves, which are green all the year; these are often single at bottom, but upward are placed by pairs opposite at each joint; the flowers are produced at the wings of the leaves, which are yellow, and shaped like those of the Foxglove. These appear in August, but are not succeeded by pods in this country. This is propagated by seeds, which (should be sown on a moderate hot-bed, and treated in the same manner as the first fort. When these plants are planted in the full ground against walls, the ground about the roots should be covered in the autumn with some old tanners bark to keep out the frost in winter; and in very severe frost, the branches should be covered with mats, to prevent their being destroyed. With this management I have had the plants flower very well in the Chelsea garden.

The fifth fort hath slender (stalks like the former, which require the same support; these are garnished with small oval leaves, which are entire, placed opposite at every joint; at the same places come out the tendrils, by which they fasten themselves to the plants which grow near them. These end in three distinct parts; the flowers come out from the wings of the leaves, which are (shaped like those of the former fort, but are smaller, and are not succeeded by seeds in this country. This grows naturally in Carolina and the Bahama Islands, but will live in the open air, if it is planted against a wall to a fourth aspect, and sheltered in very severe frost. It is propagated in the same manner as the former fort.

The sixth fort hath very weak slender branches, which put out tendrils at the joints, by which they fasten themselves to the neighbouring plants: at each joint

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there are four leaves, two on each side opposite; these are oval pointed, and waved on their edges, of a bright green, and continue through the year; the branches ramble very far where they have room; the flowers are large, yellow, and are produced at the joints of the stalks, but are not succeeded by pods in this country. I received this fort from La Vera Cruz, in New Spain, but it thrives against a warm wall in the open air very well, with the same treatment as the two former forts.

The seventh fort grows naturally in South Carolina, where it spreads over the hedges, and at the season of flowering, perfumes the air to a great distance, it also grows in some parts of Virginia, but not in so great plenty as at Carolina. The inhabitants there call it Yellow Jasmine, I suppose from the sweet odour of its flowers.

This rises with slender stalks, which twist themselves round the neighbouring plants, and mount to a considerable height; the branches are garnished with oblong pointed leaves, which come out single and opposite to each other at every joint; these remain green through the year. The flowers come out from the wings of the leaves at every joint, sometimes but two, at other times four at each joint; these stand erect, are trumpet-shaped, yellow, and have a very sweet scent; and in the countries where they naturally grow, they are succeeded by (short taper pods, filled with small winged seeds.

The plants of this fort, when young, are impatient of cold, so must be sheltered in the winter until they have obtained strength, when they should be planted against a warm wall, and in winter protected from frost by coverings of mats, and the ground about their roots covered with tan. With this management I have had them flower very well in the Chelsea garden. It is propagated by seeds in the same manner as the former forts.

The eighth fort was sent me from Jamaica by the late Dr. Houffton. This rises with an upright stem near twenty feet high, sending out many lateral branches, covered with a white bark. The leaves come out opposite at the joints upon long foot-stalks; they are composed of five oval stiff leaves, which are joined in one center at their base, where they are narrow, but widen toward the top, where they are rounded and obtuse. They are of a pale green, inclining to white on their under side, the flowers are produced at the ends of the branches four or five together, on very short foot-stalks; they are narrow at bottom, but the tube enlarged upward, and at the top (spreads open wide, of a pale bluish colour, and smell sweet; they are succeeded by taper crooked pods about four inches long, which are filled with oval compressed seeds, with wings of a silver colour.

This fort is a native of the warmer parts of America, therefore will not thrive in this country, but in a stove. It is propagated by seeds, which must be sown on a hot-bed, and the plants treated in the same manner as the fourth fort.

The ninth fort I received from Barbadoes, by the title of White Wood. This rises with an upright stem to the height of forty feet, in the natural country of its growth, and the seeds are dispersed by wind to the neighbouring lands, where the plants come up in great plenty. This and the former fort have been generally confounded, and supposed to be the same, but the growing plants are extremely different, for the under leaves of this are sometimes composed of five, at other times of four oval leaves; and on the upper part of the branches, they come out single, placed by pairs opposite: these are as large as those of the Bay-tree, and of equal thickness, rounded at their end; each of these have a long foot-stalk, whereas those of the former join at their base to one center. The flowers of this fort are produced single at the wings of the leaves, which have a narrow tube near two inches long, but spread open very wide at the top, where they are cut into five unequal segments, which are fringed on their borders. The flowers are

white,

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white, ind have an agreeable odour, but the pod I have not fecE.

The plan's muft be prefirvct in the bark-ftovc, and treated as the fourth fort. I is propagated by feeds, and will idfo take rotic from cutting™ in the fuminT, it' they an' planted in por>, am' plunged into a bark-bed. It has (o) several years in the Chell-a garden, in Au;.

Jiic tenth fort was fent me from La Vera Cruz, by the lateDr. Houftoun; this riles ft-itli ligneous (talks, which put out teuirils ar the milts, wherV they fnten themfclvcs to the neighbouring plants; the leaves come out on each fide the brand us, upon pretty long foot-ilalk; two at each joint oppofite, which arc h<Mt-fhamd and cniirt-, having a line hairy down on their under fide. The Howers grow in loofc (pikes at the end of the branches, which are tubulous, and du not fprarl much ut the topi they arc of a Violet colour, and fmell very fwect. Tittfe in their native country tin: fuccceded by oral, bard, ligneous feed-vefTds, which open in four parts, and arc ft ill of comprfid winged (ceds.

TMi fort ii propagated by feeds, which rtllfi b- fven on a hot-bed, and cbe plants in R be treated in the fame manner as the third fan, for they will not thrive in this country unlth they are placed in the bark-ftovc.

The eleventh fort grows naturally in the Bahama lilandi, from whence Mr. Caicby lent the fi eds in i 724-, and many of the plants were railed in tfo gardens near London. This, in the country where it grows naturally, rifts to die hright of twenty feet, lending our many lateral branches^ garnillhti with compound winged leave*, each having eleven alternate wings, with lpcar-iliapcd finall lobes, which grow alternate, and arc entire; at the end: of the branches the flowerJ arc produced in very loofo panicles; the foot-Italks brandling into three or •••, each containing a (ingle blue flower, with a km feeding tube, cut into five unequal legmcnB at the tap, where it frcads u'zen. The (lowers arc filer; y ova, feed-vcficK which opep tn two parts, on3 arc filled with fhi winged feeds.

The t-wlth fort luril a woody Sera, fending out many L.rinch?, which have four narrow borders nr wings running lngituiinally, fb as w eefemble .t tquare IWK; tire letrm arc' produced by pair<, on each fil. the branchei; they arc hent-ihapLf, Jmnath, anl hive ffon fooD-ftnlks) theft: nave tendrils coming out by the foot-Italks, which faller lhi-r.flyes to the plints wiith grow near them, ami thereby rife to a great height. The flowers arc Ennuced in finall clutters from the witi;j of the fawes, which have preti: bng talcs, fpical open at die top, and *te of a pile yet low colour; thre arc fuccceded by (lai pods a too' in length, which I hve two rows of flat winjrd fecdi, joined to dw intermediate partition.

This fort wwfent me from Campcadiy, whew naturally grow; and rifs W the tops of the tailed trees, (o whole branches tiefc plants feften Chen by their tendrils or, laper:; and arc thereby fup- rced. This is propagated by feeds, which miift a hot-bed,

fawn on md the planw rrotcd in the fame manner as the fourth ferts Lev a warm ill not thrive in this country, unlrb they fi where the brasirhea will : height of twenty i l three y<ars-, and if permitted, will fpread to a jpeat diftance. It his flojnned in the pirden at Chelli.?, but doth not pre- wachy,

Robert Millar, this l me from Cam} by M at height, which rilb to a gn, fabenac cfintam 01 in their branches crawl ri fper, and fending out many ligneous branches, by it: be overfhalh with oval heart-fhaped leaves, which are gamilhed l polar at the by fours, two on each fide, crowing op fide with a : tiefe arc covered on chcir litter iaft hairy down, of aycllawilh colour. The l. coducn) in lode panicle* a: tie end of the

E I S

branches, wtbet arc fliaped like (ajft of the Fax' glove, and arc of it pale yellow colour, and air fuc- Ceedfd by (ki pods a foot long, having a bo: der on each (kic, and contain t wo or ftaf' winded ;oods.

This plant is rceder. .i mttS U- conitui-iv kqu in the bivi-k-ftove, and oca ted in the I me manner as tha fourth fan. It is propagated by l pods, whi • mult be obtained from the country where it grows naturally, for it doth not produce any in Ijjizlaml.

The fourteenth fort was fan :nc from La Vera Cruz to New Spain, ijrthehueDi Houston. Thii hath a woody item covered with ail Alli-coloured bark, which rifei ro the height of ten Feet, feuding out many Bde branchcj, ganulbed with irifoliaie IMVC*.

placed oppofite each joint.iiti nre vrry linooth, oval, and •••ing in points. The Boven come cue at the extremity of the brands in loofc panicles, nr d arc of a riirr caloir. Thofc arc luccceded by fiat mnrow podi, containing two rows of flat wingrd feeds.

This ihrt is prmf*•••ed by fce ik, which muft be fawn on a hot-licd, rnd the ptatiti after. and treated ti the fourth fon, and muft euriltantly remain in the bark-ftovc.

- HIIIIAI. SttM... BINDWEED. SeeCov... BISCH-TREE. SeeBaTtL*. BISCUTEI.L.A. t.in. Gen. Plein. 744. [Wafpithim. Touni. lull. R. H. JJ4. is in 107. Bouclir Muftard, or JfilUrd Mi...]

The CHARACTERS are,

The axpaimriu is compofed of four lort. •, T>birh art pohtrd. "i ••• fower hath four petals, placed in irw ff atrvfs, *rfe are whole and fered upon, it .r.lb fix Janattdt fin .

... in the center is fixated an orbicular comprfid germ, fupporting a fingle permanent flye, crowned with an oblong fagma; the germ is ftrm J heemts & jaim in the fide of the partition, each cell containing one tempnffil fted.

This genus of I Urj is ranged in die firft fection of Linnæus's fifteen 1. clafs, intitled Tetradymia Sib- c 11 lob, the flower ha-:ng four long, and two ihort fjuiii: a, fuccceded by very flimpods*

The Si'rcr are,

- 1. Biscutella (Auricula) calycibus nectario utrinque gibbi fibulis in fylum oceanicum. Linn. Hort. Celf. 329. fower Michard, with the cup of the orbicular feeding in each file, and fmall pods joined to the flye. Thalpidium hifidum calyce floris auriculato. Lull.

- 2. BuctriLLA [UhipBtt fibulis orbiculato-difformi à flye divergentibuj. Horr. (Celf. 329. Bactia A :lorJ, with a double orbicular pod diverging from the flye. Thilipi'.k... Monfpulenti hieracii f La hirtbto. Tnum. Inf. 2(4.

- 3. Biscutella (Auric) hirtuta foliis oblongis dentatis femiamplexicaulis floribus fpicatis flyis brevioris. Flory Bactia Michard, with oblong orbicular lobes which half embrace the flye, fowers growing in fpires, and a fower flye. Thalpidium Aquilium ipocorum. Touni. lull. 14.

TJie (irft fort gro< naturally in the fouth of Frwice ant! /•••, where it riles about a foot hig hi bur in a garden generally fpoos near two feet high, dividing into lveral branches; and at every joint there ts one oblong ntirc leaf a little ii dentat, thole on the lower part of tin- IV-ck bciti; broader and more obtufe than thofe on the upper. The flowers are produced at the ends of the branches in loofc panicles which arc comj; fted of four obtufe petals of pale yellow colour; thofe arc fuccceded by double, round, comprfid feed-veficle, fwelling in the middle, where is lodged a fingle, round, flat feed, the flye of the flower ftanding upright •jctftcen the two i small veficls, joined to their borders.

The P10** n11^1^ in (rc Toutli of France, July, atit! Germany, fixim whence I r< M m tie

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the feeds, and dried samples of the plant, which are not more than six inches high, though they are the entire plants with their roots, but in the garden they grow almost two feet high*. This hath many long, narrow, hairy leaves, spreading near the ground, which are deeply indented on each side, resembling those of Hawkweed; from the center arises the stalk, which divides upward into many small branches, having no leaves on them, and are terminated by loose panicles of yellow flowers, composed of four petals, placed in form of a cross. These are succeeded by round compressed feed-vessels like the former, but are smaller, and the style of the flowers bends from them.

The third sort sends out many oblong hairy leaves, * which are (lightly indented on their edges; from among these there arises a hairy branching stalk, which grows two feet high, and at each joint is placed one oblong indented leaf, which half embraces the stalk at the base; each branch is terminated by a close spike of pale yellow flowers, which are succeeded by round compressed feed-vessels like the other sorts, but the style of the flower, which is joined to them; is shorter than those of the other species.

These are all annual plants, which perish soon after they have perfected their feeds. These should be sown either in spring, or the autumn, upon a border of light earth, in an open situation, where they are to remain for good. Those which are sown in autumn will come up in about three weeks, and the plants will live through the winter without any protection, so will flower earlier the following summer, whereby good feeds may always be obtained; whereas those which are sown in the spring, do, in bad seasons, decay before their feeds are ripe. The autumnal plants flower in June, and the spring in July, and their feeds ripen about six weeks after; which, if permitted to scatter, there will be plenty of young plants produced without any care.

These require no farther culture, but to keep them clean from weeds, and thin the plants where they are too close, leaving them eight or nine inches asunder. They are preserved in the gardens of those who are curious in botany, but they have no great beauty to recommend them, I have cultivated these sorts many years, and have never observed either of them to vary, therefore make no doubt of their being distinct species.

BISERRULA. Lin. Gen. Plant. 800. Pelecinus. Tourn. Inf. 417. tab. 234.

The CHARACTERS are,

The flower hath a fabulous empdement of one leaf, which is erect, acutely indented at the top in five equal parts, the two upper standing at a distance. The flower is papilionaceous, having a large roundish standard, whose edges are reflexed. The wings are oblong, but shorter than the standard and the obtuse keel is of the same length with the wings, bending upward. It hath ten stamina, nine of which are joined, and the other single, with their ends pointing upward. In the center is situated an oblong compressed germen, supporting an awl-shaped style, crowned by a single stigma; these are included in the keel. The germen afterwards becomes a flat narrow pod, indented on both edges like the jaw of the swordfish, having two cells, filled with kidney-shaped feeds.

This genus of plants is ranged in the third section of Linnaeus's seventeenth class, intitled Diadelphia Decandria, the flower having ten stamina, joined in two bodies*.

We have but one SPECIES of this genus, which is, **BISERRULA.** (*Pelecinus.*) Hort. Cliff. 361. We have no English name for this plant. *Pelecinus vulgaris.* Tourn. Inf. 417.

This is an annual plant, which grows naturally in Italy, Sicily, Spain, and the south of France. It sends out many angular stalks, which trail on the ground, subdivided into many branches, garnished with long winged leaves, composed of many pair of lobes, terminated by an odd one; these are heart-shaped: toward the Upper part of the branches come out the

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foot-stalk of the flowers, which sustains several small Butterfly flowers, of a purplish colour, collected together, which are succeeded by plain pods, about one inch long, indented on both sides the whole length, divided in the middle by a longitudinal nerve, containing two rows of kidney-shaped feeds.

It is propagated by feeds, which in this country should be sown in the autumn, on a bed of light earth, where the plants will come up in about three weeks, and will live in the open air very well. These should be sown where they are designed to remain, or transplanted very young; for when they are large, they will not bear removing. When the plants are come up, they will require no other care, but to keep them clean from weeds; and where they are too near, they should be thinned to about a foot distance from each other. They flower in June, and the feeds ripen in September.

The feeds of this plant may also be sown in the spring, and treated in the same manner as before directed; but these will not flower till the middle or end of July, so unless the autumn improves warm, they will not ripen feeds; for which reason I have directed their being sown in the autumn, as soon as they are ripe. Two or three of these plants may be allowed a place in gardens for the sake of variety, but they have not much beauty.

BISLINGUA. See *Ruscus.*

BISTORTA [so called, because the root is turned or wreathed into various rings or spirals,] *Bistorta*, or *Snakeweed.*

This genus joined to the *Polygonum* by Dr. Linnaeus. This plant flowers in May, and if the season proves moist, will continue to produce new spikes of flowers till August: it may be propagated by planting the roots in a moist shady border, either in spring or autumn, which will soon furnish the garden with plants, for it greatly increases by its creeping roots.

The roots of this plant have been recommended for tanning of leather, but the trouble of procuring them in a sufficient quantity is too great to answer the intention.

BIVALVULAR, or *Bivalve* [of *bivalvis*] *Huffia*, is one that opens and gapes the whole length, like a door that opens in two parts.

BIXA. Lin. Gen. Plant. 581. *Urucu.* Sloan. Cat. Jam. Orleana. H. L. *Mitella.* Tourn. Inf. 242. *Anotta*, by the French *Roucou.*

The CHARACTERS are,

It hath a plain, small, obtuse empdement, which is permanent; the flower hath a double series of petals, the outer consisting of five, which are large, oblong, and equal, the inner of the same number and shape, but narrower. It hath a great number of brittle stamina, which are but half the length of the petals, terminated by ere stamens. In the center is situated an oval germen, supporting a slender style of the same length with the stamina, crowned by a bifid, compressed, parallel stigma. The germen afterwards becomes an oval heart-shaped capsule, a little compressed, covered with sharp bristles, opening with two valves, with one cell, and filled with angular feeds, adhering to a linear receptacle, which runs longitudinally through the capsule.

This genus is ranged in the first section of Linnaeus's thirteenth class, intitled Polyandria Monogynia, the flower having many stamina and one style.

We have but one SPECIES of this genus, viz.

BIXA. (*Orellana.*) Hort. Cliff. 211. *The Arnotta*, or *Anotta*, by the French *Roucou.* *Mitella Americana maxima tinctoria.* *Acbiotti of Hernandez.*

This shrub grows naturally in the warm parts of America, where it rises with an upright stem to the height of eight or ten feet, sending out many branches at the top, forming a regular head. These are furnished with heart-shaped leaves ending in a point, which have long foot-stalks, and come out without any order. The flowers are produced in loose panicles at the end of the branches, of a pale Peach colour, having large petals, and a great number of brittle stamina of the same colour, in the center. After the

I flower is pafi, the gertncn becomes a tican Ihaped, or rather a. mitrt-'fliajwd fced-veiTel, covered on the uitTd? with brittle', opening with two valves, and tilled wicii angular ietJs, covered with a red pulp or pafe, which colours 'be hands of tht>:c who

This plant

touch it, and is colle&cd for the uft of dyers and mincers.

is propagated by fcftls, which art annually brought from the Well I:¹ *Impatiens*, icy. Thefe lliDiik! \K fown in a finall pit, I;"

earth, and -'inert bark ; a fresh hor-bed (I is of) proper tenj|termjre of heat, the plants (rill appear in about a mmh afar; whiet diefe arc about an inch high, they fhould be lliaken out i the fame ind cm-full; lu as not to tear oil' thefe tender roots, and cadi planted in a final pit filled with Jbmc richligh: earth, and plunged into men bark, obflTving ifj (hade

them every day until they have taken new which they mull be treated as other tender pi ants from nutty, by tdmirriug fresh air to them in proportion CD the nwrnth of the (cafbn -, in J when tile lu:lt of the untlrdims itJhould lie turned up tt> die bottom, anil, if neccBuy, fame frelli tan added to renew thir hear The jil.mts mult be i:efreihed three times a week with water in liimnxr, hot they mult not have it in great quantities, tor their roots often rot with much wet. I ire railed eirly in the fpring, and properly managed, they will be afoot and * (wit high ay the autumn, when they fhould be rctn -;ik>ve, und plunged into the iiii-byd. During the winter, they mult have L

water, and while the plants arc young, they tnuff a good Jhare of warmth, otherwife they are very Jibjecl: to caV thsir leaves, & their tops, whu 'in infigidly. They mull be I in the bark-Itove, for thofc plants | I teed in ' tby llove, have never - timcli projTctfs. E hnve-tudraao of theft planu

of:h with fr'np Qran ^nd lar^e b only had one protljcc flowers ; not luvc I heard at its {lowering in any of the gardens in jje, or in tic- Dutch gra

where the plants are left to) plants

paib: whkli furrounds the freds is taken off, by ilecpiin^ the fecdi in hat' til tic hands dl the feeds arcccksat then afrtr pouring HI io harden,

nuke it up in balls, whi mope, are uied in dying uid paxnongi It ii ufb ulcJ by the American! , and the native- m their bodia with il

went to the wars. R-N U T, more of our fctious at

BL ATT ARIA. S
JLI^HTS.

te is notliing fo deffructive to a fruit gr^
I] nor is shre any th'iigin the bufuiels oi'gar- denii centKm, than the ctideavuiiring (o prevent Or gyard againt thk £ of gardens.

In older therefore >> remedy this evil, it will be ne- • adcrftand the true tanles of blighis; JU have attcepted to explain lew of them nnrtht truth, rxcept the Rev, and le

who hath, in his curiuis book, intitled Vegetable Statics, given n: mm experi

together v, die air liadi upon vegetables; that Lv careful!* attending ther<= with iltigeJit obleratioio, we need fel

low to arcuunt for the can: >intnever-rhey may liappen.

But hertr I einnot hdp taking notke of the fevral 1 of Uiglii, ud tiown by of cur modern writers on gardening, together is methods pfcrcibcd to prevent their

6tc. jfcd, that blights are ufudly pro-

cluced by an Mferi/ wind, which brings vast quan- tities of insects eggs along with it front Bwne dift an' place; which, being lodged upon the iVirface of die leavcsand Hi ... m iu brivcl up and periOt. To cure this diltenjpcr, they advile the burning of wet Jitter on the windward fide of the trees, that the m'lie thereof may be tarried to them by the wind i, which they suppose will fine ,nd deftroj thofe insects, and thereby cure the dilt' jier.

Others shun the use of Tobacco-dust, or to whidie trees with w.i^r when Tobacco-dusts have been imited for twelve hours, whv h, they say, will o --iroy thiefr itslccb, ami recover the I trees; and Pepper-dust, fcrrnerd kmn the bloffom of fruit-... has, been recommenoc as very virtul in this case; ami there we form: thji advH the pulling off the leaves of the tree, as the ' it remedy when they ueflrivEU d up and wifler j and to cui off the Grtalli branches when thai produce crooked ami unnatui' thooes, and to fprinkle the tret with a w.-cring-poti or a ltund-rngint.

These conjectures concerning blighti, how fpedotil fowcer they may aupti; at first fight, yet when duly confidereil, will be found nil far Hunt or the tem cause, at * I hereafter tx* ill ...

But let us now examine the true enufef of blights, fo firm we liave been enabled to judge from impared oblerations and experiments.

i. Blights then arc often csufed by n continued dry t-allerly wjitt tor several days toycttier, without the intervention of (bowers, ur any morning dr it, by wiiich the perfpijtion in the tender blofibms is

{topped, fo that in aibomine their colour is ctu ^red, and they wither and UccjT , and if it lb happen, tlic there is a long continuance of the same weather, it wjually t'l<rfc the tender leivei; for their perfpiring nutter is hereby thickened and rendered git: mous, clulely adhering to the furface of the leav.

... and becomes a prujit-r nutriment totbo&frmltinj HK JI says, that the preying ujmii the leaves and tender branches ut firriit-trees, whenever this blight happen*;

but it is not thell- infcEh which are the firll caufe of btigii'-s, us hath ban imagined by I ... ough [t mult be illoNved, that wheocs of these insects meet with futh a jiroper ftiad, the multiply exceedingly, snd are intrumentAl in promodti; the difference; fo that many times, when in the season pruvCT fa-

... care havi ixca i.krn to prevcm thai mactact, it is fupcring to think how whole w^lls or trees havi

... followed by this i ... un,

The bftt rfmtty for thlit dirtemrwr, that I have yet known luccced, is, gently to ivdh jr>Jij- ... over the treci, from time to time, with common water fthit b, fuch as lwth not had any thing fceeped in it,) and the lb<?r this rtrbrmett [whenever we apprehend danger,) the D'ct'.

and if the young and tender ilioou leem to be much injfted, wjth iheui with a woollen c'pth, fb as in dear them, is¹ jvjitible, from il' l' t' j' l' ... dicir rclpiration and perlpiration may Dot be obfrufied; and if we pkee fome broad fiat pans ot ribs of wa ... near the trees, that the vapours exhaled from the water i may be received by the trees, it will becp ilicir

... parts in a duftile i ... and greatly help them; but whenever this oprKition of washing the trettrli Ier- formed, it lhouM bet. ... the moilt ure m.iy bfi exhaled befor. ... night comes on i efpecially if the nights are frody: ... fould it be done when the iiii (hints very hot upiin the Will, which would bi ... up the tender bloom.

Another ... ran:¹ Jjirtng fa, Oiap hi ... y fit&s, which are often luccceded by ... in the day time i which ii the mult ludden and eerti ... er of fruit', that < known ; tor the ... of die night ftraves the tender parts of the l/TToins, and die fun riling hot upon the wall ... the iw¹ h ilried from the bloTun! (which, bv; ... in final globe. !fs, coUefti the ra; ... of the fun,) a scathing heat

Another ... Jjirtng fa, Oiap hi ... y fit&s, which are often luccceded by ... in the day time i which ii the mult ludden and eerti ... er of fruit', that < known ; tor the ... of die night ftraves the tender parts of the l/TToins, and die fun riling hot upon the wall ... the iw¹ h ilried from the bloTun! (which, bv; ... in final globe. !fs, coUefti the ra; ... of the sun,) a scathing heat

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is thereby acquired-, which scorches the tender flowers, and other parts of plants.

But that blights are frequently no more than an inward weakness or distemper in trees, will evidently appear, if we confide? how often it happens, that trees against the same wall, exposed to the same aspect, and equally enjoying the advantages of sun and air, with every other circumstance which might render them equally healthy, yet very often are observed to differ greatly in their strength and vigour*, and as often we observe the weak trees to be continually blighted, when the vigorous ones, in the same situation shall escape very well; which must, therefore, in a great measure, be ascribed to their healthy constitution. This weakness, therefore, in trees, must proceed either from a want of a sufficient supply of nourishment to maintain them in perfect vigour, or from some ill qualities in the soil where *they* grow, or, perhaps, from some bad quality in the stock, or inbred distemper of the buds or cyons, which they had imbibed from their mother tree, or from mismanagement in the pruning, &c. all which are productive of distempers in trees* and of which they are with difficulty cured. Now, if this is occasioned by a weakness in the tree, we should endeavour to trace out the true cause; first, whether it has been occasioned by ill management in the pruning, which is too often the case; for how common is it to observe Peach-trees trained up to the full length of their branches every year, so as to be carried to the top of the wall in a few years after planting, when at the same time the (shoots for bearing have been so weak, as scarcely to have strength to produce their flowers: but this being the utmost of their vigour, the blossoms fall off, and, many times, the branches decay, either the greatest part of their length, or quite down to the place where they were produced; and this, whenever it happens to be the case, is ascribed to a blight.

Others there are, who suffer their trees to grow just as they are naturally disposed, during the summer season, without flogging of shoots, or disburdening their trees of luxuriant branches* by which means two, three, or four shoots shall exhaust the greatest part of the nourishment of the trees all the summer*, which shoots, at the winter pruning, are entirely cut out; so that the strength of the tree was employed only in nourishing useless branches, while the fruit branches are thereby rendered so weak, as not to be able to preserve themselves. The remedies to this evil shall be explained in the article of PRUNING Peach-trees, &c.

But if the weakness of the tree proceeds from an inbred distemper, it is the better way to remove the tree at first -, and after renewing your earth, plant a new one in its place.

Or if your soil be a hot burning gravel or sand, in which your Peach-trees are planted, you will generally find this will be constantly their case, after their roots have got beyond the earth of your borders^ for which reason, it is much more advisable to dig them up, and plant Grapes, Figs, Apricots, or any other sort of fruit, which may dwell in such a soil, rather than to be annually disappointed of your hopes; for, by a variety of experiments, it hath been found, that Apricots attract and imbibe moisture with a much greater force than Peaches and Nectarines -, and consequently, are better able to attract the nutritive particles from the earth, than the other, which require to be planted in a generous soil, capable of affording them a sufficiency of nourishment without much difficulty : and it is in such places we often see Peaches do wonders, especially if assisted by art; but as for the Vine and Fig-tree, they perspire very slowly, and are very often in an imbibing state (so that a great part of that fine racy flavour, with which their fruits abound when planted in a dry soil, is probably owing to those refined aerial principles, which are collected when in a state of respiration;) and therefore, as these trees delight not in drawing much watery nourishment from the earth, so they will much

better succeed in such a soil, than in one that is more generous: we should therefore always endeavour to suit the particular sorts of fruits to the nature of our soil, and not pretend to have all sorts of fruit good in the same.

But there is another sort of blight, against which it is very difficult to guard our fruit-trees*, this is sharp, pinching, frosty mornings, which often happen at the time when the trees are in flower, or while the fruit is very young, and occasion the blossoms or fruit to drop off; and, sometimes, the tender parts of the shoots and leaves are greatly injured thereby.

The only method yet found out to prevent this mischief, is, by carefully covering the walls, either with mats, canvas, reeds, &c. which being fattened so as not to be disturbed with the wind, and suffered to remain on during the night, and taking them off every day, if the weather permits, is the best and surest method that hath yet been found successful* which, although it has been flighted, and thought of little service by some, yet the reason of their being; not so serviceable as has been expected, was, because they have not been rightly used, either by suffering the trees to remain too long covered; by which means the younger branches and leaves have been rendered too weak to endure the open air, when they are exposed to it; which has often proved of worse consequence to trees, than if they had remained entirely uncovered, or by incautiously exposing them to the air, after having been long covered.

Whereas, when the covering before-mentioned has been performed as it ought to be, it has proved very serviceable to fruits; and many times, when there has been almost a general destruction of fruits in the neighbouring gardens, there has been a plenty of them in such places where they have been properly covered: and though the trouble may seem to some very great, yet, if these coverings are fixed near the upper part of the wall, and are fastened to pulleys, so as to be drawn up, or let down, it will be soon and easily performed -, and the success will sufficiently repay the trouble.

But there is another sort of blight that sometimes happens later in the spring, viz. in April or May, which is often very destructive to orchards, and open plantations, - and against which we know of no remedy. This is what is called a fire blast*, which, in a few hours, hath not only destroyed the fruit and leaves, but, many times, parts of trees, and, sometimes, entire trees have been killed by it.

This is supposed to be effected by volumes of traitparent flying vapours, which, among the many forms they revolve into, may sometimes approach so near to an hemisphere, or hemicylinder, either in their upper or lower surfaces, as thereby to make the beams of the sun converge enough to scorch the plants or trees they fall upon, in proportion to the greater or less convergency of the sun's rays.

The learned Boerhaave, in his Theory of Chemistry; observes, " That those white clouds which appear in summer time, are, as it were, so many mirrors, and occasion excessive heat: these cloudy mirrors are sometimes round, sometimes concave, polygonous, &c. When the face of the heavens is covered with such white clouds, the sun, shining among them, must, of necessity, produce a vehement heat; since many of his rays, which would otherwise, perhaps, never touch our earth, are hereby reflected to us: thus, if the sun be on one side, and the clouds on the opposite one, they will be perfect burning glasses: and hence the phenomenon of thunder.

cc I have sometimes, continues he, observed a kind of hollow clouds, full of hail and snow, during the continuance of which the heat was extreme; since, by such condensation, they were enabled to reflect much more strongly: after this came a sharp cold, and then the clouds discharged their hail in great quantities, to which succeeded a moderate warmth. Frozen concave clouds therefore, by*

** - their

" their great reflexions produce a vigorous heat, and the lime, when resolved, occelive cold." Whence (as Dr. Hides obferves) we fee, that blasts may be occuoned by the tvfkions of the clouds, as well as by tiic above-mentioned refraction of denfe ranparent vapours.

Againt thre enemy to fruits, &c. as hath been (aid, iKert-Hs no guard to our fruit-trees, nor any remedy to curi- it: bu: a; this more frequently happens in clofe plantations (where the ftagnuting vapoura from the earth, and the plentiful perfpi rations from the trees, arc pent in for want of n tVee nir to diiiip.itit and dilpel them i which arc often oblcved, in full weather, to attend in fo plentiful a manner, as iu be seen by the ma ved eye, but efpccially with reflecting ... !,J[u>, lo n to make a clear and diftintl: object become dim and tremulous,) than in thofe that are planted at a greater dilance, or arc not furrounded with hills or woods j this directs us, in the firft plant- Ingof kitchen-garde ns and o: ... allow i greater dilance between the trees, and to make choice of clear healthy littiarions, that the air may freely pals between the trees to diflipate thofe vapours before they arc turned into fueli volumes, whereby the circumambient air will be clear, and Ids fubjcil to injuries ; as allb the fruits which are produced in this clearer air, will be much better lafted than thofc that are furrounded with a thick rancid air ; for as fruits are often in a refpiring flare, thty confe- quently, by imbibing a p-irr of theft i ... re rendered cnide and ill-tafted, which is often cafe with a great part of our fruits in Elfgek

B i l T U M . Lin. Gen. Plant. 14. Clion ... Boerh. Ind. Morocarpus. Rupp. Strawberry

The CHARACTERS are,
It bath a tripartite fptrading impalmnt, whitb mancM the flower bath m petals, bet ww mina tbt length of lie impalafait, vrilb a dcz: mil. lit the center it finattd an eval peiHtdger: 1 porting tviojlyts, the length of tbt ftamm, xoith figma. The empaltatait afterward bitemti an t.: prtijttd capftdi, irxtudtHg out globular csmpriffid j fize of the ccpfule.

This genus of plants i* ranged in the fecond order cf Linrctus's firft cla&, intitidc Monandri^ Iligynio, the JowLr having but one itamina and two

- The SPECIES are,
 1. BLITUM {*Cepitetim*) capitellis fpicatis termii
 1 bm, LjpuL j. Elite •with fpikei terminated ly iuit btads. Chinopodio-nionis major. Boerh. (nd. »1(, 2. 91. Commonly called Strsic&rrty liltie, or xtrsvitxrrt Spimxh.
1. BLITUM {*Vsrgr.tunf*) capitellis fparfii literalibw Hort. Upfai. 3. Suit 'jHibfmeB btads growing ftautritgy from ibifidis eif tbt flouts. Chenopodio-mortis minor. Boerh. Ind. alt. I. 91. VSild Atripkx with a Mulberry fruit.

R BLIUM (*fm-iaricum*) fohis Craiogokritnu acme dntatis, capitellis iimplicibus kteralibus. Mitt w-ib triangular U/tvts fiuarffy ndatti, onJiitgU beads fncui- ing from the files cftbcftalki. Blitum tragUerum inaii- nium [x]lyfpermum. Ammm. Kuth.

The firft tort grows naturally in Spain and Pm but hath been long prdi-rved in the En] ... This is an annul ptW, which liath kaves lam like thofe of Spinach; the Lalk rifesabout twofeetand

K a half hi^h, the lower partof whkh ii gsmfted mth leaves of the (hape with thofe at bottom, but Jmaller; the upper part of the (talk hath flowed toming out in fmall heads at even' joint, and is terminated ly a im-ilt chiller of the lame : aiitr the flowers ire part, die little heads fyvll to the 6w of Wood ... ries, and when ripe have the fame apptaranw ; bring very fuculcnt. and full of 11 purple juice, which fhiiis the hinds of thiofe wltio bruife them, of a deep purple colour.

The fecond fort grows nawrally in the fourth.' France and Italy. Thisfeldom grows more than on feet high, with fmaller leaves than th ... of the liuuc lhape i the flowers art- produced

of he leaves, almoft the iengtli of the ftdfc, which art fmall, MIA dolleiled in little hc.ids, will. h are fhaped like thiuf of ^he fir^, but fm a [lor and not fo deeply coloured.

The feeds of die third fort were fen' me by tlie lace. Dr. Aini-ian, wiw ma profitfibr of ht.uly at Beter- tiurf. This rLI near three feet high; the leaves are trtangiilar, ending in very acute points, as do ailo the indenture* on the edges of the k«vct The Row- ers conle our from the wines of the leaves in I small heads, which are fuccededThy be: l ie) of the Ihapc and colour a* rhoie of the Eric, but fmaller. This lbrt difil-rs from the iirl in the Hup; and inden- tures rf die leaves, and in having leaves placed Ix- tween l the berries rhe wi le length ... fULK, which is nut terminated by heads as the firft, but hath leaves above the heads.

Til-fi- IK all of them annual timn, which will drw thrir leed; if permittcil, and tin- phnts will come up in plenty the Mowjn] ... either of the forts art foivn in March or April, upon a bed of common cartli, in open fituatwn, !K plants will come up in a month or live weclu alitr l and, if they are to remain in the place where they ;irc foivn, will require no other care but to keep them dear from weeds, and to thin them out, b is to leave them fix oi eight in bta apjirt; and in July the plants will begm to (hew thir herrris, when thty will make a pretty appearance. Bui many people tron- piant rlicm into the bortkn of the flow- gardens, and othiers plant them in pots, 10 have them ready far removing to court-yards, or to place upon low walls, among oilier annual flowers, to adorn thote

plants. When theft plants are defigned to be removed, they (liuuld be tranfphnted before they (hoot up thir How* er-ftems, for they will not beir (ranp]anting well af- terward: am! if they ore pUnted in ;>oti, they will require to be dul^ watered in dry weather, othenvife they i i' will It nit, and not grow to any for; and, as the (lower-tlcnis advance, they fiuould w supported by iticksi for if they are not, the brancies will f,i] to the ground, when the berries aregtown pretw

See LAPATHVM.
 BOC - O N I A.

This plant was fo called after the Reverend Paul Boc- cone, of Sicily, who has published fame curious book* of botany.

The CHARACTERS are,
The fewer hath tin anpatmmt compufid cft'jus c-jat, eb- tufty (WKCvt liai'ti l it butb four narrow btiah^ with agrt&tnwnter f sfvryJhorJlatuhus^ rrtmnyfy friil fii -jihkb hkh the ldnghth h>fficiit mp'kltint. la tbt tatter is ... ztrmen, atarail'at hlb en&i fuppariing a Jingle jtylt, which is iijfid at fl ... trotCBid fy a ftstgU jUgme. TivetrnKn afterward, fa- csmtt ax ova! fruit, nr.traSti at Utb ends, end a lit tit tentprfed, bafing cft all, full cfpu \, including a /i'ik rcutLA feed.

This genus of plants is ranged in tin- fn-ft fi-aion of Linncc-ii's thirteenth clafs, intitidc Polyandrii Mti- nogynia, the nower having many ftwnini an

There is but one SPECIES of this genus at priint known, whi

Botcos-ui. [FnUefcas.) Lin. Sp. Flint 505. Bocronj racemola, ij ... Plum. Nov. Gen.

Thui pbint is called, b^ Sir Hanii Sblnc, in his Na- tural Hittory of juiiaica, Cheidonium majui arbo- reum, fohis qutrtnifini or GreatrTrce Cckidixt wlt/ Oak lartan.

It is very common in Jamaica, find feveral other patta of America, whirc it ^row! to the hcglt of ten or twelve feet, having a ftain trunk as large as 3 min'i arm, whici is covcrd ! with a white fawnli bark. Al the top it divides its to levers] brancie*, on which [lie leaves arc pi-...i ntemai ... ICEVCI arc eight or nine ... i^ng, and five r. ... Ueplv

BOE

(*Boerhaavia*), fomtdmc! alnwft to the mid-rib, arid arc til a tint glaucous colour; *fa* rliat this plant makes a beautiful variety tinning ortu^ OTOk plants in tin. (hive. Thewhule plane abounds with a yellow juice like the greater CcWdiot, which ij of an acrid nature i fo that it is ufed by the inhabitants of America, to take off warts, anJ fpor from the eyes.

It is propagated by feeds, which ihotild be (own in a pot filled with light frvtil canh, early in the fpring, and plunged into a hot-bed of tanners bark, obforving to water it now anil then gently, otherwise the freds will not grow. When the plants are conic up, they lboult! be each tr;iiilp;i;ictd into feparate final pots filtt-H with light (kndy earth, and plunged into the hot-bed again, ob&rning to made the eUEs in the heat of the day, until the plants have *uken* ruot. They muft be all'j gentry wKcicU, bw it (hould be done (piringly while they are young i for their Htmi being very tender, and full of juice, will rot, if they receive too much moifture ; but after their ferns are become woody, they will require it often, especially in hut weather; when alii) they fbould have a large fharc of air, by raifing the glaffes of the hot-bed. The plain-, in two montlis after crarJpUnring, will have filled theft final pots with their roots •, therefore they fhould be lhaken out of "thorn, and planted into pou one lifie brger, lilled with light frch earth, and plunged into the bark-love, where thcjafliouid have igood (hire of freih air in warm weather. With this management I have railed theft Jibuti upwards of two high in Dne Csfon, which weie alto very frong in thicir fctmE: they cnuit k' ctmllandy kept in the ftovc, being too tender IO thrive in this country in any other fituation. This plant has (lowered in the phylu" garden at Chclfea, anil perfected iieds; but if it were not to flower, tje Gngular brauty of die plant renders it worthy of a place in every curious colle&tion of plant.) \ and it fcerts the Indians were very fond of it, tor Hernandez tells us, the Indian kings planted it in their gardens.

BOE. RHA AVIA. This genus of plants was fo named by Monf. Vaillant, profeflor of botany at Paris, in honour of the famous Dr. Boerhaave, v. I. *Boerhaavia* pro&fibr of botany, divuiltr, -and phyflic, in fhivnivtrfity of Leyden.

The OfiARI*CTEB5 are,

•*The Jlmvcr bath no tmpokmait, and hi out btl-fimptd pffil, which ii pcmexgidar and txtire. Is halb in feme fpiciti ext, and in othri two jhort Jtamiim, trewiedlya dotbUghbularfummit. Tbegtrmen w flgaldt btlKti tht receptacle., fitpparting a Jheri jlader JtyU, with a tid/ty-/btipedfignna -,ibt germen afterword btwwts a Jitq eb-tung feid, having us ti/aer.*

This pemis oi planfi u ranged in the firft fusion of Linn-ciiVs firil dafc, intitlej Mon:uitlri.i Monogynia, the flower having but one ftamina aiitl a Tingle ftyfe.

The SPICKS arc,

BOERHAAVIA (Ertela) caude ereflo glabra. Lin. Sp. Plant. j. *Boerhaavia vilb unritiSjlilili. Botii* *Sulanifolia cre&a glabra, Jlnribus carncis laiti* difpofiris. Houft. MSS.-*

i. **BOEKHAAVIA (Diffufa)** caule diffufo, Lin. Sp. Plant. 3, *Bowhixvia-siib a diji'tiftd jlali. BoerhaaviLS Solanifolia major. Vail. Def. 50-*

->. **BOERHJ(AVIA (StilHifau)cauleftaiiilcentL-floriln^ dian- ilris. Lin. Sp. Plane 3. Bynbaavia •with a climbing folk. Boerhaavu ilinea fb&o kandens, lloribus pallide IBWII iiiiyorilius in umbellx mod um difpoitis firmine aifero. Hoult. MSS.**

4. **BOERUA (Cn. • •) fofill ovatis, floriblis laterali- bu! compatiis, caule hirfuto procumbenc. Boerbaavia with oval Itavn, flowers tooting from tht Tilings of tht Iiova in rfofc beads, and a bony trailing jielk. Boerhaavia Solanitolia pnrumhens & hirluu floribus cocci- nets compacts. Houft. MSS.**

The firft (ore was difcovered by the lore Dr. Hoof loun, at La VeraCrUZ, in 1731. This riles wiil Ln upright (bvooth Ibilc, two fet high, and at each [1 hath rwo oval pointed leaves growing 0] ; ;ofitv,

BOM

upon foot-fUlks, an inch long, trf i which col>ur on their under lidv. At the joints, which in- aiunder, cor *U iitJt- branchei.gr/twinf? crcS ; theft, as idlo the brgc lljlk, are termi • and by lccae panicles of llell; coloured flowers, whidi -ir_c eECH Succeeded by oblong plurimous feeds.*

The leets of die fccordt inrtwercent me by tli* fame cenileriari from Jamaica, where i: niturally grows.

This itnds out many difful-d (talks a foot and a half or two fuet long, gjmillietl widi fmuil roundifh leaves at each joint. i the flowers ^now very fcatteringly upon long brandling ii>ot-lljlk*. from the wings of the leavt-s, as alii / at the entt of il.: branches, which are pf »psl red colour, aad in luccendei ty le<di like the tortner.

The third lort wai fent me from Jamaica with tlic former. This tends ut li-v.-nl ftalks from the mm, which divide into many hram lu-f, aml trail ewer wlun- ever plants grow near ihem, and lili- mtfel he ght of fivt or fix fet t, ptrffined with luart-ihaped le'avcs, growing by jumi*. M each joint ujmn (ong foot- ltdks, which are of thr colour ind confitenc of thnt of tin- greater Chickwetd. Tfitr rlnwers grow in looli: uiiilieis at the extremity of the blanches, which are yellow, and are iuecteed by fnall, obhmg, VICEHIS in .

The fourth fort was Inn me fn<n Jamaica with the two former : thh rends (MH many trailing hairy (talks, <hkh divide into linaller branches, garnidied with oval leaves at every joint; and at the mtwi or the leaves come out the naked t'00l-ftaiks, Iiitaining a fmall clo&head of lcarlei Bowcn, wiiichaiown fugacimis., *tobAom* landing mom ihw hall a day before thurir jietals ilrap t ih.ii as. h;:;L, [I i-n-i oblong feeds.

The firft, fecund, and fourth forts arc an nun I p Lints, which decay in autumn, but thu third fort is pttm- nial: they are all lender planK, fo will not thrive in the oijen air in lingland; they arc prdrtgatad by feeds, which muft be fuvn on a hot-bed in the forfak and when the plants are fit to be nenwvad, they (hJuM be cachplanted in a lnaU por and J)lung<l into the hot- bed, and treated as other tender cuotic plants. VV hea iK-y are grown 100 tall to remain under a common frame, a plant or two of each ftw Omrid tv placed in the ftove; the other mtv be tnniid out of ihcpots, I planted in a warm borjer, where, if the (calbt proves warm, they will jjerfekt I' . !,uf u thefe arc fubject to fail in col weather, in p< in ihe Itove will always ripen thier feet; In tutum, the third frnt may lie prelevrtti in a w.uni ftove twu nr three years.

BOMUAX. Lin. Gen. Plant. 30. I iba. Plum. Nov. Gen. j * . Silk Cotton •

The CHARACTERKS ate,

*It belb a ptrmatwit tnpn/emcmt ttf out liaf, wbki is l/elt-Juipct, ertfl, exdjia r' <H>uf. Jid and Jprraditir, the ft nusc*w. It batmany aml-jhaptidJftrmixt, lw; btlbi pelcl, crowned teiib chto>% in. *r-tdfionitt. h tbt < m- ttr h fisunled the round gi the Ungtb cfibtfta min., i i a •> m, , | the mp- polmtm afieromi itonn a large, oblong, tubercled cap/nit, bevngjk (*, * art lirjufu.^ containing mnxv reui . wlfprtd in a Jifi tviiw*Miti fixtd to aj&ve-c TrIM gentM of phnts ii ran^ I in the fifth •order of Lin!: •at's fixteenth clafs, united Monadelphus Polyandritt, ihe flower li. vng many ftyles and ftamina joined (o a column,*

The SPECIES > uv,

1. **Bo-** *ax (Cela) floribus polyandris, foliis quinatis. Jacq. Amer. 2\ Siii* *Celtis- tree which Jowers late* **nun** *foliis, and leaves with five lobes. Cela* *viticia foliis caudice aculeato. Plum. Nov. Gen. 41.*

2. **BOM** *ax (Pentandria) floribus pentandris. Jacq. A3* *incr. if>. Silk Cotton-tree which Jowers late* *Jeitja* *viticia foliis caudice glabro. Plum. Nov. Gen. •a.*

B O M

3. BOMB AX (*Villofus*) foliis quinque-angularibus villosis, caule geniculato. *Silk Cotton with five-cornered hairy leaves, and a jointed stalk.*

The first and second sorts grow naturally in both Indies, where they arrive to a great magnitude; being some of the tailed trees in those countries; but the wood is very light, and not much valued, except for making of canoes, which is the chief use made of them. Their trunks are so large, as when hollowed, to make very large ones. In Columbus's first voyage it was reported, there was a canoe seen at the island of Cuba, made of the hollowed trunk of one of these trees, which was ninety-five palms long, and of a proportional width, which would contain a hundred and fifty men: and some modern writers have affirmed, that there are trees of these sorts now growing in the West-Indies, so large, as not to be fathomed by sixteen men, and so tall as that an arrow cannot be shot to their top.

These trees generally grow with very straight stems, those of the first sort are closely armed with short strong spines, but the second hath very smooth stems, which in the young plants are of a bright green, but after a few years, they are covered with a grey, or ashy-coloured bark, which turns to a brown as the trees grow older: they seldom put out any side branches till they arrive to a considerable height, unless their leading shoot be broken or injured. The branches toward their top are garnished with leaves composed of five, seven, or nine oblong smooth lobes, which are spear-shaped, and join to one center at their base, where they adhere to the long foot-stalk. These fall away every year, so that for some time the trees are naked, and before the new leaves come out, the flower-buds appear at the end of the branches, and soon after the flowers expand, which are composed of five oblong purple petals, with a great number of stamens in the center; when these fall off, they are succeeded by oval fruit larger than a swan's egg, having a thick ligneous cover, which, when ripe, opens in five parts, and is full of a dark (hort cotton, inclosing many roundish seeds as large as small Pease.

The down which is inclosed in these seed-vessels is seldom used, except by the poorer inhabitants to stuff pillows or chairs, but it is generally thought to be unwholesome to lie upon.

These two species have been supposed the same by many writers on natural history, who have affirmed, that the young trees only have prickles on their trunks, and as they grow old, their trunks become smooth; but from many years experience I can affirm, that the seeds which have been sent me of the two sorts, have always produced plants of the different kinds for which they were sent, and continue the same in plants, which are more than twenty years growth.

There was a few years past a fine plant of another sort in the garden of the late Duke of Richmond, at Goodwood, which was raised from seeds that came from the East-Indies. The stem of this was very straight and smooth; the leaves were produced round the top upon very long foot-stalks, each being composed of seven or nine long, narrow, silky, small lobes, joined at their base to the foot-stalk, in the same manner as those of the two former, but they were much longer, and reflexed backward, so that at first sight it appeared very different from either of them. This may be the species, titled by Jacquin, *Bombax floribus pentandris, foliis septenatis*. Amer. 26.

The third sort was sent me from the Spanish West-Indies, where it grows naturally, but I do not know to what size; the plants which have been raised here, have soft herbaceous (stalks very full of joints, and do not appear as if they would become woody, for the plants of several years growth have soft pithy stems. The leaves come out on long hairy foot-stalks toward the top of the plants; these have the appearance of those of the Mallow-tree, but are larger, and of a thicker consistence; on their under

B O N

side are covered with a short, brown, hairy down, and are cut on their edges into five angles. These plants have not as yet flowered in England, nor have I received any information what flower they produce, but by the pods and seeds, it appears evidently to be of this genus. The down inclosed in these pods, is of a fine purple colour; and I have been informed that the inhabitants of the countries where the trees grow naturally, spin it, and work it into garments, which they wear without dyeing it of any other colour.

I received a few years since, a few pods of another sort from Panama, which were not so large as those of the common, but were rounder. The down of these was red; but the plants raised from the seeds were like those of the third sort, & not to be distinguished from them, so I doubt of their being distinct species. I also received some seeds from Siam, which produced plants of the same kind, so that these trees may be common to many of the hot countries.

The plants are propagated by seeds, which must be sown on a hot-bed in the spring; if the seeds are good, the plants will appear in a month, and those of the two first sorts will be strong enough to transplant in a month after, when they should be each planted in a small pot, filled with fresh loamy earth, and plunged into a moderate hot-bed of tanners bark, being careful to shade them from the sun till they have taken fresh root; after which they should have a large (share of air admitted to them when the weather is warm, to prevent their being drawn up weak; they must also be frequently refreshed with water, which must not be given in large quantities, especially the third sort, whose stalks are very subject to rot with much moisture. In this bed they may remain till autumn (provided there is room for the plants under the glasses) but if the heat of the bed declines, the tan should be stirred up, and fresh added to it; and if the plants have filled the pots with their roots, they should be shifted into pots a little larger; but there must be care taken not to over-pot them, for nothing is more injurious to these plants, than to be put into large pots, in which they will never thrive. In the autumn they must be removed into the bark-stove, where they must constantly remain, being too tender to thrive in this country in any other situation. In winter they must have but little wet, especially if they call their leaves; but in the summer they should be frequently refreshed with water, and in warm weather must have plenty of fresh air admitted to them. With this management the plants will make great progress, and in a few years will reach the glasses on the top of the stove, especially if the building is not pretty lofty.

The plants make an agreeable variety in a large stove where they have room to grow, their leaves having a different appearance from most other plants; but as they are several years old before they flower in the countries where they grow naturally, there is little hopes of their producing any in England.

B O N D U C. See GUILANDINA.

B O N T I A. Lin. Gen. Plant. 709. Plum. Nov. Gen. 23. Hort. Elth. 49. Barbadoes Wild Olive.

The CHARACTERS are,

// bath a small erect empalemt, which is quinquefid and permanent. The flower is of the ringent kind, having a long cylindrical tube, gaping at the brim; the upper lip is erect and indented, the lower lip is trifid and turns backward. It hath four awl-shaped stamens, which are as long as the petal, and incline to the upper lip, two of them being longer than the other, having single summits. In the center is situated the oval germen, supporting a slender style the length of the stamens, crowned by a bifid obtuse stigma. The germen afterward becomes an oval berry with one cell, including a nut of the same form.

This genus of plants is ranged in the second section of Linnæus's fourteenth class, intitled *Dynamia Angiosperma*, the flower having two long and two short stamens, and the seeds are included in a cover.

The SPÆCES are,
 I. BONTIA. (*Dapnoides*.) Lin. Sp. Plant. *Barbadoes Wild Olive*. *Bontia arborefcens thymelaeae facie*. Plum. Nov. Gen. 32.

z. BONTIA (*Gertmanns*) foliis oppofitis, pedunculis fpi-catis. Lin. Sp. Plant. 891. *Bontia with leaves growing oppofite, and fpiked foot-ftalks of flowers*. Avicennia. Flor. Zeyl. 57.

The firft fort is greatly cultivated in the gardens at Barbadoes, for making of hedges, than which there is not a more proper plant for thofehot countries, it being an Evergreen, and of quick growth. I have been informed, that from cuttings (planted in the rainy feafon, when they have immediately taken root) there has been a complete hedge, four or five feet high, in eighteen months. And as this will Very well bear cutting, it is formed into a very clofe thick hedge, which makes a beautiful appearance. In England it is preferred in ftoves, with feveral curious plants of the fame country. It may be raifed from feeds, which fhould be fown on a hot-bed early in the fpring (that the plants may acquire ftrength before winter.) When the plants are come up, they muft be tranfplanted out each into a feparate half-penny pot filled with light frefh earth, and plunged into a moderate hot-bed of tanners bark, obferving to water and fhade them until they have taken root; after which they muft have a large fhare of air in warm weather, and be often refrefhed with water. In winter they muft be placed in the ftove, where they fhould have a moderate degree of warmth, and but little water during that feafon. In fummer they muft have a great fhare of air, but will not do well if expofed abroad, efppecially in cold fummery; fo that they fhould remain in the ftove among plants which require a great fhare of air, which may be admitted by opening the glaffes in very hot weather. With this management, thefe plants will produce flowers and fruit in three or four years from feed. They may alfo be propagated by cuttings, which fhould be planted in the fummer. They muft be put into pots filled with light rich earth, and plunged into a moderate hot-bed, obferving to water and fhade them until they have taken root; after which they muft be treated as hath been directed for the feeding plants. Thefe plants being evergreen, and growing in a pyramidal form, make a pretty variety in the ftove amongft other exotic plants.

The fecond fort is fuppofed to be the Anacardium Orientale; but whether this is the true fort, I cannot determine, having feen only the feeds of that plant, which are frequently brought to Europe for marking nuts; and thofe have been too old to grow, fo I cannot take upon me to determine how far Mr. Jacquin is right.

BONUS HENRICUS. See CHENOPODIUM.

BORBONIA. Lin. Gen. Plant. 764.

The CHARACTERS are,

It hath a turbinated empalement of one leaf cut at the top into five acute fegments, which are ftiff, pungent, and about half the length of the petals. The flower hath five leaves, and is of the butterfly fhape. The ftandard is obtufe and reflexed. The wifigs are heart-fhaped andjherte than theftendard. The keel hath obtufe lunulated leaves. It hath nine ftamina joined in a cylinder, and one upper ftanding fingle, turning up its point. Thefe have fmall fummits. In the center isftuated an awl-fhaped germen, fupporting ajhortfyle, crowned by an obtufe indented ftigma. The germen afterward becomes a round pointed pod terminated with a fpine, having one cell, inclojing a kidney-fhaped feed.

This genus of plants is ranged in the third order of Linnasus's feventeenths clafs, intituled Diadelphia Decandria, the flower having ten ftamina, nine of which are joined, and the other Hands feparate.

The SPECIES are,

j. BORBONIA (*Lanceolata*) foliis lanceolatis multinerviis integerrimis. Lin. Sp. Plant. 707. *Borbonia with entire fpear-fhaped leaves having many nerves*. Genifta Africana irutefcens rufci nervofis foliis. Rail Hift. 3. 107.

2. BoRBONIA (*Cordata*) foliis cordatis multinerviis integerrimis. Lin. Sp. Plant. 737. *Borbonia with entire heart-fhaped leaves having many nerves*. Spartium Africanum frutefcens rufci folio caulem amplexante. Com. Hort. Amft. 2. 195.

3. BORBONIA (*Trinervia*)¹ foliis lanceolatis trinerviis integerrimis. Lin. Sp. Plant. 707. *Borbonia with entire fpear-floped leaves, having three veins*.

Thefe plants grow naturally at the Cape of Good Hope, from whence I received their feeds. In the natural place of their growth, they rife to the height often or twelve feet; but in Europe they feldom are more than four or five, having flender ftems divided into feveral branches, which are garnifhed with ftiff leaves, placed alternately; thofe of the firft fort are narrow, long, and end in a fharp point. The flowers cctne out from between the leaves at the end of the branches in fmall clutters; thefe are yellow, and fhaped like thofe of the Broom. It flowers in Auguft and September, but doth not perfect feeds in England.

The fecond fort hath broader leaves than die firft: the ftalks of this are flender, covered with white bark. The leaves embrace thefe at their bafe, where they are broadeft, and are terminated by fharp points like thofe of Kneeholm, or Butchers Broom. The flowers are produced in fmall clutters at the end of the branches, which are the fame fhape and colour as thofe of the former, but larger. This flowers at the fame time with the former, but never produces feeds here.

The third fort hath ftronger ftalks than eitlier of the former, garnifhed almoit their whole length, as arc alfo the branches with ftiff fpear-fhaped leaves, having three longitudinal nerves on each; thefe are placed clofer together than thofe of the other fpecies. The flowers are produced at the extremity of the branches, each (landing on a feparate foot-ftalk: they are of the fame fhape and colour with the former, but larger.

As thefe plants do not perfect their feeds in this country, they are with difficulty propagated here. The only method by which I have yet fucceeded, hath been by laying down their young fhoots; but thefe are commonly two years before they put out roots fit to be feparated from the old plant. In laying of thefe down, the joint which is laid in the ground fhould be flit upward, as is praftifed in laying Carnations, and the bark of the tongue at bottom taken off. The beft time to lay thefe down, is in the beginning of September; and the fhoots moft proper for this purpofe, are thofe which come out immediately, or very near the root, and are of the fame year's growth, not only from their fituation being near the ground, and thereby better adapted for laying, but thefe are alfo more apt to put out roots than any of the upper branches.

But where good feeds can be procured, that is the more eligible method of propagating the plants; for thofe raifed from the feeds make the ftraiteft plants, and are quicker of growth. When good feeds are obtained, they fhould be fown in pots filled with light loamy earth, as foon as they are received; which, if it happens in the autumn, the pots fhould be plunged into an old bed of tanners bark, under a frame, where they may remain all the winter, being careful that they are fecured fromfroft, and have not much wet. In the fpring, the pots fhould be plunged into a hot-bed, which will bring up the plants in five or fix weeks. When thefe are fit to remove, they fhould be each planted into a feparate fmall pot, filled with the like loamy earth, and plunged into a moderate hot-bed, obferving to fhade them until they have taken frefh root, as alfo to refrefh them with water, as they may require it. After this they muft be degrees be inured to the open air, into which they fhould be removed in June, and placed in a fheltd ftuation, where they may remain till autumn, when they muft be removed into the green-houfe, and place J Where they may enjoy the air and fun \ during the

winter

winter feafon, thefe plants muft be fparingly watered; but in fummer, when they are placed abroad, they will require to be frequently refrefhed, but muft not have too much water given them each time.

Thefe plants make a pretty variety in the green-houfe in winter, and as they do. not require any artificial heat to preferve them, they are worthy of a place in every garden where there is conveniency for keeping them.

B O R D E R S. The ufe of thefe in a garden, is to bound and inclofe parterres, to prevent them being injured by walking in them: thefe are commonly rendered very ornamental by means of the flowers, ihrubs, &c. that are planted in them.

Thefe ought to be laid with a rifing in the middle, becaufe, if they are flat, they are not agreeable to the eye.

As for their breadth, five or fix feet are often allowed for the largeft, and four for the leffer.

Borders are of four forts: thofe are the moft common, that are continued about parterres without any interruption, and are wrought with a gentle rifing in the middle, like an afs's back, and planted with flowers.

The fecond fort of borders is fuch as are cut into compartments, at convenient diftances, by fmall paffages -, and being alfo raifed in the middle, as before-mentioned, are likewife fet off with flowers.

The third fort is fuch as are laid even and flat without flowers, having only a verge of grafs in the middle, being edged with two fmall paths, raked fmoother and fanded. Thefe are fometimes garnifhed with flowering fhubs, and flowers of large growth, or with vafes and flower-pots, placed regularly along the middle of the verge of grafs.

The fourth fort is quite plain, and only fanded, as in the parterres of orangery, and is filled with cafes ranged in a regular order along thofe borders which are edged with Box on the fides next to the walks; and on the other, with verges and grafs-work next the parterre;

Borders are either made ftrait, circular, or in cants, and are turned into knots, fcrolls, and other compartments.

Florifts alfo make borders either along walks, or detached, and in thefe they raife their fineft and choicett flowers. Thefe are frequently encompaffed with border-boards painted green, which make them look exceeding neat.

But, in large parterres, this is not to be expected, fince, if they be ftocked with flowers fucceeding one another in their feveral feafons, it is fufficient, fo that nothing appears bare and naked.

It is ufualto difcontinue the borders at the ends next to the houfe, that the embroidery and rife of the parterre may not be hidden by the fhubs and flowering plants, and that the defign may be better judged of.

Since the modern way of gardening has been introduced in England, all the French tafte of parterres, fcroll-borders, and fret-work in Box, has been juftly banifhed our gardens: therefore I have only mentioned them here, to expofe the tafte of thofe architect-gardeners, who have no idea of the noble fimplicity of an open lawn of grafs, properly bounded by plantations, but, inftead of this, divide the part of the garden near the houfe, into various forms of borders edged with Box, with fand, fhell, or gravel-walks leading about them, by which the ground is cut into, many angles, fcrolls, &c. which is very hurtful to the eyes of a judicious perfon: therefore, where flowers are defired, there may be borders continued round the extent of the lawn, immediately before the plantations of fhubs, which, if properly planted with hardy flowers to fucceed each other, will afford a much fapre pleafing profpect than the ftiff borders made in fcrolls and compartments, after the French tañner, can poffibly do.

Thefe borders may be made fix or eight feet wide, in proportion to the extent of the garden and fize of

the lawn: for a fmall lawn fhould not have very broad borders, nor ought a large lawn to be bounded by fmall borders; fo that a due proportion fhould be always obferved in the laying out of gardens.

B O R R A G O [or Borago, which fignifies much the fame as courage, becaufe it is a good raifer of the foirit.] Borage.

The CHARACTERS are,

The empalment is divided into five parts at the top, and is permanent. The flower is of one leaf, having afhort tube, fpread wide open above, being divided into five acute fegments at the brim. The chaps of the flower are crowned by five prominences, which are obtufe and indented. It hath five fiamina which are joined together crowned by oblong fummits. It hath four germen fituated in the center, and a Jingle ftyk longer than the fiamina, fupporting a Jingle ftigma. The four germen afterward become fo many roundijh rough feeds, inferted in the cavities of the receptacle, and included in the large fwollen empalement.*

This genus of plants is ranged in the firft fedtion of Linnseus's fifth clafs, intitled Pentandria Mono* gynia, the flower having five ftamina and a fingle ftyle.

The SPECIES are,

1. **BORRAGO** (*Officinalis*) foliis omnibus alternis, calycibus patentibus. Hort. Upfal. 34. *Borage with all the leaves grafting alternate, and a fpreading flower-cup** Borrago floribus cseruleis. J. B.
2. **BORRAGO** (Ön*) calycibus tubo corollas brevioribus, foliis cordatis. Hort. Cliff. 45. *Borage with a flower-cup Jhorter than the tube of the flower, and heart-Jhaped leaves.* Borrago Conftantinopolitana flore reflexo cseruleo calyce veficareo. Tourn. Cor. 6.
3. **BORRAGO** (*Africana*) foliis ramificationum oppofitis petiolatis, calycinis foliolis ovatis acutis ere&is. Lin* Sp. 197. *African Borage with leaves growing appoiteto the branches upon foot-ftalks, and the leaves of the empalement oval, pointed, and ereff.* Cynogloffium Boraginifolio & facie iEthiopicum. Pluk. Aim.
4. **BORRAGO** (*Indica*) foliis ramificationum oppofitis calycinb foliolis fagittatis. Lin. Sp. Plant. 137. *Borage with oppofite leaves on the branches, and fpear-Jhaped leaves to the flower-cup.* Cynogloffoides folio caulem amplexante. Ifnard. A& Scien. 1718.

The firft is the common Borage, whose flowers are ufed in medicine, and the herb for cool tankards in fummer. Of this there are three varieties, which generally retain their difference from feeds; one hath a blue, the other a white, and another a red flower; and there is one which hath variegated leaves. Thefe variations have continued feveral years in the Chelfea garden, with very little alteration; but as they do not differ in any other refpect frogi the common, I have only mentioned them as varieties.

This is an annual plant, which, if permitted to fcatter its feeds, the plants will come up in plenty without care; the feeds may alfo be fown either in fpring or autumn, but the latter feafon is preferable, on a fpot of open ground where the plants are defigned to remain; when the plants have obtained a little ftrength, the ground fhould be hoed to deftroÿ the weeds, and the plants muft be cut up where they are too near each other, leaving them eight or ten inches afunder. After this they will require no farther care, unlefs the weeds fhould come up again; then the ground fhould be a fecond time hoed over to deftroÿ them, which, if well peformed, and in dry weather, will clear the ground from weeds, fo it will require no more cleaning till the Borage is decayed, the plants which are raifed in the autumn, will flower in May, but thofe which are raifed in the fpring, will not flower till June; fo that where a continuation of the flowers are required, there fhould be a fecond fowing in the fpring, about a month after the firft *, but this fhould be on a fhady border, and if the feafon fhould prove dry, the ground muft be watered frequently, to bring up the plants 5 this latter fowing will continue flowering till the end of fummer.

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The second fort was brought from Constantinople, which it grows naturally. This is a perennial plant, having thick fleshy roots, which spread under the surface of the ground, and is thereby propagated with great facility. The stems out many oblong heart-shaped leaves from the root, without any order, having lone hairy foot-stalks; from the lower part of the stem, which is more than two feet high when fully grown, having at the joints a fleshy leaf without a foot-stalk. The upper part of the stem is terminated by a pale blue colour, and the flowers are small, and are left naked. After the flowers are fallen, the four germs become so many rough seeds, smaller than those of the common Borage. It flowers in March, and the seed ripens in May. When the Borage first appears, the seeds fall into a hole, and are of such a nature, that they often spread open before the seed is six inches high; but as the seed advances, they divide into many loose spikes.

It is easily propagated by the root, which may be parted in the autumn: they should have a dry soil and a warm situation, for as the flowers appear early in the spring, so when they are much exposed, they are often killed by the frost, and thereby prevented flowering. If the plants are planted in dry rubbish, they will not grow too luxuriant, so will not be in danger of rotting. Some of the seeds of this have straggled into the joints of an old wall in the Chelsea garden, where the plants have grown without care for some years, and are never injured by cold or heat.

The third and fourth forts grow naturally in Africa; the first is an annual plant, which rarely rises above high, leaving rough stalks; those of the third fort are fit on by pairs opposite, with (short foot-stalks, but the leaves of the fourth chiefly embrace the stalks at their base; the Bowers come out on short foot-stalks from the wings of the stem, and are at the top of the stalks. Those of the third fort are white, and those of the fourth a pale flesh colour. The first is seldom cultivated but in botanic gardens for variety.

The seeds of these plants (which are sown in a hot-bed in March, and when the plants are strong enough to be removed, they should be each planted in a small pot filled with light earth, and plunged into a new situation to bring them; and when they are well rooted, they should be transplanted into a larger pot, and when they are grown up weak, and fall before the seeds are ripe.

BOSEA, Yervamora, or Shrubby Golden-rod. The Character is, that it has five ream Ubb, equal to the cereal; five aul-ftit; and the Roman xgtr than tin mpaUmfj tmimaa l figh fummiri; ex l-x eirbs, evn/ pcutndgen; if ibfi upen is. It is a small plant, which grows in the fields, and is very common in the mountains of the Alps.

The genus of plants is ranged in the first section of Jussieu's first class, under the Vntaidria Diognia, the flower having five petals and two stamens. We have but one species of this plant, viz. **Bosha**, (Yervamora.) Lin. Hort. Cliff. 4. Arb. Tbxeci lora Cacardilla, fringie carula folia, purpuratis vena, fructu monoepetalo Yervamora Hispanorum. Pluk. Phys. Cosemopolit. called Golden-rod. This plant is a native of the islands of the Canaries, and has also been found in some of the British islands in America, but was first brought into England from the Canaries, and has been long an ornament of the English gardens; but I have never seen any of these plants in flower, though I have had many old plants under my care more than forty years: it makes a pretty flower, which grows

with a stem as large as a miti. The branches came out very irregular, and strikingly different from the former, which should be fixed every spring to prevent the heads of the plants in any tolerable order: they retain their leaves till towards the spring, when they fall away, and new leaves are produced soon after: they are propagated by cuttings planted in the spring and will plant in the open air through the year, in this country.

BOSQUETS are little groves; so called from Bof-L'nii J, Italian, which is a diminutive of Buteo, a wood or grove.

They are found in gardens, which are formed of trees, shrubs, or tall large growing plants, planted in quarter; and are either disposed regularly in rows, or in a more wild or accidental manner, according to the fancy of the owner: these quarters are commonly surrounded with Evergreen hedges, and the entrance formed into regular porticos with Vews, which are by far the best and most useful for the purpose. In the inside of these quarters may be made some walks, either straight or winding; which, if the quarters are large, should be five or six feet broad, and kept well mowed and ruffled, which will render the walking much easier and pleasanter than if the walks are only the common earth; which in smaller quarters cannot be otherwise, but if the trees are close, and the walks narrow, so as to be shaded and over-hung by the trees, the walks will not grow.

The quarters may be also furrowed with hedges of Unit, Elm, Hornbeam, or Beech; which should be lit; and if the quarters are large, should be five or six feet broad, and kept well mowed and ruffled, which will render the walking much easier and pleasanter than if the walks are only the common earth; which in smaller quarters cannot be otherwise, but if the trees are close, and the walks narrow, so as to be shaded and over-hung by the trees, the walks will not grow.

In the planting of these bosquets, you should observe to mix the trees, which produce their leaves of different shapes, and various shades of green, and hoary or mealy leaves. It is also to be observed, that the plants should be planted in the autumn; of little or no effect, that we know of, yet hath good effect, in autumn, variety the foliage after the leaves are gone; as the Eilonyr, or Spindle-tree, the Poplar, or Mnrth Elder, the Caxik-fur Hawi, and many other furs, too numerous to mention in this place; the hedges are a good roof for the birds, so that they will be there invited to lay and harbour in the little groves, which by their discourse notes, will render the place very agreeable; in the spring. Evit j would advise never to mix Evergreens with deciduous trees; for, betide the ill effect it hath to the sight (especially in winter,) they seldom thrive well together. In the quarters, where you intend to have Evergreens, should be wholly planted therewith; and in the quarters, which call for a variety of different trees, which call for a variety of the largest growing flowers (especially near the OVIILL: of the quarters,) which will add greatly to the variety, if they have but air enough to grow; but if any of the Evergreen trees are mixed with the deciduous, it should lie only to border the wood.

Thele bosquets are to be planted only for spaciousness, but if they are to be used for the purpose of keeping, they should be planted in the autumn; of little or no effect, that we know of, yet hath good effect, in autumn, variety the foliage after the leaves are gone; as the Eilonyr, or Spindle-tree, the Poplar, or Mnrth Elder, the Caxik-fur Hawi, and many other furs, too numerous to mention in this place; the hedges are a good roof for the birds, so that they will be there invited to lay and harbour in the little groves, which by their discourse notes, will render the place very agreeable; in the spring. Evit j would advise never to mix Evergreens with deciduous trees; for, betide the ill effect it hath to the sight (especially in winter,) they seldom thrive well together. In the quarters, where you intend to have Evergreens, should be wholly planted therewith; and in the quarters, which call for a variety of different trees, which call for a variety of the largest growing flowers (especially near the OVIILL: of the quarters,) which will add greatly to the variety, if they have but air enough to grow; but if any of the Evergreen trees are mixed with the deciduous, it should lie only to border the wood.

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BOI & **Y S**. See **CHEKOPODIVM**. **BOX-TREE**. Sec **Btn**. **BRABEJUM**, African Almond, s-ulg6. The CHARACTER is, ETC.

Tb: four half an ounce. It is a tree of four narrow elongated seeds which are white, forming a tube, but the seeds are not backward in top, it hath four slender branching roots: they are inserted in the bottom of the stalk, and are of the same length, having small furrows. The stem is a small hairy cylinder, supporting a slender, cylindrical leaf; the leaves are small, the flowers are small, and are of a white colour, the fruit is a round, fleshy, green, berry.

this genus of plants is ranged in the first section of Linnaeus's fourth class, intitled Tetrandria Monogynia, the flower having four stamens and one style.

We have but one SPECIES of this plant, viz.

BRABEJUM. (*Stellatifolium*.) Hort. Cliff. Amygdalus^a thipica, fructu holoferico. Breyn. Cent. African* or Ethiopian Almond.

This tree is a native of the country about the Cape of Good Hope.

In Europe it seldom grows above eight or nine feet high, but in its native soil it is a tree of middling growth; but as it must be kept in pots, or tubs, being too tender to live through the winter in the open air, so we cannot expect to see it grow to a great size. It rises with an upright stem, which is soft, and full of pith within, covered with a brown bark. From the stem are sent out horizontal branches at every joint, the lower being the longest, and every tier diminishing to the top, so as to form a sort of pyramid. The branches are garnished with leaves at each joint, which are from four to five inches long, and half an inch broad in the middle, of a deep green on their upper side, but of a pale rufous colour on their under, indented on their edges, standing on very short foot-stalks. The flowers are produced toward the end of the shoots, coming out from between the leaves quite round the branches, which are of a pale colour, inclining to white; these appear early in the spring, and fall away without any fruit succeeding them in this country.

This plant is, with difficulty, propagated by layers; being often two years before they make roots strong enough to be taken from the old plants; when the branches are laid down, it will be a good method to flit them at a joint (as is practised in laying Carnations) which will promote their taking root.

These must have but little water given them, especially in winter, for as the young shoots are chiefly pith within, so they are very subject to rot with much moisture. The best time to make the layers is in April, just as the plants are beginning to shoot; the layers must always be made of the former year's shoots. As this plant is very difficult to propagate, it is very scarce in Europe, there being very few in the Dutch gardens at present.

The plants must have a good green-house in winter, but in summer should be set abroad in a sheltered situation, where they will thrive, and annually produce flowers in the spring, so will make a pretty variety among other exotic plants in the green-house.

BRANCA URSINA. See ACANTHUS.

BRASSICA, the Cabbage.

The CHARACTERS are,

The empalement is composed of four upright spear-shaped small leaves which are convex at their base and fall off. The flower is cross-shaped having four oval plain petals which spread open and are entire. It hath four oval nefarious glands, one being situated on each side of the short stamens and pistil and one on each side the empalement. It hath six stamens which are awl-shaped and erect two of which are opposite and the length of the empalement the other four are longer; these have erect pointed summits. It hath a taper germen the length of the stamens having a short style thicker than the germen and crowned by an entire stigma. The germen afterward becomes a long taper pod depressed on each side and is terminated by the apex of the intermediate partition which divides it into two cells filled with round seeds.

This genus of plants is ranged in the second section of Linnaeus's fifteenth class, intitled Tetradynamia Siliquosa, the flowers having four long and two short stamens, and are succeeded by long pods.

I shall first enumerate the species, which are distinct, and afterward mention the varieties, which are cultivated for the table, for although most of these may be continued distinct by proper care, without alteration, yet as they are liable to vary when planted near each other for seeds, so we must admit of their being different species. To this genus Dr. Linnaeus

has joined the Turnep, Navew, and Rocket, which by their general characters, may in a system of botany, come under the same title; but in a treatise of gardening, it may occasion confusion; therefore I shall treat of them under their former titles, by which they are generally known.

The SPECIES are,

1. BRASSICA (*Oleracea*) radice caulescente tereti caritosa, Hort. Cliff. 338. Cabbage with a taper fleshy stalk. Brassica capitata alba C. B. P. 111. The common white Cabbage.
2. BRASSICA (*Napobrassica*) radice caulescente orbiculari caritosa, foliis feffilibus. Cabbage with a round fleshy stalk and leaves growing close to the stalks. Brassica radice napiformi. Tourn. Inf. R. H. 219. Turnep rooted Cabbage.
3. BRASSICA (*Botrytis*) radice caulescente tereti caritosa, floralibus multicaulis. Cabbage with a taper fleshy stalk at the root and many branching flower-stalks. This is the Brassica Cauliflora. Caip. Bauh. Pin. in. The Cauliflower.
4. BRASSICA (*Sylvestris*) radice cauleque tenui ramis perenni foliis alternis marginibus incisif; Cabbage with a branching perennial stalk, and root and leaves growing alternate which are cut on their edges. Brassica maritima arborea five procerior ramosa. Mor. Hist. 2; p. 208. Taller Jhrubby Sea Cabbage.
5. BRASSICA (*Violacea*) foliis lanceolato-ovatis glabris indivisis dentatis. Hort. Upf. 191. Cabbage with entire oval spear-shaped smooth leaves which are indented.
6. BRASSICA (*Purpurea*) foliis oblongo-cordatis amplexicaulis, integerrimis. Cabbage with oblong heart-shaped leaves embracing the stalks which are entire. Brassica campestris perfoliata flore purpureo. C. B. P. 112.
7. BRASSICA (*Orientalis*) foliis cordatis amplexicaulis glabris. Lin. Sp. 931. Colewort with heart-shaped smooth leaves which embrace the stalk. Brassica Orientalis perfoliata flore albo filiqua quadrangula. Tourn. Cor. 16.
8. BRASSICA (*Gongyodes*) radice caulescente tereti, foliis inferioribus petiolatis superioribus femiamplexicaulis. Cabbage with a taper stalk the under leaves with foot-stalks and the upper half embracing the stalk. Napus Sylvestris. C. B. P. 95. The wild Navew, or Cole Seed.

The VARIETIES of the first sort are,

1. BRASSICA (*Sabauda*) fabauda hyberna. Lob. Icon. The Savoy Cabbage commonly called Savoy.
2. BRASSICA (*Rubra*) capitata rubra. C. B. P. in. The Red Cabbage.
3. BRASSICA (*Pyramidalis*) capitata alba pyramidalis. The Sugar-loaf Cabbage.
4. BRASSICA (*Pracox*) capitata alba praecox. The early Cabbage.
5. BRASSICA (*Peregrina*) peregrina moschum olens. H. R; Par. Foreign Mujk Cabbage.
6. BRASSICA (*Muscovitica*) capitata alba minor Muscovitica. H. A. Small Ruffia Cabbage
7. BRASSICA (*Capitata*) capitata alba compressa. Boerh. Ind. alt. 11. The large sided Cabbage.
8. BRASSICA (*Viridis*) capitata viridis fabauda. Boerh. Ind. 11. The green Savoy.
9. BRASSICA (*Laciniata*) fimbriata. C. B. P. in. The Borecole.
10. BRASSICA (*Selenifia*) fimbriata virefcens. Boerh. Ind. 2.12. Green Borecole.
11. BRASSICA (*Fimbriata*) fimbriata Siberica. Boerh. Ind. 2. 12. Siberian Borecole called by some Scotch Kale.

The second sort is undoubtedly a distinct species, for I have always found the seeds produce the same, with this difference only, that in good ground the stalks will be much larger than in poor land.

The VARIETIES of the third sort are,

1. BRASSICA Italica purpurea Broccoli difta. Just! Purple Broccoli.
2. BRASSICA Italica alba Broccoli difta. Just! White Broccoli.

The second sort, I believe, never varies, for I have cultivated it many years, and have not found it to

alter.

alter. This grows naturally on the sea-shore, near Dover. It hath a peculiarly initial branching stalk, in which it differs from the other species. I have continued it for four years, and have eaten the young flowers after they had been much frozen, when they were very sweet and goodly but at other times they are very (bong and rfriny. In very fevete winters, when the other raysed, out this b a neteffiry

Just, for the small severe frosts do not injure it. The rays of the leaves are inclining to a purple colour, and placed alternately on the branches. The (lower- The brandies, and ppttutl (n n m ill- <cn> ults, growereil, and feltiom put OUE

The third sort, which is the Cauliflower, has been improved a variety of ways. I have had more than fifty years experience in cultivating these plants, I could never find the least appearance of either species appearing together, and the difference is so different in their leaves, when the plants are young, that there is one essential difference between them in their growth. The common Cabbage puts out one upright stem from the center of the Cabbage, which afterward divide into several branches, whereas the Cauliflower tends out many flower-stems from the part which is eaten, which is only a compact collection of the heads of the stalks, which Biarmwri divides into many stems, branching out in many directions. It is as to form 3 Impre fprcative hew wlica in flower, but never rises pyramidically like the Cabbage

The two sorts of Broccoli I take to be only varieties of the same plant, in which the one may be distinguished by the leaves being kept distinct, yet I (loujt, if they were the same, near each other. I have seen it in the garden, and I am the either inclined to believe it is, from the YERiot! changes which I have observed in all these plants, for I have frequently had Cauliflowers of a green colour, with flower-buds regularly formed at the ends of the stalks, as in the white Broccoli, though the tototir was different and the white Broccoli approaches so near to the Cabbage, as to be with difficulty distinguished. I have seen it in the garden, and I am the either inclined to believe it is, from the YERiot! changes which I have observed in all these plants, for I have frequently had Cauliflowers of a green colour, with flower-buds regularly formed at the ends of the stalks, as in the white Broccoli, though the tototir was different and the white Broccoli approaches so near to the Cabbage, as to be with difficulty distinguished.

The Cauliflower was first brought to England from the island of Cyprus, where it has been cultivated long since, yet it was not brought to any degree of perfection, till about 1500, at least not to be sold in the markets, and since the year 1500, they have been so much improved in England, as that such of them as before were greatly admired, would at present be little regarded.

This plant has been much more improved in England, than in any other parts of Europe. In France they rarely have Cauliflowers till now, and in Italy, and in Holland, it is generally supplied with seeds from England. In many parts of Germany there was not one cultivated till within a few years past, and most parts of Europe are supplied with seeds from hence.

The eighth sort, which is generally known by the name of Rape or Cole Seed, is much cultivated in the Isle of Jersey, and some other parts of England for its

seed, from which the Rape Oil is made. It hath been cultivated of late years in other places, for feeding of cattle, to great advantage. This hath been lately joined to the Napus Sentiia, or Garden Rape, supposing them to be the same species, but I have cultivated both for more than twenty years, and could never observe a difference in them to vary; indeed the white Rape, which is the Rape, is distinguished to determine them as different species, but is the Garden Rape approaches near to the Rape than the Cabbage, for I will treat of Rape under the title of Rape.

The Cole Seed, which is cultivated for feeding of cattle, should be sown about the middle of June. The ground for this Rape should be prepared in the same manner as for Turneps. The quantity of seed for one acre of land, is from 8 to 10 pounds, and as the price of the seed is not great, it is better to allow eight pounds for an acre, if the plants are to be any part, they may be easily thinned when the ground is level. When the plants have put out their leaves, they will be lit to hoe, which must be performed in the same manner as is practised for Turneps, with this difference only, of leaving their stalks nearer together; for as they have very few roots, they do not require neat in much row. These plants should be sown a second time, about five or six weeks after the first, which, if well prepared in the ground, will entirely destroy the weed, so that they will require no further culture. By the middle of November the Rape will be grown to the height of 1 foot, when, if there is a scarcity of food, it may be either cut or fed down; but where there is not an immediate want of food, it had better be kept as a Rape, and be sown, or sown feed, when there may be a scarcity of other green food. If the heads are cut off, and the stalks are left in the ground, they will flourish again in the spring, and produce a good second crop in April, which may be either cut, or permitted to stand to feed, as is the practice when the Rape is sown for the feeds: but if the Rape is cut down, there will be no second crop.

do not destroy the Rape items, or pull the Rape ground. As the Rape is a hardy plant, it is not destroyed by frost, but is very great for the Rape for the feeding of ewes, for when the ground is frozen, as it is in the winter, it cannot be taken up, and the Rape may be cut off for the Rape supply. In several places where I have seen this Rape, I have found that one acre of Rape will produce as much Rape (buds, is sown, and the Rape will produce as much Rape; it is sown for the Rape, and the Rape will produce as much Rape, and the Rape will produce as much Rape.

Partridges, Hens, and turkeys, and the Withcreeper, are very fond of the Rape; for if there is any Rape in the neighbourhood, they will constantly be among them. The seeds of this Rape are sown in gardens for winter and spring salads, and is being one of the Rape.

The common Rape, which is sown in the garden, is not so early cultivated for winter use, as the Rape of these sorts must be sown the end of March, or beginning of April, in beds of good fresh earth; and in May, when the young plants will have about eight leaves, they should be packed out into shady beds, about three inches square, that they may acquire strength, and to prevent the Rape from being stunted.

About the beginning of June you must transplant them out, when they are so near to the Rape, as to be sown in the garden near London, a commonly between Cauliflowers, Artichokes, &c. at about two feet and a half distance in the rows; but they are planted for a Rape crop in a clear spot of ground, the distance from row to row should be three feet and a half, and as the rows two feet and a half distance, if the Rape should prove dry when they are transplanted

happens, the decayed leaves will render the soil very noxious, and the plants perished: pretty much at that time, are often destroyed in vast quantities.

In the beginning of February, if the wnatlier proves mild, you may begin to plant your plants by degrees, that they may be prepared for transplantation: and the ground where you intend to plant your Cauliflowers, or for gone! (which it would be quiet to have been well lunged and dug. It should be far advanced, with a week or fortnight before you intend to plant out your Cauliflowers: sometimes their destruction, is not, viz. that if there are not some fresh ones amongst them, and the ground is not hot and dry, as it sometimes happens, the frost will freeze your Cauliflowers, and their leaves full of holes]

Z Radishes upon the spot, the fits will not be long in coming, and the Cauliflowers, to long as they last. Indeed, the Radishes, die sooner near London than Spinach with their Radishes, and for a double crop, which is an advantage where ground is dear, or when the ground is not so good, otherwise it is better to have only one crop amongst the Cauliflowers, and the ground may be cleared in time.

Ynpr grotinri Iyring about the end of February, you may plant out your Cauliflowers: the distance which is generally allowed by the gardeners near London, is to plant other crops between their Cauliflowers, as Cucumbers for pickling, and winter Cabbages, in every other row, and a half an inch apart, and in the middle of the row, and a half an inch apart, and two feet two inches distance in the rows. In the latter end of May, or beginning of June, when the Radishes and Spinach are cleared off, you may put in a row of Cucumbers for pickling, in the middle of the wide rows, ... three feet and a half square, and in the narrow rows, plant Cabbages for winter use, at two feet two inches distance, so that there stand each of them exactly in the middle of the square between four Cauliflower-plants, and these, after the Cauliflowers are gone off, will have full room to grow, and the crop be thereby well increased in a successful year.

About three weeks or a month after your Cauliflowers are planted out, the Radishes, which will be fit to hoe, at which time, when you are hoeing out the Radishes where they are too thick, you should cut out all such as grow immediately about the Cauliflowers, and would prove hurtful to them, by drawing them up tall, and also at that time, draw up the Leeks up to the stems, and the plants, being careful not to let any get into their hearts, as was before directed, and when your plants are fit to pull, be sure to clear round the Cauliflowers first, and keep drawing the earth up to their stems as they advance in height, whirri nil!!!, rep their stems from being hurt by the weather, and be of singular service to your plants.

Benrcn, u onii ivo: driv the Leeks up to the stems, and the plants, being careful not to let any get into their hearts, as was before directed, and when your plants are fit to pull, be sure to clear round the Cauliflowers first, and keep drawing the earth up to their stems as they advance in height, whirri nil!!!, rep their stems from being hurt by the weather, and be of singular service to your plants.

Tin i are many people who are very fond of Cauliflower-plants in summer, but the gardeners near London have almost wholly laid aside this practice, and find it deal of trouble and charge with little purpose, for if the ground be so very dry as not to produce tolerable good Cauliflowers without water, it is better to have them, that watering them renders them nutd better, and when once they have been watered, if it is not constantly continued, it had been much better for them if they never had any, as also if it be given them in the middle of the day, it rather helps to fink them: so that, upon the whole, it can be taken to keep the earth drawn up to their stems, and clear away from every thing that grows near them, that they may have free open air, you will find that they will succeed better without than with water, when any of these cautions are not strictly observed.

When your Cauliflowers begin to form, you must often look over them, to turn down their leaves, as was before directed, to preserve their bottoms, and when they are full grown, observe the former directions in pulling them, &c. but wherever you meet with an extraordinary good Cauliflower, whose root is hard and white, and perfectly free from any frinkness about the edges, you should suffer it to remain for food, keeping the leaves close down upon it until the flower hath beat out stems, and then remove the leaves from them by degrees, but do not expose them too much to the open air at first. As the flowers advance, you must take the leaves quite away, and when they begin to branch out, you should cut three pretty strong stakes, at equal angles, about it, surrounding them with pickered, &c. to support their branches, which would be otherwise liable to break with the wind.

When your plants begin to be formed, if the weather grows dry, you should give them a little water all over (with a watering-pot that hath a rise to it) which will promote the growth of the seeds, and preserve them from rotting, which is often hurtful to the seeds, and when your seeds are ripe, you must cut it off, and hang it up to dry, and use it as it was directed for Cauliflowers, and although your flowers do not produce so much food as those which were of a later or frisky nature, yet the goodness of such seeds will sufficiently recompense for the quantity, and any person who was to purchase his seeds, had better give his fillings an ounce for such seeds than two for the seeds commonly found the sale, as the gardeners about London have experienced, who will never buy any seeds of this kind, if they do not know how they were sowed.

But in order to have a third crop of Cauliflowers, you should make a slender hot-bed in February, in which you should sow the seeds, covering them with a mat of an inch thick with light mould, and covering the bed with glass-frames: you should now and then gently refresh the bed with water, observing to raise the glasses with bricks or pumps in the day-time, to let in fresh air, and when the plants are come up, and I have seen four or five leaves, you should prepare another hot-bed to prick them into, which may be about two inches square, and in the middle of April harden them by degrees, to fit them for transplanting, which will be done the middle of that month, at the distance directed for the second crop, and will be managed accordingly: this (if the soil is good where they are planted, or the land cool and moist) will produce good Cauliflowers about a month after the second crop is gone, whereby their season will be greatly prolonged.

There is also a fourth crop of Cauliflowers, which is raised by sowing the seed about the end of May, and being transplanted, as has been before directed, will produce good Cauliflowers in a kindly season, and good food, after Michaelmas, and continue thro' October and November; and, if the season permit, thro' a great part of December.

The reason why I fix particular days for the sowing of this seed, is because two or three days often make a great difference in their plants, and because these are the days usually fixed by the gardeners near London, who have found their crops to succeed best when sown at those times, although one day, more or less, will make no great odds. I have also, in this edition, altered the days to the new style.

BREYNIA. See CAPPARIS.
BROMELIA. Plum. Nov. Gen. 46. tab. 1. Lin. Gen. Plant. 306.

THE CHARACTERS ARE,
It hath a three-angled permanent capsule, which is three-angled, upon which the ground is smooth. The leaves are long narrow, and are not, such having a distinct joint to it above the leaf. It hath for its fruit the length of the petals, which are terminated by a long filament. The pistil is situated upon the receptacle supporting a slender style, crowned by a bright orange stigma. The capsule is situated between

nn oblong capful, divided by a partition in the middle, to which the feeds are fixed quite round -, these are smooth, and almost cylindrical.

This genus of plants is ranged in the first section of Linnaeus's sixth class, intitled Hexandria Monogynia, the flower having six stamens and one style. Dr. Dillenius has supposed this to be the same with Plumier's Karatas, which mistake he was led into by Plumier's drawing, where the flower of his Caraguata is joined to the fruit of his Karatas, and *vice versa* and from hence Dr. Linnaeus has been induced to join these and the Ananas together, making them only species of the same genus.

The SPECIES are,

1. *BROMELIA (Nudicaulis)* foliis radicalibus dentato-spinosis caulibus integerrimis. Lin. Sp. Plant. 286. *Bromelia with lower leaves indented and prickly, and those of the stalks entire.* Bromelia pyramidata, aculeis nigris. Plum. Nov. Gen. 46.

2. *BROMELIA (Lingulata)* foliis ferrato-spinosis obtusis, spicis alternis. Lin. Sp. Plant. 285. *Bromelia with fawed, prickly, obtuse leaves, and spikes of flowers growing alternate.* Bromelia ramosa & racemosa foliis Arundinaceis ferratis. Plum. Nov. Gen. 46.

The first sort hath leaves very like some of the sorts of Aloes, but not so thick and succulent, which are sharply indented on their edges, where they are armed with strong black spines; from the center of the plant arises the flower-stalk, which is near three feet high, the lower part of which is garnished with entire leaves, placed alternately at every joint. The upper part of the stalk is garnished with flowers, set in a loose spike or thyrse, these have three narrow herbaceous petals fitting upon the germen, and six slender stamens, with the style, which are shorter than the petals. These flowers in the country where they naturally grow, are succeeded by oval seed-vessels, having a longitudinal partition, in the center of which are fattened cylindrical seeds on every side, which are smooth.

The second sort hath shorter leaves than the first, which stand erect, and are narrow at the base, increasing in width gradually to the top, where they are broadest, these are sharply fawed on their edges, and are of a deep green colour. The flower-stem arises from the center of the plant, which divides upward into several branches; the upper part of these are garnished with spikes of flowers, which come out alternately from the sides of the branches, each having a narrow entire leaf just below it, which is longer than the spike. The flowers are placed very close on the spikes, each having three short petals situated upon the globular empalement, when these decay, the empalement turns to an oval pointed seed-vessel, including seeds of the same shape with the former.

Both these plants grow naturally in very warm countries. Father Plumier, who gave this title to the genus, found them growing in the French Islands in America; and the late Dr. Houftoun observed, them growing in Jamaica, and in several parts of the Spanish West-Indies. The first sort also grows on the coast of Guinea, from whence I received the seeds; and the second sort was sent me from St. Christophers.

These plants are propagated by seeds, which must be procured from the country where they grow naturally, for they do not produce any in England. These must be sown in small pots filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark; the earth in these pots should be sprinkled over with water two or three times a week, according to the heat of the weather, but must not have too much moisture. If the seeds are good, the plants will appear in about five or six weeks, and in a month after will be fit to transplant, when they should be carefully shaken out of the pots, and each planted in a separate small pot filled with the same earth as before, then they must be plunged again into a moderate hot-bed, observing frequently to sprinkle them over with water, but be cautious of giving them too much, lest the roots should be thereby rotted.

During the summer season the plants should save a moderate share of air, in proportion to the heat of the weather; and, in autumn, they must be removed in the bark-trove, and treated in the same manner as the Ananas, or Pine Apple, with which management they will make good progress; but after the first winter, they may be placed upon stands in the dry stove, though they will thrive much better if they are constantly kept in the tan-bed, and treated like the Ananas, and will flower in three or four years; whereas those in the dry stove will not flower in twice that time.

The other parts of their culture is only to fluff them into fresh earth when they require it; but they should by no means be put into large pots, for they will not thrive if they are over-potted; unless they have much wet, especially in winter.

These plants make a pretty variety in the hot-house, for those who have room, may allow a plant or two of each sort to have a place in their collection of exotic plants.

BROOM, the common. See SPARTIUM.

BROOM, the Spanish. See SPARTIUM and GENISTA.

BROWALLIA. Lin. Gen. Plant. 691. Hort. Cliff. 318.

The CHARACTERS are,

The empalement is fabulous of one leaf, and indented at the top in five unequal parts. The flower is funnel-shaped, of one leaf having a cylindrical tube twice the length of the empalement, the upper part is spread open, and divided into five parts, the upper segment or lip being a little larger than the others, which are equal. It hath four stamens included in the chaps of the petal, the two upper being very short, and the two under broad, longer, and reflexed to the mouth of the tube, which inclose them, these are terminated by single incurved summits. In the center is situated an oval germen, supporting a slender style the length of the tube, crowned by a thick, compressed, indented stigma. The empalement afterward becomes an oval obtuse vessel with one cell, the top in four parts, and filled with seeds.*

This genus of plants is ranged in the * of Linnaeus's fourteenth class, intitled * Angiospermia, the flower having two long a, short stamens, and the seeds included in a capsule

The SPECIES are,

1. *BROWALLIA (Demija)* pedunculis unifloris. Hort. Cliff. 318. *Browallia with one flower on a foot-stalk.* The title of Browallia was given to it by Dr. Linnaeus, in honour of professor Browall, of Amsterdam.

2. *BROWALLIA (Elata)* pedunculis unifloris multiflorisque. Lin. Sp. 880. *Browallia with one flower on each foot-stalk, and sometimes many.*

The seeds of the first sort were sent me by Mr. Robert Millar, from Panama, in the year 1735 which succeeded in the Chelsea garden, where it has continued to flower, and produce seeds every year, but the plants are annual, so perish in autumn: the seeds of this plant must be sown upon a hot-bed in the spring, and the plants brought forward on another otherwise they will riot perfect their seeds in England. Some of these plants may be transplanted in June into the borders of the flower-garden, where, if the season prove warm, they will flower and perfect seeds; but lest these should fail, there should be two or three plants kept in the stove for that purpose. The plants usually grow about two feet high, and spread out into lateral branches, garnished with oval leaves which are entire, ending in a point, having short foot-stalks. Toward the end of the branches the flowers are produced singly, upon pretty long foot-stalks, arising from the wings of the leaf. These have a short empalement of one leaf, which is cut into five parts; out of the center of the empalement the flower arises, which is crooked and set downward; the top of the tube is spread open, and the brim, or open part of the flower, has some resemblance to a lipped (lower, being irregular. It is of a bright

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bright. lje colour, ibmctm* inclining to a purple or red, and oftn there are flowers of these colours on tilt limit plant. When these fall away, the green in the cenL-r become:- an oval capsule of one cell, filled with smll, brown, anjgi for seeds, it flowers in July, August, and September, and the fruits are ripe in iivc or lix week I after.

When this plant was ii derailed in the Cht lles garden, I p ^ is the tiik of Ualea, in hcnior to Mr, 13ale, an eminent botunifr, and a great mend of Mr. Ray's. By this tide ic was delivered to the Royal Society, and printed in the Philofophical Transitions, and abb m ihe dialogue of the Chcllea garden : g as by the name I communknted tire feeds w Doctor Liri-iaiaus, who afterward clianged the name to Browallii, and printed it in the catalogue of Mr. Clifford's garden; wheie there is a figure of it exhibited, fo that this litter title is become -Umiitt univerial among lifts.

The fscond fiirt grows naturally in Peru, from whence the younger Julius fent the feeds; this plant rifts about the (iimc height as ifit firr, but hath ft ranger Italics, nnti finds out a greater number of breaches, fo much more bulhy than rltat; the flower?; are produced upon foot-lblks, which proceed from the wings cf theU^wcs; fonic of dicfc foor-ftdles fufnin one, others three, ormore floweis, of a dark blue twlourj thd'c are fuccceded by oval capiiile*, likltl with JJamll anguljr feed

This plant is annual, and requires the fame culnir* a» the tirtt fort, with which it will produce plenty of Imis,

BRUNELLA, Self-heal. SecPnusr. BRUNSKLSIA. Plum. Nkv. Gen. 13. Lin. Gen. PLinr. 530. This plant tikes its name from Dr. BrunfelTius, a famous phyliciat.

The OIASIACTERS art. flie empettaol is pcutumait, itllfkapiji, eni pf out Inf, which is cut inii five blunt j'igmevt *f tbt tvp. Tbt fir, end g a Itntg Of tah tptnat tin utxts I it halt c infurtrd <i mml. bt the co- r jitp/wriiug a fimitr fuyt tbi length cf tbt iubl 11 ttBaa by a thick fignt. the empa< nurn a globular berry with sue eelt, inckfrng a great nmnter of font- njitre to tieJux of

Tin-; genus of plattt: is ranged in the furi fofion of LJtnuau^ itittl cl>ft, intitld Pcntar la, the flower Jinving five (lamina and b ttfc.

We know but one SPECIES of (his genu-, Ususjrri.stA. (Amrkiinti). Lin. K). Plant. 191. Aioettian Brxitofeljin. Brunselfiafi"fealob,l'ruchi eroceomolli. Plum. Nov. Gen 12.

This plant rilra with a woody ftem to the ijcight of I or ten leer, lending out man- fdc brandies, wli' i lit covered with a tough bark, gamim< oblong leaves wliich are entire, ami OB the lower parrot ilic brandies come gut fingfc; but toward extremity, thrj are \x.c\ on every 6 le, and are \inM]iil in lilt". At the extremity OI thf briches, the flowers are proclu<il, generally tlrv or four together. Thefc an; Jmofl m lir the greater Bindivtfit, but have very long, narrow, hair)-tubes; the brim is expand in the form of the Convolve]n, but is deeply divided into obrule fragments, which are indented on their border. After the flower is past, the empalema turns to a round soft fruit, incasing many oval seeds, which are fi* tinted dole to the cover or feic, 10 which they adhere.

This ;4int grows nsturaUy in uioftof the ibgar ifands in Ai- lya, in which places they call it uoqjet Pl-er; but in the English gardens, it is at present very rare. It may be propagated from seeds, which should be sown early in the spring in peat filled with light earth, and plunged into a hot-bed of tanne

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ub&rvisg UJ water the Kh AS oftnv 32 l and find it necessary. When the Jants ut come up, they should be transplanted each into a If puzne firml pot filled with firm light earth, and plunged into the hot-bed again, observing to water and shade the plants until they have taken root; after which they must have airadmitteii to tin every day, in proportion to the warmth of the season. When the plants have advanced in high as not to be contained in the frames, they should be removed into the back-stove, where, during the summer months, they should have a large share of free air, but in winter they must be tent & y clost. With this management the plants will be very strong, and produce their flowers every season. These plants may also be increased by planting cuttings in the spring, before they begin to make nuw (hoots, in j . as filled with firm light earth, and plunged into a !>ot-bed of tanne

fervng to water v d shade them until they have taken root-, air which, they must be managed as hath been direfled fur uthr terider ewtk plants from linn countries.

BRUSCU I See Rt;- ERVOK I \ [chii plant b fo called fniin BfJu, mo or Kiir, becaiffe it bears a flower which is hair and hairy

The CALLISTEM :rc, It both male and female flowers *w fit fion' ; int. The matt Snort bit rydemmt 9/ sue leaf, which is cut inii five blunt j'igmevt *f tbt tvp. The flower is cut-shaped, and incasing many small seeds, it is succeeded by three four berries, and the other two of the berries having double berries, and the other two. fmdt ftrm fitru on the g--ma, end I n a deciduous requirement, but the p-; i, the flower with that of the male. The female which :under the flower, supports a cold branching stalk, crowned by a spreading terminal panicle. The female afterwards becomes a greenish globose berry, containing oval seeds and

I his genu* of plants n rtn»ed in the tenth section of Linncus's twtj- first class, intitled Monocotyledonous, in un iishavin male and female flowers on die 1. the plant, mdthe fian- is joined with the style.

The S BRVOMU (Alba) tbiis palmatis ucrinque callido-fbris* Horc Cliff! ^ i j. Bryam *.i.iiih palm, and leaves, which are rough and calid in the fruit. Bryonia alpina, lrae alba bacca rJrii. C. B. P. 37. While brony with red berries.

- 1. Bryonia (Africana) foliis palmatis ovatis, artibus utrinque levibus, herbis pinnatifidis. Lin. 1498. Briony and palmated leaves are used for figments, which are joined to each side. Bryonia Africana herbacea, tubercu&rjiiiiiic. Qoribt herbaceous. Per. Bat. 107.
 - 2. Bryonia (Crotia) tbiis palmati; l'upr.i callobl 1-uncatis. Hort. Clm. 427. Certain Briony with palmated iOVii, which upper part is fringed with calid fruit. Bryonia Africana masculina. C. B. P. 377.
 - 3. Bryonia (Parvula) foliis trilobis fupr callido-fundans, fructu succoso ovali. Briony with trilobed leaves, which upper side are marked with calid fruit, and oval fruit growing in brony. Bryonia oliva fructu rubro. Fium-C.;
 - 5. BiroMi* (Parvula) Fbiis palmsu, Sacini' f macro-laii; lupr. punctum interius levibus, fru- to ovato (pura). Briony with palmated leaves, which segments are four-lobed, and their upper side fringed, but their under smooth, and an oval lateral fruit. Bryonia Americana fructu variegato. Dillen.
 - 6. Bryonia (Bosniaca) foliis palmatis quinquepartitis herbatis, lacinis obtusis. Briony with hairy palmated leaves divided into five parts, and sharp segments. Bryonia Bosniensis lic fide. Hort. Ethn. 24.
- The first sort grows upon dry banks, under hedges in m.v y parts of England; but may be cultivated in den for use, by sowing the berries, in the spring of the year, in t dry pour I d; where they will in run years time, grow to be large roots, provided they are not too clost. The roots of this plant have been

tcyrt fvyierly, by impoilurs, brought in:o an human
shape, and carried about the country, and shown for
Monstrous to the common people, who were easily
imposed on by their credulity, and their not good
livings thereby. The method which these people
practised, was to find a young living Briony plant,

then they opened the earth all round the plant, being
careful not to disturb the lower fibres; and (being
prepared with such a mould, as is used by the people
who make plaster figures) they heap the mould close
to the root, fastning it with wire, to keep it in its
proper situation; then they filled the earth about the
root, leaving it to grow in the shape of the

...Mild,
which is sowed in not January, so that it may be
done in March, by September it will have the shape.
The leaves of this plant are otherwise disposed on the
people in the market for Maraculose leaves, although
there is no resemblance between them; nor any agree-
ment in quality.

The second and fourth sorts are perennial plants, their
roots remaining several years, but their branches de-
cay every winter. These roots must be preserved in
pots filled with fresh light and in winter must
be placed in the green-house, to protect them from
frost and great rains, which would destroy them,
if they were exposed thereon. During the winter
season, they should have very little water given them,
but in summer, when they are exposed to the sun,
they must be frequently refreshed with water, in
dry weather. They flower in July, and in warm
situations will perfect their seeds.

The third, fifth, and sixth sorts are annual plants,
their seeds must be sowed in a hot-bed early in the spring,
and when the plants are about three inches high,
they should be each transplanted into a small pot filled
with fresh light earth, and plunged into a hot-bed of
tanners bark, observing to water and shade them
till they have taken root. When the plants are
grown to large, as to ramble about on the surface of
the soil, and begin to tangle with other plants, they
should be shifted into larger pots, and placed in the
bark-flow, where their branches may be raised to
the wall, or against an espalier, that they may have
sun and air, which is absolutely necessary for their
producing fruit. When these plants are full of fruit,
they make a pretty variety in the stove among other
exotic plants.

The second and fourth sorts are also propagated from
seeds, which should be sown in a hot-bed; and when
the plants are fit to transplant, they should be put
into pots, and when they have taken root, should be
covered below the open air by degrees, when they
may remain during the summer season, but in winter
they must be sheltered under a hot-bed frame. The
second sort is much easier than the former.

BRYONIA NIGRA. See TABLE.

BUBON. Lin. Gen. Plant. 748. Apun. C. B. 154.
Fons. Herp. Pat. 102. Maccedonia Parlay.

The Bubon is a large tree, the greatest, or several
times, diameter of some individuals, which when they
stand in the middle of the forest, the trees which
are near them die. The young branches are of a
pale green colour, which turn brown and are
covered with small, round scales, which are very
hard to be taken off. The leaves are of a
dark green of the true shape, and the veins are
very plain. The fruit is a small, round, red
apple, which is very hard and of a greenish red
colour, and is very hard and of a greenish red
colour. The seeds are small, round, and of a
greenish red colour. The plant is very hard
and of a greenish red colour. The seeds are
small, round, and of a greenish red colour.

The genus of Bubon is named in the second section
of Linnaeus's method, under the name of Bubon,
the first having five flowers and two styles.

The SPECIES are,

- 1. **Bubon** (Macedonia) foliis rhombicis mbcn-m'at'r rre-
natis, umbellis numerabilibus. Hort. Cliff. 32. Bubon
with oval, rhombic, crested leaves, and many umbels.
Apon. Maccedonica C. B. P. 154. Macedonia
Parlay.
- 2. **Bubon** (Koridja) foliis linearibus. ! lore. Clift' 4.
Bubon with very narrow leaves.
linittii durlor : vct in-
gulin & breviflora folia. Bocon. Mus. 2. 34.
- 3. **Bubon** (Galliana) foliis rhombicis dentatis glabra
fratibus umbellis parvis. Hort. Cliff. 36. Bubon with
ovate rhombic leaves and few umbels.
crula AIH-
cuna gallicantia tobo & facie l
iürtci. Par. Ba.
169.

(. D-) **Bubon** (Guazuma) foliis glabra inferioribus rhom-
bicis serratis, superioribus pinnatifidis tridentatis. JWJ.
Lepl. 100. Bubon with serrated and pinnatifid
leaves, and many umbels.
Ferd. Africanus gallicantia folia em-
pyreticis. Hort. Amst. p. 115.

The first sends out many leaves from the root, the
lower growing almost horizontally, increasing near the
surface of the ground: the first stalks of each leaf di-
vide into several other smaller, furnished with smooth
rhomboid leaves, which are of a bright, pale
green colour, inclined on their edges. In the center
of the plant arises the flower-stem, which is
more than a foot high, dividing into many branches,
each being terminated by an umbel of white flowers,
which are succeeded by oblong hairy seeds. It flowers
in July, and the seeds ripen in autumn, soon after
which the plant decays.

This plant in warm countries is biennial, the plants
which rise from seeds the first year, produce now is mid
(tedi : the next, 'id then the plants: but in England,
they seldom flower till the third or fourth year from
first sown but whenever the plant becomes, it always dies.

It is propagated by seeds, which should be sown on
a bed of soil (andy tan is, rather early in the autumn,
or in April -, and if the soil is not very warm and dry,
the seeds should be covered with a little earth, and
frequently watered with water, which is a sure
method to bring up the plants; for when this is not
practised, the seeds often fail, or remain long in the
ground. When the plants are up, they will re-
quire no other care but to be kept clear from weeds,
till the beginning of October, when they should be
carefully taken up, and planted in a warm border of
dry ground; and a few of them should be put into
pots, that they may be sheltered under a frame in
winter: for in severe frosts, those which are exposed
to the open air, are frequently killed; though, in
moderate winters, they will live abroad without cov-
ering; but it is a secure way to preserve the species,
to keep two or three plants in pots, in shelter, during
the winter, lest those abroad should be destroyed.

The Venice Titace.

The second sort grows naturally in Sicily, from whence
I received the seeds. This is a low perennial plant,
having short stiff leaves, which are very narrow: the
flower-stalks rise one or two feet high, which is terminated
by an umbel of small white flowers, which are suc-
ceeded by small, oblong, channelled seeds. It flowers
in June, and the seeds ripen in September. It is
propagated by seeds, and should have a dry soil and
a warm situation, where the plants will continue sev-
eral years. It is a plant of little beauty or use, fit
only to be preserved for the sake of variety.

The third sort rises with an upright stalk to the
height of eight or ten feet, which is termined by
several, having a purplish bark, covered with a whitish
powder, which comes off when handled; the upper
part of the stalk is furnished with leaves; every year,
the lower stalks having extending them as their hair,
leaving two lines several inches, like those of the
common Parsly, and so far with them, like those
of Linnen, but smaller, of a grey colour; the top
of the stalk is terminated by an umbel of yellow
flowers.

H

flowers, which are succeeded by oblong channelled feeds, having a thin membrane or wing on their border. It flowers in August, but hath not produced feeds in England. When any part of the plant is broken, there issues out a little thin milk of a cream colour, which hath a strong scent of Galbanum.

The fourth sort rises with a ligneous stalk about two feet high, garnished with leaves at each joint, which branch out like the former; but the small leaves or lobes are narrow and indented, like those of Bastard Hemlock. The stalk is terminated by a large umbel of small white flowers, which are succeeded by feeds like those of the former sort.

These plants are both natives of Africa. They are propagated by feeds, which should be sown in pots filled with light loamy earth, as soon as they arrive, which, if it happens toward autumn, should be plunged into a bed of tanners bark, where the heat is gone, and screened from frost in winter; In the spring the plants will come up, and by the middle of April will be fit to remove, when they should be carefully shaken out of the pots, being careful not to tear off their roots, and plant them each into a separate small pot, filled with the same earth as before; then plunge the pots into the tan again, and water them to settle the earth to the roots of the plants, and shade them from the sun in the day time, until they have taken new root; after this they must be inured gradually to bear the open air; into which they should be removed in June, and placed with other exotic plants in a sheltered situation, where they may remain till autumn, when they must be removed into the green-house, and placed where they may enjoy as much of the sun and air as possible, but defended from frost.

In winter these plants should have but little water given them, for much wet is very injurious to them: in summer, when they are exposed to the open air, they must be frequently refreshed with water in dry weather; but at no time should have too much wet, for that will rot their roots.

These plants make a pretty variety in the green-hedley in winter, and when they are placed abroad in the summer with other green-house plants, they have a good effect, especially when they are grown to a large size. They generally flower the third year from feeds, but their flowers are produced so late in summer, that the feeds have seldom time to form before the cold comes on in the autumn; at least for some years past, as the seasons have been cold and moist, but in warm summers, the fourth sort will perfect feeds, if they stand in a warm sheltered situation.

The Galbanum of the shops is supposed to be procured from the third sort, for upon breaking the leaves the juice which flows out from the wound, hath a strong odour of the Galbanum, which is a confirmation of it.

BUCKSHORN, or HARTSHORN. See ¹LANTAGO.

BUDDING. See INOCULATING.

BUDDLEJA. Houft. MSS. Lin. Gen. Plant. 131.

The CHARACTERS are,

It hath a small permanent empalement, which is slightly cut at the top into five acute parts. The flower is of one leafy bell-shaped, and quadrid, the petal being stretched out beyond the empalement it hath four short stamina, which are placed at the divisions of the petal terminated by short funnels. The oblong germen is situated in the center supporting a short style, crowned by an obtuse stigma the germen when it opens becomes an oblong capsule having two cells filled with small feeds.

This genus of plants is ranged in the first part of Linnæus's fourth class, entitled Tetrandria Monogynia the flower having four stamina and but one style.

The SPECIES are,

1. BUDDLEJA (*Americana*) foliis ovatis ferratis oppositis ferribus spicatis racemosis, caule fruticoso. *Buddleja with oval fawed leaves growing opposite flowers growing in branching spikes, and a shrubby tall Buddleja fru-*

tefcens foliis conjugatis & ferratis floribus spicatis luteis. Houft. MSS.

2. BUDDLEJA (*Occidentalis*) foliis lanceolatis acuminatis integerrimis oppositis, spicis interruptis. *Buddleja with pointed spear-shaped leaves which are entire placed opposite and broken spikes of flowers. Buddleja frutescens foliis oblongis mucronatis, floribus spicatis albis. Houft. MSS.*

The first sort grows naturally in Jamaica, arid midst of the other islands in America, where it rises to the height of ten or twelve feet, with a thick woody stem, covered with a grey bark; this sends out many branches toward the top, which come out opposite; as are also the leaves so placed, which are oval and covered with a brown hairy down. At the end of the branches the flowers are produced in long clove (spikes, branching out in clusters, which are yellow, consisting of one leaf, cut into four segments; these are succeeded by oblong capsules, filled with small feeds. This was sent me by Dr. Houftoun, from Jamaica, in 1730, under the title Verbaſci folio minor arbor, floribus spicatis luteis tetrapetalis feminibus-fingulis oblongis in fingulis vasculis ficcis. Sloan. Cat. Jam. 139. But as this was a vague title, the doctor afterward constituted a new genus, and gave it the title of Buddleja, in memory of Mr. Buddie, an eminent English botanist.

The second sort the same gentleman sent me from Carthage, where it grows naturally. This is the Ophioxylon Americanum, foliis oblongis mucronatis, leviter ferratis bardanae infar, subtus lanuginosis. Pluk. Aim. 270. tab. 210. fig. s. and was by Plukenet supposed to be the same with the former, which was denied by Sir Hans Sloane in his History of Jamaica.

This sort rises much taller than the first, and divides into a great number of slender branches, which are covered with a russet hairy bark, garnished with long spear-shaped leaves, ending in sharp points: these grow opposite at every joint; at the end of the branches are produced branching spikes of white flowers, growing in whorls round the stalks, with small spaces between each. It hath long, narrow, spear-shaped leaves growing between the spikes, whereas those of the other sort are naked. The leaves of this are much thinner than those of the first sort; and have scarce any down on their under side; the spikes of flowers grow more erect, so form a large loose spike at the end of every branch.

The plants grow naturally in gullies or other low sheltered spots, in the West-Indies, their branches being too tender to resist the force of strong winds, so are rarely seen in open situations;

They are propagated by feeds, which should be obtained from the countries where they naturally grow, for they do not perfect them in England. These should be brought over in their capsules or pods, for those which are taken out before they are sent seldom grow. They should be sown in small pots, filled with rich light earth, and very lightly covered with the same; for as these feeds are very small, so if they are buried deep in the ground, they perish. The pots should be plunged into a moderate hot-bed and must be every third or fourth day gently watered, being very careful not to wash the feeds out of the ground, by too hafty watering them. If the feeds are fresh and good, the plants will come up in about six weeks, provided they are sown in the spring; and if they grow kindly will be large enough to transplant in about two months after. Then they should be carefully separated, and each planted into a small pot, filled with light rich earth and plunged into the hot-bed again, observing to shade them from the sun until they have taken new root, as also to refresh them with water when they require it. After the plants have taken fresh root in the pots, there should be fresh air admitted to them every day, in proportion to the warmth of the season, they must also be frequently, but moderately, refreshed with water. If the plants thrive well, they will have filled these

finest pots with their roots by the middle of August, at which time it will be proper to shift them into pots one size larger, that they may have time to take good root again, before the cold weather comes on. When these are new potted, the tan should be turned over to renew the heat; and if it is wanted, some fresh tan must be added to the bed, to encourage the roots of the plants. In this bed they may remain till autumn, when they must be removed into the stove, and plunged into the tan-bed, where they must constantly remain, for they are too tender to thrive in this country, if they are not so treated. During the winter they must have but little water, and should be kept warm, but in summer they should have fresh air admitted to them constantly when the weather is warm, and frequently sprinkled all over with water. With this management, the plants will flower the fourth year from seeds, and continue so to do every year after, and will make a good appearance in the stove.

8 U G L O S S U M. See ANCHUSA, and LYCOPSIS.
BUGULA. Tourn. Inf. R. H. 208. tab. 98. Ajuga.
Lin. Gen. Plant. 624. Bugle.

The CHARACTERS are,
It hath ajhort permanent empakment of one leaf, which is slightly cut into five parts \ the flower is of one leaf of the lip kind, having an incurved cylindrical tube > the upper lip is very finally erect, and bifid 1 the under lip or beard is large, open, and divided into three obtuse segments, the middle being large, and the twojidei finally it hath four erect stamina, two of which are longer than the upper lip) and two porter terminated by double fummits. In the center, isfluated the four germen, supporting a slender flyle the length of the stamina, crowned by two slender stigma. The germen afterward become four naked feeds inch fed in the empakment.*

This genus of plants is ranged in the first section of Linnseus's fourteenth dais, intitled *Didynamia Gymnopermia*, the flower having two long, and two short (lamina, and is succeeded by naked feeds.

The SPECIES are,

1. BUGULA (*Reptans*) foliis caulinis femiamplexicaulis, stolonibus reptatricibus. Bugle whose leaves half embrace the stalks, and shoots which put out roots. Bugula. Dod. Pempt. 135. Common Bugle.
2. BUGULA (*Decumbens*) foliis oblongo-ovatis, caulibus decumbentibus, verticillis distantibus. Bugle with oblong oval leaves, declining stalks, and the whorls of flowers wide asunder. Bugula folio maximo flore pallide caeruleo. Boerh. Ind. alt. 1. 184.
3. BUGULA (*Pyramidalis*) foliis obtuse-dentatis, caule simpliciter. Bugle with blunt indented leaves* and a single stalk. Ajuga tetragono pyramidalis. Lin. Sp. Plant. 561.
4. BUGULA (*Genevifis*) foliis oblongis tomentosis, calycibus hirsutis. Bugle with oblong woolly leaves* and hairy flower-cups. Bugula carneo flore. Cluf. Hist. 2. P. 43.
5. BUGULA (*Orientalis*) villosa, foliis ovato-dentatis sessilibus, floribus reflexis. Hairy Bugle with oval indented leaves, placed close to the stalks, and inverted flowers. Bugula orientalis villosa flore inverfo candido cum oris purpureis. Tourn. Cor. 14.

The first sort grows naturally in woods, and shady moist places, in moist parts of England, where it spreads and increases greatly by the side shoots, which put out roots at their joints. There are two varieties of this, one with a white, and the other a pale purple flower, which I observed growing in several parts of Westmoreland \ but these do not differ in any other respect than in the colour of their flowers from the common, therefore I have only mentioned them as varieties.

The common Bugle is greatly esteemed as a vulnerary herb, and is used both internally and externally; it enters as an ingredient into the vulnerary decoctions of the furgeons, and is commended externally, applied to ulcers. This is constantly mixed with the vulnerary herbs, imported from Switzerland. It is titled *Conibida Media*, or *Middle Confound*. As

this grows naturally wild in great plenty, so it is seldom admitted into gardens.

The second sort grows naturally on the Alps; the leaves of this are much longer than those of the common Bugle, the stalks are weaker, and decline on every side, and the whorls of flowers are much smaller, and are ranged at a greater distance. This is admitted into some gardens for the sake of variety, and propagates in plenty by its trailing stalks. This requires a moist shady situation.

The third sort grows naturally in France, Germany, and other countries, but is not a native in England. This grows about four or five inches high, with a single stalk, which is garnished with leaves at each joint, placed opposite; these are oval, and indented bluntly on their edges. The flowers grow in whorls round the stalks, and toward the top form a close thick spike, and are of a fine blue colour.

The fourth sort grows naturally in many parts of Europe. This approaches near to the common Bugle, but the leaves of this are woolly, and the flower-cups are very hairy, in which the chief difference consists. There are two varieties of this, one with a white, and the other a red flower.

The fifth sort was brought from the Levant by Dr. Tournefort, and is preferred by those who are curious in collecting rare plants. There are two or three varieties of it, which only differ in the colour of their flowers.

This sort requires a little protection in winter, therefore the plants should be planted in pots filled with a loamy soil, and placed in a shady situation in summer, but in the winter they must be removed under a common frame, where they may enjoy as much free air as possible in mild weather, but in hard frost should be covered, otherwise they will not live through the winter in this country, unless it proves very favourable.

This may be propagated by seeds, which should be sown soon after it is ripe, in a pot filled with loamy earth, and placed in a shady situation till autumn, when it should be removed under a frame, where it may be freed from hard frost. In the spring the plants will come up, which should be transplanted into separate pots as soon as they are strong enough to remove, and, in summer, placed in the shade, and treated as the old plants. It flowers in May, and the seeds ripen the latter end of July. It may also be increased by offsets, but this is a slow method, because the plants put out but few of them, especially while they are young, so the other method is chiefly practised.

All the other sorts are hardy enough, and are easily multiplied by their side shoots; these delight in a moist shady situation, where they are apt to spread too much, especially the two first sorts.

B U L B [Bulbus, Lat. of Boxes, Gr. - \ Bulbous roots are of two sorts, viz. tunicated (or coated) and squamous (or scaly.) A tunicated root consists of many coats, involving each other, as in the Onion, Tulip, &c. whose roots, if cut through the middle, plainly shew the several coats. A squamous root consists of many scales, lying over each other like tiles upon a house, or scales on fish of this kind are the Lily, Martagon, &c.

B U L B I N E. See ANTHERICUM.

B U L B O C A S T A N U M. See BuNivM.

B U L B O C O D I U M. Town, Cor. 50. Lin. Gen. Plant. 368.

The CHARACTERS are,
The flower hath no empalement, it is funnel-shaped, and composed of six petals, which are concave, having long narrow necks, come set at the mouth, but are spear-shaped above. It hath six awl-shaped stamina shorter than the petals, and are inserted in their middle, having incumbent fummits. It hath an oval, blunt, three-corned germen, supporting a slender flyle, crowned by three oblong erect stigma. The germen afterward becomes a triangular pointed capsule, having three cells, which are filled with angular feeds.

B U N

This genus of plants is ringed in the Si... section of Linnaeus's fifth dafs, intidrJ i icKnrlnn Monogynia, die iuut'er having lbc Itavnfta and one A...

- i. BuLBOtopii'M (Vipintm) foliis fLbulito-linearibu!;. I'rou. LtyJ. 41. isid&ececitiini WJ/A narrow twil-jbaped hoos. linlbocoiljum Alpinutn juncioliuni Aorv tmico...

P. J74- ... HOL : flijum) fotiis bnrw III i5. J'n).I. I.- . * 1. 41. EktiucJiium v!;tb fpser-fitiiprd lmtu. Lo! I'mum reimum HiTpanicum. C. B. P. 69.

TIK first found crowa naturally upon the Alps, ami ulfo upon Snowdon hills, in Wales. This hath a small bulbous root, which is covered with a rough hairy (kins from which arises a few long narrow kive>,...

The fecond fore grows naturally in Spain, bu hath been tang cultivated in gardens. It hath a biilbous root, ihuped like thofe of the Snowdrop, covered with 3 brunw ikin, lending out three or tour fpeir-lhapcd concave leaves, between which eomt* out the flower,...

This plant* art propagated by offsets, in the fame manner as other bulboui routed flowera. The rime to remove rtiui, is foon after their icaves decay, but the KWtjmay be krpt out of the ground iwo moiRha without)rcjudice at that faibn. They lliouid not be removed otelicer than may third year, for [their roots do not multiply very lafr, Jo ty fuftering tlicii to TT-nuUB) they will Rower much froager, tml make a grrattr in...

This; fiift lort :tqiirc; an en'... fit hath too ;much tun, u will not thrive, but IIK'... should have a v... riner Smadoo, h may hr p... in a ibuilt bortkr, and fhould hivt- a fresh loamy foil, but nor dunged. They may ullb be propagated by feed,...

obtviogta keep them dean from weeds. In Oilohcr there ijionld be a lirtle fresh earth bid on the :... her, and die pots placed in fltcker again till the following fpring, when they muft be irectied in the fame manner as the former ftur, till their leaves decays...

BUNIAS. Lin. Gen. Plant. 7J7- The CHAAACreas are,

... which fall away. The flower hath four petals, placed in form of a cross, which art vsial or iiauHL, jtieid at itxir bait, end ... it ifn'ti/ of the cap, rone of which art vptfitt, nrJJucr:ir than it.

B U N

... tt, wiiiitti bifid at thirskj . In the winter it foliated an ohng j^TMTM, having no jll,, ... ly tui ci,iufr jtigwi. -The pnui; afta ... rrrrtgtkr, fiert, trod pod, mbfifsr lagla, ...

This genus of plants is ringed in the fecond feClion of Linnaeus's fifteenth clafs, ... Siliquo!;., 1! ... ,ning four i'... and two fhoot ... and are fuocceded by pods.

- The Sp.rci! . BUXIAS (Orintafo) filiculis <.,... Lin. Sp. Plant. TJO. BUKMS iv::h ... hatib%fnmtirmm. i. rambe Orientalis dentis leonia foliu criiCBginis l. ... Cur. 14.

HUVIAS (... filiculis ... in. Sji. Plane Batiiai vral , ... lili .1 liliqua qu:uli,iiguT. 1

Lin. Sji. H!int. L.ruta muritii ftliqua ... C. B. P. 99.

The first sort grows naturally, in the Levant, from whence Dr. Tournefort ... an annual stalk. ... ipread on every tide near the ground, and are deeply jagged on then- edge*, !ikci! ... from betWL/en theft: aril- the ihlks, which gnii'- upwards or two feet lugli, fending out hsjuidm garnished at each joint by one oblong Hi ... leaf, eared at the bafe, where they fit 1 ... to the ftalk. The branches are tcrminiri.il by lung looji; foikes of yrllow flowers, compofed of four leaves, fhaped like thole of the Cabbage *, tjiefc arc tic-ccttdtd by lhort, oval, rough pods ending in s j ... inclofing one round feed, ft flowers in June, and the fetds arc ripe in September.

The fecond ibrt grows niturally in the fouth of France and Italy » tjiiis is MI annual i>lint, finding out many brandies, which fprcad, t ... the ground; garni [bed with glaucov .1 ... arc deeply divided into many ((.gmenti, uhKl'. ... ofSwinaCn ... The flowers are pu ... itcedfiag); from the wings yf the leaves, toward the extremity of the brancies; there ire vtty tinall, of a patt yellowilh colour, compofed of four jictah, jiiactd in form of' a cross, wliiii are fitceded by lhort pod^, wh< charc creteli on each tide, toiming one or two roundih feeds.

The third fort grows naturally about Mouc; ; ... iliu is sltb an annual pUnt, fentiing out many d long leaves near Jic r)or, which art i IIII7, deeply cuntun each tide, and fpread in the ground; between Vae(t arise two (11 thrte (Wkt, which grow a Dor. and 1 half high, folding out feveral fide brandies, garnished with obli ...; rough leaves, mdentel on their tdets; the upper part of the bnv ... are deliqne of feaves, but have flowers placed ll ... on each Title, (landing on lhort foot-ibdks which ire [lurpic, and compofed of four pitalii thefe an: (un ... by ovi:l pointfd pulis, containing one or two roi!

Icedsi there ia a variety of this with saiti Thefe* plmu are all propagated by 6 ... may be fawn whve the j.lam 9 in the be<tnninp, ... they iliuuiUI be thin ... feet Blunder, stfor which they will 1 ... Care but to l ... s.-anfroni vnio. The fecond yeaf they will jirixiuL't lloKcn and ... A ill abide many y< ... The other two forts muft be taken where they are to remain, but the belt time is in autumn, becaufe their which ... come up time eib ... rrejuui. ... re hut to 1 ...

BUNUM. Lin. Gen. Plant. ... Town. Inf. ...

The CHARACTERS are*

The great or general umbel is composed of near twenty rays or small umbels, zybicb are port, *ni clofe together. The involucrum of the great umbel is composed of many Jhortnarrow leaves, thofe of thefmaller are the fame, but are as long as the umbels. The proper c}npalement of the flower is fearcē discernible. The rays of the great umbel are uniform. The flowers .have five heartfshaped petals which are equal, and turn inward; they have five Jiamina which are Jhorter than the petals, terminated by Jingle fummits\ the oblong germen is fituated below the receptacle, fupporting two reflexed ftyles, crowned by a blunt figma: The germen afterward becomes an oval fruit, dividing in two parts, containing two oval feeds, plain on one fide, and. convex on the other.

This genus of plants is ranged in the fecond fection of Linnaeus's fifth clafs of plants, intituled Pentandria Dig^nia, the flower having five ftamina and two ftyles.

The SPECIES are,

1. BUNIU (Bulbocastamm)bxL\bo£obofo.Stoiv. Monfp. 256. Earth Nut with a globular root. Bulbocastantum majus folio Apii. C. B. P. 162.
2. BUNIU (Creticum) radice turbinato. Earth Nut with a turbinated root. Bulbocastantum Creticum radice nafi-formi. Tourn. Cor.
3. BUNIU (Saxatile) foliis tripartitis filiformibus linearibus. Earth Nut with very narrow tripartite leaves. Bulbocastantum minus faxatile Peucedani folio. Tourn. Inf. 312.

The firft fort grows naturally in moift paffures, and in woods, in many parts of England. Of this there is a variety, fuppofed to be larger than that which grows commonly here, but I could never obferve any effential difference between them; for in fome places it is found much larger than in others, but when they have been tranfplanted into a garden, they have proved to be the fame. This hath a tuberous folid root which lies deep in the ground, and puts out fibres from the bottom and fides. The leaves are finely cut, and lie near the ground. The ftalk rifes a foot and a half high; which is round, channelled, and folid, the lower part being naked; but above, where it branches out, there is one leaf placed below every branch, which are cut into finer fegments than thofe below. The flowers are white, and lhaped like thofe of other umbelliferous plants; the feeds are fmall, oblong, and when ripe are channelled. It flowers in May, and the feeds ripen in July, foon after which, the whole herb decays to the ground.

The roots of this fort are frequently dug up, and by the poorer fort of people are eaten raw, having much refemblance in tafte to the Chefnut, from whence it had the title of Bulbocastantum. Thefe roots, when boiled* are very pleafant and delicious, and are fuppofed to afford great nourifhment. The fwine are very fond of thefe roots, and will root them up, when they are admitted where they grow, and will foon become fat with feeding on them.

The fecond fort was difcovered by Dr. Tournefort in the ifland of Crete, but it grows naturally in many other parts of the Levant. I received dried famples and feeds of this from Zant, where it grows plentifully.

The third fort I received from the Alps. This is a very low plant, feldom rifing above fix inches high. Thefe plants delight to grow among grafs, fo cannot be made to thrive well long in a garden.

BUPHTHALMUM. Lin. Gen. Plant. 876. Afterifcus. Tourn. Inf. R. H. tab. 285. Ox-eye.

The CHARACTERS are,

The empalernent* is different in the feveral fpecies. It hath a compound radiated flower, composed of h'ertnaphrodite and female florets. The hermaphrodite florets compofe the difk *, thefe are funnel-fhaped, and cut into five parts at the brim, which fspread open, and, have five JUnder ftamina* which are Jhort, terminated by cylindrical fummits. In the center is fituated an oval compreffed germen, fupporting a Jknderftyk, crowned by a thick figma. The germen afterward becomes an oblong feed, whofebor-

der is cut into many parts; the female flowers which compofe the rays (or border) are fretched out on one fide like a tongue, which fspreads open, and is indented at the top in three parts; thefe have no ftamina, but a double-headed germen, fupporting a flender jtyle, crowned by two oblong figma. The germen becomes a Jingle comprejhd feed, cut on each fide.

This genus of plants is ranged in the fecond fection of Linnaeus's nineteenth clafs, intituled Syngenefia Polygamia iuperflua, the flowers having hermaphrodite and female florets, included in one common empalement, which are both fruitful.

The SPECIES are,

- it BUPHTHALMUM (Helianthoides) calycibus foliolis, foliis oppofitis ovatis ferratis triplinerviis caule herbaceo. Hort. Upfal. 264. Ox-eye with a leafy empalement, oval fawed leaves placed oppofite, having three veins, and an herbaceous ftalk. Chryfanthemum Scrophthilarise folio Americanum. Pluk. Aim. 99. tab. 22. fig. 1.
2. BUPHTHALMUM (Grandiflorum) foliis alternis lanceolatis fubdenticulatis glabris, calycibus nudis caule herbaceo. Hort. Cliff. 415. Ox-eye with fsmooth fpear-Jhaped leaves (indented below,) naked empalenients, and an herbaceous ftalk. Afteroides Alpiiaa falicis folio glabro. Tourn. Cor. 51. tab. 487.
3. BUPHTHALMUM (Salicifolium) foliis alternis lanceolatis fubferratis villofis calycibus nudis caule herbaceo; Hort. Cliff. 414. Ox-eye with fpear-Jhaped leaves placed alternate, fawed below and hairy, naked empalenients, and an herbaceous ftalk. After luteus major, foliis fuceife. C. B. P. 266.
4. BUPHTHALMUM (Spinofum) calycibus acute foliofis* ramis alternis, foliis lanceolatis amplexicaulibus integerrimis caule herbaceo. Hort. Cliff. 414. Ox-eye with acute Uafy empalenients, branches placed alternate, and entire leaves embracing the ftalks, which are herbaceous. Afterifcus annuus, foliis ad florem rigidis. Tourn* Inf. 497.
5. BUPHTHALMUM (Sejfile) floribus axillaribus calycibus foliofis, fpinis terminalibus, foliis oblongis obtufis feffilibus. Ox-eye with flowers coming from the forks of the branches, leafy empalenients ending with fpines, and* oblong blunt leaves growing clofe to the branches. Afterifcus annuus maritimus patulus. Tourn. inf. 498.
6. BUPHTHALMUM (Maritimum) calycibus obtufe foliofis pedunculatis, ramis foliis alternis, ipatulatis caule herbaceo. Hort. Cliff. 414. Ox-eye with blunt leafy mpalenients, hawing foot-ftalks, alternate leaves, and an herbaceous ftalk. Afterifcus maritimus perennis patulus. Tourn. Inf. 498.
7. BUPHTHALMUM (Aquaticum) calycibus obtufe foliofis feffilibus axillaribus, foliis alternis oblongis obtufis paule herbaceo. Hort. Cliff. 414. Ox-eye with blunt leafy empalenients fitting clofe to the forks of the ftalk, oblong blunt leaves, and an herbaceous ftalk. Afterifcus annuus Luftitanicus odoratus. Boerh. Ind. alt. 105.
8. BUPHTHALMUM (Frutefcens) foliis oppofitis lanceolatis petiolatis bidentatis caule fruticofo. Hort. Cliff. 415. Ox-eye with fpear-Jhaped leaves growing oppofite, having foot-ftalks with two teeth, and a Jhrubby ftalk. Afterifcus frutefcens leucoii fgliis fereceis & incanis. Hort. Elth. 44. tab. 38. ..
9. BUPHTHALMUM (Arborefcens)io\\% oppofitis lanceolatis craffis, glabris utrinque viridibus floribus pedunculatis. Ox-eye with thick, fsmooth, fpear-Jhaped leaves growing oppofite, green on both fides, flowers having foot-ftalks, and a tree-like ftalk. Afterifcus frutefcens leucoii foliis viridibus & fplendentibus. Hort. Elth. 43. tab. 38.
10. BUPHTHALMUM (Incanum) foliis oppofitis lineari-lanceolatis craffis incanis, floribus feffilibus caule fruticofo. Ox-eye with thick, hoary, narrow, fphzn-Jhaped leaves placed oppofite, flowers growing clofe to the branches* # end a Jhrubby ftalk. Afterifcus frutefcens leucoii foliis anguftiflimis fereceis & incanis. Lnd. Hort. Chelf. 27.

The firft fort grows naturally in Northr America. This hath a perennial root and an annual ftalk: from the root there arifes many ftalks, in number proportional to the fize of the roots 5 thefe grow upward of

fix feet high, garnished at each joint with two oblong heart-shaped leaves placed opposite, which have three longitudinal veins, the base on one side being shorter than the other. The flowers come out at the extremity of the branches, having a leafy empalement, they are radiated, of a bright yellow colour, resembling a small Sun-flower, from whence the inhabitants of America have given it that appellation. It flowers in August, and when the autumns prove favourable, the seeds will ripen in England; but as it propagates easily by parting the roots, there are few persons who are solicitous about the seed. The best time to transplant and part the roots, is toward the end of October, when the stalks begin to decay. These should be removed every other year, to prevent their spreading too far; they are very hardy, and will thrive in any situation: but as the roots are apt to extend, they are not proper for the borders of small flower-gardens; but in large borders, on the sides of rural walks, or in spaces between shrubs, they will be ornamental during their season of flowering.

The second sort grows naturally on the Alps, as also in Austria, Italy, and the south of France. This hath a perennial root, and an annual stalk; it grows near two feet high, with slender branching stalks, garnished with oblong smooth leaves ending in a point; the flowers grow at the extremity of the branches, which are of a bright yellow colour, radiated round their borders like those of the Starwort. It flowers in June and July, and the seeds ripen in autumn. There are two or three varieties of this, differing in the breadth of their leaves and size of their flowers, but from the same seeds all these have been produced.

This sort is generally propagated by parting the roots, which may be performed at the same time, and in the same manner as is directed for the first sort. As this doth not spread so much as the former, a few roots may be allowed room in the borders of the flower-garden, especially those which have little sun, where these will continue a long time in flower.

The third sort is somewhat like the second, but the leaves are broader and obtuse; the stalks and leaves are also hairy, in which consists their difference. This flowers at the same time with the former, and is propagated in the same manner.

The fourth sort rises a foot and a half high: the stalks divide into many branches upward; the side branches rise much above the middle stalk, garnished with spear-shaped hairy leaves, placed alternately; the flowers are produced at the forks of the branches on short foot-stalks; the empalement consists of seven long, stiff, spear-shaped leaves, ending in a sharp point, these spread out beyond the rays of the flower in form of a star. The flower fits close upon the empalement, the border or rays being composed of many female florets, which have one side stretched out like a tongue, and indented at the end in three parts, the middle or disk of the flower is composed of hermaphrodite flowers, which are tubulous, funnel-shaped, and (lightly indented in five parts at the brim; they are of a bright yellow colour, and are succeeded by oblong compressed seeds. The plants flower in June and July, and their seeds ripen in September, soon after which the plants decay.

The seeds of this should be sown the beginning of April, on open borders, where they are to remain, and will require no other care, but to keep them clear of weeds, and thin them to the distance of a foot and six inches, that their branches may have room to spread. If the seeds are sown in the autumn, or are permitted to fall when ripe, the plants will come up soon after, and these will more certainly ripen seeds than the spring plants.

The fifth and seventh sorts are also annual plants, which grow naturally in the same countries with the last. These seldom grow more than one foot high in gardens, and where they are wild not so high, but send out many spreading alternate branches near the

root: their leaves, which are oblong, blunt, and hairy, are placed alternate, growing close to the branches without any foot-stalks, the leaves of the empalement of the fifth sort end in a very sharp spine, and are much broader at their base than either of the other. The flowers of all these have much the appearance of those of the last, but some are smaller, and those of the seventh sort have an agreeable odour. They flower at the same season, and are propagated in the same manner.

The sixth sort is a low perennial plant with a shrubby stalk, which rarely rises a foot high, sending out many spreading branches from the stem, garnished with hairy leaves, which are narrow at their base, but broad and roundish at their extremity; the flowers are produced at the end of the branches, they are yellow, and shaped like those of the former sorts, but the leaves of the empalement are soft and obtuse. These are seldom succeeded by seeds in England, but the plant is easily propagated by slips during the summer season; if the cuttings are planted in a bed of fresh loamy earth, and covered with a hand-glass, observing to shade them from the sun in the heat of the day, and frequently refreshed with water, they will take root in about six weeks, when they should be carefully taken up, and each planted in a separate small pot filled with fresh undunged earth, and placed in a shady situation till they have taken fresh root, after which they may be removed to a sheltered situation, where they may remain till the end of October, when they must be removed to a frame for the winter season, being too tender to live abroad in winter in this country, but as they only require protection from hard frosts, they will thrive better when they have a great share of air in mild weather, than if confined in a green-house; therefore the best method is to place them in a common frame, where they may be fully exposed in mild weather, but screened from the frost. This sort grows naturally in Sicily. It flowers great part of the year, which renders it the more valuable.

The eighth sort rises with several woody stems from the root, which grow to the height of eight or ten feet, garnished with leaves very unequal in size, some of which are narrow and long, others are broad and obtuse; these are intermixed, sometimes coming out at the same joint, and often at the intermediate one; they are soft, hoary, and placed opposite. The foot-stalks of the larger leaves have, on their upper side, near their base, two sharp teeth hanging upward, and a little higher there are generally two or three more, growing on the edge of the leaves. The flowers are produced at the ends of the branches singly; these are of a pale yellow colour, and have scaly empalements. It grows naturally in America. I received another sort of this from the Havannah, which was found growing naturally there by Dr. Houftoun, who sent it by the following title, *Chrysanthemum fruticosum maritimum, foliis glaucis oblongis, flore luteo*. Sloan. Hist. Jam. i. p. 125. The leaves of this are shorter and thicker than those of the tenth sort, and have no teeth on their foot-stalks, but in other respects are very like it; the plants are not so hardy. The eighth has been long preferred in the English gardens, and was originally brought from Virginia, as I was informed by the Bishop of London's gardener, who raised it in 1606 at Fulham.

The ninth sort grows naturally in the Bahama Islands, from whence I have several times received the seeds. This seldom grows much more than three feet high, sending out many stalks from the root, which are succulent, except near the root, where they are ligneous, garnished with thick, succulent, spear-shaped leaves placed opposite; the flowers are produced at the end of the branches upon foot-stalks which are two inches long. These flowers are larger than those of the eighth sort, of a bright yellow colour. They appear in July, August, and September, but often continue till the end of October.

The tenth fort grows in the Bahama iflands, from whence I received the feeds. This fends out many {lender (talks from the root, which rife near three feet high, garnifhed with long, narrow, thick, fucculent leaves, which are very hoary, growing oppofite, embracing the ftalk at their bafe; the flowers are yellow, and are produced at the end of the fhoots, having very fhort foot-ftalks. Thefe appear at the fame time with thofe of the ninth fort.

As thefe three forts do not perfedl their feeds in this country, they are propagated by cuttings. They fhould be planted in July, when the plants have been for fome time expofed to the open air, whereby their {hoots will be hardened and better prepared to take root, than when they firft come abroad. The cuttings fhould be planted in fmall pots filled with light loamy earth, and plunged into a very gentle warmth, obferving to fhade them from the fun in the heat of the day, and gently refrefh them with water, but it muft be given to them fparingly, for much wet will rot them. In about fix weeks thefe will have taken root, when they muft be gradually inured to bear the open air, and foon after they fhould be each planted in a feparate fmall pot filled with light loamy earth, and placed in the fhade until they have taken frefh root; after which they may be removed to a fheltered fituation, where they may remain till the middle of October, when they muft be removed in the green-houfe. The eighth fort being hardier than either of the other, may be placed in a common green-houfe; but the other two will thrive better in a warm glafs-cafe, where they will receive more fun, and have a drier air. During the winter, they fhould have but little moifture, and in very mild weather they fhould have frefh air admitted to them. In the fummer they muft be placed abroad in a fheltered fituation, and treated in the fame manner as other exotic plants.

BUPLEUROIDES. See PHYLLIS.

BUPLEURUM [fo called, from Bofe Bos, and *κρυπτον*, *cofta*, *ktus*, becaufe it is commonly believed, that if cows eat of it, it will burft their bellies.] Lin. Gen. Plant. 291. Hare's-ear.

The CHARACTERS are,

// is a plant with an umbellated flower; the rays of the principal umbel are thirty confifting of ten fmaller umbels which are ere ft and fpread. The involucrium of the great umbel is compofed of many oval pointed leaves, thofe of the fmall have five. The flower hath five fmall heart-fhaped petals, which are inflexed \ it hath five flender flannrina, which are terminated by roundifh fummits. The germen is fituated below the flower, fupporting two fmall reflexed Jyles, crowned by a fmall ftigma. The germen afterward becomes a roundifh compreffed fruit which is channelled, dividing in two parts, containing two oblong channelled feeds, convex on one fide, and plain on the other. This genus of plants is ranged in the fecond fegtion of Linnaeus's fifth clafs, entitled Pentandria Digynia, the flower having five ftamina and two ftyles.

The SPECIES are,

1. BUPLEURUM (*Rotundifolium*) involucris univerfalibus nullis, foliis perfoliatis. Hort. Upfal. 64. *Harts ear, whofe greater umbel hath no involucrium, and the flalks growing through the leaves. Perfoliata vulgatifima five arvenfis.* C. B. P. 277.
2. BUPLEURUM (*angulofum*) involucellis pentaphyllis orbiculatis, univerfali triphylo ovato, foliis amplexicaulibus cordato-lanceolatis. Lin. Sp. Plant. 236. *Harts-ear with the fmaU involucrium compofed of five orbicular leaves, the larger of three oval ones, and heart fpear-fhaped leaves embracing the ftalk. Perfoliata Alpina anguftifolia major folio angulofo.* C. B. P.
3. BUPLEURUM (*Odontitis*) involucellis pentaphyllis acutis, univerfali triphylo, flofculo centrali altiore, ramis divaricatis. Lin. Sp. Plant. 237. *Harts-ear with finaller involucrii, compofed of five pointed leaves which arc acute, thofe of the larger three-leaved, the flower in the center* taller, and the branches fpreading from each other. Perfoliata minor anguftifolia, Bupleuri folio.* C. B. P. 277.

4. BUPLEURUM (*Rigidum*) caule dichotomo fubnudo, involucris minimis acutis. Lin. Sp. Plant. 238. *Harts-ear with flalks growing from the division of the branches, which have no leaves below, and a very fmall pointed involucrium. Bupleurum folio rigido.* C. B. P. 278.
5. BUPLEURUM (*Tenuiffimum*) umbellis fimplicibus alternis pentaphyllis fubtrifloris. Lin. Sp. Plant. 238. *Hare's* ear with Jingle umbels growing alternate, and five leaves under each three flowers. Bupleurum anguftiflimo folio.* C. B. P. 278.
6. BUPLEURUM (*Fruticofum*) frutefcens, foliis obovatis integerrimis. Lin. Sp. Plant. 238. *Shrubby Harts-ear with oblong oval leaves which are entire. Bupleurum arborefcens falicis folio. Tourn. Inft. 310. Sefeli Mthiopicum frutex. Dod, Pempt. 312. Shrubby Hartwort of ^Ethiopia.*
7. BUPLEURUM (*Difforme*) frutefcens, foliis vernalibus decompofitis planis incifis, aeftivalibus filiformibus angulatis trifidis. Lin. Sp. Plant. 238. *Shrubby Harts-ear, whofe fpring leaves are decomposed, plain, and cut, and the fummer leaves are narrow, angular, and trifid. Bupleurum frutefcens foliis ex uno punfto plurimis junceis tetragonis. Burman. Afr. 195. tab. 71. fol. i.*

The firft fort grows naturally upon chalky land among wheat, in feveral parts of England, fo is feldom admitted into gardens. The leaves and keds of this plant are ufed in medicine; the herb is efteemed good for diflblving fcrophulous tumours, and is by fome ufed for internal ailments, ruptures, and bruifes from a fall. It is called Thoroughwax in Englifh.

The fecond, third, fourth, and fifth forts are annual. The fifth fort grows naturally in feveral parts of England, the others are natives of the Alps and Pyrenees; thefe are feldom cultivated but in botanic gardens for the fake of variety. Thofe who are defirous to have any of thefe fpecies in their gardens, fhould fow their feeds in autumn, where the plants are defigned to remain, for they do not bear tranfplanting well; and keep the plants clean from weeds, which is all the culture they require. They flower in June and July, and their feeds ripen in September.

The fixth fort hath a woody ftem, which fends out many branches, fo as to form a large head or bufh, covered with purplifh bark, and garnifhed with oblong, oval, ftiff leaves, which are very fmooth, of a fea-green colour 5 the ends of the branches are terminated by umbels of yellow flowers fomewhat like thofe of Fennel. Thefe come out in Auguft, but are feldom fucceeded by perfedl feeds in England. It grows naturally in the fourth of France and Italy, near the borders of the fea.

It is commonly known among gardeners by the title of Shrubby ^Ethiopian Hartwort, and is now propagated in the nurfery-gardens for fale. This grows five or fix feet high, forming a large regular bufh, the leaves continuing green through the year render it more valuable. It is hardy, fo will thrive in the open air, and may be intermixed with other ever-green fhrebs of the fame growth, in the front of taller trees, where their ftems are defigned to be excluded from fight. It is propagated by cuttings, which fhould be planted in pots filled with frefh loamy earth, and in winter fheltered under a hot-bed frame, in the fpring the cuttings will put out roots, but they will not be fit to tranfplant till the autumn following; fo the pots fhould be placed in a fhady fituation in fummer, and in dry weather they muft be refrefhed with water. The young plants may be planted in a nurfery-bed at two feet diftance for a year or two to get ftrength, and then tranfplanted where they are to remain.

The feventh fort grows naturally at the Cape of Good Hope, from whence it was introduced to the gardens in Holland. This rifes with a fhubby fcalk to the height of five or fix feet, fending out fome fide branches, which in the fpring have their lower parts garnifhed with leaves compofed of many fmall plain lobes, which are finely cut like thofe of Coriander,

BUR

of a fei-green colour, thidc leaves thon fall off, am the upper part of the branches arc clulely eperet widi long ruli-likc leaves having four angles, which come out in duflxrs from each joint. The (lowers ~~pro~~ in fjneadng ambell at the extremity of tin branches, whicli art fnull and of an herbaceous colour, and arc fuccceded by obtung channelled ~~•••••~~.

This lorisccommonly propagated by cuttings, which readily take root, if rlyty arc jointed in April in pots filled with light ruth, and plunged into a moderate hot-bed, and when they have taken root, dicy (lion!.) K inured to the open air by drgrees, and after they have drained strength, may be planted eadi into l feparatt pot filled with light loamy earth, placing them in die fh.uk, till they have taken freffi root, when they may be placed with other exotic plus in a fhdtcred filiation, where they may • main till tin; autumn, when they muft be removed into the greerj-houft, and pbeed with. Tuch hardy plants as require a large ihire of air in niild weather, and only require a protection from froft.

If ibis plant Ls propagated by feeds, they fhould be fbwn in the autumn, loon after they are ripe, in pis filled with light earth, which muft be fhdtcred under j. r. rnic in winter, and in the faring removed to a «ery gentle hotbed, which will tdon bring up die plants i thefc muft be inured to bear the open air by degrees, and then treated in ihe fame manner as ihujc ~~raised from~~ rotting*. This plant flowers in July, and the lints ripen in Siyteniber.

BUBMAN\I . Lin. Cien. 397. This genus was ∞ cided by Dr. Liumis, in honour to his friend Dr. Lunnan, profefibr of botany at Amllcrdam.

The CHAKActiis arc,

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irving three ulk fiUtd with fmall jccdi.

This genus of plants is ranged in ihe ~~Erit~~ fe&ion of Lin m: nV 5 QxthcWk, istided Hexudru Monogynia, the Rower having fix ftamuu and one ftyle.

The Si'tcm WIP,

- t. Bint VAN MA (*Dijtiaba*) fpica gemina. Burm. Zcyl. 50. *Burmenniit -xfth a detbtie jpOieffletwrt.*
2. BURMANNIA (*tijflora*) (lore gemino. Un. Sp. 411. *Rwrataniun with tvzt floviers. JJurmmnia fe'po biflone. I-ljr. Virg. 36.*

The frft: fort grows naturally in Ceylon, m places covered with water mod part of the year, the root it comtwfcd of many capillary fibres, from which come out fix Of eight narrow fpear-fliapcd leaves, near two inches long, which arc enriri. The Rower-irulk rifes a fpan high, gatniffw.l ««h lv^c or TM narrow fpear-flhapcd leaves which embrace ii it thtir bafe; thie ftalk u. terminated by a double fpike of ~~ten~~ Ipttading each way: thde arc garniffi' • J with ImU blue flowers, included in a fwclhng fpaiha, or flieathj thcleliavceach three (hurt petals, futfhmina, and one ftyle; and in its native foil, the ctnpalcmnt of tic fluwT becomes a triangular cover to the

I

The tcond fort grows naturally in Virginia and Carolina, in * at cry places, this hath a ffrong fibrous root, from which arife fveral oblong oval leaves, ~~four or five inches long~~ ; which arc fmaoth and entire; ~~LA'wccn~~ thefe arilcs die ~~foo~~ of ihe ilowrr, which ii fix or eight Inches high, terminated by fpikes of flowers, two growing in eaih fpstia or fheaih; thde arc blue, and in their native foil arc fuccceded by ~~ii!~~ i'eds inclofed in the triangular empale-

ment. Thede plants arc very difficult to preferve in garden*! for 35 thly naturally grow in marfhy places, which arc covered with water great part of the year, they

BUT

will not thrive when planted in dry ground, and being too tender to live abroad in England, renders them very difficult to prefervei therefore whoever is defuious to have diem, (hould plant them in pots, which fhould be piunged in tinuglis of water, fo deep as 10 cover the furface of the mould therdn nabout three inches, Xhofs trouglis in which the firil fort h [j]lavtted, fhould be placed in a warm ftove, whera they fhould conftandy remiin, being careful tofupjily the warcr as it may diminifh in the troughs from rime-to lime. Tht troughs in whicdi die lecond ~~fort~~ is put, fhould be placed in a green-houfc in winter to proteci the plants from froft, bu: in fummer they may be expofed in the open air, with this management, if carefully attended to, die ~~plants may~~ brprolervtd, and fomeunics may be brought to product; flowers.

BURNET. See POTEKIUUM and SASCUISOHDA.

EURSA PASTO It IS, Shepherd:-pouch. This is a common weed in mud parti of England; WIULI propagates fo fill by feeds, as not to be eafty cleared when diey arc permuted tu fhed j lot there arc com • inonly four geocratioaj of this plant from feeds in .1 year, fo faft dots die lced ripen, and the piano come up ; therfcor it cannot be too loon or carefully rooted out of a garden.

BUTOMUS, [] inifi [i] of jG[an ox, and rfj«a, tacui, lb called, becault: the Itavcs i>t"i] arc fb acute, [hac the tongue and lips of oxen, whicli arc great lovers of ihis plant, arc wounded by it, to that the blood iffues forth: it is alfo called JUNCUS Fl. trida, becaufe it has the leaves of a Ruth, and produces a tine bunch of flowers.] The Flowcring-RuOi, or Water-Gbdiole.

THE CHARACTERS

I"be JlevnTigrew its itJixgU umkl, having e/hart thrtt
teavtd hwoistenia, TUftmvr bath fix Toniidip concave
ftals, wkb ore alternate! /maier and tiivre painted, it
bath time trsiUjbafeclftinnna, fix of whicb furrouxd tit
tbir, and art itmrisatai hj doakL Limlhtid fammiss 1
it bath fix cbiani panted genrm, ftppcrthig a fingic
jllgma \ the grmin aficnyari btmnt fix ebltmg pointed
capfdfl, having cm uBilled with thngfuis.

This genus of planes is ranged in the third feftion of Linnaui'j ninth clak, intkk'ti Enneandria Hexagynia, ihe flower having nine ftamina, wid fat germen.

We know but one SPECIES of diis genus, viz.

tiTOMus (*Umbclatus*'j Fl .Lap. 159. *Til Jhwcring-livft, or Woicr-Claitie*U. Juncm flciridiu major. C, B, P. 111. *Grtaiet l-jKntning-RuJb.*

There arc i>o varicies of tills plant, one with 1 rofe coloured (lower, and die odier widi a *hite, but dufe ire only tteccitienw) variftions, therefore not to be enumerated as diftitiit fp^l.

The Rule coloured liwl is pmry conimon in (landing WMcB, in many parts of I.J)gland; die other is 3 variety of this, though iefe common widi us near London. Thcfe pbnts may be propagated in boQjy places, or by planting them in uilcms, which (hould be kept filled with water, that fhould have about a foot ihickncfs of earth in the bottom, into which die roots fhould be planted, or the feed luwn is foon » they ire ripet thefe, though common plants, yet produce very pretty ftowen, and arc worth propagating for variety, especially if in any part of die garden diec fhould be conveniency for an artificial bog, or where there ore ponds of funding water, aa is many times the cafe, and peribs arc at a lofs whuir. to plant in fuch plices, thit niay appear beautiful I whereas, ifdicfe, ami a few more wild plants, which narurally grow in fch places, wci* fiken into the garden, they would have a very good effect in diverfifying the fveral parts thereof.

There is another Jpecies, or at lcaft a variety, of this plant, which is found growing near London, intermixed with the common fort, but not half fo large tither in Jeaf, ftalk, or flower; but in other refpctis fo like it, a* to render it very difficult to be ddlinguifhed from h, for which rcafon I hn'c not nnumcrated it; though n-jny of the plants iettlrf in the

rivor

BUX

river Thames, due by the Chlfea garden, where
i mi nurd their uUial ihiall lize many years.

BUX 05, the Box Tree.

The CūAJAftras m,

It tilth rad.r end fenuit jfaztrms tie fame plaits ; tht
ixaU fcuurs bavi c trrt-kdvtd, ami lbt fandt a four-
UeKid implemtxl, nalib art content. Tht ti;it'e fiptutrs
base Sty, end ttt finale three tjrurye pads, vibkk
art larger /bun ibe tmft ... i mkjfoatri bsvt
four upright ftaaim, ttrmated h dwb!/? crtl fummiti
-jii'L: . . . : t iw j!y! (or fiign/td : the

... ml, tbrut-sontircAga-mn,
... .rcnW by obwjprickly
... Mid btcomes a rtmniijh
... gi peU tfixhig is
'so (iblong fails, uihkb are cajl
ferfi ij the t/jjialy if tht pad wlx* rift.

This genus tit plants it ranged in the fourth fection
of LtuiucuA twenty-Srft dais, intitled Moo ecia
l'etraridria, (litre bctnp male and female How
the line pLint, and the male (lowers having four
ft-iinina.

The •SPECIES are.

1. Buxus vlrloTtfcats) arborefcens, foliis ovatii. Trte
litx uiih eval haves. Buxiu arborefcens. C. 6. i'.

1. BUXVH \`bSujlift>li/i) arborefoens foliis lanceolatis.
I'rcce Bex wiib j'ptar-fbapru Uasa. Bu^us anguftifolii.
Kaii tiyn. 445. Niirt-ui-Siaved Box.

3. Buxus iSitfratitief. humifis fclis orbioJans. Dnusrf
Sex with round ueniu. Euxus humiis. Dod. j
781. Dwarf or Dutch Box.

rhefc ... three ceainly diflinft Ipecln. The two
feris of Tree Box hiive been frequently railed from
fteds, and conlbnrfy produced plants of the (knur
kind trum thoti the feeds were taken frorru and the
Dwarf Bo) will never rife to any conGdmHe height
wldi ajy culture, nor iiave I ever t'ctn iliii fort Bower,
where thic plants have tx-tn vncouragett top-ow piany
years in the griiicll luxurlancy. There are two or
ihree varktirs of rhe : ... i^ited
in the gardens, one with yellow, and the other white
flipped leaves. The other has th the tops of the leaves
only marked with yellow, which -ili il Ttped Box.
Thic firft and (econd forts grow in great plenty upon

BYT

Box 11, near Dr'king in Surry, where were the
large vitcssoftlieiekindsibi. of late the .havebeen
pretty tmicti Gctmred. yet urns are great numbers
of the weef (cmth ... i: onfidtrable
impacts. The wood of this tree is verryadful for
turntrs, engravers and mathematical infimmen-
niikers, thewobd being for I ltd, clofe, andp
ous, a; to fink in water, which renders it very valua-
ble for difery utem.

All the varieties of the tree or large Box are proper
to intermijein ch... of Evergreens, &c. when thi'y
shd to The vaiictv of fajih pisntadons •, thefe may h:
propaMted by pf.inting the 1attings in Aitumn in .I
ihuly border, rtricrvii to keep them wattered until
thry have taken rant, when they may betranfr!
into nurferies, till they are fit -Drtlie purpofesintrJ-
cd. The beft fiafon for temi'ving thie trees is in
Oftober, though indeed, if Lire beulrd M uke them
up with a good^ball of earth, they mny be iraniplan-
ed smofl at any time, except in fumi'er. Thie
trees are a vrry grejt ominiriit to cold ami barren
foils, where few other things will grow; they may
>l(b be propagated by laying tiown the branches, or
from feeds: the lait being {lie bt'ft irthod to have
themjrrrow to be In-gc, cfc imdi muft bt fuwn foon
after they are ripe in a (hady border, vLupti :-iift V
duly wattered in -Iry we.ither.

The Dwarf kind of Boy is tifed for bordering flower-
beds or border;; for which purpofe it for exceeds
iny udier jiiijnt, it being fubjeff to no injuries fr&n)
cold >r heat, and is of long duration, it vry
keep hand&tne. :nd, by the iirmnelj of in rooting,
keeps thr nould in the borders from washing ijtobe
gravel -alls, more effectually than any plant: what-
ever. This is increafed by parting the roots, or [ilnn t-
ing the flips 1 but ris it m'nk: to great an increafe of
itfrif, and fo «fily parts, it is hardly worth » hie to
plint the flips that have no roots. It is now be-
come fo common, that it may be put-chafed from the
nuritriu at a chi-ap rate.

Tht manner of parting thi' in edginsp, See
well onderftood !• every w'king p l ener, that «
would be needlefs to mention any tiling of that kind
here.

BYT N'ERIA. S « BASTRIA.

G

CAC

CABINHT, in a garden, w *conveniency
which differs from an arlxur, in thi, that
an arbour or lummc-houlc ii of great lengthy and
artheJ overhead in the form of a g-ilkry; Bui
birm ia either iquatc, circular, or in canu, making
a kind of litoi, to be fet at ; he ends, or in iht mill-
die of a long urbour.

CACALIA ANTHEMUM. See CACAUA.
CACALIA, •jreizn Colnfoor.

The CHARACTERS
It ball
men, cylindrical, fny ti
... the flowers are in-
... the top ends the parts
... the four fender fe-
... The flowers is
... the green afterward be-
... with long down.

CAC

This genus of plants is ranged in the first fection of
Luutrus's i •city first clafs, intitled Sy: cnefia poly-
gamij iequalu ; thefi bive at] henOTphrodiw flowers
which l ire fertile.

The SPICK are,
1. CACALIA (jflplna) foliis rcnifiirmibus acutis dentku-
latis calycibus tubulosis, Gouan, Measp. 239. Ca-
ch a with lobed feget leaves ... indau-
id, and generally flow fevers in each capsulement, CV
cilia foliis crassis herbis. C. B. P. 197.

2. CACALIA (Glauc) foliis cuneatis rhomboides
C.B. P. 197. Cacalia with smooth leaves, having
pinks. Cacalia glabra L. io. Cuf, HU
p. 115.

3. CACALIA (Saxatilis) caule herbaceo foliis hastato-
littatis denticubi; petiolis foris dilatatis. Hort.
Uplid. 224. Cacalia with an herbaceous stalk, four-
toothed indented leaves, and the upper ribs of the first stalk
spreading. Cacalia Americana proceris, folio triangu-
ari ptr baffn auricub.'', Borbas alba. Edle prie.
4. CACALIA

4. CACALIA (*Atriploidfolia*) caule herbaceo, foliis fubcordatis dentato-finuatis, calycibus quinquefloris. Lin. Sp. Plant. 835. *Cacalia with an herbaceous stalk, heart-shaped finuated leaves, and five florets in each empalement*, Nardus Americana procerior, foliis caefiis. Pluk. Aim. 251.
5. CACALIA (*Ficoides*) caule fruticofo, foliis compreflis carnolis. Lin. Sp. Plant. 834. *Cacalia with a jhrubby stalk, and flefhy comprefed leaves*. Senecio Africanus arborefcens, ficoidis folio & facie. Com.; Rar. Plant. 40.
6. CACALIA (*Kleinia*) caule fruticofo compofito, foliis lanceolatis planis, petiolorum cicatricibus obfoletis. Lin. Sp. Plant. 834. *Cacalia with a compound jhrubby stalk, plain fpear-shaped leaves* and the foot-ftalks leaving fears*. *Cacalianthemum folio nerii glauco*. Hort. Elth. 61. tab. 54.
7. CACALIA (*JPapillaris*) caule fruticofo obvollato fpinis petiolaribus truncatis. Lin. Sp. Plant. 834. *Cacalia with a Jhrubby stalk, guarded on every fide with broken rough foot-ftalks*. *Cacalianthemum caudice papillari*. Hort. Elth. 63. tab. 55.
8. CACALIA (*Ante-euphorbium*) caule fruticofo, foliis ovato-oblongis, petiolis bail linea triplici dedu&is. Lin. Sp. Plant. 834. *Cacalia with a Jhrubby stalk* oblong oval leaves, and three lines conneSed to the bafe of the foot-ftalk*. *Kleinia foliis carnolis planis ovato-oblongis*. Hort. Cliff. 395.
9. CACALIA (*Sonchifolia*) caule herbaceo, foliis lyratis amplexicaulibus dentatis. Lin. Sp. 1169. *Cacalia with an herbaceous stalk, and lyre-shaped indented leaves embracing the stalk*.
10. CACALIA (*Lntea*) caule herbaceo, foliis quinquepartitis acutis fubtus glaucis, floribus terminalibus pedunculis longiffimis. *Cacalia with an herbaceous stalk, leaves divided into five acute parts, glaucous on their under fide, and flowers with long foot-ftalks terminating the ftalks*.
The firft fort grows naturally in Auftria, and the Helvetia mountains, but is frequently preferred in curious gardens for the fake of variety. This hath a flefhy root which fpreads in the ground, from which fpring up many leaves, (landing on fingle foot-ftalks, fhaped like thofe of Ground Ivy, but of a thicker texture, of a flining green on their upper fide, but white on their under; between thefe arife the foot-ftalk, which is round, branching toward the top, and grows a foot and a half high; under each divifion of the ftalk is placed a fingle leaf, of the fame fhape with thofe below, but much fmaller; the branches are terminated by purplifh flowers, growing in a fort of umbel. Thefe are fucceeded by oblong feeds, crowned with down.
The fecond fort hath the appearance of the firft, but the leaves are almoft heart-shaped, pointed, and fharply fawed on their edges, and on both fides very green*, the ftalks rife higher; the leaves upon the ftalks have much longer foot-ftalks than thofe of the firft. The flowers of this are of a deeper purple colour. This grows naturally on the Alps. They flower toward the end of May, or the beginning of June.
The third fort grows naturally in North America. This hath a perennial creeping root, which fends out many ftalks, garnifhed with triangular fpear-shaped leaves, fharply fawed on their edges, of a pale green on their under fide, but a deep flining green above, placed alternately. The ftalks rife to the height of feven or eight feet, and are terminated by umbels of white flowers, which are fucceeded by oblong feeds crowned with down. It flowers in Auguft, and the feeds ripen* in October. This plant multiplies greatly by its fpreading roots, and alfo by the feeds, which are fpread to a great diftance by the wind; the down which adheres to them being greatly affifting to their conveyance. The roots of this plant, which have been caft out of the Chelfea garden, have been carried by the tides to a great diftance, where they have lodged on the banks of the river, and fattened themfelves to the ground, and have increafed fo much, as that in a few years, it may appear as a native of this country. The ftalks decay in autumn, and new ones arife in the fpring.

The fourth fort is a native of America, but has been many years in fome curious gardens. This hath a perennial root, and an annual ftalk. The root is compofed of many flefhy fpreading tubers, fending out feveral ftrong ftalks in the fpring, which rife four or five feet high, garnifhed with roundifh heart-shaped leaves, greatly indented on their edges, of a fea-green on their under fide, but darker above, placed alternately the length of the ftalks, which are terminated by umbels of yellowifh herbaceous flowers, appearing in July and Auguft, and are fucceeded by feeds like thofe of the former fort, which ripen in October.

The firft and fecond forts are propagated by parting their roots, for they feldom produce good feeds in England. The beft time to tranfplant and part their roots is in autumn. They require a loamy fojj and a fhady fituation.

The third and fourth forts propagate in great plenty, both by their fpreading roots, and alfo their feeds. The roots fhould be tranfplanted in autumn, and require a moift foil and an open fituation. If the feeds are permitted to fcatter, the plants will come up in the fpring without any care.

The fifth fort grows naturally at the Cape of Good Hope. This rifes with ftrong round ftalks to the height of feven or eight feet, which are woody at bottom, but foft and fucculent upward, fending out many irregular branches, garnifhed more than half their length with thick, taper, fucculent leaves, a little comprefed on two fides, ending in points, covered with a whitifh glaucous farina, which comes off when handled. Thefe, when broken, emit a ftrong odour of turpentine, and are full of a vifcous juice; at the extremity of the branches the flowers are produced in fmall umbels; they are white, tubulous, and cut into five parts at the top. The ftigma which crowns the ftyle is of a dark purple colour, and ftands eredt above the tube. The ftamina are much fhorter, and furround the oblong germen, which is fituated in the center of the tube, and is crowned by long, white, hairy down. The germen afterward becomes an oblong feed, with the fame down adhering to it; but thefe do not ripen in England. Some of the noblemen in France have the leaves of this plant pickled*, in doing of which, they have a contrivance to preferve the white farina with which they are covered, and thereby render them very beautiful.

This fort is eafily propagated by cuttings during the fummer months: thefe (hould be cut from the plants and laid to dry a fortnight, that the wound may be healed over before they are planted. Moll people plunge the pots, in which thefe are planted, into a moderate hot-bed, to forward their putting out roots, but if they are planted in June or July, they will root as well in the open air. I have frequently had the branches broken off by accident, and fallen on the ground, which have put out roots without any care. Thefe branches may be kept fix months put of the ground, and will take root if planted. This fhould have a light fandy earth, and in winter be placed in an airy glafs-cafe, where they may enjoy the fun and air in mild weather, but mult be protected from froft. During the winter feafon, the plants mult have but little water*, and in fummer, when they are placed in the open air, it fhould not be given them too often, nor in great quantity, but treated like the *Ficoides*, and other fucculent plants from the fame country. It flowers ufually in autumn, but is not conftant to any feafon.

The fixth fort grows naturally in the Canary Iflands, but has been long an inhabitant in the Englifh gardens. This rifes with a thick flefhy ftem, divided at certain diftances, as it were, in fo many joints; each of thefe divifions fwells much larger in the middle than they do at each end; the ftalks divide into many irregular branches of the fame form, which, toward their extremities, are garnifhed with long, narrow, fpear-shaped leaves, of a glaucous colour, landing all round the ftalks without order. As thefe fall

but they leave a scar at the place, which always remains on the branches. The flowers are produced in large clusters, at the extremity of the branches, which are tubulous, and of a faint Carnation colour. They appear in August and September, but continue great part of October, and are not succeeded by seeds in this country. There have been stones and fossils dug up at a great depth in some parts of England, which have very perfect impressions of this plant upon them; from whence Dr. Woodward has supposed, the plants were lodged there at the universal deluge, and finding the impressions of many other plants and animals, which are natives of those islands, he concludes that the waters flowed hither from the south-west.

This plant has been called Cabbage-tree by the gardeners, I suppose from the resemblance which the stalks of it have to that of the Cabbage: others have titled it Carnation-tree, from the shape of the leaves, and colour of the flowers.

It is propagated by cuttings, in the same manner as the former sort, and the plants require the same culture; but must have a dry warm glass-case in winter, and very little water, being very subject to rot with wet. In summer they must be placed in the open air, in a warm sheltered situation, and in very dry weather refreshed moderately with water. With this management the plants will flower annually, and grow to the height of eight or ten feet.

The seventh sort resembles the sixth in its form and manner of growth, but the leaves are narrower and more succulent. These do not fall off entire like the other, but break off at the beginning of the foot-stalk, which are very strong and thick; and always continue, so that the main (stalk of the plant, and the lower part of the branches, which are destitute of leaves, are set round on every side with these truncated foot-stalks. This sort hath not as yet produced any flowers in England. It is propagated in the same manner as the two former sorts, from cuttings, and the plants must be treated as hath been directed for the fifth sort, but require to be kept drier, both in winter and summer, therefore, in very wet seasons, the plants should be flickered from hard rains, which often cause them to rot, when they are exposed thereto, but they require the open air in summer. This sort grows naturally at the Cape of Good Hope. The eighth sort has been long preserved in the English gardens, and was generally titled *Ante-euphorbium*, supposing it to have a contrary quality to the *Euphorbium*. This rises with many succulent stalks from the root, as large as a man's finger, which branches out upward, into many irregular stalks of the same form, but smaller, garnished with flat, oblong, succulent leaves, placed alternately round the branches; under each foot-stalk there are three lines or ribs, which run longitudinally through the branches joined together. This sort very rarely flowers in Europe, but is propagated by cuttings in the same manner as the fifth, and is equally hardy. It must have very little wet, especially in winter, and requires a dry, sandy, poor soil.

The ninth sort grows naturally in Ceylon, China, and also in the Spanish West-Indies, from whence I received the seeds. This sort seldom continues longer than to ripen its seeds. The stalk rises near two feet high, branching a little toward the top, the leaves are cut on their sides, and sinuated somewhat like those of Mustard, fitting close to the stalks, which are terminated by flowers formed almost in an umbel; these are in some plants yellow, and in others purple; they are small, and are succeeded by oblong oval seeds, having a feathery down. It flowers in July, and the seeds ripen in September, soon after which the plant decays.

This is propagated by seeds, which, if sown in the autumn soon after they are ripe in a pot, and plunged into the tan-bed in the stove, will more certainly succeed than those sown in the spring; but where there is not such conveniency, the seeds should be

sown on a hot-bed in the spring, and when the plants are fit to remove, they should be planted on another hot-bed to bring them forward, shading them till they have taken new root, after which air should be daily admitted to them in proportion to the warmth of the season. When the plants have acquired strength, they should be planted in pots, and either plunged into a moderate hot-bed under a deep frame, or placed in a glass-case, where they will flower and perfect their feeds.

The tenth sort grows naturally at St. Helena, from whence I received the plants: the roots of this sort spread and increase under the surface, so is easily propagated by parting the roots; the leaves arise immediately from the root, having very short foot-stalks; these are cut into five or six long acute segments almost to the midrib, the segments are also acutely cut on their sides in two or three places: the under side of the leaves are glaucous, their upper side of a dark green. The flower-stalk arises between the leaves immediately from the roots; this is naked, about eight inches high, terminated by six or eight yellow compound flowers standing on long foot-stalks, almost umbriliform; the flowers are succeeded by oblong seeds, which rarely ripen in England.

As this plant increases so fast by its root, there is little want of the seeds; therefore the roots may be parted either the beginning of September, or the latter end of March, and should be planted in pots filled with light earth, and plunged into the tan-bed in the stove, where it should be constantly kept, being too tender to thrive elsewhere in this climate.

C A C A O. Tourn. Inft. R. H. 660. *Theobroma*. Lin. Gen. 806. The Chocolate-nut.

The CHARACTERS are,

The empalement is composed of five spear-shaped leaves which spread open. The flower hath five petals* which are irregularly indented* and spread open* it hath five erect stamina* which are as long as the petals* terminated by pointed summits. In the center is placed the ovary* supporting a single style* the length of the stamina* crowned by an erect stigma. The germens afterward becomes an oblong pod, ending in a point; which is woody* warted* and divided into five cells* which are filled with oval* compressed, fleshy seeds.*

This genus of plants was constituted by father Plumier, who communicated the characters, which he had drawn in America, to Dr. Tournefort, who has inserted it in the Appendix to his Institutions. Dr. Linnaeus has joined this to the *Guazuma* of Plumier, under the title of *Theobroma*; but as the fruit of these plants are very different from each other, I shall keep them under different genera.

We have but one SPECIES of this plant, which is, C A C A O. Cluf. Exot. *The Chocolate-nut-tree*.

This tree is a native of America, and is found in great plenty in several places between the tropics, but particularly at Caracca and Carthagen, on the river Amazons, in the isthmus of Darien, at Honduras, Guatemala, and Nicaragua. At all these places, it grows naturally without culture; but it is cultivated in many of the islands which are possessed by the French and Spaniards, and was formerly planted in some of the islands which are in the possession of the English; but it has been neglected for many years past, so that at present it is so scarce in those places, that the English are supplied with it by the French and Spaniards, who make the inhabitants pay then a good price for it; and as there is a great quantity of it consumed in England, consequently it must make an alteration in the balance of trade greatly to the prejudice of the English; which might be easily remedied, if the planters in our colonies might be encouraged; but the least industrious; since, as it formerly grew on those islands, so as to produce not only a sufficient quantity for their own consumption, but to supply Europe with great quantities, there can be no objection to the planting it in those islands again, especially in those situations where the sugar canes do not thrive to advantage.

I shall therefore subjoin the best account of this plant, and the culture which it requires in those countries, with the profits which have arisen from it to those who have planted some of these trees of late years, by way of experiment, in order to excite others to follow their example; and shall afterward give directions for cultivating it in England, by way of curiosity.

In making a plantation of Chocolate-trees, you must first be very careful in the choice of the situation, and the soil, otherwise there will be small hopes of success. As to the situation, it should be in a place where the trees may be protected from strong winds, to which if they are exposed, they will soon be destroyed: so that in such places where torrents of water have washed away the earth so as to leave broad and deep furrows (which the inhabitants of those islands call gullies,) these trees will thrive exceedingly: and as these are very frequently to be found in those islands, and many of them are of large extent, and not much cultivated, it may be a great improvement to some estates, which, at present, are of small value. The soil in these gullies is generally rich and moist, which is what these trees require, so that they will make great progress in these places, as hath been experienced by those persons, who have lately made trials of the plants in these situations; but where there are not a sufficient number of these gullies, choice should be made of a situation which is well frequented by large trees; or, if there are not trees already grown there should be three or four rows planted round the spot which is designed for the Chocolate-trees, of such sorts which are of quickest growth, and within these rows there should be some Plantain-trees, planted at proper distances, which being very quick of growth, and the leaves very large, will afford a kindly shelter to the young Chocolate-trees placed between them.

The Chocolate-trees which are cultivated, seldom grow to more than fourteen or fifteen feet in height, nor do they spread their branches very wide; so that if the Plantain-trees are placed in rows, about twenty four feet under, there will be room enough for two rows of Chocolate-trees between each row of Plantains, and if they are placed at ten feet distance in the rows, it will be sufficient room for them. Those trees which are found wild in uncultivated places, are generally of much larger growth, which may be occasioned by the other trees, amongst which these are found growing; for, being protected from the winds by those, they are not so much in danger therefrom, as those which are cultivated: and the other trees closely surrounding them, will naturally draw them up to a greater height: however, that is not a desirable quality in these trees; for the lower they are, the better the fruit may be gathered without hurting the trees, and the less they are exposed to the injuries of the weather; so that the inhabitants never desire to have their trees above twelve or fourteen feet high.

The soil upon which these trees thrive to most advantage, is a moist, rich, deep earth; for they generally send forth one tap root, which runs very deep into the ground, so that wherever they meet with a rocky bottom near the surface, they seldom thrive, nor are they of long continuance; but in a rich, deep, moist soil, they will produce fruit in pretty good plenty the third year from seed, and will continue fruitful for several years after.

Before the plantation is begun, the ground should be well prepared by digging it deep, and clearing it from the roots of the trees, and noxious plants, which, if suffered to remain in the ground, will shoot up again after the first rain, and greatly obstruct the growth of the plants; so that it will be almost impossible to clear the ground from those roots, after the Chocolate plants are come up, without greatly injuring them.

When the ground is thus prepared, the rows should be marked out by a line, where the nuts are to be

planted, so as that they may be placed in a quincunx order, at equal distance every way, or at least that the Plantain-trees between them may form a quincunx, with the two rows of Chocolate-trees, which are placed between each rows of them.

In making a plantation of Chocolate-nut-trees, the nuts must be planted where the trees are to remain; for if the plants are transplanted, they seldom live; and those which survive it, will never make thriving trees; for, as I before observed, these trees have a tender tap root, which, if broke, or any way injured, the tree commonly decays.

The nuts should always be planted in a rainy season, or at least when it is cloudy weather, and some hopes of rain falling soon after. As the fruit ripens at two different seasons, viz. at Midsummer and at Christmas, the plantation may be made at either of those; but the chief care must be to choose such nuts as are perfectly ripe and sound, otherwise the whole trouble and expence will be lost. The manner of planting the nuts is, to make three holes in the ground, within two or three inches of each other, at the place where every tree is to stand, and into each of these holes should be one sound nut planted about two inches deep, covering them gently with earth. The reason for putting in three nuts at every place is, because they seldom all succeed; or, if most of them grow, the plants will not be all equally vigorous; so that when the plants have had one year's growth, it is very easy to draw up all the weak unpromising plants, and leave the most vigorous; but in doing this, great care should be had to the remaining plants, so as not to injure or disturb their roots in drawing the other out.

It is very proper to observe, that the Chocolate-nuts will not retain their growing faculty long after they are taken from the trees, so that there is no possibility of transporting them to any great distance for planting; nor should they be kept long out of the ground in the natural places of their growth. There are some authors who have written the history of this tree, and distinguished three different sorts of the nuts, from the colour of their skins, one of which is of a whitish green colour, one of a deep red, and the third of a red and yellow colour; but these are not specifically different, but all arise from seeds of the same tree, as is the case of our Filberts, which differ in the colour of their skins, but are of the same colour within, and have the same taste. There are others, who would distinguish these nuts by their size and form, some being large and thick, others almost as flat as Beans; but these differences, I have been credibly informed, arise from some accident, as those trees which are young and vigorous, and grow upon a deep rich soil, will always produce larger and better nourished fruit, than those which stand on a shallow dry ground, and are unthriving trees: as will also the age of a tree make a great alteration in the size of the fruit; for old trees are generally observed to produce smaller and flatter nuts than those which are young, or than the same trees did bear while they were vigorous.

When the Chocolate-trees first appear above ground, they are very tender, and subject to great injuries from the strong winds, the scorching sun, or great droughts, for which reason the planters are obliged to guard against all these enemies, first, by making choice of a sheltered situation, or at least by planting trees to form a shelter; and, if possible, to have the plantation near a river, for the convenience of watering the plants the first season, until they have made strong roots, and are capable of drawing their nourishment from some depth in the earth, where they meet with moisture. But in order to shelter the plants from the scorching rays of the sun, they generally plant two rows of Cassada between each row of Chocolate-trees, which will grow about seven or eight feet high, and screen the young plants from the violence of the sun the first season; after which time, they will be in less danger of injury therefrom; and

and the following season, when the Caffada is taken up for use, the ground (should be worked between the young plants, being very careful not to injure their roots by this operation. This method of planting the Caffada between the young Chocolate-trees, is of great advantage to the planter, for when the roots of the Caffada are taken up for use, it will defray the expence of keeping the ground clean from weeds, without which the young plants will come to nothing. The Plantains alib, which will be fit to cut in about twelve months after planting, will defray the whole expence of preparing the ground, so that the produce of the Chocolate-trees will be neat profit, for as the Plantains produce fruit and decay, they will be succeeded by suckers, which will produce fruit in eight months after; whereby there will be a continual supply of food for the negroes, which will more than pay for keeping the ground wrought, and clear from weeds, until the Chocolate-trees begin to produce fruit, which is generally the third year after planting.

The planters usually set the Plantain-trees two or three months before the Chocolate-nuts are ripe, that they may be large enough to afford shelter to the young plants when they come up, and the Caffada is always planted a month or six weeks before the Chocolate-nuts, for the same reason. Some people plant Potatoes, others Cucumbers and Melons, or Water Melons, between the rows of Chocolate plants, which, they say, will prevent the weeds from rising to injure the young plants, for as all these trail on the ground, they occupy the whole surface, and prevent the weeds from growing: but where this is practised, it should be done with great caution, lest, by being over-covetous, you injure the young Chocolate-nuts so much, that they may never recover it; therefore great care should be taken to reduce the growth of these plants, whenever they approach the Chocolate-trees, otherwise they will soon greatly injure, if not totally destroy them.

In about seven or eight days after the Chocolate-nuts are planted, the young plants will begin to appear above ground, when they should be carefully looked over, to see if any of them are attacked by insects, in which case, if the insects are not timely destroyed, they will soon devour all the young plants; or if there should be any weeds produced near the plants, they should be carefully cut down with a hoe; in doing which, great care should be taken that neither the tender shoot, nor the rind of the bark are injured. About twenty days after the plants have appeared, they will be five or six inches high, and have four or six leaves, according to the strength of the plants. These leaves are always produced by pairs, opposite to each other, as are also the branches; so that they make very regular handfomc heads, if they are not injured by winds. In ten or twelve months they will be two feet and a half high, and have fourteen or sixteen leaves. By this time the Caffada, which was planted between the rows of Chocolate plants, will have large roots fit for use, therefore should be taken up; and the ground being then wrought over again, will greatly encourage the young plants.

In two years time the plants will have grown to the height of three feet and a half, or sometimes four feet, many of which will begin to flower; but the careful planters always pull off all these blossoms; for if they are permitted to remain to produce fruit, they will so much weaken the trees, that they seldom recover their strength again, so as to become vigorous. When these plants are two years and a half old, they will produce flowers again, some of which are often left to bear fruit; but the most curious planters pull off all these, and never leave any to produce fruit until the third year; and then but a few, in proportion to the strength of the trees; by which method, their trees always produce larger and better nourished fruit, than those which are suffered to bear a larger quantity, and will continue much longer in vigour. The fourth year they suffer their trees to bear

a moderate crop, but they generally pull off some flowers from those trees which are weak, that they may recover strength before they are too old.

From the time when the flowers fall off, to the maturity of the fruit, is about four months. It is easy to know when the fruit is ripe by the colour of the pods, which become yellow on the side next the sun. In gathering the fruit, they generally place a negro to each row of trees; who, being furnished with a basket, goes from tree to tree, and cuts off all those which are ripe, leaving the others for a longer time to ripen. When the basket is full, he carries the fruit, and lays it in a heap at one end of the plantation; where, after they have gathered the whole plantation, they cut the pods lengthways, and take out all the nuts, being careful to divert them of the pulp which closely adheres to them; and then they carry them to the house, where they lay them in large casks, or other vessels of wood, raised above ground, and cover them with leaves of the Indian Reed and mats, upon which they lay some boards, putting some stones thereon to keep them down close, in order to press the nuts. In these vessels the nuts are kept four or five days; during which time, they must be stirred and turned every morning; otherwise they will be in danger of perishing from the great fermentation they are usually in. In this time they change from being white to a dark red or brown colour. Without this fermentation, they say the nuts will not keep; but will sprout, if they are in a damp place, or shrivel and dry too much, if they are exposed to heat.

After the nuts have been thus fermented, they should be taken out of the vessels and spread on coarse cloths, where they may be exposed to the sun and wind; but at night, or in rainy weather, they must be taken under shelter, otherwise the damp will spoil them. If the weather proves fair, three days time will be long enough to dry them, provided they are carefully turned from time to time, that they may dry equally on every side. When they are perfectly dry, they may be put up in boxes or sacks, and preserved in a dry place until they are shipped off, or otherwise disposed of. The freer these nuts are, the more oil is contained in them; so that the older they are, the less they are esteemed.

These trees do not produce their fruit on the young branches, or at their extremities, as most other trees do; but from the trunk, and the larger branches, come out the buds for flowers and fruit. While the trees are young, they do not produce their fruit in great plenty; for before the trees are eight years old, they reckon it a good crop to have twenty-eight or thirty pods on each tree at one gathering, especially that at Midsummer; which is always a much worse crop than the Christmas season, which is occasioned by the much greater drought of the spring; for the autumns being the rainy seasons, the Chocolate-trees produce a much greater quantity of fruit. When the trees are full grown and vigorous, they will sometimes produce two hundred, or two hundred and forty pods at one season; which will make ten or twelve pounds of Chocolate, when dried; so that it is a very profitable commodity, and can be managed with very little charge, when compared with sugar. I have been credibly informed by a person of great worth and integrity, who resided some years in America, that he has seen as much Chocolate gathered from one tree in a year, as hath been worth thirty (hillings sterling on the spot: so that the trouble of gathering and preparing for the market, being much less than for many other commodities which are manufactured in the British colonies, it is surprising (should be neglected) especially as it yields so large a share of sustenance to the wealthier inhabitants of those colonies, that they cannot live comfortably without it, and purchase it from the French and Spaniards at a considerable price; which in time must greatly impoverish the colonies.

The Chotohtc-trees, if planted on a g«kl fell and properly taken care of, wilt continue vigorous and fruitful twenty-five or thirty year; thref,, the charge of cultivating a plantation of these trees, muff be muchlcs than EW of Sugar, for although the ground between the rows of | lants will require to be often hoed ami wrought, yet the first working of s ground totnakc a new plantation of Sugar, Indigo, Caflada, &c. is a larger expenrc dun the after-work-

Befides, Sugar-cura require as nan a labour in their cultivation, as any plant whatever; and fince the infects which defray the Sugjr-cancs, have fpreail ft) mush in tin. British col; iies, nothing is a more uncertain crop than Sugar; for which reason, I think it would be greatly worth those planters care, who arc poUefiid of proper lands for the Chocolate

—%oi to make fame fmall trials at leift, to be con- red of the truth of this fait
 The leaves of these trees being large, make a gi- ar litter upon the ground when they fall) but cRL „ (injurious, but rather of iervice to the rreej; for the surface of the ground being covered with them, they prefervc die moiithire in the ground, and prevent rvjpoi:itngi which is of pTcat life to tiee young der roots, which are juft under the furtac when the leaves are rotten, they may be buried in digging the ground, and it will revc as good n. Some planters lei the pods, in wiuch tie Ch i olare is iiduled, lie and rot in a heap (.liter they have ten the nuti out) which they atfo fprac on the ground intcad of dung. Either of thete mai- res are ve' good, provided they are well rotted before they arc Uud on die ground j and great care mould be had, thai no vermin lhouid be carried on the pbn- sion with the dung.

Befides the ordinary care of digging, hoeing, and manuring the plantation; of Chocolate-trees, tSerc is alJb another thing requifite in order to their doini> well* which is, to prune the decayed brarii: ami to take iway fmall ill placed branches, v., they are produced- But you shoud be cautious how this work h performed; for there (koullil h vigorous branches (horncd, nor any large urrpUttions made on thec trees i becaufe tie'u'ly aboui' with afoj, glutinous, milky juice, which will flow out for many days whencm [hey are wounded, which gmuly weakens the trees. However, fuch branche! whole extreme part* arc decayed, lhouid be cut off, tupre- vent; lie infe&ion from proceeding fartheri and flich branches as are mucii decayed, lhouid AK i. cloie to the Item of the tree; but this flhould be performed in dry weather, loon after the crop of fruit is gathered.

Somt jpeople rWV perhaps imagine, that what I have directed, is a tedious laborious work, and not fo be performed by a lew llavei: but this is a great niiftake, iijj! I have Ixtn credibly infbnjed, that five or (« neg tea will cultivate a plantatioti of ten thoutid of thefe tree*, piw i and they are properly instructed, which it a linall numbeij when comp-ired to the quantity neccffary to cultivate >i S r plantations of the like extent of ground. And when the profits of both are compared, there will be a great difference: for, lupposmf we let die ; rice of live burlings per annum, for the produce of e idi tret, when grown, (which I am of opinion is very moderate, confidering what has r>en related,) then a plantation of ten thousand tree) will produce twenty-five hundred pounds a year; which, managed by fix or feven nt-groes, without the exjience of farnac< . &c. is a much greater profit iji-i", I think, can be drawn from of diey ; roduftion.

In order to cultivate this plant in Europe, by w»y of curiolity, it will be neccffary to have the nuti planted into boxes of earth [in the countries where they grow j loon after they are ripe j becaufe, if the nuti are lent over, they will loft their growing quality before they arrive. Thefe bones flhould be' placed in a Jbdy fitUMion, and must be frequently water-d, in order to forward the vegetation of die nuu. In

about a fortnight after the nuts are • planted, the piant* will begin to appear above ground; when they should be carefully watered n dry weat... and provided from the violent heat of the fun, which is very inju- rious to thefe plants, cfjwcially while tb your- they should alfo be kept very clear from weed, which, if suffered to grow in the boxes, will soon overbear the plants a deliroy ru
 When the plants are grown to the height of four or five inches, they should be dug up . l and pl^ed where they may be fceced from ftroy winds, fait water, and the violent heat of the Tun. ! n .; :ige they niult be freque- refreshed with ; :ot but it mult be • lii-m in gre<t quannde
 The roots, which will decay die j . and when they come into a cool btitude, they uiit be can . . n they will not r^ . "juently to be watered: . j al a moderate degree^ heat, if they are -ntie water- ings once a week, it will be iuffi.

When the plants arrive in I-England, they should be fully taken out • the boxes, and each transplanted into a leparate pot r and wish light rich earth, and plunged into a moderate hot-bed . I VOOOt bark, being careful tocover i • glasses in the licit of the • • pfants t - mull be frequently watered, but ii must be do i wit' cauj' hot-hed rlii plan:s may remain till!

be removed iisto the bark-ftove, and plunged i, in the warir.cil
 During the winter months, they should be frequently re- given to them in water . y will re- into
 The plants are • j lire a tender to live in the year, therefore must constantly remain in til; bark-ftove, observing in very warm weather to lift them very low, and in cold weather to increafe in bulk, they should be lifted into larger pots, in doing of which, there must be particular care taken not to treat or bruife the plants; nor must they be made too large, becaufe that is a flaw, but lead death to them. The leaves of these plants must be frequently wash- d to clear them from filth, which they are fubje& to contract by remaining constantly in the houc, and this becomes an haviour for small infects, which will infect the plants, and destroy them, if they are not tim'ly waffied off'. i. these rules are duly observed, die f- luive very well, and may produce

obtaL fruit from them; but, being of 1 very tender nature, they are subjeel to man; amdtrnLs ii; a cold coun-
 CACHUYS IJO. Gen. Plant. 30+.
 I he C
 // heib HK . *modica fowr.* the great or general model is *ttn*; . the imbuement of both is *ttn*; . The flower hath five fmall petals, equal petals. It hath five fingle flomies the length of the petals, surrounded by fingle fometimes. The twisted corolla is flatted under the receptacle, fupporting five filis, crowned by round figns. The capsule afterwards becomes a large, oval, hard fruit, dividing in two parts, each bearing one large fangul' juke, which is the juke, and plain on the other.
 The genus of plants is ranged in the second section of Linnæus's fifth class, inserted Pennsylvia Digynia, thr f
 The Species are,
 1. CACHUYS (*Ericks*) folis bil; ; inarjs, foli-: *linæus* *tridris*, *seminalis* *linæus*. *Cachrys* with bipinnate *lutea*, which does not flower, and a fourth fruit. *Cachrys fenne fupula* *lin.*, *folis ferulaceis*. Mor. Umb. 61.
 2. CACHUYS (*Swale*) folis bipinnatis, foliis *lin.* *aibus* acurif, feir *ambros fiftatis fupida*. Lxp. Sp. 325. *Ca-*

ibry: with dimil: winged leaves, tebifi kit! art linear, aciti* and prkkt) furrc ... CVIDirys fcaioe fungofo fulcato aipero, t'oliis piiuccdani laiufculus. Mor. Hillt j. p. 2

3. CACI (Linn) W(r) folil* bipvniatis, foliolis acuris multifida, fcmibus fu!1. Sp. 355. Cufbryi siah dsubk vrixgid U&ats, wbsft isiu art aate, mulifid., and fmm:b lu ... -iirys femine ft;nE' ... ti'iis psucalani snguf-tis Mor. Hillt j. p. 257

4. CACHKVS flisMrw) foisis puinaris foliolis line-i-ibus multifidu renunbus Mentis plaois. Cufbryi witt very narrow, m ... :TOTVJ, and a f kin ibstodUd fruit. Cat I ... tuiigofo fukaio phno majore foliis peuccdant ajigufijs. Mor. Umb, 62.

5. C.iijIRVS (HungnrKe) ibitorum impan lobato, hir-fuco, fL'hiic fung^lb iulcavo plino. Certryswiti ... CaCJrYS Hungarica Paratis folio. 'J'ourn. Hift. j i j,

*Th= firft fart flat!, a tbkk fiel-j' root wiinii frikcy < rry ;n tlic ground, ... iprings ovii many narro' ... Giant-fen-;:!, which Tpirad near tlic ground; from bel ... the:fc arife a Hollow funguus fVnk iiboi: two feet high, ... oval, fmootli, fungous fruit, divid-ino;[U> two parti, c^h ii ... oblong feed.

Tru- ... ii^tling root, which fends out icvt-cai pinnated lejvi ... 1. but Itortet. The ftak ii Imou: ... re fit-i: liigh, whicli t* terminal- ... i of yellow fiowar ... thole of DiLU thefcare luL-cgdj by oblong, ... which ire prickty,

Th< l ... Bdhy root like Fennrf, which runi deep into :hc ground, lending out Itvfv.l narri ... [eaves, ending if mjny points-, bt^ tween inei!^ nth jointed ilalk about three feei high, which is terminated by i i^e umbds of' flowtrs'UTc rh- former imi, which ore fuccredfd by Dnailer fuogou^ plain fctis which are furtt

The 'L.s. ... firft had, very thick roots which tirike deep in chi ... Ending out very narrow winged leaves like thole of Hog's fcarci. The (ii!!- fiVe or fix feet high, an ... I'cnd- d, terminated By krye umbL-ls tlf yellow flowers, which arc fuccedL-d], large, 1^'I, fmigoui I ... ire deeply furrowed.

The fifth furt has 3 thick fungous root, from ... which ftrcc out many winged ... faing large hairy Jobs placed alcm.vie, term ... by an old one: the ftalk is hollow, rififf toi: ... flowers like thole of he former fo ... The grofs naturally is Hungary.

The firft ... fo: in the fourth of Fonct and Spain; the fecond and third in Italy; the fourth in Sicily. ... ripen in ... imm.

These plants are all propagated by feed*, ... hich lbouti ... if they are kept out of' the gio

They never come up until the fpring after, fo that by lowing them in autumn, a whole j ... the II ... mifcarry. ... the plants are to re-nwin ... will not bear ci ... The diftance to be obferved for the ... of their feeds flOU] be three feet apart; fo that if each kind is livin in a drill, w^!^: ... they may be thinned, li ... the feed remaining jjlanti tif each kind ... in April, when they mud be care-i ull> cleared from weeds, and in dry weather, if they are gently watered while young, it will greatly promote their growth, and which time they will require no farther care but to keep them clear from

weeds, and evew fpring to dig the ground i ... between ihtm, io as not to injure ... 'T'iefe plants decny to the ground evsry autumn, anil tmmc up again in the fpring: tly commonly Rower in die beginning oi* June, and thdr (ecd< arc ripe in September, Their roots fumetims run down thret or four feet deep in the earth, provided the foil be light, and aie olicn as tarfe ;& Parfcepl. They will continite many years, and if the foil is noiit and rich, they wiQ minudly produce ; ... -hen they grow on a dry lull, the fiow< ... -till away, and are nor lui^ceded by frech.

There is a K littk to be I ... of this genus of ... die] [Bngariam in the neighbourhood of* ... Srr- ... the fifth fpecies in a ... rcity of corn, for want of other L:

ACTUS. Lin. Gen. L'kint 533, Melacafliii. Tourn. ApptnJ.

This genus was li: ... Ijcardutis, and alth> E- thinoiicloc.iftus, or Hedgehog M ... bur these names be ug uympnunded, Dr. Linriirus hu chiiinged the naint* to CadliS, n-iii his added EC this genus, ihc Cereia add Opunkt.

The l ... ; tfttu ttdf, ltd jhm, ... Thi...

*nt at tie : ... tie aailnyn; ; ...

fd blvsi the ptigr* fipppwti s tji. ... ld in) a hhtaajtigma; li/r'asi'J, ... feeds fir.,

Thb ... ranged in the &H iccion of Lmna This claf includes thole p

have from twelve to rwentj ... which, with the corolla, are t'aftericd to the inner fide of the cm-palt:;

ii'tcjs are, ... rdctem m-guLiris, Uort. Clil ... Mel: 1

4. CACTUS (Asteros) fubrotundus ... :s(is(luinquiri(?rein angu-Uris, angiih ... ifiCaSxt or Mibn*iL'tj. ... ticijitd, and ercS ... iocnitus pui

5. CACTUS (Razewu) Irotundus quinquedecetrn an-rvis ciL-berr. ... jf bresd Tfcurved

4. CACTUS (MiinuILiriJ) fubrotundus te&u tuberculis ovadibaratij. I Ion. Cli ... tteral with itordrd lufa ... Melocactus Americana minor, Boerli. Ijid. alt ... kn-ibijik.

6. CACTUS (Proferat) proliferus fubrotundus, ... Di-10-berculis ovatis hirtatis hngis albidis. ... 111/* eval ... rardi, eemmmiy rnltej Small Chiding Mttia-

These plant ... arc natrvej of the Wcft-Indiej, where [here aie niurc luru ilian are ierv enumerated:] u-r-for> u^ (kill were to examine thole iflands. Tiicie have been aljout four of the large kind known-t; to England, fome of which have been enameled with a prickk* brown cap, in it'irm uf one of the v-hi chare womt ... and others, which have becntklitue of theft^ caps, although du ... full as large as thoit wh ... had them; therofoe foau ... have fuppofed them to be diftinct fpec-ies ... fpecially ince they have been many years pro-ferred in the gardens, and no appearance of any caps as yet have been produced, but as thole have been rarely propagated by feeds, it is difficult to determine if they arc ... fennally different. Thole which have thole caps, produce their fruit in circles round the

Upper part of the cap *, whereas, the smaller forts produce their fruit from between the tubercles, round the middle of the plant; and in some figures of the larger forts of these plants, the fruit is represented as coming out near the crown of the plant; so that if a skilful botanist was to examine these plants in the places of their growth, there would probably be found a much greater variety of them than is at present known.

These strange plants commonly grow upon the steep sides of rocks in the warmest parts of America, where they seem to be thrust out of the apertures, having little or no earth to support them; their roots shooting down into the fissures of the rock to a considerable depth, so that it is troublesome to get the plants up, especially as they are so strongly armed with thorns as to render it very dangerous to handle them * and as these plants delight in those rocky places, they seldom live long when they are transplanted into better soil by the inhabitants of those islands.

The great forts were some years since brought over to England in much greater plenty than of late; but then the greatest part of them were destroyed, by the unskilfulness of those persons who had the care of them in the voyage; for, by giving them water, they generally caused them to rot before they were taken out of the ships; and some of those which have appeared to be found, have been so replete with moisture, as to rot soon after they have been placed in the stoves; therefore whoever proposes to bring these plants from abroad, should be very careful to take up their roots as entire as possible, and to plant them in tubs filled with stones and rubbish, mixing very little earth with it, and to plant three or four plants in each tub, in proportion to their sizes *, for if they are placed close together, it will save room *, and as they do not increase their growth during their passage, there need not be any room allowed them for that purpose. There should be several pretty large holes bored thro' the bottom of these tubs, to let the moisture pass off, and if these plants are planted in the tubs a month before they are put on board the ship, they will in that time have made new roots, which will be the most secure method to have them succeed * but, during their continuance in the country, they should have no water given them, and after they are put on board the ship, they must not have any moisture whatever, therefore it will be a good method to cover the * plants with tarpaulin, to keep off the spray of the sea in bad weather, and expose them at all times to the open air when the sea is calm. By observing these directions, the plants may be brought to England in good health, provided they are brought in summer.

Some of the large fort which have been brought to England, have been more than a yard in circumference, and two feet and a half high, including their caps *, but I have been informed by several persons who have resided in the West-Indies, that there are plants near twice as large.

The third fort was brought into England by the late Dr. William Huxtable, who procured the plants from Mexico; but as they were long in their passage, and had received wet, they were decayed before they arrived in England *, but from the remains of them which were left, they appeared to be the most singular of all the species yet known. This has two orders of thorns; one of which are straight, and set on at the joints in clusters, spreading out from the center each way like a star *, and in the middle of each cluster is produced one broad flat thorn near two inches in length, which stands erect, and is recurved at the point and is of a brownish red colour. These thorns are, by the inhabitants of Mexico, set in gold or silver, and made use of for picking their teeth, and the plant is by them called Vilhaga, i. e. tooth-pick.

The fort with spiral ribs, as also that with white spines, I received from Antigua, with the common fort *, but whether these are only accidental varieties, arising from the same seeds, or real different species,

I cannot take report me to determine; since, in this country, they are very rarely propagated by seeds * nor could I observe, in the several years that I have had these plants under my care, there was the least disposition in either of them to produce fruit * when, at the same time, the common large fort produced plenty of fruit out of their caps every year, from the seeds of which I have raised some young plants * but although some of these have grown to a considerable size, yet none of them have as yet produced caps, therefore no fruit can be yet expected from them.

The fifth fort produces quantities of fruit annually; and as the seeds grow very readily, it is now very common in those gardens where there are stoves * keep them; for the fruit is permitted to drop upon the earth of the pots, and that is not disturbed, there will plenty of plants come up without any farther trouble; and these seedling plants may be taken up as soon as they are of a proper size to remove, and planted six or seven of them into a small halfpenny pot, where they may stand one year; by which time they will be large enough to be each planted into a separate pot, and afterward they will make great progress, especially if they are plunged into a hot-bed of tanners bark in summer; for although this fort is much more hardy than the large kind, and may be preserved in a moderate stove, yet the plants will not make near the progress as those which are kept in a greater degree of heat. This fort will continue many years with proper care, and the plants will grow to be a foot high or more; but when they are so tall, the lower part of them is not so firmly, their girth being decayed, and the spines changed to a dark dirty colour, they appear as if dead, so that the upper part of these old plants only seem to have life; whereas the plants of the middling size appear healthy from top to bottom. The flowers of this fort appear in July and August, and are succeeded by the fruit quite round the plant, which are of a fine scarlet colour, and continue fresh upon the plants through the winter, which renders them very beautiful at that season. And in the spring, when the fruit shrivels and becomes dry, the seeds will be ripe, and may then be rubbed out, and sown upon the surface of the earth in small pots, which should be plunged into a hot-bed of tanners bark to bring up the plants.

The sixth fort is but little larger than the fifth, growing nearly in the same form * but this produces a great number of young plants from the sides, by which it is increased. This fort produces tufts of a soft white down upon the knobs, and also between them at every joint, which makes the whole plant appear as if it was covered with fine cotton. The flowers of this fort are produced from between the knobs round the sides of the plants, which are in shape and colour very much like those of the fifth fort, but larger. These flowers are not succeeded by any fruit, at least all those which I have under my care, have not produced any, although they have produced plenty of flowers for some years *, but from the same places where the flowers have appeared, there have been young plants thrust out the following season. These young plants I have taken off, and after laying them to dry for two or three days, I have planted them, and they have succeeded very well.

All the species of this genus are plants of a singular structure, but especially the larger kinds of them, which appear like a large fleshy green Melon, with deep ribs, set all over with strong sharp thorns *, and when the plants are cut through the middle, their inside is nothing but a soft, green, fleshy substance, very full of moisture. And I have been assured by persons of credit, who have lived in the West-Indies, that in times of great drought, the cattle repair to the barren rocks, which are covered with these plants, and after having ripped up the large plants with their horns, so as to tear off the outside skin with the thorns, they have greedily devoured all the fleshy moist parts of the plants, which has afforded them both meat and

and drink i but how any animal should ever attack plants which are so well defended by strong thorns, which are as hard and stiff as whalebone, or any other bony substance, is difficult to conceive; nor could any thing but distress; for moisture ever have tempted them to venture amongst these troublesome plants to seek for relief, since they must encounter with many difficulties, before they could find a method of dislodging the thorns.

The fruit of all the sorts of Melon-thistles, are frequently eaten by the inhabitants of the West-Indies, there is scarce any difference in the fruits of all the kinds I have yet seen, either in size, shape, colour, or taste. They are about three quarters of an inch in length, of a taper form, drawing to a point at the bottom toward the plant, but blunt at the top, where the empalement of the flower was situated. The taste is an agreeable acid, which, in a hot country, must tender the fruit more grateful.

All the sorts of these plants require a very good stove to preserve them through the winter in England, nor should they be exposed to the open air in summer, for although they may continue fair to outward appearance when they have been some time exposed abroad, yet they will imbibe moisture, which will cause them to rot soon after they are removed into the stove. And this is frequently the case of those plants which are brought from abroad, which have a fair healthy appearance many times at their first arrival, but soon after decay, and this will happen very suddenly. Scarce any appearance of disorder will be seen, till the whole plant is killed; which, in a few hours time, has often been the fate of those plants, when they have been placed in the stove.

If these plants are plunged into a hot-bed of tanners bark in summer, it will greatly forward them in their growth, but when this is practised, there should be scarce any water given to the plants, for the moisture which they will imbibe from the fermentation of the tan, will be sufficient for them, and more would cause them to rot. The best method to preserve all the large kinds is, in winter, to plate the pots, either upon the tops of the flues, or, at least, very near them, that they may have the warmest place of the stove, and during that season, never to give them any water; but when the season comes for leaving out the fire in the stove, to remove them into a bed of tanners bark, which will soon set them in a growing state, and recover their verdure. The soil in which these should be planted, must be of a sandy nature, and if mixed with some dry lime rubbish, it will be still better. In the bottom of the pots should be placed some stones, in order to drain off any moisture which may be in the earth; for as these plants naturally grow upon the hot dry burning rocks which have no earth, and, were it not for these plants, would be absolutely barren, we must imitate their natural soil as near as possible, making some allowance for the difference of climates.

The great sorts may be propagated by seeds, which must be sown and managed as hath been directed for the smaller sort; but as the plants which are raised from seeds in England, will be some years in arriving to any considerable size, it will be much the best way to procure some plants from the West-Indies, and if the plants arrive here in any of the summer months, so as that there may be time for them to get new roots before the cold comes on in autumn, the plants will more certainly succeed. When the plants come over, it will be proper to take them out of the earth as soon as possible, and lay them in the stove upon the shelves, to dry for a fortnight or three weeks, and when they are planted they should be plunged into a good warm bed of tanners bark, to promote their making new roots. In this bed they may remain till the beginning of October, when they must be removed into the stove, and created in the manner before directed.

The two small sorts propagate so fast in England, as to render it unnecessary to send for plants of these kinds from abroad, for whoever hath a mind to be,

plentifully stocked with them, may be soon supplied with the fifth sort from seeds, and the sixth from the young plants which are thrust out from the side of the old.

CIBESALPINA. Plum. Nov. Gen. 9. Brafiletto.

This plant was so named by father Plumier, who discovered it in America, in honour of Andreas Csesalpinus, an eminent botanist, and one of the first writers on a method of classing plants.

The CHARACTERS are,
// bath a quinquifid pitcher-shaped empalement, the under lobe being large. The flower bath five almost equal petals* of the butterfly kind. It bath ten declining stamina which are distinct, and terminated by roundish summits, and an oblong germen supporting a single style the length of the stamina, crowned by a blunt stigma. The empalement afterward becomes an oblong compressed pod, with one cell inclosing three or four compressed seeds.

This genus of plants is ranged in the first edition of Linnaeus's tenth class, intitled Decandria Monogynia, the flower having ten separate stamina and one style.

The SPECIES are,

1. GA: SALPINA (*Brafilienfis*) foliis duplicato-pinnatis, foliolis emarginatis, floribus decandris. *Cafalpinawith doubly winged leaves > whose small leaves are indented at the end and flowers with ten stamina. Pseudo-fantulum croceum.* Sloan. Hist. Jam. Vol. II. p. 184. *Saffron-coloured Bastard Sautiders, commonly called Brafiletto.*
2. CBSALPINA (*drifta*) foliis duplicato-pinnatis foliolis ovatis integerrimis floribus pentandris. *Cafalpina with doubly winged leaves? whose small leaves are oval and entire^ and flowers with five stamina.* Csesalpina polyphylla aculis horrida. Plum. Nov. Gen. 28.

The first sort is the tree which affords the Brafiletto wood, which is much used in dyeing. It grows naturally in the warmest parts of America, from whence the wood is imported for the dyers, and the demand for it has been so great, that there are no large trees left in any of the British colonies, the biggest scarce exceeding eight inches in diameter, and fifteen feet in height. It hath very tender branches, which are armed with recurved thorns. The leaves are winged, branching out into many divisions, each being garnished with small oval lobes which are indented at the top, and are placed opposite. The foot-stalks of the flowers come out from the side of the branches, and are terminated by a loose pyramidal spike of white flowers, which are shaped somewhat like those of the butterfly kind, having ten stamina which are much longer than the petals, and terminated by roundish yellow summits. The germen afterward becomes a long compressed pod with one cell, inclosing several oval flat seeds.

The second sort grows naturally in the same countries with the first, but is of larger size: it sends out many weak irregular branches, armed with short, strong, upright thorns. The leaves branch out in the same manner as the first, but the lobes (or small leaves) are oval and entire. The flowers are produced in long spikes like those of the former, but are variegated with red, these have each but five stamina, therefore, according to Linnaeus's system, should not be ranged in this class, but as in all the other characters they agree, I have continued them together.

Dr. Linnaeus has joined these two species together, in which he has been followed by Dr. Burman, but if either of them had seen the plants, they could not have committed this mistake. To this genus Linnaeus has added two other species, one of which is a Guilandina, and the other a Bauhinia: to the latter he has added the Synonyme of Colutea Verse & Veficaria, which is a plant totally different, being a genuine Colutea. I received this from the late Dr. Houftoun, who found it growing naturally at La Vera Cruz, in New Spain.

These plants are propagated by seeds, which should be sown in small pots filled with light rich earth early in the spring, and plunged into a hot-bed of tanners bark, observing to water the earth as often as it appears

pears dry, in order to promote the vegetation of the feeds; and if the nights should prove cold, the glasses of the hot-bed should be covered with mats, to keep the bed in a moderate warmth. In about six weeks after, the plants will begin to appear, when they must be carefully cleared from weeds, and frequently refreshed with water; and, in warm weather, the glasses of the hot-bed should be raised in the middle of the day, to admit fresh air to the plants, which will greatly strengthen them, otherwise they are apt to draw up weak. When the plants are about three inches high, they should be carefully taken out of the pots, and each transplanted into a separate small pot filled with fresh light earth, and plunged into the hot-bed again, observing to water them, and screen them from the heat of the sun until they have taken new root -, after which time, the glasses of the hot-bed should be raised every day, in proportion to the heat of the weather, to admit fresh air to the plants. In this hot-bed the plants may remain till autumn, when they should be removed into the stove, and plunged into the bark-bed, where they may have room to grow. These plants being tender, should always be kept in the bark-stove, and have a moderate share of heat in the winter, and being placed among other tender exotic plants of the same country, will afford an agreeable variety.

- CALCITRAPA. See CENTAUREA.
- CALEA.
- CAINITO. See CHRYSOPHYLLUM.
- CAKILE, Sea Rocket. See BUNIAS.
- CALABABA, Indian Maftich-tree. See CORNUS.
- CALAMINTHA. See MELISSA.
- CALCEOLUS, Ladies Slipper, See CYPRIPE-DIUM.

The CHARACTERS are,
It hath a uniform compound flower, composed of many equal hermaphrodite florets, included in a loose imbricated empalement -, the florets are tubulous, divided into five segments -, they have each five stamina with cylindrical summits, and an oblong germen, with a slender style the length of the corolla, crowned by two recurved stigma. The florets are succeeded by an oblong feed, crowned with a hairy down, having a chaffy substance between each feed.

This genus of plants is ranged in the first order of Linnaeus's nineteenth class, intitled Syngenesia Polygamia sequalis, the flowers being composed of hermaphrodite flowers.

- The SPECIES are,
1. CALEA (*Oppositifolida*) corymbus congestis, pedunculis longifloris, foliis lanceolatis, caule herbaceo. Amcen. Acad. 5. p. 404. *Calea with a clove corymbus, very long foot-stalks to the flowery spear-shaped leaves, and an herbaceous stalk.* Santolina Americana foliis oblongis integris, floribus albis. Houft. MSS.
 2. CALEA (*Amellus*) floribus subpaniculatis, calycibus brevibus, feminibus nudis, foliis ovato-lanceolatis petiolatis. Amcen. Acad. 5. p. 44. *Calea with flowers in panicles, short empalements, naked feeds, and oval spear-shaped leaves on foot-stalks.* Santolina scandens Americana Lauri foliis, floribus racemosis. Houft. MSS.

These plants grow naturally in Jamaica. The first hath an upright herbaceous stalk three feet high, garnished with entire spear-shaped leaves, placed opposite at the joints 5 the stalk is terminated by three foot-stalks, one in the middle, and one on each side, supporting a small corymbus of white flowers closely joined together.

The second sort hath ligneous branches, which spread over the neighbouring plants, and rise eight or ten feet high, garnished with thick spear-shaped leaves, placed opposite 5 from these stalks are put out many side branches, garnished with smaller leaves placed opposite, and terminated by panicles of yellow flowers, having short empalements: these are succeeded by naked feeds inclosed in the flower-cup.

These plants are both propagated by feeds, which should be sown upon a hot-bed early in the spring 5

when the plants come up, they should be tenderly treated while young, admitting fresh air to them daily in proportion to the warmth of the season, giving them water frequently, but sparingly; when they have obtained strength enough to be removed, those of the first sort should be transplanted into another hot-bed, allowing them four inches distance. The plants of the second sort should be put into small pots plunged into the tan-bed, observing to shade them until they have taken new root; after which they should be treated in the same manner as other tender exotic plants, watering them frequently in warm weather, and admitting fresh air to them daily. When the plants of the first sort have grown so strong as to meet, they should be carefully planted in pots, and removed either into the stove or glass-case, where they may remain to ripen feeds, after which they soon die. The plants of the second sort will live many years if they are preserved in the bark-stove, but they are too tender to thrive in the open air. in this country; however, they should have plenty of fresh air admitted to them in summer when the weather is warm.

CALENDULA. Lin. Gen. Plant. 885. Marigold.

The CHARACTERS are,
It hath a compound radiated flower, consisting of hermaphrodite and female florets, included in a common single empalement, the border or rays being composed of female florets, which are stretched out on one side like a tongue - these have no stamina, but an oblong three-cornered germen, supporting a slender style, crowned by two reflexed stigma. The hermaphrodite florets, which compose the disk, are tubulous and quinquefid, having five short slender stamina, terminated by cylindrical summits. The germen is situated under the petal, supporting a slender style, crowned by an obtuse bifid stigma. These florets are barren, but the female florets are each succeeded by one oblong incurved feed, with angular membranes.

This genus of plants is ranged in the fourth section of Linnæus's nineteenth class, intitled Syngenesia Polygamia neceflaria 5 in which are included all those plants which have hermaphrodite barren flowers in the disk, and fruitful female flowers in the border.

- The SPECIES are,
1. CALENDULA (*Arvensis*) feminibus cymbiformibus muricatis incurvatis. Flor. Suec. 711. *Marigold with rough boat-shaped feeds.* Caltha arvensis. C. B. P. 275.
 2. CALENDULA (*Sanffa*) feminibus urceolatis obovatis levis, calycibus submuricatis. Lin. Sp. 1304. *Marigold with smooth pitcher-shaped leaves, and a rough empalement.* Caltha media folio longo cinereo, flore pallido. Bobart. *Middle Marigold with a long Ash-coloured leaf, and a pale flower.*
 3. CALENDULA (*Officinalis*) feminibus cymbiformibus muricatis, incurvatis omnibus, Lin. Sp. 1304. *Marigold with boat-shaped, prickly, incurved feeds.* Caltha vulgaris. C. B. P. 275. *Common Marigold.*
 4. CALENDULA (*Pluvialis*) foliis lanceolatis finuato-denticulatis caule folioso, pedunculis filiformibus. Hort. Upfal. 274. *Marigold with spear-shaped indented leaves and slender foot-stalks.* Caltha Africana flore intus albo extus violaceo. Tourn. Inft. R. H. 499,
 5. CALENDULA (*Nudicaulis*) foliis lanceolatis finuato-denticulatis caule subnudo. Lin. Sp. Plant. 922. *Marigold with finuated, indented, spear-shaped leaves, and a naked stalk.* Caltha Africana flore intus albo, extus leviter violaceo, femine piano cordato. Boerh. Ind. alt. 1. p. 113.
 6. CALENDULA (*Hybrida*) foliis lanceolatis dentatis caule folioso, pedunculis superne incrassatis. Hort. Upfal. 274. *Marigold with indented spear-shaped leaves, and the tipper part of the foot-stalk swelling.* Cardipermum Africanum pubescens foliis incisus parvo flore. Vaill. Mem. Acad. Sc. 1724.
 7. CALENDULA (*Graminifolia*) foliis linearibus subintegerrimis caule subnudo. Lin. Sp. Plant. 922. *Marigold with narrow entire leaves, and a naked stalk.* Caltha Africana foliis Croci angustis, florum petalis externe purpurascens, interne albis, Boerh. Ind. alt. 1. p. 113.

§" CALENDULA (*Fruticofa*) foliis obovatis fubdentati. caule fruticofa. Amcen. Acad. '5. p. '25. *Marigold with obverfe, oval, indented leaves, and ajhrubby Jtalk.*

9. CALENDULA (*Decumbent*) foliis oppofitis pinnatifidis aperfis, iūbtus incanis, ramis decumbentis, pedunculariudis. *Marigold with rough pinnatifid leaves growing oppofite, which are white on their under Jide, trailing branches, and naked foot-ftalks.* *Caltha Americana foliis laciniatis flore luteo.* Houft. MSS.

10. CALENDULA (*Americana*) caule ere&o ramofo, foliis oblongis oppofitis hirtutis, floribus lateralibus. *Marigold with an upright branching ftalk, oblong hairy leaves growing oppofite, and flowery proceeding from the fides of the Jtalk.* *Caltha Americana eredta, & hirtuta, flore parvo ochroleuco.* Houft. MSS.

The firft fort grows naturally in the fourth of France, Spain, and Italy; it rifes with a flender branching ftalk, which fpreads near the ground, and is garnifhed with narrow, fpear-lhaped, hairy leaves, which half furround the ftalk at their bafe, the flowers are produced at the extremity of the branches upon long naked foot-ftalks. They are very fmall, and of a pale yellow colour \ the rays are very narrow, as are alfo the leaves of the empalement. The feeds are long, narrow, and on their outfide armed with prickles. The root is annual, and perifhes foon after the feeds are ripe. If the feeds of this plant are permitted to fcatter, there will be a frefh fupply of young plants: fo that from May, when the flowers firft appear, till the froft puts a flop to thefe, there will be a fuccellion of plants in flower. There are feveral botanifts who fuppofe the common Marigold, which is cultivated in gardens, to be only a variety of this, arifing from culture, but I have cultivated this in the garden more than forty years, without finding the leaft alteration in it, therefore cannot doubt of its being a diftindt fpecies.

The fecond fort I gathered in the garden at Leyden, where it had been feveral years cultivated without altering, the leaves of this fort are fsmooth, and much larger than thofe of the former, but not fo large as thofe of the common Marigold; the flowers are alfo of a middle fize between them, and are of a veiy pale yellow colour. This is alfo an annual plant. If the feeds are permitted to fcatter, there will be a conftant fupply of young plants come up.

The third fort is the common Marigold, which is cultivated for ufe in the gardens; this is fo well known, as to require no defcription. Of this there are the following varieties; the common fingle, the double flowering, the largeft very double flower; the double Lemon-coloured flower; the greater and fmallr chiding Marigold.

Thefe varieties are fuppofed to have been originally obtained from the feeds of the common Marigold, but moft of thefe differences continue, if the feeds are properly favec\ nor have I ever obferved the common fort approaching to either of thefe, where they have been long cultivated in the greateft plenty, but as the two chiding Marigolds, and the largeft double, are fubject to degenerate, where care is not taken in faving their feeds, I conclude they are not diftindt fpecies. The beft way to preferve thefe Varieties, is to pull up all thofe plants, whofe flowers are lefs double, as foon as they appear, that they may not impregnate the others with their farina, and fave the feeds from the largeft and moft double flowers, and the chiding fort fhould be fown by itfelf in a feparate part of the garden, and the feeds laved from the large center flowers only, not from the fmall ones which come from the empalement of the other, for the feeds of thefe are apt to change.

The feeds of thefe may be fown in March or April, where the plants are to remain, and will require no other culture but to keep them clean from weeds, and to thin the plants where they are too clofe, leaving them ten inches a/under, that their branches may have room to fpread. Thefe plants will begin to flower in June, and continue in flower until the froft kills them. The feeds ripen in Auguft and Septem-

ber, which, if permitted to fcatter, will furnifh a fupply of young plants in the fpring; but as thefe will be a mixture of bad and good, the beft method is to fave the beft feeds, and fow each of the varieties diftina, which is the fure way to have them in perfe&ion. The flowers of the common Marigold are ufed in the kitchen.

The fourth fort grows naturally at the Cape of Good Hope. This plant is annual, and perifhes foon after the feeds are perfected.

The lower leaves are oblong, fpear-ftiaped, and deeply indented on their edges; they are flefhy, and of a pale green colour. The ftalks are produced on every fide the root, which decline toward the ground, and are from fix to eight inches long, garnifhed with leaves from the bottom, to within two inches of the top. The leaves on the ftalks are much narrower, and more indented than thofe at the root. The upper part of the ftalk is very (tender, upon which refts one flower, fhaped like thofe of the common Marigold, having a purple bottom; and the rays (or border) of the flower are of a Violet-colour on their outfide, and of a pure white within; thefe open when the fun ihines, but ihut up in the evening, and remain fo in cloudy weather. When the flower decays, the pedicle (or foot-ftalk) becomes Weak, and the head hangs down, during the formation and growth of the feeds; but when they are fully ripe, the foot-ftalk raifes itfelf again, and the heads of the feeds ftand upright.

The fifth fort is a native of the Cape of Good Hope. This is alfo an annual plant, and has much the appearance of the former, but the leaves are more deeply indented on their edges; the ftalks grow about the fame length as the former; the flower is a little fmallr, and the outfide of the rays are of a fainter purple colour. The feeds of this are flat and heart-lhaped, but thofe of the former are long and narrow.

Hie fixth fort was brought from the fame country with the two former, and is alfo an annual plant; the leaves of this are much longer than thofe of either of the former forts, and broader at the end, they are regularly indented near the root, but thofe on the ftalks have but few and (hallow indentures. The ftalks of this fort are much longer and thicker than thofe of the former; and at the top, juft below the flower, fwel larger than at the bottom; the flower is fmallr than thofe of the other forts, but is of the fame colour. Thefe plants flower in June, July, and Auguft, and their feeds ripen about fix weeks after, fo that they muft be gathered 3t different times as they come to maturity.

The feeds of thefe plants fhould be fown in the fpring in the borders of the garden where the plants are defigned to remain, for they do not bear tranf planting well, therefore they may be treated in the fame manner, and fown at the fame time, with Candy Tuft, Venus Looking Glafs, and other hardy annual plants, putting four or five feeds in each patch* if they all grow, there fhould not be more than two plants left in each patch: after this, they require no farther care but to keep them clean from weeds. If the feeds of thefe plants are permitted to fcatter, the plants will come up the following fpring without care, and thefe will flower earlier than thofe which are fown in the fpring.

The feventh fort is alfo a native of the fame country. This is a perennial plant, which divides near the root into feveral tufted heads, which are clofely covered with long graffy leaves coming out on every fide without order, fome of thefe have one or two indentures on their edges, but the moft part are entire. From between the leaves arife naked foot-ftalks about nine inches long, fuftaining one flower at the top, which is about the fize of the common Marigold, having a purple bottom; the rays are alfo purple without, but of a pure white within. Thefe expand when the fun ihines, but always clofe in the evening, and in cloudy weather. The general feafon of their beauty

beauty is in April and May, when they have the greatest number of flowers upon them; but there is commonly a succession of flowers late in the autumn, though not in so great plenty. This sort doth not often produce good seeds in Europe, but it is easily propagated by slips taken off from the heads, in the same manner as is practised for Thrift. They may be planted any time in summer, in pots filled with light fresh earth, which may be plunged into a very moderate hot-bed, to forward their putting out roots; or otherwise the pots may be sunk in the ground up to their rims, and covered with a Melon-glass, which, in the middle of summer, will answer full as well, but in the spring or autumn* the former method is to be preferred: when these are planted, the glasses must be shaded in the heat of the day, and the slips must be frequently refreshed with water, but it must not be given them too liberally, for much wet will rot them: after they have got strong roots, they should be each planted into separate small pots, filled with fresh light earth, and placed in a shady situation, till they have taken fresh root, when they may be placed in the open air, in a sheltered situation, where they may remain till autumn, and then should be placed in a dry, airy, glass-case, for the winter season, or under a common hot-bed frame; for these plants do not thrive in artificial heat, they only require protection from frost and wet, and should enjoy the air at all times when the weather is mild. The seeds of this sort are heart-shaped, like those of the fifth* I have sometimes had one or two heads of them ripen in a season, but this is very rare, and if the seeds are not sown in autumn, they seldom grow.

The eighth sort has been of late years introduced into the Dutch gardens from the Cape of Good Hope. This was sent me by Dr. Van Royen, professor of botany at Leyden, some years past. It hath a slender, shrubby, perennial stalk, which rises to the height of seven or eight feet, but requires support; this sends out a great number of weak branches, from the bottom to the top, which hang downward, unless they are supported; they are garnished with oval leaves, having short flat foot-stalks, most of these are slightly indented toward the top, and many of them are entire, they are of a shining green colour on their upper side, but paler underneath; the flowers come out at the end of the branches, on short naked foot-stalks, and are in size and colour like those of the sixth sort; these are sometimes succeeded by flat heart shaped seeds. The flowers appear during the summer months.

This is easily propagated by cuttings, which may be planted any time in summer in a shady border, or otherwise shaded with mats in the heat of the day: in five or six weeks, these will have taken root, when they should be carefully taken up, and each put into a separate pot, filled with light sandy earth, but not dunged, and placed in the shade till they have taken fresh root, then they may be placed with other hardy exotic plants in a sheltered situation where they may remain till the frost begins, when they must be removed into the green-house, placing them near the windows that they may enjoy the free air, for this plant only requires protection from frost. The earth in which these are planted, should be light, but very poor, for in rich earth they grow too luxuriant, and seldom flower.

The ninth sort was sent me from La Vera Cruz, in New Spain, by the late Dr. Houffout, where he found it growing naturally in great plenty. This sends but many herbaceous stalks from the root, which are hairy, and trail upon the ground. The leaves are placed by pairs opposite; these are long, narrow, and indented on their edges in two or three places opposite to each other, so as to appear like three, five, or seven lobes: they are rough, and of a deep green on their upper side, but hoary on their under, covered with slender hairs. From the divisions of the branches and the wings of the leaves, come out long naked foot-stalks, terminated by single yellow

flowers, about the size of those of the Field Daify; which are succeeded by long, flat, rough seeds. It grows naturally in poor sandy ground, and flowers in the spring. This plant is annual; the seeds must be sown in the spring upon a hot-bed, and when the plants are fit to remove, they should be planted in pots filled with light sandy earth, and plunged into a hot-bed of tanners bark* observing to shade them until they have taken new root, then they must have air admitted to them every day, in proportion to the warmth of the season, and treated in the same manner as other tender plants from the same countries. With this management, the plants will flower by August, and the seeds ripen in October.

The tenth sort rises with an upright stalk about eight inches high, sending out slender stiff branches on every side, those near the ground being much longer than the upper; these are garnished with oblong hairy leaves without foot-stalks, placed opposite. From the wings of the stalk, arises the foot-stalk of the flower, having two small leaves placed opposite, just below the flower, which hath a single empalement, like the other species. The flowers are of a yellowish white colour. This sort was sent me with the former from La Vera Cruz, by the same gentleman. It is an annual plant, and requires the same treatment as the former sort.

CALLA's SNOOT. See ANTIRRHINUM.

CALLA. Lin. Gen. Plant. 917. Wake Robin, or Ethiopian Arum.

The CHARACTER; A,

It hath a large open spathe of one leaf, which is oval and heart-shaped, ending in a pointy it is coloured and permanent) and a single upright spadix, to which the flowers and fruit adhere. This hath male and female flowers, intermixed toward the upper part of the club. (for spadix.) The male flowers consist of many very short stamina, terminated by small yellowish summits; the female flowers have a empalemed style, resting upon an obtuse germen, crowned by 6 pointed stigma. These flowers* at their first appearance, have a short green empalement which soon falls off, leaving the style naked. The germen afterward becomes a globular pulpy fruit, compressed on two sides, which hath two or three obtuse seeds.

This genus of plants is ranged in the seventh section of Linnaeus's twentieth class, entitled Gynandria Polyandria. This class includes those plants whose male and female flowers are intermixed; and this section, those whose male parts have many stamens.

The SPECIES are,

1. CALLA (*Ethiopica*) foliis sagittato-cordatis, spathe cucullata, spadice superne maculo. Hort. Cliff. 436. Calla with arrow-beaded heart-shaped leaves, a hooded spathe or sheath, and male flowers situated on the upper part of the spadix. Arum Africanum flore albo odorato. Par. Bat. Prod.
2. CALLA (*Palustris*) foliis cordatis, spathe plana, spadice undique hermaphrodito. Hort. Cliff. 436. Calla with heart-shaped leaves, a plain sheath, and every part of the foot-stalk both hermaphrodite flowers. Dracunculus aquatilis. Dod. Pempt. 330.
3. CALLA (*Orientalis*) foliis ovatis. Gron. Orient. 282. Calla with oval leaves. Arum minus Orientate, rotundioribus foliis. Mor. Hist. 3. p. 544.

This plant hath thick, fleshy, tuberous roots, which are covered with a thin brown skin, and strike down many strong fleshy fibres into the ground. The leaves arise in clusters, having foot-stalks more than a foot long, which are green and succulent. The leaves are shaped like the point of an arrow, they are eight or nine inches in length, and of a shining green, ending in a sharp point, which turns backward; between the leaves arise the foot-stalk of the flower, which is thick, smooth, of the same colour as the leaves, and rises above them, and is terminated by a single flower, shaped like those of the Arum; the hood or spathe being twisted at the bottom, spreads open at the top, and is of a pure white colour. In the center of this is situated the spadix or club, which is of an herbaceous yellow colour, upon which the small herbaceous

Weous flowers are placed, and fo clofely joined, as that the male and female parts' are very difficult to diftinguifh, without the affiftance of glaffes. When thefe fade, part of thofe which are fituated at the top of the club, are fucceeded by roundifh flefhy berries compreffed on two fides, each containing two or three feeds.

This plant grows naturalljr at the Cape of Good Hope, but has been long an inhabitant in the Englifh gardens. It propagates very faft by offsets, which fhould be taken off the latter end of Auguft, at which time the old leaves decay; but this plant is never deftitute of leaves, for before the old ones decay, there are young leaves produced, which advance in height all the winter *, but at this feafon the roots are in their moft inactive ftate. Thefe roots have generally a great number of offsets about them, fo that unlefs there is a want of them, the largeft only fhould be chofen; which fhould be feperated from all the fmaller, and each planted in a feperate pot, filled with kitchen-garden earth, and placed with other hardy exotic plants in the open air till autumn, when they muft be removed into fhelter for the winter feafon, during which time, they muft not have too much wet, for that will rot the roots. This plant is fo hardy as to live in the open air in mild winters, without any cover, if they are planted in warm borders, and have a dry foil; but with a little fhelter in hard froft, they may be preferred in the full ground very well. It flowers in May, and the feeds ripen in Auguft *, but as the roots increafe fo plentifully, few perfons care to fow the feeds, becaufe the young plants will not flower in lefs than three years. The flowers of this plant have but little fweetnefs, altho* by Herman's title, it fhould have a very agreeable odour; but unlefs a perfon places it near him, it cannot be perceived. I have frequently received the feeds of this from the Cape of Good Hope, but have always found they produced the fame fort.

The fecond fort grows naturally in moift or marfhy grounds in many parts of Europe, fo is rarely admitted into gardens.

The third fort grows naturally on the mountains near Aleppo. This hath a thick tuberous root, from which fpring up feveral oval leaves, Handing on pretty long foot-ftalks -, the fpadix of the flower rifes between the leaves, about fix or eight inches high, fupporting one white flower at the top.

The roots of this fort fhould be planted in pots filled with light earth, and in fummer they may be placed with other exotic plants in the open air; but in winter they fhould be placed under a common hot-bed frame, to fcreen them from froft, to which if they are exgofed the roots will be deftroyed; there is little beauty in this plant, fo it is only preferred in botanic gardens for variety.

CALLACARPA. See JOHNSONIA.

CALTHA. Lin. Gen. Plant. 623. *Marfh. Marigold.*

The CHARACTERS are,

The flower bath no empalement, but is compofed of five large, oval, concave petals which fpread open. It hath a great number of flender ftamina, which are fhorter than the petals, terminated by obtufe ereft fummits: in the center there are feveral oblong compreffed germen fituated, which have no Jyles, but are crowned by fingle ftigma. We germen afterward become fo many Jhort pointed cap-Jules, containing many roundifh feeds.*

This genus of plants is ranged in the feventh feftion of Linnaeus's thirteenth clafs, intitled Polyandria Polygynia, the flowers of this clafs having many ftamina, and of this feftion feveral germen.

The SPECIES are,

1. CALTHA (M^?r) foliis orbiculatiscrenatis, fioremajore. *Marfh. Marigold with round crenated leaves, and a larger flower.* Populago flor majore. Tourn. Inft. 273.
2. CALTHA (Minor) foliis orbiculato-cordatiscrenatis flore minore. *Marfh. Marigold with round beart-Jhaped leaves which are crenated, and a fmaller flower.*

Thefe two forts are fuppofed to be the fame, but I have never obferved either of them to vary, either in

their natural places of growth, or when they are removed into a garden. They both grow upon moift boggy land, in many parts of England, but the firft is the moft common *, of this there is a variety with very double flowers, which for its beauty is preferred in many gardens. This is propagated by parting the roots in autumn, and fhould be planted in a moift foil and a fhady fituation; and as there are often fuch places in gardens, where few other plants will thrive, fo thefe may be allowed to have room, and during their feafon of flowering, will afford an agreeable variety. This fort with double flowers, doth not appear fo early in the fpring as the fingle, but continues much longer in beauty. It flowers in May, and if the feafon is not very warm, will continue till the middle of June.

CALYCANTHUS. See BASTERIA.

CALYX [with botanifts, fignifies the cup of a flower before it opens: this is ftyled the empalement of the flower; in fome plants this continues, and becomes afterward a cover to the feeds of herbs, and fruit of trees.] *Lat.* -The cup inclofing or containing the flower.

CAMARA.. See LANTANA.

CAMERARIA. Plum. Nov. Gen. 18. tab. 29. Lin. Gen. Plant. 264.

This plant was fo named by father Plumier, in honour of Joachim Camerarius, a phyfician and botanift of Nuremberg; who publifhed an edition of. Matthiolus, in Latin and High Dutch, with new figures of the plants, and many obfervations.

The CHARACTERS are,

The flower bath a Jhort permanent empalement of one leaf, cut into five acute fegments at the top: the flower is of one leaf, falver-Jhaped, having a long cylindrical tube at bottom, which is enlarged above, and divided at the top into five acute fegments. It bath five Jhort inflexed ftamina, which are terminated by obtufe membranaceous fummits. In the bottom of the tube are fituated two roundifh germen, having one common Jyle, which is cylindrical and the length of the ftamina, crowned by two ftigma \ the under one is orbicular and flat, the other is concave. The germen afterward becomes two long, taper, kafy cap-Jules, filled with oblong cylindrical feeds.*

This genus of plants is ranged in the firft feftion of Linnaeus's fifth clafs, intitled Pentandria Monogynia* the flowers of this clafs having five ftamina, and thofe in this feftion but one ftyle.

The SPECIES are,

1. CAMERARIA (*Latifolia*) foliis ovatis, utrinque acutis tranfverfe fratis. Hort. Cliff. 76. Lin. Sp. Plant. 210. *Cameraria with roundifh leaves ending in points tranfverfly ribbed.* Cameraria lato Myrti folio. Plum. Nov. Gen. 18.
2. CAMERARIA (*Angustifolia*) foliis linearibus. Lin. Sp. Plant. 210. *Cameraria with long narrow leaves.* Cameraria angufto linariae folio. Plum. Nov. Gen. 18. The firft fort was fent me from the Havanna by the late Dr. Houftoun, where he found it growing naturally in great plenty. This rifes with a fhubby ftalk to the height of ten or twelve feet, dividing into feveral branches, garnifhed with roundifh pointed leaves placed oppofite, having many fmooth tranfverfe veins running from the midrib to the borders. The flowers are produced at the end of the branches in loofe clufters, which have long tubes enlarging gradually upward, and at the top are cut into five fegments, hroad at their bafe, but end in fliarp points: the flower is of a yellowifh white colour. After the flowers are fallen, the germen become two leafy capJules joined at their bafe, and have two fwelling protuberances on each fide at the bottom, the middle being extended confiderably longer; thefe have one cell, filled with cylindrical feeds. It flowers in Auguft, but never produces any feeds in England.

The fecond fort hath an irregular fhubby ftalk, which rifes about eight feet high, fending out irregular branches, garnifhed with very narrow thin leaves, placed oppofite -% thefe have two ribs running longitudinally

• tudinally through each. The flowers *ixt* produced fcattringly at the end of the branches, which are fhaped like thofe of the former fort, but fmaller. Both thefe plants abound with an acrid milky juice like the Spurge. The fecond fort grows naturally in Jamaica.

Thefe plants are propagated by feeds, which muft be procured from the places of their growth, for they do not perfect their feeds in England* They may alfo be propagated by cuttings planted in a hot-bed during the fummer months: they muft have a bark-ftove, for they, are very tender plants; but in warm weather muft have plenty of air.

C A M O C L A D I A, the Maiden Plumb.

The CHARACTERS are,

It hath a tripartite coloured emp dement of one leaf spreading open -, the flower hath three plain, oval, spreading petals, and three awl-Jhaped ftamina fhorter than the corolla, terminated by roundijh incumbent fummits, and an ovalgermen, but no flyk, crowned by an obtufe ftigma; the empalement afterward becomes an oblong Plumb, having three pun ffures at the top, inclofng a nut of the fame formm

This plant is ranged in the firft order of Linnaeus's third clafs, intitled Triandria Monogynia, the flower having three ftamina and one fyle.

The SPECIES are,

1. CAMOCLADIA (*Integrifolia*) foliis integris. Jacq. Amer. 12* *Camocladia with entire lobes. Prunus race-mofa, caudice non ramofa, alato fraacini folio non crenato, fructu rubro fubduki. Sloan. Cat. 184. The Maiden Plumb:'*

2. CAMOCLADIA (*Dentata*) foliis fpinofo-dentatis. Jacq* Amen 12. *Camocladia with prickly indented leaves.*

The firft fort grows naturally in Jamaica, and alfo in many other of the iflands in the Weft Indies; this rifes with an upright ftem near twenty feet high, garnifhed with long winged leaves, whofe pinnae are entire; at the top there are a few branches fent out about a foot long, which fuftain the flowers and fruit.

The fecond fort grows naturally at the Havanna, where it rifes about the fame height with the former; but as the flowers and fruit of this are unknown to the author, he can give no farther account of them.

Thefe plants are propagated by feeds, when they can be obtained from the places of their growth, which fhould be fown in pots and plunged into a hot-bed; the plants, when fit to remove, fhould be each planted in a fmall pot, and plunged into a tan-bed, and in the autumn fhould be plunged into the bark-bed in the ftove, and treated as other tender plants.

C A M P A N I F O R M flowers [of campana, a bell; and forma, *Lat.* fhape,] fuch flowers as in fhape refemble a bell.

C A M P A N U L A. Tourn. Inft. R. H. 108. tab. 38. Lin. Gen. Plant. 201. [fignifies a little bell, as tho' parva campana, *Lat.* fo called, becaufe the flowers refemble a little bell.]

The CHARACTERS are,

The empalement is divided into five acute parts, is upright, fpreading, and refts upon thegermen. The flower is of one leaf, fhaped like a bell, fpreading at the bafe where there are holes. In the bottom is fituated the five cornered neEtarium, which is joined to the top of the receptacle. It hath five jbandrt ftamina, which are infer ted in the top of the valves of the nettarium, terminated by long comprreffed fummits: below the receptacle is fituated the angular germen, fupporting a fyle which is longer than the ftamina, crowned by a thick, oblong, tripartite ftigma. the empalement afterward becotnes a roundijh angular capfule, which in fomefwecw have three, and in others five cells, each having a hole toward the top, through which (be feeds)are-fcattered when ripe.

This genus of plants is ranged in the firft fection of Linnaeus's fifth clafs, intitled Pentandria Monogynia; the flowers of this clafs have five ftamina, and in this fection but one fyle.

The SPUCIES are,

- r. CAMPANULA (*Pyramidalis*) foliis ovatis glabris fubferratis, caule erecto paniculato, ramulis brevibus Lin. Sp. 233. *Bell-flower with ovalfmooth leavesfawed below, an upright paniculated ftalk, andffort branches** Campanula pyramidata altiffima. Tourn. Inft: 109; *Talleft pyramidal Bell-flower.*

2. CAMPANULA (*Decurrens*) foliis radicalibus obovatis, caulibus lanceolato-linearibus fubferratis feffilibus rdmotis. Lin. Sp. Plant. 164. *Bell-flower with lower leaves oval, and thofe on theftalks narrow, fpear-faoaped, fawed, and growing clofe to theftalks at remote diftancei.* Campanula perficae folio* Cluf. Hift. 171. *Peach-leaved Bell-flower.*

3. CAMPANULA (*Medium*) capfulis quinquelocularibts te&is, calycis finibus reflexis. Vir. Cliff. 16. *Ziell-flower with a covered capfule, having five cells, and the borders of the cup reflexed.* Campanula hortenfis folio & fiore oblongo. C. B. P. 94. *Commonly called Canter* bury Bell-flower.*

4. CAMPANULA (*Trachelium*) caule angulato* foliis petiolatis, calycibus ciliatis, pedunculis trifidis. Vir. Cliff. 16. *Bell-flower with an angular ftalk, leaves having foot-ftalks, a hairy empalement, and trifid foot-ftalks to the flowers.* Campanula vulgator, foliis urticae vdl major & aterior. C. B. F. 94. *Nettle-leaved Bell-flower^*

5. CAMPANULA (*Latifolia*) foliis ovato-lanceoiatis, caule fimpliciffimo tereti, floribus folitaris pedunculatis fructibus cernuis. Vir. Cliff. 17. *Bell-flower with aval fpear-Jhaped leaves, a fingle taper ftalk, flowers growing Jingly upon foot-ftalks, and pendent fruit.* Campanula maxima foliis latiffimis* C. B. P. 94. *Greateft Bell-flower with broadeft leaves.*

6. CAMPANULA (*Rapunculus*) foliis undulatis radicalibus lanceolato-ovalibus, panicula coardatâ. Hort. Upfal. 40. *Bell-flower with waved leaves, thofe growing Hear the ftalk oval and fpear-fhaped, and a comprreffed panicle.* Campanula radice efculentâ. H. L. *Commonly called Rampion.*

7. CAMPANULA (*Glomerata*) Caule afgulato fimplici, floribus feffilibus capitulo terminali. Vir. Cliff. 16* *Bell-flower with a Jingle angular ftalk, flowers growing clofe, and terminating in a head.* Campanula pratensis flore conglomerate. C. B. P. 94. *Meadow Bell-flower with flowers gathered in bunches.*

8. CAMPANULA (*Speculum*) caule ramofiffimo diffufo-fo-iliis oblongis fubcrenatis, calycibus folitariis corollâ longioribus, capfulis prifmaticis. Hort. Upfal. 41. *Bell-flower with a very branching diffufed ftalk, oblong crenated leaves, folitary ftmver-cups which are longer than the petal, and prifmatic capfules.* Campanula arvenfis erefta Euphrasiae luteae, feu Triflaginis appulae foliis. EL Cath. *Commonly called upright Venus Looking-glafs.*

9. CAMPANULA (*Hybrida*) caule bafi fubramofa ftrifto, foliis oblongis crenatis, calycibus aggregatis corollâ longioribus, capfulis prifmaticis. Lin. Sp. Plant. 1684 *Bell-flower with a ftalk branching at, the bottom, oblonjr crenated leaves, flower-cups gathered together, which are longer than the petal, and prifmatic capfules.* Campanula arvenfis minima erefta. Mor. Hift. 2.457. *Small Venus Looking-glafs.*

10. CAMPANULA (*Erinus*) caule dichotomo, foliis feffilibus utrinque dentatis. Hort. Cliff. 65. *Bell-ftnvef with a forked ftalk, and leaves growing clofe to theftalks, which are indented on both fides.* Campanula minor annua, foliis incifis. Mor. Hift. 1. 458. *Smaller annual Bell-flower with cut leaves.*

11. CAMPANULA (*Pentagonia*) caule fubdivifo ramoff. iimo, foliis linearibus acuminatis. Hort. Cliff. 66. *Bell-flower with a very branching divided ftalk, and narrow pointed leaves.* Campanula pentagonia flore aropliffimo Thvacia. Tourn. Inft. 112. *Five-cornered Bell-flower ofThracica,*

12. CAMPANULA (*Perfoliata*) caule fimplici, foliis cordatis dentatis amplexicaulibus, floribus feffilibus aggregatis. Hort. Upfal. 40. *Bell-ftcwer with a fingU ftalk, heart-Jhaped indented leaves which embrace the ftalk, .end flowers gathered together^ growing clofe to the ftalk.*

- Campanula pehagonia perfoliata. Mor. Hift. 2. p. 457. *Five-cornered perfoliate Bell-flower.*
13. CAMPANULA (*Americana*) caule ramofo, foliis linguiformibus crenulatis margine cartilagineo. Prod. Leyd. 246; *Bell-flower with a branching stalk, and toHgue-Jhaped crenulated leaves with ftiff edges.* Campanula minor Americana, foliis rigidis flore caeruleo patulo. H. L. 107; *Smaller American Bell-flower.*
14. CAMPANULA (*Canariensis*) foliis haftatis dentatis oppofitis petiolatis, capglis quinquelocularibus. Lin. Sp.-Plant. 168. *Bell-flower with fpear-Jhaped indented leaves growing oppajite, having foot-Jtalks and capfules with five cells.* Campanula Canarienfis, atriplicis folio, tuberosaradice. *Canary Bell-flower.*
15. CAMPANULA (*Patula*) foliisJftri&is, radicalibus lanceolato-ovalibus, panicula patula. Flor. Suec. 186. *Bell-flower whofe radical leaves are oval, fpear-Jhaped, and fspreading flowers in panicles.* Campanula elculenti facie, ramis & floribus patulis. Hort. Elth. 1. 68.
16. CAMPANULA (*Cervicaria*) hifpida, floribus feffilibus, capitulo terminali, foliis lanceolato-linearibus undulatis. Lin. Sp. 235: *Rough Bell-flower with feffile flowers terminating the ftalks, and linear, fpear-Jhaped, waved leaves.* Campanula foliis echii. C. B. 36.
17. CAMPANULA (*Saxatilis*) foliis obovatis crenatis, floribus alternis nutantibus, capfulis quinquecarinatis. Lin. Sp. 237. *Bell-flower with oval crenated leaves, nodding flowers placed alternate, and boat-Jhaped capfules with five cells.* Campanula Cretica faxatilis, bellidifolio, magno flore.* Tourti. Inft. in .

There are feveral other fpecies of this genus, fome of which grow naturally in England, and others in the northern parts of Europe, which have but little beauty, therefore are feldom cultivated in gardens, fo I fhall not enumerate them here. There are alfo feveral varieties of fome of the forts here mentioned, which I fhall take notice of in their proper place, but as they are not diftindt fpecies, they are omitted in the above lift.

The firft fort hath thick tuberous roots which are milky, this fends out three or four ftrong, fmooth, upright ftalks, which rife near four feet high, and are garnifhed with fmooth oblong leaves, whofe edges are a little indented. The lower leaves are much broader than thofe which adorn the ftalks. The flowers are produced from the fide of the ftalks, and are regularly fet on for more than half their length, forming a fort of pyramid; thefe are large, open, and fhaped like a bell. The moft common colour of the flowers is a light blue; but there have been fome with white flowers, which "make a variety when intermixed with the blue, but the latter is moft efteemed.

This plant is cultivated to adorn halls, and to place before die chimnies in the fummer, when it is in flower, for which purpofe there is no plant more proper, for when the roots are ftrong, they will fend out four or five ftalks, which will rife as many feet high, and are garnifhed with flowers great part of their length. Thefe upright ftalks fend out fome fhort fide branches, which are alfo adorned with flowers, fo that by fpreading the upright ftalks to a flat frame compofed of flender laths (as is ufually praftifed) the whole plant is formed into the fhape of a fan, and will fpread near the width of a common fire-place. When the flowers begin to open, the pots are removed into the rooms, where, being (haded from the fun, and kept from the rain, the flowers will continue long in beauty, and if the pots are every night removed into a more airy fituation, but not expofed to heavy rains, the flowers will be fairer, and continue much longer in beauty.

Thofe plants which are thus treated, are feldom fit for the purpofe the following feafon, therefore a fupply of young plants fhould be annually raifed. The common method of propagating this plant, is by dividing the roots. The bell time for doing this is in September, that the offets may have time to get ftrong roots before winter.

This method of propagating by the offets is the

quickeft, therefore generally praftifed, but the plants which are raifed from feeds, are always ftronger, the ftalks will rife higher, and produce a greater number of flowers, therefore I recommend it to the practice of the curious; but in order to obtain good feeds, there fhould be fome ftrong plants placed, in a warm fituation, near a pale, or wall, in autumn, and, if the following winter fhould prove fevere, they fhould be covered either with hand-glaffes or mats, to prevent their being injured by the froft; and, in the fummer, when the flowers are fully open, if the feafon fhould prove very wet, the flowers muft be fcreened from great rains, otherwife there will be no good feeds produced: the not obferving this, has occasioned many to believe that the plants do not bear feeds in England, which is a great miftake, for I have raifed great numbers of the plants from feeds of my own laying, but I have always found that the plants which have been long propagated by offsets, feldom produce feeds, which is the fame with many other plants which are propagated by flips, or cuttings* which in a few years become barren.

When the feeds are obtained, they muft be fown in autumn in pots, or boxes, filled with light undunged earth, and placed in the open air till the froft or hard rains come on, when they fhould be placed under a hot-bed frame, where they may be fheltered from both, but in mild weather the glaffes fhould be drawn off every day, that they may enjoy the free air; with ijs management the plants will come up early in the fpring, and then they muft be removed out of the frame, placing them firft in a warm fituation, but when the feafon becomes warm, they fhould be removed where they may have the morning fun only. During the following fummer they muft be kept clean from weeds, and in very dry weather, now and then refrefhed with water, which muft be given with great caution, for the roots are very fubjeft to rot with too much moifture. In September the leaves of the plants will begin to decay, at which time they fhould be tranfplanted, therefore there muft be one or two beds prepared, in proportion to the number of plants. Thefe beds muft be in a warm fituation, and the earth light, fandy, and without any mixture of dung, which laft is an enemy to this plant. If the fituation of the place is low, or the natural foil moift, the beds muft be raifed five or fix inches above the furface of the ground, and the natural foil removed a foot and a half deep, putting lime rubbifh eight or nine inches thick in the bottom of the trench, to drain off the moifture. When the beds are prepared, the plants muft be taken out of the pots, or cafes, very carefully, fo as not to break or bruife their roots, for they are very tender, and, on being broken, the milky juice will flow out plentifully, which will greatly weaken them. Thefe fhould be planted at about four inches diftance each way, with the head or crown of the root half an inch below the furface; if there happens a gentle fhower of rain foon after they are planted, it will be of great fervice to the plants; but as the feafon fometimes proves very dry at this time of the year, in that cafe, it will be proper to give them a gentle watering three or four days after they are planted) and to cover the beds with mats every day, to prevent the fun from drying the earth; but thefe muft be taken off in the evening, that the dew may fall on the ground. Towards the end of October the beds fhould be covered over with fome old tanners bark to keep out the froft, and where there is not conveniency of covering them with frames, they fhould be arched over with hoops, that in fevere frofts they may be covered with mats; for thefe plants, when young, are often deftroyed in winter, where this care is wanting. In the fpring the coverings muft be removed, and the following fummer the plants muft be kept clean from weeds; and, if the feafon fhould prove very dry, they muft now and then be refrefhed with water. The following autumn the furface of the ground fhould be ftirred between the plants, and

some fresh earth spread over the beds, and in the winter covered as before. In these beds the plants may remain two years, during which time they must be treated in the manner before directed; by which time the roots will be strong enough to flower: in September they should be carefully taken up, and some of the most promising planted in pots; the others may be planted into warm borders, or in a fresh bed, at a greater distance than before, to allow them room to grow. These plants which are potted should be sheltered in winter from great rains and hard frosts, otherwise they will be in danger of rotting, or at least be so weakened, as not to flower with any strength the following summer* and those which are planted in the full ground, should have some old tanners bark laid round them, to prevent the frost from entering deep to the roots*, with this management these plants may be brought to the utmost perfection, and a constant succession of good roots raised, which will be much preferable to those which are propagated by offsets. I have been informed that there is a double flower of this kind, but as I have not seen any, I can give no farther account of it. This sort is by some called Steeple Bell-flower.

The second sort grows naturally in the northern parts of Europe, but has been long cultivated in the English gardens*, of this there are the following varieties, viz. the single, blue, and white flower, which have been long here; and the double flower of both colours, which has not been more than twenty-eight years in England, but has been propagated in such plenty, as to have almost banished those with single flowers from the gardens. All these varieties are easily propagated by parting their roots in autumn, every head which is then flipped off will take root*, they are extreme hardy, so will thrive in any soil or situation, therefore are very proper furniture for the common borders of the flower-garden.

This hath a root composed of many fibres, and sends up an angular, or channelled stiff stalk, about two feet and a half high, garnished with oblong, oval, stiff leaves near the root, which are placed without order y but those on the stalks are longer and narrower, having their edges (lightly indented, and are of a shining green. The flowers are produced towards the upper part of the stalk upon short foot-stalks. These are shaped like those of the former sort, but are smaller, and more expanded. This flowers in June and July, and in cool seasons there will be some continue great part of August.

The third sort is a biennial plant, which perishes soon after it hath ripened seeds. It grows naturally in the woods of Italy and Austria, but is cultivated in the English gardens for the beauty of its flowers. Of this sort there are the following varieties; the blue, the purple, the white, the striped, and the double flowering, but the last two are not very common in England.

This hath oblong, rough, hairy leaves, which are serrated on their edges, coming out without order from the root; from the center of these a stiff, hairy, furrowed stalk, arises about two feet high, sending out several lateral branches, from the bottom upward, garnished with long, narrow, hairy leaves, fawed on their edges, and are placed alternately*, from the setting on of these leaves, come out the foot-stalks of the flower, those which are on the lower part of the stalk and branches being four or five inches long, diminishing gradually in their length upward, and thereby form a sort of pyramid. The flowers of this kind are very large, so make a fine appearance*, they come out the beginning of June, and, if the season is not very hot, will continue a month in beauty. The seeds ripen in September, and the plants decay soon after.

It is propagated by seeds, which must be sown in the spring in an open bed of common earth, and when the plants are fit to remove, they should be transplanted into the flower-nursery, in beds six inches asunder, and to water them frequently till they

have taken new root j after which they will require no other culture, but to keep them clean from weeds till the following autumn* when they should be transplanted into the borders of the flower-garden. As these plants decay the second year, there should be annually young ones raised to succeed them.

The fourth sort hath a perennial root, which sends up several stiff hairy stalks, having two ribs or angles. These put out a few short side branches, garnished with oblong, pointed, hairy leaves, deeply fawed on their edges. Toward the upper part of the stalks the flowers come out alternately, upon short trifid foot-stalks, having hairy empalements. The flowers are of the shape of the former, but shorter, spread more at the brim, and are pretty deeply cut into many acute segments. This flowers in June, and the seeds ripen in autumn.

The varieties of this are, the deep and pale blue -, the white with single flowers, and the same colours with double flowers. The double sorts are propagated by parting their roots in autumn, which should be annually performed, otherwise the flowers are apt to degenerate to single*, to prevent which, the roots should be every autumn transplanted and parted. The soil should not be too light or rich, in which they are planted, for in either of these they will degenerate; but in a strong fresh loam their flowers will be in the greatest perfection. These plants are extreme hardy, so may be planted in any situation; those* with single flowers do not merit a place in gardens.

The fifth sort grows naturally in the northern parts of England: this hath a perennial root, composed of many fleshy fibres, which abound with a milky juice, from which arise several strong, round, single stalks, which never put out branches, but are garnished with oval spear-shaped leaves, (lightly indented on their edges, which are placed alternately. Toward the upper part of the stalk the flowers come out singly upon short foot-stalks; these spread open at the brim, where they are deeply cut into five acute segments. After the flowers are past, the empalement becomes a five-cornered seed-vessel, which turns downward till the seeds are ripe, when it rises upward again.

The varieties of this are, the blue, purple, and white flowering. This sort is easily propagated by seeds, which it furnishes in great plenty, and, if suffered to scatter, the plants will come up in as great plenty the following spring; when they may be transplanted into the nursery till autumn, at which time they should be transplanted where they are designed to remain. As this sort delights in shade, the plants may be planted under trees, or in shady borders where few better things will thrive, they will afford an agreeable variety when they are in flower. It flowers in June and July, and the seeds ripen in autumn.

The sixth sort hath roundish fleshy roots which are eatable, and are much cultivated in France for fallads, and some years past it was cultivated in the English gardens for the same purpose, but is now generally neglected. It grows naturally in several parts of England, but the roots never grow to half the size of those which are cultivated. This is propagated by seeds, which should be sown in a shady border the latter end of May, and when the plants are about an inch high, the ground should be hoed, as is practised for Onions, to cut up the weeds, and thin the plants to the distance of three or four inches and when the weeds come up again, they must be hoed over to destroy them: this, if well performed in dry weather, will make the ground clean for a considerable time, so that, being three times repeated, it will keep the plants clean till winter, which is the season for eating the roots, when they may be taken up for life as they are wanted: These will continue good till April, at which time they will send out their stalks, when they will become hard and unfit for use, as do also those roots which have flowered; so that the young roots only are such which are fit for the table, therefore when the seeds are sown too early, the plants frequently run up to flower the same year, which spoils their roots.

If his fort fends out upright ftalks about twd feet high, which are garnifhed with oblong fpear-fhaped leaves, placed alternately. Towards the upper part of the ftalk the inall BeU-flowers are produced, Handing upright clofe to the ftalk ; fome of thefe flowers are blue, and others white -, they come out in June and July, and the feeds ripen in autumn.

The feventh fort grows naturally upon chalky pafures in many parts of England, where the ftalks do not rife many times a foot high, and in other places it grows to double that height, which has occafioned their being taken for two diftindt plants. This hath a perennial root, which fends up feveral round hairy ftalks, which often rife upward of two feet high *, the bottom leaves are broad, and ftand upon long foot-ftalks, and are (lightly fawed on their edges. Thofe which are upon the ftalks are long, narrow, have no thot-ftalks, and are placed alternately at confiderable diftances* From the wings of the leaves, towards the upper part of the ftalk, come out long naked foot-ftalks, fupporting two or three bell-ihaped flowers, clofely joined together in a head, and the main ftalk is terminated by a large clutter of the fame flowers, which are fucceeded by roundilh capfules filled with fmall feeds. This plant is eafily propagated either by feeds, or parting their roots, and will thrive in any foil or fituation. It flowers in July, and the feeds ripen in autumn.

The eighth fort is an annual plant, which rifes with (lender ftalks a foot high, branching out, garnifhed with oblong leaves, a little curled on their edges 5 from the wings of the leaves come out the flowers, fitting clofe to the ftalks, which are of a beautiful purple, inclining to a Violet-colour, divided into five fegments, which refemble fo many leaves, and in the evening contract and fold into a pentagonal figure ; from whence it is by fome titled Viola Pentagonia, or five-cornered Violet. The empalement which encompaffes the flower, is compofed of five, long, narrow, green leaves, which fpread open, and are much longer than the petals of the flower 5 thefe remain on the top of the prifmatic feed-veffel, which is filled with fmall angular feeds. If this plant is fown in autumn, it will grow much taller, and flower a month earlier than when the feeds are fown in the fpring* The autumnal plants will flower in May, and the fpring plants in June and July. There is a variety of this with white flowers, and another with pale purple,

The ninth fort is the common Venus Looking-glafs, which hath been long cultivated in the Englifh gardens. This fort feldom rifes more than fix inches high, with a ftalk branching from the bottom upward, garnifhed with oval leaves, fitting clofe to the ftalks, From the bafe of which the branches are produced, which are terminated by flowers very like thofe of the former fort.

The tenth fort grows naturally in the fouth of France and Italy. This is alfo a low annual plant, which feldom rifes fix inches high, but divides into many branches, garnifhed with fhort oval leaves, fitting clofe, which are deeply indented on both fides. The flowers are produced at the ends of the branches, which are fhaped like thofe of the other fort laft mentioned, but they are fmall, their colours lefs beautiful, and the leaves' of the empalement are broader.

The eleventh fort grows naturally in Thrace, but hath been long in the Englifh gardens. This is alfo a low annual plant, which rifes little more than fix inches high; the ftalks divide by pairs, and frequently there arifes a branch from the middle of the divisions *, the lower leaves are oblong and obtufe, but thofe which come out toward the end of die branches are much narrower, and pointed. The flowers come out fingle at the end of the branches, having a long five-leaved empalement, and are larger than thofe of the three laft forts, of a fine blue colour; the feeds are like thofe of the eighth fort.

The twelfth fort is an annual plant, which, in good ground, will rife a foot and a half high, but in poor

land, or it where it grows wild among corri, feartely rifes to the height of fix inches. The ftalk is fingle, rarely putting out any branches, unlefs near the root, from whence there are fometimes one or two fhort lateral branches produced. The leaves are roundilh* and embrace the ftalk at their bafe; their edges are fharply fawed, and from their bafe comes out a clofe tuft of flowers, furrounded by the leaf, as in an empalement. The flowers are five-cornered, fhaped like thofe of the Venus Looking-glafs, but are much fmaller -, thefe are produced the whole length of the ftalk. The feeds are inclofed in fhort capfules, which are fhaped like thofe of the former forts. It grows in Italy, and alfo in Virginia. If the feeds of this fort are permitted to fcatter, the plants will come up without care; or the feeds may be fown in the fpring, in the fame manner as thofe of the laft forts, and treated in the fame way.

The thirteenth fort is a native of America, but has been long cultivated in the gardens of the curious, both in England and Holland. This hath many rigid oblong leaves coming out from the root on every fide, which form a fort of head like thofe of Houfe-leek, crenated, having a ftrong rib running on their border longitudinally. From the center of the plant proceeds the ftalk, which rifes about a foot high, and is thinly garnifhed with very narrow ftiff leaves, of a fhining green. From the wings of the leaves come out the foot-ftalks of the flower, which are from two to four inches long, each being terminated by one fpreading bell-fhaped flower, whofe empalement is fhort, and cut into five acute fegments. The fyle of this is longer than the petal, and is crowned by a bifid ftigma. There is a white and a blue flower of this fort in the gardens, but in Holland they have it with a double flower. This fort doth not produce feeds in England, fo is only propagated by offsets; thefe may be taken off from the old plants in Auguft, that they may get good root before the cold weather begins: they muft be planted in fmall pots filled with frefh, light, loamy earth, and placed in the fhade until they have taken root; then they may be placed with other hardy exotic plants, and in autumn they muft be removed into fhelter, for in fevere winters thefe plants are often deftroyed which are expofed *, though in mild winters they will live in the open air. It flowers in July and Auguft.

The fourteenth fort is a native of the Canary Iflands, from whence it was introduced to the gardens in Europe, where it hath been many years cultivated *, and of late years great numbers of the plants have been raifed from feeds which were brought from thence, but the flowers of thefe new-raifed plants are not fo well coloured as thofe of the old ones.

This hath a thick flefhy root, which is of an irregular form, fometimes running downward like a Parfnep, at other times dividing into feveral knobs near the top, and when any part of the root is broken, there iffues out a milky juice at the wound. There are many ftrong flefhy fibres fent out, which ftrike deep into the ground, and from thefe a numerous quantity of fmall ones. From the head, or crown of the root, arife one, two, three, or more ftalks, in proportion to the fize of the root; but that in the center is generally larger, and rifes higher than the others. Thefe ftalks are very tender, round, and of a pale green; their joints are far diftant from each other, and when the roots are ftrong, the ftalks will rife ten feet high, fending out feveral fmaller fide branches. At each joint they are garnifhed with two, three, or four fpear-fhaped leaves, with a fharp pointed beard on each fide. Thefe are of a fea-green, and, when they firft come out, are covered (lightly with an Afh-coloured pounce. From the joints of the ftalk the flowers are produced, which are of the perfeft bell-fhape, and hang downward; they are of a flame colour, marked with ftripes of a brownifkred; the flower is divided into five parts, at the bottom of each is fituated a nectarium, covered with a white tranfparent fkin, much refembling thofe of the Crown Imperial, but

C A M

are fmiSer; upon each of these is fimatit men, which lifia almoft the length of the petal, a: i i is ter-
 m... I by oblong firamiu. In the center of the flower is fiuated the Uric, which is longer than the ftiminj, and is crowned by a crtdf ftigma. The flow... The flow... JL:TI in the beginning of Ociobtf, and there is often a fuccetlion of them till March. '1 I... <y to the root in June, and new ones Ipring up in Auguft

It is propagated by parting their roots, which must be "done v. i fir if the roots are broken or wounded] the milky juice will flow out plentifully, ib that it... hhiisl before the wound* an-
 lkiiiiifj ovct, it octafions their rotting-, therefore whenever <ny of them are broken, they fhould be laid in the ^reohqafe i few days to heal. Theft roots muft tint be too often parted, pfpccially if they are expected to flower well: for by frequent parting the r j(its Mi v. enkffcd, The beft rime for tranl'pJant-
 tna anil parting their roots, is in July, loon after the Ihiks are decayed. The earth in which thefe fhould be planted, iliouliJ not be rich, for thail will caufe them to be luxuriant in branches, and but thiiij par-
 nilimJ with flowers. The foil in whit h they have fucceded beft, is a light fondy loam, mixed with a fourth partof fended lirr-w-rubbiij; when the roots are Uric planted, the pots fhould be placed in the lhades and, uniefs the fafon is very dry, fhoul r.tii be watered, for during the time they are inactive, wet is very ufprioth to them. About the middle of Augufc tin- roots will begin to put out fibres, at which time-, if the ppts 3tv placed under a hot-bed frame,
 and as the night give it cod, caravel with thejtlea, but og*iwil every day to enjoy die free air, it will
 lykinvarJ them for Dowering, and increafe th^ir ltrengch i when the talks appear, the pknes muft be now and then refteihed with water, which muft not be given too often, nor in great quantity. Tlic plants thus nunageJ, by the muddie of September, w i have grown Co till, u licit to be kept longer uiuler tin 'tane, lu rhey (liouk! ix MM a dry airy glafi-cafe, rhere they niay t-njoy tlic Bee air in mild weather, but fcrened from cold. During die winter feafon they muft be frequently refteihed with water, and guarded from rroft; and in fpring, w ten the ftalks begin to cleacy, the pet? fhould be let abroad in the (hade, and fl

The fifteenth fort grows naturally in Lime of the north-
 >un... It is a biennial plant, veiylike fhccttblctort, but the branches grow more honiouti, and the flowerafpread uidernpen.

This is propagated by feeds, which fhould be C... in the autumn; "for thioe leeds which arc ibwn in the fpnoj often fail, or at beft for a year in the ground before they grow. When the plain:- tome Lp, they ihould be diimcil and kept LUMU from weedi, which U tic culture lify nquire.

TKc fifteenth fort grows namnlly in Germany and Swedrnt ihis l'mth rough leaves: tie .ftalk riles L-amilhed with narrow r... -weed by an obtuil: iiiikc of flowers.

The feventh >unth fort f'rows naturally "n Crete, upon rocks, where the roots penetrae the ffiircs, whereby the plants continue much longer F... when they are tranlplanted into f'ardens. The Iblki of thi* tift a foot nigh, w mi&d with oval cianated iravesj the flowers are TMge, blue, and pi... jdding (award the nuundi thele open in July, and are lue-ccr:) by fced vdltk, having five eelk fiUi with fmali feeds.

The ft planu arc proj... ated by feeds, which, if fown in the autumn, will more certainly fucced the... when fown in the fpring, j. When the plants are fit to remove, they ilioulii be nxlnfplanted into beds, and treated in the l: vie manner to the hardy forts befotC-
 mennenod but a few. pbnu of the lail fort may be pjjrted in pots, to iw (belated in winter.

C A M I' H U R A. S C • LAURUS.
 C A M I' 110 R O S M A- Camphorau. Tourn. Inf.

C A N

The Ca uuxmuu arc,
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 is permanent, bet as trdrda. It bat fair Jtet:Aa-/smina vil'Ub are equst, lenwueltd by evai Jkmaits, aid an
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 •at afterword btemzs a eapfuU erm
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The SPECIES at*.
 1. CANNUS... foliis ovatis linearibus.
 Amcen. Acad. i. p. 391. Cmsphorite w:lb tint:;, hairy
 Itovei. Camfihonta hurfura. C. B. P. 486,

1. CAMPHOHATA (Gloira) fblij fubrriqueus glabris mrmibus. Amocn. Acad. p. 303. Cumpberolis with fmeeth brtt-rcrtterid letrv.

•) he firft fort grows naturally aimut Mopclier. It is an annual plant, who& branches trail an IAC ground, Bhl extend each way a fwrt and more in lcingOI, gar-
 milhed with linear hairy leaves p!... <n ^
 branches; the flowers are prudutt l from the ioints of die ii.ii!:i, which we ib foul u to i. fcaoe per-
 ceptible, hiving no petali but a pitcher-DupeJ em-
 pale lent, which afterward becomes A capfulc : o the
 feed. This is an annual plant, which '* propagated by feed*, which, if fown in the autumn, will mor-
 prub.tbly fuccced, than if fown in the tiring; and if
 [lie feeds are permitted to fait in the autumn, there wli! be a lupply of your. plants be following fpring.

The iecond fort grows naturally in the Helvetian mountains. This is a perennial piagit, w- the branches tmi on the ground; the leavei ate mootit, threec-
 corncR-d, and unarmed. The flower; arc nut more vifiblt lhan iliocf of the iirt fort, and the cmp>le-
 ment becomes a cover to the feeds.

These plants are preferred in liime ijardrns, mo the fake of variety, than lor either beauty or i...
 the)... in any abjeel parr
 and when ijic plaon tome up, they are thinned, and *f-
 cenmrdr tejt dean from wtcdi, ihry will ripen their feeds, wlii:h, if jxriiitted to fcaoe, riere will be a fuppy ot' j'ants.

C A M P' I O N. See LyCRNU.
 CAN 1)1, E-B E R R Y - T R !: I-. See MvBtc.i.

C A N N A. Lin, Gen. Punt \ Imian flowrrini; Reed.
 In French Balifitr.

'T' br jfsir bath a ihte?-litrstd tmpaUwheat, <2ihi; b is prr-
 mamnt, ereSI, and tlmretl. li bulb tm petal, vibkb is divided'win fix pam: the brtt upper ferments are trcfl, and tiroedtr than th Ivxer, xei
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This genus of !,n.T k... ran^... of
 Linnaeus's first class, intitled Monandria Monogyna. The flowers of this class have but one flamen, and in
 distinction but one ftyle.

The E
 1. CANNA (Jady) foliis ovatis utrinque acuminatis ov-
 yllis. Prod. Leyd. 11. Canna with oval serrous leaves
 pimilid at bath ends. Canna. ... s; vulgarii.
 Tourn. Inf.

2. CANNA (* (A/1/0(tf) foliis oblongu-r
 ft^rientii fiorti: acibus. I
 pointed leiwts, ...
 Inf.

3. CANNA (G... ; fbliis ovatis obn:
 florid., ... 'jama ... with mi
 Staves, and I ... //fle&trs. (...
 Coccinco fplendenti.: Tourn. Inf. 367,

4. CANNA (*Luted*) foliis ovatis petiolatis nervosis fpatha floribus longiore. *Canna with oval* obtuse, nervous, leaves, having foot-stalks, and a longer hood to the flower.* Cannacorus flore luteo punctato. Tourn. Inf. R. H. 367.
5. CANNA (*Glaucā*) foliis lanceolatis petiolatis enervi- bus. Prod. Lcyd. 11. *Canna with spear-shaped smooth leaves having foot-stalks.* Cannacorus glaucophyllus, ampliore flore, Iridis palustris facie. Hort. Elth. 69.
- The first fort grows naturally in both Indies: the inhabitants of the British islands in America, call all the species without distinction Indian Shot, from the roundness and hardness of the feeds.
- This plant hath a thick, fleshy, tuberous root, which divides into many irregular knobs, spreading wide near the surface of the ground, sending out many large oval leaves without any order; these, at their first appearance, are twilled like a horn, but afterwards expand and are near a foot long, and five inches broad in the middle, lessening gradually to both ends, and terminating in points. They have many large transverse veins running from the midrib to the sides, which are prominent on their under side; and between each of these run two smaller, parallel, pointed veins, which are peculiar to this species. The stalks are herbaceous, rising four feet high, encompassed by the broad leafy foot-stalks of the leaves; these are compressed on two sides; at the upper part of the stalk the flowers are produced in loose spikes, each being at first covered by a leafy hood, which afterward stands below the flower, and turns to a brown colour. Each flower hath one petal, which is cut almost to the bottom into six slender segments, the three upper being broadest, these are of a pale red colour. The flower is encompassed by a three-leaved empalement, which fits upon a small, roundish, rough germen, which, after the flower is fallen, swells to a large fruit or capsule oblong and rough, having three longitudinal furrows, and is crowned by the three-leaved empalement of the flower which remains. When the fruit is ripe, the capsule opens lengthways into three cells, which are filled with round, hard, black, shining seeds. The principal season of these plants flowering, is in June, July, and August.
- As this fort is a native of the warmest parts of America, it requires to be placed in a moderate stove in winter, otherwise the roots will decay. I have frequently tried to keep these roots through the winter in a green-house, but could not succeed; for although some have escaped, yet they were so much weakened by the cold, as not to recover their strength the following summer, so as to flower in any tolerable degree of perfection; so that I have since constantly kept them in winter in a moderate stove, where they always flower in their season, at which time they make a fine appearance, and in the summer, place them abroad in a sheltered situation with other tender exotic plants, where they flower again, and produce ripe feeds annually.

The second fort grows naturally in Carolina, and some of the other northern provinces of America. The leaves of this fort are longer than those of the former, and terminate in sharper points. The stalks grow taller, and the segments of the flower are much narrower; the colour is a pale red, so it makes no great appearance. The feeds are like those of the former fort. If the roots of this fort are planted in warm borders and a dry soil, they will live through the winter in the open air. I have plants of this fort in the Chelsea garden, which have survived twelve winters in a fourth-west border without cover, and flower well every year, but do not produce feeds.

The third fort hath larger leaves than either of the former, the stalks rise much taller. I have received the feeds of this from America, and from the Brazils, by the title of Wild Plantain. The flower-stalks of this fort rise more than six feet high. The leaves are very large, and those near the root have long foot-stalks. The flowers are produced in larger spikes than those of the former sort, and are of a

much brighter scarlet. The feed-veffels are longer, and the feeds larger than those; and these differences are permanent from feeds, so that I make no doubt of its being a distinct species.

The fourth fort is let common in America than either of the former. I received the feeds of this from India, but have had two varieties arise from the feeds, one with a plain yellow, and the other a spotted, flower, which I find are apt to change from one to the other, when propagated by feeds. This fort hath shorter and rounder leaves than either of the former forts. The stalks seldom rise higher than three feet, and the spikes of flowers are like those of the first species, excepting the colour of the flowers.

The feeds of the fifth fort I received from Carthage in New Spain, in the year 1733, which produced very strong plants the first year, some of which flowered the same autumn. The roots of this are much larger than either of the former forts, and strike down strong fleshy fibres deep in the ground. The stalks rise seven or eight feet high. The leaves are near two feet long, narrow, smooth, and of a sea-green colour. The flowers are produced in short thick spikes at the extremity, which are large, and of a pale yellow colour, the segments of the petal are broad, but their shape like those of the other forts. The feed-veffels are larger, and much longer than those of the other forts, but contain fewer feeds, which are very large. The young plants which are raised from feeds of this fort, do more certainly flower than the old roots, or the offsets taken from them; for the roots send out many offsets, which will spread to a considerable distance where they have room, but seldom produce flowers; so that it is the best way to raise a succession of plants from feeds, and to throw out the old ones after they have perfected their feeds.

All the forts are propagated by feeds, which should be sown on a hot-bed in the spring; and when the plants are fit to remove, they should be transplanted into separate small pots, filled with rich kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark, observing to shade them till they have taken root, after which, they should have a large share of free air admitted to them every day in warm weather, and be frequently refreshed with water. As these plants will make great progress in their growth, they must be shifted into larger pots filled with the same sort of earth, and part of them plunged into the hot-bed again; and the others may be placed abroad in June, with other exotic plants, in a warm situation. Those which are placed in the hot-bed, will be strong enough to flower well in the stove the following winter; but those in the open air, will not flower before the following summer. These may remain abroad till the beginning of October, when they must be removed into the stove, and treated in the same manner as the old plants; and in May, if a gentle hot-bed is made, and covered a foot thick with rich earth, and the plants turned out of the pots, planting them with their balls of earth upon the hot-bed, covering each with a bell-glass, which may be raised on one side every day to admit air to the plants; and as these advance, they must be gradually inured to bear the open air. With this management the plants will grow much taller, and flower stronger than those which are kept in pots, and from these good feeds may be expected in autumn. These plants will continue many years with proper management; but as young plants always flower better than the old roots, it is scarce worth while to continue them after they have borne good feeds.

The second fort, which is much hardier than either of the other, should have a different treatment. The young plants of this must be earlier inured to the open air, where they may remain till the frost begins; then they must be placed in the green-house, and should have but little wet in winter; and the beginning of May, these should be turned out of the pots, and planted in a warm fourth border, in a dry soil, where they will thrive and produce flowers annually;

but

but as there is little beauty in this fort, a few plants for variety will be as many as most persons will choose to keep. There is a variety of this with variegated-leaves, which is preserved in some gardens, and is propagated by parting the roots -, but this hath little beauty, so is scarce worth cultivating.

CANELL A. See WINTBRANA.

CANNABIN A. See DATISCA.

CANNABIS [K*W&K, Gr.] Lin. Gen. Plant 988. Hemp.

The CHARACTERS are,

It is male and female in different plants. The male flowers have a five-leaved empalement which is concave, but have no petals \ they have five Jhort hairy ftamina > terminated by oblong fquare fummits. The female flowers have permanent empalements of one leaf which are oblong and pointed. They have no petals, but a small germen, supporting two long ftyks, crowned by acute fligma \ the small germen afterward becomes a globular depreffed feed, inch fed in the empalement.

This genus of plants is ranged in the fifth fection of Linnaeus's twenty-fecond clafs, intituled Dioecia Pentandria, the male and female flowers being in feperate plants, and the male having five ftamina.

We have but one SPECIES of this plant, which is, CANNABIS. Lin. Sp. Plant. 1027. Hemp. Cannabis fativa. C. B. P. 320. *Manured Hemp.* Most of the old writers have applied the latter title to the female Hemp, and the male they have titled Cannabis erratica, or Wild Hemp; but as both arise from the same feeds, so they should not be made different plants. This plant is propagated in the rich fenny parts of Lincolnshire, in great quantities, for its bark, which is usefull for cordage, cloth, &c. and the feeds afford an oil, which is used in medicine.

Hemp is always sown on a deep, moist, rich foil, such as is found in Holland,, in Lincolnshire, and the fens in the ifle of Ely; where it is cultivated to great advantage* as it might in many other parts of England, where there is the like foil; but it will not thrive on clay, or stiff cold land: it is esteemed very good to destroy weeds, which is no other way effected, but by robbing them of their nourishment; for it will greatly impoverish the land, so that this crop mull

which Hemp is designed to be sown, **is ploughed, and made very fine by harrowing**, *out the middle of April is a good season for sowing the feed: three bushels is the usual allowance for an acre, but two is fully sufficient. In the choice of the feed, the heaviest and brightest coloured should be preferred *, and particular care should be had to the kernel of the feed, so that some of them should be cracked to see if they have the germ or future plant perfect; for in some places the male plants are drawn out too soon from the female, i. e. before they have impregnated the female plants with the farina: in which case, though the feeds produced by these female plants nixy-seem fair to the eye, yet they will not grow, as is well known by the inhabitants of Bickar, Swinehead, and Dunnington, three parishes in the fens of Lincolnshire, where Hemp is cultivated in great abundance, who have dearly bought their experience.

When the plants are come up, they should be hoed out in the same manner as is practised for Turneps, leaving the plants a foot or sixteen inches apart; observe also to cut down all the weeds, which, if well performed, and in dry weather, will destroy them. This crop will require a second hoeing about a month or six weeks after the first, in order to destroy the weeds. If this be well performed, it will require no farther care; for the Hemp will soon after cover the ground, and prevent the growth of weeds, the first season for pulling the Hemp, is usually about the middle of August, when they begin to pull what they call the Fimble Hemp, which is the male plants; but it would be much the better method to deter this a fortnight or three weeks longer, until these male plants have fully shed their duft, without which, the

feeds will prove abortive, produce nothing if sown the next year, nor will those concerned in the oil-mills give any thing for them, there being only empty hulks, without any kernels to produce the oil. These male plants begin to decay soon after they have shed their farina.

The second pulling is a little after Michaelmas, when, the feeds are ripe: this is usually called Karle Hemp, it is the female plants which were left at the time when the male were pulled. This Karle Hemp is bound in bundles of a yard compass, according to statute measure, which are laid in the sun for a few days to dry; and then it is stacked up, or hooped to keep it dry, till the feed can be threshed out. An acre of Hemp on a rich foil, will produce near three quarters of feed, which, together with the unwrought! Hemp, is worth from six to eight pounds.

Of late years the inhabitants of the British colonies in North America, have cultivated this useful plant, and a bounty was granted by parliament for the Hemp, which was imported from thence -, but whether the inhabitants of those colonies grew tired of cultivating it, or the bounty was not regularly paid, I cannot say 5 but whatever has been the cause, the quantity imported has by no means answered the expectation of the public, which is greatly to be lamented; because, as this commodity is essential to the marine, which should be the principal object of this kingdom, the being furnished with it from our own plantations, will not only save the ready money paid for it, but secure to the country an ample supply at all times, without being obliged to our neighbours for it.

CANNACORUS. See CANNA.

CAPERS. See CAPPARIS.

CAPILLAMENTS [*Capillamenta, Lat.*] the firings or threads about the roots of plants.

CAPILLARY plants, [of *Capillaris, Lat.* of, or like hair,] are such plants as have no main stem, but the leaves arise from the root upon pedicles, and produce their feeds on the back of their leaves, as the Fern, Maiden Hair, &c.

CAPITULUM -, i. e. a little head; the head or top of any flowering plant.

CAPNOIDES. See UMARIA.

CAPNORCHIS. See UMARIA.

CAPPARIS. Lin. Gen. Plant. 567. The Caper Brieh.

The CHARACTERS are,

The empalement is composed of three oval concave leaves \ the flower hath four large roundish petals which are indented at the top, and spread open \ it hath a great number of slender ftamina, which are as long as the petals* terminated by single fummits. In the midst of these arise a single style longer than the ftamina, with an oval germen, crowned by a Jhort obtuse stigma. The germen afterward becomes a fleshy turbinated capsule, with one cell, filled with kidney-shaped feeds.*

This genus of plants is ranged in the first fection of Linnseus's thirteenth clafs, intituled Polyandria Monogynia, the flower having many ftamina and but one style.

The SPECIES are,

1. CAPPARIS (*Spinosa*) pedunculis foliariis unifloris, stipulis spinosis foliis annuis, capsulis ovalibus. Lin. Sp. 720. *Caper with one flower on each foot-stalk, prickly stipula, annual leaves, and oval fruit.* Capparispinosa, fructu minore, folio rotundo. C. B. P. 480.
2. CAPPARIS (*Baducca*) pedunculis subfoliariis, foliis perffitentibus ovato-oblongis nudis determinate confertis. Lin. Sp. 720. *Caper with single foot-stalks, oblong, oval, naked leaves in clusters, which are always green.* Cappariscapitata, Indica Baducca dicta. Raii Hill. 1630. *Indian Tree Caper, called Baducca.*
3. CAPPARIS (*Arborefcens*) foliis lanceolato-ovatis perennantibus caule arborefcenti. *Caper with oval spear-shaped leaves which continue through the year, and a tree-like stalk.*
4. CAPPARIS (*Cynoballcpbora*) pedunculis multifloris terminalibus angulatis, foliis perffitentibus ovalibus obtusis.

obtus. Lin. Sp. 711. *Czper vxtb angular hmubes* *mxhitiicdfafat-ftalkt, having many powers, andever-* *Qtun, clitufc, trvat Uirjes.* Cappiris arborfcens Lanri lotiis fruclu longifTuno. Plum. Cat. 7. *Tree C/sperviilh* *by laces. auitbt hngfji fruit.*

5. **CAPPARIS** (*Bainyfu*, *tu*); .. ovatis oppofitis perennantibus floribus luccmofis. *Coper vritb mad leaves* *A Dpjmfrit, -x':i:h caniuu thrtngb the year, ani* *fimixrs growing i" Ittiuba.*

6. **C** *iruitis (iitiqttefa)* peduncuis unifloris rompreltis, Julis pcrflintibus lanceulato-oblungis acuminatis lubtus punctatis, Lin. Sp. 731. *Caper icitb easprifftd* *foet-foet; cue Jk&er, ami tt>hng, jpear-Jbapt,* *caaffia ItKa, wib patfitra w: their under fide.* Brey-ni arboidecm, folib ovatis utrinque acuminate, (iliqna torofa iongi(!!iii. Brown, Hiit- Jam. 147.

7. **CAPPAIB** (V(^(fEyJ;i'jlilL>biicecJatisacutisa>rifwti5 IWTvnmantibuj, caule frutkofti. *Caper tiriti fainted* *fpar-jbafid letr;;; growing in (lu/Uri, V>hub continue* *tkrtngb ike • rutfy Jinfc<*

8. **CAPPARIS** (C.»tf/o-/j;toGiilancecobusalterniirrtiolis longiliniis Jloribus confcmais. *Caper with ffar-toma* *USMS placed alternate en ury hug font.JtaUn^ asdfiw-* *trivrvaing in dxifteTi.* Cajl]Miis aim arborlcens l-auri foliis fructo oblongo ova(o. Kum. Cat. 7.

i. L:\ pRAR 1 s (*Br/ytua* j ptdunculis racemofii, foliis perliftentibus oblongis, pedunculii calycibufque tomentofis, noribusofctandrs; s. Jatcj. Amcr. tab. 103. *Capo-* *with branching feot-Jfflks, el>kxg ei-ergrax leaves, fi-iv-* *trs -with eight fiamina, vihuji fiet-Jialks and tups are* *wmb.*

10. **CAWAHIS** (*Xrtfcleri!*) foliis lanccolai-is nervofis perennantibifi [letliinculis crifloru. *Caper viitb nervous* *Jpier-fiiaped kw a-biib UM'am through tbeytar, end* *three flmws upm tad foot-ftalk.*

The tirt Li the common Caper, whoc full grown Bower-bud is ljicUed, and brought to England annually from Italy, and the Mediterranean. This is a low lbrub, which generally grows out of die Joints or old walls, die itlures of rucks, and amonglt rub-bifh, in moft of the warm iirts of Kuropc : the ftalks art- ligneous, and covered vidi awliiee bark, which fendi out many lateral deader bpmcbej •, under each of thi-le arc plated two thort crooketl (pines, between which and thic branches come out the foot-IULK of the lava, wtkh ate Cngtc, lhort, anil fuftain a round> fmoodi, entire leaf; at the internediate joints between the bi-ancies, come out the flowers upon long foot-flails; before thefc expand, ihc bud, with the c; ipnlement, is gadiered for picklinff; but dioc wh h .ircleft expand in form of a fingleKofe, having five lar^e, white, roundifh, concave pptalsj in the middle is placed a great innbcr of kmg flamina, iurrounding a Ryle, which rifes above them, and is crowned with an oval gerroen, v.liidi afterward becomes a capsule, filled with kidney-flap. • I kqds.

This fort is cultivated upon old walls about nlon, and is feveral parts of it. • Mr. Raj ubferved it growing naturally on the walls ;jid ruitu at Home, Sicily, and France

The wand tort hath a tree-like fctm • jwlding into branches, which are fmooih, hiving no fpines on them; the leaves arc oblong, oval, anafmooth, •• huch continue (I ough the year. Prom die: wings of the leaves come out the foot-ftalks. I of the flower*, which are produced iir. . . ; thic ; jwers are i: . . die buds.

The plants of the fifth fort are with difficult I pre-ferred in England, for they delight to grow Jii ere-vices or rocks, and the joints of old walls or ruins, and always therrc fall in an horizontal pofition; fo that when they are planted under a gale, or the full ground, they rarely thrive, though they may be kept alive for fome years. They are propagated by feeds in the warm parts of Europe, but it is very difficult to get them to grow in England. I have feveral

had three plantteomeup in an old wall, irilich being young and tender, wets defroyed in the ytur 174. but in the >••••• rufcd a good numb.; of plants from feeds, which were down the year before. There ii an old plant giw'ing out of a . v, all in the garden ai Cambdtu-Houfc, rcn Kentfngron, which fia- filkti tire cold for many yt-iiR, and suimilj- produce* many flowers, but the young flojots of it arc frequently killed to the (lump every winter.

The n>ois of this plant arc annually brought from Italy, by th (ome of whit!) luvc been planted iit wali, where they have lived a few •••••, but hve not cotuinuixl long. l'hc thirJ fort 1 received from Cardiagena in New Spain, near whic b place it grows naturally. This rrics with a woody Item to the height of twelve or fourteen iV •, lenden- on: many hireial brai covered with a rufct birk, girmiftid •••••, clofing oval U'avcj, ftanding upon long foot-ilalks; the flowers arc produced fium the fmic of the bnus. Jingle, Ibiuung upon long foot-ftalki, which arc tike thole of the hit fort.

The fourth fort was fent me from Carthigena by Ac iire Mr. Robert Milljr, furgeoa. THi grow with a Ilrong upright trunk near CWQy feet high, fending out many laicrjl branches, gamified with a very white bark, and cjtcfy gamiflu s of a rJieeker con(ift n«« thnn tWe 1 of the common Laurelj of fplcmdM green, luing feveral traoferve nerves from she midrib to the border, which art prominent on their under Jide; the Howers conic out from the lideof the branches, luich arc large, and thic (iimmits of the (amina are purph-. The fifth • t me from the fine county.

Thb rife with a trunk about twentr feet high, fending out many long (lender brandus, which are to-veced with .l brown (jyrk, and garniied \jch kavts like tirole of the Bay-tree, I and deeply ribbed on tht-ir under fide, (landing upon pretty lung foot-ftalks opiMifin: re produced »juaa long brandiinp foot-ftalcs, which [erminate d>c branches, each iiiiHaininy tv/o or tl: JULII are large, white, and are fticceeded by potU two or three mehes long, the ducknela of » nun'i luicd finger, vifich are filled «iili brj Tnd^: thL-k' potK have -i thick Red

The sixth loit was tent me from Tolu it An This nSa with n ihubby Hall; to the height of eight or ten feet, lending out iron* ligneous brj; covered with a rufhish brown bark, gamified with oblong, fpear-ftaped, flit leaves, having punctures on the >i from the of the leaves are the foot-ftalks of the flowers, which are long, femlar, and coi ; which fuibi a fmall white flowt-f. which is fucceeded by an oval pod, containing iniwy fmallkkli.

Thefcventh fort rifes with a (irubby ftem to die height: of twelve or fourteen feet, fending out many (Iron: lateral branches, covered with a dark brown bark, gamimwl with fpear-fjiapts! pointed leaves, placed alternately, having very fhort foot-ftalks; die leaves are of a thicker confidence than thofe of the Bay-tree; at the foot-ftalk of each leaf comes out a fingle flovnrc, alir. h of thu lirir whidi are fmiill, i ikz Canmits of thic flowers are of a purplifh colour, but th lamina are white. This fort was from Tolu.

The eighth fort riles with a fhubby Ealk to thc height of u-u or : feet, lending out flender branches, which are covered with a With the joints of thic branches are far diftant at each I come out feveral leaves in clufters, without ur: ftanding upon pretty long foot-ftalks; they are fix inches long, and three broad in the middle, and as thick as thofe of the Laurel; of a flining green, femlar on their upper fide, but have many tranfverfe ribs on their under fide, which are prominent. I received this fort from Tolu, with the ferroz.

The ninth sort grows naturally in most of the islands in the West Indies; it hath a strong woody stem, twenty-five or thirty feet high, dividing into many branches, covered with an Ash-coloured bark, and garnished with oblong oval leaves, downy on their under side, but smooth on their upper, placed without order, the flowers are produced in loose panicles at the extremity of the branches; these consist of four pretty large concave petals, of a purple colour, including eight long purple stamens, with a very long style crowned by an obtuse stigma; the germen afterward turns to an oblong fleshy pod, containing four or five seeds.

The tenth sort hath slender (hrubby stalks, which rise seven or eight feet high, sending out many ligneous branches, garnished with very long, nervous, (pear-flaped leaves. The flowers come out at the end of the branches, three (landing upon each foot-stalk; these are small, white, and are succeeded by oval fruit.

These last nine sorts are natives of warm countries, so will not live through the winter in England, without the assistance of a stove. They are propagated by seeds; which must be procured from the countries where they grow naturally, for they do not produce any in England; these must be sown in (mail pots, filled with light sandy earth, and plunged into a hot-bed of tanners bark; which (should be now and then refreshed with water, but by no means (should have it given in too great plenty: these seeds frequently remain in the ground a year before they vegetate, therefore the pots in which they are sown (should be protected w/ winter; and the spring following must be plunged into a fresh hot-bed of tanners bark, which will bring up the plants if the seeds were good; when the plants appear they must have but little wet, and a good (share of air in warm weather; but when they are large enough to remove, they must be each transplanted into a (separate small pot, filled with the same earth, and then plunged into the hot-bed again, observing to shade them until they have taken fresh root; after, which they (should have fresh air admitted to them every day, in proportion to the warmth of the season. In the autumn they must be removed into the stove, and plunged into the bark-bed, where (they must constantly remain, and will require the same treatment as other tender exotic plants from the same countries; with this difference only, that they require but little water, especially during the winter, for the roots of these plants are very subject to rot with wet.

If the seeds are brought over in their capsules, they will keep much better than without them; but these should be secured from insects, by wrapping them in Tobacco leaves which are well dried; without this precaution, the seeds will be destroyed before they arrive.

CAPER [BEAN.] See ZYGOPHYLLUM.

CAPRARIA. Lin. Gen. Plant. 686. Sweet Weed.

The CHARACTERS are,

// hath a permanent empalement of one leaf, cut into five oblong narrow segments, which are ereff and stand under the flower is bell-shaped, of one leaf, divided at the top into five equal parts, the two upper standing ereff, it hath four stamens, which are inserted in the base of the petal, and but little more than half so long, two of the under being shorter than the other, and terminated by heart-shaped stamens; it hath a conical germen supporting a slender style, longer than the stamens, crowned by a bivalve heart-flaped stigma. The germen afterward becomes an oblong conical capsule, compressed at the point, having two cells, divided by a partition filled with round seeds.

This genus of plants is ranged in the second section of Linnæus's fourteenth class, intitled Didynamia Angiospermia, the flower having two long and two short stamens, and the seeds being included in a capsule.

We have but one SPECIES of this genus, viz.

CAPRARIA (*Biflora*) foliis alternis floribus geminis. Jacq.

tab. 15. *Capraria with alternate leaves, and foot-stalks with two flowers.* Capraria Curaçavica. Par. Bat* 110. This plant grows naturally in the warm parts of America, where it is often a troublesome weed in the plantations; it rises with an angular green (talk about a foot and a half high, sending out branches at every joint, which sometimes come out by pairs opposite, but generally there are three at a joint standing round the italic; the leaves are also placed round the branches by threes; these stand upon short foot-stalks, are oval, hairy, and a little indented on their edges. The flowers are produced at the wings of the leaves, coming out on each side the (talk, each foot-stalk sustaining two flowers; they are white, and succeeded by conical capsules compressed at the top, opening in two parts, and filled with small seeds.

This plant is preserved in botanic gardens for the sake of variety; but as it hath no great beauty, so is seldom admitted into other gardens.

It is propagated by seeds, which must be sown upon a hot-bed in the spring of the year, and the plants must be brought forward by planting them upon a second hot-bed; and about the middle or latter end of June they may be transplanted either into pots of rich earth, or a warm border, and may then be exposed to the open air, where they will perfect their seeds in autumn.

CAPREOLATE plants [of capreolus, Lat. the tendril of a Vine,] such plants as twist and climb upon others, by means of tendrils.

CAPRIFOLIUM. See PERICLYMEKUM.

CAPSICUM. Lin. Gen. Plant. 225. [takes its name of capsa, Lat. a cheft; because the seeds of this plant are included, as it were, in a little cheft; or esse of ~~the~~, to bite, because it is a burning pungent plant.] Guinea Pepper; in French, *Poivre d'Inde ou de Guinée*.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, divided into five parts, which are ereff. It hath but one petal, which is wheel-shaped, having a very short tube, spread open above, and divided into five parts; it hath five small stamens, terminated by oblong stamens, which are "connected. It hath an oval germen, supporting a slender style, longer than the stamens, and crowned by an obtuse stigma. The germen afterward becomes a soft fruit, or capsule, of an indeterminate figure, having two or more cells, divided by intermediate partitions, to which adhere many compressed kidney-shaped seeds.

This genus of plants is ranged in the first section of Linnæus's fifth class, intitled Pentandria Monogynia, the flower having five stamens and but one style.

The SPECIES are,

1. CAPSICUM (*Annuum*) caule herbaceo, fructu oblongo propendente. Capsicum with an herbaceous stalk, and an oblong fruit hanging downward. Capsicum filiquis longis propendentibus. Tourn. Inf. 152.
2. CAPSICUM (*Cordiforme*) caule herbaceo, fructu cordiformi. Capsicum with an herbaceous stalk, and an heart-shaped fruit. This is the Capsicum filiqua propendente oblonga & cordiformi. Tourn. Inf. 152.
3. CAPSICUM (*tetragonum*) caule herbaceo, fructu maximo anguloso obtuso. Capsicum with an herbaceous stalk, and a large angular obtuse fruit. Capsicum fructu longo, ventre tumido, per se tetragono. Tourn. Inf. 153- Bell Pepper.
4. CAPSICUM (*Angulosum*) caule herbaceo, fructu cordiformi anguloso. Capsicum with an herbaceous stalk, and an angular heart-shaped fruit. Capsicum filiquis fure & cordiformibus angulatis. Tourn. Inf. R. H.
5. CAPSICUM (*Cerastiforme*) caule herbaceo, fructu rotundoglabro. Capsicum with an herbaceous stalk, and a round smooth fruit. Capsicum filiquis fure & Cerastiformi. Tourn. Inf. 153.
6. CAPSICUM (*Oliviforme*) caule herbaceo, fructu ovato. Capsicum with an herbaceous stalk, and an oval-shaped fruit. Capsicum filiqua olivae forma. Tourn. Inf.

do make a pretty appearance in the latter part of (imincr, when they ate properly dipolct) in ih borders of the llower-garden; or if they are planted in pot-; for the decoration of courts, &c. titrijlg ill-termixed with other annual plants, which arc in beauty at the fame feafon, they will make an agreeable variety; especially, if as many of the difcrent lhapcd &UU3, or both the red and yellow colours as can be procured, are p:

The four bit forts hive perennial lhnibby (talks, which rife four or five feet high; theft an not lb bardy as the other, therefore wicn the plants have been brought forward in the hot-bed, as was difrected for the common forts, they (hould be cadi planted in a pot filled with rich earth, and plunged into a very moderate hot-bed, under a deep frame, where they may have room to advance *, anil in wann weatlcr, they (hould have a Urge iharc of air admitted to them, but muft be covered with glaffes every night, or in coUl weather, and frequently watered. With this management, they will produce plenty of fruit in autumn, which ripin in winter-, but they rciufV be removed into the (toe, on thefirft approach of trofl, and placii where they may have a temperate warmth, in which they will thrive better than in a greater heat-, and the fruit will continue in beauty molt part of winter, making a pretty appearance in the (love during that feafon.

The feeds of the lev-nth (ore I received from Egypt: the lIMVCS of t^ much narrower than thote of any other &•• . * feen; the pods always grow creel, iiced in grew plenty, fb that the plip* ^ood appearance forthreemonths in <•• jnd they may be prefervcJ two or three >ut is the young plants arc die mod fi i <<// ptrfons prierve the old longer, tian till they .have perfected their fruit, when they begin to lofe their beauty. I have cultivated this fon feveral years, and have never found it vary, ^o conclude it is a iliftinct fpeciej.

The eighth fort I received from Antigun, bytnetnk of Hen Proper. This rife-, with a (nrubby folk *Jm< cr high, fending out many branches lev-JTI^1 f: the fruit is about half an inch long, ,rm of an obrufe cone, and of a bright rref. This ripens its fruit in winter, aakes a pretty appearnci-

i nth fortgrows about the fame height a; Ac egli-.i, but differs from it in the fhajie and fae of die fruit: thofe of this fon being about the bigntli of a Barberry, and nearly of the Tame fhape. This I have long cultivated, and have not oblcrved a to alter.

The tenth fon is commonly known by the tHr of llnl Pepper in America. This rife with a flvabby flak four or five feet high: the leaves arc broad, and rounder at the ends than thofe of the other fora, and of a itdd green: the fruit (pww d'vifions of the branches. Handing erect i thefe arc fmall, oval, and of a bright red; ihry arc much m^re Jharp and biting than thofe of the other forts. From die fruit of this fon k made tire Cayan butter, or what the inhabitants of America call Pepper-pora, which they efteem as the beft of all the fpices. Tie Winning is a receipt for making a Pepper-pot: take of the ripe, pods of thb fort of Capiicum, and dry them well in the fun, then put them into an earthen or (tone pot, mining flour between every ftrau or pods, and put them into an oven after the biking of brtttd, thiat they may be thoroughly dried-, after which, they mult be well deanfed from the flour, ufid or ihe (talks remain to the pods, they ihould be laken ofT, and the pods beaten, or ground to fine powder t to every ounce of thi>i " ^ a pound of Wheat dour, and u much leaven di is fuffeiem for tlte quantity irendf U (alter this has been properly mixed and wrought, it fhodd be made into small cakes, and bked in the fame mail: moo cakci of the fame l in them into ftruil parts, and tckr them again, that they m*y be as dry and hard is

if

cuir, Which, bf-aten into tin; pov;Jer ami lifted, miy be kept tor ufe. This may Le uird as die common .Pepper, to leafon meat 01 /w any of the purpofej that the ordinary Pepper a ufcd: ir gives a better reliffi to tnsir or fauce, md is fb of excellent ufe to break and difcifti the wind, both in the (lomach and the guts; r ry proper fauce for fuch meati ss arc flatulent and (hat breed much moiffure or crwdiry, 4 (cripple of this powder put into chicken or is greatly commended for comforting cold ftom*ch% or dif- i of phlegm or vifcoui humours, and helping digeftion.

Moft of the forts of Cspficum are natives of both the Indies; but they hive been Jrought to | rope from America, where they abound in all the Caribbcc itlinds, and tie by the inhabitant* greatly ufeJ in all ihrir lauces, but cjpegully by the negroes, who are great devourers of them; from whence it tad the appellation of Negro Pepper, and probably ihe title of Guinea Pepper may have been applied to ic for the fame reafon. In Sp.tin and Portugal thefe ffuit arc much cultivated, where they arc ul'cd for the iatne purpofes as in America; but in Ungland, they an; cultivated for ornament, bting rarely uled lor , or in medicine; though it b mudi ufcd in both, in feveral other countries.

If the ripe pncls of Capficum are thrown inca the fire, tlicy will i^aife ftrong and noilbmc vapours, which occafion vehement fnceezing and coughing, anj often vomiting, in thofe whoaic nt the place, or in the room where they arc burnt. Some perfoiu have mixed the powder of die pods with lnuft, to give to others for diverfion; but where it is in quantity, may be danger in ufing it, for it will octafion ijch violent fits or fnceaing, as to break die blood-veffels of the head, as I hive oblerved in fome to whom ir. has been given.

CAPSULATE pods [of cap Mi, l^t. achtft] are little, lWR, dry [ced-veffel] of yf

C A P S J J L A T E D pb are such a; reduce their feeds in flit of hufks.

CARACAL.L.A. Sec PB

C \ R A G A N A. S<< Ov.ontrs.

CARDAMINDUM. Sec TROPJEO.UM.

CARDAMINE. Lin. Gen. PUNn 717. [takes iw name of Cardamum, which L. cnllrd Noiturtium l hence it is a famul fpecics of Nalburtium,] in Englxfj, Ladies Smock.

The CHARACTERBS arc, Tie empitiki. of four oval limits. Tbs fijvltt btUh j *: being pttail, placed in fev'. of a tritft, which at th are oval, but ftrual open nix?, jftc? crt nmth hi^tr the • -nt -, it Lmh fix fitititiant fiST of wh.'i are the long • tie onpaU- ment; the other two, which are pufitc, ar.-; which have: theft ere terminated iy ol/tan*, tistrt-fiapcd, ercJ jjes- tuiti. It bath ajlcwder t? ftititil pttail. j krr at tit fixaxtftia, bzn'Wg s* flyki feu it trtmud ly ar, oluft jitma. The rmtitt afttrvzrj tarm ts a k^f, ctmprcf- fid, n part, with ftititil pttail, -ahts which mult ftititil , and cefi ouJ tbt fnE -jibcx ripe, bj tbrirttttj

This genus of p • IB is ranged in the fctond il of Lmuciffi*s titteenth cla£, intitld TctridyBiinU SUIquofai the flowers of this tbfis huve (• flamina, four of which are flion. and two are bn(jci, (Linding , and the feeds arc included in lung pods.

The SMXIZS arc, CARDAWINC {Pratoiju} foiiis pinnitU, fbllblis ratjicalibus fubrotundii, caulinb tanceuiatii. Lin. Sp. Plant. 6^6. Lania SJS; k tpi leaves, tsbeft Ulis 111 fatten) art rmx&Jb, itt • t JlaJkr art fpecr-ktfti. Cirdambe pratenuV magno Bore purpuralcentc, Tuurn. EolLitu

GuUAMitn {Psnijtora} folliis pinmtis, fbtiote fis, floribuj ciiausis, caule ercito rLmofu. Lc&s Saetk iritb n-ift^.-a teittJ, cat kid, l.TV fmrfjfkotf.; tsisdar. might itir, gftclk. Cardamin; annul exiguu Host. Tourr.. Init R. H. 114,

- 3. CASDAMINS [*Hirfuto*] faliis pinnstis, floribus terrsndis. Hurt.Clift'. 3j6. *Ledits Stand, or impatient Crefi a-IA vhtged havi, axd fsrjrcrs viitb fourJlam'ma*. Cardaroine qiarta. Dilechamp. Ludg.
- 4. CARDAMIKS (*Impatient*) tibli pinnatis incifis ftipuiatis, Roribus apetalis. Lin. Sp. 914- *Impatient Crefi with veixgti leaves, cut fiipsCe, ani fagatitus fliers.* • CarJami'ne pratenfis parvo Hore. Tourn. Intl. 124. <•. L'.-ki.iMiss (*Gra-ra*) foliis pinnatis foliulis palmatis aquilibus, j>eiolatis. Prod. Ley. 3+5. *Impatient Crefi with winged lar--ei, wbsfe hies are baxdfd, equal, and hxtv put-Jlalks*. Cardamine Sicula, foliis ramane. Tourn. Inf. 225, *SiiiUtm impatient Crefi v;itb Fumitry lames*,

d. CARDAMINE (*ifmara*) foliis pinnatis fuliolis fubrotundij angulofis. Hall. Heiv. 55S. *Impatient Crefi aib mi haves, tbife kins are rsKitidJb and angular*. Nallirtium a'uaiicuin majus Sc amarum. C. B. V. 104.

y. CAKCAJHINE (*Trifilid*) foliis ternatis obtuGs, ciuc fubnudo. Lin. Sp. Plant. 654. *Tnt-lea-jed impatient Crefi with a naked Jlnk*. Nafturtium Alpinum tiifotium. C. B. P. 104..

5. CAHDAMIME [*Betlidifatia*] fottis fimplicibus ovatis in-tegrrimis petiolis longii, Plor. 1. *ipatlent Crfs -Iatb fnglt, tetl, entire leaves, having hug fios-fialks*. Nafturtium Alpinum Bellidisk folio minus. C. B. P. 105. *SmaUtr Alpiat Crefi ivitb a Daifey leaf*.

9. CASDAMINE (*Petr.ca'*) foliis fimplidibus oblongisden-tatis. Lin. Sp. Plant. S54. *Impatient Ctfs viiib Jingle, ebhng, indented Itavei*. Nafhiraum pctraum. 1'luk. Aim. 161. *RsekCrefs*.

10. CABDAMIKE (*Cbilidetiia*) fWls pinnatis foliolk qui-11 is iticilis. Lin. Sp. P!In^ 655. *Impatient Crfs with ringed leaves, bsv'xg five isbtii xebirb arc at*. Cardamine glabraChclidonii folie. Toum. In ft. 225.

The firft fort grows naturally in the meadows in many parts of England; it is called Cuckow Flower, and Lidit-s Smock. Of diis there are four varieties, ^z, the fingle purple with white flowers, which are fluently intermixed in the meadows, and the double flower of both colours. The fintrle forts are feldom admitted into carders; but as the tirft fort (lands in tlw lift of medkiiKil plants, I have enumerated ic. The young leaves of thli plant have been gathered in the fpring, by fomic pertuns, and put into fallsds inftead of Creis: it ii tippedcd 10 be an anttfeorbucic. The two varieties wiith double Bowers were accidentally foimd growing in the meadows, and were tranfplanEcd into gardens, where they have been prt> pagated. Thfc deserve a pbec m lludy floift borders of the fiowtr^girden, where they will thrive, and make a pretty appearance during their continuance in flower: they si* propagated by parting their roots; the beft time for diis 13 in autumn, when thry (hould be tranfulamed annually. They dtli^it in a foft loamy foil, not too itiff, and muft have a [tudy ficu-ftion. This flowers in MiV) and in cool leatbns will continue part of 1

I Tiic feventh, eighth, and tenth fam, grow naturally on the Alps, and otlic: mountainouj placn. I received thde from Verona, in the neighbourhood of winch place *thej* grow naturally. Thtie are low per-ennial plants, which may be propagaied by parting iheir roots in the auninut, ana require a llrang foil and (haiiy iituation: they may alfo be pnipaeitctt by *ittra*, which (haul be Town in ; he autumn, on a thady border, • here they will come up foan after, •ra) are Dever hurt by froft, Hi n;|| flower the folj-awing feafun. Thcle vstii'ties are prrlerved in fome gardens, but having link beauty, are ieldom admitted into the flowCT-jri

» The ninth fort ii alt-naturally in /ex be propagstol oy : I befown in an open ituation, .I will require no other care: liut ro kerp the plants clear from weeds. It flowers in June, and the feeds ripen in July.

The sixth fort grows naturally I by the sides of rivers and ditches in molt parts tif F.ngland, to is not admitted into gardens. l'herc has been a. variety of this found with double flowers, but it is not I yet much known. Tliis Bowers the latter end of April, and in May.

The other forts are low annual plants, which grow naturally in fveral pans of England, fo art (tidom admitted into gardens. Thefe have the title of Int-pwcm Creis, irom the elafiii -y of their pods, which, if touched when they are ripe, fpring open, a; I caft out their feeds with violence, to a confidcrable dip rancee. Thefe forts when young, are, by the country people, eaten in faUads, and have the flavour of the common Crefs, but milder.

Thcfe plant*, whenontc admitted into a garden, propagare in plenty; tor they produce great quantity of feeds, which, if permitted tu Cicler, there will IK a fuuply of plants, which only require to be thinned and kept clean from weeds, and will thrive beft in tie ftiaile.

C A R D I A C A. See LEovuRtw.

C A R D I N A L S P L O W E R. See R.A?BHTIO<.

C A R D I O S P E R M U M. Lin. Gen. l'lant. Heart Pca, by tlic bhubiwjits of America called Wild Parik'y -, by the French, *Pets it MgrvoUe*.

The CHAD ACTKUI are, // bath a ptrmtinct empalment amptfid of four tmeave- leaves, 'fbc flower has feur ebwfe petals, aiMcbartjJ-tersattij larger; it bath a fmstl fear-leaved udeulium enaimpaffmg tit gentcii, and eight jlismitu), thrc and tbretJfaxdlig epptjiit, tbtetber ivsseneshtfide; theft on terminated ty fmall fv'mmitf. TE:(en.: canrttd, and fuppttrts three fbert fjlr: • /writ Jligma. Tlegrrrmen afr.Tttwi beemv a rci. capfutt with three kites, divided into tbret a at the tap, ta.b having cue er t'jia globular feeds, minted with a heart.

This genus of plants U ranged in the third feftion of TinEKCu'i cichth clafs, in tided Oftandrii Tr-gynia, the Sower having eight ftamina and three ftyles.

The SPECIES are,

1. CAnnioswtMtfM [*Crixidiin*] foliis fubtns tomentorn. Lin. Sp. 526. *Heart Pea'jsitb vwdtj . . . C.-nndum folio & frui3u minori*. Tourn. Inf. + j i.

2. CAsmosfr.itMuM *Hab'cae&hum*) fadm ia:viLis. Hort. Cliff, [jo. *llirt-fetdvxtb fmmih leaves*. *Crundum* folio ampliori, fuctu majore. Tourn. Inf-

The firft lurt rifes with a flender, channelled, climbing ftalk, to the height of four of five feet, fending out many fide branches, rrimilhed with leaves, upon very long foot-ftalk s, coming out oppofuc at the lower part of the ftalk 4 but upv:ird the leaves come oui tin one fide, and the foot-ftid. of the flower at tile oppo-fite; the foot-ftaULS of the leaves are divide;! three, each of which fullain fiall i ii are again divided into three para, tliat arc fiarply cut on their crig?, and cud in fharp yokes. The fim-ftalk of ihe flowers are long, naked, and niwarl ihe wp, divided into three flion ones, each fullainng a fingle flower. Imntdiaicly under thde divil comes nut tendrils or clalpers, like thofe of the Vine, but Tmalier; thcle faften thumlelves |o whatever plants grow near them, and are thereby fup- orteti Tht ilowcrt are fmall, white, am] concave (x-i: ~ oppo(iif ate

Vr; when I v, the ger-mn afterward becomes a Lir. ladder, having three lobes, in each of which j contained one, TOO, and fomtimes three feed:, which are round, hard, and thefize of final' Poo, each being n . with a black fpotm (bane <!

The fecond fon differ* from the firft in hiving taller [talki, thf lravcs being firft divided into five, and * into three pwrt. The foot-ftalk are 11, and the feed% an.: in whkh thej' ar< : arr much larger, and the whale plant is fmoother, in other rrlprtli ; Thefe pUnrs gr- m both Indict whetr they climb upon whatevct Arviii we ni-

rise to the height of eight or ten feet, but in England they seldom are much above half in height; in they lend out many of their branches, which spread in a considerable distance every way, and if cut or pruned, will furnish themselves to the places which are cut, and so they multiply themselves, and thereby spread over them.

They are annual, and perish soon after they have perfected their seeds, and being natives of warm countries, they will not thrive in England in the open air. They are propagated by seeds, which should be sown upon a hot-bed in the spring, and when the plants are two inches high, they should be each transplanted into a pot filled with light sandy earth, not too rich, then put them into a very moderate hot-bed, where they must be carefully shaded until they have taken firm root, after which they must have a large share of air admitted to them, to prevent their becoming drawn up tall and weak, and when their roots have filled the pots, they should be carefully shaken out, preserving all the earth to their roots (for if that should fall off, the plants will not thrive it) then put them into pots a little larger, filling them up with the same light earth, and place them either under a deep frame, or behind the plants in the flower, where they may be screened from the sun till they are well settled in the pots, after which they may be removed into a glass-case, where they may have a little more of air admitted from the bottom, if it is not too hot; in warm weather they will require a little more of air; with this management they will flower in July, and their seeds will ripen in autumn.

CARDUUS Lin. Sem Phnt. 83*. Thistle, in French. *Chardon*.

CHARACTERS. It has a compound flower made up of many hermaphrodite flowers, which are fruitful; the flowers are in a common hairy involucre, which is furnished with many sharp teeth, and is hairy; the flowers are yellow, being of one hue, having a funnel-like, with an oval base, and the base narrow towards the end; the flowers have four flat hairy leaves, terminated by cylindrical hair, which are inserted into the stem; the leaves are green, and are supported by a single rib, which is hairy and hairy. The flowers are of a white color, and are of a roundish shape. The flowers are of a white color, and are of a roundish shape. The flowers are of a white color, and are of a roundish shape.

This genus of plants is ranged in the first section of Linnæus's natural class, marked Synonymia Polygonia equalis; the flowers of this class have their segments connected into a cylindrical tube, but the stamens are separate, and the fruit is a flattened oval body, which is covered with a fine downy hair.

1. CARDUUS (*Polygonia*) foliis lanceolatis serratis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.
2. CARDUUS (*Erigeron*) foliis lanceolatis serratis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.
3. CARDUUS (*Aster*) foliis lanceolatis serratis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.
4. CARDUUS (*Aster*) foliis amplexicaulis lobatis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.

5. CARDUUS (*Aster*) foliis lanceolatis serratis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.

6. CALYPSO (*Carduus*) foliis lanceolatis serratis, spinis rufis latissimis. Hort. Cliff. 222. This is the most common sort, which is called in the fields, and is also called in the fields, and is also called in the fields.

The first sort grows naturally in Sicily. It is an annual plant, which rises with a channelled stem about a foot and a half high, sending out several side branches toward the top, furnished with long narrow leaves like those of the Austrian Primrose, which are of a deep green above, but white on their under side, placed alternately, just below the root stalk of the leaf come out several unequal yellow flowers, the end of the branches the flowers are produced, there are very thickly enveloped, under which are placed two long leaves, the flowers are purple, and shaped like those of the common Thistle, but are smaller; these are succeeded by oblong smooth seeds, which have a long woolly down lying on their top. This first flowers in July and August, and the seeds ripen in September. It is propagated by seeds, which should be sown on a bed of light earth in the spring, where the plants are to remain, for they do not bear transplanting, unless it is performed when they are very young; for they send long slender roots deep into the ground, which, if broken, the plant seldom survives it. The second sort grows naturally in the lowland countries of England. This is a perennial plant, which sends out many long leaves, which are of a deep green above, but white on their under side, placed alternately, just below the root stalk of the leaf come out several unequal yellow flowers, the end of the branches the flowers are produced, there are very thickly enveloped, under which are placed two long leaves, the flowers are purple, and shaped like those of the common Thistle, but are smaller; these are succeeded by oblong smooth seeds, which have a long woolly down lying on their top. This second flowers in July and August, and the seeds ripen in September. It is propagated by seeds, which should be sown on a bed of light earth in the spring, where the plants are to remain, for they do not bear transplanting, unless it is performed when they are very young; for they send long slender roots deep into the ground, which, if broken, the plant seldom survives it.

The third sort grows naturally in the lowland countries of England. This is a perennial plant, which sends out many long leaves, which are of a deep green above, but white on their under side, placed alternately, just below the root stalk of the leaf come out several unequal yellow flowers, the end of the branches the flowers are produced, there are very thickly enveloped, under which are placed two long leaves, the flowers are purple, and shaped like those of the common Thistle, but are smaller; these are succeeded by oblong smooth seeds, which have a long woolly down lying on their top. This third flowers in July and August, and the seeds ripen in September. It is propagated by seeds, which should be sown on a bed of light earth in the spring, where the plants are to remain, for they do not bear transplanting, unless it is performed when they are very young; for they send long slender roots deep into the ground, which, if broken, the plant seldom survives it.

The fourth sort grows naturally in Spain and Portugal. This rises six feet high; the leaves are long, narrow, and the edges are set thick with small hairs; at every indurment of the leaves there comes out two long yellowish spines, at the end of the branches the flowers are produced from the side of the stalk, which have woolly oval envelopes, chiefly armed with slender spines. The flowers are yellow, but make no great appearance, as they advance very little above the envelopes. It flowers in July and August, and the seeds ripen in autumn. This plant may be propagated by seeds in the same manner as the first.

malfhet u the former fort. It is called Fifth Thistle, from the resemblance which the (pines hive to the bones of filli.

The fourth lbrt grows very common on the side of banks, and in walk land in many part! of England, and Uby fame peribru blanchend anddrefTed as a curious dihi. This is a biennial plant, which ftiould belbvra very thin, and wlien the plants arc come up la as tobe. well diftinguiihtil, the ground flould be hoed, to cut down all die young weedis, and the plants left about a foot ...; fiilt diftance; and the following Imiimcr the ground llioulii be kept clean from weeds. to the auiumn the I avesof the plants flould be tied up, and tiie earth ilrawn up dofe to blanth them; »taa thry are properly whitened, they will be fit for tife. This it a biennial plant, which perUhes Toon •fter the lecdi are ripe.

The filth fort is a bwnniil plant, which is by fom- culcrated for medicinal uie. and has been fitpofed a remedy for feme fort of inadnefe. Thiis may be propagated by feeds in the fame manner as the fecond lorr. It ... natura!lv in (1* northern pans of England, and flowers in June.

The fixth fort is fippofcil to be the trueFifthThiltle of Theophrallus. This is a bicnniil plant, which ri&i with an uprihr IULK fix feet high, gamilhd with long (pear-hfped leaves, armed with triple [pines at every indenture on thicr edges; al the top ofihcFbA the flowers come out in duffers, which are of a purple cokrnr, and are fuccedeii by Imooth, oval, thck feed ... naturally in Sicily an;! the t.evant. It is pi- paged by feeds a> die fccoiid fort, wWkh (houli be lown on a warmhorder, o;hir- wile the plants will not live through the winter. li Sowtrjin lunc. and ihc feeds ripen in autumn.

CAKDUUS BENEDICTUS. Sec CEKTAU-

CARDUUS FULLONUM. Sec DIPS*WS.

CARI ('A. Lin. Gen. Plant. :ooo. Papaw, in French Papft-

The CHAHACTEKS ...

h U mule and [male fa Sffirtnt plants; thtfa&in ef thi mob bout learet any rfpntemnt i thij an l ... StajivA tads/ eue k<i\ lumii^ a Iwgfaulr tain ... rxfumti oi tbt lap, wberri it is JrMtJ iniojhe Karnrji obtufparJ, vihicii turn iatkatrJ; it hath laiji- Jki of which arc ohawartfy le«gir lka« sht sber^ and art ltrmiwtid by s&img finmitt. The fawslt ftwtrt bart a Jhall ptmmezi mpnlmixt indenid in fine parti; <lb fine hug foer-Jhoptd petals, wbitb are ebltfti, erdet ibitep; tbt eval gcmrn fippcri ... rb art trsed at tie lfp, I hi rtrme» aflencarA itcsnti a largt ... ;/:; i ... ^ f..e lon^tubtd tub, wbrti ... aguli- ...

Thiscnuiof plants w ranged in the ninth feffion of LinMiu's twenty-fctonJ cJali, intitled Diccica Ditindri.i i tht ... male and female Dowers on diflrcnt pUnts. anil in this fection the 11 ... -n-e ten liuininJ-

TheSfEcits arr,

i. CAKICA (Pap.n.i) fcliconim lobis finustis. Hon. Cliff ... Hmetti. Papaya fructu Midepeonia eff; <;, l'iiiiii. Ptpjrt ...

; CARICA (Papaya) baloran bis integris. Hurt. Cliff. ...

There are several varieties of the first sort, which differ in the size and shape of their fruit. Plunder mentions three of the name of fruited Papaw, be- side the male, one of which he calls Mino Sharp, and the other shaped like the fruit of the Gourd; and i have seen another variety in England, with a large, smooth, pyramidal fruit: but these are sup- posed to be accidental varieties, which arise from the

Uiuic ...

This fort riles with a rhick, soft, berblceetls flout, to the height of eighteen or twenty fct, wlich is n.iked till Within lra or three feet of the top, and h.nh marks of [lie veltiges of the f:dltn U'jves grt-jt paitot' its kngh i ihe leaves come out on evry (ide the item upon very long foot-(talks; thofi rfii I are fit Listed uiddrmofit arc sinoit horizon ul, but thioletin the top are tteft: thicf leaves (in full gn wv plants) are very large, and divided inn many pa I (or lobes) which arc ikeply (Intrated, or cut into irregular tivifions. The whole plant ab c:it with a milky acrid juioe, v. ILL }I h ellcL'nild ffood for Lilt ringwom: the Item of the plant, and alb the 'ixn-fhiilt of thr leaves, are hollow in the middle. The flowed of die male pbnts an-protlutrd from beewctn the leaves on the upper p.irt of the j>lam, oneveiyilde, M hich hive foot-ftalfet n:cir two tc:: lony, at the ends of which the flowers (land in loole ouftttrs, e'ch huviii' a fep- rate llmrt foot-blk •, thiclc are of a pure white, and hare in :ijjreceable udour. They are monopeta- iou?, juving pretty long tubes, but are tut at the (Op intti five parts, which twift b^kwanl lit;c * feirw j functiinet thtlc arc fuccedct! by Gnall ftuic, about the Hie and Mlx of a Catherine Pear, which lix occasioned fome to firppofe it woa a did.; ... but I have frequently railed this, ant! the female <r fruitful furt, tVom the fame leetls, ami in general the male flowers fall away, without any fruit fuccceding them. The flowers of [hi: f ... w alfo come out bctwten the leaves, • ward the upper part of rjic plant, iijjon ver\Thort foot-i* ... fitting dofc to vhc fteni i they are large tnd ... con- pofed of fix priaij, -which arc co. ... w, biff

... the pyramidal fort, which i ed, were purple: vhen ... ran large fcthy fruit, the fa. ... which arc of different fotua; feme and comprefied at both endii, others tie oval an. H ... iar, and I bine pyramidal; tbc Frail alfo abound with the lame acrid milky juice is the plants. Thisfiicc, when ripe, a by the inhabitants of the Caribbec ... eaten wkh pepper and lugar as Melon, but are much inferior to uur n:jl comrKin vour, in it! native country • but that fi b'vc ripened in England were rlinefkc.li: j , have made known of :liis ftuic about luilf grown, to So ... DUI the milky juice, and ... for which ilicy luive been i \- plants are fuppulhl to be nonves of Am ... whence du ... Philipine I I ... and to fever*] jiarti of India, where thty art now pretty commn. Though thole plants hive been fuppofed to have male (lowers only in fimm- plants, and female on the other, yet I have ttrpn (ben lmall fruit on the mule plant ... :cntly hid folk on tht Gnnale, ... have grown as Well as any I ever lowed, though j:o male plant* were in the tufK ftuce with them.

"liil- teaaa Rirt was found [rowing in a garden at Lima, by f:itc; ... and it was the only plant he fa i of that fort in his travels. This differs from the ... icr, b having a branchingflalk, ih; lobes or ... JOS of the leaves beine entire, and the fr ... ing fbaprcd like a Pear, which he fays were of dif- ftnSM ... that which he difcovered was about eight inches Itmg, aod three and a half thtk, ycil ... and without, ... of a fweet flavour. I he flower, he ft, wat of a Role colour, and divided but into pinj.

Theft plant? being natives t.L ... in, will ooc ihrive in England, unless they ... Lreprelervcdinawarni tove ... inmueneie*, of a pro- perty ... in the plants, they ... a place Bwdlaa almull aiV of tht- plants which are multi- vaicd for ornartvent; ... arc grown to j large file, I ... a noble app< arance w. ... their franjij upright ... which arc onlv every fide i- ... the top with Ungc Hiiing Iravei, Ipfta ... out r, ... i all rutitul ihc i ... U fl ...

of the male fort come out in cluftew on every Gdt j and the fr • it of the female growing round the flalk between the leaves, being fo different from any thing of European production, may intide dieirt to th* tare of the curious.

They arc eafily propagated by Teedi, which art annually brought in plenty from die Wejt-Indks. Tiitfc Ihould be fown in a hot-bed early in the tiring, I tut the plants may obtain ftrenth before the autumn : when the plunre tre near two inches high, they fhould be each em into a leparate I mall pot tilled with a high\ gentle, loamy foil, and plunged into a hot-bed of tanners bark, carefully [hading them from the fun tilt they have taken root; after VJ hie li they mull be treated in the fame manner as other tender plants from the lame country; but as tilde plants have foft herbaceous ftallu, and ^bjund witliairilky juice, they trmit not have too much water, for they are frequently killed with mo'ifturc. T hefe fhould 3lib be great care taken when the/e plants are fhifted from fmail pots into Lir^jer, to piefejve tie whole ball of earth to their roots j for whenever dery are left bare, they rarely furvive ir. As the plants advance in their growth, they will require larger pots, and when tlicy are too tall to remain under frames, they muft be placed in the tan-bed of the bark-dove, where they (hiukl cunhufly remain, being careful not to fjive them much water, efpccially during the winter teafon t and in Amufe* their waterings fhouldbeoften itcd, buc givrn in fmsll quantities. With this tent I have raiii.il planes near twenty feet ITS, which have produced their flow- in great perfection.

i, Lin. Octi. Plant. 836. The Carllne

ARACTLRS arc,

It hath a compound jicueir, made up cf mam bermapbre- iite jlaretit wii b tat fruitful; lbtfi arc included is a •fmMl, fiesiha, fiaty cmptilemJ; the inner ftates art lift?, and placed in it circular erder. Tbtfs/jers arefait- ; having a iartvm tube, but arc ktl-Jlcfed an into five parti at the brim; ibefe have a fiertir bahy fiammn, terminated by cylindrical IK ibteuttier is Jltialed a fieri gemiiti trzrijud •iin, ftppirring aftenkr Jlyk tbt length of thfta- 'xib ait oblong bifid fligma. TbegmitK s 1) fi>igle tiipcr feed, crowned tfl/i a irmebin • lamfe derail.

["*] genus of plants is rangett in the firft fectia of L ncrat'u'g nineteenth tliiis, intitktk Syngnefia Poly- gamia :W[ualit, the Howra being compiled of only hermaphrodite florets which arc Iriiirilul, whole fum- mits arc connreltd, and form a tube.

The SPECIES sire,

1. CARI is-* (Vilgarit) cnule multilloro corymbofe. floribus tertinabbus calyehus radii' albis, Horr. Cliff ^5- Ctriinr. TbtfiU a-i.i many flowers i> it certmlms, <htb termniU the 8*0, bavm toftco Imnt. Carlit. i vteclms • ..ipris. Clac Hift. 2. p. 153. CMMIM teili CorSnt Jil
2. CABMVA (Kacenti'fi) lloribus ((V libus, luv raiibus piucifiimis. Sauv. Meth. ing. Qirliiu Tijiilt with :. few ftewen grewing ckfe It tbt fide nf tbejhli. Car- Una i vteclms • ..ipris. Cluf. Hilt, i- p. i,57' Smell vuli Spiinifls Carlaxe Tb-ftk.
3. C^KLINA vteclms ca uleuniilorofiorfbrt-vtarc.llort, Cli/T. 395. Carlim Tbijilt witbenc fbi'rler fiswtr tu czfb fiolk, Carlin* acaulos magno fiore ajbo. C. li. P. 380.
4. CUUJNJI (LSMW) csulc muliidro ioanato, dlycibus fdio purpurcii. Lin. Sp. 1160. Coriot Tlsjie vatb vffitmxs aaafialk, •abiih vteclms • ..ipris ijs u vteclms • ..ipris. Aaifta flow purpureo rubente pa- C 15. P. 37a.
5. t; iiiiLrx_A fCeyiidifa) auk multifloro fubdivifo, fiiv ribus feJTiibus calyebus radio fiavii. I'rod.' 135. Carhne Tbfife with ruair.-fieran. J&tb is fubdivided, ibeficrctrsfitiUji <m ibtjalki, endbmie •••iis to the'r mpaUneit- Acarnn apula umbdla- u. Cvlni. Eeplir. %*.

The firft fort grow naturally upon fertile ground in moft parts of r.nglam.1.10 a rarely adm.: and into car- dtns, TheotBa • i in often pteceived in botanic gar- dens for the lake of varitry. They grow naturally in the fouth off'rance, Spain, and Italy. Xhcjfi may sil be pmp. agard by fowing their feeds in die fprinjr on a bed of frelh unduiged earth, where they are JcfigntJ LO remain; tor, as tin find forth tap roivs, they ivill not bear tntnfubntng lb well as tnaft other plants. When the pi-ns appear abeve ground, dicy fhould be carefully weeded; and as they grow in li>:, they fhould be th mmtl, where they arc too clou*. Iciii- ing them about ten an he, or, a foot ifund". The fecondyear mod of thefe plants will Bqwr; bus, unk-fs the Itimmcr groves dry, they rarely produce good feeds in England, and moft of flu-m decay ion; after they have flowered, the eefbre it is pretty difficult to maintain (licit plants in this country.

CARNATION. Sec! : CARPESIMUM, Lin. Gen. 9+8. Nodding Sar- wort.

The CHARACTERS arc,

It btffb an imbricated cmpahmfil, the cair Idrvts arf larger, ffirtadiig, and rrjlextd, tbt inner art fun- and ejita: the flewer is tjital and compounded\ the hentta- pbredite florets arc fund-shapei, eper-\ it tbt tup iri five purl; theft tntfeji tbi .iik. Tit female fiortis ere Uiuims, qxingnefd, ckj vteclms, 'vhitb cmpt the bsrdr. The bimspraliti' fitns have five fieri fiaitii- tia, crowned by glindi-i. •••; an ckr.g ger- mt, J'ilb a'ngle fiali, creaiuj by a hififtigma; the fmale florets faw tbt litr, rnti bath art futaeitd tj eol naked feeds •••> the mpekmt.

This genus of plsnt, is ranged in the fecond order of Linnrcus's nineto book title, intitled Syngnefia Polygamia fupermia, tlic flowers being compofed of fem- lide and licrnaphrodite (loiva, which are botli fruitful.

The Si-sots arc,

1. CESIUM fCumm') floribus terminalibus. Lin. Sp. 1.03. Neddiny Starfearl 'ihafv fltxcrj itmxiit tl<tje/h. AfterCernuus. Col. Evj'fir. 1. p. ;jr.
2. CULFEATUM (jthvtamida) Horibii btrmlibus, Oib. It. tib. 10. Nedding SlzKuert vihtfi plans umftrm tbcfijt cf. • Jalk.

The Brit fo« grows naturally in Italy. It is a biennial plant, wofc br or leaves arc obtufc, woolly, tnd loft to tile touch. The flower-llalk rifrs from theccnwr of die plati l ar a foot and a half Jtigh, branchiri^ toward the top, and garniflml with leaves of the fame futm with thofe at bottom, but liii after; tach of the branches arr terminated by one ; wety large BLOWLT of an ••• colour, nodding on one fide [heftaJkj l ••• are com- pofed of female florttt which compole the I ••• and hermaphro- dite Boren which com] ••• the disk, both whidi aro lucco- .-Jid by oval naked feeds. The flowers • July, airf the feeds ripen in September.

ThejjUnt is eafily propapied by Ms, wticfi may be fo*n on 1 bed of figh earth'in ihe Jj ••• and when the plant* come up, if thry are thim* and kept clean from weeds, they will require no «her culture. The fecond year they will flower and produce ieedi, foon alter whidi the plants decay. The fecond fort (m>W5 natur.ily in China, and ar. pedant is rare in England. This ; icha rurdbranch- ing (talk, garnihed with bi and fpear-thed itavci fhghiy crenated on the edge : the flwers are thinly fattered (1: the fide of the ll luv and branches, where they fir. very clofe, nodding tWnw.ud -, their tm- palettiert arc compofed of many Email ILMVCS which iprend ope, and include a great number of l n'ts.

This may be propagated by feeds, which fhould be fown on a hot-bed in the luring, and when thr plants arc fit to remove, they fhould be each planted in a ftngle pot i ind v'hen the weachn becomes warm, they mry be cxjmieJ, but ii ai. •••••• they muft be hauled.

C A R

C A R P I N U S. Lin. Gen. Plant. <:; [& c>] *d of tarjiti-t, Lat.io cropj becaue it maybe eailycropped, or its wood is eailiy deflt.] The Hornbeam, <T Hard- bwm, in French Chmntt.

The CHARACTERS arc.

h l m " mdi arJ fowl; jfovirs, growing kparatc BK the faafihutt- I'll Tsak finatrt are difpojd in a tyl- rffe er kathn, #hhb is hfti snA fesh\ tub cni l ... ha tm final! fia prfuid hairyfkinmiis. Tbcfasalt fame firm, #ii trfittgU under t fiolt; tptfi ... jbtiped likt » U mujtxwli, and I-JUQjhurt germmn, :;irb having *trjfaUs, mnnitdfa ajagtftii hdiki* :-,Wgrcwi large, and at tin baft sf each fink it it wal tpihir mu.

L Ills grim5 of plants b ranged in the eighth (ction of' l jnnwu's twenty-Jirit ebb, intitled Monera tyandru, tin;jAmts of this clfs having male and female Rowers growing icpar.ite on the lame trtc, and tlofi; of this feet ion have many ifcraiiisa-

T/L- .SfEciis art,

- i. CAaptNt'i {Vs.; :ma ftjoullorum Mart. Cliff. 447. Honibtam wilb jtit fait; to :; Carp'mus. Dod. Ftmpi. 841. Casmn Hirnbttm,

% CARPIMUS {Ojhya} squami-i fumbilorum infintij. Hort.

447. Rerahtsm Oftrya uimo iimilis, fniilu rjctiuuiu lupulo fimllu. C. D. P. +27. Tl

- 3. C- miali)) foliis ovato-hnccolads feratis itmhillis brebvius., HcrKixam v^Ub *i<U, fpitr-foiytd. Carpinus Ontnt- tIB folio minor;, i. J*. Cor. +0. Eqjteni llvbiem, with afaa'ler ktiffnidjherlrfndl.

4. C- y-ius (&")? lanceobttc acamniis, jlrubiiii longiHmia. Hi ttfpear-jbaptA -tfcunti. (iginiina flo- Phlk. P'irgiuia flowering ffarnbeam.

The firil EM iimion in many parts of Eng- land, bur is rarely fullered 10 grow as 3 timber-tree, " cine generally reduced EO pollards by the country people, yet where the young trees have been pro- <rly nx-attj, they havegn I havt- romu of tlirm in « upon a cold day, which Imvc been near : lajge, noble, fine item*, pc;.

rtiis liio been o)Uy fondicrL'd as a Jbrltb, and niltivnted I ar-wood inthi ind in the nurVrics to form titJgts, after the Ktrnch lalle; far in moft of tlicir ijrcat gs: their cabins, &c. are formed of dveft tnrs, as aic wclBf&a and hedges which furround their plan- But finec thelc f: of orn-enta haveneo almost banifhed from the English gardens, their has been little demand for the trees in the .. HUtict'itS.

As this tree will thrive upon cold, barren, expofed hills, and in fuch fituations where few other forts will grow, it may be cultivated to great advantage. Te by the iiprietors in ch lands. It will refift the vio- kna-of windsbt' in it! growth. Bu(where they are pro- accd for timber, liny HiDiild bt' in on the fame foil, and in the fame fituation, where they are defigned to grow, and not brought from better foil, and a warmer fituation, as it is frequently prafticed. Nor fhould they be propagated by layers, which is the common method where they are intended for hedges or under-wood, for which thofe fo raised will never be capable full as well as thofe raised from feeds, but the latter muft always be preferred for timber trees.

The feeds of this tree fhould be fown in the autumn, foon after they are ripe; for if they are kept out of the ground till fpring, the plants will not come up till the following year. When the plants appear, they muft be kept very clear from weeds, and treated as other foft-wood, in two years time they will be lit to transplant, for the fooner all trees which are defigned for timber are planted where they are to remain, the larger they will grow, and the wood will

C A R

be firmer and more durable. If theft are not infer- mixed with other kind of trees, they fhould bi jilum'tit pretty ctioie; dtjetially on itic outlide of the plan- tattuns, that the; may prufe b and daw each ot!wt up: and if they are kept d in from we-ds tbtee.or four yenre, it will g.n:a\y promote their growth, after which the plants will have obtained luiticicnt itreBgiU to keep down the Wiv

As the tree) advance in their gruwth, they muft be thinned, which fhould be done with cation, cut- ting away the mtib unpromiling plants gradually, ii) tt iiu! LO let much cold air at once, to thole i hich art left, dfecUUUf on the bowlers of [lie plantation.)"or in all young ptaftodom of timber, it is much dsc' better method, : • take away a few trees every year, where it is wanted, than, as ij tommunly pra to let all grow till it ii fit to cut at under-wood, and then cut ail away, except ihoie intended for timber •, who by fo much cold air is kiddlenTy let in upon them, as to ftop their protrefj for ibnrc years: but by this method a pitfall advantage is gained, which is now more generally atiinded to, than liic future profit.

Tie timber of th« tree h very tough ud I; and might bt convened 10 m. My idatus purpofes, when fulli-red to grow to t proper jnfei, but ai tht been generally tr-tLed otherwife, the principal uies it his been applied to, was for tumti, warr, for v.Æcli ii is an eMCLler, r wood, and abb for m mill^ags, liends of IJCL-(IW,&C. It ► aib excelle; i The leaves of thi tree remain upon them, till the year; buds in lhi fpring thruft them out, y at- fbrd much lhelter to buds in winter, & of this re- them very proijer to ploni roi other plinr-iiion-i in c-xptod Guad v.ill defend the other ti-cc» in winter, and i; arby i> promote their growth.

The Hup Hurnbtam iheds its leaves in winter, with the Elni, ami wr.cr deciduous trees. This trtc, tho* but lately much known in England, is very common in Germany, growing proTLiicoull'. the common fort. It alio tend to grow plentifully in many Mrcs of North Ameiica, but ii is doubtful whether that is not a different fort from The Hop Hurnbeam is of quicker growth than a com- mon fir, but the wood of that will fcl the nut kntiw; for there urn bi few of the trees in I jlgland growing upon thieicrown r' having been ^r.titted wjon the common I junibcain, which is ufuall in- paguing them in the nurferic^i •, but the trers (a railed are tit (h' du- ration, for the graft genejly grows much finler than the [toek, fo that m a few years there is a great ijifproportion in thi-ir the j am! where they haveen to tUnd opofed to strong winds, the graft is fre- qtitndy broken from the Itoek, aftrr many years growth; for »Wch i fctus, I would aotkm cvdry perfon not to purchafe any ; ihcie trees which have been fo propagated.

The Virginian Hurnbeam I I'n>n>eam is Jill lefts com- tlian the lafl, and o:ily to be lern in carious (r?r- dras; itii toxuV the other, and maybe increas byla

This fort will ; row to the height of tilm- feet, or more, and is of quicker growth than Uher of thic former forts: it sheds its leaves in autumn, about the fame time with the Elm; and, during the time of its verdure, this tree unkes a good appearance, being well clothed with leaves, which are of a deep, firm; -. grrtncul •, refembling more the long-leaved Elm than : he Hornbeam.

The Eaffers Hornbeam is a tree of humble growth, rarely riring above ten or twelve feet high in this country, thoodrig ovit many horizontal irrejrobr branches, (b cannot eailiy be trained up to :; Item. The icives of tlik fort ; irr tnuelt JrniUtr thai: thofe of the common I Hornbeam, and the branches grow clofe together, therefore may be very proper for low hedges, WIHC they are wanted in gardens; being a very taufle plant, it may be kept in left • imp

than atmof t any deciduous tree. I; is as hardy as any of the iurts, nnti may be propagated in die fame miiuier . but at preil-nt it ii rare mdw Englifi nurii

i. ARROTS. See DAOCI.

CARTHAMUS; in. Gen. Plant, 8^8. ffo called of ... in. Gen. to i urga, becanfc the fec] of it are purging.] Bahrd Sarran, orSifflower in French; Carti ... ran StitariL

TILL^ CHAHACTSM ire,

li hub it filler coixpejed offeottd ixrmspltrdUt finrttu included m tut ctmisim fait tmpoUmaa. The fcilts art ccmpoj-d of mm/flat leave:* bread at their tuft, endiar rtdsd opts k!<xv. Thjlsrtii arefiamel- .*, efatm leaf, cut into fvt equal figments til the tup ; htiit five fiuar hairy ftamiia, tennantA h <y-

... htiit five fiuar hairy ftamiia, tennantA h <y-

... htiit five fiuar hairy ftamiia, tennantA h <y-

This genii J ol plants ii range San o) Uiuifuis's nineteenth clai's, inrklcd SyngencCa IV lygamia A^quiuS) the flower* of this fret ion bring compulcd ul only fruitful lioreti. and tiidr liinnnits uecvnuAi-d in form of a cylindrical tube.

IES are,

i. CAKTIMMI:s (Triffruii) foli ...-gris ferrato-acukitis. Hort. Cliff. 394. Bajiard S<\$rtn tvilt oval ami. ... lib bsvfpirer jmmuris. Carthamus officinarum. Bore eroceo. Tourn, I

2. Carthamus (Linnæus) ... pilofu fupernc ... amplexicauli ... rosier lava ... upper embratMB btjtjaik. Atraitylis lutea. C. U. I* .« Uipff Thifile.

3. CAUTBAilca (Cretieut) caulc lxviulculo, calyeibus lublanatii, (lofcutis fubnovf ... friuriubua y- it5 araplndcaulibiB ilenutis. I.in. Sp. 1163. ... tit timer beraa hre-finspci, and ibe v u T cmbrd'ixg ibtjlt&- Cninu Cretius Atraftyiidii m. Cor. J3.

4. ... mtsam) foliis radicilibus pii ... ifcavrs arc ... VZ:T en njlif. Cnims ... i I. L. iLz. Bbtpt-

S CARTHAMUS (Caryophyll) foliis caulibus linearibus ... Lin. Sp. Plant. 83J. ... va BH tkt ... vjcd ... Cnictu aerulcua h- niii;. ... f. L. Du.,/rf Cxltut if ... Lupus wife a bkejhfcr.

6. CARTHAMUS (Gerardus) foliis hnceol.iu< fpinofo-den- tatis, canic fubuniloro. Hort. Cliff. Uti- Carlham-M id ontfcv.-/T ... ur. C. B. J', 376.

• CIUTRAMI ... torrnhus flnuaro- dentj ... GTrbamits with jiverd- ... iCmus. Toum. Inf. 451.

C CARTHAMUS (Caryophyll) floribus umbellatis ... Icon mger uiribetlatus, ...

The first fort grows naturally in Egypt, 3i<d in fame of the warm parts of Aib. I have m-tjui-fily ir- ceved the feeds of this from the ... jly carried ... could never be rifj-l-t/ infbn ... iliviated in mtrw ... vant, from ... i.uttitSOL ... annually im- porwt! ... dyci<g and painting,

This is an nnni] plant, which rifct with a (iff lig- neous fUlkc. two Sxt and R half, or three feet (ijgh, ... ag upward into many branchei, which are gar- nillu-d wirl: ova] poimicii leaves, liltng rloir to tie branthes: thefr arc entire, and art (lightly fa wed on their edges, each tuoth being terminated by a fiort 'l'inc. The flowers grow finale at the extrmirj^ of wch branch: the heils of I lowers ate Urge, inelofaj in a icily entpatenient) each leak is bitrd at the bife, flat, and formed likt a leaf of the pknt, ter- minafing in a (iarp (pine. The lower pan of the emjialmertii fpreadi open, but the fcales above clull-Jy embrace the florets, which iland out near an inch above the empalcment; thdi; are of a fine Saffron colour, and this is the part which is galhctcd for the ufes above- ... me Whimil. ... ilecay, the germen which is Ctuated in each, become linglc, oblong, nngulir ... of a white colour, anj have a prtjty (ing ... 11 or cover to them. It flowers in July and Atlgult, and thefctdi ripen in lututnrij but it the l'cion jiroves cold anil moilt, wheo the plants are in Bower, there wll be no good feeds produced; fo that there wefi ... therein the ILIXI; of thii plant Jo come to j ... i England.

The feeds of this plant are fometimes ufed ... me- dic uu-, anJ arc accunnttd a pretty Etroog (JL^ ... but at preftni tiny arc fldora prtfrtbed. It is pro- jagitei! by feeds, wlich floiuid IC iov. n in April, upon a bed of light car ... the bell-, ... to low ilien in drills, drawn at two ; ... and a half diftance iYom each other, in which the feeds fhould be ftattered thinly, for the ; ... must not ftand nearer cadl orhtr than fl foot in the rows ; but r; ianv: of the feeds will fail, li) A greater quantity ihould be Iwr, as it will be cady ; ... nits, at Uic dmt when the ground is hoed. If the feed arc good, tlic plants will appear in kcb tlum a month i and in a fortnight or three Wtcki after, it will be proper to hoc the ground to defroy die weeds, and at the fame time A ... ihould be thinned whei they are loo clcJc . but K this lime they fliontd not be fe- planted in their full ... t. tl (bine of them fhould afttrwrd fil i lb ... :JW left fu inches ... U be room enough for the plants to grow, rill the next time of hoeing, when they must be thinned to the diftince they are to remain for good: after this they lhould have a third houin:, which, if carefully performed in dry weather, will defroy the weed; ... the ground dean, (b tii^t the j ... will require Lf ... they ... rane to ilower; ivhen, if the ... is introduced for ufe, the florets mould be cat off from the flowers, as they come to perfection; but His mull be performed when they arc perfeftly dry, and then they fhould be dried in A kiln, with a moderate tire, in the fame manner 11 the true Saffron, which will prepare the commodity ibr ufe.

Kut if the phnts arc deCgned for feed, the flowers must not be gathered, for : the florets are cut off, it will ... ler the lceds abortive, though they may fwel am! grow to I ... : .e, aj I have frequently experienced; yet when they are broken, there will be found nothing more than a fhcll wirhuur any kernel. Anil thii frequently hajpens to be the cale with yealc feeds, in wet Cold ... felfon ... b very wet yealc the germen will rot, ami never come lb forward as tu form I Ihell.

I have been inforned, that this plant was formerly cultiviteit in ... in feveral prts of Enj ... and, for the dyers ufc; and pai-iculsiriy inGlouceff: ... where the comoian people frequently pthercil the florcev, and dried thrm, to pui into (heir pudding! and check i ... to give them a colouri but fame by putting it in too great quantity, gave their puddings a cathaVn: qiality.

If this plain was ever cultivated here in grwt quantity, it is JiirvriiinE; how it cine to be (e totally neglcted, & diai at [jrefent, there arc not the left traces to be met with, in an; part of England, O; its ever hating been cultivated -, nor it the commodity

ibrr known, eycepr to thole who deal in
 tiryof this wjiu' i' annually coriumed i
 make a very confidcrable article
 in trade, to that it might be very well worth,
 (ml) i for although the feeds feldotn cort-
 to perfe&ion hi England, yet thefe might be annually
 procured from abroad, and ihe plants would con-
 handy produce the flower, which is the only part
 ufisM. A few ye-irs pad I lent a fmall parcel of the
 Jecds of ilus pl.int to South Carolina, where t was
 afterward informed i. grew amazingly, for in fin
 necksaiW' the feeds were fown, the crop of Saffiuwer
 Wu jit to CUE, and the gentleman to wJom ti.

e given* feni ionic of the commodity to his brodir
 in i,OD4CDI who was fo kind as » lefld me a lpc-
 cimen of it, with an account itur the dyers complained
 of its want of colour; and upon examining ir, I found
 the florets wtxt drawn out of dtcir em]alemciti the
 whole length, lij that dicir tails luliich had been in-
 i loded in their covers were white, and being mixed
 together gave the whole a pale appearance; upon this
 I wrote to die gciidi'mon to dcfire he would cut off
 die upper pan & the florets . iih feillars, which
 be cafitr performed, but have heard nothing from
 him Giice s however, .1 year or two after I received 3
 lertcr from his excellency Governor Lyrdcton, in
 which lie wrote dim the Safflower bid fair a> prove
 one of their great brandies of commerce, but huw it
 has turned out I hsvc rut lituc heard.

This plant ll cultivated in great plenty, in fome parts
 of Germany, where the feeds conitandy comit to
 perfection •, and as I have obtained a fhort account
 of their method of cultivation, from a curious gen-
 tlcuUB of that country, ib i (tall iifert it for the be-
 neciit of rhole who may be induced to engage in diis
 undenakiiv *

The ground in which they propofc to fow die Car-
 tbwnus, has always a double fallow given to it, firft
 to dctroy die weeds, and afterward to make it fv^.
 They make choice of their lighted land, and fuch as
 is clear front Couch Grafs, and other troubidbme
 Weols. After die land lias been followed I Jummer
 ud wintci, in which rime they give ir four pi
 ings, and hlrow it between each, to break die clodi,
 end pulverize it: in the latter end ai March drey give

I all ploughing, when they by it in narrow
 furrows of about five feet or a tub more, leaving a
 of two feet between each: dicn they harrow
 •: i' chcia level, and after it is finifhed,
 they low rhe feeds in die tollowing manner. With a
 finalt plough, they draw four fhallow furt,
 each land, at DBK a tout and a half Jliancir, into
 which they featrc the feeds thinly; tliisn with A har-
 row, are little more di^n one indi long,
 ricy draw the cardi into die drills to cover the feeds;
 after this, they dmw a roller over die ground, to
 fmoOU. ft. Whea the planu are come up,
 lbaj to bcdilliii: y hoc the grou.ii
 Sroy the weedi; and at this firli ope ration, where
 i tu IK CIIJC, they cut up the leaf
 at die djftance of
 hesj which they .i: • will
 be ft: a for dieir growth, till caefecoad
 ttite 0 t ir:uit: be porfbmal in about

week • 11 in which thy are guided
 j dm growth of die weeds, for as ihii work is per-
 formed with a Dutch hoe. To they never iulFLr the
 —eds [o grow CD biibr they cue diem;
 hev jutkc right, for when the weeds arc
 much ground in a day,
 as tan be performed hy three, wht-i they aw per-
 mured to grow large; and die vveddi will be more
 illy dtroyed.

They give a ibird hoeing to die plants, about five
 Cix weeks after (he fecond i ivljich generally miikes
 ground fo i-lr;n, 13 to icqiiire no mac
 all the Carthaunfi is pulled itp. When the j I
 in to flower, and fiave dirutt our their Hoj;
 im; to a proper [cngtli, dicy go over tlit gnnuid
 once a week to gather it; and as ir is num time ty

time gathered, it is diied in a kiln for rife. There
 is usually a fucc m of floWCS fur & x or feven
 weeks. j l - J r ^ " W^b * (talks ;rc
 p, and t=d in bundle f, fuel, and wh. they
 have been fa up a fa* days todrv- t% arc
 off, and the ground is ploughed for Wheat; h
 Jhejr lay, alwma fucceds wcl] tfa this plw
 The BQodmiaSg of this commodity is chief ly
 colour, M Jhould be of bright S^nc^T
 Mid herein tl,at which is cultivated in England often
 tails; ior it there happens much rain uuiriraj tljc
 time the plants arc in flower, ir will caufc tin
 to ch Wgc toa dark or dirt' ydlow, whid, will .lft
 Ural that which is gadicicd when there is any moifurc
 rt'm..ung upon it j therfbre great care muft be

is quite dried off,
 Ir has been dried
 on the kiln. The manner of doing this being the fame
 as for the true Saffron, I fhall not mention it here,
 but deire th to the article Caocox,
 where that is

In Spam this plant is cultivated in their
 Margolds are in England, «, pUt inw their foup,
 colour. The
 lx it in moit
 or viacos, and it is very probable they
 perions who firft carried the feeds of this
 America, and taught he inhabitant the ufc oV; it fTM
 itisnowaseomn... only ucl by •ihc EnaliO, there' Z
 in any part of Europe.

This plant may be admitted to httt » plo« in the
 v^v i ^ .B^w..where %\ "AJJ , , , tfe
 variety, dunnng dtc timcoi its com hw...
 which is commonly two months, . S

thetU and there will be a fucteOion of floi.^ * f
 fide branches, rill the end of SeptembT o r \ u
 <nnn feafon, till the middle of O^S u r W wh i e h
 time the plants will not be defitute of rlower^ wh h
 bemg of a bnglu Siirc,n colour, nuke
 peii-jnte! and if the plants are hippor.,
 dicir being broken, or blown down b
 they wil' not interfere with the other i'ow
 thefe have a regular upright growth.

When they arc cultivated for this purpo
 Uwuld be fawn in the places where the pj
 ugned to remain, becaafe they do not RMK TM r
 .lant.newdUdi.re.ore tl.re^or faffll
 be fown n each patch, left any of them ihodd i
 and when the plants are grown fo ft,olg M ,, teow
 of d^ger, the moft promifing in ead. patch ftou'd
 be left, and the others pulled up, that they may not
 draw or injure thole which are to ihnd.

The fecond fort grows naturally in the fovai of
 I-ranec, Spam, ana Italy, whtro the women ufethc
 Jtalks of this plant for dilbrfc, from whence it h, a i
 tin- title of Uuilajf Thiitle. It is by fomT rX\
 Bailed wild Sa^n. The > t o « of^A^pLnt iVc
 fiMiWinnao dend for medicine, and are fimpcid En
 have the fame virtue as Carduaa I W W

This plane h annual, perilling fo<n after the feeds
 arc ripe; the lower leaves fprea; Hat upon , l, (ground ;
 the arc fivftwfc mcha long, narrov > and deeply
 indented on both He*, they are hair-, have a
 tew loll

igh, covered with (uire, an I
 oblong hwry feva, whicf embr., the flalk with
 • fae deeply fiiiu<cd, with nanuh
 growing on the r edge^ The upper pn of £k. ^k
 divide, into many brands, WA arc g.mifhed wi h
 leaves of the fame form, but finifcr. The te> m
 are produced « tie end of the branches, having a
 clufbr of ftj, hard, prickly leaves below rhe

ncnt, which contain! many yellow herma-
 te flavm, luceeded by oblong angubr feed,
 - » Juw wid July, ami Se fetS S
 aUtumn, " the feeds of this are i fe fowr fn iu-
 tumit the plana fl .;ly lhl. fQ]]owinfif]m-
 mer, fa there will be » certainty of good Jecds, They
 nuy

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be sown upon a bed of soil in any situation. I will require no other culture, but to keep them clear from weeds, and I thin the plants where they are crowded, this being a method that is kept in some parts, but it hampers the beauty. There is a variety of this, which grows much taller, the heads are larger, and the leaves are placed closer upon the stalks. This was found by Dr. Tournefort in the Levant.

The third fort was discovered by Toumefort in the island of Crete, from whence he sent it to the royal garden in Paris. This differs from the former, in having a smooth stalk; the leaves are very thick, deeply marked, smooth, and are armed with very strong spines; the heads of flowers are of a blue color, and the plant grows four feet high. This is a perennial plant, which may be blown and treated in the same way as the former, and Bowers about the same time.

The fourth fort has a perennial root, but an annual stalk. This grows sparingly in Spain, and may first be brought to England from Tangier; the seeds of this are never perfected in England, so it is propagated by cutting of the roots. The best time for planting is about the beginning of March; they should have a dry soil and a warm situation, otherwise they are liable to be destroyed in winter.

The fifth fort is five feet high, the stalks are thick and putting out any branches, garnished with narrow leafed leaves, which cover the whole length of the stalk. The leaves are thick and pointed, each is a simple ending in a spine. Each leaf is marked with a large fealy head of blue flowers, and is the same as the other species.

The sixth fort grows naturally in the South of France, Spain, and Italy. This has a perennial root and an annual stalk. It rises about four feet high; it is channelled, has in the leaf a narrow channel, ending in several sharp spines; the edges are rounded, each is a simple ending in a spine. Each leaf is marked with a large fealy head of blue flowers, and is the same as the other species.

It is difficult to propagate in England, for the seeds are put in water, which do not come to perfection; here, unless the leaf part be warm and dry. This plant is very common in the Levant.

The sixth fort is famous, to be the same as the fifth, which is a great mistake, for they are extremely different. This rises with a purple colour, hairy and channelled, closely garnished with broad spear-shaped leaves, which are finely lined on their edges, and covered with a fine lacy down. The stalk is marked with a large fealy head of blue flowers, having a fealy empalement, composed of two orders of leaves, the outer being broad, long, and armed with sharp spines; the inner are smaller, and terminate with sharp thorn. It lowers in June and July, and the seeds ripen in August. This fort may be propagated by pricking of their roots, which should be performed in autumn, when the leaves decay. It should have a light dry soil, in which it will endure the cold of our winters, and continue for many years. It may also be propagated by cuttings, which ripen well in dry seasons, but in the autumn the seeds are generally short; this requires as much care as to keep it clear from weeds. It grows naturally in Spain, France and Italy, on arable land.

The seventh fort I received from Andalusia, where it grows naturally in great plenty. This rises with a thick perennial stalk to the height of eight or ten feet, dividing into many branches, garnished with very long sword-shaped leaves, which are marked with sharp spines on their edges, which end in a

wide their surface. The branches are terminated by large, fealy, pointed heads of yellow flowers, which come out in July, but are overruled by winter, (so can only be propagated by cutting).

The eighth fort is a plant which is filled with light airy roots, and is called in our country, being very much valued for its medicinal qualities, which are removed into the open air, when they have lost their strength, they are planted in a warm dry place in the cold of our ordinary winters, but in severe frosts they are frequently destroyed.

The seeds of this fort were first sent me from Spain, where it grows naturally. It has a perennial root but an annual stalk; it is light, and never produces any branches, but is a simple ending in a spine. The leaves are narrow, of a pale greyish green, closely lined on their edges with short thick spines. The flowers are of a purple color, and are borne in a simple ending in a spine. This species is common in the Levant, and is very much valued for its medicinal qualities, which are removed into the open air, when they have lost their strength, they are planted in a warm dry place in the cold of our ordinary winters, but in severe frosts they are frequently destroyed.

The ninth fort is five feet high, the stalks are thick and putting out any branches, garnished with narrow leafed leaves, which cover the whole length of the stalk. The leaves are thick and pointed, each is a simple ending in a spine. Each leaf is marked with a large fealy head of blue flowers, and is the same as the other species.

The tenth fort is five feet high, the stalks are thick and putting out any branches, garnished with narrow leafed leaves, which cover the whole length of the stalk. The leaves are thick and pointed, each is a simple ending in a spine. Each leaf is marked with a large fealy head of blue flowers, and is the same as the other species.

This gem of plants is ranged in the second section of Linnaeus's fourth class, and is called Penuria Uygynia, the flowers being simple, and the leaves being simple.

The Swedes call it Capsella, and the Latins call it Capsella bursa-pastoris; it is a perennial plant, and is very common in the Levant.

The Carvi I received from Andalusia, where it grows naturally in great plenty. This rises with a thick perennial stalk to the height of eight or ten feet, dividing into many branches, garnished with very long sword-shaped leaves, which are marked with sharp spines on their edges, which end in a

The Carvi fort is the common Camempana, whole feeds are peculiarly unfit, no: only in medicine, but in the kitchen, &c. This grows naturally in the richest meadows in Lincolnshire and Yorkshire, and is sometimes round crowbeet in the pictures near London. It is cultivated for its medicinal qualities, and is a biennial plant, which rises from seeds one year, flowers the next, and produces seed after the seeds are ripe. It has a large root like a parsnip, but much smaller, which runs deep into the ground, and is a strong aromatic, lending out small fibres, which are white and soft.

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folid, channelled stalks, about two feet high* garnished with winged leaves, having long naked foot-stalks, and many small wings placed opposite on the midrib, which are composed of many narrow, little, plain leaves, ending in fevetal points. The stalks divide upward into several smaller branches, each of which is terminated by an umbel, composed of six or eight small separate umbels or rays, which divide into several small foot-stalks, each sustaining a single white flower, with five heart-shaped petals; the flowers of these small umbels are closely joined together. After the flowers are decayed, the germen becomes an oblong channelled fruit, composed of two oblong channelled feeds, plain on one side, but convex on the other. It flowers in June, and the feeds ripen in autumn.

The best season for sowing the feeds of this plant is in autumn, soon after they are ripe, when they will more certainly grow, than those sown in the spring, and the plants which rise in the autumn, generally flower the following season, so that a summer's growth is hereby saved. When the plants come up, the ground should be hoed to destroy the weeds; and where the plants are too close, they must be thinned in the same manner as is practised for Carrots, leaving them three or four inches apart. In the following spring they will require to be twice more hoed, which will keep the ground clean till the feeds are ripe; then the stalks must be pulled up, and tied in bundles, setting them upright to dry, when the feeds may be threshed out for use.

The second sort grows naturally in Spain: the feeds of this were sent me from the royal garden at Paris. This plant rises with a stronger stalk than the former, which seldom grows more than a foot and a half high, but is closely garnished with fine narrow leaves like those of Dill; the stalks divide upward into many branches, each being terminated by loose umbels of white flowers, which are succeeded by large broad feeds, having the same aromatic flavour as the common sort. This is a biennial plant, and may be treated in the same manner as the former.

CARYOPHYLLATA. See GEUM.

CARTOPHYLLUS. Lin. Gen. 594. Caryophyllus aromaticus. Tourn. Inf. R. H. 661. tab. 432.

^The Clove-tree, or Allspice.

The CHARACTERS are,

It hath a double empalement, that of the flower is of one leaf, cut into four obtuse parts, upon which the germen is situated \ the fruit hath another empalment, which is finally and slightly divided into four parts, which are perwanent. The flower hath four blunt petals, which are situated opposite to the incisures of the empalment. It hath many stamina, which rise from the sides of the empalement, terminated by roundish summits. The germen is situated under the flower, and is crowned by the small empalement, supporting a single upright style, crowned by an obtuse stigma. The germen afterward becomes a soft berry with two cells, each containing a single kidney-shaped feed.

This genus of plants is ranged in the first section of Linnaeus's thirteenth class, intitled Polyandria Monogynia, the flower having many stamina and but one style.

The SPECIES are,

1. CARYOPHYLLUS (*Aromaticus*) foliis ovato-lanceolatis oppositis, floribus terminalibus, staminibus. corollâ longioribus. *The Clove-tree with oval spear-shaped leaves growing opposite, and flowers terminating the stalks, whose stamina are longer than the petals.* Caryophyllus aromaticus fructu oblongo. C. B. P. 410. *Aromatic Clove with an oblong fruit.*
2. CARYOPHYLLUS (*Pimento*) foliis lanceolatis oppositis, floribus racemosis terminalibus, & axillaribus. *Clove-tree with spear-shaped leaves growing opposite, and flowers growing in bunches at the ends of the branches, and wings of the leaves.* Myrtus arborea aromatica foliis laurinis. Sloan. Cat. 161. *The Pimento, or Allspice.*
3. CARYOPHYLLUS (*Fruticosus*) foliis lanceolatis oppo-

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tis, floribus geminatis alaribus. Brown. Hift. Jam; 248. *Clove-tree with spear-shaped leaves placed opposite, and flowers growing by pairs from the sides of the stalks.*

4. CARYOPHYLLUS (*Cotihifolia*) foliis ovatis obtusis oppositis, floribus sparsis alaribus. *Clove-tree with oval blunt leaves placed opposite, and flowers growing thinly from the sides of the branches.* Myrtus cotini folio. Plum. Cat. 19. *Myrtle with a leaf of Venice Sumach.*

5. CARYOPHYLLUS (*Racemosus*) foliis oblongo-ovatis, emarginatis, rigidis, glabris, floribus racemosis terminalibus. *Clove-tree with oblong oval leaves, which are stiff, smooth, and indented at the edges, and flowers growing in branches terminating the stalk.*

The first sort grows naturally in the Moluccas, and the hottest parts of the world, where it rises to the height of a common Apple-tree 5 but the trunk generally divides at about four or five feet from the ground into three or four large limbs, which grow erect, and are covered with a thin smooth bark, which adheres closely to the wood. These limbs divide into many small branches, which form a sort of conical figure; the leaves are like those of the Bay-tree, and are placed opposite on the branches. The flowers are produced in loose bunches at the end of the branches, which are small, white, and have a great number of stamina, which are much longer than the petals. The flowers are succeeded by oval berries, which are crowned with the empalement, divided into four parts, which spread flat on the top of the fruit, in which form they are brought to Europe for it is the young fruit beaten from the trees before they are half grown, which are the Cloves used all over Europe.

I have not heard of any plants of this kind being in the gardens, either in England or Holland, but I chofe to mention it here, to introduce the other.

The second sort grows naturally in Jamaica, but particularly on the north side of that island, where it is found in great plenty, and is a considerable branch of their trade, the unripe fruit dried, being the Allspice so well known in Europe. It is now cultivated with care in many of the plantations, for the trees will thrive upon (hallow rocky land, which is unfit for the Sugar-cane; so that a great advantage is offered to the planters from those lands, which would otherwise be of small account to them.

This tree grows to the height of thirty feet or more, with a straight trunk, covered with a smooth brown bark, dividing upward into many branches which come out opposite, garnished with oblong leaves, resembling those of the Bay-tree in form, colour, and texture, but are longer, and are placed by pairs: when these are bruised or broken, they have a very fine aromatic odour like that of the fruit. The branches grow very regular, so that the trees make a fine appearance, and as they retain their leaves through the year, the trees are worthy of being propagated for ornament and shade about the habitations of the planters. The flowers are produced in large loose bunches from the side of the branches, towards their ends, each branch is also terminated by a larger bunch than the other 5 the flowers are small, and of an herbaceous colour, they are male and female upon distinct trees. I was favoured with fine samples of both, and also a particular account of the trees, by William Williams, Esq. of St. Anne's, on the north side of Jamaica, who has the greatest number of these trees on his plantation of any person in that island. The male flowers have very small petals, and a great number of stamina in each, which are of the same colour with the petals, terminated by oval bifid summits; the female flowers have no stamina, but an oval germen, situated below the flower, supporting a slender style, with a blunt stigma at the top. The germen afterward becomes a globular pulpy berry, including two kidney-shaped feeds. The usual season when these trees flower, is in June, July, and August.

When

When the fruit of these trees are designed for use, they are gathered, or beaten down from the trees a little before they arrive to their full size, and are separated from leaves, stalks, or any rubbish which may have accidentally mixed with them; then the fruit is exposed every day to the sun, spread on cloths for ten or twelve days to dry, but removed under cover every evening to screen it from the dews; when the fruit is perfectly dry, it is packed up for exportation. If the fruit is permitted to grow to maturity, the pulp, which surrounds the seeds, is so full of moisture, and is so glutinous, as to stick to the fingers of those who bruise them, therefore are unfit for those uses to which the dried fruit are applied.

It is called by some Jamaica Pepper, but the most general appellation is AU-spice, from its relish and flavour, partaking of many other spices, and is deservedly accounted one of the best and if it was as scarce and difficult to procure as those spices in the east, would be much more sought after and esteemed: our neighbours the Dutch, who have engrossed the spice trade to themselves, have also been artful enough to deceive us with this of our production, by purchasing the dried fruit of the AU-spice in England at a low price, and grinding it to a powder, then selling it to us at an advanced price for powder of Cloves. This I have been credibly informed of, by an eminent merchant, through whose hands great quantities of this commodity have passed.

The Dutch have also drawn an oil from the fruit of this tree, which they vend for oil of Cloves. I had a small phial of this oil sent me from Jamaica, which was shewn to some of the best judges of drugs in London, who tried many experiments with it, and declared they thought it as good oil of Cloves as they had seen.

As there is so great an affinity between this tree and the true Clove, it might be worthy of trial, if the fruit when first formed, or the flowers were beaten down from the trees, and dried in the same manner as the eastern Cloves might not answer the same purpose, or, at least, it would be a good succedaneum for that spice, and as it is the production of our own colonies, should have proper encouragement.

This tree is propagated by seeds, which in the natural course of its growth is conveyed, and sown by birds, to a great distance; and, it is very probable, the seeds passing through them, are rendered fitter for vegetation, than those which are immediately gathered from the tree; for I have received great quantities of the berries from the gentleman before-mentioned, which were perfectly ripe and fresh, great part of which I sowed in different ways, and communicated some of them to several other curious persons, who did the same, but none of them have yet succeeded, and upon informing my friend Mr. Williams of this, he told me that a friend of his, whose plantation was on the fourth side of Jamaica, desired him to save a large quantity of the ripe berries for him to sow on his plantation, which he accordingly did, but his friend forgot to tend for them till near two years after, during which time, they had lain in a large heap, and had fermented, and, on sowing those berries, the plants came up with the first rains in great abundance; so that it may be of great service to these seeds, either to pass through animal bodies, or to be fermented before they are sown.

The plants cannot be preserved in England unless they are placed in a stove during the winter season, but they will thrive in a moderate degree of warmth: they should be planted in a soft light soil, and in winter must have but little water. In the summer they should have a large share of air, and in July, if the season proves warm, they may be placed in the open air, in a warm sheltered situation, but upon the approach of cold nights, they must be removed into the stove again. The exposing of these plants to the open air for one month only, will be of great service to clean their leaves from insects or filth, which they are subject to contract, by remaining long in the

stove; but if the season should prove very wet or cold, it will not be safe to trust these plants longer abroad; therefore their leaves should be now and then washed with a sponge to clean them, which will not only render them more fitly, but also promote their growth. This tree is pretty difficult to propagate in England, where the seeds do not ripen; the only method in which this has been done, is by laying down the young branches, flitting them at a joint in the same manner as is practised in making layers of Carnations. If this is carefully performed, and the layers are regularly but gently watered, they will put out roots in one year; then they may be carefully separated from the old plants, and each planted in a small pot filled with light earth, and plunged into the tan-bed, either in the stove or under a frame, being careful to shade them until they have taken new root, after which they may be treated as the older plants*. This plant, being an Evergreen, makes a fine appearance in the stove at all seasons of the year; and their leaves having such an agreeable fragrance when rubbed, render them as worthy of a place in the stove, as any other tender exotic plant which is preserved for ornament.

The third sort grows naturally in Jamaica, from whence I received it some years past. This rises with a divided trunk to the height of eight or ten feet, sending out many branches, which are placed opposite, covered with a grey bark: the leaves come out opposite, which are shorter and rounder at their points than those of the last species, they are also smoother, and of a firmer texture. The flowers come out from the side of the branches between the leaves, upon slender footstalks, about an inch in length, two generally arising from the same point: these are succeeded by round berries, of a brighter colour than those of the former, having the empalement on their crowns. The leaves and fruit of this sort have no aromatic flavour, so are not of use, but the characters of the flower and fruit are the same as in the other sort.

This tree retains its leaves all the year, which being of a splendid green, make a very good appearance, when it is intermixed with other exotic plants in the stove, but the flowers being small, and growing thinly upon the branches, do not make any great figure, so it is only preserved for the beauty of its foliage. It is propagated by seeds, and requires the same treatment as the other sort.

The fourth sort was sent me by the late Mr. Robert Millar, surgeon, from Carthage in New Spain: this rises with many irregular stems about twelve or fourteen feet high, covered with an Ash-coloured bark, dividing into many branches upward: these are garnished with stiff oval leaves, placed opposite. The flowers are produced from the side of the branches, sometimes four, five, or six foot-stalks arise from the same point; at other times, they come out single, or perhaps by pairs: these are white, and of the same shape with those of the second sort, and are succeeded by berries which are rounder, and, for the most part, contain but one kidney-shaped seed.

This sort agrees with the second in its general characters, but not in the virtues, for it hath none of the aromatic flavour, with which that abounds; but as it retains its leaves through the year, may merit a place in the stove, better than many other plants which are preserved by the curious. This is propagated by seeds, in the same way as the second sort and the plants must be treated in the same manner as those.

The fifth sort was sent me from the island of Barbuda, where it rises to the height of twenty feet; the trunk and branches are covered with a smooth brown bark. The branches come out by pairs; they grow erect, and are garnished with very stiff, smooth, lucid leaves, which are placed opposite, and have very short foot-stalks. The leaves vary much in their form; some of them are oval, others oblong, and some are indented so deeply at their ends, as to

be almost heart-shaped. Their confidence is much thicker than thofe of the common Laurel, and their colour is a fplendent green, with one deep midrib running through their middle, and many fmall veins going from thence tranfverfly to their border. The flowers are produced in fmall loofe bunches at the extremity of the branches, which have feveral narrow leaves intermixed with the bunches. Thefe are fucceeded by berries of the fame fhape with thofe of the fecondfort, but larger.

This tree is propagated by feeds as the other fpecies, and deferves a place in the ftove, for the beauty of its evergreen leaves, which being of a thick confidence, and of a fliining green colour, make a fine appearance in the ftove at all feafons of the year; but this hath no aromatic flavour to recommend it, as hath the fecond fort, for which reafon it is feldom noticed. I take this to be the Bay-tree, mentioned by Hughes, in the Hiftory of Barbadoes, which he defcribes to have no flavour * for I have feen plants of this fort which were brought from Barbadoes, fo that I fuppofe it grows naturally there.

As the plants of thefe forts do not rife fo readily from feeds in England, the beft way to obtain them, is to get fome perfi of (kill in America, to take up a number of young plants, and plant them clofe in boxes of earth, letting them in the fhade till they have taken new root *, then remove them into an open fituation, where they may have time to eftablifh their roots before they are fhipped for England *, and in their paffage they muft be guarded from the fpray of the fea, and fait water, and fhould have very little water given them *, for moft of the plants which are fent to England, are killed in their paffage by having too much wet. If thefe direftions are obferved, the plants may be brought in good health to England, provided they come over any time in the fummer, that they may have time to get freffh root before the cold feafon begins and when once they are well eftablifhed in their roots here, they may be preferred many years in vigour *, but I have not feen many of the plants in flower here as yet.

CASSIA. See OsvRis.

CASSIA. Lin. Gen. Plant. 461. Caffia, or Wild Senna.

The CHARACTERS are,

The empdement is compofed of five concave coloured leaves, the flower hath five roundifh concave petals, which fpread open; it hath ten declining ftamina, three of the lower are long, the three upper are fhorter; the fummits of the three lower are large, arched, beaked, and feperated at their points \ the three upper ftamina have very fmall fummits; the four fide ftamina have no beaks, but fpread from the other. In the center is fituated a long taper germen, having a fhort ftyle, terminated by an obtufe Jigma. The germen afterward becomes a long pod, divided by tranfverfe partitions, each containing one or two roundifh feeds, faftend to the margin of the upper valve.

This genus of plants is ranged in die firft fe&ion of Linnaais's tenth clafs, intituled Decandria Monogynia, the flowers having ten ftamina and one ftyle.

The SPECIES are,

1. CASSIA (*Occidentalis*) foliis quinquejugis, ovato-lanceolatis, margine fcabris, exterioribus majoribus, glandulâ bafeos petiolorum. Lin. Sp. Plant. 337. Caffia with leaves compofed of five pair of oval fpear-fhaped lobes with rough borders, the upper lobes being the largeft and a fmall gland at the bafe of the foot ftalk. Senna occidentalis, odore opii virofo, orobi Fanjionici foliis mucronatis glabris. Hort. Amft. 1. p. 51. tab. 26.
2. CASSIA (*Frutefcens*) foliolis quinquejugatis ovatis glabris, exterioribus longioribus, caule fruticofa. Caffia with leaves compofed of free pair of fmooth oval lobes, the tipper being the longeft, and a fhubby ftalk. Senna fpuria Americana frutefcens, foliis mucronatis minoribus, filiquis teretibus, duplici feminum ordine foetus. Houft. MSS.
3. CASSIA (*Alata*) foliolis o&ojugatis, ovali-oblongis, interioribus minoribus, petiolis eglandulofis ftipulis

patulis. Hort. Cliff. 158. Caffia with eight pair of oblong oval lobes, the inner being the leaf, foot-ftalks without glands, and a fpreading ftipula. Caffia fylveftris fetida, filiquis alatis. Plum. Cat. 18. Wilifmking Caffia with winged pods.

4. CASSIA (*Villofa*) foliolis trijugatis, oblongo-ovatis fequalibus villofis, filiquis articulatis, caule ere&o arboreo. Caffia with three pair of oblong, oval, hairy leaves, which are equal, jointed pods, and an upright woody ftem. Senna fpuria arborea, villofa, foliis latis mucronatis, filiquis articulatis. Houft. MSS.
5. CASSIA (*Uniflora*) foftolis trijugatis, ovato-acuminatis, villofis, floribus folitariis axillaribus, filiquis erectis. Caffia with three pair of lobes in each leaf, which are oval, pointed, hairy, and fingle flowers proceeding from the fides of the ftalks, with upright pods. Senna fpuria herbacea orobi Pannonici foliis rotundioribus, flore parvo, filiquis ere&is. Houft. MSS.
6. CASSIA (*Marylandica*) foliis odtojugis ovato-oblongis, fequalibus, glandula bafeos petiolorum. Lin. Sp. 541. Caffia with fmall leaves compofed of eight pair of oblong, oval, equal lobes, having a gland at the bafe of the foot-ftalk. Caffia Marylandica pinnis foliorum ohlongis, calyce floris reflexo. Mart. Cent. 1. 21.
7. CASSIA (*Bicapfulari*) foliolis trijugatis obovatis glabris, interioribus rotundioribus minoribus, glandulâ interjeftâ glpbofâ. Hort. Cliff. 159. Caffia with three pair of oval fmooth leaves, the inner ones being rounder*, fmaller, and a globular gland placed between the leaves. Caffia hexaphylla* iilliquâ bicapfulari. Plum. Cat. 18.
8. CASSIA (*Fiftula*) foliis quinquejuga^s ovatis acuminatis, petiolis eglandulofis. Fior. Zè./l 149. Caffia with five pair of oval, pointed, fmooth lobes, and foot-ftalks having no glands. Caffia fiftula Alexandria. C. B. P. 405. The purging Caffia of Alexandria, or Pudding Pipe-tree.
9. CASSIA (*Bahamensis*) foliolis fejugatis, lanceolatis, glabris, interioribus minoribus, floribus terminatricibus. Caffia with fix pair of fmooth fpear-fhaped lobes, the inner ones being fmaller, and flowers terminating the ftalk. Caffia Bahamensis, pinnis foliorum mucronatis a^tis, calyce floris non reflexo. Martyn. Cent. 1. A
10. CASSIA (*Fruticofa*) foliolis bijugatis, ovato-lan-tis, glabris, floribus terminalibus, filiquis lo% retihus, caule fruticofa Caffia with two pair of fpear-fhaped, fmooth lobes, flowers terminating the long taper pods, and a fhubby ftalk. Caffia fr tetraphylla, filiquis eredtis. Houft. MSS.
11. CASSIA (*Javanica*) foliolis duodecemjugatis, oblongis, obtufis, glabris, glandula nulla. Lin. Sp. Plant. 379. Caffia with twelve pair of fmooth lobes, winch have no glands. Caffia fiftula Brafiliana. C. B. P. 403. Purging Caffia of Brafil, commonly called Horfe Caffia in America.
12. CASSIA (*Ligu/hina*) foliolis feptemjiugatis, oblongo-ovatis, floribus fpicatis axillaribus, filiquis recurvis. Caffia with feven pair of oblong oval lobes, and ftwifpikes of flowers proceeding from the fides of the ftalks, and recurved pods. Senna folio liguftri. Plum. Cat. 18? Senna with a Privet leaf.
13. CASSIA (*Emarginata*) foliolis trijugatis, obtufis, emarginatis, caulibus pilofis, floribus folitariis axillaribus petiolis longioribus. Caffia with three pair of obtufe leaves, indented at the top, hairy ftalks, flowers growing fingly from the fides of the ftalks upon a long foot-ftalk. Senna fpuria frutefcens, foliorum pinnis latioribus, caulibus pilofis, filiquis longiflimis pediculis infidentibus. Houft. MSS.
14. CASSIA (*Biflora*) foliolis quadrijugatis oblongo-ovatis, caulibus procumbentibus, floribus axillaribus pedunculis bifloris. Caffia with four pair of oval oblong leaves, trailing ftalks, and flowers proceeding from the fides of the ftalks, two growing upon each foot-ftalk* Senna fpuria minima, procumbens, foliorum pinnis fubrotundis, caule pubefcente. Houft. MSS.
15. CASSIA (*Arborefcens*) foliolis bijugatis oblongo-ovatis, fubtus villofis, floribus corymbofis, caule erecto arboreo. Caffia with two pair of oblong oval leaves, hairy, on their under fide, fowers growing in ruund bunche^ and an ere ft treelike ftèm. Senna fpuria

- tetraphylla arborea, filiquis compreffis, anguftis, longiffimis, pendulis. Houft. MSS.
26. CASSIA (*Flexuofa*) foliolis multijugatis linearibus, floribus folitariis axillaribus, pedunculis longiffimis. *Caffia with many pair of narrow leaves, Jingle flowers proceeding from the fides of the ftalks* and very long foot-ftalks.* Senna occidentalis, foliis herbae mimofae, filiqua fingulari, floribus pediculis longioribus infiftentibus. Sloan/Hift. Jam. 2. 51.
17. CASSIA (*Chamacrifia*) foliolis multijugatis linearibus, caulibus procumbentibus, frutescentibus, floribus maximis folitariis axillaribus, filiquis glabris. *Caffia with many fair of fmall leaves\ which are narrow\ Jhrubby trailing ftalks* large flowers growing Jingly from the fides of the ftalks* and fmooth pods.* Senna fpuria mimofae foliis, frutescens & procumbens, flore maximo, filiquis glabris. Houft. MSS.
18. CASSIA (*Pentagonia*) foliolis trijugatis ovatis, exterioribus majoribus glandula fubulata inter inferiora. Prod. Leyd. 46. *Caffia with three pair of fmall oval leaves* the upper being the largeft* and an awl-Jbaped glandule between the lower pair.* Senna fpuria pierumque hexaphylla filiqua pentagona alata. Houft. MSS.
19. CASSIA (*Racemofa*) foliolis quinquejugatis, lanceolatis rigidis floribus racemosis axillaribus, filiquis planis, caule fruticofo. *Caffia with five pair of fpear-shapedftiff leaves* flowers growing in bunches from the fides of theftalks flat pods, and a Jhrubby ftalk.*
20. CASSIA (*Procumbens*) foliolis bijugatis ovatis, caulibus procumbentibus, floribus folitariis axillaribus, filiquis hirtutisi *Caffia with two pair of fmall oval leaves* trailing ftalks* jingle flowers proceeding from the fides of the ftalk* and hairy pods.* Senna fpuria tetraphylla herbacea procumbens, filiquis hirtutis. Houft. MSS.
21. CASSIA (*Glandulofa*) foliolis multijugatis, glandula petioli pedicellata, ftipulis enfiformibus. Hort. Upfal. 101. *Caffia with many pair of leaves* and the gland on the foot-ftalk refembling an infeSt* and fword-jhaped ftipule.* Chamae chritta pavonis Americana, filiqua multiplici. Breyn. Cent. 64.

The firft fort grows naturally in moft of the iflands in the Weft Indies, where it is called Stinking Weed, from its unfavoury odour. This rifes with a channelled folk three or four^tet high, dividing into feveral brandies, garnifhed with winged leaves placed alternately *, each of thefe is compofed of five pair of lobes which are oval, fpear-shaped, fitting clofe to the midrib, having rough edges, the lower pair of lobes being the fmalleft, the others enlarge to the top, which are the biggeft; at the bafe of the foot-ftalk is produced a fmall protuberance, which is called a gland; this is differently fituated in the feveral fpecies of this genus. The flowers come out from the fides of the ftalks> two growing upon each foot-ftalk *, but the branches are terminated by loofe fpikes of flowers, which are compofed of five concave yellow petals, with ten declining ftamina* fituated round the germen and ftyle, which becomes a fword-lhaped flat pod, having a border on each fide, and is indented between each feed.

This is a biennial plant, which is propagated by feed in plenty, in the countries where it grows naturally *, but in England, the feeds muft be fown on a hot-bed in the fpring, and when the plants are fit to remove, they fhould be each planted in a feparate pot, filled with light earth, and plunged into a moderate hot-bed, where they fhould be fhaded till they have taken frelh root; after which they fhould have frelh air admitted to them every day, in proportion to the warmth of the feafon, and fhould be frequently watered. When the plants have fiffle&c P^ol^s with their roots, they fhould be fhifted iⁿ M^og^er; and if they are too tall to remain in the hot-bed, they muft be placed either in the ftove, or a glafs-cafe, where they may be defended from cold, but in warm weather have plenty of air. With this management the plants will flower in Auguft, and perfect their feeds in O&ober, but may be preferred through the winter in a ftove, where they will continue flowering a long time. In

warm fummrs the plants may be placed in the open air toward the latter end of June, where they will flower very well* but thefe will not perfect their feeds, unlefs they are removed into the ftove in autumn.

The fecond fort was fent me from Jamaica by the late Dr. Houftoun, who found it growing there naturally. This rifes with a fhrubby ftalk five or fix feet high, fending out many branches toward the top, garnifhed with winged leaves, compofed of five pair of fmall oval leaves, the upper ones being longeff. The flowers come out from the fide of the ftalks, and alfo terminate the branches in loofe fpikes, thefe are yellow, and fhaped like thofe of the former, but are fmaller; the pods are long, taper, and contain two rows of feeds.

This plant may be preferred three or four years in the ftove, and will annually flower and perfect the feeds. It is propagated by feeds, which fhould be fown on a hot-bed in the fpring *, and the plants muft be treated in the fame manner as the former fort, with only this difference, that thefe, when they are too tall to remain longer under the frames on the hot-bed, muft be removed into the ftove, where they will ofttn flower in autumn or winter, but they feldom perfect their feeds till the fecond year.

The third fort hath an herbaceous ftalk, which rifes five or fix feet high, garnifhed with long winged leaves, compofed of eight or ten pair of large oval lobes, each being more than three inches long, and one broad, rounded at the end, where they are lightly indented. The flowers are produced in loofe fpikes at the top of the ftalk, which are large, yellow, and of the fame fhape with thofe of the other fpecies; the pods are long, taper, and have four borders or wings running longitudinally 5 thefe contain a double row of angular feeds. The whole plant hath a ftrong foetid odour.

This fort feldom continues more than two years; it muft be raifed from feeds as the former forts, and placed in the tan-bed in the ftove, being very tender, and fhould have but little water in winter. The fecond year the plants will flower, but they very rarely produce feeds in England.

The-fourth fort was fent me from Campeachy by the late Dr. Houftoun, who found it growing there in great plenty. This rifes with a woody ftem to the height of fourteen or fifteen feet, fending out many lateral branches, garnifhed with winged leaves, compofed of three pair of oblong, oval, hairy lobes, of equal fize, the flowers come out in loofe bunches at the end of the branches, which are of a pale ftraw colour, and fmall, but fhaped like the others, the pods are long, narrow, and jointed, each feed being lodged in a fort of ifthmus * the feeds are oval and brown.

This may be propagated by feeds, which muft be fown upon a hot-bed, and the plants afterward treated as the former forts, placing them in a warm ftove, where they will continue feveral years producing their flowers in fummer, and in warm feafons the feeds will ripen.

The fifth fort is a low herbaceous plant, feldom rifing a foot high* the ftalk is fingle, and garnifhed with winged leaves, compofed of three pair of oval pointed lobes, which are hairy; the flowers come out fingle from the fide of the ftalks; they are of a pale yellow, and fmall; thefe are fucceeded by narrow taper pods two inches long, which grow upright. This plant is annual -, the feeds muft be fown on a hot-bed, and the plants treated as the fifth fort: they will flower in July, and ripen their feeds in autumn. This was fent me from Campeachy by the late Dr. Houftoun.

The fixth fort grows naturally in Maryland, from whence I received the feeds. It hath a perennial root* compofed of a great number of black fibres; this fends out feveral upright ftalks in the fpring, which rife four or five feet high, garnifhed with winged leaves, compofed of nine pair of oblong fmooth lobes, which are equal * toward the upper part of the ftalks

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the flowws come out from the wings of the kaves, or three together i but the (talks are ttmnfcaud by lo^fc fpikj of pale yrllnw flowers, which are rarely fucced... : by pods inEngland. TheMks de-eav in autumn, and rile again in [lie lpnng. The roots of this fte continue many years, and will live abroai in a WBTIII border anil a dry foil. Tin feeds will COOK up in the full ground, if fown in April, end in auirfln djey may be planted into the borders where they are defigned tu remain.

The feventh fort is an annual pLmt, which rife a foot and a half high, with an erect herbactmu Italk, pttmiffitil with winged leivet, compofed of diree pair of oval lobes; the lowers come out Gn^ly from the wimp (if the Waves; tiete are final), yellow, u of tlic tune fhapt with thofe of the other fpeciu, and aKfucccednibytiiprrpoti?, having cell* containing two rows of feeds. It gro- naturally in J-imaica, and che other fugar iEireS-

l his it propagated by feeds* which mud be fown on * hot-bed in the fpring, ami thr planes afterWATA : c J in the tame r'l Ebd for the he lcedjnpetitn October, and then-the plants'.

The eighth fort ii the tree which produces the purg- ing Caffia which is ufed in medicine. It grows naturally in Alexandria, h liitlr;, where it rife* to the height of forty •• fifty feet, ith'a large trunk, dividing ii winged ivcs, compel v trnnlvrlc the midrib ii

iirominent on the until nlongfpikes at the end of the brs: tach Itandup upon a pretty long fctm-ftalk; thele jrc compofed of five LLITC concave petals, of r deep yellow colour, and •&<• fuctert«J by cylindrical pods, whidi are from one wtwo feet long, with a dark brown woody lhell, having a longitudinal ftam on »nr; Cile, divided into manj' crilUbv n-inlVetle partitiniw, ung omortwjoV»(. (mooih, compreffJ feeds, lodged in a fWicilli til^ck pulp, which u rim part ufed in medicine.

This tree is propagated by feeds, which may be eafily procured from the druggifts who import ilie jTOcitor ftr; thele mud be i... en a, huL-bc.i in the Tjiring, and when the pifnB come up, they mud be treated ncrasthe firft fort, during the rirlr fummer; and in autumn they tmft be removed into a flower, and planged into thr tan-bed : Juri; the *iiu they fhould have very little water -, fw us chde trees grow naturally in dry sandy land, molt tute is a great enemy to them, but efpccially during thn fea- jan. In the fummer they fhould have /ood (Ijarcof aim, limited to turn iiiv.ami wt.ithj;r, but dwy will not n.rive in the open air in thii county, at the warmft time of the year, fo fhould continually f*main In [In flow. With picipercart diet |>tims will grow (o the height of eight or ten feet, and produce Uicir flowers, when they i i;ike i fin i appearance.

The nitiUi iart grows naturally in theBahaniil. l'inds from whence i received the feeds. This is an annual plant, which rife with an upright ftalk two feet and a half high, garnifhed with winged lezevs, ctHnpofed of fix pair of lobes, which are smooth, narrow •, and featr fhaped, ftanding at wide dift inCL*5i the floweri are i lacted into loofe bunches; it the top of the ftalk, which are of a pale yellow, and are fucceeded by large compofited pods. It flowers in July, and the feeds much in autumn. This nm(t beamtedas tlic (irft t

The vnth iurt was fent tne fIOM Ija Vera Cruz, in New Spain, by the late Dr. Houftoon. Thisgruwj upward of twenty feet high, with feveral trun s covered with brown bark; thele divide into m any bran- ches upward, garnifhed with wined leaves, com- pofit' of two pair of lobes, which in the lower leaves are oval, but thofe of the upper are five nches long, and two and a half broad in the middle, fnowh, and of a light green. The flowers are produced in

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ioofe fpikd at the extremity of the branches, «... n are l... rge, of ft gold colour, and fuccctdtti b: taper brown JXis about nine inches long, having many tmufverle paniouns, in which the feed* are iodg-d 'ui a thin pulp.

Tim fire ii propagated by feeds, which mult be fown in a hot-bed, and tlic plants afterward trea[r]d in the lame manner is the eighth Curt, fur the plants will not live abroad in this Country in die warmft fea- lbn of the year; but if properly managed in the fovt*. will produce their beaulLtul flowers in three or four yeys from the ited.

The feventh fort grows in great plenty in mofl of the illard! ofil.tr West Indies. This rifa to a great mag- nitude, with a large trunk, dividing into many brandies, garnifhed wiili very long wined leaves, compofed i •, twelve or r fbonecn pair of oblong bluni lobes, which arefmooth, of aligtitgTern, and"; and near together. The flowers come out in looic fpikea at the end of the branches, which are of • pah niiiion coliv, thaped : ke thofe of the oil species, and «tfuccceded by large cylindric.il pods, divided by tranfverle partiridhs into many eel... in which the lteJi ire lodged, furruntided with a black pur... pulp. This is called Florc Caffia, becaufe it : Cg nerally given to horfes, and fed... taken by citu

Ions on account i I... It 15 i propagated by feeds, which f... ud be fown, and the plants afterward treated i i the fame iraiuir: as the eighth fort, with ivhchli niLiniiginent ihry will thrive and produce flowers in Eng... rid.

The tenth fort was fent me from the i-lav an nail by the late Dr.Houftoon: rhkliathanheAic •... ftalk, which lividei into many brancafo, riling about ilf... feet high, r... roitbed ithb winged leavt:, compted of feven poor of oblong oval lob. ... roinud at the enil The flowers come OUT from the li... of the branches, upon very king ftot-ftulk, difpofed in looic fpikesj thefe are of a pale yellow, and are fucc... ededby recutvtd pods, torwining one row of compreHed li'eis.

This is a bienniil planr. which, if brought forw.inl early in the... will: lomaimes perfect feeilj the lame year, but if they fhould fail, die pbtrms may be kept through the wiliter in a Rave, as the fir] I... and good feedi ir.ay be ubtiined the following fenfon.

The thirteenth fort riles with feveral weak (Viruliby tblks abut two... high, -lali-ly gami ilivd with winged kavet, tompfiffd of three pair of lubes, which are Very narrow at their bafe, enlargint; to the top, where they art blunt, and rounded wnh i tin... denture at die point; thefe contract eldly every tnciing, aftrr the fun has left thm. The flowers come out [ingle from the Ekt of the bnn... ftand- ing upon very long foot-flalks, they are of a bright yeFlow, and (hap^d like thofr of the other fpecies, itni are fucoxdo l by narrow the pods, an inch and a liilt long. Thh grown; plenifuUy in Jiffiaia^ . It is propa^>ic<l by It-edfl, which null be finvn on a hen-bed, and manogvd as the other tender forts -, it •ill ainiinue two ur dttec years, if placed in a warm Rave.

The fourteenth brt fcnds out from the root two or three Bender It.dks, which trail on the ground, gar- ni (hod with wined k-nvei, luvtnq four piiir of fmall main... lli lobes, of a pale grctn; at the infertion of the foot: Lka arife thnie of the flower, whi... is jointed\ divitiitii, into two the rtrcr at the lop, ful&iu- ing two fmall yellow flowers. ... grows naturally tnjwniica, fromwhemx th. feeds were fent me. It is an annual plant, v | H B ^ s m11 n De < < < n early In the iplrln; on a... and treated like the other kind-:, but a; the bfiSttifi of this grow tm the ground, to the Janes may remain under a frame all tlic (umini, and will flower in July; when, if ilie feafon is warm, they muA hive have a lai... flare of air, otherwife the flowers will: fill off, without bcin; fucccedJed by pots-, but if richly n... the feeds will rpen... ^jlvlinn.

The fifteenth fort was fence me from La Vera Cruz, in New Spain, by the late Dr. Houftoun. This ritej with a strong upright trunk, to the height of twenty-five, or thirty feet, dividing into many branches, it is at 11 ura covered with an A (h-coloured bark, garnished with long foot-talks; each being composed of two pair of oblong oval lobes, four inches long, and near two broad, which are smooth, of a dark green on their upper side, but paler under! The Bowers are produced from the side of the ftjki, where they are few and featury, but the ends of the brandies have large round bunches of fkwors, which branch out from one center; they are deep yellow, inclining to an Orange colour. These are succeeded by compressed pods, near nine inches long, having a border on each side, and contain one row of oval, (mouth, complicated feeds.

This fort may be propagated by feeds, which should be sown on a hot-bed in the spring, and when the plants come up, they will require the same treatment as the (even in ibrt; with which maaagei the plants will thrive, and produce their flowers in a few-year!

The fix Kent h fort hath very flenkr miiing flails s, about two feet long, garnished with winged leaves, fitting close to the branches, composed of many narrow like tirole of the Sen Drive Plant* the flowers come out single from the side of the stalk, in a long lotie ilcndr foot-lh lks, which are small, of a bright yellow colour, shaped like those of the other species; they are succeeded by short Hat pods, containing two or three feeds. This grows naturally in Jamaica. It is a biennial plant, and requires the Unit (rc:itii) itai the fin

The seventeenth fort was lent me by the law Dr. Houiloun from La Vera Ctm, where he found it growing naturally. This ritej with several flirubby trailing Italics, which are two feet long, sending out many fine branches, clothed with winged leaves, com- posed of several pair of very narrow pinnae, (smaller than those of the fenitive Plant. The flowers are produced single from the side of the brandies, on very Hyl .oot-(talks -, they are Urge, of a deep Orange colour, and are succeeded by short, narrow, smooth pods. This plant differs much from the Chama x crifta pavonii major, of Breynius, in having a flirubby trailing IU!k; the leaves are much shorter, having but half the number of pinnae, which are also narrower and (shorter, the lower ones are larger.

This plant will continue two or three years, and produce flowers annually, but it must be treated in the same manner as the other ritej forts \ for it will not thrive unless it is 15 preferred in a warm stove, where it will flourish the second year. It flowers in July and August, and the feeds ripen in autumn.

The eighteenth fort ma (cut me) from Campechy, by the late Dr. Houiloun. This ritej with a flirubby flitidr (talk about two feet high, consisting of several bran- ches, which are finely garnished with winged leaves, composed of three pair of oval lobes, the upper being the largest; these stand upon long foot-stalks, from the side of which comes out the flowers, standing single on a short foot-stalk, of a pale yellow colour, and is succeeded by a bearing pod, near four inches long, having five longitudinal wings, ending in a point.

It is a biennial plant, which if hit in the spring, will flower the first summer, and sometimes the second year, but if the plants are placed in a warm stove, they will live through the winter, and the following summer will flower earlier, and good feeds may then be obtained. The nineteenth fort ritej with a flirubby stalk to the height of ten or twelve feet, dividing upward into many branches, garnished with winged leaves, composed of five pair of flat leaf-shaped lobes; the flowers come out from the side of the branches, on long branching foot-stalks, collected into large loose

clusters; these are of adccpOrarsgecoL. large, and flattened like those of the other species, and are succeeded by flat brown pods, about four inches long, containing one row of oval feeds. This fort was fence me from CirtJugenjt, by the late Mr. Robert Millm.

This fort is propagated by feeds in the same manner as the other species, and KCjuina n »»»rm (to preferve it, where it will thrive and produce flowers annually.

The twentieth fort was lent me from La Vera Cnre, by the late Dr. Hounoun. This has several trailing herbaceous (bilks, about two feet long, garnished with winged leaves, having long foot-stalks, which are placed at a considerable distance from each other; they have two pair of oval imtioil lubes. The flowers come out single from the side of the branches, which are large; How cakmr, and are succeeded by iliort, flit, hiir'pods, each containing one row of flat feeds.

This is an annual plant, which must be raised on a hot-bed early in the spring, and treated in the same manner as the other annual forts before-mentioned. It flowers in July, and the feeds ripen in autumn.

The twenty-first fort grows common in all the islands of the West-India. This ritej with a stout stalk about two feet high, sending out several branched upright stalks, garnished with winged leaves, composed of several pairs of narrow pinnae, like those of the fenitive /,UK. The flowers come out upon short foot-stalks from the side of the branches, each foot-stalk sustaining two or three yellow flowers, of the same form with the other species of this genus; these are succeeded by short flat pods, containing three or four flat feeds in each.

This is an annual plant, and requires the same treatment as the other forts of this grow- right, they will be too tall to stand in the summer; therefore when the plants are advanced to the height of two or three feet, they must be removed into the stove, or a phs cajir, where they may have room to grow, and be preserved from the cold, but in warm weather (without lube a good flux of air admitted to them; v-tili this managerif they will (lower in July, and perfect their feeds in autumn.

These plants are frequently preferred in the garden* of the natural curiosities, therefore I have enumerated them here, though several of them have not been recommended to me, but are chiefly kept for the sake of variety. The most beautiful are the fourth, die eighth, tenth, eleventh, fifteenth, and nineteenth forts; these will make a good appearance in the stove, especially when they are in flower; and as they retain their leaves all the year, they make an agreeable variety in the winter season, when intermixed with other plants from the same countries. All the species of this genus contract their leaves every evening as the sun declines, and open them again with the rising sun in the morning; which is also common to many other plants, some of which turn their upper surface outward, but all those of this genus turn their under surface outward, the upper being very closely folded together. These are what Linnæus calls sleeping plants. It must also be observed that most of these plants, whose under surface is turned outward, as they grow upon dry sandy land, where their roots do not find a supply of moisture, so that the lower surface of their leaves being generally covered with a short soft down, or hairs, obtain the property of being highly dried by the heat of the sun, and the lower part of their surface is cured outward, do not stand in need of the supply of Uting smooth, the moist Uirei* cast into, and not injured by them.

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CASSID [i. t an lielm: j Scufi-cap. See Scufi- HJ*. CASSI • E. Lin. Gen. Plant. 333. The Ciffiobeny Bush, and South Sea Trees.

The CHAR^c-r.ii i

h ba.'b a f n m l l p m i t . i u t i i . ' e i > t ? ; ! < r ; : w j f , a ' i f r i s
into jfs. / . . . i j ; t b * j b f c t r b o t h b u t t m p e t a l , V b k b i s
m : i a c f i n e f i l u / f f g s f i t f , w b i t b j p r t a J O p e n \ i i h a t h
f i v e j t d w i r u , i o t i t b j p i . . . : * t i / h r , a i a r t S t r -
n . i - i u l d b y f i n t U j m m i i l i ; i f b a i l / o (c a n a l g e r n u n , v A t b -
e u t a f y i t , j i i p p s r S s T i g t h r e e r e f e x e d f i g m a , T b i g t r m t H
n f t r w a r A b i m n n » u m b i l i t a u d b e r r y - w i t h t b r t (t U i ,
e t t b a a t a i m n g * f u * ! t f t J .

'liii? genui ol' plants is ranged in ihc thin) fiftion
of Linnieuii's fifth c . . . I, Pennndria Tri-
rjynia, the flower hiving live itamina, and three
mm.

The SpiciKiare,

i. C**siKa (Csr/mlifa) foliit ovato-huiccolatis, ferraiis,
oppofitij, toribu-i cjrjmbofii axillaribus. Fig. PL
plat. Sj. f. i. Cj^trr Wffir «W fpear-flaipi bava
piettitppe/iu, nuJ faierigr-momg wrtxsrf bimcbes frm
tkr fidts of the bravcln. Callint: vera peitjuam funi-
lis, arbirfcitla, P . . . aUk antagonists, ex Pro-
vincia Carolinkli. Pluk. Mant. 40. Tit Cofiskny
D.A

Case-j:r "Paragon" (<Avi lanreolaris alternis fcmper-
virentilnis, llonhu* airilaribus. I-ig. pi. Plat 83. f. t.
CiJ]htr tairt evtrgrfiit ffrurjZ/nped tatvii pUld alter-
tititify, •end Jetereri praidinx frm lie fides tf rfe
iraabtt. CalBne vera FJoriJanoruin, arbufcula bac-
cicftii, Alaterrij i'crmt ficie, tbiils alternatim fitb
tetraprcnj-. Piuk. Mant. 40. Ewgrtw Cejimm, j'&•
pm, er S4ub~Sei) Tbtj.

j, t . . . acutis glabris,
foliis axillaribus parvis. Caeffe with small round leaves
stem lie WJ&EJ of the
folks, tammmfy

The linl . . . with two or 'lirce (remi, which
fend out many fide branches their whole length, and
becomu buflly -, thrfe feklom rife more than eiglit or
nine feet high. The branditt are gumilhed with oval
FjM'ar-lhaped leaves, Jawed on their edges, which
grow oppofite. TowaiH the upper j]r of the
bnuchel the flowers come oui fit)tn the fides, grow-
ing in roundifh I . . . a- white, and arc
divided into five parts along . . . the bottomi in theii
center it placed the germen, attended by five flaixiina,

which'rpr<d optn, ne; . . . as much as the firmness of
the pcidl. After the fl . . . the gerxnen lwells
to a round berry, having three cdl, each containing
a (ngle feed. This . . . Dft Linr.»ifi Gapp . . .
he die liime jslant as the PhiUyrea Capeniis folio ce-
laftri. Hon . . . But theie . . . to know both the
plants, can have . . . no doubt of their being diliercm.
The Calfiri: . . . here mentioned draps in leaves in au-
tum; . . . i die former
lives abroad in the open air, but the lat T can Itarce
be kept through the winter in a gre . . . n-doulc, without
artificial heat; . . . ne leave the plants the . . . une appjear-
ance, and whial differ eflentially, according to his
own fystem, in the number of fl . . . ira, which nji
moves them to different clafles.

The flr has been i prrty common in the nur-
series near London fome years, where it is pr . . . ^ated
by laying down the branches, which ajbrti ihi . . .
of the firm, fo . . . (he roor, and lower prir
«s 10 become very bulhy and thick,
numbers of thrii: . . .
flrubs which produce flowers in E . . . tand ever) year,
but none of them ripen their feeds.
The leaves of this plant are ext . . . mcty bitter, k that
if a fingle tree is choiced, the lizernais cannot be
gotten rid of in a long time. Thele leaves will con-
tinue green very late in autumn, if the feales proves
milu, . . . they come out early in the fjinn;?, but
art freijt-k-i . . . irail in . . .
when they appear fo foon. The flirub flowers in
&M n.itundly in Virginia and
Car . . . in*.

It loves a . . . >hc fcil, not too dry, uid Jhoull hti'e a
warm fituation; for, in exapled places, the young
flroos are frequently killed in the winter, whereby
the flrubs are rendered unfruitful. Jy; bu; where llicy ire I

near the fln) terof trees, or walls, they are very rarely

hurr. -
I he (eond fort grows DMunOly in Carolina, and a!li,
iniome warm para; of Virgin^ but chieily t.«r t =
h) K "V^ ^ " ^ ^ P ^ ^ ^ its growth, rilMio
^>e height of ttnor t.,lvc feet. Ending out branch^
from & pound upward, which fortn *£5Z
nto a ion of pyramit!, gamiOicd with rptyr-fnatw.!
leaves, paced alternate!; th.fc arc in Stvrea^d
colour hk_e thofe of Alaternus, and con. "tree n
through the year. The flower, arc produced in <
whorls round the branches, at the foot-ftalks of the
leaves; they are white, and of the lame Dupe_w the
ofZv^:ri: ^dtb y * ^ ^^

the Dahoon |,J y, fitppofing ^tn, to bf the fame
plant; in «hkh be: n equally mifhAtt, for thrv nnt
only diffir m the (h.pe of their Ita^, but K
their eflential cWbffii -, for Uic Da)on Holly_mu/t

Sr a Qre mī •* ^ S ^ i n h «
This plant was m<ny years preferveti in feveral cu-
nougard™, i u , London, till .he lvere winter "n
1/30, when thoft of them were dellroyed; . . . W
there was Iwrc •oy left; bu . . . fkd . y r a ; ^ ^
been many ot the young plants railed from fe«k.
cmne from CaiJina, ibinc of which luve bcea
rdilW^ h, !!!L H^ll, S?)Unt_?_rtVCral ^ and h ^
rough they ortrn JuSir in very cold (eafenj, wlj
rhev are not v,r,y v,dl <&*& If U,i, p_3nt e

the firft, cipecia ly when green, therefore aa-preferred
to them tor making the Thea , U,t an infusion of the
W o r d * firit, ha, b<n taken fi ./,ppX

wYapon. which ffuppcf Q be dieKrfin r,^"?
med by the Indians for
tainly have a name for

thefmall leaved Alaten,US. bUtarcl^o^rw1n. (S.or.er
and a hrtle broader « their.hafej they are a fefe
l about their edges, and are O/ a thick fub-
«ance, and tJctp greet, colour; the Mowers of this
produced at the joints near the foot-lbtk of
the leaves, but the Calfioberry Bulh produces in
Rowers in umbcb M the extremity of" (lio ^KKU .)1(-
TM7^es, of thjs Yapon continue upon the pJam, ^mi>it
part oi . . . and, being of abrightied colour

, at Um. lealon. From thefc berrie, cot
tiaumg to long tmtouched by the bird., we may

qmhry beca.ile few of the frujo, or berries, which
are^dlefome eft . . . in a . . .
wefuch flocks of many i . . .
pn^Mgatal . . .
d from Carolina,
with light ftmdy tarth, i . . .
gentle bit-bed, obferving ton'ater them tn
qua . . .
five ur fa wr<
. . . jrc, if the j !
where they . . .
keep ilirmi •
ben in tiry weather going . . . xra t

C A ;

water; then remove thcir j « into fhelcn during the winter leafon, ami in the March followii put ihcoi upon a furih hot-bcti, bfc h wiil forward th feeds in their vegetation.

When the plants are come up, they fhofSd, by degrees, to be ex poled to the open air, in order to inure ihl-in to our climate; yvt thry Ihould not be expofed to the open fun at iirit, bw rather let them hvce tJir morning fun only, plating them for-fome time where they may be Jhemred fiom cold winds j III—l (houti enjoy a [helter during the two or Hirer hrft winters, aifcr which the Caffiorviry Until may be fent abroad; but the South-Sea Thira ASoud be kept in pots a year or two longer, being flower of gi and will therefore not have ftrcngth enough to reff the cokl when young.

The third fort has been but few years introduced to the Engliih gardens; this riles eight or ten feet hiyh, lending out branches from the root to the top, garntthed iv-itl*(t)val, l'mwth, entire leave* ph'ed oppolite, whole fNYt-ilalks are drawn toward each other, where Wy Hir leaves turn upward j die flowers conn out from die vines of the leaves thinly, they art white . . and of tlic lame fhapc with tholh nf the othr tiiru, bin jre nut fttccceded by berries in England. This h propagated by feeds ii the other faro, or by laying down the branches in the iprin, which if careilly performed will take root in oneycari when they may be cut from the old plant, and ptil into Jni-jll poll, and plated in tin- made till tin, have taken new root-, »fym and they may be expofed in fummer, but in autumn lliey muft be removed into ficher.

The Paraguay, or South-Sea Thea, is accounted by the Indians very wholcfome, and (as I have been informed by frvrul worthy peribw, who refidci for feveral years in Carolina) is the only phy fie the In- iluni; ulr - wd for which, at certain rimes of the year, they raw in drove-, fome hundred miles diftanr, for [jit] l, wvcs of th, oee ;it not being known to crow at airy confidcrable diftnce from the Irs.) where their ufual custom ir, w mate a fire upon the ground, airtl, putting a great ker .icr thereon, they throw into it a ! of thefi 'aves, and immedMDcty fet th .-'^ ** &*> and, with a bowl * 11 holds about a pint, they begin drinking iiraviEhw, which in a very fliont rime vomis them feverily-. thus they continue drinking and vomiting, for the fpace of two or three days, «> they naveuffidimly deanfcl themfcivw, then they , other every one a bum; .;rub to carry away with them. and return " haliitations. But tbrfr Turkmen obfervtd fonlthing vtry exrraprdinary in the operation of tliii P^nt, ^ ^ ^ *«« that in vomiting it gave them no urjeafine&, or pain, but comc *w*y Ui a H>] ftrcain from their mouths, without fo much as declining their heads, or the leaf reaching-

This pkat is pncrailly fupposed to be the fame M that .iich grjws in l^Mguay, where the jeluirs of that count: i-rat revenue of the ttevn, which they export to feveral other couics, where it is infuicd and drunk like tea; indeed, there ore foirjr . fcing the lafnej wliith will be pretty difficult io determine, fince there is fo little com,rtfe between the . . . of Paraguay and ihofe in Europe; and all tliir l. . . which have been brought to Luropc, havi been penenUv fo broken jnd ii-tjce-i, as to nmilr it almost impoffible io know tltdr true fiRurti him fume of tie faircft l«W«, which were pi . . . Paraguay TV* by apeifon of Jkill, who com m wcn ftoioi- of the Yapon, he had gre^e- calion to believe they were the . . . me-, and *s attributed ro the Vaponare nevy, if not abfolutely, the fame w: . . . of their northern parts of America making the fame fci- tif it . . . as the inhabitants of the fouth parts of America do, viz. to reduce hdl expcries, and they fay it gives them couc ^c xmi agility, fol which pugiofcs it has

C A S

been in nfr time out of mind: we may alfo obferve, tha; the [jjace of is growth in the north, is the fame kinside as Paraf . . . ta Jbuth; (b I <bm beglr infer the account given of the Paraf . . . Tea by Monf. Freaief, who mi . . . called through great part of NrwSwniit, . . . order of th(. . . InSouthC.L . . . the plant is called Caffina, or South- fiea 1 . . . the inhabitants of that country do not make (ii or . . . of this Tea, « rhrfe-ol . . . and North Carolina; in the IJH of which, the white people hart it in as pew e&eam as the li . . . and make as conftant oft of it.

Monfieur Frwicr alfo firys, i . . . the Spaniards who live near the gold mines in Peru, arc obliged frequently to drink of the herb Pwamiay or Mate, to EDOfici their breads, without which, they at* liable to a tort of fu(location, from the (1 rong rxiations which arc continually coming from the min«. Ttie feme author alfo adds, that the inhabitants of Lima, during the day-time, make much ufc of the licrb Paraguay, which fome call St. ibriholoniew's Herb. who, they pretend, ctme into thof; provinces, where he made it who! dome . . . and benefits it wherca; before it wa^ venomous j this, he fays, is brought to Lima dry, arid aimed in powder. Infteavl of drinking the tinrwrc or infufinn apart, as we drink rra, they put the hrrb into a cup or bowl made of a c.tnba/h tipped with filver, which they cail mate i AKV add fugar, and pour the hot waier upoo JI, whilthly drink immediately, without giving it time to infufe, bctaulc it nimi black a* ink. To avoid following the herb, which fwims at tli . . . top, they make ufc of a Bhrer ppe, at the end whereof in a bowl full of little holes; fo dial the liquor fucked in ai the other end, is clear from thr herb. They drink round with the fame pipe, pouring hot witcf on the fame herb, at ir is drunk orF. Inftcad of ct pipe, which they call bombilla, fome part the herb with a liltv-r frJantor, called apartador, full of lirtle holes. Thr relufhtncy which . . . the French Live fhcVn m drink after all lbrts of people, in a country where many have the venereal difeafe, has occafioned H . . . inventing the vie of little glass pipes, which they began to ufe at Lima. This liquor, ht tiys, in his opinion, is better thj; tea; it has a flavour of the herb, whid) is agreeable enough: the people of the country are fo flic; to it, that even the ponrell drink it once a day, when they rife in the morning.

The trade for ih« herb, [he ! . . . is carried on at Sanra Fr, "whether it it brought up T . . . of Plate. There are two fora of it, throne called Yerba de J'alos; and the other, which ii finer, and of more virtue, Yerba de Camini; the lart a brought from the lands beSongng to the jrluits. The great confum . . . n of it a between La Paj and Cufco, where it is worth h;l, as much more as the other, which is fas from Pqtoii to La Paz. Trieru come yearly from Paraguay into Peru a! . . . i . . . land arrovas, twelve thoufand hundred weight of both lbrts, where- of at leaft one thini is of the Camini, without reck- oning twenty-live thoufand arrovas of that of Palo* . . . ill The; - rjay tar each parcel, containe foe or fcvm arrovas, (our royak fi . . . the duty called al- cavala r«cing a rate upon all goods fold) which, with the charge of carriage, b . . . ing above fix . . . idml leagues . . . covers the first parcel, which is about two ; . . . of eight i fo th;it ^t l'otoG il . . . comes to about five pieces of eight the arrova. The . . . charge is commonly by carts, which . . . airy an hundred and fifty arrovas Inset Saita . . . Fe to Juiuv, rhc bfr w . . . of the province of Pitcumanj and from tSencr to Pofull, v.hich is an hundred leagues farther . . . it is carried on mules.

What this curious author his obfervrd, on there being two fnm ct thii herb, i . . . very well agree with the two hll fbrs mentioned, fice; both of them are generally fupposed to come in their qualities, though one is much preferable to the c: . . . therefore I imagine the Yrba dc Camir? . . . is what we call Pai- gusy or South-Sea . . .; and Yerba (c P*1«t to be

CA:S

our t'ml for* 'But as o'r author Only Cw the. dried
 no more diffincjuiff their difference,
 than we cad brought man China i I mean,
 as to the particular trtrs u'hkh produce it.
 CASSY TIT A, L.in. Gen. Pbnt. 505.

CHARACTERS ARE,

// both a *fructu* medpermanent empdtmmt; tie
 ffrtaii -stiacb arc eencavt and permaaM,
 and lew tblwy. (Oiwrei, Mlcriati tlandi furreounding
 tfregtrmtn, rts Mmprtjfedlimihit, end sws
 globular gfamts, hulojm^a ta<b efmgljt jLiminj, fitting on
 <mt fide ibt bafi; thejs h.rsi fm/i niti under dx top of the
 ftamiiUi it bus en seal girmen vrithm ibt (okurtdm-
 pitieitit, fKppstrmg a tbiok sij/e tit Ungib tftiitftamim,
 <:/) ctM'fe almufi rrJfJ jligm/t; ibt ntpUtdt
 * pulpy Ifry, glsbuisr hut a fiilti defrtftid, ix-
 tktd in tit tckxrii trmfatemit, having a ferferattd
 xaael ii:r/n/wg xny v;d jetis.

Dili's firft ocfer of his eleventh
 daft of plants, imitled Ennemiilria Monog; »ia, tht
 flower having elr I twt one ftySe.

We have at present but one SpsciEsof thisgenus.
 CASSY TIT A, L.in. 530.SbmdtrCtjyjtba.
 Culcus. l baotti; • Barbadeufiam. P. l. l'hyt. tab.
 372. f. 2.

Tilis plant grows najur.tlly in both Indies. I have
 received it rom Baroadoei, Jamaica, and the 5
 West Intl^a and that I j'rowa ali in tin- East Indies,
 a plant from its figure in the H. •rtus Malafa

It puts with taper succu. l. •• stalks, which dive le into
 many slender beculent branches; these come out (ve-
 jiiifr. lame joint, aft
 come out fide branches singly witliout order, and
 become very bulky; the flowers come one on the

side of the branch x-s fingiy, titling very clo/e tlierwo,
 via no empdment; it; U*c corolla is oval, white,
 ure of red, opening like a navel a;
 top, ii •ncn, lbrtna, Ihlc, anil
 oeftlrtnus glantls (0 ciojrjy, as not to be ti&covered
 *rll the iMrolla is cut 0; the flower is pa ft.
 •i men becomes n • oval, dark icedi,
 nth a ttiui

The plant is eajily pcojgated b' plantinir cuttinc^
 f're during the liunmer monrh; but .l3 tiirii: cuttings
 *" licculent, it will be •oper to •ul them off i
 •• lJrtort they nre pl*W ed, lying ilicm in the
 ftre, that the part cut may have time to he! OFer
 before they are planted. Their cuttings •ild he
 planted in small pots, which must be plunged into ii
 moderate hot bed, where, i : hey an: not over watercil,
 iii week; i then they may be
 feparare final po' filled
 with light sandy earth, and may be plunged again
 into the hotbed to forward their Lakuig new roue;
 after which they should be •moved into a dry ftovt,
 whether • I h oiii J cor. •' it, gi vin g in it ti rlc
 water in v in fummcr admitting » targe
 XT. for thk plant it ino
 tender to thrive in the open air in this climate.

CASSY TIT A. Tournef. 1 H. H. ^ 4, cub, jn^.
 Ficus Lile. Gen. Plant. (151. fit tikti its name ipom
 Canara, a city of Thrasy, •Mwre rhis n
 Chr'nut-tree, in French
 Character, or Mercur.

The **CHARACTERS ARE,**
 It hath milk and fleshy flowers on the stem tree, foun-
 dness at separate places, and at other times near each
 other. The milk flowers are fixed to a long fibre, form-
 ing a sort of whisk; these have not a stalk, but
 are fixed to the side of the stem; they have no petals, but
 include about ten or twelve highly furnished, terminated by
 white filaments. The fleshy flowers have all an empdment
 of one leaf, divided into four parts, being as pe-
 tals, but a green leaf to the empdment, supports three
 fleshy rounded, cylindrical flowers. The green leaf, which
 is found at the base of the empdment, becomes a
 rough fruit about twice the size, including UM cr

CHARACTERS ARE,
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 rough fruit about twice the size, including UM cr

This genus of plants is ranged in the eighth section
 of Li *Methodus botanica*, entitled M i c e a F.

BK7T I

CAS

Cyandra, the plants of this section have male and fe-
 male flowers, and the male flowers have many fla-
 mina; but he has joined this genus to the Fagus,
 making these of one genus, so that he has entirely
 abolished the title. However, as the male flowers
 of the Chestnut are formed into long catkins, and
 those of the Beech are globular, they may with
 propriety be kept separate; and this I chioofe to do,
 that it may be more intelligible to common readers.

The **SPECIES ARE,**
 1. **CASTANEA (Setiva)** foliis lanceolatis acuminato-ser-
 ratis, subtus nudis, Cebant with spear-shaped leaves,
 which are sharply serrated, and naked on their under side.
 Castanea sativa. C. B. P. 418. The nutted Chestnut.
 2. **CASTANEA** foliis lanceolato-ovatis acumi-
 serratis, amictis filiformibus nodosis,
 i. spear-shaped leaves, which are covered with
 their under side, and a slender knotted
 hairs. C. B. P. 418. The hairy Chestnut.
 3. **CASTANEA** foliis oblongo-ovatis, serratis,
 fructu rotundo, so echinato, Chestnut with shining,
 very large, round, prickly fruit.
 amplis Castanea foliis, fructu echinato. Plum.
 en. 49.

The Chestnut is : :rrc wLe* ddtr, ^ ou care, as
 much a. anyot them es which are pu p a
 this country, either fry ubj or beauty, being one of
 the bdt fort <f dnibcr. and affording a goodly shade.
 It Ktu grow to a very or, and spread its
 on every side where it has room.
 T. of a lucid green, and continue
 ; not are they liable to be er-
 are those of the Q- which of late
 > hve fl
 render it fluently l, ap < n, HJ to X
 h i h l W never observed to be the case with the
 Chestnut, which renders them in
 and plantations for ornament; parks
 food for many othe rmmuk, h7n ! e i,
 their -on them pre r to .eorn; ; but v-
 near to
 they
 often very

There are fevers! vtrietics of this im. which have
 accidentally arfcn from feeds; ibmcha
 postU diffint species, but th. differences are only in
 the Ikegf their fuk a-U l, which have be
 altered, and irofromi by ci V!

ftr II^ve fiajoemiy founJi rhM ^ y ^ ^ « ^ .
 the fan tree, and cultivated n thr fa,
 ^Od earc, hive pradaccd trees Hikirn innlVfru :
 and .wong them have been ptUtn, whole fruit ^j
 been u large a> thofe of the parent tree; therefore
 they ran be% n v < located as varieties. But in many
 cases the trees are sup- r : a, ^ . *'??*«
 fruh, the peok
 these ;
 the French t-aeuo .. Fran-
 sier, but they are unfit for timber.
 There is also a h h h : variegated leaves, which
 is propagated n ihc nut trees by way of curiosity;
 this is mainod by bud- ing, and inanking it upon
 eticChcfimt fleet in the same manner as other
 fruit-trees; but these e regarded trees and plants are
 not fo much! egrated -; prelat, as they were some
 years past.

The IW4M bearing Chrimt which is mentioned
 in ead of the books, I take to be only a variety of
 the common; for Dr. Boerhaave shewd me some
 young : trers in his garden near Leyden, which he had
 raised from nuts, which were sent him by Michell
 from Florence, as the true fruit of the Dwarf Ches-
 nut; but there appeared to be no difference between
 thnl. and some other which came from nuts of the
 large sort.

There are fevers! vtrietics of this im. which have
 accidentally arfcn from feeds; ibmcha
 postU diffint species, but th. differences are only in
 the Ikegf their fuk a-U l, which have be
 altered, and irofromi by ci V!

ftr II^ve fiajoemiy founJi rhM ^ y ^ ^ « ^ .
 the fan tree, and cultivated n thr fa,
 ^Od earc, hive pradaccd trees Hikirn innlVfru :
 and .wong them have been ptUtn, whole fruit ^j
 been u large a> thofe of the parent tree; therefore
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 cases the trees are sup- r : a, ^ . *'??*«
 fruh, the peok

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 the Ikegf their fuk a-U l, which have be
 altered, and irofromi by ci V!

ftr II^ve fiajoemiy founJi rhM ^ y ^ ^ « ^ .
 the fan tree, and cultivated n thr fa,
 ^Od earc, hive pradaccd trees Hikirn innlVfru :
 and .wong them have been ptUtn, whole fruit ^j
 been u large a> thofe of the parent tree; therefore
 they ran be% n v < located as varieties. But in many
 cases the trees are sup- r : a, ^ . *'??*«
 fruh, the peok

The third sort of *am* in South Carolina, from whence
 or the fruit with r... water covers, were first to
 hU f; ... like of KcdtWd, s few ynrs pa(t):
 thefe were u larpt' and round as n tennis-bill, and
 armed all over with itrong ipincs like a hedge-hug:
 theft: ctpiulx were divided regularly in four ...
 each containing one finall Cl... rime ... I
 compared thife with father Plumiti ...
 figure ... lich he exhibited u... the title of S...
 and found them ... agree ocaftly; and uj
 : IE box in which ihtie were Jem, I found
 some of the ... s of tin. tree, which aUb
 his di:(ri)-iiu:i, whichconfin ... my former op'inion
 thier... uhl fee no other iiiiYm'n« between
 il'it fruit of thits and die common Cid'nur, but us
 hiving tour raj ... divided by pftiatitms,
 whereas-thole ofthe Chethac have gowrtlf out threes
 therefore!! ... I:im together,being perliindcd,
 that farther ublcrvatiuns wi i ...
 It does not appear where Hunier found this tree
 Erowit'? IUUIYIIIY, though it ii probable, it might
 IK in I'juiriana; for I think it could not be in
 either of the We • India iflmd.i, when: t. ... o great
 for this trie to thrive; though this is tenderwhile
 young, for two or cL ... young plants which were
 railed in England, did i ... the third winter.
 The iii 11 of theft trees waa fi ... in greater plenty
 smonglt us than at p relent, as may be proved by the
 old buildi' ... in Lon Inn, which » ... for the mull
 part of this timber; and in a deli rription of London,
 yrictm by Fitz-Srephens, in Henrj i ... umcj
 he ... alks of ci very noble foraft, which grew c ...
 the north part of it; proxinic fl ... it» in-
 getis, felt us numeral! fenni later B cervonim,
 damirium, aprorum, & tauomm fylveflmtm, &t\
 And there are now fame remains of old decayed
 Chclmtn,ia the woods and t: ... not far distant from
 London, but particularly or; Emerald Chccr, which
 jhittily proves, that this tree is not li ^n:ut a fimoger
 a ... climate, a, many people bc&ve; md may
 be cultivated in Engl ind, to afford an ctjuil profit
 with any of the ctficr (bra ... larger timber-trees,
 fincc tin: wood of thlis " ... is ctjual in value to the
 ... i;k, and, for iiiiary purples, for exceedii
 u [ir]icularly for making vefiek for nil kin ... of
 ... ir, it linvin^ a property (when once thoroughly
 seasoned) of maintaining its bulk con- ...
 is not 'ibjccct to ftirink ur live!', as other imber is mo
 apt to • da: and I am tert.ainly informed, iliac all the
 large cafts, iuns, &c. for cheir winei in Italy, are
 made til' ilui linibtT; iind it is for itut, ant! many
 more purpofes in mai ... chivn among the [uliaiot,
 that: iny other dmoCI whasevi-r. Jr n alii) very va-
 luable for pipes ro convey vmtcr urtdt. ground, as
 enduring longer than the I iin, or any other wood.
 In Itay it is planted fur cni ... wood, and is vtty
 much coltviittjt in l tools, to make ... * rhctr
 Vines; which, licing Ituck into (he ground, will
 endure feven years, wtich 15 longer than any other
 ftake • will do, by near lialf: ... time. The woodwork
 of the limber, together with the b ... of the tree,
 renders it as well w-rth prujing-jung w, ai¹ ...
 whatever.

The *ma* arc propagated by [.] ... the nut* in
 Kcbruarr, in betij of frdh undt ... earth. The
 trft niiti for lbwng, ... are such as are brought from
 Portugal and Spain, and arc • ... in winter
 far eating, provided (they are not kiln-dried, which is
 gene rail y the cafe of fn ... of thofe brought from abroad,
 which is done to prtvent their fprouting or fhoating
 in their pait&c ... therefore, if they cannot be procured
 frefti from the ilL, it vll be m:cl'i better in ufe
 thofe of thw art ... of E ... land, wllith ire full ai
 go"ij to low for timba or l ... tury, as any of the
 tre:fgn nuui, tlimgih ill ... fruit is much tender; thefe
 fhould be- preferred, until the feafon for fowing, in
 land, where more, or other vernal rains come to
 them, oth'rwife they will toon tkAroy rhem: before
 you fet A ... it w i be prnpt-r to full tl- ...
 water, ta ti-j' dcir goj ... : b M KJIOWI' •• their

••jionriroiry ; thiofr v/ thirm that hrigi upon \ne fur-
 fate of the walfr tho; ... be rejected as good for
 nothing; but fudi ai fink to the bottom, you may
 be liire are good.
 In fowing thic feeds ornuu, the beft way is, to mak
 a drill with a hoe (as is commonly praAiled in feitin
 Kasey Acaw about "if indws ilceep, in whi ... you
 Humid place the nuw, at about four inches diftaice,
 with their ... then draw the- canli over
 them with a rake, and make a ficed drill at about
 a toot diftance from the former, proccci'ing as before,
 allowing three or tour rows fa ... a bed, with an alley
 between, three feet broad, for a convenience of
 clean; ... the bed. Sec When you have finished your
 plantation, you muft: bo r ... that it is not de-
 fered bjr mice, or odi ... which is very often
 the cafe, if they art not prevented by traps, oroch
 means.
 In April thefc nut; will appear above ground > yo
 muft ; ... rve to keep it: ... clear from
 weeds, especially ... young ... in thit bed they
 may remain for ... yews, when you lho; ... I remove
 them into a nur ... v, at a wider illi ...
 The beft
 feafon for tranfplanting thefe trees, n eillier in Oc-
 tober or the latter end oi February ; but October it
 the beft feafon: ... be till.intc thife fhould live in the
 nur ... f, is three feet row from rtiw, uid one toot in
 the rows : you mulr be careful in wanfplunring thefc
 trees, to take them up without injuring thid root,
 nor ... loud they remain lcing out ut the ground t but
 if thic¹ have n downright tap-root, it fhould be
 cut off, elpecciiiij' if they :irc intended to be rtntovl'
 againfli this will occafion their putting out Uteri
 ntots, and i ... der them left: iBlef to mifeory I ...
 the- arc removed for good.
 The trees generally allowed them in thit nurfery, is
 thrf ... or four years, according to their growth, but the
 year they are tranfplanted, if designed for timber,
 the better they will fucceed, during which time you
 fhould be careful : ... keep them clear from w ...
 (etving ... to prevent off lateral branches, ... thieit would
 retard their upri\$... antl where you fin J any
 thiatartf'ijKileJ to grow cruol.trd, (ititcr by their upper
 bud being ... hurt, or from any other accident, you uuy
 the year after planting, in March, cut ... midown tot'
 ... eye next the furface of the ... be ground,
 which will caufe them to make one ftroag upright thioot,
 and may be afterwards trained into good ftair trees;
 but 11 ... fhould not be practifed, ' nrl'i the ...
 have abfolutely lat their leading thioot; Tor although
 the ficnu of tht ... fhould be very crooked (» b
 generally checdi with ilicju when ypung ... yet when
 Uity are tranfplanted out, and have room to grow,
 as they increafe in bulk, they will grow more up-
 right, and their items will tweome ltrait, *j I | ...
 frequently ublcrvcd where there have been great
 plantatjora made of them,
 But in doing of this, you muft ... becanfid not todilturb
 or break their too: ... which, perhaps might detroy
 them, TJ<r! ... trees require no other training th' ... anttea-
 own leaves, which fhould be fuffered to rot ... in i
 mau ... and in the fpring of the year, the ground
 fhould have a light digging, when thiee fhould be
 lizual between their roots, but not too clofe to the
 trees, whic ... iiiiight be iii;
 After having remained three or four years in the
 nurfety, the) ... Tor trjnlp. ... either in
 ru*s ... grow for ... timber, or in quarter
 detached plantations, but if you intend them for timber,
 it is by much the better method to low them in
 furrows (as is prafticed for Oaks, Sec.) ... let them
 remain unremoved; for thefe trees are apt to ... lu li-ve
 a downright tap-root, which, being hurt by tranf-
 planting, n other a check to their upright growth,
 and caufes them to fhoot out into lateral branches, as
 is the call with tiu Oak, Walnut, &c.
 Therefore, wh<irMr any of thefe trecM are planttd
 for ciEither, they fhould remain unremoved; but
 where the II uit of them is more faight other, then it
 is certainly the better w.-, to tranfplant them; for as
 F f f in ni-

ttafpianUDB is a check to the luxuriant growth of trees, ib it is a promoter of their fructification, as may be evinced by observing low ihvubby Oaks, Walnut*, tic. which generally luvra greater plenty of fruit, ihsn any of ihc larger and mure vigorovu tea-, and the fruit of luth i pa is tauch luperka in taste, though the seeds of vljoi->ui irew arc vailly preferable for i inEuions of timber; for it is a com- im i observation, that, by laving feeds from dwarf trees or pisms, from time to time, they may >c rendered much luvver in their growth than Is their DS- rural size -, but where the fruit is moll dcji-, then they "luulil be taken from fuch trees as produce the liirt^iti and Twee left nuts, which are commonly found upon such trees as fpcad the moil, ujd have hor- sants i roots ; for the weaker trees beinylefs capable LO fumilh a fupply of nuirifhmcni, and having a greater quantity of fruit upon them, to win: this mull be diltrib'ued, together with their roots; lying near the furface of the ground (by whicji means the juices ire better prepared by Inn, air, &c. befbre it enters vlinr vcltiii -L- deir juk < ir< bet- ter digefted !, and their fruits better matured, than mfc can poiTibly be, which grow upon [ttong vi- gorous trees, wllidi have long tap-roots running veral fcer deep into the earth, and conlcquently take in v,il quantities of crude unprejiarcd juite, which ji buoyed up 10 the extreme [aru of the tree; and ill fie ieldom hiiviti^many late rid brancht.-i, t' - light and prepare their juice, by perfpiring and tin- woy off : c crude part before it enters the fruits.

And this, 1 OJK Cy, I univerfally holds good in all forts of fruit trees, and is c:ini the occafion of tie good and bad qualities of die Eune lores of tVuits growing nli the fame foil.

What has been related about (^raiting this tree into L- Walnut, to proraote thal lie^ina, oi rentier ineir fruit l'airtrj or inoculatinr Cherries into the Cheiiut, for later fruit, is very whimftill and filly, fnee nci- tht.-:lii;Chdiuinor Wilnutivill receive its own kind any other way thin by jnocuhriag >r inarcUiuu, and it is the la i er only, by which the VWalnut can oe pro- psgitid ; nor was it ever known, that any two trees of i different genus would take upon ejuh other, > as ro produce either a good tree Oi fruit; cherefore we may juUuy explote ail thofe diferent "raftings of various t:ret upon each other, ib much talked of by tin- ancients ; at Irall we may fuppofte thioie creei are not !.lown by the liime names now, tlut the; are mnd i >nd by in itteir writings; fix 1 ban e matte many [rials upon diem, which, although pcdomcti with great care, and in diferent It-i:uns, yet fearCt!) line of them fucceded. But to return :

If HI defign a Ijr^o plantation of thefe trees for limber, after having two or three tim-t-i piovgli the ground, the better to clttroy the Ous of weeds, you fhould make your furrows about fix tea diltiict- froin each other, in which MAI ihuulil lay the nuts about ten inches apart, covering then) with earth about thro: inches deepj and, when they come up, \oii i mull carefully clear them (Wan wo : the dif- tance allowed betweca eiich row, is for t' : of the horle hoeing pltiugji, which will ilifpacdi a great deal of cilia work in a laort time, but it ihuuld be ;irr- (brmi with great eart, Ib js nouo injtn the younger plants; therefore the middle of the fpaci • only fhould be cleared with this iiftrntm, and a hand hoc mull be ufed to titan between the plants in the RW, and also on each lide, where it will be unlife for the plinth to be drawn: and in hand hoeing, there mull be great tare Wken, nrjt to cut the tender rind of the plants. If the following Iping the Spvxa are care- fully flirred with the plough, it will not on) make the ground rleenn, but alloloofen it, fo as that ike fun and noirtitrc may more eafily penetrate die fame, which will greatly promote the growth of die p- ants; and the oftener ihfc plough'ings are neared, the cleincr *Ut be tile § : and the greater will be the progrefs of die plana, which cinoot W.- I kept too clean while they are young. When thrfe li

maun i tht < orfcuti' years (if the nuts fuccceded in it) you will have many o: these trees to remove, which fhould be done at the I-sons before diltiched, leav- ing the trees about ih| feet diftance in the rows, at whicli tlitbiice they n ay remain for three or four years more, when you IIOIUJ renjii: every other tree to m. • room for the MOHuming, which will reduce the wholt plantjUiofl to fix • foare, Aich wil l u- chitance eno-ll gh for them to J remain in, until they are large enough for poles, wffin you ILLV cut down every • iher of tin to trees (making choice of the leafy promising,) within a foot of the ground, in order to make fuch foi poles, which, in eight or i.r. years time, will be frong enough Co lop for l'oope, hop poles, &c. for which purpofV they are prefer'd bk'to moft Othtr trees; fo that every tenth year, J er will be a freili crop, which wji pay the rent of the ground, and all othtr iDcumbent cli Jame itnK^ a tnU crop oi ^L. owing timber left upon the ground: but s^ (lit: 1 I've been in bulk, their diftance of twelve feet fquare will be too final; itieirfon: when they have grown to a fize for small boards, you :.n'ld tell cvrj other tree, which will reduce them to : • every four feet fquare, which is a proper diftance for them to remain for goods; this • will gin.* air co the under wood (which, by that time, wou'd be too r r. i • overthru by the difturb of the large trees) by Vliicli means that will be greatly en- couraged, and the small timber fell'd, will pay fuffi- ciiiitii intereR for tin. l' caulery as first had out to plant- ing, &c. with the pin i fual alio: in that all the re- maimng trca arc clew prutit, lor thi, under wood full out inumg, will jiny ilit rent i of the ground, and all othtr: capices | and what : fee there here will : lur a llii-i-iaing general ton. ti about fourcore years, J leave every one to judge.

TheChinctuajan, or Dwarf, Virguow Che&uc, is at prefent; very rare in Eoglaad: it is very CQinnm in the woods of America, where kfit! can grow ibwe twelve or fourtinfcet lii^li, • and produces great plenty of nuts, which ar^ l'ir the small part, fingle in CUh outer conr i Thia tree ij very I and will rt-Git the nuts at the --nttrrs in the open grounM, but ii v, cullly if it U pUnia ... of iteii; I've, if brought from ... ; i^ put up in land u fotm u tiey arc ... England uniatdiately, uthti wik t'ey lole UK. ing quality, which is tk rouon th'>tre < i> at'j to mance with us; foi not one ed in five < • I've Itn: ovci ever grew, wfiich w-s <iwin^ to tilt m of puttiivr diem up in ttis • iir;>er: inc. and, moft of the BU which i've been bluuigi: over, have been kiln-dried, to prelim them from fputting, which infallibly deftr the germs. When the nuts ar- rive, they fhould be put into the ground as a bonaj portable-, a) if the winter fhould prove feverc, it will be proper t'i cover the ground with leaves, tan, or rttfohaulm, to rircven! the froil from t'urtTitirig thiegrourwl, as to diltich the mits. The fort of Chefntii delights in imoift oil; but if th wet conti- nues long upon the ground in winter, it is apt to kill the trees. This will take by inarding it upon the commuii fort, but tin- trees fo mpagued : idan fucced well.

I hve ken i r pocinun, ind feme nu < of u i dwarf Chefnut, which were brought from South America, which differed fram ail the other forts, and \ have been nformtd, that the French have iulld plantj of this kind, from the nuts which were broughti from Canada; but ai 1 h*rc not been any clic pluit) rriifed in IMJIIIIII, I > an give no farther account of ii, than dm (brae of the late writ- have fupplid it niight Lt; the dwarf bunciiuir I had before men- tiOMd.

CASTANEA EQUINA. & CASTOREA. Sevi ... -i. l'lant. Kj4. I ... netcfiity, m of »;

because the opinion the ancients Ju:l of it, diat it was t (Yronij, ml a) moil invincible inducement to lbe.v J Ciindu Lions l*our.

The'CaidicTeK) arc,
The Jbt'<er is amfofJ of wd*y tnaepinJiU ftertt, sis ut tierdtr frug fomtr iban tmfi *wbkb an in ttr ; theft an inlmdk i/i mi comix/i fiat/ tmptslim, which ufirtuwiu anJltgOBL. Tbr jrorru art af ait leaf, it>i&uc-Jbiipcd, hidttttid in five pens, and arc lunge ihjiti thi mipakixutr; tbtfi boot ax&jrvejtvt hair/ innalei by rfundi:- list germo!
hJUtutuitt ltwi lhc'fswer, ftpperluttg a jltxJtr Jljtt tit length of tht fliwiiBtt, triesimiisib a bifid ftigma which is rejltxeJ. -Tbcgmea afrr&u&S-J iaeea a Juigt voa\ fid, which is tomprjtd ind crowned w;h irijtUt, iacLfJ in thbcmftikmml.

The Lt-nm of plants is ranged in [lie first lection of Lintia_us's nineteenth cla6, iniidcd SyngeneJia Poly-B3mu. xx\iAn; the flowers claa have their lamiiu separate, and their fummiu connected tog<-ther in a cylinder, antl tho'le ofdib ftuion luvconly litm-ujlirotlitc flowett.

The Sr-EciEh arc,
t. CATAXAKCHS (Cemti/i) ijuuimis rilycinis In enori-bus ovaiis, lion. ClifF. 3jo. CiUmaacht wfoft under ftalks of the tmptamtnt ate Mat. Gitanance quoruodjun. Lugd. J-lift. H90.

1. CATAXANCH* (Lutea) fquamii calycinis inferiorihus lanceoiatis. Hor: Cld. 35. Cuituxmtht vibefi xsdrr JI-iUs of ibe tnpaUmtKt are Jftar-fiHtPi. Oitnriante U-re hit<J! Utiarefolio, 't'ourn. In(l. R. f-j.

Toumctbix mlirjuns a third fort with a njm(5
"i wliidi it diffiii from tin: fecund ; bm it there is a distinct flectes, I haw not happened to ra<t with II -, tor aliougH L l iave (tcqiu ally rcc, a) the feedi from ti'vetal para of Eurujw bj' thi; Dtl l cwiiil not find my dirterfnee between the plants, and thofe of the fecond fort; thofe of the firft fort may have a mnd liic plum

where die leaves were mudi narrower twn thntc gruuing ilia garden, or in lietter gruntu, ft'bjcb may havt induccd Tum t" " " Uwy were diliindt ipccies. [m' :'] naturally in (lie foutli fit Fr

... i-ions Pool,
'the ... as aur rainy ton", narrow-, hairy lmv<, ... uin are jag^eii on their edges I ... of Buckfhtjm l'laniaia, bui I he leave* arc broaier, tlic ... letper, and nt greater diftairt...; rlieli i ... on thc ground, turning their [minis upwards, which ate very narrow. Between l ... leaves come out tht flower t [talks, wlikliaivin number proportional to the fize of l lie plant; fur from an old ii ... root, there is frequently Light or ti ... do mit fend tlLmore than two or dire < ... Their ftalks rifc near two fet high, dividing i: ... many fmall branches upward, gan-jilhi l with leaves like thofe below, but are fmallcr, and ha<< few or ... of the foot-ftalks use terminauii »iri Bngle Ju'iiiis u" flowers, ht'ving a til ... filvry, ftaly emblement, in which an included three or four florets, whole petals are broad, fiut, am! ... at their ends : ehdi: arc of a fine blue colour, ha ... nd in each tfit; five ll ... with their yellow fummit. ... landing a little II> n1, nuke a pretty appearance,

It has been by fome authors Adm Chondrilla cerulea, i. e. Hhie Glim Gemy, and by others Sclamoidea, or Catabancca Sclamoidea. Catijer Bauhin calls it Chondrilla cerulea cyani Ctpintlo. Pin, 130. The Goss Cy ... with a fine Buple. There is a variety of this with double (lowers, which is not very common in the Englifi gantent.

The frconij fort liadi broader Icmti than the firft, which are rmooiher, ami lei ... at their edges. From < each root ai ... two or three ftalks, which grow a fimil and a halt* hirh, ... ending out two or three fender foot-ftalks, each containing a fingle head of yellow flowers, included in a dry leafy emblement, of a darker colour than thofe of the firft, as their flow-

eri are (null, they make bite Ijtk' appcj ... therefore the plant is only kept for the ufo of warty.

The firft of thti' | leaves is a perennial, and may be propagated by head] uken oil die- mother pL- ... filier in [prmgor autumn; but chufcuhut ... which are raised from lectio, are much firmer than thofe from flips, r hefe plants art commt>nU' planted tn ... mltdl with iij ... : il, in order to llicker them in the winter from Severe : ... but if they are planted in warm borders, citbl i ... pale, or hedges, in il moderately dry foil, ilxy v.!! ... l vry well- It begins dowering in May, and continues till Auguft or September (eljeieisly if the flwflcr is not tpu dry,) ii a pretty ornament to a garden, and ifciidly kept wivhin bound i, I ii ... be jiropagited by lefdi, which fu ... ftwiti in i border of good light earth i ... March, md In May, when the plants ... come up, they may be either trait!planted into pote or be: ... where they ir< to remam lbr Sowcnng. 'I Jicle plants ihould remain unremoveI when they are planted in the full ground, which will caufe them to liowir better, and thty will produce more lbetk. The leeds ripen it Au-

gult.

'Jitr tither Qm is an annual plant, ami tlctretbr: only prop.! ... which ripen very earl; in this tountry. The tinic for lbwippi ... is early in March, in bed or borders of light cattli whi ... they are to remain, wheli will come up) In a month or five^; weeks time, and require no other care but to kctP thi-ra clean from weedt, and thin the plants w ... they are i(lia CIUCL. I i ii June, anii pcr ... their fize in Augull or September ; bur u they have little beauty, they are not often ... ept ingniens.

CATAPUTIA MAJOK. Sic RAGRICA. CATAPUTIA MINOR. Sic ESPINORRUA. CATAPUTIA (I.A. Sec Ntl-iTA.

CATERPILLARS.

The re are fevetal kinik of thii infect, which are very pernicious to agarden, but ii ... are two forts which art: tie molt commoo, and ikdmitive to the \ ... ung plants: one of than b dui vshci' tin' white but nery brecl. It is of a yellowifl colour, iporf-J anil Iriped with black ; this commonly ... the tender leaves of Cabbages, Cauliflowers, and the Indian Cress; they eat off all ... leaves, leaving yrtly the ... to that I know of, but to pick them off the plants before they are fpreed from the nets ; by which means, though perhaps many may be overlooked, yet their numbers will be gredly diminihed. I ... this work mult be often repeated during the w'im weather, WILL II J). • Infterflies are ahewl, which are ... latiminUy dep ... ing their eggs, and in a few days ... time will In ... metamorphoied to perfect caterpillars. But M tin- ... fur the moft part, find upon the outer leaves of plants, fo they are moft eadly taken than the other fort, which is much larger: the ftin is very tough, and of a dark colour: this is called by the gardener., a grub, and ii exceeding bu ... 'The rpo of thi ... of caterpillars, arc, for the moft part, deposited in the w ... heart or center of the plant (efpecially in Cabbages) ii wheiCi ... After it hath obtained its form, it eats its way out through all the leaves thereof; and also thir dung, l> ... being lodged In-tween the incloftd leaves i ... the Cabbages, gives them an ill :

The infect alfo burrows juft under the furface of the ground, and makes great havoc on young plants, by eating them through their tender ftalks, and draw-

ing

C A T

ing them into ... holes. The method is chiefly used in the night; whenever you observe this, you should every morning look ... ; if plants; and wherever you see any plants cutten off, stir the ground round about the place with your Gngen an inch or two, and you will certainly find them out. This is the only method I know of destroying them.

CATNINS, or TULUS. This is, by the botanists, called Flos'Amentaceus: it is an aggregate of funnits, which are joined together in form of a rope or cat's tail, and is the most flower of the trees which ... them; v. the Flos, Pinea, Cdora, W.ihnus, Bifch-trces, and Willows.

CATERPILLAR. Lin. Gen. Plant. 121. Hist. Carolina. Vol. II. p. 100. The Lily Thorn.

The Character is, It hath a small perianth ... of CXf Itsf, with few long ... the petals is of one leaf, funnel-shaped, ... which gradually widens to the top, where it is four-angled and spread open; it hath five ... in the end of the tube, terminated by short ... the remains ... under the flower, ... single ... The remains ...

This genus of plants is ... of Linnaeus's fourth class, ... : I. :trandria Monogynia, the flower having four ...

We have but one Species of this plant, viz.

CATERPILLAR. Lin. Sp. Plant. 109. The Lily Thorn. France ...

This shrub was discovered by Mr. ... near Naf-fau town, in the ... of Providence, where he saw two of them growing, which were all ... from them he gathered ... and brought them to England in 1736, from which nunv plants were raised in the English garden, ... which have since flourished here.

Branches with a branching stem, to the height of ten or twelve feet, which is covered with a pale ruffet bark; the branches come out alternately from the bottom to the top, which are furnished with ... resembling those of the Box-tree, coming out in clusters all round the branches; at certain distances; if the flowers come out single from the side of the branches, hanging downwards; they are ... and near six inches long, very narrow at their base, but widening upward toward the top, where it is divided into four parts which spread open, and are reflexed backward; the ... are of a dull yellow colour. After the flower decays, the garden twells ... oval flidly ben ... the size of a maddling Plum, hollow within, and filled with small ... seeds.

This shrub is propagated by seeds, which must be procured from the country where it naturally grows. If the seeds are brought over in fruit, the seeds will be better preserved; when they arrive in England, the seeds must be sown in small pots filled with light sandy earth, and plunged into a moderate hot-bed of tanners bark, and now and then moderately watered. If the seeds are good, the plants will appear in about six weeks after sowing; when, if the heat of the bed declines, the pots should be turned over to the bottom, and, if necessary, some fresh added to renew the heat, for these plants make but little progress the first year. When the pots are again plunged into the hot-bed, they must have fresh air admitted to them every day in proportion to the heat of the season, and frequently refreshed with water, in small quantities, for much wet will certainly kill them; if the winter should prove ... the plants should be covered with mats every evening. As the plants grow slowly, they will not require to be removed out of the hot-bed the first year. In the autumn the pots should be removed into a ... place, and plunged into the tan-bed. During the winter, the plants should

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be watered with great caution, and in spring they should be carefully taken up, and each plant set in a separate small pot; till the light kindly ... artly, and j ... bed of ... being can't ill to shade them until they have taken fresh root; also to refresh them with water gently, as they may require it, and in spring, when the weather is warm, they should have good fire: admit to it; in autumn mull be removed into the iluv, where they should constantly remain, and not be treated afterwards in the same manner as the other ... plants.

This plant may be propagated by planting cuttings in small pots filled with light earth, during the month of July; the pots should be plunged into a moderate hot-bed of tanners bark, and the cuttings covered with small bell-glasses to it; if the weather is proper, the cuttings will put out roots in about two or three months, when they may be carefully separated, planting each into a small potted with light earth, and plunged into the hot-bed again, and afterwards mull be treated as the other plants.

Most of these plants which were raised from Mr. ... seeds, were killed by the ... in 1735; but (even years ago I received from ... seeds, which succeeded so well, as to ... innumerable plants to several curious persons in England.

CAULIFEROUS plants (see ...)

This is one of the umbelliferous plants with oblong seeds, which are a little flattened and prickly; the petals of the flower are unequal and heart-shaped. There are several species of this plant ... in the ... Locality ... I shall pass them over with only ... that it ... in autumn, soon after they are ripe ... kept till spring, they will produce ... They are much of use in ... and require to be sown every year. We have four or five species of them, which ...

CAULIFEROUS plants (see ...)

(V L L S, is the part of the plain which rises Tingle above the ... whence the leaves or little branches put forth, ... or it is the upper part of a plant stretched forth to an height, for that the top part differs not from the hind, nor the roots from the left. In trees and shrubs it is called Caudex; in cum Oil; ... the ... of a tree, ...

CEANOTHUS. Lin. Gen. Plant. 17. Eucalyptus.

The Character is,

It hath a ... of the leaf, ... the flower hath five ... petals which spread open, and are ... than the ... ; the ... and are ... of ... terminated in ... ; the ... of ... The ...

This genus of plants is ranged in the first section of Linnaeus's fifth class, ... Monogynia, the flower having five ... and two style.

The Species are,

- 1. CEANOTHUS (Africanus) Folia triseriata. !. in. Sp. Plant. 105. Cassia with leaves having three a rev. Eucalyptus Nova Belgii ... Hort. Amst. 1. 157. New Zealand ... 2. CEANOTHUS (Africanus) Folia ...

3. CEANOTHUS (*Arborefcens*) foliis ovatis fefilibus nervofus floribus alaribus. *Ceanothus with oval nervous leaves fet clofe to the branches* flowers proceeding from the wings of the leaves* commonly called Red-wood.*

The firft fort grows naturally in moft parts of North America, from whence great plenty of the feeds have been of late years brought to Europe, by the title of New Jerfey Thea, where I have been informed the inhabitantfuily the leaves of this fhrub to ufe as Thea. The people of Canada ufe the root in venereal cafes, I have received the feeds of this fort from New England, Penfylyania, Virginia, and Carolina; and the French mention it as a common fhруб in Canada, where they fay the cattle browse upon it, and keep it very low.

In England this fhруб feldom rifes more than three or four feet high, fending out branches on every fide from the ground upward. The branches are very tender, and as it is pretty late in the fpring before they begin to fhoot, they keep growing very late; therefore, unlefs the autumn proves dry and mild, the tender fhoots are often killed down very low by the early frofts; but, in favourable feafons, the extreme parts of the fhoots only are injured by the cold. Thefe branches are garnifhed with oval pointed leaves, having three longitudinal veins running from the foot-ftalk to the point, which diverge in the broad part of the leaves from each other: the leaves are placed oppofite, and are of a light green colour. At the extremity of each fhoot the flowers are produced in clofe thick fpikes, which are compofed of five fmall leaves, of a clear white. Thefe appear in July, and make a pretty appearance during their continuance; for, as every fhoot is terminated by one of thefe fpikes, the whole fhруб is covered over with flowers, the branches commonly growing very clofe to each other*, and when the autumn proves mild, thefe fhruvs often flower again in Oftober. After the flowers are paff, there fucceeds to each flower a tricarpular feed-veffel, flattened at the top, opening into three cells, each having a fingle feed. In warm feafons the feeds ripen in England. This fhруб is beft propagated by feeds, which fhould be fown in the autumn in fmall pots, laid plunged into an old hot-bed, ^{^v\^r*} they may remain during the winter, expofing them to the weather to the open air, but in froft they muft be protefted from cold. In March the pots fhould be plunged into a moderate hot-bed to bring up the plants, which fhould be inured to bear the open air by degrees; and as foon as they have obtained a little ftrength, they fhould be expofed in a fheltered fituation till autumn, when they muft be placed under a hot-bed frame, to free them from fevere froft in winter; but in mild weather they fhould be fully expofed to the open air, for while the plants are young, they will not endure the cold of the winter. In the following fpring, before the plants begin to fhoot, they fhould be tranfplanted; fome of them may be put into feparate pots, and the others into a nurfery-bed, in a warm fituation, where they may remain a year or two to get ftrength, after which time they may be removed to the places where they are defigned to remain. They fhould have a moderately dry foil and a fheltered fituation, where they will thrive and flower extremely well; but in ftiff cold land, they are always very late in the fpring before they come out, fo that their young fhoots are full of fap in the autumn, and the firft froft commonly kills their tops, which frequently caufes them to die great part of their length.

It may alfo be propagated by laying down the young branches, which, in a light foil, will put but roots in a year's time, but thefe layers fhould not be much watered*, for as the fhoots are tender, moifture will often occafion their rotting, when it is given in quantities, or top often repeated; therefore the beft method is to cover the furface of the ground in dry weather, all round the layers, either with mulch or rotten tan, which will preferve a fufficient moifture in the ground, provided the feafon is not extremely dry*

in which cafe they fhould have a little water once in eight or ten days, which will be fufficient.

The beft time for laying down thefe branches is in autumn, and if after this is performed, the furface of the ground is covered over with fome old tan, taken from a decayed hot-bed, it will prevent the froft from penetrating the ground, which will fecure them from injury; and the fame covering will prevent the winds from drying the ground in the fpring, and thereby promote their putting out roots. Thefe layers, when rooted, may be taken up the following fpring, and treated in the fame manner as thofe raifed from feeds.

The fecond fort grows naturally at the Cape of Good Hope, from whence it was originally brought to Holland, and has been many years preferved there; and fince has been communicated to moft of the curious gardens in Europe, where it has been long known by the title of Aiaternoides, &c. and by fome authors it is titled Ricinoides Africana arborefcens, &c. but Dr. Linnaeus, having examined the characters more exactly, has joined it to this genus.

This rifes to the height of ten or twelve feet, with a woody item, covered with a rough dark-coloured bark, and fends out many weak branches, which hang downward; thefe while young are green, but afterward change to a purplifh colour. They are garnifhed with oblong pointed leaves, of a lucid green, which are fmooth, and flightly fawed on their edges. The Bowers are fmall, of an herbaceous colour, coming out from the fide of the branches; thefe fometimes appear in July, but are not fucceeded by feeds in this country, nor do the plants often produce flowers; fo that they are preferred only for the beauty of their fhining evergreen leaves, which make a variety in the green-houfe during the winter feafon.

It may be propagated either by layers or cuttings; the latter being a very fure and expeditious method, is generally preferred. The cuttings fhould be planted in the fpring into pots filled with good kitchen-garden earth, and plunged into a very moderate hot-bed, obferving to fhade them in the heat of the day, and now and then refrefh them with water. In about two months or lefs, they will have taken root, when they muft be gradually inured to the open air, placing them in a flickered fituation till they have obtained ftrength, when they may be feparated, and each planted in a fmall pot filled with light earth, placing them in the fhade till they have taken frefh root; then they may be removed, and intermixed with other exotic plants for the fummer feafon. In autumn they muft be houfed with Myrtles, and other more hardy exotic plants, and treated in the fame manner.

The third fort grows naturally in the Bahama Ilands, from whence the late Mr. Cateby brought the feeds to England. It alfo grows naturally in Barbadoes and fome other Ilands in the Weft Indies, from whence I have received the feeds. This, in the countries of its natural growth, rifes to the height of forty or fifty feet, with large trunks, which are by the inhabitants fawn into boards, and were at firft efteemed for the beauty of their colour; but being expofed to the air, their colour vanifhed and they became pale, fo have not fince been much regarded.

In Europe, where the plants have been properly treated, they have grown to the height of twenty feet; and if the ftoves in which they were placed had been lofty enough, would have grown much higher. The item is ftrong, woody, and is covered with a light brown bark, which, when young, has feveral furrows; the branches come out irregularly from every fide the item, garnifhed with pretty large oval leaves, of a light green colour, having feveral longitudinal veins inclining to white. The flowers are fmall, of an herbaceous white, fo make little appearance; they come out from the wings of the leaves, and, in their native foil, are fucceeded by roundifh fruit almoft the fize of fmall Peafe, opening in three cells; in each is inclofed one fhining black feed,

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This h propagated by feeds, which should be fown in the pots filled with Uglit earth, 1 p l j d into E hot-bed t tbcfe fceds lie generally in the pots...

CHOCROPIA I Jursisi Oviedi. Sloan. Hift. Jam. The Trumpet-tree, "i Snaktwood.

The CHARACTERS are, It hath male and female flowers indifferent plants. The male flowers have an oval...

This tree is named in the second order of Linnxus' i Diaeria DLintJria, the male flowers growing upon...

It grows naturally in small J tht wowlv pirtsof the island of Jamaica, where it rift t to tti hi iajbt of thirty-five or forty feet...

This tree is very rare at present in Europe i the fruit being small and generally devoured by birds...

I received specimens of this tree from the late Dr. Bouillon, who found it growing naturally at LaViti Cruz, in New Spain...

It may be propagated by feeds (when proqred from the places where it naturally grows)...

CED

when they are put up in lifrht find, h will prevent that incanyl-nieiey. The iced! [hou]d be lwn m Jjnall pots filled with Hghi earth...

C B DR L S, The Ctdar-tree of Birbadocs, and the Mahogany, &c.

The CHARACTERS are, It hath a tubukiti ttU-Jbaptit em olment of kef, /:- dinted ixfvtporis. Tie fbrjiei...

This gi mis ot" plants is ranged in the first foffl of Linnaiu'i th tial filititid...

As Uw Cedar of Libanvis is by Toorntfort very properly referred m the nus of Lube, inii ail (he berry...

The S?rciri 4IT, 1. CEDKUJ (Oderata) tbliis pinnris, fultolis mliij-obtulis, fruftu ovali glabro. Ctdm-trtt until...

2. CYNARA (Moly and) foliis pinnatis f&liolis opi ••••• glabris, floribus racemosis speculis. Cedar with winged leaves...

3. CYNARA (Moly and) foliis pinnatis f&liolis opi ••••• glabris, floribus racemosis speculis. Cedar with winged leaves...

4. CYNARA (Moly and) foliis pinnatis f&liolis opi ••••• glabris, floribus racemosis speculis. Cedar with winged leaves...

5. CYNARA (Moly and) foliis pinnatis f&liolis opi ••••• glabris, floribus racemosis speculis. Cedar with winged leaves...

C I : D

wood Di in ... ty be cut out with grv...
... will carry a great weight on
... the canoe.) in the Weit Indies,
... /rined out of these trunks, which
... and lix broad; thic wrxk) i
... of a brown oilour, and has a fragrant Oflour, from
... whence the titk- of Cedar has been given to it. This
... wood is fre^ieje)Lly cur. into Jhinglrs for cove:
... houil-s, andwtbound renr durable i but at the worms
... are apt to eat this wood, it is not proper for build
... ingot" foips, thuiigh it is often u led for that purpofe,
... [heathing of (tips. It ii trftm ufi
... wainscoting of rooms • and fc> mafec didh, becauil-
... vermin do not li frequently breed in it. as in many
... other forts of wood, this haiMg a very hitteit tallo,
... which is communicated to wfc^evtr is put ii
... the cheds, especially when the wood # frefli; iii:
... traion it is never made into calks, becaufe fpirituous
... liquors w III • il i i u I • part of the refia, and then by ac-

This tree rifes with x itniit ftan m the kigiit of fe-
verity or eighty f ft, while young the [t:]; ii finooih,
and of an Ah-colour - but a they advance, the bark
becomes rough and of a darker colour.
it fhoots out
many Cdc branches, gamilhed with
small leaves, computed of fixteen or eighteen n pair
of lobes (or small leaves) fo that they are ibmi^rineJ
near three feet long the lobes arc broad nt dieir
bale, and ;ire not mo inches long,, blunt at their
ends, and of a pale colour; their exur a very • rank
colour in the fummer feafon, b Ji K) be i rry ofen-
five. As I have not :Ven any of tht^c (towers upon
i- tircj, t can give no de, rription of (!• u. The
oval, about the five of a partridge's tpg,
smooth, of i \trv dart; colour, and «jii»s in live
having a A • cotored column ftanding -n the
middle, becomen thicker and broader towards the
even thr an'e'l of whi, the wide d fed?i
are clofely placed, Upping over each oilier like the
fcales of fifh.

There are (UITK pbnt* of thlii lbrt in EnjrtrmJ, which
are preferred in the garden, if thofe who arc curious
in collecting exotick plants, thefe ha»e been railed
from the feeds of this tree. I am brought from iBdrba-
d idrr to live in the open air
liclc plants fhould be treated
inih
the Mahogany next mentioncd,
iti quicker gi^ow[h, for in four
yc-irs fto, ited, J luvc had rjic plants upward of
tfn Eet11

t have receivrd planri nf this kind from Pii
the ritle of Scmjruha; but wheihr the root i
this tree, what they uif in medicine under that appella-
tion, I cannot fay. The feeds • (his h:ivi: •) been
fentjncfn in the French Iflands in America, by the
title of Acjou Qtdte.

It is propagated by feedj, which may be ci(i)l
cured from the Amnk^n iQands, which mull be
upon a hot-bed in the fpring, and the plants treated

The fecond fort is the Mahogany, whole wood I is now
well known in Enalaad,
the wsrneft parts of Ameri-
ca, growing plentifully in the Iflands of Cuba, Ja-
maica, and Hispaniola; there art alfo many of them
in the Eaft India Iflands, but j JLi.
«in^ found in any of the Lcewanl WanJs. In Cuba
and Jamaica a chereare treei of a verj- large &te, ft M
to cue inujptank!
thejBihama Iflgndsm not fo large, though they are
frequentljfour feet diameter, and nkk to a
tight, nocwiditftnding the
upqn the lbtid rucki, vi
any earth for :il-ir naurilhnrint. The wen
has been brought from the Bahama Iflands has ufually
ified uitiL-r the •ppeilauon of M.iden^u; and, but
we Js no doubt oi ,ts being thl
ony, the Spaniards make great ufe of this wood
for building of fhips, for which purpofe it is better
adapted, than any other fort of wood yet known, be-
; very durable, withftanding gun fhots, and buying

C E D

cheJior. without fplintersing . nor is the worm fo apt
to eat this wood as that of the Oak, fo that fir the
Weft Indies, the OippsbuilLCif Mahogony are preferable
to any other.

The excellency of this wi*., for all • neflic ufct,
is nov
fufficiently known in England; and it is a mat-
ter of furprife, that the : it fhould not have been
taken notice of by any Naturift or traveller to this
time, the only author who has mentioned this tree,
is Mr. Cauley, in his Natural Hiftory of Carolina,
and t h
Bahama Iflands, before whom I believe no
il-rr the Ire
of the wood was taken notice of by any
writer on natural hilWy, al
though the wood has
been many years brought to England in great quan-
tities.

In the Weft Indies theft tiers are of fo quick growth,
us vo arrive to t large fize in a few ytaoi the man-
ner of their propagation in the Bahama Iflands, ii ic
i. defetibtil :
Mr. Cauley, in as follows: when the
Iriiitis ripe, the outer turd llidl or coverinr Jcpa-
rates at the bottom, n, ne«Lhc fbot-Iblk, tl
exceeding the feeds, which are fillen I to a hard five-
cornered column, icinting in thit middle; the feeds
bi^iig broad and light, are dilberfed on tin
urface of the
,md, which is very roilky. Such of the feeds
as happfn w fill into th<
fiffures of the rock,
very
icon Jentl fb n
,dc tender filjres meet
with refiftance from the hardnefs of the rock, they
creep on
of ir, and ilx another fil-
fure, into which they caci-p, and fwell DO
fuch a fig-
and ftraieht, as t < •
ptd thereby make
for the rock's deeper penetration, and by thin
nouridiment from the lockj the l
grow .on largti
year.

The leaves (if this tr« are winged like theft of the
Aih, h
iloilly IIJ: 0
eight or nine lir of THUKB
(or lobes) %\
are thicker and broader towards the
ufcr at their b^li:
iiook- a" the 'I)11, where they iulttrc to the
vrry ihi»;

Imootti, having but out vent •
rough e-jeli,
which is always on one I •
to be to divide the
m un-
equally. We
ny perfeG account rf ilic 6
of this tree; thole which are exhibited in Mr. Catif-
by's Natural Hiltory, «
from ft withcued
imperf
, which were the only remains of
the (lowers which could be found >i
the time when
he U ihrc; but the fruit he has i
mented ver.
cx-
ally, ;li I have lud nppou
of comparing it with
fome which I have befii
brought to England. The co-
lor of the fruit, before it opens, is of a brown colour; the
fruit gwiv ert'et, upon foot-^h

it, the
it, the
water cover divides at the bottom into five equal parts,
and when these fall off, and the feeds are disperfed,
the foot-ftalk and the column remain fome months
after on the tree.

It is propagated by feeds, which may be easily pro-
cured from the Bahama Iflands, from whence moft
of the good feeds which have come to England were
brought; for moft of these which have been sent from
Jamaica, although brought in these parts, have not
increas'd; whereas, those from the Bahama Iflands,
have grown as well as if they were immediately taken
from the trees. The feeds should be sown in small
pots filled with light sandy earth, and plunged into a
hot-bed of tannin's bath, giving them a gentle wa-
tering once a week: if the trees get good, the plants
will appear in five or fix weeks; and when they are
two inches high, a sufficient number of small
pots should be filled with light earth, and plunged
into the hot-bed a day or two, that the earth may be
warmed before the plants are put into the pots; also the young
plants should be shaken out of the pots, and carefully
separated, so as not to tear their roots, and each plant
put in a single pot, being careful to shade them till
they have taken fresh root; t; airerlvficJi they mltifbe
Etnie nianner as o i kr (Vndir i
from
the

CEL

the liune dianiaie, being cartful not to give them much wan...

Bliftai, to prdcrve the earth nUiut their roots, Otherwifc they arc very lubject to jCiillij tor in the...

As :. The wood of this tree is now {a generally utd in England. ; it is thought to be now {a generally utd in...

The diird fort was aifcovered by the late Dr. Houf- lotiri at Campcichy, from whence lit fent the feeds to England, which fucceeded in feveral gardens...

This tree is ally rife to the height of eighw feet, or Ufiwnni, nnd divide into niany Wgc b:aiiehc9 to-wirJ thL- topj g^nilhctt wtili leaves, fomewhit re- fenibling thioic of the Witch Hazel, but are broader...

We have no account of the wood of thlis tree, whether it is ever ufed in buildings, or other purpofrs, as there have been few jrrions of any curioDly in that...

- CEL [JAR of BERMUDAS. K T_mtl «. «.
CEDAR of JAMAICA. S. «. «. MA.
C | DAK of LIBA v US. See L. «. «.
CEDAR of LYC ! /
CEIIA K of PJ GENIC : A. tSec Jtsii-tiius.
CI. ' JAR of VIRGINIA. J
CEBA : See rki. (B.«.
CELAS r RUS. Lin. Geu. PLii 191. Etymol-
<ki. lfntrd. Ac. R. So
The («. «. «. «.
Dif. Ann' CBffckuKiiK cat inn
for uerpal lin. parts. Tbfower ba.i. for ead pe

CEL

tals, uibith on e^uat, and If read cpcii. U hath for funnisa as long us tt petals, tznmr.attd by fmeli j...

This genus of plants is ranged in the firft fi-ftion of Linn^us's fifth clafs, intitlcti Pcwndria Mono-

The SPICIES are,

- 1. CELASTHUS (BuUattu) inermis, foliis ovatis inermis. Lin. Sp. Plant. 196. Smith Staff-tra-milh aval Ktsre kavts. Kuomtrms Virginbruis, rotundifolius capfulis CoceindfVleganter bullatis. Muk. Aim. [39.
1. CELASTRU! (Seitdm) inermis, ciule volubili toliii frrrularij. Lin. Sp. Plant. aS;. Smooth Staff- <r: a twini'ip/lali, utbift leaves are ffigbtty fand. L. uoody-moldes Camdeniii feanilens folii Jerratis, lfnard. Ac. Reg. 1716.
3. CELASTILUS (Pyracantbtis) fpinis nudis, ramis terctibus, foliis acutis. More Cliff. jz. Staff-tree art'i naked fpincs, taper braticket, and feinted Itava. Lycium Lycium Portoricenfc, Buxi fojiiis anguftioribus. Pluk. Alil. I. «. «. tab. 202. f. 3.
5. CELASTRUS (Mrtitfelb a) inermis, folus ovauj fr-rulariis, fioribus raccnwiis «ki «. «. I «. «. C' «. 7a. Staff-tret without jphui, ... of Jerratis leaves, Jowers in leaf bunches* end an ertS Jlaik. Myrtus arbore, foliis Luis fubrotundis, flore Jbo. Sloan, lliit. Jam. 2. p. 79. tab. 103.

The firll fort STOWS naturally in Virginii, and many odier pans of North America, wherc it riles to the height of eight or ten feet; but in England there are few of them much more than half that licight. It generally puts out kvo or three ftems from the root, which divide upward into 4"verj branches, covered with a brown bark, garnifhed vjth leaves pfa tiirtc inches long, and two broad, whii. ed flittr-narily on thc branches -, the finw come out in loofc fpikes at the end of the branches j thefe are wiLL- made up of five oval petals, with a ggrmeh in the center, attended by five (laminar when the Bowers fall off, the germen fwclth to & three-torncred capful, of a fearlet colour, let full of fmall protuberances ; this opens in three cells, each containing a hard oval ftea, covered with a thin reJ pulp. This fhrub flowers in July, but rarely produces good feeds in England.

[t a propagated here by layers, which will take root in one year, the young branches only are proper for this purpofe. To that when there K not any of thefe near the ground, the main iblks flould be drawn, down, r.nj fattened with pegs to prevent their riling, and the ytiung lfoots from them fhould be bid. JVc bed Qme fordoing thi\ is in autumn, when they begin to call their leaven, and by that time twelve-month they will be fufficiently rooted, when they ihould be cut from the old plant, and planted in 3. mirfery for two or three years to get ftrengrh; after which, they muft be removed to the places where they are to remain. This ilineb grows naturally in moift places, In will not thrive wclfin a dry foil. It is very Wdy, and bears the cold of our winters very well. It is alfo propgated by feeds, which lire frequently brought from America i but as thefe rarely am we here Lijic enough to fow before the faring, fo the plants never come up the firfl year; therefore the feeds may be lbwn either in poti, or in a bed of loamy earth, keeping th«n clean from weeds during the fummcr; r.nd thole in the pott JhouW be placed W the (bade till the Mtuinn, when the pou fhould be either plunged kt;o die ground in a worm fltuation, or placed

CEL

placed under a common frame, to prevent the frost from penetrating through the side of the pots; and if the surface of those which are plunged in the ground, and also the bed where the feeds are sown are lightly covered with some old tan from a decayed hot-bed, it will secure the feeds from being hurt by severe frosts. In the spring the plants will come up, which must be kept clean from weeds, and, if the season proves dry, they should have water now and then, which will greatly forward their growth. If the plants make good progress the first summer, they may be transplanted into a nursery in autumn, otherwise they should remain in the feed-bed till the second year, when they may be treated in the same manner as the layers.

The second sort sends out several ligneous stalks from the root, which are flexible, and twist themselves about whatever trees and shrubs grow near them, or when they are at a distance from such support, they twine about each other, and rise to the height of twelve or fourteen feet; but when they fall themselves about trees they will grow much taller, but wherever this happens, their branches girt the trees so closely, as in a few years will destroy them. These are garnished with leaves about three inches long, and near two broad, which are fawn on their edges, and placed alternately on the branches; they are of a lively green above, and paler on their under side, having several transverse nerves from the middle to the side. The flowers are produced in small bunches toward the end of the branches, which are of an herbaceous colour, composed of five roundish petals, these are succeeded by roundish three-cornered capsules, which are red when ripe, spread open in three cells, disclosing the seeds in the same manner as our common Spindle-tree. This flowers about the beginning of June, and the seeds ripen in autumn. The seeds of this sort generally ripen well in England, and the plants may be propagated from the seeds, or by layers, in the same manner as the former sort; it delights in a strong loamy soil, rather moist than dry, and will grow in woods among other trees and shrubs, where, when the fruit is ripe, they make a pretty appearance. It grows naturally all over North America, and is extremely hardy.

The third sort is a native of Ethiopia, from whence the seeds were first brought to the gardens in Holland, where the plants were propagated, and have been since communicated to most of the curious gardens in Europe. This rises with an irregular stalk about three or four feet high, sending out several side branches, covered with brown bark, garnished with leaves about two inches long, and more than half an inch broad, some of which are pointed, and others are obtuse, they are stiff, of a lucid green, and come out irregular from the branches; these continue green through the year. The flowers are produced from the sides of the branches in loose tufts, many of them arising from one point, (landing upon long footstalks, they are of an herbaceous white colour, composed of five petals, which spread open, and five spreading stamina, which surround a swelling germen, supporting a tapering style, crowned by an obtuse trifid stigma; the germen afterward becomes an oval fruit, of a fine red colour, which opens in three cells, containing one oblong hard seed, the other two cells being generally empty.

This plant is commonly propagated by cuttings in Europe, which is more expeditious than raising them from seeds, because the seeds rarely come up the first year. The cuttings may be planted any time in summer; but those which are planted early, will have more time to get strength before winter. They should be planted in small pots, which will contain four cuttings in each; the earth of a kitchen garden, which is well cultivated, is as good as any for this purpose. The pots should be then plunged into a moderate hot-bed, and shaded from the sun every day, and gently refreshed with water now and then; when they have taken root they must be gradually

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raised to the open air, and then placed in a sheltered situation till they have obtained strength, when they should be separated, and planted each in a small pot filled with the same earth, then placed in the shade till they have taken fresh root, after which they may be placed with other exotic plants in a sheltered situation till autumn, when they must be housed with Myrtles, and other hardy green-house plants, and will require the same treatment.

This plant has been titled African Barberry by some ignorant persons, I suppose from the resemblance of its fruit to that of the Barberry.

The fourth sort grows naturally at the Cape of Good Hope, from whence I received the seeds. This rises with a slender ligneous stalk to the height of ten or twelve feet, covered with a light Ash-coloured bark, and full of joints, which are armed with long spines, upon which grow many small leaves, the branches are slender, and armed with the same spines at every joint, but the whole plant is so weak, as to require some support, without which they would fall to the ground. The leaves come out in clusters without any order, which are shaped somewhat like those of the narrow-leaved Box-tree, but are longer, and of a looser texture; the branches are angular, and when young their bark is whitish. As I have not seen the flowers of this shrub, I can give no farther description of it.

This rises very easily from seeds, and the plants make great progress; for I have raised them four feet high in two years from seeds, without any artificial heat; and some of the plants have lived thro' two winters against a fourth-east wall, but these have shed their leaves in winter, whereas those which were removed into the green-house have retained their verdure through the year.

It may be propagated by cuttings, which should be planted in the spring, and treated in the same manner as hath been directed for the former sort; or if the young shoots are laid, they will take root in one year, and may then be transplanted either into pots, or against a good supported wall, where I find they will endure our ordinary winters without any protection; and if they are covered in severe frosts, they may be brought, when old, to live abroad without protection. Those in pots will require a little shelter in winter, but should not be tenderly treated, for that will cause them to have weak branches, nor will the leaves have so much verdure, as when they are exposed to the open air in mild weather.

The fifth sort grows naturally in Jamaica, and also in some of the other islands in the West Indies, where it rises to the height of eighteen or twenty feet, sending out many side branches, garnished with leaves somewhat like those of the broad-leaved Myrtle, which are slightly fawn on their edges; the flowers come out from the side of the branches in long bunches; they are white, and composed of five petals, having five stamina placed opposite to them, and a germen in the center which is channelled; this afterward becomes a fruit, having five cells, each inclosing an oblong seed.

This plant is at present rare in England, for the seeds seldom grow the first year, therefore when the seeds arrive here, they should be sown in small pots filled with light earth, and plunged into a tan-bed, where they should remain till the following spring, when they should be plunged into a fresh hot-bed of tanners bark, and if the pots are duly watered, the plants will appear in about a month after; when they are fit to remove, they should be planted into separate small pots, and plunged again into the tan-bed, being careful to water and shade them till they have taken new root, after which they should be treated in the same manner as other tender plants from the same countries.

CELERY or SALARY. See APIUM.

CELLS of plants [of Cellae, *La?*] are those partitions or hollow places in the hulks or pods of plants, in which the seed is contained.

CE[^]OSIA. Lin. Gen. Plant. 555. Amarantwts, Tiirn. Inil. K. H. 23+ tab. 11S. Amaranth.

The C>M HALT tits ire.

Tit impairment n frmmait, and tokftfd «f three dry tloarcd Itatvi. Tbt/kwer bulb fax trrltjbarp-ptixldi ptnU, vibith art frmmna, Juf, and jbtptid likt a fimtr-cup- It bat It afmai nelltriMi. Joined It lie herder if lit germex, I vibub cibere the five jtmix*, vibith art trmiiuUfd fy turning fumtt. The gltubir germn ftf. Ttr:s envprigt JlyUy to buhil as long .:i ibi JlamiiM, trmiiud arili a ji>; gl< jtiema, Tbe n«f«*W»f tifttrwrd h(ta» <* gbi-tjnr MpfiU m/i cut clli tf wing harizen-s. itii?LS7Uiiimnrrt* iuibjh fads.*

I hit genus of pianu ii ranged in the fit ft bG&M of Ijnncui'i tilth clals, irritlef Pentamiria Monogynia, the flower hwi/ig five Ir-amina and one fyle.

The SPECIE* ire,

t. CLIOSJA (*Mdrgmittiat*) folii ovatis ftipulis : *scatis, peduncutis ingnluis, lj>ic» k.iriiofi. Lm. Sp. Hint. 397. Oitfia «S» nvtJ Itirn, a faitkkivx-jbtptid firpna, aid a riHgb Jpice. Amar.irihus Jpici albecente hmbi-riore. Martyii. Cent. 1*

1. CLOSA (*Crijtiti**) foBtf lanrcoliriMivati* rcurvis fu bundati! angti latit, fpieu obtmut crif ratU. Lin. Sp. iaj. Ctt^awiJbmjptm^btM tDguUr ftti'fi/ilks, and cbkng ertfled jfika «/ flvmers. Amaranth us criftatia. Cimer. Epit. 702. Qnfid Amaranth, rommaxh (did Cstkfcwlr.

USA (*Pcnituliita*) foliis Ijuicolito-ovatii, paniculj diflufi filiformi. l-lor. Virg. 144. Cdefia -ssith aval fpaur-lbapt Ir.nrt, arj a fiadrr difxrd pamlt. Aiiir^nthus poniculj Havicjnte gratili nvlofcricca. Slowi. HllV. 1. p. 14J- tab. 90.

4. Cti.oiui (*Cretma*) foliis ov>d« flixitu inauricutatij liile*to, fpicis multiplicibH criilatii. Lin. Sp. Cde/i; with ova! leaves, a fxrcwtd stalk, am trtfed fplku ef flsmtn. Anwnntlius panicJa fpeciofa crilbna. C, B. P. tai,

5. CLOii* (*Cajlrt*ju*) rblu Lnceolato-ovarii linestis snminatilTimn, lltipulis rak^tii, fpids enftntij. Lin. Sp. 197. CII/IB idlb rvel, linear, fpenr-Jbcftd, enut-pointed Itav/s, <mi ertjta fpttes tf fjmxt. Amaranthus vojgnrii. Kiirnph. Amb. 5. p. 236,

C. CLOSA (*Iarais*) toliklanceolatu tomemofis obtufi; Ipkis confertis, ftaminibus lanatif. flor. Zeyi. Cibfd *iitb fptr-jbnptd, tbtvj, nwl'i Uncs, and mxy fpikti e/Jhuirrs having dewmfamfuii.

The firft fort here mentioned, grow3 naturaly in America, from whence I have frequently received the fe-ds. This riles with on upright ftalk about tw feet high, garnilhed with oval leaves ending in poim, of a pale colour; thofe on the lower part bein^ four or five indies long, and one md a hiif broad in die middJe, but they diminish graduaUy in their tije upward. Toward the upper part of tilt-ftalk, there an a tem fide branches fent out which ftand ereft -, each of which b terminated Ky n (tender fpike of anil the principal ftalk is irnmirred by one whic] is much Ur^er; this is rwo or three inchii long, ant about a* thick us a nun's middle ringer, the whole Ipikc being of 1 fdvery colour. But therc is a variety Of thii with Ocmlet pyratu'dal Qnkef, intermixed with rfd toward fire top, the feeds of vluch I received from Dr. Linnxui, bi am inclinable ro think it a different from that which was figured by Dr. Martyn in his Dreader of rare plants, wliich I have cultivated many years in th Chelica garden, and have nt-ver found it to vary The Ipikc of' this is much thicker than that of Lin : and of equal fizc tie whole length; whrrai

hit tiiimijhrs aim oft to a [soirt at the top, and th colour* of both are very different. Thto fort ii annual like the other Amaranths, wi riiquires the lkm culture.

The fecond fort ii well known by its common appelUdun of Cockfmm, ivhiirh wn piven > it from the rbfm of in crefted head of fio- rcs, resembling a CocWcomb 1 of this there arc many varieties, which differ in their form, magnitude, and colours; but a they viry Em feedi they m not iiumimi n

dillinfl fpecie?. I have rwded great varieties of thofe from feeds which came from China, and other countries, but have generally found them alter in a few years, notwithUndine great care hji been taken in the faving of their KMS: the princijul ccciiion of their headiare red, puqlic, yellow, and whit'-; but I have had tome, whole hrtkl* have been varicyai'd with two or three colour. I alfo railed lome from feed* which I rrcivt-ii from I'crfia, whofe luadu were divided like a plume of feathen, whkh wtce of a beautiful Karlet colour, but theli* in a frw yeatt deg^nerateit: thtfore I hllal ini. hide M the different varieties of Cocklcomb, under this general title.

The feeds of the third fort were fent me from JJ-rniks by the btt Dr. HoulltKin. Xtris KIOWS naturally in moft of the Sugar I (lands, li Ma with a weak ftalk near four feet high, gamiftictl with oblong pointed leaves which (Utui ojuxifite at earh joint. The ftowrre come out in loole ptniclu ironi the tije of the falks, and alfo at the end of the bnocrhs : there are divided inv a great number of very 0 tjiike5, which an: of a pale yellow, (hining with a glo& tike filk. The plums ot' thii penlhed in the autumn, without perfittng their I«rda.

The fourth fort I received from China t this hattt a rowl lblk, which rifes three or four li-rt high, gamifted with oval leaves which arc not eared at th.ii twfe j the ftalk is cefnirmted by feveral fpikes of flowers which are Tariouly formed, fome being L-reflui, others are plumed like feathers, of a brigiu Icarlet colour, fo make a good appearance; but die feeds of this when circuUy fared, are apt to degenerate.

The fifth fort is of humbler growth, the team arc oval, fpear-fliapcd, ending in very fcute points; the btanchei jmrfeed from the wings of the leaves, al-ift the length of the Stalk, and are terminated by lkndcr fpiitci of flowen of no great beauty, therefor* the plant » prcferved as a variety in the botanic MM

The fixth fort growl tawrally -1-, it rik-s wi-Ji a *rry white woolly fULK ft *nee lett hgh. gartiiftieti -with obmfe woolly leaves; from the upper part of the ftalk tere are two or three (ender fide brwi Jib ;he principal ftalk) arc terminated by mx iikes ot' flowers: th'd flowers arc fo cioley wrapped up in r heir woolly empalemcns, as to be icarce vifibie to die naked eye, fo they make no tpueirance; but the extreme whiwnctof the ftalk, leaves, and fyikes, make a pretty variety among other tender plants during their continuance.

I daai it rentier-, the feeds I hould be fiwn in the ipring upon • hot-bed, and the ptmu floitld be trented in the lame way ai b dimmed for rhe Cock-combs-, but when the plana we fully grown, thiry fhoulM be removed into an airy gtafs-cife, where they may be Jcixncd from col'd and wet, but have free air admitted to thwrn in warm weather, OT!; they will WK perfect their feeds in this country.

In order to nave Urge fine Amaranth*, great care ihould be taken in the choke of the fetch] for itthi-y 1 are not carefully coltocted, the whole expence and trouble of nifing them will be loft When you arc provided with good feed*, they muft be fawn on a hot-bed (which fhould have been prepared a trw days before, that the violent hrit may be abated) about th; beginning of March] and in about a founight's time ! if the bei' is in good temper) the plants will rile-, but as they arc temler when they firft aj-pe*r, they require greM tare tor a few dayi nil they get fhength j firft, in giving them » doe proportion of air, to prevent their drawing Up and next to ketp them from too greit moiftjre, fer n fmall (hare of moifture will cuile their

10 rot: in lowing the feeds there Jhouki be cats taken Bbt tB put tin-nt too c'ofe, for when the pbnti come up in cluftcn, they rreqently fpoilrath other for want of room to grow: in .1 :«rtinrlit of thi«

weeks time the plants will be fit to remove, when you must prepare another hot-bed, covered with good rich light earth, about four inches thick, which should be made a few days, that it may have a proper temperature of heat; then raise up the young plants with your finger, so as not to break off the tender roots, and prick them into the new hot-bed about four inches distance every way, giving them a gentle watering to settle the earth to their roots: but in doing this, be very cautious not to bear the young plants down to the ground by hasty watering, which rarely rise again, or at least so as to recover their former strength in a long time, but very often rot in the items, and die quite away.

After the plants are thus planted, they must be screened from the sun till they have taken fresh root, but as there is generally a great steam rising from the fermentation of the dung, which condenses to wet against the glasses, and this dropping upon the plants, very frequently destroys them; so the glasses should be frequently turned in the day-time, whenever the weather will permit; but if the weather happens to prove bad, that you cannot turn your glasses, it will be of great service to your plants, to wipe off all the moisture two or three times a day with a woollen cloth, to prevent its dropping upon the plants. When your plants are firmly rooted, and begin to grow, you must observe to give them air every day (more or less, as the weather is cold or hot) to prevent their drawing up too fast, which greatly weakens their stems.

In about a month or five weeks these plants will have grown so as to meet; therefore should have another hot-bed, which should be of a moderate temper, and covered with the same rich earth about six inches thick, in which they should be planted (observing to take them up with as much earth about their roots as possible) at seven or eight inches distance every way, giving them some water to settle the earth about their roots, but be very careful not to water them heavily, so as to bear down the plants, (as was before directed) and keep them (shaded in the heat of the day, until they have taken fresh root, and be sure to refresh them often (but gently) with water, and give them air in proportion to the heat of the weather, covering the glasses with mats every night, left the cold chill your beds, and stop the growth of the plants.

In the middle of May you must provide another hot-bed, which should be covered with a deep frame, that your plants may have room to grow: upon this hot-bed, you must set as many three-penny pots as can stand within the compass of the frame; these pots must be filled with good rich earth, and the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the frame with noxious fumes; then, with a trowel, or some such instrument, take up your plants (from the former hot-bed) with as much earth as possible to the roots, and place each (single plant in the middle of one of the pots, filling the pot up with the earth before described, and settle it down to the root of the plant with your hands; water them gently, as before, and shade them in the heat of the day from the violence of the sun, by covering the glasses with mats; refresh them often with water, and give them a good quantity of air in the day-time.

In about three weeks more, these plants will have grown to a considerable size and strength, so that you must now raise the glasses very much in the day-time; and when the air is (oft and the sun is clouded, draw off the glasses, and expose them to the open air, and repeat this as often as the weather will permit; which will harden them by degrees, to be removed abroad into the places where they are to remain the whole year: but it is not advisable to set these plants out until a week in July, observing to do it when the air is perfectly soft, and if possible, in a gentle shower of rain.

Let them at first be set near the shelter of a hedge for two or three days, where they may be screened from the violence of the sun, and strong winds, to which they must be inured by degrees; these plants, when grown to a good stature, perform very freely, and must be every day refreshed with water, if the weather proves hot and dry; otherwise they will flout, and never produce their plumes as fine as they would do if taken care of.

This is the proper management, in order to have fine Amaranths; which, if rightly followed, and the kinds are good, in a favourable season, will produce wonderful large fine heads, and are the greatest ornament to a good garden for upwards of two months: by this method, I have had plants five or six feet high, with crests near a foot in breadth; and I am persuaded, if the kind is good, (and there is no want of dung, or conveniences) in a kindly season, they will grow much larger.

By the middle or latter end of September, the Amaranths will have perfected their feeds, so that you must make choice of the largest, most beautiful, and least branching plants of each kind for seed, which you should remove under shelter, (especially if the weather proves wet, or the nights frosty) that the feeds may be perfectly ripened; in the choice thereof, be sure never to take any feeds from side branches, nor from the neck of the plume, but such only as are produced in the middle thereof, which in many plants, perhaps, may be but a small quantity; but I do assure you, it is those only you can depend upon, to have your kinds good the succeeding year.

CEL SIA. Lin. Gen. Plant. 675. The name was given to this plant in honour of Dr. Olaus Celsius, professor of philosophy and theology in the university of Upsal, in Sweden, by Dr. Linnaeus. We have no English name for it.

The CHARACTERS are,

*// bath an obtuse permanent stemment, which is as long as the petal, divided at the top into five parts. The flower is of one leaf, with a very short tube, spread open above, and cut into five unequal parts; the two upper being small, and the under larger. It hath four hairy stamina, which incline toward the upper segments of the petal, two of which are longer than the petal, and two are of the same length, terminated by small roundish stamens. In the center is situated a roundish germen, supporting a slender style, crowned by an obtuse stigma. * The germen afterward becomes a roundish capsule compressed at the top, fitting upon the empurment, having two cells which are filled with small angular seeds.*

This genus of plants is ranged in the second edition of Linnaeus's fourteenth class, intitled Didymia Angiosperma, the flower having two long and two short stamina, and the seeds being included in a capsule.

There is but one SPECIES of this genus at present known, which is,

CELSIA (*Orientalis*) foliis duplicato-pinnatis. Hort. Cliff. 321. *Celsia with double winged leaves. Verbaicum orientale* Sophie folio. Tourn. Cor. 4*. *Eajlern Mullen with a FHweed leaf.*

This plant grows naturally in Armenia, from whence Dr. Tournefort sent the seeds to the royal garden at Paris, where they succeeded, and have been since communicated to most parts of Europe. In its natural place of growth, this is an annual; but in England it will rarely ripen its seeds, unless the plants come up in the autumn and live through the winter.

It sends out many oblong leaves, which are finely divided almost to the mid-rib on both sides; these lie flat on the surface of the ground, and from the center arises a roundish herbaceous stalk near two feet high, garnished the whole length with leaves of the same shape, but diminishing in their size gradually to the top: these are placed alternately, and at the foot of each come out the flowers, more than half the length of the stalk, which are of an iron colour on their outside, but pale yellow within, spreading

ing open like thofe of the common Mullein, but are not fo regular *, the (hort tube being turned downward, and the lower fegments being larger than the upper, and the ftaminabeingunequal, have occafioned Linnaeus to remove: it to his ringent flowers. The feed-wiffel is round, compreffed, and hath two cells filled with fmall feeds. It flowers in June, and the feeds ripen in September: if the feeds of this plant are fown upon a warm dry border as foon as they are ripe, the plants will often come up and live through the winter, provided the foil is poor -, for in rich ground they are apt to grow rank, and then they are generally deftroyed by the early frofts, or will rot with much wet; but if the plants fhould not rife the fame autumn, there will be little hazard of their growing the following fpring. When the plants come up, they will require no other care but to keep them clean from weeds, and thin them if they are too clofe; for they do not bear removing well, fo fhould be fown where they are intended to remain.

I have fometimes, when the feafons have proved warm, had ripe feeds from plants fown in the fpring; but this cannot be depended on, therefore it is much better to fow the feeds in autumn.

CELTIS. Tourn. Inft. R. H. 612. tab. 383. Lin. Gen. Plant. 101a. The Lote or Nettle-tree, in French Micocoulier.

The CHARACTERS are,

It hath male and hermaphrodite flowers on the fame tree: the hermaphrodite flowers are fingle, and fituated above the male. The empalement of the hermaphrodite flower is divided into five parts, in which there are no petals, but five fhort ftamina terminated by thick quadrangular fummits, which have-four furrows. In the center is fituated an oval germen, fupporting two reflexed ftyles crowned by a fingle ftigma. The germen afterward becomes a round berry with one cell, inclafing a roundifh nut. The male flowers have their empalements divided into fix parts and have no germen or ftyle, but in other parts like the hermaphrodite.

This genus of plants is ranged in the firft fe&ion of Linnseus's twenty-third clafs, intided Polygamia Monoecia, from the fame tree having male and hermaphrodite flowers.

The SPECIES are,

- i. CELTIS (*Auftralis*) foliis lanceolatis atuminatis, ferratis, nervofis. *Nettle-tree with fpear-Jhaped pointed leaves, which are veined and fawed on their edges.* Celtis fru&u nigricante. Tourn. Inft. 612. *Lote-tree with a blackfruit.*
- i. CELTIS (*Occidental*) foliis obliquè-ovatis, ferratis, acuminatè. Lin. Sp. Plant. 1044. *Nettle-tree with oblique, oval, pointed leaves, which are fawed on their edges.* Celtis fru&u obfeurè purpurafcente. Inft. R. H. 612. *Lote-tree with a dark purple fruit.*
3. CELTIS (*Orientalis*) foliis ovato-cordatis, denticulatis, petiolis brevibus. *Nettle-tree with oval heart-Jhaped leaves, flightly indented, and fhort foot-ftalks.* Celtis orientalis minor, foliis minoribus & craffioribus, fructu flavo. Inft. Cor. 42. *Smaller Eaftern Lote-tree with fmailer, and thicker leaves, and a yellow fruit.*
4. CELTIS (*Americana*) foliis oblongo-ovatis, obtufis, nervofis, fupernè glabris, fubtus aureis. *Nettle-tree with oblong, obtufe, nervous leaves, which are fmooth on their upper furface, and of a gold colour beneath.* Celtis foliis citrii iùbtus aureo, fru&urubro. Plum. Cat. 18. *Lote-tree with Citron leaves, of a gold colour on their under-fide, and a red fruit.*

The firft fort grows naturally in the fouth of France, in Spain and Italy, where it is one of the largeft trees of thole countries: yet this is not fo plenty in England as the fecond, nor do I remember to have feen but two large trees of this fort in the Englifh gardens; one of which was formerly growing in the Bifhop of London's garden at Fulham, but was cut down fome years paft, * with many other curious exotic trees, which wqre there growing in great perfeftion: the other was in the garden of Dr. Uvedale at Enfield, which was there Handing a few years ago, when I paid a vifit to that place, which had frequently pro-

duced fruit, but was never propagated in this country 5 nor were there any young plants of this kind it the garden, till about fourteen years ago, when I procured a good quantity of the fruit from Italy, which I communicated to feveral of my friends.

This tree rifes with an upright ftem to the height of forty or fifty feet, fending out many (lender branches upward, which have a fmooth dark coloured bark, with fome fpts of gray; thefe are garnifhed with leaves placed alternately; which are near four inches long, and about two broad in the middle* ending in long fharp points, and deeply fawed on their edges, having feveral tranfverfe veins which are prominent on their under fide. The flowers come, out from the wings of the leaves all alding the branches 5 they have a male and an hermaphrodite flower generally at the fame place, the male flowers being fituated above the others: thefe have no petals but a green herbaceous empalement, fo make no figure 5 they come out in the fpring, at the fame time when the leaves make their firft appearance, and generally decay before the leaves have grown to half their magnitude. After the flowers are paft, the germen of the hermaphrodite flowers become a round berry about the fize of a large Pea, which, when ripe, is black.

The fecond fort grows naturally in North America; it delights in moift rich foil; in which it becomes a very large tree. This rifes with a ftrait ftem, which in young trees is fmooth, and of a dark colour, but as they advance, it becomes rougher and of a lighter green. The branches are much diffufed on every fide, and are garnifhed with oblique oval leaves, ending in points, fawed on their edges; they are placed alternately on the branches, with pretty long foot-ftalks. The flowers come out oppofite to the leaves, upon pretty long foot-ftalks *, the male flowers ftanding above the hermaphrodite as in the other fpecies -, after thefe decay, the hermaphrodite flowers are fucceeded by roundifh berries, which are fmaller than thofe of the firft fort, and when ripe, are of a dark purple colour. This tree flowers in May, and the feeds ripen in Oftober. Of this fort there are feveral pretty large trees in the Englifh gardens, fome of which produce great quantities of fruit annually, which in favourable feafons come to maturity, fo that from thefe feeds there have been plants raifed *, and there are few years, in which there is not fruit of this fort fent from America, whereby it is now become pretty common in the Englifh nurseries.

This tree is late in coming out in the fpring, but in recompenfe for that, it continues as long in beauty in the autumn, for it is the lateft in fading of any of the deciduous trees *, nor do the leaves alter their colour long before they fall, but continue in full verdure till within a few days of their dropping off; and, fo foon as they begin to fall, the trees will in a few days be quite deftitute of leaves, fo that the litter which their falling leaves occafion, may be fooner cleared away, than that of any other deciduous tree. There is little beauty in the flowers or fruit of this tree; but, as the branches are well clothed with leaves, which are of a fine green colour, the trees* when mixed with others in wilderneffes, make a pleafing variety during the fummer feafon. The wood of this tree being tough and pliable, is eftemed by coachmakers for the frames of their carriages.

The third fort was difcovered by Dr. Tournefort in Armenia, from whence he fent the fruit to the royal garden at Paris, where they fucceeded, and the trees, which were there raifed, have produced fruit for feveral years, fo that moft of the curious gardens in Europe have been furnifhed with it from thence. It rifes with a ftem about ten or twelve feet high, dividing into many branches, which fpread horizontally on every fide, having a fmooth greenifh bark, garnifhed with leaves about an inch and a half long, and near an inch broad, inclining to a heart-fhape,

but are blin... one of the cars of the bale being smaller and lower than the other, they are of a thicker texture than those of the common fort, and of a paler green, placed alternat on the branches, and have three ... The flowers ... E one from the first-blake of the leaves, in the same manner as the former, and ... re liittTcdeti by ova! yelkw berries, when fully ripe, turn 01 a da ... >ir. The wood ... this tree is very white.

Their trees are all propagated by seeds, which should be sown soon after they are ripe, when they can be procured at that season. For these frequently come up the following spring; whereas, those which are sown in the spring, will not come up till a twel remtmih after; therefore it is the best way to sow ;ticm in jxits or nibj, [fur they m>y bi* I fully respon cd, for thiofi: which are sown in the spring should be plant d in a shady situation in summer, and constantly kept clean from weeds; but in autumn they should be placed in a warm situation, plunging the pots into the ground; and if they are covered over with a ... tan from a decayed hot-bed, it will prevent the frost from penetrating the earth » inj ... And it" their pots are placed on a gentle hot-bed, in the tyri ... it will greatly forward the vegetation ... the seeds, whereby the plants will have more time to get through before I he Winter: but iviicn the plants appear above ground they must have a large share of air admitted to them; ... olWwif: they will draw up weak, and as soon as the weather is warm, they must be cjtjracti to the open air, and in summer they :utl be constantly itept clean from weeds; if the season proves dry, they will ttqake water two or three rimes' a week. In autumn it wiif be proper to remove the pots, ... md j'l' c tK m ... xdtmmc, t ... ter tiem in winter froi : ... where there ft r.M tiat convenicney, the pots should be plunged into the ground near plinis, when young.» ... full of top, and tender, the early tVufi in jtunimn fVequia

... covered with mats, or a litle (haw or PesTc-haulm) over them to protect them. In the following spring the [plants (hould be taken out of the first-pots, and planted in the full ground: this should be done about the middle or latter end of March, when the danger of the frost is over; therefore a bed or two should be prepared (according to the number of plants raised) in a sheltered situation, and, if possible, in a grassy leamy field. The ground must be well raked, and cleared from the roots of bad weeds, and when levelled, should be marked out in lines at one foot distance; then the plants should be carefully turned out of their pots, and watered, if necessary, to near their roots, and plant d in the lines at six inches asunder, pushing the earth down close to the roots. If the ground is very dry when they are planted, and there is no appearance of rain soon, it will be proper to water the beds. 10 fetde thit gfuund to the roots of the plants; and after this, if the surface of the ground is covered with some ...] ran or rain dng, it will fceep it u;>ic, and prevent the drying winds from penetrating to the roots of the plants.

The following summer, the necessary care must be to keep them constantly clean from weeds; but after the plants are pretty well established in the ground, they will not require any water, especially towards the latter end of summer, for that will occasion their late growth, whereby they will be in great danger of suffering by the autumn frosts; for the more any of these young trees are stopped in their growth by drought towards autumn, the firmer will be their texture, so better able to bear the cold.

The plants may remain in their nursery-beds two years, by which time they will have obtained sufficient strength to be transplanted where they are designed to remain for good, because their roots will have spread their roots wide every way; and if they stand long in the nursery, their roots will be cut in

ring, which HW. be a great prejudice M their future growth.

These Sorts are hardy enough to thrive in ihr open air in England, alter they tut become ibtrne; bite fur the two first win ten after they come Dp from their roots, they rtquire a litde prtM&ion, dj scially the ih:d fort, wiiL'i is ten Jf rer than either of the farmer. The young pliiits of this fort ... i-ufnrly Jntve varitgjcd craves, but timic art more ii: parent of child than the plain leaved,

The fourth sort was first discovered I ij father Plumier, in the French islands of America; and it was found growing in Jamaica, by Dr. Hansloot, who brought it to England. This tree with a fruit trtuk ten or twenty feet high, covered with a gray bark, divided into many branches upward, furnished with small leaves four inches long, and two and a half broad, rounded at their extremity, of a thick texture, very smooth on their upper surface, and on their under side are of a lard gold colour, placed alternately on the branches. The fruit is round and red, but the lionets I have not;

I hi? fccets if this fort; they come up the first year, but they may be raised in pots, and plunged into the tan-bed in the flower, where they should remain till the plants come up. These plants must be constantly kept in the bark-liver, and treated in the same manner as other tender exotics.

CENTAURIA R.E.A. Lin. Gen. Plant. Hist. Centaureum majw, Tom. 1. fol. 11. 449. tab. 270. Juss. Tournef. 443. Cyana. Tournef. 445. Greater Centaury, Knapp. ... Blue Borage, &c.

The CHARACTERS are, ft bt, ch a compound flower, white dyl: :t emspujtd </iwur/ ... trj ir TSJI of finxU ... infinded ... ttmf-

J fnumit; tit germn, is figured under the title, separating a female style, ornamented with an oblong stigma. The germen afterwards becomes a single seed, and is in the envelope. The female flower bears a slender tube, but expands above, where it is enlarged, and cut into five unequal parts, these are barren.

This genus of plants is ranged by the third edition of Linnaeus's sixteenth class, under the name of Centaury, the flowers of this section have their disk and middle composed of hermaphrodite florets, which are fringed, and thwr bonk'rt of i'enuie abortive florets.

- 1. CENTAUREA (Apos) calycibus inermibus, Equamb ovatis obtusis, foliis pinnatis glabris heterophyllis impari ferratis. Hort. Cliff. 431. Centaury with an empaleone without spurs, oval slender pale, and smooth winged leaves, which are entire. Centaureum alpinum HEDD. C. B. P. 117. Yellow Alpine Centaury.
- 2. CENTAUREA (Cacuriana) calycibus inermibus, squatis ovatis, foliis pinnatis, lobis ferratis dimorphis. Hort. Cliff. 431. Centaury with an empaleone without spurs, oval joints, and winged leaves, which are entire; ami n ... in I. it in
- 3. CENTAUREA (Glabrioides) calycibus scariosis foliis indivisis heterophyllis decurrentibus. Hort. Cliff. 431. Centaury with a fleshy empaleone, and scarious entire leaves running along the stalks. Centaureum majus orientale erectum, glabris foliis, flore luteo. Tournef. Cor. 32. Com. Rat. Plant. 29. Upright, soft, green Centaury, with a flat leaf and a yellow flower.
- 4. CENTAUREA (Strob) calycibus ciliatis obtusis, foliis pinnatifidis linearibus heterophyllis. Prod. Leyd. 140. Centaury with slender hairy empaleone, and winged pointed leaves, which are very narrow and entire. Centaury with the appearance of blue Borage, and a narrow leaf.

1. **CENTAUREA** (*Conifera*) calycibus scariois, foliis tomentosis, radicalibus lanceolatis, caulibus pinnatifidis *aule simplici. Prod. Leyd. 142. *Centaury with awl-shaped empalement, woolly leaves, those near the root being spear-shaped, *b^o on the stalk pointed, and a Jingle stalk.* *Centaureum majus incanum, humile, capite pini.* Tourn. Inf. R. H. 469. *Dwarf, hoary, greater Centaury, with a head like a Pine cone.*
6. **CENTAUREA** (*Montana*) calycibus ferratis, foliis lanceolatis decurrentibus, caule simpliciflora. Hort. Cliff. 422. *Centaury with Jawed empalements, spear-shaped running leaves, and a Jingle stalk.* *Cyanus montanus latifolius.* f. *Verbafructum Cyanoides.* C. B. P. 273. *Greater Mountain Blue Bottle with broad leaves.*
7. **CENTAUREA** (*Angustifolia*) calycibus ferratis, foliis linearibus lanceolatis decurrentibus, caule simplici. *Centaury with Jawed empalements, very narrow, spear-shaped running leaves, and a Jingle foot-stalk.* *Cyanus angustifolius* & *longiore Belgicus.* H. R. Par. *Narrower and longer leaved Belgick Blue Bottle.*
8. **CENTAUREA** (*Mofcbata*) calycibus inermibus, fubrotundis glabris, squamis ovatis, foliis lyrato-dentatis. Hort. Cliff. 421. *Centaury with unarmed, roundish, smooth empalements, oval scales, and finned leaves.* *Cyanus floridus odoratus, Turcicus five orientalis major.* Park. Theat. 421. *Sweet oriental Cyanus, commonly called Sweet Sultan.*
9. **CENTAUREA** (*Amberboi*) calycibus inermibus, fubrotundis, glabris, squamis ovatis obtusis, foliis laciniatis ferratis. *Centaury with roundish, smooth, unarmed empalements, oval obtuse scales, and cut leaves, which are Jawed on their edges.* *Cyanus orientalis flore luteo fistuloso.* Ac. R. Par. 75. *Eastern Cyanus with a yellow fistular flower, commonly called yellow Sweet Sultan.*
10. **CENTAUREA** (*Cyanus*) calycibus ferratis, foliis linearibus integerrimis, infimis dentatis. Hort. Cliff. 422. *Centaury with Jawed empalements, very narrow entire leaves indented below.* *Cyanus fegetum.* C. B. P. 273. *Corn Blue Bottle.*
11. **CENTAUREA** (*lippii*) calycibus inermibus, squamis mucronatis, foliis pinnatifidis obtusis decurrentibus. Lin. Sp. Plant. 910. *Centaury with unarmed empalements, having pointed scales, and winged pointed leaves, which are obtuse, running along the stalk.* *Cyanus JEgypticus flore parvo purpureo, caule alato.* D. Lipp. *Egyptian Cyanus with a small purple flower, and a winged stalk.*
12. **CENTAUREA** (*Cineraria*) calycibus ciliatis terminalifloribus, foliis tomentosis pinnatifidis, lobis acutis. Hort. Cliff. 422. *Centaury with hairy empalements closely terminating the stalks, woolly leaves with winged points, and the segments very narrow.* *Jacea montana candidissima, Staebes foliis.* C. B. P. 273. *White Mountain Knapweed with a Sube leaf*
13. **CENTAUREA** (*Ragufina*) calycibus ciliatis, foliis tomentosis pinnatifidis, foliolis obtusis ovatis integerrimis exterioribus majoribus. Hort. Cliff. 422. *Centaury with hairy empalements, woolly leaves with winged points, the small leaves oval and obtuse, the outer larger.* *Jacea arborea argentea Ragufina.* Zan. Hift. 107. *Silvery-tree Knapweed of Rdgusa.*
14. **CENTAUREA** (*Napifolia*) calycibus palmato-fpinofo, foliis decurrentibus radicalibus lyratis. Prod. Leyd. 141. *Centaury with palmated spinous empalements, and sinuated prickly leaves running along the stalks.* *Jacea cyanoides altera, alato caule.* Herm. Par. 189. *Another Knapweed like Cyanus, with a winged stalk.*
15. **CENTAUREA** (*Rhapontica*) calycibus scariois, foliis ovato-oblongis denticulatis integris petiolatis, fubtus tomentosis. Hort. Cliff. 421. *Centaury with awl-shaped empalements, oval, oblong, indented, entire leaves, having foot-stalks, woolly underneath.* *Centaureum majus, folio helenii incano.* Tourn. Inf. 449. *Greater Centaury with a white Elecampane leaf.*
16. **CENTAUREA** (*Peregrina*) calycibus fetaceo-fpinofo, foliis lanceolatis petiolatis, inferne dentatis. Hort. Cliff. 423. *Centaury with bristly prickly empalements, spear-shaped leaves, with foot-stalks indented beneath.* *Centaureum majus folio molli acuto laciniato, flore aureo magno, calyce fpinofo.* Boerh. Ind. alt. 1. p.

144. *Greater Centaury with a soft, pointed, cut leaf, and a large golden flower, with a prickly empalement.*
17. **CENTAUREA** (*Orientalis*) calycibus squamato-ciliatis, foliis pinnatifidis, pinnis lanceolatis. Lin. Sp. Plant. 913. *Centaury with hairy scales to the empalement, wing-pointed leaves, whose lobes are spear-shaped.* *Cyanus foliis radicalibus partim integris, partim pinnatis, bractea calycis ovali, flore fulphureo.* Hall. Aft, Phil. 1745.
18. **CENTAUREA** (*Argentea*) calycibus ferratis, foliis tomentosis, radicalibus pinnatis, foliolis uniauritis. Lin. Sp. 1290. *Centaury with fawed empalements, woolly leaves, those near the root winged, and the lobes eared.* *Jacea Cretica laciniata argentea, flore parvo flavescente.* Tourn. Cor. 31.
19. **CENTAUREA** (*Sempervirens*) calycibus ciliatis, foliis lanceolatis ferratis, inferioribus haftatis. Lin. Sp. 1291. *Centaury with a baity empalement, spear-shaped fawed leaves, and those near the root halbert-shaped.* *Jacea Lusitanica sempervirens.*
20. **CENTAUREA** (*Splendens*) calycibus scariois obtusis, foliis radicalibus pinnatifidis, caulibus pinnatis dentibus lanceolatis. Prod. Leyd. 142. *Centaury with a rough obtuse empalement, the radical leaves wing-pointed, and those on the stalk winged, spear-shaped and indented.* *Jacea caliculis argenteis major.* Inf. R. H. 444.
21. **CENTAUREA** (*Romano*) calycibus palmato-fpinofo, foliis decurrentibus inermibus, radicalibus pinnatifidis, impari maximo. Hort. Cliff. 423. *Centaury with a palmated spiny empalement, smooth running leaves, those near the root wing-pointed, and a large terminating lobe.* *Jacea fpinosa Cretica.* Zan. Hift. 141.
22. **CENTAUREA** (*Spherocephala*) calycibus palmato-fpinofo, foliis ovato-lanceolatis petiolatis dentatis. Hort. Cliff. 422. *Centaury with a palmated prickly empalement, and oval, spear-shaped, indented leaves, having foot-stalks.* *Jacea spherocephala fpinosa Tingitana.* H. L. 332.
23. **CENTAUREA** (*Eriophora*) calycibus duplicato-fpinofo lanatis, foliis femidecurrentibus integris finuadque caule prolifero. Hort. Upfal. 272. *Centaury whose empalement is downy and doubly armed with spines, running leaves, some entire, others sinuated, and a childing stalk.*
24. **CENTAUREA** (*Benedicta*) calycibus duplicato-fpinofo lanatis involucratis, foliis femidecurrentibus denticulato-fpinofo. Lin. Sp. 1296. *Centaury whose empalement is downy and doubly armed with spines, running leaves with indentures, terminating in spines.* *Carduus Benedictus.* Camer. Epit. 562. *Benedict Thistle.*
- There are many other species of this genus, which are preserved in botanic gardens for the sake of variety; some of which grow naturally in England, and are often troublesome weeds in the fields, so do not deserve a place in gardens; therefore I chose not to trouble the reader with mentioning their titles, but have here selected those species which have some beauty to recommend them.
- The first sort grows naturally upon the Alps. This hath a perennial root, which strikes deep into the ground, sending out a great number of long, winged, smooth leaves, of a glaucous colour; the stalks rise near four feet high, and divide upward into many branches, garnished with small leaves of the same form as the lower, each of these stalks is terminated by a single head of yellow flowers, composed of many florets; those which occupy the disk are hermaphrodite, but those of the ray are female. This flowers in June and July, and, in dry seasons, will perfect their seeds in autumn. It may be propagated either by seeds, or by parting their roots in the autumn, being careful not to divide the roots too small. The seeds should be sown in the spring on a bed of light earth; and when the plants are fit to remove, they should be transplanted into a bed of fresh earth six inches asunder, in which place they should remain till autumn, when they should be planted where they are designed to remain.
- The second sort stands in the list of medicinal plants of the college, but is very rarely used; the root is reckoned

reckoned to be binding, and good for all kinds of fluxes, and of great use to heal wounds. This grows naturally on the mountains of Italy and Spain; it hath a strong perennial root like the former sort, from which come out a great number of long winged leaves, which spread wide on every side, of a lucid green, and fawed on their edges; the flower-stalks are slender, but very stiff and divide upward into many smaller foot-stalks; these, together with the other stalks, rise five or six feet high, having at each joint one small winged leaf of the same form with the other: each of these foot-stalks is terminated by a single head of purple flowers, which are considerably longer than the empalement. This sort flowers in July, and in very warm dry seasons will produce ripe seeds in England. It may be propagated by parting of the roots in the same manner as the former sort, and the plants must be treated in the same way, but should have more room to grow, therefore it is not proper for small gardens; but in large open borders, or to intermix in open quarters with other tall growing plants, this will make a variety.

The third sort was discovered by Dr. Tournefort in the Levant, who sent the seeds to the royal garden at Paris, and from thence it hath since been communicated to most of the curious gardens in Europe. This hath a perennial root, which strikes deep into the ground, from which forings up a great tuft of long entire leaves, shaped like those of Wood, growing upright, with many upright stalks, which grow near five feet high, garnished with leaves coming out single at each joint, of the same shape as the under, but are less, and have a border or wing running along the stalk. The upper part of the stalk divides into two or three smaller, each of which is terminated by a single head of yellow flowers, included in a silvery scaly empalement. This flowers in July, but rarely produces good seeds in England. It may be propagated by parting the roots in the same manner as the former, and the plants may be treated in the same way, being equally hardy; and as this doth not spread so much as the last, it may be allowed a place in smaller gardens.

The fourth sort grows naturally in Austria. This hath a perennial root as the former, from which come out many winged leaves, which are hoary, the segments narrow and entire, the stalks rise near three feet high, dividing into several branches, which have a single winged leaf at each joint, of the same shape with the other, at the end of each stalk is one head of purple flowers, included in an oblong scaly empalement, each scale being bordered with small hairs like an eye-brow. The flowers appear in June, and the seeds ripen in August. This is propagated by seeds, which may be sown in a bed of common earth, in a nursery; and when the plants come up they must be thinned, and kept clean from weeds, and the following autumn the plants may be transplanted where they are designed to remain; after which they will require no further care. Two or three of these plants may be allowed a place in gardens where there is room, for the sake of variety.

The fifth sort grows naturally in the south of France, and in Italy: I received the seeds of this from Verona. It hath a perennial root, which doth not divide and spread as the former, but grows single, sending out in the spring several entire spear-shaped leaves, and afterward a single stalk, more than a foot high, garnished at each joint with one divided hoary leaf; and at the top comes out a single, large, scaly head, shaped like a cone of the Pine-tree, very taper at the top, where it closely furrounds the florets, whose tops just peep out of the empalement: they are of a bright purple colour, and appear in June, but are not succeeded by seeds in England, so cannot be propagated unless the seeds are procured from abroad. These seeds may be sown, and the plants afterward treated in the same manner as the last.

The sixth sort is the common perennial Blue Bottle, which by some is titled Batchelors Button. This is

so well known as to need no description; the roots of this sort creep under ground to a great distance, whereby the plant propagates too fast, and often becomes troublesome in gardens. It flowers in May and June, and will grow in any soil and situation.

The seventh sort differs from the eighth, in having much longer and narrower leaves, which are not so white, the heads of flowers are also smaller; but whether this is only a variety from the other, I cannot determine, having never raised either from seeds; for these plants spread very much by their creeping roots, which renders them barren, as is frequently the case with many other creeping rooted plants, few of which produce seeds: however, this plant has always retained its difference from the year 1727, when I first brought it to England; and as it propagates so fast, it is now become almost as plenty in the gardens, as the common broad leaved sort. This is equally hardy, and may be planted in any soil or situation, where many other sorts will not thrive, and during its continuance in flower will make a variety in the garden.

The eighth sort is annual, so is only propagated by seeds. This has been many years propagated in the English gardens, under the title of Sultan Flower, or Sweet Sultan. It was brought from the Levant, where it grows naturally in arable land among the corn. This sends up a round channelled stalk near three feet high, which divides into many branches, garnished with jagged leaves, of a pale green, smooth, and stand close to the branches; from the side of the branches come out long naked foot-stalks, each sustaining a single head of flowers shaped like those of the other species, which have a very strong odour, so as to be offensive to many people, but to others is very grateful. The empalement of these is scaly* round, and without spines; the flowers are in some purple, and others white, and likewise a flesh colour between them hath come from the same seeds. There is also a variety of this with fringed flowers, and another with fringed flowers, commonly called Amberboi or Emberboi: but these have degenerated to the common sort in a few years, although I have saved the seeds with great care, so I suppose they are only varieties. These seeds are commonly sown upon a hot-bed in the spring, to bring the plants forward, and in May they are transplanted into the borders of the flower-garden; but if the seeds are sown in a warm border in autumn, they will live through the winter; and these plants may be removed in the spring into the flower-garden, which will be stronger, and come earlier to flower than those which are raised in the spring. The seeds may all be sown in the spring on a common warm border, where the plants will rise very well, but these will be later in flowering than either of the other. The autumnal plants will begin to flower the middle of June, and will continue flowering till September; and the spring plants will flower a month later, and continue till the frost fops them. Their seeds ripen in autumn.

The ninth sort has been supposed to be only a variety of the former, which is a great mistake; for although there is a great similitude in their appearance, yet they are specifically different, so never alter. I have cultivated this sort upward of forty years, and have never observed the least variation in it. This is much tenderer than the former, so the seeds must be sown upon a hot-bed in the spring; and when the plants are fit to remove, they should be transplanted on a fresh hot-bed to bring them forward: when they have taken root in this bed, they must have air admitted to them every day, to prevent their drawing up weak, and refreshed with water sparingly, because they are very apt to rot with much wet. When the plants have obtained strength, they must be carefully taken up, and planted in separate pots filled with light earth, and some of them placed in the shade till they have taken root; then they may be placed with other annual plants in the pleasure-garden, where they will continue long in beauty. But as these plants which

itt j.: should be two or three plants kept in a moderate hot teaep frame, where they will come earlkr to flower, and being Brote&cd from wet and soil, they will ripen their leed every year, which a the in all method L to pfercm the fruit.
 This fort dirfvs from the COOM. In its IVM being laived o" ihtireti; the flowers are bluish, of abrigbtcakntr, and have a very agreeable fe-leftodour.

I

October.
 The tenth grows naturally in England: this stands in all parts of the island, which is effect of cold flowers, and are

Iftwentiin Jtiy and Auguft, and the feeds ripen in fort it rile common Blue Bottle, which :v.nglt thic com in m i the lilt uf mafic

There is atiiHled watei of the Bower ned good ibr the eyes. There are givat i IIS in ilm Same of wfiid finely variegated i the feeds of theft are (bW by firelf-mcii, by the title of Bottle, of all Colours. Thefe arc hieit will rife ill <l iiorder,

.mil rttljjin: im t' tksa
 weed«, 7:1 thinned v.luit tlity arc too f; well whm thry arc tranfolant- cd- If the >K arc low n tity will fee-

I

ing along the stalk, the flowers are bright purple, and have a fealy feals are torn in the fpring upon a border

and divided into many narrow fegments; the

Lnd ucrttr, and 'die plant • wn in the l'pring. CHILLI lore were, lint me by Dr. trum Paris, TolO rfeicwd them from Dr. Lifpi, at Grand Cairi Thi» i: an annual plant, ••; near two lect hii>l), lending out two tir

the icives fl< into ma: i live a btmJer run- jll, fit' a m!l:drmaitt. If the • ! Bghi

eanh, where the ; Unn . t o remain, they » quire no farther tare hut to keep iVm clean from weed:: It flowers in July, and the feeds ripen b autumn.

The twelfth fort is a; lant, whkh retains iw kaves throuh ilw- ytiir. Thii grmvj naturally in July, on the borders of ib llaar* .

i, branching

tsvon leaf being the largst, ir feedi in u This ion • the fide branches upon thoir root-ftalks, f« » I. i>ui in only killed, fo one or July, but fince ever are itrown - a common frame

twiii It is propagated by planting of the young fourth pagan lant, which do nol

dry time-estibh, where they will not In a Jhidybor- • A arm borders, or put into winter.

naturally in Mat • of the Mr- ti rik* more than liatli a jJctennial flait;

nany obtufe er.tirc lobci, the Imr.tl leaves or lobes on the a ,-ri ;trc pro-

iiu<. in thic grow l-jrurianr,

they *.; Thii renenth fort ii annual. Tiiis omvs. >" varirtv

about thire feet high-, the kmcf leivrs unlike thofe of the Turrtep, Lemg rounded at their ends, mil their bafe is cii into many fegments; thoir wpon the Italks and branches are nearly of the linvr form, butdimmim gradually in iheiriWetothc too; thdc have a border or mna nmning along tie ftalks, which connect them loerher i the flowers are p-dodced at the end of the branches, which have prickly rmpalcmnu*, the Ipines come out from the burdr of the feals, divided like the tutors of a- hand.

'Hit: Bow/crs arc of a bright par] le, to make a pretty appcaranLe. II: a fort may be treated in die fame manner as the C••n Bottle, by faring the feeds in autumn, and kcr; ing the pimis clean from weeds. The plants Will flower in June, and the feeds t.I ripen in Aug alt Itl': the feeds are »lfo fown in the fpring, iht plant will come t; Bower a month after there, and will coatbuc Sowcmg till the froft ftops them. ilur thefe j:l>u>ti &> not always pi- fect to that from the autumnal plajuu thl feeds :ill more certainly be procured.

The fifteenth fort grows naturally opon rk" 11 five-tan, and fomeofthe ItliW) mountairu. I received the tads of this fort from Verona: it luth a perennial toot and an annual fULK-, the lefves art obi f%htly indented on thier edge*, and woolly on thoir unintr fide; thefe hare mucd the rdcuUuice of thofe of Blacampne, generally being upright i the ftcdki rle little more th>i a toot high, and are terminated by Te [ingle liruds of purple Rower?, iiccloTrd i: fealy capu cmcoB; thrf appear in July, but unhis the lefous • oves very dry and warm rhy have nu feeds forced them in cuicuunny; Co that this, like rle i: th fort, is 'fry dirnailt to propagate in Eng- land, unlrf's good feeds can be procured from the countries where they naturally erow. Thi is very harxly, ib may be treated in the Taile mnnner as any of thf former perennial forts, but will require a liule more am than th* fr'li.

The fixteenth fort grows naturally in Aitftria and Hungary, from both which countries I have received the feed*. The lower leaves of this plant fread M: enthegroupds they tre&ft, hairy, and end inili: p ir bafe are cut into lever. r tj ilir Italki rile near three feet high, garnifhed • e-is-li joint •• from the ped entire le

I e Ecnniued by wers, oi n g'ltl 1 hour, included in a prickly fealy ennpale rwnr. This flowers in July and Auguft, but never produces feed IS this country. It hath a perenniil root, which fendt out offsets; thefe may be tiken from thit old plants in aiinnun, whrreby it may be eafily pmpagsrert. It is very hardy in refpect to cold, biK fould have a dr' foil, ihe roots bciii; very apt to rut in winter • with much we.

Thefewnto with lnt grows naturally in Siberia. The fecji of this were lnt me from Katerin •gh. This (mt.U out mnoy long winged leai-cs from the root, whieh are divided into fevers i pear-fhaped lobes; the ftalks rife near five feet hi and divide upward into many fmaller bran: an, garnifhed with leaves of the fajnc farm a= the lower, but much fmlier, anil the fevrs a very narrow -, each of the Italks ii ter- rinatcd l by a head of yellow flowers, indofed in 1 icily emp:ilrmfit •, the bordere of the fealts l e- let with tirtc h.nri like an cyc-bruw. I flowers in Jtmr, July, .inj Auguft, ivih tie iL-eds ripen in autumn.

This bath a jwrcnniil runt and an ai falk, which with the leaves, \taj- in autumn, - and arle new from the root in the f ring. || n-; be propagated :ith> by II: th ex parting of the roots, in the fame manner as the tiith ibrt, and the J)lmit rquire a large fh a re ol room, fo floulc! not be planted tm near other plants I iherfore it is not proper furniture fv: fmall eardeni.

The eighteenth fort fitews naturaiij- in C<-ti-. This hath a [xmnnin] root l the lower Unvss are • and vrry woolly, dift on th i f c l k are fingle, wedge-fhaped, and indented; the ftalks are terminated by heads of yellow flowers, compofed of a many

florets as the other forts. This flowers in July, but rarely produces ripe feeds in this country, fo is propagated by flips as the fifth fort; and as the plants which are expofed to the open air in winter are frequently deftroyed, it will be proper to piace one of two of them under a common frame to preferve the fpecies.

The nineteenth fort grows naturally in Portugal: the ftalks of this are perennial; the leaves continue in verdure through the year, for which it is chiefly valued, for the flower has little more beauty than the common Knapweed. It flowers in June and July, and in warm feafons the feeds ripen in September. It is propagated by feeds, which, if fown in April in a bed of light earth, the plants will rife eafily. Thefe plants, in a dry foil and a fheltered fituation, will live in the open air in mild winters; but as they are frequently killed when the frofts are fevere, it will be proper to fhelter a plant or two under a common frame in winter to preferve the fpecies.

The twentieth fort grows naturally in Spain, and upon the Helvetian mountains. This rarely continues longer than two or three years: the lower leaves are doubly wing-pointed, thofe on the ftalks are fpear-flaped, Ringed, and indented; the ftalks rife three feet high, and are terminated by flowers like thofe of the common Knapweed, having filvery empalements. It flowers in July, and the feeds ripen in September. If thefe are fown in April on a bed of light earth, the plants will come up, and will live through the winter in the open air.

The twenty-firft fort grows naturally in the Campania of Rome. This is a biennial plant in England; thofe plants which arife from feeds in the fpring feldom flower till the following year, and when they perfeft their feeds they die. The ftalks of this fort rife three feet high; the lower leaves are wing-pointed, without fpines; thofe on the ftalks run along the ftalks like wings; the flowers are large, red, and their empalements are ftrongly armed with fpines. This flowers in July, and the feeds ripen in September. It may be propagated by feeds as the former.

The fecond fort grows naturally in Spain and Mauritania. This is an annual plant, which rarely ripens its feeds in England; the leaves of this are fpear-lhaped, indented, and woolly; the ftalk rifes two feet high, dividing upward into three or four branches, which are terminated by pretty large heads of flowers, whofe expalements are woolly, and ftrongly armed with fpines. This flowers in July, and in warm feafons the feeds ripen in September. It is propagated by feeds as the two former forts.

The twenty-third fort grows naturally in Portugal. The ftalk of this rifes two feet high, garnifhed with woolly leaves, fome of which are entire, others are finuated on their borders, the ftalks are terminated by woolly heads of flowers, ftrongly armed with double fpines on the empalement, which almoft inclofes the florets. It flowers in July, and in warm feafons the feeds ripen in September. It is propagated by feeds as the former.

The twenty-fourth fort is the Carduus Benedi&us, or Bleffed Thiftle, which is frequently ufed as an emetic. It grows naturally in Spain and the Levant; in England it is propagated in gardens for medicinal ufe. It is an annual plant, which perfities foon after the feeds are ripe. The fureft method of cultivating this plant, is to fow the feeds in autumn; and when the plants come up, to hoe the ground, to cut up the weeds, and thin the plants; and in the following fpring to hoe it a fecond time, leaving the plants a foot afunder, which will ripen their feeds in autumn, and foon after decay.

CENTAURIUM MINUS. See GENTIANA.
CENTINODIUM, Knot Grafs. See POL YGONUM.
CEPA, the Onion.

The botanical charafters of this genus are the fame with thofe of Allium, to which it is now joined by the late fyftem; but as this work is intended for the inftrufion of fuch as are not well acquainted with the

fcience of botany* or who may have no inclination to ftudy it, and yet may want information how to cultivate the plants which are ufeul in the kitchen, I have chofen to treat of thefe under their former appellation. Mr. Ray and Tournefort admit of the fiftular leaves and fwelling ftalks, as chara&ers to diftinguifh the plants of this genus from Porrum and Allium.

The VARIETIES of the common Onion are,
The Strafburgh. Cepa oblong. C. B. P. 71.
The Spanifh Onion. Cepa vulgaris, floribus & tiincis purpurafcentibus. C. B. P. 71.

The white Egyptian Onion. Cepa floribus & tunicis candidis. C. B. P. 71.

..All thefe vary from feeds, fo that there are feveral intermediate differences which are not worth enumerating.

Thefe three varieties are propagated by feeds, which fhould be fown at the latter end of February or the beginning of March, on good, rich, light ground, which fhould be well dug and levelled, and cleared from the roots of all bad weeds; then the feeds fhould be fown in a dry time, when the furface of the ground is not moift; and where they are intended for a winter crop, they muft not be fown too thick. The common allowance of feed is fix pounds to an acre of land; but the generality of gardeners fow more, becaufe many of them allow for a crop to draw out, which they call cullings; thefe are all fuch as want to be removed from others, fo are thinned out when young, and tied in bunches for the market; but thofe who have regard to their principal crop, never practice this; therefore fow no more feeds than is fufficient, which is the quantity before-mentioned, for when the plants come up too clofe, they draw each other weak; and when this happens, their roots never grow fo large as thofe which are thin: befides, there is a greater trouble in hoeing them; and when they are thinned for the market, the ground is trodden over, and the Onions which are to ftand have their leaves bruifed, whereby they are greatly injured; fo that where young Onions are wanted, it is a much better way to fow fome feperate beds for this purpofe, than to injure the future crop.

In about fix or feven weeks after fowing, the Onions will be up forward enough to hoe; at which time (choofing dry weather) you fhould, with a fmall hoe about two inches and a half broad, cut up lightly all the weeds from amongft the Onions; and alfo cut out the Onions where they grow too clofe in bunches, leaving them at this firft hoeing at leaft two inches apart. This, if well performed, and in a dry feafon, will preferve the ground clear of weeds at leaft a month or five weeks; when you muft hoe them over a fecond time, cutting up all the weeds as before, and alfo cut out the Onions to a larger diftance, leaving them this time three or four inches afunder. Thfs alfo, if well performed, will preferve the ground clean a month or fix weeks longer, when you muft hoe them over the third and laft time.

Now you muft carefully cut up all weeds, and fingle out the Onions to near fix inches fquare; by which means they will grow much larger, than if left too clofe. This time of hoeing, if the weather proves dry and it is well performed, will keep the ground clean until the Onions are fit to pull up; but if the weather fhould prove moift, and any of the weeds fhould take root again, you fhould, about a fortnight or three weeks after, go over the ground and draw out all the large weeds with your hands; for the Onions having now begun to bulb, they fhould not be difturbed with a hoe.

Toward the middle of Auguft your Onions will have arrived to their full growth, which may be known by their blades falling to the ground and fhrinking; you fhould therefore, before their necks or blades are withered off, draw them out of the ground, cropping off the extreme part of the blade, and lay them abroad upon a dry fpot of ground to dry, obferving to turn them over every other day at leaft, to prevent their

Striking fresh root into the ground; which they will suddenly do, especially in moist weather.

It about a fortnight's time your Onions will be dry enough to house, which must be performed in perfect dry weather *, in doing of this, you must carefully rub off all the earth from the roots, and be sure to mix no faulty ones amongst them, which will in a short time decay, and spoil all those that lie near them; nor should you lay them too thick in the house, which would occasion their sweating, and thereby rot them; nor should they be put in a lower room, or ground floor, but in a loft or garret; and the closer they are kept from the air, the better they will keep. You should, at least, once a month, look over them to see if any of them are decayed; which if you find, must be immediately taken away, otherwise they will infect all that lie near them.

But notwithstanding all the care you can possibly take in the drying and housing of your Onions, many of them will grow in the loft, especially in mild winters, which are generally moist; therefore those who would preserve them late in the season, should select a parcel of the firmest and most likely to keep from the others, and with a hot iron (lightly singe their beards, or roots, which will effectually prevent their sprouting; but in doing of this there must be great caution used not to scorch the pulp of the Onions, for that will cause them to perish soon after.

The best Onions for keeping are the Straßburgh kind, which is an oval-shaped bulb; but this seldom grows so large as the Spanish, which is flatter; the white lbrt is esteemed the sweetest *, but these varieties are not lasting; for if you have feeds of white Onions only, you will have a mixture of the red ones amongst them; nor will the Straßburgh Onion keep long to its kind, but will by degrees grow flatter, as do the large Portugal Onions, when planted in our climate, which in a year or two will be so far degenerated, as not to be known they were from that race.

But in order to have feeds, you must in the spring make choice of some of the firmest, largest, and best shaped Onions (in quantity proportionable to the feed you intend to have;) and having prepared a piece of good ground (which should be well dug, and laid out in beds about three feet wide,) in the beginning or middle of March you must plant your Onions in the following manner. Having traced a line about four inches within the side of the bed, you must, with a spade, throw out an opening about six inches deep, the length of the bed, into which you should place the Onions, with their roots downward, at about nine inches distance from each other; then with a rake draw the earth into the opening again to cover the bulbs; then proceed to remove the line again about a foot farther back, where you must make an opening as before, and so again till the whole is finished; so that you will have four rows in each bed, between which you must allow a space of two feet for an alley to go among them to clear them from weeds, &c. In a month's time their leaves will appear above ground, and many of the roots will produce three or four stalks each; you must therefore keep them diligently cleared from weeds, and about the beginning of June, when the heads of the flowers begin to appear upon the tops of the stalks, you must provide a parcel of flakes about four feet long, which should be driven into the ground, in the rows of Onions, at about six or eight feet apart; to which you should fasten some packthread, rope yarn, or small cord, which should be run on each side the Items of the Onions, a little below their heads, to support them from breaking down with the wind and rain; for when the feeds are formed, the heads will be heavy, and so are very often broken down by their own weight, where they are not well secured; and if the stalks are broken before the feeds have arrived to maturity, they will not be near so good, nor keep so long as those which are perfectly ripened. About the end of August the Onion feed will be ripe, which may be known by its changing brown,

and the Cells in which the feeds are contained openings so that if it be not cut in a short time, the feeds will fall to the ground: when you cut off the heads, they should be spread abroad upon coarse cloths in the sun, observing to keep it under shelter in the night, as also in wet weather; and when the heads are quite dry, you must beat out the feeds, which are very easily discharged from their cells *, then having cleared it from all the husk, &c. after having exposed it one day to the sun to dry, you must put it up in bags to preserve it for use.

The directions here given is for the general crop of winter Onions; but there are two other crops of this common sort of Onion, cultivated in the gardens about London to supply the market, one of which is commonly called Michaelmas Onions. These are sown in beds pretty close, the middle of August, and must be well weeded when they come up. In the spring of the year, after the winter Onions are over, they are tied up in bunches to supply the markets; but from the thinning of these they carry to market young green Onions in March, for fallads, &c.

And in the spring they sow more beds in the same manner, to draw up young for fallads, after the Michaelmas Onions are grown too large for that purpose; and where a supply of these are required, there may be three different sowings, at about three weeks distance from each other, which will be sufficient for the season.

There are also the following sorts of Onions cultivated in the kitchen-gardens.

The Shallot, or Echalottes, which is the *Cepa Acalonica*. Matth. 556.

The Ciboule, or *Cepa fiffilis*. Matth. Lugd. 1539.

The Gives, or *Cepa fe&ilil juncifolia perennis*, TVor, Hift. 2. 383.

The Welch Onion I suppose to be the same with the Ciboule, although they pass under different appellations; & I have several times received the Ciboule from abroad, which, when planted, prove to be what is generally known here by the title of Welch Onions. There is also a great affinity between the Echalottes and these, so that they are not well distinguished yet; for although they are generally cultivated in the gardens, yet they are not well known to the botanists,* some of whom have supposed a greater variety than is in nature; while others have joined them together, making but two species.

The Scallion, or Efcallion, is a sort of Onion which never forms any bulbs at the roots, and is chiefly used in the spring for green Onions, before the other sorts, sown in July, are big enough; but this sort of Onion, how much sooner in use formerly, is now so scarce as to be known to few people, and is rarely to be met with, except in curious botanic gardens: the gardeners near London substitute another sort for this, which are those Onions which decay and sprout in the house: these they plant in a bed early in the spring, which in a short time will grow large enough for use; when they draw them up, and after pulling off all the outer coat of the root, they tie them up in bunches, and sell them in the market for Scallions.

The true Scallion is easily propagated by parting the roots, either in spring or autumn; but the latter season is preferable, because of their being rendered more fit for use in the spring: these roots should be planted three or four in a hole, at about six inches distance every way, in beds or borders three feet wide, which in a short time will multiply exceedingly, and will grow upon almost any soil and in any situation; and their being so hardy as to resist the severest of our winters, and being green, and fit for use so early in the spring, renders them worthy of a place in all good kitchen-gardens.

The Cives are a very small sort of Onion/which never produce any bulbs, and seldom grow above six inches high in the blade, which is also very small and slender, and are in round bunches like the former;

* this

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This was formerly in great request for fallads in the spring, as being milder than those Onions which had stood through the winter. These are propagated by parting their roots like the former, and are also very hardy, and will be fit for use early in the spring.

The Welch Onions are only propagated for spring use also; these never make any bulb, and are therefore only fit to be used green for fallads, &c. They are sown about the end of July, in beds of about three feet and a half wide, leaving alleys of two feet broad to go between the beds to clean them, and in a fortnight's time they will appear above ground, when they must be carefully cleared from weeds; towards the middle of October their blades will die away, so that the whole spot will seem to be naked, which hath led many people to dig up the ground again, supposing the crop totally lost; whereas, if they stand undisturbed, they will come up again very strong in January, and from that time grow very vigorously, resisting all weathers, and by March will be fit to draw for young Onions, and are, in the markets, more valued than any other sort at that season; for they are extremely green and fine, though they are much stronger than the common Onion in taste, approaching nearer to Garlick, which hath occasioned their being less esteemed for the table: but as no winter, however hard, will hurt them, it is proper to have a few of them to supply the table, in case the common sort should be destroyed by frosts.

The roots of these Onions, if planted out at six or eight inches distance, in March, will produce ripe seeds in autumn, but it will be in small quantities the first year; therefore the same roots should remain unremoved, which the second and third year will produce many stems, and afford a good supply of seeds; these roots will abide many years good, but should be transplanted and parted every second or third year, which will cause them to produce strong seeds.

C E P H A L A N T H U S. Lin. Gen. Plant. 105. *Platanoccephalus*; Vaill. Acad. R. Scien. 1722. Button Wood.

The CHARACTERS are,
// bath a number of small flowers, which are collected into a spherical head, these have no common empalement, but each particular flower bath a funnel-shaped empalement, divided into four parts at the top; the flower is funnel-shaped, of one petal, divided at the top into four parts, inclosing four stamina, which are inserted in the petal, and are shorter than the tube, being terminated by globular summits. The germen is situated under the flower supporting a style which is longer than the petal, and is crowned by a globular stigma; the germen afterward becomes a globular hairy capsule, inclosing one or two oblong angular seeds, these are joined to an axis, and form a round head.

This genus of plants is ranged in the first section of Linnaeus's fourth class, intitled Tetrandria; Monogynia, the flower having four stamina and but one style.

We have but one SPECIES of this plant, viz.

C E P H A L A N T H U S (*Occidentalis*) foliis oppositis ternisque. Flor. Virg. 15. *Button-tree with leaves growing opposite, and sometimes by threes. Scabiofa dendroides Americana ternis foliis caulem ambientibus, floribus ochroleucis.* Pluk. Aim. 336. tab. 77.

This shrub grows naturally in North America, from whence the seeds are annually sent to Europe, and of late years great numbers of the plants have been raised in the gardens of the curious; but there are no very large plants in the English gardens; the largest I have seen are in the curious gardens of his grace the Duke of Argyle, at Whitton, near Hounslow, where they thrive better than in almost any other place where they have been planted, so that in a moist soil they will do the best.

This seldom rises higher than six or seven feet in this country. The branches come out by pairs, opposite at each joint, the leaves also stand opposite, sometimes by pairs, and at other times there are three

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arising at the same joint, standing round the branches these are near three inches long, and one and a quarter broad, having a strong vein running longitudinally through the middle, and some small transverse veins from that to the borders, they are of a light green, and their footstalks change to a reddish colour next the branches; the ends of the branches are terminated by loose spikes of spherical heads, about the size of a marble, each of which are composed of many small flowers, which are funnel-shaped, of a whitish yellow colour, fattened to an axis which stands in the middle, these appear in July, and, in warm seasons, are succeeded by seeds, which have sometimes ripened in England.

These plants are propagated chiefly by seeds (though there has been some raised from cuttings and layers) these should be sown in pots, for the greater convenience of removing them either into a shady situation, or where they may have shelter. If the seeds can be procured so early as to sow them before Christmas, the plants will come up the following summer; but if they are sown in the spring, they generally remain a year in the ground, therefore, in such case, the pots should be placed in the shade that summer, and in the autumn following removed under a common frame to shelter them from frost, and the spring following the plants will come up.

The first year, when the plants come up, it will be necessary to shade them in hot dry weather, while they are young, at which time they are often destroyed by being too much exposed, nor should the watering be neglected, for as these plants naturally grow on moist ground, so when they are not duly watered in dry weather, the young plants will languish and decay.

The next autumn, when the leaves begin to drop, the young plants may be transplanted into nursery-beds, which should be a little defended from the cold winds, and, if the soil is moist, they will succeed much better than in dry ground; but where it happens otherwise, it will be absolutely necessary to water them in dry weather, otherwise there will be great danger of the plants dying in the middle of summer, which has been the case in many gardens where these plants were raised.

In these nursery-beds the plants may remain a year or two (according to the progress they may have made, or the distance they were planted) then they may be taken up in October, and transplanted where they are to remain for good. Although I have mentioned but one season for transplanting them, yet this may also be performed in the spring, especially if the ground is moist into which they are removed, or that the plants are duly watered, if the spring should prove dry, otherwise there will be more hazard of their growing when removed at this season.

These plants make a pretty variety among other hardy trees and shrubs, being extreme hardy in respect to cold; but they delight in a moist light soil, where they will grow very fast, and their leaves will be larger than in dry land.

C E R A S T I U M. Lin. Gen. Plant. 518. *Moufe-ear, or Moufe-ear duckweed** in French, *Oreille de Souris*.

The CHARACTERS are,
It hath a permanent five-leaved empakment, which spreads opens the flower hath five obtuse bifid petals, which are as large as the empakment. It hath ten slender stamina shorter than the petals, terminated by roundish summits. In the center is situated an oval germen, from which arise five styles, which are hairy, erect, and crowned with obtuse stigma; the empakment afterward becomes an oval, cylindrical, or globular capsule with one cell, opening at the top, containing many roundish seeds.

This genus of plants is ranged in the fourth section of Linnaeus's tenth class, intitled Decandria; Pentagynia, the flower having ten stamina and five styles.

- The SPECIES are,
1. CERASTIUM (*Repens*) foliis lancolatis, peduculis ramosis, capfulis fubrotundis. Lin. Sp. Plant. 439. *Cerajium with spear-shaped leaves, branching foot-stalks, and roundish capfuls.* Myofotis incana repens. Tourn. Inft. R. H. 245. *Hoary creeping Moufe-ear, by some called Sea Pink.*
 2. CERASTIUM (*tomentofum*) foliis oblongis, tomentosis, pedunculis ramosis, capfulis globosis. Lin. Sp. Plant. 440. *Cerajium with oblong woolly leaves, branching foot-stalks, and globular capfuls.* Myofotis tomentosa, linariae folio angustiore. Tourn. Inft. R. H. 245. *Woolly Moufe-ear with a narrow Toad-flax leaf.*
 3. CERASTIUM (*Dicbotomum*) foliis lanceolatis, caule dichotomo ramofillimo, capfulis erectis. Prod. Leycl. 450. *Cerajium with spear-shaped leaves, a very branching stalk divided in forks, and upright capfuls.* Myofotis Hispanica legetum. Tourn. Inft. R. H. 54.5. *Spanijh Corn Moufe-ear, or Horned Chickweed.*
 4. CERASTIUM (*Pentandrum*) floribus pentandriis, petalis integris. Lin. Sp. Plant. 438. *Cerajium with flowers having five Stamina, and entire petals.*
 5. CERASTIUM (*Perfoliatum*) foliis connatis. Hort. Cliff. 173. *Cerajium whose leaves are joined.* Myofotis Orientalis perfoliata folio lychnidis. Tourn. Cor. 18. *Eastern perfoliated Moufe-ear with a Lychnis leaf.*

The first fort grows naturally in France and Italy, and was formerly cultivated in the English gardens under the title of Sea Pink, one of the uses made of it was to plant it as an edging to keep up the earth of borders; but this was before the Dwarf Box was brought to England, since which all those plants which were formerly applied for this purpose have been neglected. This plant was by no means fit for this use, because its creeping branches would spread into the walks where they put out roots into the gravel; so that unless they are frequently cut off, they cannot be kept within compass.

This sends out many weak stalks which trail upon the ground, and put out roots at their joints, whereby it propagates very fast; the leaves are placed by pairs opposite, which are about two inches long, and little more than half an inch broad, very hoary; those next the root are much smaller than the upper; the flowers come out from the side of the stalks upon slender foot-stalks, which branch out into several smaller, each supporting a white flower, composed of five petals, which are split at the top. The whole flower has the appearance of Chickweed flowers, but are larger, it flowers in May.

It propagates too fast by its creeping roots and trailing branches, when it is admitted into gardens, so may be planted in any soil or situation; and is very proper to be planted between (tones on the side of grottos, where it will spread, and thrive without care.

The seeds of the second fort I received from Istria, where it naturally grows; this is by Parkinson titled hoary narrow-leaved Pink. The leaves of this fort are narrower than those of the former, and are much whiter; the stalks grow more erect, and the seed-vessels are rounder, in which their chief difference consists. This is a trailing plant, and propagates by sending out roots at the joints, in the same manner as the former, and is equally hardy. It flowers in May and June, and the seeds ripen in August.

- The third fort is annual; this grows naturally on arable land in Spain, from whence the seeds were sent to England, where it is allowed a place in botanic gardens for the sake of variety, but hath not much beauty, this hath branching stalks, which grow about six inches high, dividing by pairs in forks, the flowers coming out in the middle of the divisions, which are fitted like those of Chickweed; the whole plant has a clammy moisture, which sticks to the fingers of those who handle it. This flowers in May, and the seeds ripen in July. If the seeds are sown in autumn, they will succeed better than in the spring; or if they are permitted to fall, the plants will rise without care.

The fourth fort is very like the third in its whole appearance, and differs from it, in having but five stamina in the flower, whereas the other hath ten. This was discovered by Mr. Loeffing, a pupil of Dr. Linnseus's, in Spain, from whence he sent the seeds to Upfal, part of which were sent me by the Doctor. The fifth fort was discovered by Dr. Tournefort in the Levant, from whence he sent the seeds to the royal garden at Paris, where they succeeded, and have been since communicated to most of the curious botanic gardens in Europe. This is an annual plant, which rises with an upright stalk a foot high, the lower leaves of this plant have much resemblance to those of the Lychnis, which is called Lobel's Catchfly, so that when the plants are young, it is not easy to distinguish them. The stalks are garnished with leaves of the same shape, but smaller, placed by pairs, and embrace the stalks at their base. The flowers come out at the top of the stalks, and alight from the wings of the leaves, on the upper part of the stalks, which are white, and shaped like those of Chickweed. They appear in May and June, and are succeeded by beaked capfuls, containing many roundish seeds.

If the seeds of this fort are sown in autumn, they will more certainly grow than those which are sown in the spring, or if the seeds are permitted to scatter, the plants will come up and live through the winter, and will require no other care but to keep them clean from weeds.

There are many other species of this genus than are here enumerated, which are weeds in many parts of England, so are never cultivated in gardens, therefore not worthy of notice here.

CERASUS [*ixtros*, Gr. so called according to Servius, from Cerasus, a city of Pontus, which Lucullus having destroyed, he carried the Cherry-tree from thence to Rome, and called it Cerasus, after the name of the city; but others will have it that the city took its name from the abundance of those trees which grew there.] The Cherry-tree.

The botanical characters of this genus, according to the system of Linnaeus, are the same with those of Prunus; therefore he has joined the Apricot Cherry, Laurel, and Bird Cherry together, making them only species of the same genus; but those who admit of the fruit, as a character to determine the genus, must separate the Cherry from the others, because they differ greatly in the shape of their stones; but there is a more essential difference in nature between them, which is, that the Cherry will not grow upon a Plumb-stock, by budding or grafting, nor will the Plumb take upon a Cherry-stock; and yet we know of no trees of the same genus which do not unite with each other, by budding or grafting.

However, as the joining so many genera into one, would occasion great confusion among gardeners, who cultivate these trees for sale, therefore if there were no other motive than that, it would be a sufficient excuse for not closely following that system in this work, which is designed for the instruction of those who have not made botany their study; so I (shall refer the reader to the article PRUNUS, under which the botanical characters will be inserted, and proceed to the species.

I (shall first enumerate the sorts which are specifically different from each other, and then mention the varieties of these fruits, which are cultivated in the English gardens; many of which seem to differ essentially from each other, that they may be allowed as specific differences; but as I have not had an opportunity of trying the various sorts from seeds, so see if they alter, so I chose to insert them only as varieties, till further observation may better settle their boundaries.

The SPECIES are,

1. CERASUS (*Fulgens*) foliis ovato-lanceolatis, ferrugineis. *The common, or Kentish Cherry.* Cerasus fativa rotunda rubra & acida. C. B. P. 449. *Manured Cherry & its round red, acid fruit.*

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- s. CenASL-i (ffigra) foliis ftratis Innceolatis. Cherry-
tree *Stib fptw-jh apal jazad ants*. Ccmfus major ac
eftris, frull u subdul I ntgro color inficnie.
C. B. P. 450. *Grtrtrr fviM Lhmy-tret wi/i afucetijb*
fruit, wcty pan.
- 3. CBRASVS (//VV. *o*) foliis ovato-lanceolatis, *tiobus*
conftrtis. *Cherry-tree mVA v. 'di ipear-jbapdl ltrvcj, and*
fi < rj. 4rsjrv. vi < gineittj < ri, t. mofii hortcnCs.
C. B. P. 450. *Cvsmavbt (die. de Caple) cherry.*
- 4. Osunrt **vobait*»).-ribus curv. nbofii, fblis ovatis,
Lin. Sp. Rim. 474. *Cbtrry-.r, -t with P.-*
in round buKche; sad aval ttev; >. Cert
hafcb putata. Jf. B. I'bt Mcbuibt SIT -per-
faned Cherry.
- 5. CERANUS (*Cera ktffii*) foliis tonceototis, glabra, inte-
iicivmij, futu'., *cahis, ramis pabulis. Cbtrry-tra*
with fount. . . . ptii entire leave), of a iilmfu
green an tbir tinder fidt, attJ fprttuUng trajiihts. Cera-
na; -.mvli Canadenfis, oblongo angufto rul;>
parvo. Du Haincl. tkajrf Canada Cinrry, with obng
xirrs w Itva, and afmatfhiit, tailel' Kag & uminia; Ne
or Mand in Canada.

The lirl fon is the common or Kenrifh Cherry, which is li ivcH known in England is to need no defcription. From this liir it jutii I cen fuppon. •! many of the varictin which are cultivated in the Englifh garden, have been raic^i bm JS there wi very great difTerciics in the Qw and Ojapc of rhcirleavo, as allo in the fhoots of die trcrs trouu thofe of this lart, I (liink it is very doubtful, wlicre the boundaries of' chrir ipecilit' differences terminate : however, I fhall comply with the Generality of modern bounifiti, in iuppoine tje following forts to have been produced from the feeds of this, is we have not fiiffkient eYperitments to determine othtrwilt.

- The !-lirly Mav Cherry. The Ox Heart.
- The MAY Duke Cherry, Tke Luknvird,
- The Archduke Cherry. The Curnar
- The Hemifit Chmv. The HenforJililre Ikart.
- The Ked H<rrr. The Moi
- The • iire Hturr. Thr Blmiing Heart.
- Thr BSack !cart. Yellow Spmith Cherry.
- The Amber Heurt.

Two flrts with double flowers, one larger and fuller than the other, Thicfc arc propagated for ornament. The fecond fort -)ovc-menfined is the Blick Cherry, which is fuppofed to be a tiatire of England. This grws to be a large tree, fit for timber, and is frequently found growing a, fach in the woodi. From this, the only varietici *liitth I have ever known raised by •••etU, ire the Black Coraun, and the imall "WiWCherrr-, uf which there arr two or three-varieties, which differ in the 6w ind colour Oj their fruit.

Thcfe Wild Chfirw arc vrr>-proper w pUnr m p>rk?, becaufe thrr crow w a large iire, and make bwtiful tre>, and in* the fpring, when timjr are in flower, will be vrr,- ornamental. The twit of them will be TMd food for birds, as •': when the Axxare cut down, the wood i very ufcful for turners. Thcfe trees will thrive in poor la and better than moft other in TM fo there " in advantage in propagating them in their pl.ici. The French often plant them for avonics to their •••ies, upon fach land where they can K get any othtr trees 10 thrive. they alfo cultivate them in their Tuex- to cut i or hoops, and grtatty cilcem them for this purpofe.

The iices of this lart ire goncratly fown for raiQng flocks to graft or bud the other forts of Cherry a upes, being of quicker growth, and of longer duration than either of the other, fo are very juftly efteemed and preferred 10 ihem.

The wood of the fourth fort, is by the French peatly efteemed for making of c bins, becaufe it hath an agreeable odour. This, and the wood of the Bird Cherry, are often blended together, and put under the appellation of • Bob de S_ane Lacle; but the Bird Cherry is the true fort.

The fifth vrit w< brought tram Canada, where it grows natural U, to ih* garden* in France, where k

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is cultivated as a flowering flirabfor ornament, The (tones of thti were lent me by Dr. Bernard de juUku* profcfbr of botany at Paris, which fuccceded ven ivcl) ij rlit: Ciiclfci garden; but by comparing thii- with a fyx-citnen of the old Chamxceraiiis, or CtraJus humilisof Cciitrd, and other old writers, I find it tn be the lbme planr, lor it alto agrees exafil; with their dL-feriptions of it.

This • a low firub, which Siidom grows more than three or four Ket high, tending out nuny horixontal brjneitrs, which rprtaui nrd dw ground on every tide-, and the lower brmdit-s arc very ibjctcl to lit in thK ground, where they ui!! put out roots, and (hi mulpny. The young branches have a wry fmooch bark, it'iclin'm^ ; toward rcd; the leaves are long, narrow, very Imoqtb, and entire, having tile ipp<-ar-ance of' lioftic llirci of Willow I vcs, of a light green i in their uper Bde, but of 3! • lilt or the green on tl. r under; the fl- -tri come out from the fide of the branches, two, three, ur four oririiig at the fame place, and part of the low lh of the young lhoatSi thec arr B and lilt fhwia of the civimom Chem-, but are foolcr, llonJing iip'jn long l, under foot-litlks. The fruit is like thafe of the Imall wild Cherry, [jut haii; a bitterifh favour. It flowers atout • at the fame time as the otter fora of Cherries, and the fruit ripen in July, the • fruit are good food for birds, and the French plant them among their otlier flirulie, to emice the birdi to harbour there.

It is: eafily propagated by laying down ilv: branchti early in the fpring, which will take root by tlw following autumn, uhrn they may b^ taken off; and cither phiitil in a nurfery v get flrengtk, or to the places where they art: dtligncd w rtmaint. It may alfo be propagated by laying tlw ftoicJ, in the fame mntn as other Cherries.

All the f. I. of Chenita i% h:di at ufually < cultivated in fruit-gardens, are propagated by budding or grafting the feveral kinds into flocks of the black or wild Red Cherries, which are frung ftocks, and of longer duration than •; of-the garden kinds. The ftimes of thcfe to 0 t-inds are fown in a bed of Hgfit &ndy <rrh in autumn (0: arc preferred in land till faring and thefc week.) WStocks arife they mull b. carefully wooded, and if in dry weatiter you n: :th them with •ittr, it will greatly promote their growth. Thcfe flocks lh: ilil fimAJn in the nurfery-lands till the fecond •••omt after fuwngi at which time you fhould prepare an open lymt of good freffi earth, which fhould be well watered but if the foil k tle, it will be the better. In the g-und, in October, you fhould plant out the young flocks At threc distance two fret in row, and about .1 foot afunder: the rows, being •••cilitil in taking them up irum iheir lied beds to loofen their roots wcl: with a fpade, to prevent their breaking, as Ub to prune their r. <u; JUUI if they are inclinab le to root Jown-wwdf, you fhould ihonen thit up-root to ciufe It to put out literal roots-, bur do not prune their tops, for this is what by no means they • ill endiirt.

The fecond year after planting out, if they take to growing well, they will ! IK fil IO bl. If they ;reir> tended for dwarts: but if (Key are for (b bards, they will not be tall enough until the fourth year. iirthey lould be budded ui _grafted near fix feet loin -hi ground, otherwise the graft will not advance much in IK light; fo that it will be impoffible to make a good tree from fuch as are grafted low, unlt the graft is raised upward.

The usual way with the nurfery gardeners is to bud their flocks in fummer, and fuch of them as mairry they graft the fucceeding fpring (the manner of thefe operations will be defcried under their proper heads.) Thofe trees where the buds have taken, muft be headed off in the beginning of March about fix inchi above the bud l and when the bud hath flax in it'um- mtr, if you fear its being blown out by the wind, you may fatten it Up with iumc bafs, ••• any other foft b'di to that pin of the folk wh>-li wji Jrfj abov<

the bud. The autumn following these trees will be fit to remove; but if your ground is not ready to receive them, they may remain two years before they are transplanted \ in doing which, you must observe not to head them, as is by many practised, for this very often is immediate death to them; but if they survive it, they seldom recover this amputation in five or six years.

If these trees are intended for a wall, I would advise the planting dwarfs between the standards; so that while the dwarfs are filling the bottom of the walls, the standards will cover the tops, and will produce a great deal of fruit \ but these, as the dwarfs arise to fill the walls, must be cut away to make room for them; and when the dwarf trees cover the walls, the standards should be entirely taken away. But I would advise, never to plant standard Cherries over other fruits, for there is no other sort of fruit that will prosper well under the drip of Cherries.

When these trees are taken up from the nursery, their roots must be shortened, and all the bruised parts cut off* and also all the small fibres, which would dry, grow mouldy, and be a great prejudice to the new fibres in their coming forth *, you must also cut off the dead part of the stock which was left above the bud, dole down to the back part of it, that the stock may be covered by the bud. If these trees are designed for a wall, observe to place the bud directly from the wall, that the back part of the stock that was cut may be hid from sight. The soil that Cherries thrive best in, is a freest hazel loam *, but if the soil is a dry gravel, they will not live many years, and will be perpetually blighted in the spring.

The sorts commonly planted against walls, are the Early May, and May Duke, which should have a fourth aspect wall. The Hearts and common Duke will thrive on a west wall *, and in order to continue this sort later in the season, they are frequently planted against north and north-west aspect walls, where they succeed very well *, and the Morello on a north wall, which last is chiefly planted for preserving. The Hearts are all of them ill bearers, for which reason they are seldom planted against walls: but I am apt to believe, if they were grafted upon the Bird Cherry, and managed properly, that defect might be remedied *, for this stock (as I am informed) will render Cherries very fruitful; and having the same effect on Cherries, as the Paradise stock hath on Apples, they may be kept in less compass, which is an experiment well worth the trial.

Your trees, if planted against a wall, should be placed at least twenty or twenty-four feet asunder, with a standard tree between each dwarf: this will be found a reasonable distance, when we consider, that Cherry-trees will extend themselves full as far as Apricots, and many other sorts of fruit.

In pruning these sorts of fruit, you should never shorten their shoots *, for the moil part of them produce their fruit buds at the extremities, which, when shortened, are cut off, and this often occasions the death of the shoot, at least a good part of its length: their branches should be therefore trained in at full length horizontally, observing in May, where there is a vacancy in the wall, to slip some strong adjoining branches, which will occasion their putting out two or more shoots *, by which means, at that season of the year, you may always get a supply of wood for covering the wall; and at the same time, should all upright shoots be displaced by the hand *, for if they are suffered to grow till winter, they will not only deprive the bearing branches of their proper supply of nourishment, but when they are cut out, it occasions the tree to gum in that part (for Cherries bear the knife the worst of any sort of fruit trees,) but be careful not to rub off the sides or piths, which are produced upon the two and three years old wood; for it is upon these that the greatest part of the fruit are produced, which sides will continue fruitful for several years. And it is for want of duly observing this caution, that Cherry-trees are often seen so unfruitful, especially the Morello, which the mo. e

it is cut the weaker it shoots *, and, at last* by frequent pruning, I have known a whole wall of them destroyed; which, if they had been suffered to grow without any pruning, might probably have lived many years, and produced large quantities of fruit.

Cherry-trees are also planted for orchards in many parts of England, particularly in Kent, where there are large plantations of these trees. The usual distance allowed for their standing is forty feet square* at which space, they are less subject to blight than when they are closer planted -, and the ground may be tilled between them almost as well as if it were entirely clear, especially while the trees are young; and often stirring the ground, provided you do not disturb their roots, will greatly help the trees; but when they are grown so big as to over-shadow the ground, the drip of their leaves will suffer very few things to thrive under them. These standard trees should be planted in a situation defended as much as possible from the strong westerly winds, which are very apt to break their tender branches *, this occasions their gumming, and is very prejudicial to them. The sorts best approved for an orchard, are the common Red, or Kentish Cherry, the Duke, and Lukeward; all which are plentiful bearers. But orchards of these trees are now scarcely worth planting, except where lands very cheap; for the uncertainty of their bearing, with the trouble in gathering the fruit, together with the small price it commonly yields, hath occasioned the destroying many orchards of this fruit in Kent within a few years past.

This fruit was brought out of Pontus, at the time of the Mithridatic victory, by Lucullus, in the year of the city 680, and were brought into Britain about 120 years afterward, which was An. Dom. 55; and were soon after spread through most parts of Europe, it being generally esteemed for its earliness, as being one of the first of the tree fruit that appears to us come in the approaching fruit season.

This sort of fruit hath been by many people grafted upon the Laurel, to which it is a congener; but the effect hath in the growth of the tree, as also in its fruit, will not recommend it to practice, the trees being of short duration, and seldom produce much fruit; though this practice is as old as Pliny, who says it gives the fruit a pleasant bitterness; but there is little to be depended upon in the writings of the ancients, with respect to the several sorts of trees being grafted upon each other \ very few of those which we find mentioned by them to have been frequently practised, will not succeed with us. Nor is it owing to the difference of climate, as some have supposed, who are inclinable to believe whatever they find related in those books, especially in the business of husbandry and gardening; whereas many of the rules for the practical part of husbandry, are not founded on experiments, but are mere theory; for from many repeated trials which have been made with the utmost care, by persons of the best skill, it appears, that no two sorts of trees, which are of different classes, will take upon each other. However, the Laurel and the Cherry being of the same genus, or so near of kin to be ranked together by most botanists, will take upon each other by grafting. But I have not yet seen any of the trees so grafted, which have lived to be of any considerable size; though I have seen many trees so grafted, which have lived a few years, but have made very poor progress; nor do I remember to have seen any fruit upon the Cherry-trees which were grafted on the Laurels, therefore cannot determine what effect this has on the flavour of the fruit.

There are some persons who graft the Duke, and other sorts of Cherries, upon the Morello Cherry, which is but a weak shooter, in order to check the luxuriant growth of their trees* which will succeed for three or four years: but they are not of long duration, nor have I ever seen one tree so grafted, which had made shoots above six or eight inches long, but they were chiefly covered with blossoms, so may produce

duce some fruit in a small compass; but these are experiments unfit to be carried into general use, and only proper to satisfy curiosity; for is it not much better to allow the trees a greater share of room against the walls, when one tree is planted and properly managed, will produce more fruit than twenty of these trees, or twice that number, when they are planted too close, though they are grafted upon the Black Cherry or any other free stock.

The Early or May Cherry is the first ripe, for one or two trees of this sort may be allowed a place in a garden, where there is room for variety. The next ripe is the May Duke, which is a larger fruit than the other, and is more valuable. After this comes the Archduke, which, if permitted to hang upon the tree till the fruit is quite ripe, is an excellent Cherry, but few persons have patience to let them hang their full time, for rarely have them in perfection, for these should not be gathered before July* and if they hang a fortnight longer they will be better. This is to be understood of the situation near London, where they ripen a fortnight earlier than in places forty miles distant, unless they have a very warm fluted situation. When this sort is planted against north walls, the fruit may be continued till the middle of August; but these must be protected from the birds, otherwise they will destroy them.

The Hertfordshire Cherry, which is a sort of Heart Cherry, but a firmer and better flavoured fruit, will not ripen earlier than the end of July, or the beginning of August, which makes it the more valuable for its coming when the other sorts of Cherries are gone. This is now pretty common in the nurseries; but as it is one of the best kind of Cherries, it is well worthy of being propagated in the nurseries.

The Morello Cherry, which is generally planted against walls to a north aspect, and the fruit commonly used for preserving; yet where they are planted to a better aspect, and suffered to hang upon the trees until they are thoroughly ripe, is a very good fruit for the table; therefore some of the trees of this sort should have place where there is plenty of walling, upon a south-west wall, where they will ripen perfectly by the middle or end of August, at which time they will be an acceptable fruit.

The Carnation Cherry is also valuable for coming late in the season; this has a very firm fleshy fruit, but is not the best bearer. This sort will some seasons ripen very well on espaliers, and by this means the fruit may be continued longer in the season.

The large Spanish Cherry is nearly allied to the Duke Cherry, from which it seems to be only a variety accidentally obtained; this ripens soon after the common Duke Cherry, and very often passes for it.

The yellow Spanish Cherry is of an oval shape and of an amber colour; this ripens late, and is a sweet Cherry, but not of a rich flavour; and being but a middling bearer, is not often admitted into curious gardens, unless where variety is chiefly considered.

The Corone, or Crown Cherry, is somewhat like the Black Heart, but a little rounder; this is a very good bearer and an excellent fruit, for should have a place in every good fruit-garden. This ripens the middle of July.

The Lukeward ripens soon after the Corone Cherry; this is a good bearer, and a very good fruit; it is of a dark colour, not so black as the Corone; this will do well in standards.

The Black Cherry is seldom grafted or budded, but is generally sown for flocks to graft the other kinds of Cherries upon; but where persons are curious to have the best flavoured of this sort of fruit, they should be propagated by grafting from such trees as produce the best fruit. This sort of Cherry is frequently planted in wildernesses, where it will grow to a large size, and, at the time of its flowering, will make a variety, and the fruit will be food for the birds.

The double-flowering Cherry is also propagated for the beauty of the flowers, which are extremely fine,

the flowers being as double and large as a Cinnamon Rose; and these being produced in large bunches on every part of the tree, render it one of the most beautiful trees of the spring. Some of the flowers which are less double, will often produce some fruit, which the very double flowers will not; but this defect is sufficiently recompensed in the beauty of its flowers. This is propagated by budding or grafting on the Black or Wild Cherry stock, and the trees are very proper to intermix with the second growth of flowering trees.

CERASUS RACEMOSA. See PADUS.

CERATONIA. Lin. Gen. Plant. 983. Siliqua. Tourn. Inf. R. H. 578. tab. 344. The Carob, or St. John's Bread, in French *Carouge*.

The CHARACTERS are,

It is male and female in distinct trees. The male flowers have large empalements, divided into five parts, they have no petals, but have five long filamina, terminated by large summits. The female flowers have empalements of one leaf, divided by five tubercles, they have no petals, but a fleshy germen situated within the receptacle, supporting a slender style, crowned by a stigma in form of a head. The germen afterward becomes a long, fleshy, compressed pod, divided by transverse partitions, each having one large, roundish, compressed seed.

This genus of plants is ranged in the third section of Linnæus's twenty-third class, entitled Polygamia Triœcia. The plants of this class have male, female, and hermaphrodite flowers on distinct plants.

We have but one SPECIES of this genus, viz.

CERATONIA (*Siliqua*.) H. L. The Carob-tree, or St. John's Bread. *Siliqua edulis* of Caspar Bauhin, and the Caroba of Dale.

This tree is very common in Spain, and in some parts of Italy, as also in the Levant, where it grows in the hedges, and produces a great quantity of long, flat, brown-coloured pods, which are thick, mealy, and of a sweetish taste. These pods are many times eaten by the poorer sort of inhabitants when they have a scarcity of other food, but they are apt to loosen the belly, and cause gripings of the bowels. The pods are directed by the College of Physicians to enter some medicinal preparations, for which purpose they are often brought from abroad.

In England the tree is preferred by such as delight in exotic plants, as a curiosity; the leaves always continue green, and being different in shape from most other plants, afford an agreeable variety when intermixed with Oranges, Myrtles, &c. in the greenhouse.

These plants are propagated from seeds, which, when brought over fresh in the pods, will grow very well, if they are sown in the spring upon a moderate hot-bed; and when the plants are come up they should be carefully transplanted each into a separate small pot filled with light rich earth, and plunged into another moderate hot-bed, observing to water and shade them until they have taken root; after which you must let them have air, in proportion to the heat of the weather. In June you must inure them to the open air by degrees; and in July they should be removed out of the hot-bed, and placed in a warm situation, where they may remain until the beginning of October, when they should be removed into the greenhouse, placing them where they may have free air in mild weather; for they are pretty hardy, and require only to be sheltered from hard frosts. When the plants have remained in the pots three or four years, and have gotten strength, some of them may be turned out of the pots in the spring, and planted into the full ground, in a warm situation, near a south wall, where they will endure the cold of our ordinary winters very well, but must have some shelter in very hard weather.

I have not as yet seen any of these trees produce flowers, though from some which have been planted some time against walls, it is probable there may be flowers and fruit in a few years; though it cannot be expected that the fruit will ever ripen in this country.

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CERBERA. Lin. Gen. Plant. 260. Thevetia, Lin. Hort. Cliff. 76. Prod. Leyd. 413. Ahouai. Tourn. Inft. R. H. 657. tab. 434.

The CHARACTERS are,
The empalcment is composed of five Jharp-pointed leaves, which spread open and fall away, The flower is of one leaf, funnel-Jhaped, having a long tube spread open at the top, where it is divided into five large obtuse segments, standing oblique to the mouth of the tube; it hath five stamina situated in the middle of the tube, which are terminated by ere ft fummits \ these ft and clofe together. In the center is situated a roundish germen, supporting ajhort style, crowned by a stigma in form of a head. The germen afterward becomes a large, fleshy, roundish berry \ with a longitudinal furrow on the side, dividing it into two cells, each containing a Jingle, large, compressed nut. This genus of plants is ranged in the first section of Linnæus's fifth class, intitled Pentandria Monogynia, the flower having five stamina and one style.

- The SPECIES are,
1. CERBERA (Ahouai) foliis ovatis. Lin. Sp. Plant, 208. Cerbera with oval leaves. Ahouai. Thevet. Antartf. 66. Tourn. Inft. 658. The Ahouai.
 2. CERBERA (Thevetia) foliis linearibus, longissimis, confertis. Lin. Sp. Plant. 209. Cerbera with very long narrow leaves growing in clusters. Ahopai Nerii folio, flore luteo. Plum. Cat. 20. Ahouai with a Rose-bay leaf, and a yellow flower.
 3. CERBERA (Manghas) foliis lanceolatis, nervis tranfverfalibus. Flor. Zeyl. 106. Cerbera with spear-jhaped leaves and tranfverfe nerves. Manghas Iabteicen\$, foliis. Nerii crassis venosis, Jafmini flore, fructu Perfici funili venenato. Burm. Zeyl. 150. tab. 70.

The first fort grows naturally in the Brazils, and also in the Spanish, West Indies in plenty; and there are some of the trees growing in the British islands of America *, this rises with an irregular stem to the height of eight or ten feet, sending out many crooked diffused branches, which, toward their tops are garnished with thick succulent leaves about three inches long, and near two broad* of a lucid green, smooth, and very full of a milky juice, as is every part of the shrub. The flowers come out in loose bunches at the end of the branches, of a cream colour, having long narrow tubes at the top cut into five obtuse segments, which seem twisted, so as to stand oblique to the tube & these spread open, and have the appearance of the flowers of Oleander. It flowers in July and August, but never produces fruit in England. The wood of this tree stinks most abominably, and the kernels of the nuts are a most deadly poison; so that the Indians always caution their children against eating thereof, for they know of no antidote to expel this poison; nor will any of them use the wood of this tree for fuel, but they take the kernels out of the shells, into which they put small stones, then bore a hole through each shell, and firing them; these they tie about their legs, to dance with, as the morris-dancers use bells.

The second fort grows naturally in the Spanish West Indies, and also in some of the French islands in America, and hath lately been introduced into the British islands, from whence I received the seed* by the title of French Phytic Nut; but how it came by that appellation, I cannot imagine, because there is another plant which grows common there, and has passed under that title, many years.

This rises with a round stalk about the same height as the former dividing upward into many branches. These, when young, are covered with a green smooth bark, by and by grow older* the bark becomes rough, but changes to a gray or Asbi-colour. The leaves are four or five inches long and half an inch broad in the middle, ending in a sharp point of a lucid green, and come out in clusters without order, and are full of a milky juice, which flows out when they are broken. The flowers come out from the side of the branches upon long foot-stalks, each supporting two or three yellow flowers with long tubes, spreading open in the same manner as the former. It flowers

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about the same time as the former, but never produces fruit in England.

The third fort grows naturally in India, and also in some parts of the Spanish West Indies, from whence I received the seed* this rises with a woody stem to the height of twenty feet, sending out many branches toward the top, garnished with long spear-shaped leaves, which are rounded at their ends; they are thick, succulent, and, on their upper side, of a lucid green, having several transverse nerves from the midrib to the side; on their under side they are of a paler green. The flowers are produced at the end of the branches, standing on long foot-stalks, each supporting two or three flowers shaped like those of the other species.

These plants may be propagated from their nuts, which must be procured from the countries where they grow naturally * these should be put into small pots filled with light earth, and plunged into a hot-bed of tanners bark in the spring, and treated in the same manner as other tender exotic seeds, giving them now and then a little water to promote their vegetation. When the plants are come up about two inches high, they should be transplanted each into a separate pot, filled with light sandy earth, and plunged again into a hot-bed of tanners bark, observing to shade the glasses in the heat of the day, until the plants have taken new root *, they must also be frequently refreshed with water, but it must not be given in too large quantities. As the summer advances, these plants should have air admitted to them in proportion to the warmth of the season; and when they have filled these small pots with their roots, they should be turned out and transplanted into other pots of a larger size, but they must not be too large; for the roots of these plants should be confined, nor should the earth in which they are planted be rich, but a light sandy soil is best for them; after they are new potted they should be plunged into the hot-bed again, observing to water them now and then, as also to admit air under the glasses every day in proportion to the warmth of the season. When the plants are grown about a foot high, they should have a larger share of air, in order to harden them before the winter, but they should not be wholly exposed to the open air. In the winter these plants should be placed in a warm stove, and during that season they should have very little water given to them, especially in cold weather, lest it should rot their roots. In the following spring these plants should be shifted again into other pots, at which time you should take away as much as you conveniently can of the old earth from their roots* and afterwards cut off the decayed fibres; then put them into pots filled with the same light sandy earth, and plunge them into the bark-bed again, for these plants will not thrive well unless they are constantly kept in tan: and as they abound with milky juice, they should be sparingly watered, for they are impatient of moisture, especially during the winter season.

When by any accident the tops of these plants are injured, they frequently put out shoots from their roots, which, if carefully taken up and potted, will make good plants, so that they may be this way propagated.

CERCIS. Lin. Gen. Plant. 458. Siliquastrum. Tourn. Inft. R. H. 646. tab. 414. The Judas-tree, in French Guainier.

The CHARACTERS are,
It hath a short broad Jhaped empalcment of one leaf, which is convex at the bottom, and full of honey liquor \ at the top it is indented in five parts. The flower hath five petals, which are inserted in the empalcment, and greatly resembles a papilionaceous flower. The two wings rise above the standard, and are reflexed \ the standard is of one roundish petal* and the keel is composed of two petals, in form of a heart, which inclose the parts of generation. It hath ten distinct stamina, which decline, four of which are longer than the rest, and are terminated by oblong, incurved stamens. It hath a long Jkndvr germen,

men fitting upon a slender stylob> crowned by an obtuse stigma; the germen afterward becomes an oblong pod with an oblique point, having one cell, indofing several roundish compressed feeds.

This genus of plants is ranged in the first section of Linnaeus's tenth class, intitled Decandria Monogynia, the flower having ten (lamina and one style. This genus is by all the writers placed with the papilionaceous flowers, before Linnaeus's System, which separates it from them; because the stamina in these flowers are all distinct; whereas the papilionaceous flowers have nine stamina joined together, and one separate.

The SPECIES are,

1. CERCIS (*Siliquastrum*) foliis cordato-orbiculatis glabris. Hort. Cliff. 156. *Cercis* with round, heart-shaped, smooth leaves. *Siliquastrum*. Caft. Duran. 415. and the Arbor Judae. Dod. Pemp. 786. "The common Judas-tree.
2. CERCIS (*Canadensis*) foliis cordatis pubescentibus. Hort. Cliff. 156. *Cercis*, with downy heart-shaped leaves. *Siliquastrum Canadense*. Tourn. Inf. R. H. 647. *Canada Arbor Juda*, or *Red Bud-tree*.

The first sort grows naturally in the south of France, Spain, and Italy* and is by the Spaniards and Portuguese, titled the Tree of Love: this rises with an upright trunk to the height of twenty feet, covered with a dark brown bark, dividing upward into many irregular branches, garnished with round, heart-shaped, smooth leaves, placed irregularly on the branches, having long foot-stalks; they are of a pale green on their upper, and of a grayish colour on their under side, and fall off in autumn. The flowers come out on every side the branches, and many times from the stem of the tree in large clusters, arising from the same point, having short foot-stalks; they are of a very bright purple colour, to make a fine appearance, especially when the branches are covered pretty thick with them: for they come out in the spring with the leaves, so are in full beauty before the leaves have obtained to half their size. The shape of the flower is the same as other papilionaceous (or butterfly) flowers; these have an agreeable poignancy, so are frequently eaten in fallads. When the flowers fall off, the germen becomes a long flat pod with one cell, containing one row of roundish feeds, a little compressed; but these do not often succeed the flowers in this country upon standard trees, for the birds pick off the flowers when fully open, but where they have been planted against good walled walls, I have seen great plenty of the pods, which, in warm seasons, have ripened very well.

These trees are usually planted with other flowering trees and shrubs for ornaments to pleasure-gardens, and for their singular beauty, deserve a place as well as most other sorts; for when they are arrived to a good size, they are productive of flowers, so as that the branches are often closely covered with them, and the singular shape of their leaves make a very pretty variety in the summer, and are seldom damaged by insects, so that, they are often entire, when many other trees have their leaves almost eaten up. This tree flowers in May, when planted in the full air, but against warm walls it is a fortnight or three weeks earlier.

The wood of this tree is very beautifully veined with black and green, and takes a fine polish, so may be converted to many uses.

There are two other varieties of this tree, one with a white, and the other hath a flesh-coloured flower, but these have not half the beauty of the first. Tournefort also mentions one with broader pods and pointed leaves, which I believe is only a variety of this. The second sort grows naturally in most parts of North America, where it is called Red Bud, I suppose from the red flower-buds appearing in the spring before the leaves come out * this grows to a middling stature in the places where it is a native, but in England rarely rises with a stem more than twelve feet high, but branches out near the root. The branches of this

is weaker than those of the first sort > the leaves are downy, and terminate in points; whereas those of the first are smooth, and round at the end where they are indented; The flowers of this are also smaller, 16 do not make so fine appearance as those of the first; but the trees are equally hardy, and will thrive in the open air very well.

The flowers of this sort are frequently put into fallads by the inhabitants of America; and the French in Canada pickle the flowers, but these have little flavour. The wood of this tree is of the same colour and texture as that of the first.

These plants may be propagated by sowing their feeds upon a bed of light earth, towards the latter end of March, or the beginning of April (and if you put a little hot dung under the bed, it will greatly facilitate the growth of the feeds -) when the feeds are sown, sift die earth over them about half an inch thick and, if the season prove wet, it will be proper to cover the bed with mats, to preserve it from great rains* which will sometimes burst the feeds, and cause them to rot, the feeds will often remain till the spring following before they come up, so the ground must not be disturbed till you are convinced that the plants are all come up; for some few may rise the first year, and a greater number the second.

When the plants are come up they should be carefully cleared from weeds, and in very dry weather must be now and then refreshed with water, which will greatly promote their growth: The winter following, if the weather is very cold, it will be proper to shelter the plants, by covering them either with mats or dry straw in hard frosts, but they should constantly be opened in mild weather, otherwise they will grow mouldy and decay.

About the beginning of April, you should prepare a spot of good fresh ground, to transplant these out (for the best season to remove them is just before they begin to shoot;) then you should carefully take up the plants, being careful not to break their roots, and plant them as soon as possible, because if their roots are dried by the air, it will greatly prejudice them.

The distance these should be planted, must be proportionable to the time they are to remain before they are again transplanted; but commonly they are planted two feet row from row, and a foot asunder in the rows, which is full room enough for them to grow two or three years, by which time they should be transplanted where they are designed to remain; for if they are too old when removed, they seldom succeed so well as younger plants.

The ground between the plants should be carefully kept clean from weeds in summer, and in the spring should be well dug to loosen the earth, that their roots may extend themselves every way; at that season prune off all strong side branches (especially if you intend to train them up for standard trees,) that their top branches may not be checked by their side shoots, which often attract the greatest part of the nourishment from the roots, and if their stems are crooked, you must place a strong stake down by the side of each plant, and fatten the stem to it in several places, so as to bring it straight, which direction it will soon take as it grows larger, and thereby the plants will be rendered beautiful.

When they have remained in this nursery two or three years, they should be transplanted in the spring where they are designed to remain, which may be in wilderness quarters among other flowering trees, observing to place them with trees of the same growth, so as they may not be overhung, which is a great prejudice to such plants.

CEREFOLIUM. See Cistaceae.

CEREUS. Par. Bat. 122. Boerh. Ind. alt. 1. 292. Just. Aft. R. Par. 171 & Cadus. Lin. Gen. Plant. 539. The Torch Thistle.

The CHARACTERS are,

It hath an oblong scaly empalement, which is covered with spines, and sits upon the germen. The flower is composed

of a peat number of narrow pointed petals* which spread open like the sun's rays. It hath a great number of declining flaming which are inserted to the base of the petals, and are terminated by oblong fummits. The germen, which is situated under the empalement, supports a long cylindrical styky crowned with a multifid stigma, in form of a head. The germen afterward becomes an oblong succulent fruit, with a prickly skin, full of small seeds inclosed in the pulp.

Dr. Linnaeus has joined the plants of this genus, and also those of Opuntia to the Cactus, making them only species of the same genus * but as the flowers of these plants differ greatly in their form from those of the Cactus, they should be separated and by preserving the title to this genus, by which it has been long known, it will prevent confusion, and by increasing the number of genera, the specific differences may be better ascertained, Linnaeus places the genus of Cactus in his twelfth class, entitled Cofandria, in which he includes those plants, whose flowers have from nineteen to thirty (lamina, which are fattened to the petals.

The SPECIES are,

1. CEREUS (*Hexagonus*) erectus, hexangularis, longus, angulis distantibus. Upright long Cereus with six angles, which are far distant. Cereus erectus altissimus Surinamensis Par. Bat. 116. Tallest upright Torch Thistle of Surinam.
2. CER^EUS (*Tetragonus*) erectus quadrangularis, angulis compressis. Upright Cereus with four compressed angles. Cereus erectus quadrangularis, costis alarum inflat affurgentibus. Boerh. Ind. alt. 293. Four-cornered upright Torch Thistle.
3. CEREUS (*Lanuginosus*) erectus octangularis, angulis obtusis, superne inermibus. Upright Cereus with eight obtuse angles, having no spines in the upper part. Cereus erectus, fructu rubro non spinoso. Par. Bat. 114. Upright Torch Thistle with a red fruit* having no spines.
4. CEREUS (*Peruvianus*) erectus octangularis, angulis obtusis, spinis robustioribus patulis. Upright Cereus with eight angles which are obtuse, and strong spreading spines. Cereus erectus maximus fructu spinoso rubro. Dadus. Par. Bat. 113. Greatest upright Torch Thistle with a red prickly fruit.
5. CSH-EUS (*Repandus*) erectus novemangularis, obfoletis angulis, spinis lanis brevioribus. Upright Cereus with nine angles, and spines shorter than the down. Cereus Curavicus, erectus, maximus, fructu rubro non spinoso, lanugine flavescente. Par. Bat. 115. Greatest upright Torch Thistle with a red fruit having no spines, and a yellowish down.
6. CEREUS (*Septagonus*) erectus octangularis, spinis lanis longioribus. Upright Cereus with seven of tight angles, and spines longer than the down. Cereus erectus craissimus maxime angulolius, spinis albis pluribus longissimis, lanugine flava. Boerh. Ind. alt. 293. Upright thick Torch Thistle having many angleSy&ueral very long white spines, and a yellow down.
7. CEREUS (*Rcyeni*) erectus novemangularis, spinis lana sequalibus. Upright Torch Thistle with nine angles* and spines of equal length with the down. Cereus erectus, gracilis, spinosissimus, spinis flavis, polygonus, lanugine alba pallecente. Boerh. Ind. alt. 293. Upright slender Torch Thistle, very full of yellowish spines, many angles, and a pale white down.
8. CEREUS (*Gracilis*) erectus gracilior novemangularis spinis brevibus, angulis obtusis. Slenderer upright Torch Thistle having nine obtuse angles and short spines. Cereus akiflimis, gracilior, fructu extus luteo intus niveo, feminibus nigris pleris. Tallest slender Torch Thistle with a fruit yellow without, white within, and full of black seeds.
9. CEREUS (*Triangularis*) regens triangularis, fructu maximo rotundo, rubro, esculento. Creeping triangular Torch Thistle, with very large, round, red, eatable fruit. Cereus (candens minor trigonus articulatis fructu suavisimo. Par. Bat. Prod. 118. Lesser, creeping, three-cornered jointed Torch Thistle, with a very sweet fruit, commonly called in the West Indies, the true prickly Pear, and by the Spaniards PUBaticya*
10. CEREUS (*Compressis*) repens triangularis, angulis compressis. Creeping triangular Torch Thistle, with compressed angles. Ficoides Americanum, f. Cereus erectus, cristatus, foliis triangularibus profundis canaliculatis. Pluk. Phyt. tab. 29. f. 3. Crested American Torch Thistle, with three angles deeply channelled.
11. CEREUS (*Grandiflorus*) repens subquinquangularibus. Creeping Torch Thistle with five* angles. Cereus scandens minor polygonus articulatis. Par. Bat. 120. Lesser jointed climbing Torch Thistle with many angles.
12. CEREUS (*Flagelliformis*) repens decemangularis. Creeping Cereus with ten angles. Cereus minor scandens, polygonus, spinosissimus, flore purpureo. Ed. Prior. Lesser climbing Torch Thistle, with ten spinous angles and a purple flower.

The first sort has been the most common in the English gardens. This grows naturally in Surinam, from whence it was brought to the gardens in Holland, where it produced flowers in the year 1681, and from the Dutch gardens, most parts of Europe have been supplied with this plant.

This rises with an upright stalk, having six large angles, which are far asunder, armed with sharp spines, which come out in clusters at certain distances, arising from a point, but spread open every way like a star, the outer substance of the plant is soft, herbaceous, and full of juice, but in the center there is a strong fibrous circle running the whole length, which secures the stem from being broke by winds. These will rise to the height of thirty or forty feet, provided their tops are not injured, if they have room to grow; but some of them have grown too tall to be kept in the stoves, so have either been cut off, or the plants laid down at length in winter, but whenever the stems are cut, or otherwise injured, they put out one, two, or sometimes three shoots, from the angles, immediately under the wounded part, and frequently one or two lower down. These (shoots, if they are not cut off, form so many distinct stems, and grow upright; but these seldom, are so large as the principal stem, especially if more than one is left on the same plant. The flowers come out from the angles on the side of the stem these have a thick, fleshy, scaly foot-stalk, round, channelled, and hairy, supporting a swelling germen, upon the top of which fits the scaly prickly empalement, closely surrounding the petals of the flowers, till a little time before they expand, which in most of the sorts is in the evening, and their duration is very short, for before the next morning they wither and decay. The flower of this sort is composed of many concave petals, which, when fully expanded, are as large as those of the Hollyhock; the inner petals are white, and crenated at their extremity. The empalement is green, with some purple stripes; the middle of the flower is occupied by a great number of stamens, which decline, and rise at their extremities, having roundish fummits. The flowers of this kind are never succeeded by fruit in this country, nor do the plants often produce their flowers here; but when they do, there are generally several on the same plant. I have some years had more than a dozen upon a single plant, which have all flowered within a few days of each other. The usual time of its flowering is in July.

This sort is not so tender as the others, so may be preserved in a warm green-house, without any artificial heat; but the plants should have no water given them in winter, when they are thus situated; for unless they are placed in a stove, where the moisture is soon evaporated, the wet will occasion them to rot. These plants naturally grow upon very dry rocky places, where their roots are confined, so they must not be planted in large pots, nor should they be planted in rich soil; the best composition for them is one third light earth from a common, a third of sea sand, and the other part fitted lime-rubble, if these are well mixed together, and often turned over before the plants are put into it, they will thrive the better. The directions for their management, will be hereafter exhibited.

The feond fort rifb with an upright ftem like the hrft, but it bach only four angles, which are com prffcd, and fmd far' afundcr. Thi; BTCry fubject to put out many moot* from the fides, whit [top ijiriglit growth, fo that tlic plants rardyrfc mo: than four or five feet high. This htth nor Btwnt in England, fo far as I have been able to learn. The third, fourth, fifth, fmh, feventh and eightl Ibra grow naturally in the Britiili iffemb of America, from whence I received them in the year 1728. Thefc have the fame form as the firft, but differ in the Cue of their ferns, the number of angles, and the length of their Jpincs, as is before exprffed in their titles; but, except the eighth fort, not any of them have flowered in Engine) as yet, though there are many of the plants which are more than twelve or fourteen feet high: the eighth fort hath die fmalldl fan of any of rhe upright forts which I have yet fan; this hath generally nine obiuic angles, which ait armed with litirt (bines, placed at farther diftances than thole of the other forts, nor are tlic channels between the metis near fo tkep. The flowers of this are produced from the angels, in the fame manner as the firft, but they are Imaller, and the emplicient is of a light green, without any mixture of colour. The fruit is about the fixe and ftwpc of a miAHim* Eerg^mot Pear, having many fift Ipima OB die ft in; the outlide is a pilc yellow, the inlide very white, full of pulp, having a greit number of fmall black (tedl lodged in it. This fort frequently (lowers in July, and in warm fcafans will pterel its fruit, whitth hath very little flavour in this country.

Thiefe forts are more impatient of cold than the firft, & require a ftovc to prefer** them in winter; nor fhoud they be expold abroad in fummer, but kept conftanty in the houfe, giving them a large fhare of air in warm weather.

The twelfth for: growl naturally in Peru, from whence it was fair to the royal garden at Paris; and .itc Year 173+, I was favoured with feme cuttings h by Dr. Bernard de JulHeu, demotiftrator of : lmts in thai garden. Thefc fucweded in the Chlfes garden, and have fince been communicated BO moft of the curious gardens in England. This b not 6 tender at the other forts, fo may be preferred in a good green-houfc, or placed under a hot-bed frame in winter, and in fummer fhould be <djX>fa) to die open air, which will prevent thie fhoots from drawing wcik, and thereby « greater number of floweru will be produced -, but during the time they remain in the open air, they fhould have little water; and S the tafon Ciould prove wet, the plants [hould be [crecenn] froii) it, otherwife ii irill caufc them t> lie bitwining winter. THu fart produces its flowers io May, Bid fomctimes earlier, when the I raiou is warm.

The ninth fort is, by the inhabitants of Barbados, trained up again; ib their (louies for the lake of its fruit, which is about the bignefs of a Bergatooi Pear, r.nd of a itintl delidouj flavour. This, and oil tenrit, clevtnth, and twelfth forts, are ten; require a warm Rave to preserve them. • tick fhould be placed ajainft the walls of the How.. • b they will infinate thleit rooU, and • extend themfelves to a greit length l and with a iict: help, in fattening them to the wall in a few place;. B ay be led up about the deling of the houfb, where they will appeal very hanJfome. And the eleventh lbrt, when arrived to a fufficent ilretigth, will pn • doce many eycccdjng hrpe., bwutiful, fweet-fecnte.; flowers, but they are like moft of the Bowtts of thefc kinds, of -cry fhort doratloh, fearely eontitiuing full blown iix' hours-, nor do the fatneBowen ever open jpain, when once clofed: they bq in to open in the evening be •ween feven and eight of the • ticks, are fully blown by die-, en, and by three or four the next morning f'ar, and hang <lov,n qu' : -e decorely, but, •uring their con ftituant, there is fcare any flower of greit beautt, or that makes a more mag-

nificent appearance \ for the caljr* of die (lower, whrn open, is near a foot diamctcti LIC infide of which being of a fplendid yeljaw colour, aprrin lib; tha rfyi of a bright Har, rhe outlide of a (jut brown , a-d the petals of ihc (lowers being of a pure white, adds to the luftre; and the vafll number of nturved Itamina, furrouading the ilyle in the center of the Bower, mike a fine appearance; and atid to this the fine fcent of the Rower, which perfumes the air to a con; • dorable diftance; there it force any plant which defeves » place in the hoi-houfc fo much as this, especially as it is to be trained i jEjinli the wall, where ic will not take up room. The uTuat fcafon of its flowering il iti July, and when the plants are large, they • produce a great number Of Howcn, fo that there will be a fucttion oi them fir feveral nights, and many of them will opo the fame night. I have frequH • tly had fix, eight, or ten flowers . Jpc at the fame time upon one pi • nt, which have miffed a moft magnificent ap] • arance by caufc -liglic, but nontof them have been fuctceded by any appearance of fruit.

The tenth fort produces a flower li • le inferior to the former, as I have been informal i • perfons who have fecn them, but I never had the good fortune to have any OI thefc planu which have been unJer my care fiowur; nor have I heard of more dun tv. • gardens where they have as yet flowered in England -, the firft of ihcm was many yrare finer in the roval gardens at Hampton Court, when there was a curi • uous toileffion of exotic pUnu kept in g<•/i order in thole gardens, which have fincc been gnraty neglected j the other was produced in the gardens of (he right hotnourabk the M.irquis of Rockingham, at Wentworth-Mall, in TorkfhiKr. Thdc arc the only garilens in this country where I hai'c heard of this fort having produced Howers; although th. • are many of thicfc pVinu in Jcvmi gardens, wlii'd aj • of « confiderabl agr, uul extt: • their branches as a very gnxt diftance.

The ninth fort has never producd any flower; as yet in England, nor hate we any good figure of the flower in any of the botanic bouki; but I have been informed by feme curious perioM who have r • d in America, that the flowers are not near fo bcrifical 3\$ thiufe of die tenth and eleventh, but the fruit u greatly eftemed by JII the inhabitaim.

The twelfth fort produces a greater number of flowerers rlimi either of the orlicr; thicfc arc of a fine Pink colour, both within and without; tlic JXTMIS jrr not fo nflmcrou5, and the mbe of the Bower is longer than thole of the other fpecics; and, tontrary to nil thie uthvr fiirt5, keep open thnx or four days, urovidcd the w • atber h not too hot, or the place where they ftand kept foa warm. During ttw continuance of thefe flowers, they make a fine appearance. Tilts fan has very ikmler trailing • fir •, wtdi require td be fupported; but tiitie do not extend fo far as thofe of the other fori, nor art their brandies jointed as thoiic arc, fo they cannot be trained (0 far agajift the w • lilt of the houfc; but as thie pro: • ce such beautiful flowers and in fo great plenty, it n-ny be placed among [lic • ft club of exotic plants. This plant has p; • du;cd fruit in the garden at Che •, but it hath nut as yet rip • ed.

Thicfc plants are • Il propagated by cuttine'i fw • if you intend to increafc thie numb • of them, you muft cur off the ftcms of thic upright; fums M whnr length you pleafe; thefc I • d be cut off - dry [Lcc to be l ihe part en, at least a fortnigl • /e'eki brfbre they arc planted; but if ilm • be a run: • li it 15 much thie bi-tter, and they will be in ! • danger of rotting, cipttUly thole lbrta which are the moft f • lent.

Tick-cuttings fhould be plantd in pots filled with thic mixture of wrth before due iW, laying • some fticks in thi boitom of the ; • to drain off the [jioiltuK; tlien place the poti • into a gen k hm-btd of • ujiers l>uk, to facilitate their rooting, giviog t! :cm once a week a g • ridc watering.

The best fun for this work is in June, or die beginning of July, that they may have unit to root towards the middle of Auguf you mult begin to give them air by degrees to liarJ.n [hem againft winter, bur they EhouJ not be wholly expofeatc the opci air or fun; at the end of September they'roult be removed into the fen, or grLi house, where they are to abide the winter, during WUL-JI tafoli you niuft be very careful not to let them liave much water i and always obfrve to place tlt; young plants, for the firft winter, in a little warmer lituatiuii than die older plants, as being fomewhar tenderer.

Theft plants flould always have a dry fituation in winter, for as (hey imbibe the grwieft part of their nourifhmen from the circumambient air, v if this be too irph tt with muttl particles, it will occafion their rotting; therefore they {hould not be expofed abroad, not even in the mklfl of J-immer, unkj they are bnder Jlicccr j for great mins, which often happen at that li-iftin, arc very injurious w [hem -, the tfrft rigfcl forts fhould b; Bwrcftrc placed fa as to enjoy a trte air in the lunimcr, but, at tlic fame time, forced from rains and grrac dews ; it will therefore be muth the better method u let them in an open glal> (love, wlcrc the windows may be fel open in good weather, and fbur in cold or wet. The other lour lorn niuil not be omofed too tnnch tu the open air, rveti in the hottcft fealbn, dj>eaaily it" you deSign to have them flower; and in winter they fhouM be ^ept very warin, anl bav* no viatii: given than.

When you hive once cut off the tops of iny of thefe plant], in order to increafe them, the lower parti will put forth freth ll-uots from tuicir angles, wnth D f'roivn ro be eight or nine indies long, may alii) be taken off to nuke fr/h plants^ and, by this means, the old plants will continually afford a iupply, lb thai you never need cut off above one plant of a fort, wlikh you (hould preferve for a brccoder. Thefc plants being fucculent, they will bear to be a long lime out of the ground; ther- for whoever hath a mind to get any of thrm from the Weft Indies, need give no other inflruaiojw to their friends, but to cut them off, and let thcm lit- two or ill; days to dry-, then put them up iit a box with (try hay, <r fraw, to keep them from wounding cadl utlier with their fjimrs, ind it' they ,irc iw or throe montlis on their paTage, they will keep very well, provided no wet get to them.

CEMNTHE. Lin. Gen. PJant. 171. Tourn. Inf, K. I i. y. tab. 16. Honey wort; in French, A&linx.

The CHARACTERS arc,
Jt b/Ub tin oi/favg firntdicut empalemt, •us init fvr mi! parts, hck on ya' having tbiith
f v l ink; A v d m d at v r, m ibt
rim is qi-
hotbff
Jiithi wllt,
fupporting a fltsdtr Jhk the La£!b O/ ibz Ji
h en oisvft
ti fy maty fiedl, tshcb art bard, faMth, f
jUe, ha
palnmt.

This genus (jf planu ii ranged in the firil fctcion of Linn: la£, mtilet! I Manog'nia, tlic flower hiving five itamiiia W one ftyle

- 1. Cm... folia ovato-oblonga, arpcrij, npl. ... Uigith /all, end fi:- Cmndie ^uoruntlani major, f... flofC J. B, 3, fioa, Grrattr mmysart Jiith a prkky Itaf, and o ytfcv jterc.
- 2. CEMNTHE (Gland) folia obli^30-a vans, glalirk, amplexicaudibus, corolla obtusicaulis, p;utulis. Homy-wsrtr -aib, f... f... 11% ibt JIath, and a iptrairing blum fetal. Ccrinthc florc rubro

purpurafcnrc. C. B. P. 25S; //(wrpwart VHbt per- plijh rttljmtKr.

- 3. CEMNTHE (Gland) folia amplexicaudibus, integris, frigitibus gemiois, cord... Plant. 137. Hexefax: ... ibijialk., a fauU- rintlle minor. C. li. 1'. 2 Thefirir fort gr- naturally in Germany and Italy. This is m annual p] which rife with limooth branching falta a foft and half thick, granifhed with, oval, oblong, pri leaves, which are of a fca-green, fpottedwith white, anil embrace the flalks with tinir bale i He flowers are pi ched at -he end of the branches, Handing between the small leaves, which embrace the ft ill; their are long, the ailota, and blunt at the top, where the tube u' are en- large<3-, thrj .1: yellow, ulliavca. mdbus liquor in their cubes, with which the bees are mucli delighted i and an herbaeeuu, empalemt, cut into Hue parts, which ifft; and includes the feeds, these flowers have each four einbrj . • german, but only two 1 if them are fruifua. The top of the flalks are reH'xet! backward, fomewis. It flowers in June and July, and the feeds ripen in Auguft and September. If' tlic leads jrc not uki-n as loan as they change btack, rlioy drop out of the empielement in a ftiorf [ime] lu uilcft tlic' aie carefully gat i if red up, they -will vegcia^: with tlic firft moitl weather.

The ftTonil TOII is like the I J, but leaves are larger, stid fmooth, having no jiricki on them. The flowers of this are of a purplish red colour, and the plants grow larger. Thi grows in i only, md the louth of l'mnce v it is fdlb ?n - 1;J plant.

The third fort ; naturally on III; Alps, and other mountainous pi* the 1 iih. llenJcrv ihlks tlian either of the fornir, which rife twu feet high, and clofer garnifiaJ wirlt leaves than either of the others j these embrace the f alk with their bale, and are of a bluer grci-nolntir. The fiow. are small, their upper pan is deeply cut into ii.

bin the mourn of the 1 be is chiefly that up; .:hem- ptlement . . la ge, <: closely furrounds the flower. The flv. are . . . and appear at the last:it" : with the OIIIIT : . . . If the feeds of this are permitted to leatter, the y.ants will come up i iutuunn, and thefs . . . grow much taller, and lower in lirr than those which are sown in the spring; this hath been supposed a perennial plant by many, but from man) years observation, I could never find these plants to come after they haJ flowered and perfitted thcr feed!.

The species of tills plwit are propagated by seeds, wli • fi Uiotild hi: fown loon afte they are ripe; for, if they are kept till i; . . . the growing quality of them is often loft; or m least they be four months in the ground befo<- they grow; the plants are hardy, and ii' the ix-ds are !own in a warm situation, they will endure the winter's cold very well without shelter; these autumnal plants are also much sooner to produce ripe iieeds than those which are sown in the spring, whk! are generally lost in the field before they Bower-, ana erst: . . . frequently if the autumn should not prove very warm, thdr seeds would not be pcr- ti-ited.

ThiepSantsmakt- a pretty variety for large borders in gankai, where, if they are suffered to drop their seeds, the plants will iuili v.; . . . for that when a person is once furnished with the several varieties, he need be at no more trouble than fj allow each of them .1 . . . and with this culture, there is a greater certainty of preserving the best than in any othir manip- ment; . . . for when great quantities of the seeds havr [attered Upon the ground, some of them will bt buried fo deep, in v. . . grow the fell yi:ar; . . . upon being turned by

to the air the succeeding year, will come Up as well as new feeds.

CESTRUM. Lin. Gen. Plant. 231. Jafminoides. Dill. Nov. Gen. 170. Bastard Jafmine.

The CHARACTERS are,

// bath ajhort tubular empalement of one leaf, which is indented at the top into five parts, which are ere8. The flower is funnel-Jhaped, of one petal, having a long cylindrical tube, which Jpreads open at the top, where it is cut into five equal fegments; it hath five flender fiamina the length of the tube, to which they adhere, and are terminated by roundih four-cornered fummits. The oval cylindrical germen is fituated in the empalement, fupporting a flender fyle the length of theftamina, crowned by an obtufe thick stigma. JThe germen afterward becomes an oval oblong berry with one cell, inclojing feveral roundih feeds.

This genus of plants is ranged in the firft fe&ion of Linnaeus's fifth clafs, intituled Pentandria Monogynia, the flower having five ftamina and one fyle.

The SPECIES are,

1. CESTRUM (*Nofturnum*) floribus pedunculatis. Hort. Cliff. 490. *Ceftrum with flowers ftanding upon foot-ftalks. Jafminoides foliis Piihaminis, flore virefcente noftu odoratiflimo. Hort.Elth. 183. tab. 153. Bastard Jafmine with leaves of Pijhamin, and a green/b flower, fmelling very fweetly in the night.*
2. CESTRUM (*Diurnum*) floribus feffilibus. Hort. Cliff. 491. *Ceftrum with flowers growing to the branches. Jafmioides laureolae folio, flore candido interdiu odorato. Hort.Elth*. 186. tab. 154. Bastard Jafmine with a Spurge Laurel leaf, and a white flower, fnulling in the day.*
3. CESTRUM (*Nervofum*) foliis lanceolatis oppofitis nervis tranfverfalibus, pedunculis ramofis. *Ceftrum with fpear-Jhaped leaves growing oppofite, having tranfverfe veins, and branching foot-ftalks *to the flowers. Jafminoides Americanum, lauri folio, flore albo odorato. Houft. MSS. Bastard Jafmine of America with a Bay leaf, and a white, fweet, fmelling flower.*
4. CESTRUM (*Spicatum*) foliis ovato-lanceolatis, floribus fpicatis, alaribus & terminalibus. *Ceftrum with oval fpear-Jhaped leaves, and flowers growing in fpikes from the fides and tops of the branches.*
5. CESTRUM (*Confertum*) foliis oblongo-ovatis, obliquis, floribus alaribus confertis, tubo longiffimo & tenuiffimo. *Ceftrum with oblong oval leaves which are oblique, and flowers growing in clufters from the fides of the branches, with a very long flender tube.*
6. CESTRUM (*Venenatum*) foliis lanceolatis obliquis, floribus alaribus, pedunculis foliofis. *Ceftrum with oblique fpear-Jhaped leaves, flowers proceeding from the fide of the branches, and leafy foot-ftalks. Jafminum laurinis foliis, flore pallide luteo, fru&lu atroceruleo polypyreno venenato. Sloan. Hift. Jam. 2. p. 196. Jafmine with Bay leaves, a pale yellow flower, and a dark blue fruit with many feeds, which are poifonous.*

The firft fort was many years paft raifed in the curious gardens of the Duchefs of Beaufort, at Badmington, in Gloucefterfhire, and was from thence communicated to feveral gardens in England and Holland, where in the latter it paffes under the title of Badmington Jafmine to this time. This grows naturally in the ifland of Cuba, from whence I received the feeds by the title of *Dama de Noche*, i. e. *Lady of the Night*; which appellation I fuppofe was given it, from the flowers fending out a ftrong odour after the fun is fet.

It rifes with an upright ftalk about fix or feven feet high, covered with a grayifh bark, and divides upward into many flender branches, which generally incline to one fide; and are garnifhed with leaves placed alternate, which are near four inches long, and one and a half broad, fmooth on their upper fide, of a pale green, and on their under fide they have feveral tranfverfe veins, and are of a fea-green colour, having fhort foot-ftalks. The flowers are produced at the wings of the leaves, in fmall clufters, ftanding upon fhort foot-ftalks, each fupporting fodr or five

flowers, which have Very fhort empalements, wkli long flender tubes, which are enlarged at the top* where they are cut into five parts which are reflexed; tiefe arc of an herbaceous colour; they appear in Auguft, but are not fucceeded by berries in this country; but thofe which I received from America were fmall, and of a dark brown colour, inclojing feveral feeds.

The feeds of the fecond fort were fent the from the Havannah, by the title of *Dama de Dio*, or *Lady of the Day*; this rifes with an upright ftalk to the height of ten or twelve feet, covered with a fmooth light green bark, dividing upward into many fmall branches, garnifhed with fmooth leaves near three inches long, and one and a half broad, of a lively* green colour, and the confiftence of thofe of the Spurge Laurel; thefe are ranged alternately on thd branches. Toward the upper part of the fhoots come out the flowers from the wings of the leaves, ftanding in clufters clofe to the branches; they are very white, fliaped like thofe of the former fort, and fmell fweet in the day time, from whence it had the appellation of *Lady of the Day*. The bewies of this are fmallef than thofe of the firft fort. This flowers in September, O&ober and November.

The third fort was fent me from Carthfgena in New Spain, near which place it grows naturally; this rifes with a ffrubby ftalk five or fix feet high, covered with a brown bark, and divides upward into many fmall branches, garnifhed with fpear-fhaped leaves, about four inches long, and little more than one broad; they are fsmooth, of a light green, and have many horizontal veins running from the midrib to the fides, and are placed oppofite. From the wings of the leaves, toward the upper part of the branches, are produced the flowers, ftanding upon branching foot-ftalks, each fupporting four or five flowers, whofe tubes are fwelling at their bafe, juft above the empalement, but contraft upward to the mouth, where the petal is cut into five broad fegments which fpread flat; they are white, bur without fcent.

The fourth fort was fent me from Carthagenam the former. This rifes with a fhrubby ftalk ten or twelve feet high, covered with a light gray bark, and fends out many branches the whole length, garnifhed with oval fpear-fhaped leaves, ftanding without order; they are two inches and a half long, and one and a half broad, of a light green, with flender foot-ftalks. The flowers come out in loofe fpikes from the fide, and alfb the end of the branches, which are fhaped like thofe of the firft fort, and are of a whitifh green colour, without fcent. Thefe are fucceeded by roundifh purple berries, the fize of large Peafe, which have a foft juicy pulp, filled with flat feeds.

The fifth fort rifes with feveral fhrubby ftalks eight or ten feet high, covered with a white fsmooth bark, fending out many irregular branches, garnifhed with oblong oval leaves, which at their bafe are longer on one fide, fo that the foot-ftalk is oblique; they are placed on the branches without order, and are of a pale green. The flowers come out in clufters from the fide of the branches, many of them arifing from the fame point; thefe have very flender long tubes, which are cut at the top into five acute fegments which are ereft. They are of a pale yellow, and without fcent.

The fixth forf grows naturally in Jamaica, from whence it was fent me by the late Dr. Houftoun. This rifes with a woody ftem eight or nine feet high, covered with a fsmooth brown bark, and fends out many branches on the fide which grow ereft, garnifhed with oval fpear-fhaped leaves, whofe foot-ftalks are fhort; they are five inches long, and two broad, fsmooth, of the confiftence with Bay leaves, and are placed alternate on the branches. From the wings of the leaves the flowers are produced, moft part of the length of the branches; the foot-ftalks of the flowers arc garnifhed with fmall leaves, ftanding between each flower in a fingular manner, the flowers

riling one above the other *, and between, or opposite to each, is one, and sometimes two leaves, of the same form with those on the branches. The flowers are of a pale yellow, and emit a disagreeable odour. These are succeeded by oval berries of a Violet colour, full of juice, each containing several flat seeds; they are reckoned very poisonous, to have the appellation of Poison Berries in Jamaica.

This has been, by many of the writers on botany, supposed to be the same with the first; but any person who has seen both sorts growing, cannot doubt of their being distinct species; the shape and size of the leaves are very different, as are also their flowers and berries. Some have also supposed that the Parqui of Pere Feuillé, is the same with this, but that is a great mistake -, for the flowers of this plant are produced in loose bunches at the extremity of the branches, whereas those of this sort come out from the side, at the foot-joints of the leaves -, so that this plant is certainly different from either of these, but approaches nearest to the third.

The fifth sort I take to be the same as Pere Plumier's *Jasminum aliud arborecens, foliis folani, minus* *, for by an imperfect specimen of his plant which was shewn me, the leaves appear the same, but as the specimen was without flower or fruit, so I could not determine it.

The first and second sorts produce their flowers every year in England, but the others do but seldom flower here \ but as they retain their leaves all the year, so they make a pretty variety in the stove, during the winter season; and when they flower, the branches are commonly well garnished at their joints with bunches of flowers, so they make a fine appearance at that time.

All these plants grow naturally in very hot countries, so cannot be preferred in England without artificial heat *, therefore require to be placed in a warm stove, especially in the winter. The two first are hardier than the others *, these I have kept several years in a dry stove, with a moderate share of heat in winter, and in the middle of summer have set them in the open air, in a warm situation. With this management I have found them thrive, and produce flowers much better than when they have been placed in a greater heat *, but I have often endeavoured to keep these plants through the winter, in a green-house, or ■ ■ is safe, without fire, but could never succeed; for by the end of January, they commonly decayed.

The other sorts require a larger share of heat, especially when the plants are young; therefore they should be plunged in the tan-bed of the bark-stove, otherwise they will lose their leaves in winter, if they are not quite destroyed; but after three or four years growth, they will bear to be treated more, hardily, provided they are inured to it gradually.

These plants may be propagated from seeds, or by cuttings. Those which come from seeds are always the most vigorous, and straight plants; but as they do not produce seeds in England, so the other method is generally practised, because their seeds are rarely brought hither.

The best time to plant these cuttings is about the end of May, by which time the shoots will have had time to recover their strength, after their confinement during the winter season. The shoots which come out from the lower part of the (stalks, should always be chosen for this purpose. These should be cut about four inches long, and five or six of them may be planted in each halfpenny pot *, for the cuttings of most sorts of exotic plants, will succeed better when they are planted in these small pots, than they do in larger, as I have many years experienced. The earth in which these are planted, should be fresh and light, but not full of dung: when the cuttings are planted, the earth must be pressed pretty close to them, and then gently watered \ after which the pots must be plunged into a moderate hot-bed of tanners bark, and every day shaded from the sun. They must also have

fresh air admitted to them in warm weather, and two or three times a week refreshed with water. With this management the cuttings will put out roots in five or six weeks, when they should be gradually exposed to the sun *, and when they begin to put out shoots, they must have a greater share of fresh air admitted to them, to prevent their drawing up weak *, and their waterings should be oftener repeated, but given in small quantities, for their young tender fibres will not endure much wet. When they have made good roots, they should be carefully shaken out of the pots, and each put into a separate small pot, filled with the same sort of earth as before; then give them some water, to settle the earth to their roots, and plunge them again into the tan-bed; observing if any of their leaves hang down, to shade them from the sun in the middle of the day, until they have taken fresh root -, after which they should have a large share of air in warm weather, to strengthen them before winter. Their waterings in the summer should be frequent 5 and if they are sprinkled all over their leaves, it will wash and cleanse them from filth, which will greatly promote their growth; but their roots must not be kept too moist.

In the autumn the plants of the three last sorts must be removed into the bark-stove, and plunged into the tan-bed, where they must be treated in the same manner as other tender exotic plants; but the two first sorts may be treated otherwise, especially when they have obtained strength, yet the first winter they may be managed in the same way as the* others. There must be great care had in watering of these plants in winter, for they are all (except the second sort) very impatient of moisture, so that they are soon killed by being over-watered.

If the seeds of these are procured from the countries where they grow naturally, they should be sown in small pots filled with the earth before directed, and plunged into a moderate hot-bed of tanners bark, giving them now and then a little water. Sometimes the seeds will come up the same year, but they very often lie in the ground till the spring following; so that if the plants do not appear in six or seven weeks; after the seeds are sown, they will not come up that season; in which case the pots may be plunged in the tan-bed of the stove, between the other plants, where they will be shaded from the sun, and but little water given them; in this situation they may remain till the following spring, when they should be removed, and plunged into a fresh hot-bed, which will bring up the plants in a short time, provided the seeds were good.

When the young plants are fit to remove, they should be carefully shaken out of the pots, and each planted into a separate pot filled with the before-mentioned earth, and plunged into the hot-bed again, and afterward treated in the same way as hath been directed for the plants raised from cuttings.

C E T E R A C H. See ASPLENIUM.

C H ^ E R O P H Y L L U M. Lin. Gen. Plant. 320. Tourn. Inft. R. H. 314. tab. 166. [gai^fuM*, of *χαίρομαι*, to rejoice, and *πλευρον*, Gr. a leaf, because the leaves, steeped in wine, and drank, will exhilarate and cheer melancholy persons.] Chervil.

The CHARACTERS are,

It is an umbelliferous plant; the principal umbel is spreading and hath no involucre, composed of several small ones, called rays; the small ones have a five-leaved involucre, which is reflexed; the flowers have five heart shaped inflexed petals, and five stamina, which are terminated by roundish summits: the germen is situated below the flower, supporting two reflexed styles, crowned with obtuse stigmas. The germen afterward becomes an oblong pointed fruit, dividing in two parts, each having one seed, which is convex on one side and plain on the other.*

This genus of plants is ranged in the second section of Linneus's fifth class, entitled Pentandria Digynia, the flowers having five stamina and two styles.

The SPECIES are,

1. CH[^]EROPHYLLUM (*Sylvestre*) caule friato geniculis tumidiufculis. Flor. Suec. 2. N. 257. *Wild Chervil with friatedstalks, whose joints are /welling.* Myrrhis fylveftris feminibus laevibus. C. B. P. 160. *fVild Myrrh with fsmooth feeds.*
2. CH[^]EROPHYLLUM (*Bulbofum*) caule laevi, geniculis tumidis. Lin. Sp. Plant. 258. *Chervil with afmooth ftalk, and fwelling joints.* Myrrhis tuberofa & nodofa conyophillon. Mor. Umb. 67* *tuberous and knotted Myrrh with a Hemlock leaf.*
3. CH[^]EROPHYLLUM (*Temulum*) caule fcabro, geniculis tumidis. Lin. Sp. Plant. 258. *Chervil with a rough ftalk, and fwelling joints.* Chaerophyllum fylveftr. C. B. P. 152. *Wild Chervil*
4. CH[^]EROPHYLLUM (*Aureum*) caule squall, foliolis incifis acutis. Lin. Sp. Plant. 258. *Chervil with an equal ftalk, and leaves cut into acute fegments.* Myrrhis pennnis alba minor, foliis hifutis, femine aureo. Mor. Umb. 282.
5. CH[^]EROPHYLLUM (*Hirfutum*) caule aequali, foliolis incifis acutis, feminibus fubulatis. Lin. Sp. Plant. 371. *Wild Chervil with an equal ftalk, whose fsmall leaves are cut acutely, and awl-Jhaped feeds.* Myrrhis paluftris, latifolia rubra. C. B. P. 161.

The firft fort grows naturally on the fide of highways, and the borders of the fields in moft parts of England, fo is never cultivated in gardens. It is frequently called Cow Parfley, but for what reason I cannot fay, becaufe there are few animals who care to eat it, except the afs; for it is reckoned to have fomething of the quality of Hemlock, but in a lefs degree. It is a weed which fhould be rooted out from all paftures in the fpring, for it is one of the moft early plants in fhooting; fo that by the beginning of April the leaves are near two feet high. The feeds of this plant fspread greatly over the ground, and as the roots are perennial, they are often very troublefome weeds to deftroy.

The fecond fort grows naturally in Hungary and Iftria. This plant hath a thick tuberous root, from which come forth feveral leaves refembling thofe of Wild Chervil, which fspread horizontally near the ground. The ftalks rife fix or feven feet high, which are fotted with purple, and garnifhed with leaves of the fame form as thofe below. The knots at the joints of the ftalks fwell out on every fide, at which is placed one of thefe divided leaves; the ftalks are terminated by fmall umbels of white flowers, which are fucceeded by long narrow feeds. It flowers in June, and the feeds ripen in Auguft. If the feeds of this plant are permitted to fcatter, the plants will come up without any farther care, and only require to be kept clean from weeds.

The third fort grows naturally on the fides of foot-walks, and on the borders of woods in many parts of England, fo is not cultivated in gardens.

The fourth fort grows naturally in the paftures about Geneva, and in Switzerland; this hath a perennial root, from which come out in the fpring many leaves, lhaped like thofe of the firft, but narrower, hairy, and more divided. The ftalks are channelled, and rife three feet high, garnifhed with the like leaves; thefe are terminated by large umbels, formed of many fmall ones, which are compofed of flowers, having five heart-lhaped petals, which turn inward; thefe are fucceeded by long pointed feeds. The whole plant has an aromatic fmell and tafte.

The fifth fort grows naturally on the Alps, and the Helvetian mountains. It is a perennial plant, fomewhat refembling the firft fort, but their leaves are hairy, and their fegments are broader; the ftalk rife four feet high, terminated by large umbels of flowers, which in fome plants are red, and in others white; thefe are fucceeded by long pointed feeds, two being joined in the fame cover.

Thefe plants are preferred in botanic gardens for variety; but as their ufe either in medicine or the kitchen are not known, they are rarely admitted into other gardens.

CHAM[^]ECERASUS. See CEKASUS and Lo¹

NICERA.

- CHAM[^]ECISTUS. See CISTUS.
 CHAMⁱECLEMA. See GLECHOMA.
 CHAM[^]CYPARISSUS. See SANTOUNA*
 CHAMⁱEDAPHNE* See Ruscus;
 CHAM[^]EDRYS. See TEUCRIUM.
 CHAM[^]L[^]EA. See CNEORUM.
 CHAMⁱJEMELUM. See ANTHEMIS.
 CHAM[^]MESPILUS* See MESPILUS.
 CHAM/EMORUS. See RUBUS.
 CHAM/ENERION. See EPILOBIUM.
 CHAM[^]PITYS. See TEUCRIUM.
 CHAM[^]RHODODENDRON. See AZA⁻LEA and KALMIA.

CHAMJERIPHES. See CHAM[>]EROPS.

CHAMⁱEROPS. Lin. Gen. Plant. 1084. Cham^{*}-riphes. Poit^{*} to^{*} Dod. Pempt. 820* Dwarf Palm, or Palmetto.

The CHARACTERS are,

It bath male and hermaphrodite flowers in diftinft plants; the hermaphrodite flowers are all included, in one common fpatha or hood, which is compreffed and bifid, and the fpadix or club is branching; each flower bath afmall bree-pointed empalement; they have one thick upright petal which is cut into three parts, and turns inward at the top, and five compreffed ftamina which join at their bafe[^] terminated by narrow twin fummits, joined to the interior part of the ftamina. They have three roundifh germen, each having a diftinft ftyle, which is permanent, terminated by pointed ftigma. The three germen afterward become fo many round berries, having 01ft cell, each containing a Jingle feed. The male flowers are tike the hermaphrodite, but the ftamina are not diftinft, nor have they any germen.*

This genus of plants is joined with the other kinds of Palms by Dr. Linnaeus, and placed in the appendix to his Genera Plantarum; but it fhould be ranged in his twenty-third clafs, or rather made a diftinft clafs by themfelves, becaufe their manner of fru&ification is very different from moft other plants.

The SPECIES are,

1. CHAM²EROPS (*Humilia*) frondibus palmatis, plicatis* ftipitibusfpinofis. Hort. Cliff. 482. *Dwarf Palm with folding palmated leaves, and prickly foot-ftalks.* Palma humilis, fc. Chamaeriphes. J. B. Hift. 1.368. *Dwarf Palm, or Palmetto.*
2. CHAMⁱBROPS (*Glabra*) foliis flabelliforcibus, maximis, ftipitibus glabris. J[^]warf Palm with very large fan-jhaped leaves, and fsmooth foot-ftalks. Palma non ipinofa humilima. *Dwarf Palm without fpines, commonly called fmall Palmetto Royal.*

The firft fort grows naturally in Spain, particularly in Andalusia, where, in the sandy land, the roots fspread and propagate fo faft, as to cover the ground in the fame manner as the Fern in England. The leaves of thefe plants are tied together to make boms for fweeping.

This never rife with an upright ftem, but the foot-ftalks of the leaves rife immediately from the head of the root, and are armed on each fide with ftrong fpines *, they are flat on their upper furface, and convex on their under fide. The center of the leaves are faftened to the foot-ftalk, which fspread open like a fan, having many foldings, and at the top are deeply divided like the fingers of a hand; when they firft come out, they are clofed together like a fan when fhut, and are faftened together by ftrong fibres which run along the borders of the leaves; and when the leaves fspread open, thefe fibres or frings hang from the fides and ends of the borders of the leaves[^] are finely fawed, and have white narrow edgings % they are from nine to eighteen inches long, and near a foot broad in their wideft part: as the lower leaves of the plants decay, their veftiges remain, and form a fhort ftump above ground, in the fame manner as our common male Fern does; from between the leaves comes out the fpadix or club, which fuftains the flowers; this is covered with a thin fpatha or hood, which falls off when the bunches open and di-

vide*

vide. As all the plants of this sort which I have seen flower were male, I cannot give any particular description of their fructification.

This plant is commonly propagated here by heads, which sometimes separate from the main root; if these are carefully taken off with fibres and planted, they will grow, but the plants so raised are not so good as those which are produced from seeds; so that if good seeds can be procured, that is by much the better way to propagate them. The seeds should be sown in small pots filled with light sandy earth, and plunged into a moderate hot-bed of tanners bark, these must be refreshed now and then with water. If the seeds are fresh, the plants will come up in two months; these rise with a single long-pointed leaf. When they appear they must be now and then refreshed with water, but they must not have it in too great plenty. If the plants are not too close to each other in the pots, they will not require to be transplanted the first year; therefore they should remain in the tan-bed all the summer, but in warm weather they must have plenty of air admitted to them. In autumn the pots should be removed into the stove, and, if they are plunged into the bark-bed the first winter, it will greatly forward the growth of the plants. The following spring the plants should be carefully turned out of the pots, so as to preserve their roots entire; for all the sorts of Palms have tender roots, which, if they are cut off or broken, frequently kill the plants: then they should be each planted into a separate small pot filled with light, sandy, undunged earth, and plunged into a fresh hot-bed to encourage their taking root; the following summer they should be gradually hardened, by raising the glasses pretty high, so as to admit a large share of air to them, but they should not yet be wholly exposed to the open air. The autumn following the plants may be placed in a dry stove but as the plants advance and get strength, they may be treated more hardily, and in summer placed in the open air in a warm situation, and in winter may be preserved in a warm green-house without artificial heat.

As the plants advance in growth, they should be put into larger pots, but when this is done, there must be great care taken, that their roots are not cut or broken, nor should they have pots too large. In winter they must have but little water, and if they are exposed to the open air in summer, they will not require much, unless the season proves very warm and dry, in which case they may be sparingly watered two or three times a week.

The second sort grows naturally in the West Indies, where it never rises with a stem 5 the foot-stalks of the leaves are rounder than those of the former, and have no spines on their sides. When the plants are old their leaves are three or four feet long, and upward of two broad; these are folded in the same manner as those of the first, but the folds are broader, and the leaves are of a darker green, some of these plants have put out slender bunches of male flowers in England, which were too imperfect to form a description.

This sort rises freely from seeds, which may be easily procured from the islands in America, these must be sown in the same manner as the former, and the plants treated in the same way; but as they are natives of a warmer climate, they should be constantly kept in the bark-stove, where, if they are carefully managed, they will make good progress.

I have received seeds from Carolina of a Dwarf Palm, which is very like this, if not the same, but the plants do not make so good progress here, as those which came from Jamaica; the berries were so like, that I could not distinguish them; but as the plants advance, if they are different, it will appear.

CHAMBER UBUS. *SCCRUBUS*.

CHAMIESYCE. See *EUPHORBIA*.

CHEIRANTHUS. Lin. Gen. Plant. 730. *Leucogium*. Tourn. Inf. R. Ji. 220. tab. 107. Stock Gilliflower and Wall-flower to French *Giroffliou* *Viofor*.

The CHARACTERS are,

It hath a four-leaved compressed empalement, the tv) outer leaves are fuelling at their base. The flower hath four petals placed in form of a cross, these are longer than the empalement. It hath six parallel stamina, which are the length of the empalement, two of which are between the swelling leaves of the empalement, the other are a little shorter, and are terminated by erect bifid summits, which are reflexed at the top. It hath a four-cornered prismatic germen as long as the stamina, supporting a very short compressed style, crowned with an oblong divided stigma, which is reflexed and permanent. The germen afterward becomes a long compressed pod with two cells, opening with two valves, filled with compressed seeds.

This genus of plants is ranged in the second section of Linnaeus's fifteenth class, intitled *Tetrandynamia filiquosa*, the flowers having two long and four shorter stamina, and the seeds are lodged in long pods.

The SPECIES are,

- CHEIRANTHUS (*Eryfimoides*) foliis lineari-lanceolatis dentatis caule redo, filiquis tetragonis. *Cheiranthus* with narrow, indented, spear-shaped leaves, an upright stalk, and four-cornered pods. *Hesperis leucoides* folio ferrato, filiqua quadrangula. Tourn. Inf. R. H. 223. *Dames Violet* with a fawed Wall-flower leaf, and a quadrangular pod.
- CHEIRANTHUS (*Integerrimis*) foliis lanceolatis integerrimis, caule erecto, filiquis tetragonis. *Cheiranthus* with spear-shaped entire leaves, an upright stalk, and quadrangular pods. *Hesperis leucoides* folio non ferrato, filiqua quadrangula. Tourn. Inf. R. H. 223. *Dames Violet* with a Wall-flower leaf not fawed, and a quadrangular pod.
- CHEIRANTHUS (*Cbeiri*) foliis lanceolatis, acutis, glabris ramis angulatis? Hort. Cliff. 334. *Cheiranthus* with spear-shaped, pointed, smooth leaves. *Leucogium luteum vulgare*. C. B. P. *Common yellow Leucogium* or Wall-flower.
- CHEIRANTHUS (*Angustifolium*) foliis linearibus, unguibus petalorum calyce longioribus. *Cheiranthus* with narrow leaves, and the necks of the petals longer than the empalement. *Leucogium angustifolium* Alpium flore sulphureo. H. R. Par. *Narrow-leaved Wall-flower of the Alps*, with a sulphur-coloured flower.
- CHEIRANTHUS (*Annuus*) foliis lanceolatis, subdentatis, obtusis, incanis, filiquis cylindricis apice acutis, caule herbaceo. Lin. Sp. Plant. 662. *Cheiranthus* with spear-shaped leaves few with indented, obtuse, and hoary cylindrical pods, with acute points and an herbaceous stalk. *Leucogium incanum minus*. C. B. P. 200. *Lesser hoary Stock Gilliflower*, commonly called the *Ten Week Stock*.
- CHEIRANTHUS (*Incanus*) foliis lanceolatis, integerrimis, obtusis, incanis, filiquis apice truncatis, compressis, caule suffruticoso. Hort. Upfal. 187. *Cheiranthus* with very entire spear-shaped leaves, which are obtuse and hoary, compressed pods with truncated points, and a shrubby stalk. *Leucogium incanum majus*. C. B. P. 200. *Greater hoary Stock Gilliflower*, commonly called the *Queen's Stock Gilliflower*.
- CHEIRANTHUS (*Cocdnus*) foliis lanceolatis undatis, caule erecto indiviso. *Cheiranthus* with waved spear-shaped leaves, and an upright undivided stalk. *Leucogium incanum majus Coccineum*. Mor. Hist. 2. 240. *Greater hoary Stock Gilliflower* with a scarlet flower, commonly called the *Brompton Stock Gilliflower*.
- CHEIRANTHUS (*Albus*) foliis lanceolatis, integerrimis, obtusis, incanis, ramis floriferis axillaribus, caule suffruticoso. *Cheiranthus* with hoary, entire, spear-shaped, obtuse leaves, flower branches proceeding from the sides, and a shrubby stalk. *Leucogium album* five purpleum five violaceum. Ger. *The white, purple, or Violet Stock Gilliflower*.
- CHEIRANTHUS (*Glabrus*) foliis lanceolatis, acutis, petiolatis, viridibus, caule suffruticoso. *Cheiranthus* with spear-shaped acute leaves, which are great, having foot-stalks, and a shrubby stalk. *Leucogium album odoratissimum*, folio viridi. C. B. P. 2. 102. *Sweetest white Stock Gilliflower* with a green leaf, commonly called *white Wall-flower*.

- 10. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 11. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 12. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 13. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 14. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 15. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 16. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
- 17. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.

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 lava, tk'jv irafubi, and ytxg.'t psM. Leucojum
 miiiriimtiin immi't folio. C. B. 1.
 »6. CHERANTHUS (SciifjJU) folia conferto-capitauis, recurvatis, umbratis. Lin. Sp. Plant App.
 ficriba-; Icllilhus peMM iiiiid^tis, caul Juffruticolb.
 Lecli. Cbar&xibitt 'jii.'L SHOT idtm
 cltfti is ibi.fi.
 Lcu-
 cqjum rtiinui breviori.' tiilio, abloleie Ba
 17. CHEJH.IVTHI.'S (I n s) toXin lacirrci-dentaas aeu-
 niinatls calycebu
 1111. Sp. 'I'ii. Chir.iulhtu v::b tern, iidoted, feinti
) irnpaloncti'. and kneited. acute-pa'Mid
 liucqjum Luftt:inutuni purpurcum, fohiscie-
 defltaai Earad. Battigj.
 firll fort prws n
 in Spdin and 1'
 high) wit!) an angaSur channelled Itulk,
 which branches upward on every fide i thcli- ire gar-
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 tlwjlc of the couumn will-jluwer, but are fl
 indented D:
 at die cxt'i-;
 duced in loc
 pctiUa finuted in ibrm 1
 tltofi; of the common
 no fcent; ihfe arc fuacedtd by lotig four-cornereJ
 poets, riikd with biwn feedi. It flowers in jum',
 and cl
 ripe in autumn.
 The fecond feer
 fiwi nucralb/ in Hungary wid If-
 triai this ialfo an annual plant, riling with an upright
 Italk nearly the fame height as the other, hut doth
 not branch
 leaves ire broader,
 Imotr.
 they (hn J alteroa
 ;^lk without any vibible
 foot-ftiU; and ire of a d«p green. Ttic flowers
 come out in loofe fpites .it the top of the talk* %
 we Imall, and of a pale ydW without fecit,
 and are fucedded by four-cornered pods like thole
 of die tbmier. i.
 Boithe feedi uv ripe at
 the Jiime riine with the former.
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 the hore, but I have cultivated
 -Winy year,
 and have never
 mndthem alter, ttheil teaU jre
 permittit
 • iiraner, tht planM will come up wi

 any Tol or uuuon. and n'i-
 in walls, or in rubida,
 : die lame manner as tir
 iron Wall
 ver.
 Ibcod lure grows natuniUy upon old walls and

buildings in many parts of England; it il alfo cui-
 tivat
 in gardens for the fragrancy of its
 vits,
 When thefe plants grow upon walls or buildings,
 (Kev fcUHTi r:~^1 more than iix or ei'uit inches high,
 having
 ami firm [r:~1L) the leaves
 are fiore,
 and the Ucnrtis are
 fmall, but in gardens the plants will grow e'vi fet
 high, in-
 and branch out wide on every fide; the leaves
 arc bra 1
 ber, and the flowers much larger; but in fe-
 vere v
 when thefe plants are frequently killed
 in tiir ganlens, thoic u[»n 1
 the walls will receive no
 injury, tliotigll tlcy sre mutli more c\
 wind and fro
 I their plant; nre Runted, and
 of a
 Iruws, I
 never affects them.
 There is a variety of this with very double flowers,
 which is propagated in the gardens from flips plant-
 ed in the fpring, which finally take root. This is
 one
 fact of this with variegated leaves, which is pre-
 ferred in the gardens, but this is not quite fo hardy
 as the plain.
 TIK brpv. yellow, bloody Wall 3WC; h a';
 fuppoed to be a variety
 of thti, v.lich has had: in-
 proved by culture; and
 I am inclinable w be-
 lieve, becaufe I
 htve frequently oblcrcvd many of
 llicni
 to be common fort; but although
 I have many years tried the feeds of 'lie common
 fort from the walls, yet I could never find I them aiuTt
 citfpptn being lai
 but not any of them approach-
 ed toward the other varieties. The large bloody
 Will-Buwer will frequently lie with
 Me llo-wers
 from fat's, if they are carefully faved from fuct
 plinn as have five petals; ar'i tlide diiutulo flowers
 may be propagated fty flips as the common fort,
 but the plants in aSGca wilt not produce futli large
 fufces vt flower* as tooJi; which are propagated by
 There ij alfo another variety with double blood-co-
 loric'd tiow'.
 are (hortr anil more nu-
 m'rt^A
 approaching nearer
 to the rumm™ double
 Wall-flower, but much larger
 This is called the
 Old Bloodr
 Wall-flower. It is propagated from flips,
 in tiir tome manner as the oti
 or double form.
 There ore fome its:
 immediate varieties of thefe flowers
 dif-
 fering in the fine and colour of their petals, v-
 hich the fofits diftinguifh as different; but as they
 could not be
 with/ vaiy from feeds, they do not derive
 nonce.
 The fourth fort ptjwji naturally upon the Atpi, ami
 the mountJiru in Jtaly, where ltrsi
 rices above
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 inches high; the leaves arc vt-ry niirraw, jntl the
 flower* grow in rluvc fpilen at tilt rnd or the
 bwndM it'
 are of a pale yellow, or brimlroiit^ ou-
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 are much 1
 than L!
 cultivation, thefe have but little Trent,
 When this b
 is cultivated in 1 warden, it prawj as
 large
 i rJweommoa W
 all-flower, and makes a fair
 appearance,
 for the fpikes of flowers are longer, and
 thty grow mtch d
 together; but they have little
 fcent, which oceafionei
 their being firt neglected,
 und nt pre&iH tlwrt an- 1'
 w, if any, of the plants re-
 maining in the Pjiphfh
 It was ufe! the
 Straw-colon red Wtil-fiowcrbv ih
 the gardens.
 The forts with fingle
 flowers produce feeds in plenty,
 fromi "
 when the plants are raiied; but the largeft and
 deepeft culcured flowers (though always be blifted
 for fed*, li
 fide from feeds carefully faved, there
 will be twer
 of the plants deccndent. The feeds
 fhould be fown in April, upon poor or unimproved foil,
 ir.d when the
 plants are fit to rumber, they fhould be
 tranfplanted into nurfery-beds, at about fix inches
 diftance each way, obferving to water and fize them
 until they have taken their roots after which they will
 require no farther care, but to keep them clear from
 weeds all the fummer; and at Michaelmas they may
 betr:
 1
 fplanted into the borders of the flower-garden
 wherf they are defigned to remain, that the plants
 may get good roots before the fruit comes on. This
 is the method which is commonly praftifed with thefe
 flowers; but if the feeds are fown upon poor land,
 O u o
 where

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where they are defigted to remain, and hot tran-
planted, they will thrive, and endure the froft in win-
ter much better than thofe which are removed *, fo
that upon ruins or rubbilh the feeds of thefe plants
may be (own, where they will thrive and continue
much longer than in good land *, and in fuch places,
if they are properly dilpofed* they will be very orna-
mental, and their flowers having a ftrong odour, will
perfume the air to a confiderable diftance.

The Stock Gilliflowers are diftinguifhed from the
Wall-flowers, by their hoary leaves. Thefe agree with
each other in their botanical chara&ers* fo are gene-
rally included in the fame genus ; but the gardeners
remove them to a confiderable diftance, and treat
them very differently; yet there is fo great affinity
between them, as that they may be treated in the
fame manner, and both will grow equally upon old
walls or ruins 5 but as they have been feperated by
Aioft of the writers on gafdenerig, I have, in compli-
ance v/ith that cuftom, ranged them accordingly.

The fifth fort is now generally known by the appella-
tion of ten Weeks Stock, but it is what was former-
ly titled Annual Stock Gilliflower, which of late
has been applied to another fpecies, which is biennial.
This rifes with a round fmooth ftalk about two feet
high, dividing into feveral branches upward, garnifh-
ed with fpear-fhaped hoary leaves, which are rounded
at their ends, and placed without order, fometimes
being almoft oppofite, and others alternate, and fre-
quently three or four together of unequal fizes *, at
the ends of the branches the flowers are produced in
loofe fpikes, which are placed alternate \ the emplace-
ment of the flower is large, erect, and (lightly cut
into feveral acute parts at the top; the petals are
large and heart-fhaped, fpreading open in form of a
crofs *, the pods are long, cylindrical, and have a
longitudinal furrow on one fide, which opens in two
cells, which are filled with flat rundifli feeds, having
a thin border. It flowers in July and Auguft, and
the feeds ripen in October.

Of this fort there are the red, the purple, the white,
and ftriped, with fingle flowers, and the fame colours
with double flowers; thefe are very great ornaments
in the borders of the flower-garden in the autumn,
when there is a fcarcity of other flowers \ and if the
feeds are fown at two or three different times, the flow-
ers may be continued in fucceffion near three months.
The firft lowing fhould be about the middle of Fe-
bruary, upon a very tender hot-bed, juft to bring up
the plants, which muft be guarded againft froft; and
when they are fit to remove, they fhould be tran-
planted into the nurfery beds, at about three or four
inches diftance, obferving to water and (hade them
till they have taken root, and afterward to keep them
clean from weeds; in thefe beds they may remain
five or fix weeks to get ftrength, and may then be
planted into the borders of the flower-garden, where
they are to remain: if thefe are tranfplanted when
there is rain, they will foon take root, after which
they will require no farther care. From thefe early
plants good feeds may be expe&ed, therefore fome
of the fineft plants of each colour fhould be preferved,
and marked for feeds, which, when ripe, ihould
be carefully cut before the froft pinches it, and the
ftalks tied up in fmall bundles, and hung up in a drj
room till the pods are well dried, when the feeds may
be rubbed out and preferved for ufe.

The fixth fort is a biennial plant, though when the
feeds are fown early in the fpring, the plants often
flower the following autumn *, but thefe plants which
are fo forward, are often killed in winter % therefore
it is much better to fow them in May, that the plants
may not grow too rank the firft feafon; they will
live through the winter, and produce large (pikes
of flowers the fecond year.

This is commonly called the Queen's Stock Gilli-
flower by the gardeners, and differs greatly from the
ether forts, though many of the late botanifts have
fuppofed they were only feminal variations 5 but from
near forty years experience in the culture of thefe

C H E

plants, I can affirm, that the fpectes here enumerated,
do not alter from one to the other, though they
frequently vary in the colour of their flowers.

It rifes with a ftrong ftalk, which is almoft (hrubby,
a foot high or more, having oblong, fpear-fhaped,
hoary leaves, which are frequently waved on their
edges, and turn downward at the extremity; from
the ftalk is fent out many lateral branches, which are
garnifhed with the fame (haped leaves, but fmaller *
thefe fide branches are each terminated by a loofe
fpike of flowers, each having an oblong woolly em-
placement, and confift of four large roundilh petals,
which are indented at the end. Thefe ufually ap-
pear in May and June, but the fame plants frequently
continue flowering moft part of the fummer. The
feeds ripen in autumn, and the plants generally pe-
rih foon after; but when any of them grow in
dry rubbifh, they will laft two or three years and
become (hrubby 5 but thofe with fingle flowers, are not
worth preferving after they have perfected their feeds.
The flowers of this fort vary in their colour -, fome
are of a pale red, others are of a bright red, and fome
are curioufly variegated, but thofe of the bright red
are generally moft efteemed. There is always a
great number of double flowers produced, if the feeds
are well chofen, frequently three parts in four of the
plants will be double; and as the plants divide into
many branches, they make a fine appearance during
their continuance in flower.

The feventh fort is known by the title of Brompton
Stock Gilliflower, I fuppofe from its having been
there firft cultivated in England. This rifes with an
upright, ftrong, undivided ftalk, to the height of
two feet or more, garnifhed with long hoary leaves,
which are reflexed, and waved on their edges, and at
the top form a large head *, out of the center of thefe
arifes the flower-ftalk, which, when the plants are
ftrong, is frequently a foot and a half long, putting
out two or three fhort branches toward the bottom 5
the flowers of this kind have longer petals than any
of the other forts, and are formed into a pyramidal
fpike ; but thofe with fingle flowers are loofely di-
pofed, becaufe the flowers having but few petals, d<
not fill the fpike, as thofe do which are double; fo
thefe often have fo many petals, as to render each
flower as large and full as fmall Rofes; and whei..
they are of a bright red* make a pretty appearance
being excelled by none of the flowery tribe 5 but the
plants of this fort produce but one fpike, in which it
differs from all the other kinds, and being conftant in
this particular, I think is fufficient to eftablifh a dif-
tinct fpecies. This fort is generally biennial, though
many times the plants are preferved longer; but they
are always ftronger the firft year of their flower-
ing, than they will be after *, fo that the feeds are
fown every fpring, to continue afucceffion of flower-
ing plants.

The eighth fort" is the White Stock Gilliflower,
which is of longer duration than either of the other
forts. I have frequently had thefe plants live three or
four years, which have become (hrubby *, their ftalks
have been three feet high, and branched out on every
fide, fo as to appear like (firubs; thefe feldom fent
out flower-ftalks from the center of the plant, but it
is the fide branches which produce the flowers, and
thefe fide branches divide into feveral other, which is
not common to the other forts. There are always
many double flowers rife from feeds of this fort, when
they are well chofen -, fome years I have fcarce had
enough fingle flowers to preferve the kind. The va-
rieties of this are few, fometimes a few of the plants
will produce pale fiefh-coloured flowers, and now and
then fome have been purple 5 and as that fort of Stock
Gilliflower, which is titled the Twickenham Purple,
will fometimes come with flowers variegated with
white, I have been inclinable to think thefe two
may be varieties of each other; and the rather, be-
caufe the plants agree with each other in their exter-
nal habit 5 for neither of thefe put out their flower-
ftems from the center of the plants, but always on
their

their side, so that these are undoubtedly a distinct species from the former.

The ninth sort is known by the title of White Wall-flower, among the gardeners and florists. This rises with a greenish stalk a foot high, dividing into many branches, garnished with narrow, smooth, spear-shaped leaves, of a lucid green, and of thicker confidence than those of any of the other sorts; they come out without any order, are near three inches long, and about half an inch broad in the middle; the flowers are produced in loose spikes at the end of the branches, which are of a pure white, and have a great fragrant, especially in an evening or in cloudy weather-, the flowers are succeeded by oblong compressed pods like those of the other species. There is a variety of this with double flowers, which is propagated by cuttings or slips, in the same manner as the double Wall-flowers; but these plants require protection from great rains, and frost in Winter; so if they are planted in pots, and placed under a common frame in winter, where in mild weather they may enjoy the open free air, and be covered from hard rains and frost, they may be preferred several years. Sometimes many of the plants with double flowers will come up from seeds, but not so frequent as some of the other sorts. I have for several years raised more than one hundred plants in a season, without obtaining one double flower; and from the seeds of these, have the following year had more than half the plants with double flowers: but this is not to be expected often.

The seeds of the tenth sort were sent me by Dr. Linnaeus, from Upsal in Sweden. This plant rises about six inches high, with an herbaceous swelling stalk; the leaves are produced in clusters at the top, which are very hoary, waved on their edges, have obtuse points, and set very close to the stalk; the flowers are produced in slender spikes from the side of stalk; these are purple, but not so fragrant as many of the other sorts; the pods are woolly, and recurve backward at the end.

All these sorts flower in May and June, at which time they are the greatest ornament to the flower-garden, therefore deserve our care to cultivate them as much as any of the flowery tribe -, but in order to have many double flowers, there must be great care taken in the choice of plants for seeds, without which there can be little hopes of having these flowers in perfection. The only sure way of getting many double flowers, is to make choice of those single flowers which grow near many double ones; for I have always found those seeds which have been saved from plants growing in beds close to each other, where there happened to be many double flowers among them, have produced a much greater number of plants with double flowers, than those which have been saved from plants of the same kinds, which grew single in the borders of the flower-garden; so that there should be a small bed of each kind planted on purpose to save seeds in the flower-nursery; or if they are sown there, and the plants thinned properly when they are young, they need not be transplanted; for I have always observed the plants which have come up from scattered seeds, which have not been transplanted, endure the frost much better than those which have been removed; for as these plants send out horizontal roots from the bottom of their stems, which spread near the surface of the ground, so when they are transplanted, the roots are forced downward out of their natural direction; and if their stalks were grown tall before removal, they are generally planted low in the ground, whereby they are apt to rot, if the ground is moist, or the winter should prove wet; therefore where they can be left unremoved, there will be a better chance of their living through the winter -, and as these beds need not be of great extent, so when the winter proves very severe, it will not be much trouble or expence to arch the beds over with hoops, and cover them with mats in frosty weather, by which method they may be always preserved.

The ground where these seeds are sown, must have any dung, for in rich land the plants will grow very vigorous in summer, but when the frost comes on, or the heavy rains in autumn, either of which will soon destroy them; for these plants will thrive upon rocks or old walls, as was before observed; and in such situations they will live, when all those which are planted in gardens are destroyed. The best time to sow the seeds is about the beginning of May; and if the season should prove dry, it will be proper to shade the beds with mats every day, to prevent the earth from drying too fast; but the covering must be taken off every evening, to admit the dews of night, and they should be gently watered in the evening two or three times a week. When the plants first appear, with their two seed-leaves, they are often attacked by flies, especially in dry hot seasons; therefore to prevent their destroying of the plants, the covering should be continued over them during the heat of the day, and the plants frequently refreshed with water, which will keep them in a growing state, so the flies will not infect them; for I have always observed, they never attack any plants unless they have been stunted in their growth: when the plants have got strength, they will be secure from this danger, and the coverings may be removed; after this the plants will require no farther care but to keep them clean from weeds; and to be thinned to the distance of nine inches or a foot asunder, that they may have proper room to grow, and not draw each other up tall and weak. The plants which are drawn out of these beds to thin them, may be planted in the borders of the flower-garden, where they are designed to remain, and the sooner they are removed, when the plants have got six or eight leaves, the more likely they will be to live through the winter; because their roots will not have extended themselves so far, so cannot be planted deep in the ground, and may take their natural direction* therefore whenever these plants are removed, it is always the best way to do it when they are young.

The farther care of the plants which are left in the beds, will be to cover them in winter with mats; and when they come to flower, all those which are not of good colours, or whose flowers are small, should be drawn out as soon as they appear, that they may not impregnate those which are designed for seeds with their farina; but those with double flowers should by no means be removed; if should their flowers be cut off* but suffered to fade among the single ones, by which the seeds will be improved; it will also be a sure method of preferring each sort in perfection, to have them separate from each other, in distinct beds; though I think there is no danger of any of the species altering, by the mixture of their farina, but their colours are liable to be changed by it; so that in order to continue those pure, they should not stand too near each other.

The time for sowing the seeds before-mentioned, must be understood to be for the sorts which are biennial; for the annual, or ten Weeks Stock Gilliflower should be for the first season sown in February, as was before directed; and to succeed these, there should be another parcel sown in March; and those who are curious to continue these flowers late in the autumn, should sow a parcel of the seed the latter end of May; and if these last sown plants are upon a warm border, where they may be covered, by placing glasses before them in winter, or covering them with mats, they may be continued in flower till Christmas; and if some of the plants are potted, and put under a hot-bed frame in autumn, where they may enjoy the open air in mild weather, and be screened from hard rains and frost*, by which method I have known these plants kept flowering all the winter, when the winters have not been very severe.

There are some who propagate the double Stock Gilliflowers by slips and cuttings, which will take root when properly managed; but the plants so raised are never so strong as those which come from seeds, and

their

their spikes of flowery are always Very lhort, and livit hot half the beauty; therefore it is not worth while to pccrtife this method, unlefs for thofe forts which cannot be obtained with any certainty from feed.

The eleventh fort grows naturally in the fourth of France, Spain, and Italy, nerr the fea coaft. This rifes near a foot high, with a ligneous ftalk, dividing into many fmall branches, garnifhed with narrow hoary leaves, which are entire, and rounded at their extremity *, the flowers are produced in loofe fpikes at the end of the branches, which are fmaller than thofe of either fort before-mentioned, of a bright red at their firft appearing, but fade to a purple before they fall off. The ftalks, leaves, and the whole plant is very white, and by its woody ftalks hath the appearance of a perennial plant, but it generally perishes in autumn. The feeds of this fort fhould be fown in autumn, upon a warm border, where the plants are defigned to remain; when the plants come up, they will require no farther care but to keep them clean from weeds, and thin them where they come up too clofe. Thefe autumnal plants will flower early in June, fo will produce good feeds; but thofe which are fown in the fpring will flower in July and Auguft, fo that from thefe there cannot be any certainty of having ripe feeds: however, by fowing the feeds at two or three different feafons, there may be a fucceffion of flowers continued for three or four months.

The twelfth fort is commonly fown in gardens, fometimes as an edging for borders, but more generally in patches between taller growing flowers: it is titled fometimes Dwarf annual Stock Gilliflower, and by others it hath the appellation of Virginia Stock Gilliflower. This feldom rifes more than fix inches high, lending out many branches from the root, which intermix and grow irregular; thefe are garnifhed with fpear-ftaped leaves, rounded at their ends, and fit clofe to the branches; the flowers come out in loofe fpikes at the end of the branches, which are of a purple colour, compofed of four petals in form of a crofs, and are fucceeded by (fender pods like thofe of the other fort*. If the feeds of this fort are fown in patches, at two or three different times, the firft in autumn, the fecond the latter end of March, and the third the end of April, or the beginning of May, in the borders of the flower-garden, they will make a variety, when intermixed with other low growing annual flowers, for three months.

The thirteenth fort rifes near two feet high, fending out many upright branches from the bottom, which are thinly garnifhed with fpear-ftaped leaves, the lower ones being a little indented; the flowers come out fingle, at great diftances from each other, toward the upper part of the branches; thefe are fmall, of a purplifh red colour, and foon fall away, being fucceeded by long taper pods, with awl-ftaped points. This is an annual plant, which may be treated in the fame manner as the laft mentioned fort; but as it hath little beauty, it is not often cultivated in gardens. The fourteenth fort grows naturally on the fea coasts in Italy, Spain, and Portugal. This is alfo an annual plant, which branches out from the root into many declining ftalks; the lower leaves are about two inches long, and three quarters of an inch broad, very deeply finuated on their edges, and hoary; thofe upon the ftalks are of the fame form, but much fmaller *, the flowers are produced from the fides of the ftalks fingly, and at the top in loofe fpikes; the empalements of the flowers are covered with a white down, as are alfo the end of the branches; the flowers are purple, compofed of four leaves placed in form of a crofs; the pods are about three inches long, taper, woolly, and at their ends are divided into three parts, which fpread into a triangle. It flowers in July, and when the feafon is favourably the feeds will ripen in autumn; but if the feeds are fown in autumn on a warm border, the plants will live through the winter, and thefe will flower early in June, fo from thefe good feeds may be obtained from them.

The fifteenth fort grows naturally on the fea coasts in the fourth of France and Spain, where it continues three or four years; the ftalk is eredi, and the whole plant is covered with a white down; the lower leaves are broad, fpear-ftaped, obtufe, and alternately indented; the flowers are flefh-coloured, compofed of four petals like the other fpecies, and are fucceeded by long woolly pods.

This may be propagated by feeds in the fame manner as the other forts; and if the plants grow in rubbish, they will live through the winter better than in rich earth.

The fixteenth fort is of humble growth, feldom HGng above eight or nine inches high; the leaves are very narrow, and indented on their edges; the ftalk becomes fhubby, to which the flowers grow very clofe; thefe are of a worn out purple colour, fo make but little appearance. It grows naturally in Spain and Italy, and is not fo hardy as the other forts, therefore requires fome protection in winter.

The feventeent fort grows naturally in Portugal. This is a low annual plant with pointed leaves, whose borders are indented as if torn; the empalement of the flower is hoary; the flowers have four purple petals placed in form of a crofs, which are fucceeded by knobbed-pointed pods inclofing flat feeds.

If the feeds of this kind are fown in the fpring upon fheltered borders, where the plants are to remain, and they are thinned and kept clean from weeds, the plants will flower in July, and produce ripe feeds in autumn.

CHELIDONIUM. Tourn. Inft. R. H. 31. tab. 116. Lin. Gen. Plant. 572. *Chelidonium majus*. Raii Meth. Plant. 100. *Glaucium*. Tourn. Inft. R. H. tab. 130. *Celandine*, or *Greater Celandine*, in French *Cbetiodine* or *Eclair*.

The CHARACTERS are,

The flower hath a roundifh empalement, compofed of two concave obtufe leaves, which fall off; it hath four large roundifh petals, which fpread open and are narrow at their bafe; in the center is fituated a cylindrical germen, attended by a great number of ftamina, which are broad at the top and are terminated by oblong, compreffed, twin fummits. Upon the germen is fituated a bifid figma in form of a head. The germen afterward becomes a cylindrical pod, with one or two cells, opening with two valves and filled with many fmall feeds.*

This genus of plants is ranged in the firft fection of Linnaeus's thirteenth clafs, intituled Polyandria Monogynia, the flower having many ftamina and one fyle. To this genus he has joined the *Glaucium* of Tournefort, whose characters very well agree with thofe of *Celandine*, fo are very properly brought together.

The SPECIES are,

1. CHELIDONIUM (*Majus*) pedunculis umbellatis. Lin. Gen. Plant. 505. *Celandine with anumbellatedfoot-ftalk*. *Chelidonium majus vulgare*. C. B. P. 144. *Greater common Celandine*.
2. CHELIDONIUM (*Laciniatum*) foliis. quinque lobatis, lobis anguftis acute laciniatis. *Celandine whose leaves are compofed of five narrow lobes, which are cut into many acute figments*. *Chelidonium majus laciniato flore*. Cluf. Hift. 203. *Greater Celandine with a jagged flower*.
3. CHELIDONIUM (*Glaucium*) pedunculis unifloris, foliis amplexicaulis finuatis, caule glabro. Lin. Sp. Plant. 506. *Celandine with fingle flowers on the foot-ftalks, finuated leaves which embrace the ftalks, and a fmooth ftalk*. *Glaucium flore luteo*. Tourn. Inft. R. H. 351. *Glaucium with a yellow flower*; and the *Papaver corniculatum luteum*. C. B. P. 171. *Yellow horned Poppy*.
4. CHELIDONIUM (*Corniculatum*) pedunculis unifloris, foliis feffilibus pinnatifidis, caule hispido. Lin. Sp. Plant. 506. *Celandine with fingle flowers upon the foot-ftalks, leaves fet clofe to the ftalks which have winged points, and a rough ftalk*. *Glaucium hirsutum flore Phoenicio*. Tourn. Inft. R. H. 253. *Hairy Glaucium, or horned Peppy, with a fcarlet flower*.
5. CHELIDONIUM (*Glabrum*) pedunculis unifloris, foliis femiamplexicaulis, dentatis, glabris. *Celandine with*

foot-stalks having a Jink flower, and smooth indented leaves, which half embrace the stalks. Glaucium glabrum flore Phœnicio. Tourn. Inft. 254. *Smooth horned Poppy with a scarlet flower.*

6. CHELIDONIUM (*Hybridum*) pedunculis unifloris, foliis pinnatifidis, linearibus, caule levi filiquis trivalvibus. Lin. Sp. Plant. 724. *Celandine with single flowers upon the foot-stalk, many pointed narrow leaves, and a smooth flat Glaucium flore violaceo.* Tourn. Inft. 254. *Horned Poppy with a Violet-coloured flower.*

The first sort is the common Celandine which is used in medicine, and is esteemed aperitive and cleansing, opening obstructions of the spleen and liver, and is of great use in curing the jaundice and scurvy. This grows naturally on the side of banks, and in shady lanes in many parts of England, so is seldom cultivated in gardens; for if the seeds are permitted to scatter, the ground will be plentifully stored with plants to a considerable distance. It flowers in May, at which time the herb is in the greatest perfection for use.

The second sort is found growing in a few particular places, where the seeds have been formerly sown, or the plants cast out of gardens. This is by some supposed to be only a variety of the first but I have propagated this by seeds above forty years, and have constantly found the plants produced to be the same as those from which the seeds were sown, and never vary, nor have I ever observed the first alter to this. The leaves of this are divided into narrow long segments, which are deeply jagged on their edges, and the petals of the flower are cut into many parts, in which it differs from the first. If the seeds of this sort are permitted to scatter, they will fill the ground with plants. They both delight in shade. There is a variety of this with double flowers, which generally exceeds the same from seeds, which is not usual in many other plants; however, this variety may always be preferred by parting the roots.

The third sort is known by the title of Horned Poppy; it was so called from the resemblance which the flower bears to the Poppy, and the long feed-veffel, which is like a horn. It grows naturally upon the sandy and gravelly shores by the sea, in many parts of England, from whence the seeds have been brought into gardens, where it is sometimes allowed to have place for the sake of variety. This plant abounds with a yellow juice which flows out from every part, when broken. It sends out many thick gray leaves, which are deeply jagged; the stalks are strong, smooth, and jointed, which rise near two feet high, and divide into many branches. These are garnished with leaves at each joint; those on the lower part of the stalks are long, broad, and deeply jagged, but the upper leaves are entire and almost heart-shaped: they closely embrace the stalks with their base; from the bottom of the leaves come out the short foot-stalks of the flowers, each supporting one large yellow flower, composed of four broad petals, which spread open like the garden Poppy, in the center of which are a great number of yellow stamens, surrounding a long cylindrical germen, crowned by an arrow-pointed stigma, which is permanent, remaining upon the top of the horned feed-veffel, which grows nine or ten inches long, having a longitudinal furrow on one side, where it opens when ripe, and lets out the seeds. This is a biennial plant, which flowers the second year, and perishes soon after the seeds are ripe.

If the seeds of this plant are permitted to scatter, they will fill the ground near them with plants, so that it is not a proper plant for a flower-garden; but if a few of the seeds are scattered about in rock work, the plants will rise without trouble, and in such places will have a pretty effect. And if the seeds are permitted to scatter, there will always be a supply of young plants; so the only care they will require, is to pull them up when they multiply too fast. It flowers in June and July, and the seeds ripen in autumn.

The fourth sort grows naturally in Spain, Italy, and some parts of Germany, from whence the seeds have been brought to England. The leaves of it are deeply jagged and hairy, of a pale green, and grow close to the stalks: those at the bottom lie on the ground, and are broader than those above. The stalks are a foot and a half high, having a single jagged leaf placed at each joint; these have many divisions, from their origin to the point, which is extended longer than the lower leaves. The flowers come out from the bottom of the leaves; these are composed of five broad obtuse petals, which are of a dark scarlet colour, and soon fall off. In the center of each is situated an oblong germen, having no style, but supports a bifid stigma; this is attended by a great number of short stamens, terminated by obtuse summits. The germen afterward becomes a long taper pod, on the apex of which the bifid stigma remains, fitting on the middle partition, which divides the pod into two cells, which are filled with small seeds. The flower hath an empalement composed of two hollow leaves, which are closely set with short prickles; this falls away when the flower is expanded. It flowers in June and July, and the seeds ripen in autumn. As the flowers of this plant are but of short duration, they do not make any considerable figure; but the foliage of the plant is very elegant, and might be introduced by way of ornament to furniture with great advantage, being very picturesque: it may also be wrought into patterns for silks, and painted upon porcelain, where it would have a very good effect. If the seeds of this plant are sown in the autumn, they will more certainly grow than those which are sown in the spring; which frequently, in dry seasons, do not come up the same year, or at least not before autumn; whereas those sown in autumn, frequently come up soon after, or if not at that season, do not fail coming up in the spring; and these plants come early to flower, so that good seeds may always be obtained from them. They should be sown where the plants are to remain* and they will require no other care but to thin them where they are too close, and keep them clean from weeds.

The fifth sort differs from the fourth, in having broader leaves, which are not so deeply divided; the whole plant is smooth, and the flowers are larger, but are of the same colour: this is also an annual plant, and requires the same treatment as the last.

The sixth sort grows naturally among the Corn in some parts of England. This is also an annual plant, whose seeds should be sown in autumn, for those which are sown in the spring seldom succeed. The leaves of this sort are finely jagged, and divided into narrow segments, somewhat like those of Buckthorn Plantain; they are smooth, of a lucid green, and are commonly opposite. The stalks rise little more than a foot high, dividing into two or three branches upward, garnished with small leaves of the same form as those below. The flowers are sustained by slender foot-stalks, which come out from the wings of the leaves; these are composed of four obtuse petals, of a Violet colour, in the center of which is situated a cylindrical germen, attended by a great number of stamens; the germen afterward becomes a long cylindrical pod, like those of the other species. The flowers of this plant are very fugacious, seldom lasting above three or four hours before the petals drop off; especially in clear weather. It flowers in May, and the seeds ripen in July, and the plants soon after perish. If the seeds are permitted to scatter, the plants will come up without care as the others.

- CHELONE [*ix-xy*]. Or. a tortoise. Tourn. Aft. R. S. 1706. tab. 7. fol. 2. Lin. Gen* Plant. 666.

The CHARACTERS are,

*The empalement of the flower is of one leaf cut into five parts, and is permanent; the flower is of the ringent kind, having a short cylindrical tube, which is swollen at the chaps, where it is oblong, convex above, and plain below; the mouth is almost closed; the upper lip is obtuse and indented**

Jinted, • the kwer lip is lightly cut into three parts. It hath four ftawina, which are inclofed in the backfide of the petak the two fide ones being a little longer than the other', which are terminated by oval hairy fummits-. It hath an oval germen fupporting a Jlcnder fyle, crowned by an obtufefigma-, the germen afterward becomes an oval cupfuk having two cells', which are filled with flat roundifh feeds having a border.

"This genus of plants is ranged in the fecond fe&ion of Linnaeus's thirteenth dais, intitled Didynamia Angiofpernia, from the flower having two long and two fhort ftamina, and the feeds being included in a capfule.

The SPECIES are,

- i. CHELONE (*Glabra*) foliis lanceolatis* acuminatis, fedibus, obfolete ferratis, radice reptatrice. *Chelone with pointed fpear-Jhaped leaves, fet clofe to tht ftalks, with Jmall ferratures on their edges, and a creeping root. Chelone Acadienfis flore albo. Tourn. Aft. R. Par. 1706. Cbekne of Acadia, with a white flower.*

1. CKELONE (*Purpurea*) foliis lanceolatis, obliquis, petiolatis, oppofitis, marginibus acute ferratis. *Chelone with oblique fpear-Jhaped leaves, growing oppofite on foot ftalks, and their borders Jharply fawed. Chelone floribus fpeciofis pulcherrimis, colore rofae damafcenfe. Clayt. Flor. Virg. 71. Chelone with a very beautiful looking flower, the colour of the Damajk Rofe.*

3. CHELONE (*Hirfuid*) caule-fbliifque hirfutis. Lin. Sp< Plant. 611. *Chelone with hairy ftalks and leaves. Dig9 tatis Virginiaha, panacis coloni foliis, flore amplo, pallafcente. Pluk. Mant. 64. Virginia Foxglove with Clowns all-heal leaves, end a large pale flower.*

The firft fort grows naturally in moft parts of North America. This is called by Jofcelin, in his New England Rarities, the Humming Bird-tree. It hath a pretty thick jointed root, which creeps under ground to a considerable diftance, fending up fmooth channelled ftalks, which rife about twofeet high, garnifhed with two leaves at each joint, (landing oppofite without foot-ftalks; thefe are three inches and a half long, and about three quarters of an inch broad at their bafe, where they are broadeft, and diminifh gradually to a fharp point5 they have fmall ferratures on their edges, which (Scarcely appear. The flowers grow in a clofe fpike at the end of the ftalks; they are white, and have but one petal, which is tubular, and narrow at the bottom, but fwells upward, almoft like the Foxglove flower; the upper fide is bent over and convex, but the under is flat, and (tightly indented in three parts at the end. When the flowers fall off, the germen turns to an oval capfule fitting in the empalement, filled with roundifh compreffed feeds, which have a thin border. It flowers in Auguft, and when the autumn proves favourable, the feeds will fomeumes ripen in England* but as the plants propagate fo faft by their creeping roots, the feeds are feldom regarded. The beft time to tranfplant the roots is in autumn, that they may be well eftablifhed in the ground before the fpring, otherwife they will not flower fo ftrong, epecially if the feafon proves dry; but when they, are removed in the (pring, it (hould not be later than the middle of March, by which time their roots will begin to puff out new fibres. They will thrive in almoft any foil or fituation, but their roots are apt to creep too far, if they are not confined, and fometimes intermix with thofe of other plants; and then their ftalks ftand fo far diftant from each other, as to make but little appearance; therefore they fhould be planted in pots, which will confine their roots, fo that in each pot there will be eight or ten ftalks growing near each other, when they will make a tolerable good appearance. This plant is very hardy, fo is not injured by cold, but it muft have plenty of water in hot weather.

The fecond fort was difcovered in Virginia by Mr. Clayton, who fent it to England: the roots of this do not creep fo far as thofe of the firft, the ftalks are ftronger, and the leaves much broader, and are oblique; they are deeply fawed on their edges, and ftand upon fhort foot-ftalks: the flowers are of a

bright purple colour, fo make a finer appearance?*" This flowers at the fame time with the firft, and is propagated by parting of the roots in the fame manner.

The third fort I received from New England, thtere it grows naturally: this is near to the firft fort, but the ftalks and leaves are very hairy, and the flower is of a purer white. It flowers at the fame time with the former, and requires the fame treatment.

As thefe plants flower in the autumn, when there is a fcarcity of other flowers, it renders them the more valuable, epecially the fecond fort, whofe flowers make a very pretty appearance, when they are ftrong; and if fome of them have a (hady fituation in the fummer, they will flower later in the autumn.

CHENOPODIA - MORUS. See BLITUM.

CHENOPODIUM fowo'cW, Gr.] Tourn. Inft. R. H. 506. tab. 288. Lin. Gen. Plant- 272. Goofefoot, or Wild Orach.

The CHARACTERS are,

// hath a permanent empalement, compofed of five oval concave leaves: the flower hath no petal, but in the center it hath five Jiamina placed oppofite to the leaves of the empalement, and of the fame length, terminated by roundifh twin fummits \ it hath a round germen fupporting a Jhort double fyle, crowned by an obtufe figma. The germen afterward becomes a five-cornered fruit inclofed in the empalement, containing one roundifh depreffed feed. Linnaeus places this genus in the fecond fe&ion of his fifth clafs, intitled Pentandria Digynia, the flower having five ftamina and two fyles.

The SPECIES are,

1. CHENOPODIUM (*Bonus Henricus*) foliis triangulari-fagittatis, integerrimis fpicis compofitis aphyllis. Hort. Cliff. 84. *Goofefoot with arrow-Jhaped triangular leaves which are entire. Chenopodium folio triangulo. Tourn. Inft. 506. Goofefoot with a triangular leaf, called Englifh Mercury, All Good, cr Good Henry.*
2. CHENOPODIUM (*Vulvaria*) foliis integerrimis rhombo-ovatis, floribus conglomeratis axillaribus. Flor. Suec. 216. *Goofefoot with entire, oval, rhomboidat leaves, and flowers growing in dufiers on the fide of the ftalks. Chenopodium fetidum. Tourn. Inft. 506. Stinking Orach.**
3. CHENOPODIUM (*Scoparia*) foliis lineari-lanceolatis, planis, integerrimis. Hort. Cliff. 86. *Goofefoot with narrow fpear-Jhaped leaves, which are plain and entire. Chenopodium lini folio villofo. Tourn. Inft. R. H. Goofefoot with a hairy Flax leaf, commonly called Belvedere, or Summer Cyprefs.*
4. CHENOPODIUM (*Botrys*) foliis oblongis, finuatis, racemis nudis multifidis. Hort. Cliff. 84. *Goofefoot with oblong finuated leaves, and nakedmultifid Jpikes of flowers. Chenopodium ambrofioides folio finuato. Tourn. Inft. 506. Goofefoot, like Ambrqfia, with finuated leaves, commonly called Oak of Jerufalem.*
5. CHENOPODIUM (*Ambrofioides*) foliis lanceolatis, dentatis, racemis foliatis fimplicibus. Hort. Cliff. 84. *Goofefoot with fpear-Jhaped indented leaves, and Jingle leafy fpikes of flowe?s. Chenopodium ambrofioides Mexicanum. Tourn. Inft. 506. Mexican Goofefoot, like Ambrofia, commonly called Oak of Cappadocia.*
6. CHENOPODIUM (*Fruticofum*) foliis lanceolatis, dentatis, caule fruticofa. *Goofefoot with fpearjhaped indented leaves, and ajhrubby ftalk. Chenopodium ambrofioides Mexicanum fruticofum. Boerh. Ind. alt. 2. p. 90. Shrubby Mexican Orach.*
7. CHENOPODIUM (*Multifidum*) foliis multifidis, fegmentis linearibus, floribus axillaribus fefilibus. Lin. Sp. 320. *Goofefoot with multifid leaves, linear figments, and flowers fet clofe to the ftalk. Chenopodium lempervirens, foliis tenuiter laciniatis. Hort. Elth. 78.*

There are many other Ipecies of this genus, fome of which grow naturally on dunghills and the fide of ditches, in moft parts of England, where they often become very troublefome weeds *, for which reafon> I have not enumerated them here.

The firft fort is found growing naturally in fliady lanes in many parts of England, but it is very doubtful if the feeds have not been caft out of gardens originally,

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originally, because this plant was formerly cultivated in kitchen-gardens for use; and in some of the northern counties, the people still preserve it in their gardens as an excellent herb; which in the spring season, they dress in the same manner as Spinach, for which it is a substitute. But, as the latter is a much better herb, it has obtained the preference very justly, in all the countries where the culture of the kitchen-garden is understood.

The second sort is very common upon dunghills, and in gardens, in most parts of England: it is seldom cultivated, except in some physic-gardens, for the markets in London are supplied with it by the herb-women, who gather it in the places where it grows wild.

The third sort is sometimes cultivated in gardens, it is a beautiful plant, which is naturally disposed to grow very close and thick, and in as regular a pyramid as if cut by art. The leaves are of a pleasant green; and were it not for that, it hath so much of the appearance of a Cyprus-tree, that at some distance it might be taken for the same, by good judges: the feeds should be sown in autumn; and in the spring, when the plants are come up, they may be planted into pots of good earth, and kept supplied with water in dry weather: these pots may be intermixed with other plants to adorn court-yards, &c. Where they will appear very handsome, until their feeds begin to swell and grow heavy, which weigh down and displace the branches; at which time the pots should be removed to some adjacent part of the garden, to perfect their feeds; which, if permitted to fall upon the ground, will come up the next spring; so that you need be at no more trouble in propagating these plants, but only to transplant them where you intend they should grow.

The fifth sort was formerly used in medicine; but although it still continues in the catalogue of simples annexed to the London Dispensatory, yet is very seldom used at present. This plant may be propagated by sowing the feeds in an open border of good earth in the spring, where it will perfect its feeds in autumn, which, if permitted to shed upon the ground, will arise as the former.

The fourth sort was brought from America, where the feeds are called Worm Seed, I suppose from some quality contained in it, which destroys worms in the body.

This is propagated by sowing the feeds in the spring, as the before-mentioned sort, and will perfect its feed in autumn; after which, the plant decays to the ground: but if the root be preserved in shelter under a common frame in winter, the stalks will rise again the following spring.

The leaves of this plant emit a very strong Odour when bruised, somewhat like those of the Ambrosia, for which the plants are preserved in gardens, for the flower hath no beauty. This plant grows naturally in most parts of North America, where it is generally called Worm Seed. It sends up several stalks from the root, which rise about two feet high, garnished with oblong leaves a little indented on their edges, of a light green, and placed alternately on the stalks; the flowers come out from the wings of the leaves on the upper part of the branches, in loose spikes: these appear in July, and the feeds ripen in September, which, if permitted to scatter, the plants will come up the following spring, when a few of them may be transplanted into pots filled with kitchen-garden earth, to be preserved through the winter, and the others may be planted in the common borders, where they will flower and perfect their feeds; but unless the winter is very favourable, the roots will be destroyed.

The feeds of all the species of this genus will succeed best, if they are sown in autumn, for when they are sown in the spring, they frequently lie a whole year before the plants come up: therefore where the feeds of any of them scatter, the plants will come up much better than those which are sown by hand.

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The fifth sort is annual: this also grows naturally in North America, from whence I have frequently received the feeds. It is also a native of many of the warm countries in Europe. This hath many oblong leaves at the bottom, which are deeply furrowed on both sides, somewhat like those of the Oak-tree, from whence it received the title of Oak of Jerusalem. These are purple on their under side, and when bruised, emit a strong odour. The stalks rise about eight or nine inches high, dividing into several smaller branches. The lower part of these is garnished with leaves of the same shape with those below, but are smaller. The flowers grow in naked loose spikes, divided into many parts: they are small, herbaceous, and are succeeded by small round feeds. This sort flowers in June and July, and the feeds ripen in autumn.

The sixth sort hath leaves very like those of the fourth, and have the same scent: but this hath a shrubby stalk, which rises five or six feet high, and divides into many branches. It is a native of America, and must be housed in the winter, for it will not live through the winter in England in the open air. It is easily propagated by cuttings during any of the summer months, which, if planted in a shady border, and duly watered, will soon take root, and then may be planted in pots filled with light earth, and placed in the shade till they have taken new root, after which they may be placed with other hardy exotic plants in a sheltered situation during summer; and when the frost comes on, they must be removed into the green-house; but they only require protection from hard frosts, and should have plenty of air in mild weather. This grows naturally in the Brazils.

The seventh sort grows naturally at Buenos Ayres: this rises with a shrubby stalk three or four feet high, garnished with oblong leaves, which are cut into many linear segments; the flowers sit close to the stalks, which, like the other species of this genus, have no petals, but the empalement incloses five slender stamens: the germen supports two styles, crowned by obtuse stigma.

This is a perennial plant, which retains its leaves through the year, so will add to the variety in a green-house in winter, but has little other beauty to recommend it. This may be propagated by cuttings, which, if planted in a bed of light earth during any of the summer months, and duly shaded and watered, will put out roots; then they may be transplanted into pots, and may be placed with other hardy exotic plants in summer, but must be sheltered from frost in winter.

CHERRY-LAUREL. See PADUS.

CHERRY-TREE. See CERASUS.

CHEVIL. See SCANDIX.

CHESTNUT. See CASTANEA.

CHESNUT, the Horse. See Escaus.

CHIONANTHUS. Lin.Gen.Plant. 21. The Fringe, or Snowdrop-tree. This title was given to this plant by Dr. Van Royen, from the whiteness of its flowers: the inhabitants of America, where this tree is a native, call it Snowdrop-tree, for the same reason: and the Dutch call it Sneebaum, i. e. Snow-tree, on the same account.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is effective and cut into four acute parts \ the flower is of one petal, having a short spreading tube the length of the empalement, and the upper part is cut into four very long narrow segments, which are erect. It hath two short stamens inserted in the tube of the petal, which are terminated by upright heart-shaped summits. In the center is placed the oval germen, supporting a single style, crowned by an obtuse trifid stigma. The germen afterwards becomes a round berry with one cell, inclosing one hard feed.

This genus of plants is ranged in the first section of Linnaeus's second class, entitled Diandria Monogamia, the flower having two stamens and one style.

C H t

We have but one SPECIES of this plant in the English gardens, viz..

CHIONANTHUS pedunculifl. trifidis "trifloris. Lin. Sp. Plant. 8: *Snowdrop-tree, or Fringe-tree, with trifid foot-stalks supporting three flowers.* Amelanchier Virginiana laurocerasti folio. Pet. Hor. Sice, 241. Virginia Amelanchier with a Laurel leaf.

This shrub is common in South Carolina, where it grows by the side of rivulets, and seldom is more than ten feet high: the leaves are as large as those of the Laurel, but are of a much thinner substance, the flowers come out in May, hanging in long bunches, and are of a pure white, from whence the inhabitants call it Snowdrop-tree; and, from the flowers being cut into narrow segments, they give it the name of Fringe-tree. After the flowers have fallen away, the fruit appears, which becomes a black berry, about the size of Sloes, having one hard seed in each.

This tree is now more common in the curious gardens in England, than it was a few years since; there having been many young plants raised from the seeds, which have been brought from America lately: there have also been some plants propagated by layers, though there is great uncertainty of their taking root, which they seldom do in less than two years; nor will they ever take root, unless they are well supplied with water in dry weather.

The best way to obtain good plants, is from the seeds, which must be procured from America, for they never have produced any fruit in this country. The seeds should be sown in small pots filled with fresh loamy earth soon after they arrive, and should be placed under a hot-bed frame, where they may remain till the beginning of May, when they must be removed to a situation exposed to the morning sun, and screened from the sun in the middle of the day. In dry weather the pots must be watered, and kept clean from weeds, for as these seeds lie in the ground a whole year before the plants will come up, they should not be exposed to the sun the first summer, but the following autumn they should be removed, and placed under a frame, to protect the seeds from being injured by the frost, and if the pots are plunged into a moderate hot-bed the beginning of March, it will bring up the plants much sooner than they will otherwise rise; by which means they will get more strength the first summer, and be better able to resist the cold of the next winter. While these plants are very young, they will be in danger of suffering by severe frost; but when they have obtained strength, they will resist the greatest cold of our climate in the open air; therefore for the two or three first winters, it will be proper to keep them under shelter; so that the young plants may remain in the seed-pots all the first summer, and the following winter; and in the spring before they begin to shoot, they should be shaken out of the pots, and carefully separated so as not to break off their roots, and each planted in a small pot filled with light loamy soil, and plunged into a very moderate hot-bed, just to forward their taking fresh root; then they should be gradually inured to the open air, and during the following summer, the pots should be plunged into the ground, to prevent the earth from drying, in a situation where they may enjoy the morning sun, but screened from the great heat at noon. During the summer season, they will require to be frequently watered, and kept dean from weeds. The autumn following, they should be again placed under a hot-bed frame to screen them from frost; but they should enjoy the free air at all times, when the weather is mild. The April following, the plants may be shaken out of the pots, with the ball of earth to their roots, and planted where they are designed to remain.

This shrub delights in a moist, soft, loamy soil, and if it is planted in a sheltered situation, will endure the cold of our winters very well in the open air, but in dry land it is very subject to decay in warm seasons.

C H I

In the places where this shrub grows naturally* it produces great quantities of flowers, so that they seem covered with snow, which gave occasion to the inhabitants for titling it Snowdrop-tree, but in England the flowers are seldom so numerous, so do not make so good an appearance*

CHIRONIA. Lin. Gen. Plant. 227.

The CHARACTERS are,

The flower hath a permanent impaction of one leaf cut into five oblong segments: it hath one petal, with a roundish tube; the size of the empalement, divided into five equal parts above, which spread open: it hath five short broad stamina, which are fastened to the top of the tube, and are terminated by large oblong summits, which join together, and after the flowers drop are spirally twisted. It hath an oval germen, situated in the center supporting a slender declining style, crowned by a rising stigma in form of a bead. The germen afterward becomes an oval capsule with two cells, filled with small seeds.*

This genus of plants is ranged in the first federation of Linnaeus's fifth class, intitled Pentandria Monogynia* the flower having five stamina and one style.

The SPECIES are,

1. **CHIRONIA frutescens, capfulifera.** Lin. Sp. Plant. 190; *Shrubby Chironia bearing capsules.* Centaureum minus Africanum, arborefcens, latifolium, flor ruberrimo. Com. Rar. Pl. 8. tab. 8. *Leffer Tree-Hk* African Centaury, with a broad leaf, and a very red flower.*

2. **CHIRONIA frutescens baccifera.** Lin. Sp. Plant. 190. *Shrubby berry-bearing Chironia.* Centaureum minus arborefcens pulpiferum. Com. Rar. Pl. 9. tab. 9. *Leffer Tree-like Centaury with seeds surrounded with pulp.*

These plants grow naturally at the Cape of Good Hope, from whence their seeds were brought to Holland many years past, and the plants were raised in some of the curious gardens there, and have since been communicated to the curious in many parts of Europe. The seeds of the first sort were sent me from Paris, by Mr. Richard, gardener to the king at Versailles, from which I raised several plants, which have flowered in the Chelsea garden several years, but have not as yet perfected any seeds.

It hath a fibrous root, which spreads near the surface of the ground. The stalks are round, and inclining to be ligneous, but are of a very soft texture; these grow from two to three feet high, having several branches on every side, which grow erect, garnished with succulent leaves, which are an inch or more in length, and an eighth part of an inch broad, ending in an obtuse point. At the ends of each shoot the flowers are produced, which are tubulous, and spread open at the top like those of Periwinkle; these are of a bright red colour, and when there are a large number of the flowers open on the same plant, they make a very fine appearance. In the center of the flower is placed an oval germen, upon which there is fixed a recurved style, having a blunt stigma at the top, surrounded by five incurved stamina, each supporting a large summit. When the flowers fall away, the germen becomes an inflated capsule, which is filled with small seeds. The flowers are produced from June to autumn, and the seeds ripen in October. This plant should be placed in an airy glass-case in winter, where it may enjoy a dry air and much sun, but will not thrive in a warm stove nor can it be well preserved in a common green-house because a damp moist air will soon cause it to rot.

The seeds of this plant should be sown in small pots filled with light sandy earth, soon after they are ripe, and plunged into a moderate hot-bed, and must be frequently but gently watered; sometimes the seeds will lie a long time in the ground, so that if the plants do not appear the same season, the pots should not be disturbed, but preserved in flicker till the following spring, and then plunged into a fresh hot-bed, which will bring up the plants in a short time, if the seeds are good. When the plants are fit to remove, they should be transplanted into

small pots, four or five in each pot; then plunge the pots into a moderate hot-bed, and sprinkle them with water, and shade them every day from the sun till they have taken new root; after which they must lie a large share of air in warm weather, to prevent their drawing up weak: when the plants have obtained some strength, they must be gradually inured to bear the open air; but when they are exposed abroad, if there should happen much rain, the plants must be screened from it, otherwise it will cause them to rot: when the plants have filled the pots with their roots, they should be parted, and each put into a separate pot filled with light sandy earth, not rich with dung, placing them in the shade till they have taken fresh root; then they may be removed to a warm flickered situation, and mixed with such other plants as require but little water; in which situation they may remain till autumn, when they must be placed in a dry airy glass-case; and in the winter should have very little wet, but must enjoy the sun as much as possible; and in mild weather should have fresh air admitted to them, but must be protected from frost: with this management, the plants will thrive and produce flowers the second year from seed.

The second sort rises with a firmer stalk than the first, which is round, jointed, and divides upward into a greater number of branches, garnished with short narrow leaves, which are pretty thick and succulent. The flowers are produced at the end of the branches, in the same manner as those of the first, which are of a fine red colour, but not half so large as the flowers of the first, when these fall away, they are succeeded by oval pulpy berries, in which are included many small seeds. This sort continues flowering great part of summer and autumn, and in warm seasons the seeds will ripen in England.

It is propagated by seeds in the same manner as the former sort, and the plants require the same treatment.

CHIVES, as they are by some titled, are the stamina, which support the stamens in the center of flowers.

G-HIVETS, in French, are the small parts, or little offsets from the roots of bulbous plants, by which they are propagated.

CHONDRILLA. Lin. Gen. Plant. 815. Tourn. Inft. R. H. 475. tab. 268. [of X&Jfcta Gr. a cartilage.] Gum Succory.

The CHARACTERS are,

The common empalement is composed of many narrow cylindrical scales, which are equal. The flower is composed of many hermaphrodite florets, which are uniform, and imbricating like tiles on above; these have one petal, which is stretched out on one side like a tongue, and are indented at the top in four or five figments; they have each five short hairy stamina terminated by cylindrical stamens. The germen is situated under the floret, having a style the length of the stamina, crowned by two reflexed stigmas; the germen afterward becomes a single, oval, compressed seed, crowned with a fringe down, and inclined in the empalement.*

This genus of plants is ranged in the first section of Linnaeus's nineteenth class, intitled Syngenesia Polygamia aequalis. The flowers of this section are composed of only hermaphrodite florets, which are fruitful.

We have but one SPECIES of this genus, viz.

CHONDRILLA (*Juncea*.) Lin. Hort. Cliff. 383. Gum Succory. *Chondrilla juncea viscosa arvensis*. C. B. P. 30. *Viscous Field Gum Succory with rusty stalks.*

This plant grows naturally in Germany, Helvetia, and France, on the borders of the fields, and is seldom preferred in gardens, because the roots are very apt to spread, and become troublesome weeds, and the seeds having down on their tops, are carried by the wind to a great distance, so that the neighbouring ground is filled with the plants; the roots of this strike deep into the ground, and spread out with thick fibres on every side, each of which, when cut, or broken into many parts, will shoot up a plant so

that when this plant hath obtained possession of the ground, it is very difficult to root out. The roots send out a great number of slender stalks, which at their bottom are garnished with oblong finuated leaves, but those above are very narrow and entire. The flowers are produced from the side and top of the branches, which are like those of Lettuce, and are succeeded by seeds of the same form, crowned with down. It flowers in July, and the seeds ripen in September.

The other species of this genus which were enumerated in the former edition, are referred to the *Lactuca* and *Crepis*.

CHRISTMAS FLOWER, or Black Hellebore. See HELLEBORUS.

CHRISTOPHORIANA. See ACTEA.

CHRISANTHEMOIDES OSTEOSPERMON. See OSTEOSPERMUM.

CHRYSANTHEMUM. Tourn. Inft. R. H. 491. tab. 280. Lin. Gen. Plant. 866. *Leucanthemum*. Tourn. Inft. R. H. 492. [*xpvfr&is/Ao**, Gr. from χρυσός, gold, ἀνθή, a flower, that is to say, Golden Flower.] *Corn Marigold*.

The CHARACTERS are,

It hath a compound flower, the rays being composed of female florets, which are extended on one side like a tongue and are indented in three figments at the end; these have an oval germen, supporting a slender style, crowned by two obtuse stigmas. The hermaphrodite florets which compose the disk, are funnel-shaped the length of the empalement but are divided into five figments at the top, which are spread open; these have five short hairy stamens, terminated by tubular cylindrical stamens, and have an oval germen, with style and stigma like the female; the germen afterward becomes a single, oblong, naked seed.*

This genus of plants is ranged in the second section of Linnaeus's nineteenth class, intitled Syngenesia Polygamia superflua. In this section all the central florets which compose the disk, are hermaphrodite and fruitful, and the rays are composed of female florets.

The SPECIES are,

1. *CHRYSANTHEMUM (Segetum) foliis amplexicaulibus; superne laciniatis, inferne dentato-ferratis*. Hort. Cliff. 416. *Corn Marigold with leaves embracing the stalks, the upper being jagged, and the lower indented like a saw.* *Chrysanthemum segetum*. Cluf. Hift. 1. p. 334. *Corn Marigold*.

2. *CHRYSANTHEMUM (Leucanthemum) foliis amplexicaulibus, oblongis, superne ferratis, inferne dentatis*. Hort. Cliff. 416. *Corn field-marigold with oblong leaves embracing the stalks, the upper ones being sawed, and the lower indented.* *Bellis sylvestris caule folioso major*. C. B. P. 261. *Greater wild Daisy with a leafy stalk.*

3. *CHRYSANTHEMUM (Serotinum) foliis lanceolatis, superne ferratis, utrinque acuminatis*. Hort. Cliff. 416. *Corn Marigold with spear-shaped leaves, those above being sawed, and pointed on all sides.* *Bellis major, radice repente, foliis latioribus, ferratis*. Mor. Hift. 3. p. 29. *Greater Daisy with a creeping root, and broad sawed leaves.*

4. *CHRYSANTHEMUM (Montanum) foliis imis spatulato-lanceolatis, ferratis, summis linearibus*. Sauv. Monfp. 87. *Corn Marigold with lower leaves pointed like a spear-shaped spatula, and sawed, and the upper ones linear.* *Leucanthemum montanum minus*. Tourn. Inft. 492. *Lesser Mountain Ox-eye.*

5. *CHRYSANTHEMUM (Graminifolium) foliis linearibus, fubintegerrimis*. Sauv. Monfp. 87. *Corn Marigold with narrow leaves, which are entire.* *Leucanthemum gramineo folio*. Tourn. Inft. 493. *Ox-eye with a Grass leaf.*

6. *CHRYSANTHEMUM (Alpinum) foliis pinnatifidis, laciniis parallelis, integris, caule unifloris*. Lin. Sp. Plant. 889. *Corn Marigold with many pointed leaves, whose figments are parallel and entire, and one flower on each foot-stalk.* *Leucanthemum alpinum, foliis coronopi*. Tourn. Inft. R. H. 493. *Alpine Ox-eye with a Hart/horn leaf*

7. CHRYSANTHEMUM (*Corymbiferum*) foliis pinnatis, incifo-ferratis, caule multifloro. Prod. Leyd. 174. *Corn Marigold with winged leaves, fawed fegments* and many flowers upon a stalk. Tanacetum montanum inodorum, minore flore. C. B. P. 132. Unfavoury Mountain Tanfy with a leffer flower.*
8. CHRYSANTHEMUM (*Coronarium*) foliis pinnatifidis, incifis, extrorfum latioribus. Hort. Cliff. 416. *Corn Marigold with wing-pointed cut leaves* whose exterior parts are broadest. Chryfanthemum Creticum. Cluf. Hift. i. p. 334. Corn Marigold of Crete.*
- §. CHRYSANTHEMUM (*Monfpelienfium*) foliis imis palmatis, foliolis linearibus, pinnatifidis. Sauv. Monfp. 304. *Corn Marigold* whose lower leaves are palmated* and the mailer linear, ending in many points. Leucanthemum montanum foliis Chryfanthemum. Tourn. Inf. 492. Mountain Ox-eye with Corn Marigold leaves.*
10. CHRYSANTHEMUM (*Frutefcens*) fruticofum, foliis linearibus dentato-trifidis. Hort. Cliff. 417. *Shrubby Corn Marigold with narrow leaves* having three indented-points. Leucanthemum Canariense, foliis Chryfanthemum, Pyrethri fapore. Tourn. Inf. 493. Canary Ox-eye with Corn Marigold leaves* and the tafte of Pelitry.*
11. CHRYSANTHEMUM (*Flofculofum*) flofculis omnibus uniformibus, hermaphroditis. Hort. Cliff. 417. *Corn Marigold* whose florets are all uniform and hermaphrodite. Bellis ipinofa, foliis Agerati. C. B. P. 262. Prickly Daify with Maudlin leaves.*
12. CHRYSANTHEMUM (*Pallidum*) foliis linearibus, infernè apice dentatis, fupernè integerrimis, pedunculis nudis unifloris. *Corn Marigold with narrow leaves* whose on the lower part being indented at their points* the upper entire* and naked foot-stalks with one flower. Chryfanthemum pallidum minimis, imifque, foliis incifis fuperioribus integris, capillaribus. Barrel. Icon. 421. Leafy Corn Marigold* with the under and leffer leaves divided* the upper entire.*

The firft fort is the common Corn Marigold, which grows naturally amongft the corn, and the borders of the corn-fields in divers parts of England, fo is rarely admitted into gardens *, but we have inferred this and the next to introduce the other fpecies.

The fecond fort is the greater Daify, which ftands in the lift of medicinal plants in the Colledge Difpenfatory: this grows naturally in moift paffures, almoft every where in this country. It rifes with (talks near two feet high, garnifhed with Oblong indented leaves, which embrace the ftalks with their bafe. The foot-ftalks are each terminated by one white flower, fhaped like thofe of the Daify, but four times as large. It flowers in June.

The third fort grows naturally in North America, but hath been long preferved in the Englifh gardens. The roots of this plant creep far under the furface, and fend up ftrong ftalks three or four feet high, garnifhed with long fawed leaves, ending in points; the ftalks divide upward into many fmaller, each being terminated by a large, white, radiated flower; thefe appear in September. It multiplies very faft by its creeping roots, and will thrive in any foil or fituation.

The fourth fort grows naturally upon the Alps, and other mountainous places. I received this from Verona, near which place it grows in plenty: this fends up a fingle ftalk a foot high, garnifhed with entire leaves above, but the under leaves are fawed on the edges. The ftalk is terminated by one large white flower, fhaped like thofe of the third fort. It flowers in June, and the feeds ripen in Auguft. This fort may be propagated by feeds, which, if fown in a fiady border, will come up in about fix weeks *, and the plants, when fit to remove, may be tranfplanted into a fiady border, where they are to remain, and will require no other care but to keep them clean from weeds.

The, fifth fort grows naturally about Montpellier, this hath a perennial root, from which fprings up many narrow Grafs-like leaves, and, between them, ftalks which rife a foot and a half high, garnifhed

with leaves of the fame form as thofe below. *f hē ftalks are each terminated by one large white flwver, with a yellow difk or middle. This dowers in June, but rarely perfe&s feeds in England, fo is propagated only by parting the roots: the beft time for this is in autumn, that the plants may get good root before winter.

The feventh fort grows naturally on the Alps, and other mountainous places in Germany: this fends out upright ftalks, garnifhed with leaves cut into many parallel fegments, fofnewhat like thofe of Buckihorn Plantain. The ftalks rife a foot and a half high, and are each terminated by a fingle flower of the fame form with thofe of the laft: it hath a perennial root, and may be propagated in the fame manner as the other.

The eighth fort has been many years cultivated in the gardens for the beauty of its flowers. Of this there are fingle and double with white, and the fame with yellow flowers *, and as thefe do not differ from each other in any thing except in the colour of their flowers, therefore they are generally efteemed but one fpecies *, but this difference is conftant, for I have never found the feeds faved from the white, produce plants with yellow flowers, nor thofe of the yellow produce white.

There is alfo a variety of thefe colours with fiftular florets, which has accidentally rifen from feeds of the other; thefe are generally titled Quill-leaved Chryfanthemum; but as the feeds faved from thefe degenerate to the common forts, fo they do not merit a particular denomination.

Thefe plants are always efteemed as annual, fo the feeds are ufually fown upon a flender hot-bed in the fpring, and the plants treated in the fame manner as the African Marigold, for the culture of which we fhall refer the reader to that article; but as the plants which rife from feeds, do many of them produce fingle flowers, although the feeds are faved from the beft double flowers, therefore many perfons now propagate thefe plants from cuttings, whereby they continue the double forts only -, thefe cuttings, taken from the plants the beginning of September, and plant'd in pots, will readily take root *, and if they are placed under a hot-bed frame to fcreen them from the froft in winter, letting them have free air in mild weather, they will live through the winter; and in the fpring thefe plants may be tranfplanted into the borders of the flower-garden, where they will flower in June, and continue in fuceffion till the froft puts a ftop to them *, by this method all the varieties may be continued without variation, but the plants which are propagated this way by cuttings will become barren foon, fo will not produce feeds.

The ninth fort is a perennial plant, fending out many ftalks from the root, which divide into branches, garnifhed with pretty thick leaves, deeply cut into many fegments, like thofe of the laft fort; thefe are of a pale green; the flowers are produced at the end of the branches, ftanding upon pretty long naked foot-ftalks *, they are very like thofe of the common Greater Daify, in fize and colour. It flowers in June, and continues till the end of September. This fort ripens feeds every year in England, by which the plant is eafily propagated; for if the feeds are fown in the fpring on a common border, the plants will come up in fix weeks; when thefe are fit to remove, they may be tranfplanted into a nurfery-bed at about a foot diftance every way, and kept clean from weeds till autumn, when they may be removed to the places where they are defigned to remain. As thefe plants extend their branches pretty far on every fide, they fhould be allowed at leaft two feet room; therefore they are not very proper furniture for finall gardens, where there is not room for thefe large growing plants *, but in large gardens, thefe may have a place for the fake of variety.

If thefe plants are planted in poor dry land, or upon lime-rubbifh, they will not grow fo vigorous as in good ground, fo they yrill endure the cold better,

and continue longer; for when their leaves and branches are replete with moisture, they are very apt to rot in the winter, so are seldom of long duration; but where the plants have grown from the joints of old walls, I have known them continue in vigour several years.

The tenth sort grows naturally in the Canary Islands, from whence it was first brought to England, where it has been long an inhabitant in some curious gardens. It has been frequently called by the gardeners Pellitory of Spain, from the very warm taste which it hath, much resembling the taste of that plant.

This rises with a shrubby stalk near two feet high, dividing into many branches, garnished with pretty thick succulent leaves, of a grayish colour, cut into many narrow segments, which are divided into three parts at their extremity. The flowers come out from the wings of the leaves, hanging upon naked footstalks singly, which greatly resemble those of the common Chamomile -, there is a succession of flowers upon the same plants great part of the year, for which it is chiefly esteemed. This plant will perfectly feed in England, when the seasons are favourable; but as the cuttings of it take root so easily, if planted during any of the summer months, the feeds are rarely sown.

As this plant is a native of warm countries, it will not live in the open air in England during the winter season; therefore when the cuttings have made good roots, they should be each planted into a separate pot, and placed in the shade till they have taken fresh root; then they may be removed to a sheltered situation, where they may remain till autumn, at which time they must be removed into the green-house to protect them from frost -, but in mild weather they should have plenty of free air, and, during the winter, they should be frequently refreshed with water, but it must not be given them in too great plenty. In summer they will require more moisture, and should be treated in the same manner as other hardier kinds of exotic plants.

The eleventh sort grows naturally at the Cape of Good Hope, from whence the feeds were brought many years past to Holland, where the plants were first raised, and from thence all the other parts of Europe have been supplied with this plant. It rises with a shrubby stalk about two feet high, which divides into many (tender branches upward, garnished with oblong leaves, much indented on their edges, each indenture terminating in a soft spine; these are of a pale green, set close to the branches. The flowers are produced on short footstalks from the wings of the leaves, toward the upper part of the branches *, these are globular, and formed of a great number of hermaphrodite florets, which are tubular and even, having no rays, so are naked, and of a deep yellow colour. The flowers appear in June, and continue in succession till the frost stops them. This may be propagated by cuttings in the same manner as the last, and the plants should be treated in the same way. The twelfth sort grows naturally about Madrid: this hath a low shrubby stalk, which seldom rises a foot high, putting out several slender ligneous branches, garnished with narrow, pale, green leaves -, those on the lower part of the branches are indented at their extremity in several parts, but the upper leaves are entire *, from the end of each branch is produced a naked footstalk six inches long, sustaining one radiated flower, * of a sulphur colour. The flowers come out in June and July, but there is seldom any feeds ripened in England *, this sort must be sheltered under a common frame in winter, for unless the winter proves very favourable, the plants will not live in the open air here. It may be propagated by cuttings in summer, as the two last sorts, but these cuttings do not so readily take root as those do.

CHRYSOBALANUS. Lin. Gen. Plant. 585. Icac. Plum. Nov. Gen. 44. Cocoa Plum.

The CHARACTERS are,
The § enpalement of the flower is of one leaf divided into

five parts, almost to the middle. The flower hath fog petals* which spread open, and ten stamina, five of which are longer than the petals; the other are shorter, and are terminated by heart-shaped summits. In the center is situated an oval germen, supporting a trifid short style, crowned by obtuse stigmas. The germen afterward becomes an oval fleshy berry, inclosing a nut with five longitudinal furrows.

This genus of plants is ranged in the first section of Linnaeus's thirteenth class, intitled Polyandria Monogynia; but it would be more properly placed in the third section of his tenth class, for the flowers have ten stamina and three styles.

The SPECIES are,

1. CHRYSOBALANUS (*Icac*) foliis ovatis, emarginatis, floribus racemosis, caule fruticoso. *Chrysobalanus* with oval indented leaves, flowers growing in bunches, and a shrubby stalk. Frutex Cotini ferè tblio crasso, in fumitate deliquium patiente, fructu ovali cseruleo officulum angulofum continente. Catefb. Car. *The Cocoa Plum*.
2. CHRYSOBALAKUS (*Purpurea*) foliis decompositis, foliis ovatis integerrimis. *Chrysobalanus* with decomposed leaves, whose lobes are oval and entire. Icac fructu purpureo. Plum. Nov. Gen. 44. *Icac* with purple fruit.

The first sort grows naturally in the Bahama Islands, and in many other parts of America, but commonly near the sea. It rises with a shrubby stalk about eight or ten feet high, sending out several side branches, covered with a dark brown bark, spotted with white; these are garnished with oval stiff leaves, which are indented at the end, in form of a heart, placed alternately on the branches. From the wings of the leaves, and also at the division of the branches, the flowers are produced, which grow in loose bunches; these are small and white, having many stamina in each, which are joined to the petals of the flowers, terminated by yellow summits. The flowers are succeeded by oval Plumbs about the size of Damsons; some of these are blue, some red, and others yellow; they have a sweet luscious taste. The Spaniards in the island of Cuba, make a conserve of these fruits. The (tone of the Plum is shaped like a Pear, and hath five longitudinal ridges on it. This grows naturally on moist land.

The feeds of the second sort were sent me from Jamaica, with Plunder's title-, the tones were exactly the same shape of those of the former, but the plants have leaves compounded of several winged lobes, which are branched out opposite, each having six or seven pair of pinnae (or lobes.) This sort hath not flowered in England, so I can give no farther account of it.

As these trees are natives of the warm parts of America, so they will not thrive in England, unless they are kept in a warm stove. They are propagated by feeds, which must be obtained from the countries where the plants naturally grow; these must be sown in the spring in small pots filled with light earth, and plunged into a hot bed of tanners bark, observing frequently to water the pots 5 but not let them have much at each time. In six weeks the plants will come up, and, if properly managed, will be fit to remove in a month's time after, when they should be carefully separated, and each planted into a separate small pot filled with light kitchen-garden earth, and then plunged into the hot-bed again, observing to shade them from the sun till they have taken fresh root j after which they must have air every day in proportion to the warmth of the season, and their waterings during the summer should be frequent, but sparing. In the autumn the plants must be removed into the bark-stove, and plunged into the tan-bed 5 and in winter the plants must not have too much water, lest it occasions their throwing off their leaves. In summer they must have a good share of air, and the plants in the stove should be constantly treated in the same manner as other tender plants from the same countries.

CHRYSOCOMA. Lin. Gen. Plant. 845. Dillen. Gen. 14. Coma aurea. Boerh. 1. p. 121. Goldylocks.

The CHARACTERS are,
The common empalement is imbricated* the feaks are narrow* the outer being convex and pointed; the flower is compofed of many hermaphrodite florets* which are tubular* equal* and funnel-shaped* cut into five fegments at the brim* which turnback* thefe have each five Jhort flender ftamina* terminated by cylindrical fummits* they have an oblong germen* Jupporting a flender Jtyle* crowned by two oblong depreffedftigmas. The germen afterward becomes a jingle* oblong* compreffed feed* crowned with hairy down*

This genus of plants is ranged in the firft: fection of Linnseus's nineteenth clafs, intitled Syngenefia Polygamia ^qualis 5 the plants of this fection have only hermaphrodite florets, which are fruitful.

The SPECIES are,

1. CHRYSOCOMA (*Unofyris*) herbacea, (pliis linearibus, glabris, calycibus laxis. Lin. Sp. Plant. 841. *Herbaceous Goldylocks with narrow fsmooth leaves* and loofe empakments.* Coma aurea Germanica linariae folio. Park. Theat. 688. *German Goldlocks.*
2. CHRYSOCOMA (*Biflora*) herbacea paniculata, foliis lanceolatis trinerviis, pun&atis, nudis. Lin. Sp. Plant. 841. *Herbaceous Goldylocks with flowers growing in panicles* and fpear-Jhaped leaves* having three nerves* and yellow flowers growing in umbels.*
3. CHRYSOCOMA (*Coma Aurea*) fruticofa foliis linearibus dorfo decurrentibus. Hort. Cliff. 397. *Shrubby Geldylocks with very narrow leaves* wbofe back parts run along theftalks.* Coma aurea Africana fruticans, foliis linearis auguftis, major. Com. Hort. Amft. 2. p. 89. *Greater Jhrubby African Goldy locks* with narrow Toad-flax leaves.*
4. CHRYSOCOMA (*Cernua*) fubfruticofa, foliis linearibus fubtus pilofis, floribus ante florefcentiam cernuis. Hort. Cliff. 397. *Shrubby Goldylocks with very narrow hairy leaves* and flowers nodding before they are blown.* Coma aurea foliis linearis auguftioribus minor. Hort. Amft. 2. p. 89. *Leifer Goldylocks with narrower Toad-flax leaves.*
5. CHRYSOCOMA (*Ciliata*) fuffruticofa, foliis linearibus freftis, ciliatis ramis pubefcentibus. Lin. Sp. Plant. 481. *Shrubby Goldylocks with narrow leaves and downy branches.* Conyza Africana, tenuifolia, fubfrutefcens, flore aureo. Hort. Elth. 104. tab. 68. *Narrow-leaved* African* Jhrubby Fleabane* with a golden flower.*

The firft fort grows naturally in Germany, and alfo in France and Italy 5 this hath a perennial root; the ftalks rife two feet and a half high, are round, ftiff, and dofely garnifhed With long, narrow, fsmooth leaves, which come out without any order, of a pale green colour; the upper part of the ftalk divides into many flender foot-ftalks, each fuftaining a fingle head of flowers, which are compofed of many hermaphrodite florets, contained in one common empalement, having very narrow feales. The flowers are of a bright yellow, and ftand difpofed on the top of the ftalk, in form of an umbel. Thefe appear in July, and in favourable feafons' are fucceeded by feeds, which ripen in September, foon after which the ftalks decay to the root, and new ones arife the following fpring.

This plant is generally propagated by parting of the roots, that being the mod expeditious method -, for the feedling plants do not flower till the fecond or third year. The beft time to remove the plants and part their roots, is foon after the ftalks decay in autumn, that the plants may get frefh roots before winter. It delights in & dry loofe foil, in which it will live in the open air, and propagate by its roots very faft; bint in ftrdng wet land, the roots often rot in winter.

The fecond fort grows naturally in Siberia, from whence the feeds were fent to Peteriburgh, part of which I received from the late Dr. Amman, who was profeffor of botany in that imiverfity. This plant hath a perennial creeping root, which fpreads 01

every fide to a confiderable diftance, fending up many eredt ftalks, garnifhed with flat fpear-fhaped leaves, ending in points *, thefe are rough, and have three longitudinal veins; the upper part of the ftalks branch out, and form loofe panicles of yellow flowers, which are larger than thole of the former fort. This flowers in June and July, and the feeds ripen in autumn.

It propagates too faft by its creeping "roots to be admitted into the flower-garden, for the roots will often extend two or three feet every way in the compaft of one year, fo that they will interfere with the neighbouring flowers; but as the plants will grow in any foil or fituation, fo a few roots may be planted on the fide of extenfive rural walks round the borders of fields, where they will require no care, and their flowers will make a good appearance, and continue long in beauty.

The third fort grows naturally at the Cape of Good Hope. This rifes with a ligneous ftalk about a foot high, dividing into many fmall branches, which are garnifhed with narrow leaves, of a deep green, coming out on every fide without order-, the back part of each leaf hath a fmall fhort' appendix, which runs along the ftalks. The flowers are produced at the end of the branches, on flender naked foot-ftalks *, thefe are of a pale yellow, and fhaped like thole of the former forts, but are larger. This plant flowers great part of the year, for which it is chiefly eftemed; the feeds ripen very well in autumn, which if fown on a common border of light earth in the fpring, the plants will come up, and may be tranfplanted into pots, to be removed into fhelter in winter, for thefe plants will not live through the winter in the open air in England.

The moft expeditious method of propagating this plant is by cuttings, which, if planted in a common border in any of the fummer months, and covered with hand-glaffes, will eafily take root, provided they are fhaded from the fun and duly watered: when thefe have gotten good roots they fhould be carefully taken up, and each planted in at feperate pot, filled with light earth, placing them in the fhade till they have taken new root; then they may be expofed with other hardy exotic plants till autumn, when they muft be removed into the green-houfe during the winter feafon; they fhould enjoy a large fhare of free air in mild weather, for they only require protection from froft, fo muft not be too tenderly treated.

The fourth fort is a native of the Cape of Good Hope, from whence I received the feeds *, this is a lefs plant than the former, it hath a fhubby ftalk, branching out in the fame manner -, the leaves are fhorter, and a little hairy; the flowers are not half fo large, of a pale fulphur colour, and nod on one fide before they are blown. This alfo flowers great part of the year, and ripens feeds very well *, but this is generally propagated in the fame manner as the former, and the plants require the fame treatment.

The fifth fort is alfo a native of the fame country as the two former -, this hath a low fhubby ftalk, which branches out on every fide, very narrow, (hort, rough, and reflexed 5 the flowers ftand fingle on the top of haked foot-ftalks, which arife from the upper part of the branches; thefe flpwers are larger than thole of the laft, and ftand eredt. This plant requires the fame treatment as the two former, and is propagated by cuttings in the fame manner.

CHRYSOPHYLLUM. Lin. Gen. Plant. 233. Cainito. Plum. Nov. Gen. 9. tab. 9. The Star Apple.

The CHARACTERS are,

The empalement is permanent* and conffts of five finally roundijh* concave petals* the flower is compofed of five petals* which fpread open* and are cut in the middle into two parts*, it hath five ftamina placed alternate to the fegments of the petals, terminated by heart-fhapei fummiu : the oval germen is fituated in t ht center* fupporting;

ing ahortfyk, crowned by an obtufe jigm. The germen afterward becomes a large, oval, flefity fruit, inclofing three or four fiat feeds, having hardjhells.

This genus of plants is ranged in the firft fe&ion of Linnaeus's fifth clafs, intituled Pentandria Monogynia, the flower having five (lamina and one ftyle.

The SPECIES are,

1. CHRYSOPHYLLUM (*Cainito*) foliis ovatis, parallelis fubtus, tomentofis nitidis. Jacq. Amer. 15. *Chryfophyllum with oval leaves, with parallel veins and neat woolly leaves on their under fide.* Cainito folio fubtus aureo, fructu olivae formi. Plum, Nov. Gen. 10. *The Damfon-tree.*

2. CHRYSOPHYLLUM (*Glabrum*) foliis utrinque glaberrimis. Jacq. Amer. 15. *Chryfophyllum with very fmooth leaves.* Cainito folio fubtus aureo, fructu maliformi. Plum. Nov. Gen. 10. *The Star Apple.*

Thefe trees grow naturally in the Weft-Indies, where the firft fort rifes from twenty to thirty feet high, dividing into many branches, garnifhed with oval leaves, fmooth above, and of a gold colour on their Under fide 5 the flowers come, out from the fide of the branches, at the fetting on of the leaves, in round clufters, which are fucceeded by oval, fmooth, pulpy fruit, inclofing three or four hard fiat feeds.

The fecond fort rifes with an upright trunk to the height of thirty or forty feet, dividing into many (ender branches, garnifhed with fpear-lhaped leaves, coming out without order; from the wings of the leaves, and alfo at the extremity of the branches, the flowers are produced in bunches, which are fucceeded by round pulpy fruit the fize of a Golden Pippin, containing many flat hard feeds.

The fruit of both thefe trees is very rough and aftringent at firft, but by lying fome time after they are gathered, they become mellow, like the Medlar. The timber of both thefe trees is ufed in buildings, and for fhingles to cover houfes.

Thefe plants are preferred in feveral curious gardens for the beauty of their leaves, efppecially the firft fort, whofe under fides fhine like fattin, the upper fides are of a deep green. The leaves continue all the year, fo make a very pretty appearance in the ftove at all feafons.

Thefe trees, being natives of the warmeft parts of the world, cannot be preferred in this country, without being kept in the warmeft ftoves; and fhould always remain in a hot-bed of tanners bark, otherwife they will make but little progrefs. They are propagated by feeds, which muft be procured from the places of their growth, for they do not produce fruit in Europe. Thefe feeds muft be freffi, otherwife they will not grow; and if they are fent over in fand, it will preferve them from drying too much j when the feeds arrive, they muft be fown as foon as poffible in fmall pots filled with light frelh earth, and plunged into a good hot-bed of tanners bark. If the feeds are good, and the bed in a proper temperature of warmth, the plants will appear in five or fix weeks; and in about two months after, will be ftrong enough to tranfplant; in doing of which, the plants, with all the earth, fhould be fhaken out of the pots very carefully, and feparated with their roots entire, and each planted into a fingle fmall pot filled with freffi rich earth, and plunged again into a hot-bed of tanners bark, watering and (hading them until they have taken freffi root. If the hot-bed in which thefe plants are plunged, is from time to time ftirred, and a little freffi tan added to it, to renew the heat when it declines, the plants will make good progrefs, and in three or four months will be near a foot high, and may then be fhifted into pots a fmall fize larger than thofe they before were in. If thefe plants are conftantly kept in a warm bed in the ftove, and lhifted twice a year, to renew the earth to their roots, they will thrive very faft, and put out their fide branches, fo as to make a handfome appearance in the ftove, with other curious plants of the fame country j for though they do not produce

feitheh flowed of fruit, yet as they keep their leaved through the year, which are fo very beautiful, they delerve a place in the ftove, better than nroth other plants. The chief care they require, is to keep them conftantly in a proper degree of heat, and never to put them into too large pots; arid in winter they fhould not have too much Water, about twice a week will be often enough to water them-, and in the depth of winter, they fhould not have much at each time.

Thefe trees are frequently propagated in the Weft-Indies, by planting of their branches (as I have been informed by perfons of credit;) but I have not heard of their being propagated in England by that method.

CHRYSOSPLENium. Lin. Gcn. Plant. 493. [*Χρυσοσπένιον*, of *Χρυς*, Gold, and *σπένιον*, the spleen 5 q. d. a plant, the flowers of which are of a golden colour, and good againft difeafes of the spleen.] Golden Saxifrage.

The CHARACTERS are,

The empalement is divided into four or five parts which fpread open, are coloured, and permanent. The flower bath no petals, but eight or tenftamina, which arefhoru ereff, and ft and oppofite to the angles of the empalement terminated by fingle fummits: the germen is immerfed-in the empalement, fupporting two Jhort ftyles, crowned by obtufe ftigma. The germen afterward becomes a capfule with two beaks, opening with two valves, and filled with fmall feeds.*

This genus of plants is ranged in the fecond feftion of Linnseus's tenth clafs, intituled Decandria Digynia, the flowers having ten ftamina aftd two ftyles.

The SPECIES ate,

1. CHRYSOSPENIUM: (*Alternifolium*) foliis alternis. Flon Suc. 317. *Golden Saxifrage with alternate leaves.* Saxifraga aurea foliis pediculis oblongis infidentibus. Rail Syn. Hift. 206. *Golden Saxifrage with leaves growing upon long foot-ftalks.*
2. CHRYSOSPENIUM (*Oppofitifolium*) foliis oppofitis. Sauv. Monlp. 128. *Golden Saxifrage with oppofite leaves.* Chryfolpenium foliis amplioribus auriculatis. Tourn. Inf. 146. *Golden Saxifrage with larger eared leaves.*

Thefe two plants are found growing wild in many parts of England, upon marfhy foils and bogs, as alfo in moift fhady woods, and are feldom propagated in gardens *, where, if any perfon has curiofity to cultivate them, they muft be planted in very moift fhady places, otherwife they will not thrive- They flower in March and April.

CIBOULS, or CHIBOULS. See CEPA.

CICER. Lin. Gen. Plant. 783. Tourn. Inf. R. H. tab. 210. [This plant is called Cicer, of *Κίκαρος*, ftrength', becaufe it is faid to ftrengthen: it is alfo called Arietaria, becaufe the feeds of it refemble the head of a ram.] Cicer, or Chich Peafe-

The CHARACTERS are,

The empalement of the clover is cut into five fegments, four of which lie upon the ftandard-, the two middle, which are the longeft, are joined, the other is under the keel. The flower is of the butterfly kind-, the ftandard is large roundifh, and plain \ the wings are muchfhorter and obtufe, the keel is fhorter than the wings, and is Jharp-printed. It bath tenftamina, rine of them are joined, and the tenth is feparate, terminated by fingle fummits. It bath an oval germen fupporting a fingle ftyle, crowned by an obtufe ftigma. The germen afterward becomes a turgid fuelling pod of a rhomboidal figure, inclofing two roundifh feds, with a protuberance on theirfid.*

This genus of plants is ranged in the third fe&ion of Linnseus's feventeenths clafs, intituled Diadelphia Decandria, from the flower having ten ftamiiSa joined in two bodies.

There is but one SPECIES of this genus, viz.

- CICER (*Arietinum*) foliolis ferfatis. Hort. Cliff. 370. *Chich Peafe with fawed leaves.* Cicer fativum. C. B. P. 347. *Garden Chich Peafe.*

There is a variety of this with a red feed, which differs from it in nothing but the colour.

It is much cultivated in Spain, being one of the ingredients in their oils, and is there called Garavance; it is also cultivated in France, but in England it is rarely sown.

This plant is annual, (shoots out several hairy stalks from the root, which are about two feet long*, garnished with long winged leaves of a grayish colour, composed of seven or nine pair of small roundish leaves (or lobes) terminated by an odd one, which are sown on their edges. From the side of the branches come out the flowers, sometimes one, at other times two together. They are shaped like those of Pease, but are much smaller and white, standing on long foot-stalks; these are succeeded by short hairy pods, including two seeds in each, which are the size of common Pease, but have a little knob or protuberance on one side.

The seeds of this plant may be sown in the spring, in the same manner as Pease, making drills with a hoe, about an inch and a half deep, in which the seeds should be sown at about two inches asunder, then with a rake draw the earth into the drill to cover the seeds. The drills should be made at three feet distance from each other, that there may be room for their branches to spread, when the plants are fully grown, as also to hoe the ground between them, to keep it clean from weeds, which is all the culture these plants require.

This plant flowers in June, and the seeds ripen in August; but unless the season proves warm and dry, the plants decay in this country before the seeds are ripe.

CICHORIUM. Lin. Gen. Plant. 825. Tourn. Inf. R. H. tab. 272. [σιπτεριον, or κισσοριον, of *xiyifa** to find, because found every where in walking.] Succory.

The CHARACTERS are,

The flower hath a common scaly empalement which at first is cylindrical^ but is afterward expanded* the scales are narrow* spear-shaped* and equal. The flower is composed of many hermaphrodite florets* which are plain* uniform* and flat and circularly* each having one petal* which is tongue-shaped* and cut into five segments. They have five short hairy stamina* terminated by five-cornered cylindrical summits. The germen is situated under the petal* supporting a fimmier style* crowned by two turning stigmas: the germen afterward becomes a Jingle seed* inclosed with a down* and shut up in the empalement.*

This genus of plants is ranged in the first section of Linnaeus's nineteenth class, intitled Syngenesia Polygamia aequalis. The plants of this section have only hermaphrodite fruitful florets.

The SPECIES are,

1. **CICHORIUM** (*Intybus*) floribus geminis sessilibus, foliis runcinatis. Flor. Suec. 650. *Succory with two flowers fitting close to the stalk.* Cichorium sylvestre five officinarum. C. B. P. 126. *Wild Succory.**
2. **CICHORIUM** (*Spinofum*) caule dichotomo spinoso floribus axillaribus sessilibus. Hort. Cliff. 388. *Succory with a prickly forked stalk.* Cichorium spinosum. C. B. P. 126. *Prickly Succory.*
3. **CICHORIUM** (*Endivia*) floribus foliariis pedunculatis, foliis integris, crenatis. Hort. Cliff. 389. *Succory with single flowers on foot-stalks* and entire crenated leaves.* Cichorium latifolium, five endivia vulgaris. C. B. P. 125. *Broad-leaved Succory* or common Endive.*
4. **CICHORIUM** (*Crippum*) floribus foliariis pedunculatis, foliis fimbriatis, crispis. *Succory with Jingle flowers on foot-stalks* and fringed curled leaves.* Endivia crispata. C. B. P. 125. *Curled Endive.*

The first sort grows naturally by the sides of roads and in shady lanes, in many parts of England: this has been supposed to be no other way differing from the garden Succory, but by the latter being cultivated in gardens; indeed, most of the writers on botany, have confounded the two sorts together, for the Garden Succory which is described in most of the old books, I take to be the broad-leaved Endive, which is the third sort here enumerated, for I have many years cultivated both sorts in the garden, without finding either of them alter. There is an essential

difference between these, for the wild Succory hath a perennial creeping root, whereas the other is at most but a biennial plant; and if the seeds of the latter are sown in the spring, the plants will flower and produce seeds the same year, and perish in autumn, so that it may rather be called annual. The wild Succory sends out from the roots long leaves, which are jagged to the midrib, each segment ending in a point* from between these arise the stalks, which grow from three to four feet high, garnished with leaves, shaped like those at the bottom, but are smaller, and embrace the stalks at their base. These branch out above into several smaller stalks, which have the same leaves, but smaller and less jagged; the flowers are produced from the side of the stalks, which are of a fine blue colour; these are succeeded by oblong seeds, inclosed in a down. It flowers in June and July, and the seeds ripen in September.

The second sort grows naturally on the sea-coasts in Sicily and the islands of the Archipelago. This sends out from the root many long leaves, which are indented on their edges, spreading flat on the ground; from between these arise the stalks, which have very few leaves, and those small and entire: the stalks are divided in forks upward, from between these come out the flowers, which are of a pale blue, and are succeeded by seeds (shaped like those of the common* sort; the ends of the smaller branches are terminated by star-like spines, which are very sharp. The plant is biennial with us in England, and in cold winters is frequently killed. It flowers and is ready about the same time with the former sort, and may be treated in the same way as the *JEndive*.

The broad leaved Succory or Endive, differs from the wild sorts in its duration, the root always perishing after it has produced seeds: the leaves are broader, rounder at the top, and not lacinated on the sides as the leaves of the wild; the branches are more horizontal, and the stalks never rise so high.

This sort is not much cultivated in the English gardens at present, for the curled Endive being tenderer, and not so bitter, is generally preferred to it. The broad-leaved and curled Endive has been supposed to be only varieties from each other, which hath accidentally been produced by culture; but from having cultivated both near forty years, I could never find that they ever altered, otherwise than by the curled sort coming more or less curled, the leaves of this sort have only a few slight indentures on their edges, and the stalks grow more erect, having but few leaves upon them. This, when blanched, has a bitter taste, which has occasioned its being generally neglected in England, but in Italy it is still cultivated in their gardens.

All the sorts of Succory are esteemed aperitive and diuretic, opening obstructions of the liver, and good for the jaundice; it provokes urine, and cleanses the urinary passages of slimy humours, which may stop their passage.

The curled Endive is now much cultivated in the English gardens, being one of the principal ingredients in the salads of autumn and winter, for which purpose it is continued as long as the seasons will permit. I shall therefore give directions for the managing of this plant, so as to have it in perfection during the autumn and winter months.

The first season for sowing of these seeds is in May, for those which are sown earlier in the year, generally run up to seed, before they have arrived to a proper size for blanching; and it frequently happens, that the seeds sown in May in the rich ground near London, will run to seeds the same autumn; but in situations which are colder, they are not so apt to run up, therefore there should be some seeds sown about the middle or latter end of that month. The second sowing should be about the middle of June, and the last time in the middle of July. From these three different crops, there will be a supply for the table during the whole season; for there will be plants of each sowing, very different in their growth, so that

there will be three different crops from the same beds.

When the plants come up they must be kept clean from weeds, and in dry weather duly watered, to keep them growing till they are fit to transplant, when there should be an open spot of rich ground prepared to receive the plants, in size proportionable to the quantity intended. When the ground is well dug and levelled, if it should be very dry, it must be well watered to prepare it to receive the plants; then the plants should be drawn up from the feed-bed carefully, so as not to break their roots, drawing out all the largest plants, leaving the small ones to get more strength; which, when they have room to grow, by taking away the large ones, they will soon do. As the plants are drawn up, they should be placed with their roots even, all the same way, and every handful as they are drawn, should have the tops of their leaves shortened, to make them of equal length: this will render the planting of them much easier, than when the plants are promiscuously mixed, heads and tails: then the ground should be marked out in TOWS at one foot alunder, and the plants set ten inches distant in the rows, cloving the earth well to their roots, and let them be well watered; and repeat this every other evening, till the plants have taken good root, after which they must be kept dean from weeds.

When the plants of the feed-bed have been thus thinned, they should be well cleaned from weeds and watered, which will encourage the growth of the remaining plants, so that in ten days or a fortnight after, there may be another thinning made of the plants, which should be transplanted in the same manner. And at about the same distance of time, the third and last drawing of plants may be transplanted.

Those plants which were the first transplanted, will be fit to blanch by the latter end of July at farthest, and if they are properly managed, in three weeks or a month, they will be sufficiently blanched for use, which will be as soon as these fallads are commonly required; for during the continuance of good Coss Lettuce, few persons care for Endive in their fallads; nor, indeed, is it so proper for warm weather. If any of the plants should put out flower-stems, they should be immediately pulled up and carried away, being good for nothing, so should not be left to incommode the neighbouring plants. As the quantity of roots necessary for the supply of a middling family is not very great, so there should not be too many plants tied up to blanch at the same time, therefore the largest should be first tied, and in a week after, those of the next size; so that there may be three different times of blanching the plants, on the same spot of ground. But as in some large families there is a great consumption of this herb for soups, so the quantities of plants should be proportionably greater, at each time of planting and blanching. The manner of blanching is the next thing to be treated of, therefore in order to this you should provide a parcel of small Osier twigs (or bafs mat) to tie up some of the largest heads to blanch, which should be done in a dry afternoon, when there is neither dew nor rain to moisten the leaves in the middle of the plants, which would occasion their rotting soon after their being tied up. The manner of doing it is as follows, viz. You must first gather up all the inner leaves of the plant in a regular order, into one hand, and then take up those on the outside that are found, pulling off and throwing away, all the rotten and decayed leaves which lie next the ground; observing to place the outside leaves all round the middle ones, as near as possible to the natural order of their growth, so as not to cross each other: then having got the whole plant close up in your hand, tie it up with the twig, bafs, &c. at about two inches below the top, very close; and about a week after go over the plants again, and give them another tie about the middle of the plant, to prevent the heart leaves from

bursting but on one side; which they are subject to do, as the plants grow, if not prevented this way.

In doing of this you heed only tie up the largest plants first, and go over the piece once a week, as the plants increase in their growth; by which means you will continue the crop longer, than if they were all tied up at one time: for when they are quite blanched, which will be in three weeks or a month after tying, they will not hold found and good above ten days or a fortnight, especially if the season proves wet: therefore it is that I would advise to sow at three or four different seasons, that you may have a supply as long as the weather will permit. But in order to this, you must transplant all the plants of the last sowing under warm walls, pales, or hedges, to screen the plants from frost; and if the winter should prove very sharp, you should cover them with some Pease haulm, or such other light covering, which should be constantly taken off in mild weather: these borders should also be as dry as possible, for these plants are very subject to rot, if planted in a moist soil in winter.

Although I before directed the tying up of the plants to blanch them, yet this is only to be understood for the two first sowings; for after October, when the nights begin to be frosty, those plants which are so far above ground will be liable to be much prejudiced thereby, especially if they are not covered in frosty weather; therefore the best method is, to take up your plants of the latter sowings in a very dry day, and with a large flat-pointed dibble, plant them into the sides of trenches of earth, which should be laid very upright, planting them sideways, on the fourth side of the trenches, towards the sun, with the tops of the plants only out of the ground, so that the heavy rains may run off, and the plants be kept dry, and secured from frosts.

The plants thus planted, will be blanched fit for use in about a month or five weeks time, after which it will not keep good more than three weeks, before it will decay; you should therefore continue planting in successive ones into trenches every fortnight or three weeks, that you may have a supply for the table; and those which were last transplanted out of the feed beds, should be preserved till February, before they are planted to blanch; so that from this you may be supplied until the beginning of April, or later: for at this last planting into the trenches, it will keep longer than in winter, the days growing longer; and the sun, advancing with more strength, dries up the moisture much sooner than in winter, which will prevent the rotting of these plants; but if the weather should prove frosty, these latter plantations of Endive should be covered with mats and straw to preserve it, otherwise the frost will destroy it, but the coverings must always be taken off when the weather is favourable.

When your Endive is blanched enough for use, you must dig it up with a spade; and after having cleared it from all the outside green and decayed leaves, you should wash it well in two or three different waters to clear it the better from lugs, and other vermin, which commonly shelter themselves amongst the leaves thereof, and then you may serve it up to the table with other fallading.

But in order to have a supply of good feeds for the next season, you must look over those borders where the last crop was transplanted, before you put them into the trenches to blanch; and make choice of some of the largest, foundest, and most curled plants, in number according to the quantity of feeds required for a small family, a dozen of good plants will produce feeds enough; and for a large, two dozen or thirty plants.

These should be taken up and transplanted under a hedge or pale, at about eighteen inches distance, in one row about ten inches from the hedge, &c. This work should be done in the beginning of March, if the season is mild, otherwise it may be deferred a fortnight

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fortnight longer. When the flower-stems begin to advance, they should be supported with a packthread, which should be fattened to nails driven into the pale, or to the flakes of the hedge, and run along before the stems, to draw them upright close to the hedge or pale, otherwise they will be liable to break with the strong winds. Observe alib to keep them clear from weeds, and about the beginning of July your feeds will begin to ripen -, therefore, as soon as you find the feeds are quite ripe, you must cut off the stalks, and expose them to the sun upon a coarse cloth to dry -, and then beat out the feeds, which must be dried, and put up in bags of paper, and preserved for use in some dry place. But I would here caution you, not to wait for all the feeds ripening upon the same plant; for if so, all the first ripe and best of the feeds will scatter and be lost before the other are near ripe -, but great a difference is there in the feeds of the same plant being ripe.

The wild Succory (of which there are some varieties in the colour of the flowers) is seldom propagated in gardens -, it growing wild in unfrequented lanes and dunghills in divers parts of England, where the herb women gather it, and supply the markets for medicinal use.

C I C U T A properly signifies an hollow intercepted between two knots, of the stalks or reeds of which the shepherds used to make their pipes, as Virgil sings ;

*Eft tuihi difparibus feptem compafta Cicutis
Fijiula—*

C I C U T A. Lin. Gen. Plant. 316. Sium. Raii Syn. 212. Water Hemlock.

The CHARACTERS are,

It is a plant with an umbelated flower > the principal umbel is composed of several/mailer (called rays -) these are equal, roundish, and bristly: the great umbel hath no involucre, but the smaller have, which are composed of many short leaves. The flowers have each five oval petals nearly equal, which turn inward \ they have five hairy stamina, which are longer than the petals, terminated by single summits. The germen is situated below the flower, supporting two slender styles, which are permanent and longer than the petals, crowned by stigmas in form of a head. The germen afterward becomes a roundish channelled fruit dividing into two parts, containing two oval feeds, plain on one side and convex on the other.

This genus of plants is ranged in the second section of Linnaeus's fifth class of plants, intitled Pentandria Digynia, the flower having five stamina and two styles. The title of this genus has been generally applied to the common Hemlock, which grows naturally on the banks by highways, in moist parts of England. But to that plant Dr. Linnaeus has applied the old title of Conium, and added this title to the poisonous Water Hemlock described by Webber.

The SPECIES are,

1. C I C U T A (*Virofa*) *umbellifera* oppositifolia, petioli marginatis. Lin. Sp. Plant. 255. *Hemlock with umbels opposite to the leaves, and obtuse margined foot-stalks.* Sium eruce folio. C. B. P. 154. *Sium with a Rocket leaf* Cicuta aquatica Gefneri. J. B. in. 2. p. 175. *Water Hemlock of Gefner.*
2. C I C U T A (*Maculata*) foliorum ferraturis mucronatis, petioli membranaceis, apice bilobis. Lin. Sp. Plant. 256. *Hemlock with pointed ferratures to the leaves, and membranaceous foot-stalks ending in two lobes.* Angelica Virginiana foliis acutioribus, femine striato minore, cumini sapore & odore. Mor. Hist. 3. p. 281. *Virginia Angelica with pointed leaves, and a small channelled feed, having the taste and smell of Cumin.*
3. C I C U T A (*Bulbifera*) ramis bulbiferis. Lin. Sp. 367. *Hemlock, whose branches bear bulbs.- Ammi foliorum lacinulis capillaribus, caule angulato.* Flor. Virg. 31. The first sort grows naturally in standing waters in many parts of England, so is never propagated in gardens * for unless there is a considerable depth of

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standing water for the plants to root in, they will not grow. I have several times transplanted these plants into ponds, where they have grown one summer, but have not continued through the winter.

It grows near four feet high, with a branching hollow stalk, garnished with winged leaves. The stalks are terminated by umbels of yellowish flowers, which are succeeded by small channelled feeds like those of Parsley. It flowers in June and July, and the feeds ripen in autumn.

The second sort grows naturally in North America, from whence the feeds have been brought to England, where the plants are preserved in botanic gardens for the sake of variety. This is propagated by feeds, which should be sown in autumn in a shady border, where the plants will come up in the spring, and require no other care but to keep them clean.

The third sort is a native of North America. This is sometimes preserved in botanic gardens for variety, but being a plant of no great beauty or use, is seldom allowed a place in other gardens. It is propagated by feeds, which should be sown in autumn, and the plants afterward treated as those of the second sort.

C I C U T A R I A. See LIGUSTICUM.

C I N A R A. See CYNARA.

C I N E R A R I A, Sea Ragwort.

The CHARACTERS are,

It has a simple empalement, composed of many small equal leaves. The flower is radiated. The disk is composed of many hermaphrodite florets, which are funnel-shaped, cut into five segments at the top -, these have five slender stamina, crowned by cylindrical summits, and an oblong germen, supporting a very slender style, crowned by two erect stigmas. The germen afterward becomes a narrow four-cornered feed, covered with downy hairs. The female florets which compose the rays are tongue-shaped, indented at their points \ these have an oblong germen with two styles, and have feeds like the hermaphrodite florets, which are included in the empalement.

This genus of plants is ranged in the second order of Linnaeus's nineteenth class, intitled Syngenesia Polygamia superflua, the flowers being composed of hermaphrodite and female florets, which are both fruitful.

The SPECIES are,

1. C I N E R A R I A (*Geifolia*) pedunculis ramosis, foliis reniformibus fuborbiculatis fublobatis dentatis petiolatis. Lin. Sp. 1242. *Ragwort with branching foot-stalks, kidney-shaped, orbicular, indented leaves upon foot-stalks.* Jacobaea Africana, hederæ terrestris folio, repens. Hort. Amft. 2. p. 145.
2. C I N E R A R I A (*Maritima*) floribus paniculatis, foliis pinnatifidis tomentosis, laciniis finuatis, caule frutescente. Lin. Sp. 1244. *Sea Ragwort with a Jhrubby stalk, woolly wing-pointed leaves, and flowers growing in panicles.* Jacobaea maritima. C. B. P. 131. *Sea Ragwort.*
3. C I N E R A R I A (*Jmelloides*) pedunculis unifloris, foliis ovatis oppositifolia, caule suffruticoso. Lin. Sp. 1245. *Ragwort with an underflimb stalk, oval leaves placed opposite, and foot-stalks with one flower.* After caule ramoso scabro perenne, foliis ovatis fessilibus, pedunculis nudis unifloris. Fig. pi.
4. C I N E R A R I A (*Othonnites*) pedunculis unifloris, foliis oblongis indivisis fubdentatis petiolatis alternis nudis. Lin. Sp. 1244. *Ragwort with oblong undivided leaves slightly indented, and foot-stalks with one flower.* Jacobaea Africana frutescens, crassis & fucculentis foliis. Hort. Amft. 2. p. 147.
5. C I N E R A R I A (*Tomentosa*) foliis pinnato-finuatis dentatis fubtus tomentosis, floribus paniculatis, caule frutescente. *Ragwort with finuated, wing-shaped, indented leaves, downy on their under side, flowers in panicles, and a Jhrubby stalk.* Jacobaea maritima latifolia. C. B. P. 69.

There are several other species of this genus than are here enumerated, but being plants of little use or beauty are omitted, as they are rarely cultivated in gardens.

The first fort grows naturally at the Cape of Good Hope. The root of this is composed of many small fibres; the (talks are weak, so trail on the ground, if they are not supported; but if they are will rise four feet high, dividing into many branches, garnished with roundish kidney-shaped leaves, circled on their edges; the flowers are produced at the extremity of the branches in small clusters, they are yellow, and in shape like those of the common Ragwort, which are succeeded by feeds, crowned with down.

This sort is easily propagated by cuttings, which, if planted in a shady border during the summer months, and duly watered, will put out roots in a month or five weeks; (boil after which it will be proper to transplant them into pots, because their roots are very apt to spread in the full ground; so when the plants are taken up, many of their roots are torn off, whereby the plants are endangered. This is also often the case of the plants in pots. When they are not often removed, their roots will shoot through the holes in the bottom of the pots into the ground, and the plants will grow luxuriantly; but when the pots are removed, and those roots torn off the plants are often killed thereby. As this plant grows naturally at the Cape of Good Hope, it is too tender to live through the winters in England in the open air; yet if it is nursed tenderly, it is very apt to draw up weak, and thereby is destroyed; therefore the illicit method to preserve it, is to make young plants annually from cuttings, and to place them in a common hot-bed frame in winter, where they may enjoy the full air in mild weather, but be screened from the frost, and in summer place them abroad with other of the hardier sorts of exotic plants.

The second sort grows naturally on the sea-coasts in some parts of England and Wales, in particular the arm spots, but in the South of France and Italy, it is very common. This hath many ligneous (talks, which rise two or three feet high, dividing into many branches, which have a white downy bark, and are garnished with very woolly leaves six or eight inches long, deeply sinuated, and jagged on their borders into many winged points; they are downy on both sides. The (talks which support the flowers are a foot or more in length, having two or three small leaves on each, shaped like those below, and are terminated by many yellow flowers growing in panicles. It is a common Raswort; these appear in June, July, and August, and are succeeded by feeds, which ripen the beginning of October.

This sort is also easily propagated by planting cuttings or slips of it on a shady border during the summer months, observing to water them duly. When these are well rooted, they should be planted in a dry rubbishy soil, where they will resist the cold of our ordinary winters very well, and continue many years, but in rich moist ground, the plants are often very luxuriant in summer, as to be killed in winter when there is much frost.

The third sort grows naturally at the Cape of Good Hope. This hath branching (talks, which are (hrubby, and rise from two to three feet high, garnished with oval leaves placed opposite: the footstalks of the flower long, naked, and support one blue flower at the top, whose rays are reflexed; these appear great part of the year, and those which grow in summer are succeeded by compressed feeds crowned with down.

This may be propagated by sowing the feeds on a bed of light earth the beginning of April, and when the plants are fit to remove, they should be part of them planted in pots, that they may be sheltered in winter under a hot-bed frame; the remainder may be planted in a shady border. In poor ground, where, if the winter proves favourable, they will live; but if they fail, those in the frame will be secured. It may also be propagated by cuttings, in the same manner as the first mentioned.

The fourth sort hath (hrubby branching (talks which

rise three or four feet high, garnished with oblong thick, undivided leaves, of a glaucous colour. The flowers are produced on branching footstalks, arising toward the end of the branches; they are yellow, shaped like those of the other sorts, but are rarely succeeded by feeds in England. This is easily propagated by cuttings any time in summer: the plants, when rooted, must be planted in pots, that they may be removed into flicker in winter, for they will not live abroad in England. It grows naturally at the Cape of Good Hope.

The fifth sort grows naturally on the sea coasts of Italy and Sicily. This has great resemblance to the second sort, but the (talks are more woody, rise higher, and do not branch so much. The leaves are broader, not so much sinuated, and are of a black green colour on their upper side. The flowers are produced in small bunches on the top of the footstalks, and are like those of the second sort, but are rarely succeeded by feeds; in England, nor are the plants so hardy, therefore, they should be flickered in winter. It is easily propagated by cuttings during the summer months, in the same way as the second sort.

CIRCEA. Lin. Gen. Plant. 24, Tourn. Inf. R. H.

[It is said to be so called from Circe, the vain nihil enchantress, said to have enchanted Lily lies and his companions, Boerhaave supposes it to be so called, because the fruit of this plant takes hold of peoples cloaths, and by this means draws them to it, as the enchantress Circe was wont to do by her enchantments.] Enchanter's Nightshade.

The CHARACTERS are,

The root is of the fibre of two oval concave leaves. - the flower hath two heart-shaped petals, which are equal and spread open; it hath two trefoil hairy fruit. - the fruit is of a yellowish green colour. - the germen is situated under the flower, supporting a slender joint, cream coloured, obtuse bordered stigma. The empagement afterward becomes a rough oval capsule with two cells opening lengthways each containing a single seed.

This genus of plants is ranged in the first section of Linnaeus's second class, in titled Diandria Monogynia, the flower having two stamens and one style.

The SPECIES are,

1. CIRCEA (*Lytetiana*) caule erecto, racemis pluribus. Lin. Sp. Plant. p. 155. Enchanter's Nightshade, with an upright stalk and many spikes of flowers. Circea lytetiana. Lob. Icon. 266. Common Enchanter's Nightshade.

2. CIRCEA (*A'pitia*) caule adscendente, racemo unico. Lin. Sp. Plant. p. 155. Enchanter's Nightshade, with an ascending stalk and single spike. Circea minima. Col. p. 2. 80. Enchanter's Nightshade.

The first sort grows naturally in shady woods, and under hedges, in many parts of England. This plant hath a creeping root, by which it multiplies greatly. The (talks are upright, and rise a foot and a half high, garnished with heart-shaped leaves, placed opposite, upon very long footstalks: these are of a dark green on their upper side, but are pale on their under side. The (talks are terminated by loose spikes of flowers, which are branched out into three or four small (pikes. The flowers are small and white, having but two petals, opposite to which are situated the two stamens. After the flowers fall away, the impalement of the flower becomes a rough capsule, inclosing two oblong feeds.

The second sort grows at the foot of mountains in many parts of Germany. It also grows naturally in a wood near the Hague, from whence I brought it to England. This sort seldom rises more than six or eight inches high, with a slender (talk, garnished with leaves shaped like those of the former sort, but smaller, and are indented with oil their edges. The flowers are produced on single loose spikes at the top of the stalks, which are smaller than those of the former sort, but of the same form and colour. These plants flower in June, and their feeds ripen in August; but they both multiply exceedingly by their creeping

roots, it is seldom kept in gardens, unless for the sake of variety.

If the roots are planted in any shady moist part of a garden, they will increase fast enough without any care.

CIRCULATION of the sap. See SAP.

CIRRI are those fine firings or fibres put out from the stalks of plants, by which some plants fasten themselves to walls, pales, or trees, in order to their support, as Ivy, &c.

CIRSIUM. See CARDUUS.

CISSAMPELOS. Lin. Gen. Plant. 993. Caapeba. Plum. Nov. Gen. 33. tab. 29.

The CHARACTERS are,

It is male and female in different plants; the male flowers have no empalement they have four oval plain petals and a wheel-shaped nectarium in the disk* with four small filamina joined together* crowned by plain summits. The female flowers have neither empalement or corolla* instead of petals* there is a large nectarium* whose membranes stand round the hairy oval germen* which afterward becomes a succulent berry* inclosing a single seed.*

This genus of plants is ranged in the twelfth section of Linnæus's twenty-second class, intitled Dioecia Monodelphia, the male and female flowers being on different plants, and the male flowers have four stamens, which are joined in one body.

The SPECIES are,

1. CISSAMPELOS (*Pariera*) foliis peltatis cordatis emarginatis. Lin. Sp. 1473. *Cissampelos with target heart-shaped leaves which are indented at their top.* Caapeba folio orbiculari, & umbilicato Uevi. Plum. Nov. 33. *Caapeba with a round* smooth* umbilicated leaf.*

2. CISSAMPELOS (*Caapeba*) foliis basi petiolatis integris. Lin. Sp. 1473. *Cissampelos with leaves having footstalks* and entire at their base.* Caapeba folio orbiculari non umbilicato. Plum. Nov. Gen. 33. *Caapeba with a round leaf not umbilicated* called Velvet Leaf in America.*

These plants grow naturally in the warmest parts of America, where they twist themselves about the neighbouring shrubs, and rise to the height of five or six feet. The first sort hath round heart-shaped leaves, whose footstalks are set within the base of the leaf, resembling an ancient target; these are hairy on their under side, and have pretty long (tender footstalks. Toward the upper part of the stalks the flowers come out from the wings of the leaves; those of the male plants grow in short spikes or clusters, and are of a pale herbaceous colour*, but the female flowers are produced in long loose racemi from the side of the stalks, and are succeeded by a single pulpy berry inclosing a single seed.

The second sort hath round heart-shaped leaves, which are extremely woolly and soft to the touch; these have their footstalks placed at the base between the two ears; the flowers of this come out in bunches from the side of the stalks, in the same manner as the first. The stalks and every part of the plant is covered with a soft woolly down.

The seeds of both these plants were sent me from Jamaica, by the late Dr. Houftoun, which succeeded in the Chelsea garden, where the plants produced their flowers for several years; and the fruit of the first sort were produced, but these would not grow, though they seemed to be perfectly ripened; but the plants grew at some distance from the male, so were probably not impregnated.

These plants are propagated by seeds, which should be sown upon a hot-bed in the spring, and the plants must afterward be treated in the same way as other tender exotics, keeping them constantly in the bark-stove, otherwise they will not live in this country.

The first sort is supposed to be the *Pariera*, whose root has been so much esteemed as a diuretic. But by a specimen which I received from the late Dr. Houftoun, under the title of *Pariera*, it should rather be ranged under the genus of *Smilax*.

CISSUS, WildGrape.

The CHARACTERS are,

It hath a small many-leaved empalement and four concave petals to the flower* with a large nectarium at the border of the germen* and four stamens the length of the corolla inserted in the nectarium* crowned by roundish summits. The germen is four-cornered* supporting a slender style the length of the stamens* crowned by an acute stigma. The cover of the flower afterward becomes a berry inclosing one roundish seed.*

This genus of plants is ranged in the first section of Linnæus's fourth class, intitled Tetrandria Monogynia, the flowers having four stamens and one style.

The SPECIES are,

1. *Cissus (Cordifolia) foliis cordatis integerrimis.* Lin. Sp. 170. *WildGrape with entire heart-shaped leaves.* Vitis folio subrotundo, uva corymbosa caeruleo. Plum. Gen. 18.

2. *Cissus (Sicyoides) foliis ovatis nudis fetacco ferratis.* Lin. Sp. 170. *Wild Grape with oval leaves which are jawed.* Bryonia alba geniculato, violas foliis, baccis e viridi-purpurascensibus. Sloan. Hift. Jam. 1. p. 106.

3/ *Cissus (Adda) foliis ternatis oblongis carnosis incisis.* Lin. Sp. 170. *Wild Grape with trifoliate leaves* which are oblong* fleshy* and cut on their edges.* Vitis trifolia minor corymbosa, acinis nigrioribus turbatis. Plum. Sp. 18.

4. *Cissus (Trifoliata) foliis ternatis subrotundis subdentatis.* Lin. Sp. 170. *WildGrape with roundish trifoliate leaves* which are slightly indented.* Bryonia alba triphylla maxima. Sloan. Hift. Jam. i. p. 106.

These plants all of them grow naturally in the island of Jamaica, and in some of the other islands in the warm parts of America, where they tend out (tender branches, having tendrils at their joints, by which they fasten to the neighbouring trees, bushes, and any other support, mounting to a considerable height.) The first sort produces bunches of fruit, which are frequently eaten by the negroes, but are chiefly food for birds and wild fowl, as indeed are most of the fruit of the other sorts, as they all grow in the uncultivated parts.

The plants are preserved in some of the European gardens, more for the sake of variety, than for use or beauty, as they rarely produce either fruit or flowers in moderate climates. They are propagated either by laying their flexible branches down in pots of earth, where they will put out roots in four or five months, or by planting cuttings in pots filled with light earth, which should be plunged into a moderate hot-bed of tanners bark, covering the pots closely with hand-glasses to exclude the outer air: the cuttings must be frequently refreshed with water, but not too much given at each time. When these or the layers are well rooted, they should be carefully taken up, and each planted in a small pot filled with light earth, and plunged into the hot-bed of tan, where they should constantly remain, being too tender to thrive in England, but with this care. Therefore they should be shifted into larger pots when it is necessary, and their branches must be supported with stakes, to prevent them from trailing over the neighbouring plants, and in warm weather the plants should have free air admitted to them daily. With this treatment they will thrive very well.

CISSUS. Lin. Gen. Plant. 598. Tourn. Inft. R. H. 259. tab. 136. [It is so called from *It/We*, or *TLurvU** Gr. Ivy, because its small femoral vessel is inclosed in a cysta, or little chest.] Rock-rose.

The CHARACTERS are,

The flower hath a five-leaved empalement which is permanent two of the middle alternate leaves being smaller than the other. The flower hath five large roundish petals which spread open* it hath a great number of hairy stamens, which are shorter than the petals* and are terminated by small roundish summits. In the center is situated a roundish germen* supporting a single style the length of the stamens* crowned by a plain orbicular stigma. The germen afterward becomes an oval clove capsule* homing in some five* and others ten cells* filled with small roundish seeds.*

This genus of plnnts is ranged in the first section of Linnau's thirteenth class. It is distinguished from the other genera of the class by having many flowers and but one style.

- The SPZCJES are,
- I. Ctijus (*P. lafisis*) arboidei: cr<s> exflipubiiis foiiis ovutis, petiolnis hii' liliis. 12a. Sp. 736. *Tret Hock-reft wjtb inial bava, wbofi feul-Jialis are hairy*, Ciftm mas major; folio ntcundiurc. j. R. 2. 2. *Grtafe mult Ctijus, er Bjxk-rt>ft, TvitJi 11 founder tetif.*
- 1. CISTL'3 *ijncaims*; arboreftens exflipulatb iViliis fpatularis tomentofi; rugofus, inferioribus baii vsginantibus corumii. Hort. Clifi'. 105, *l'рте Roit-reft isub fptt-taU-Jbaptb, wtwlfs, reugh Icavts, which arc joined at thir bafi.* Ciftus mas 2 folio ioiigiore incano, J. B.
- 3. CISTIJ (*Rrcviorjolios*) arbord'eens, foliLi ovitolan-ecuhU, b-fi coowb, birfuiis, rugofis, peduncuhs riorum lojigioribus. *Trtt Roct-roji with tuzl fpeor-foapd leaves, jwied at thir bafi, wkkb art hairy and r<W&, and lmtgr feoi-fialis < the fitr&trt.* Ciftu mas folio breviorc. C. B. T. 4C4.
- 4. CISTRUT (*Ijt/Uiiiuaaj ubmefixns*, folis ovatis, obtuiis, villuft, itihus iiovofii rugofis, nWibm amplioribui. *Urt* Rwi-rfti, with n'i, eblnfe, iniiiry leova., which arc nrmus and roitrb on their mdiTjde, and larger fi&xeri.* Ciftus mas Lulitunicus, felio amplifimo iteano. Touni. Init. 259.
- 5. CISTUS (*panialis*) arborefcni viltofus folib lanceolatis, vnaibus, bafi connacis, floribus fclilibui, ciliis huius*cutis. *H<trij-trn i gtenijpior-piaptd kruit joined at their liife, fiwers film rkti, and Jbarp -p&intfd aup&HmtKis.*
- CistiL-s (*ijJamfaiBs*) arborefcei cyrtipulatu-. folis lanceolatis, supra Levibiu, ptioi!'. bui coal; lantibuj. Hort. Cliff. *9td fcaem, Jmth > l'ivr stppn-fide, cud tic:>* • *jeiwiwg liif Sicaitit.* Ciftus hdaim i. C. %. P. 4^7.
- 7. CISTIJ (*fit&ijiu*) otwefeem citdipulatus foiiis ovatulan-ecolwis tomentofij inciuiis, fdTdbus fubirincmk. Sauv. Monfp. 150. *Trw RttJ-s-reft <xtib ovid, fpcxr-jbitpcd, moth WJ <, filling ihk la tic JlsUu,* Ciftus niai folio ub'longo iucaiu. C. B. 1'. 464.
- S. CIST' < l' arborefcu xftijuhutiis, foiiis ovit., ioWii utanqoc hirfuui. Hurt. Cl. 202. *Reck-nfe* (folia) *fiaks.* Cilti (folia) IUVKU, fupiaa humilparla. C. B. 1'. 466.
- 9. CISTUS (*ovatus*) arborefcens cxtipulatus, foliis fpatulatis, petiolibus encrivw fi>ofi», c.iiyctnis Un-iiMhrsfe ui. li OVIII! *foot-jiath,* Ciftus lalanica Ciftus flava purpurea. O. Cor. *Ijmtbapurpitfa*
- 10. CISTUS (*obovatus*) fruticosus, foliis ovatis, terminalibus. *Sbrvih* Utis, l'ir. 115,11 *terminalibus.* *Sbrvih* *cleft to the irtuuies, ani flowtri trmitatug tk.* Qllusledoa foh: *clec and angustioribus.* C. B. P. 157.
- 11. CISTUS (*urifatifu*) arboretens cxiUpulatus foliis obkm^o c. uis, irinervia fupn giabris. *Trie kn<i:* *WJ, imwiif fit-* *fmeeth aiov, and ths fael-jb&i jrud* • *thir 'ift.* Cili n inns. C. II. 1*. *^longo-eor* *Tuticofo. I;* *l'olFr ty-*
- 12. CISTUS (*cordatus*) foliis lanceolatis, glabris, petiolibus longioribus, ciliis huius*cutis. *l'olFr ty-*
- 13. CISTUS (*linearis*) arborefcens, foliis linearibus, lanceolatis, serratis, ciliis huius*cutis. *l'olFr ty-*
- 14. CISTUS (*obovatus*) arborefcens, foliis linearibus, lanceolatis, serratis, ciliis huius*cutis. *l'olFr ty-*

albo, maculis punkinw in/i^niro. Toufn. Iab. R. 11. 20. *Sfiumj*, <j'kirt-i<jritu& Ciftus with *raibic fit* *fpoltsA v)ith purth,*

- 15. CISTUS (*PipulifoUus*) arborefceni cxitijmsuus, foliis cordaiis liti'ibus acuminaris pctiolatis. H^n. Clifi 205. *9>M Ruk-rofi viith btort-Jliitpcd fmsdlt itovt, bavi*g fwt-falfo.* Ciftus lakin foiiis uouli ni; mnjor. C. 15. P. 467.
- 16. CISTUS (*ovatus*) arborefceni nrttipulaiui, foliis lanceolatis, serratis, ciliis huius*cutis. *l'olFr ty-*
- 17. CISTUS (*linearis*) arborefcens, foliis linearibus, lanceolatis, serratis, ciliis huius*cutis. *l'olFr ty-*
- 18. CISTUS (*obovatus*) arborefcens, foliis linearibus, lanceolatis, serratis, ciliis huius*cutis. *l'olFr ty-*

L iii us folki kdimi longiuri-

These plants all grow naturally in the fyvid of Prance in Spain, and Portugal, from whence their seed have been brought to England, where mod of the sorts are OK cultivated in the nurseries for f3k. The first has a strong woody stem, covered with rough scurf, wkh rises three or four feet high, riding into many brandies, (o a) to form a large bushy head. The leaves are oval hairy leaves, placed opposite, and the flowers are small, and the fruit smaller leaves of the same shape, and the flowers are produced at the end or in the middle of the stems, four or five (landing together, abioft tann of in uinbd, but nrely mare than one is at the lime time; these are surrounded by five large romidilli petals of A purple colour, which is the Role, having a grc3f number of stamens, surrounding the ovj gernicn in die center, terminated by small, ratmdith, yellow funimie; these flowers are bvic or (hort duration, generally falling off the day they expand; hut dicre is a succession of fresh flowers every day for a considerable time. After the flowers are part, the germen l wells to 1 oval lucil-vcllr!, fitting in the cm pa I emeu t, which is hairy, ihcfe capful" liave ten cell), which arc full of froal rauntliih feeds. This fiili flowers in Mai and June, and the l'cdi riptn in Hl' and i there h Kencrally mott fiowrs produc^ in September* and October, in the autumn proves favours • I, imd where the plant is not protected from frost, they frequently pwdu flowers all the winter li ifon.

The second sort differs from the first in the l'hytc of tile lea vis, which are longer and whiter; thoe on the lower pun of the brinthes are oval, and join at thir biff, furrounding the itaiks, biL the upper leaves arc (pear-lhaptil and tutliiu, the flowers are larger, and of a darker purple colour. This flowers and seeds ripen at the same time with the first. The third sort differs from both the former, in having fluyter and greener leaves which arc joined at then base, and are hairy. The fourth sort differs from the former in having longer leaves, and the flowers are smaller, but of a deeper purple. This flowers and seeds at the same time with the first. The fifth sort differs from the former, in having rounder leaves, either of the former, which, are hairy, and smooth on their upper side, but rough, imd full of veins iin their under side, the branches are white, hairy, and the (lowers air very large, and of a light purple colour. This sort grows at the (tax time with the fanner.

The fifth sort doth not rife fo high as either of the former, hut fends out branches near the root, which are hairy and ttt&f g>miOied with fpear-shaped leaves, of it dirk green colour, whitn join at the base.

C I S

...l. lurrDitding the (talk. At cich joint comes
i very Dender branch, having thnr pair of [mill
leaves (if the fame thin e with the other, terminated
by a Cm'Ac Rower; dks ends of the b nches have
three or four Bowers fitting dole *ithout foot-ftlka.
The iViwersarc of a il«p purple colour, and like
thoie of the firfl. Thb flowers at the lime time widi
the other forts.

Tlw iixdi fort riles to thv height of five or fix feet,
witli afrong wn • y flalk, fending out many hairy
branches, garnilhrriiviih tjicar-iliajvd leaves, imooth
on their upper fidi¹, bitt veined on thcir under, iaving
ftinri • flalks, which join at their bife, where they
form a fort of (heath to thi: branch. The flowers
come nut at the end of the bninchd, which are large,
of a light purple colour, and refcmbling iliofe of the
fourth fort.

Tlit- levemh fort hadi cteil branches, whkh come
out frin the tower part of the (talk, and arc woolly;
the end of the brandits, v.hich are of a bright purple
colour, ancl Urge. This flowers at the Lime tint
with die other lorts.

Theti"hi:i fciooth Eblk, fl
with a brown bark, which covers this more than
feet high, fending out many horizontal weak, but
which fpend wide, garnifhed with small oval
leaves, which are hairy, ftanding upon flavr foot-ftalks,
which come out at the wings of the leaves;
the flowers are produced at the end of the brandits,
which are of a bright purple colour, ancl Urge. This flowers at the Lime tint
with die other lorts.

I point-wliat fmlller ihan tlioi¹ of tl« oilier lorts. This
Bowen m June, JiiJy, ai

The ninth fut grows umnUly in the ilkntls of the
Archipelago j this is the pi¹ which produ¹ the
labi¹ hereafter mctuionccl; itrifea three
or four feet high, with a woody flalk, fending out
many lateral branches, covered with a brown feark,
gain. The leaves are broad, fpear-shaped, hairy
above, and have long foot-ftalks; they are of a deep purple colour, and
the furfuji- i lower*
i liurt hairy
abi) the fir of a fngle flalk; thals a ipMriaJone
and July.

The tenth fort riles with a flubby flalk about four
feet high, the branches are very hairy, glutinous,
and are garnifhed with long, narrow,
hair, leaves, ending in points, of a deep green on
both fides, having a deep longitudinal furrow on their
upper fide, made by the midrib, which is pro-
minent; the flowers ftand upon long foot-ftalks at the
end of the branches, which are of a pale fulphur colour,
having a bordered empalement, which is cut into
five acute parts at the top. This flowers in June,
July, and Auguft, and the feeds ripen in autumn.

The eleventh fort riles with a ftrong woody flalk to
the height of five or fix feet, fending out many erect
branches, garnifhed with fpear-shaped leaves
in points; thefe are thick, white on their under fide,
and of a dark green above, and very glutinous in
warm weather. The flowers are produced at the end of
the branches, upon long naked foot-ftalks, which
branch on their fides into feveral foot-ftalks, each
bearing one large white flower, having a hairy
empalement. This fort flowers in June and July.

The twelfth fort riles with a flubby flalk
four or five feet high, fending out many flender
lignous branches, covered with a flmooth brown bark,
garnifhed with oblong fpear-shaped leaves, which are
broad, and have long foot-ftalks. The flowers are
produced at the end of the branches, ftanding upon
pretty long foot-ftalks; they are white, and appear
in June, July, and Auguft, but rarely produce any
feeds in England.

The thirteenth fort riles with a flender flubby flalk,
from three to four feet high, fending out many

C I S

bnwclies from the borrm itjward, which arc hairy,
garnifhed with l'lx;ir-)ilipcd leaves, of a very dark-
green colour, having three bnj radial veins in each,
mU ii' warm weather. Are covered with a CIUL
fweet-fented fublante, which exfudes from i
ports. Th* flom is •; at the end
O) Lhc branches, arc long, raked, (ant) iuftain many
white Howers, riling above each oilier-, their em-
jialeinents are bordered, and end in [harp points.
This flowers at the fame time witli the iit men-
uorred.

Tiie fourteenth fort rifa wkh a wotriy ilem to the
height of Bve or Gx fett, fending otic many flce
branches from the borrm, the flalk is le length; thefe
are fuprvnh, covered witii a reddilh brown bark, ^r-
mjlu'ii *ith narrow fjicar-diaped leaves, whitilh on
their undtr fulc, of a dork (green above, having ih
long radial veins. The ilowers arc produced at the
end of the brandits, on Ihnrt f • flalks, and arc
compoiid of Hvc very larpi", rouutiitih, white ; petals,
each having a large purple fpot at their baf. The
whole plan) exfui is a fweet glutinous Jubilance in
warm weather, which hath a very drong bilfami-
icrnt, fo as 10 perfume ihe circumambimt air to a
great ditlanctr. This flower in June, July, and
Auguft.

There is a variety of thi with white flowers, ;iving
no purple fpts, which is in all otlwr refpects the fame
with this.

The fifteenth iort hath a fliff, (lender, woody fUtk,
which fends out many branches of •• whole length, and
rife to the height of fix or feven feet; the leaves are nit-
tear-shaped, and of a light green colour;

the flowers are produced at (he end of the branches
upon naked foot-ftalks; they are white, and foon drop
on. Their flower-vin Junt and July, and is at j
pretty rare in the tngldh pirdens.

The iittecmb fort hath weak, flender, woody branche?,
which fjiead horiionally, to fiddum rife more
than two ot tine. The flalk is four feet high, garnifhed with fpefr-
QMPed hairy leaves, which are iniknted on their
upper fides, and have thin longitudinal veins mnting
through the middle of the flalk; the flowers are white, coming
out upon naked foot-ftalks from the wings of the leaves,
and are fucceeded by round white berries, which are
leaving irvcnl cell., and with fliff foot-ftalks. This
flowers in June ami July, and the feeds nXN in An-
gull and September.

The fiventeenth fort hath 3» upright flirubby flalk,
which riles four or five feet high, fending out many
branches from the erect upward, to a K» form *
large hum. The branches are dmncHcil and hoiry.
The flalks are oval, (landing upright i thofe on the
lower part of the branches have tooi-ftstks, but u¹
ward they become a ilieir bafe, and ihround the
ftalk; the lire very white. The I of flalks i" the
(lowers which rife at the end of the branch*. are a
flalk in length, naked, hairy, ?M put out two or
four ftioner foot-ftalks in the lide, each fupporting
three or four fluwms. The (lowers are larg, of a
bright yellow colour, but of Jhortd
pahincjils art- liair,¹ and Iharp-pointed. This flowers
in Juiw and July, and at prefer* hbot in few EngVifh
gardens.

The eighteenth [bit hath been long preferred in rlw
English gardens; this riles with a Iknder woody
flalk three or four feet high, fending out many
flender branches, garnifhed with narrow, fpear-shaped,
hairy, wad leaves; from the wings of the leaves
come out Iknder branches, which I have two or three
pair of flalk leaves, fupported by loolc bum. The
flowers are of a dirty fulphur colour, and appear in
June and July, but arc never fucccedrd by feeds in
this country.

This fort will not live abroad in the winter, fo is
always placed in a green n-lnjiilv, wlietr, by its hmr>
leaves, wbkh continue all the year, it makes > vi-
tary.

All the various kinds of *Cistus* are very great ornaments to a garden; their flowers are produced in great plenty, which though but of a short duration, yet are succeeded by fresh ones almost every day for above two months successively; these flowers & many of them about the bignoni of a middling Roll, but single, and of different colour; in the plants continue their leaves all the year.

Their plants are all of them, except the soft, hard enough to live in the open air in England, unless in very severe winters, which often destroys many of them; so that a plant or two of each sort may be kept in pots, and sheltered in winter, to preserve the kinds; the rest may be intermixed with other shrubs, where they will make a pretty appearance; and in such places where they are flickered by other plants, they will endure the cold much better than where they are scattered singly in the borders. Many of the plants will grow to the height of five or six feet, and will have large spreading heads, provided they are permitted to grow uncut; but if they are ever trimmed, it should be only for as much as to prevent their heads from growing too large for their stems; for whenever this happens, they are apt to fall on the ground, and appear unprofitably.

These shrubs are propagated by seeds, and also from cuttings; but the latter method is seldom practised, unless for those sorts which do not produce seeds in England; these are the twelfth, seventeenth, and eighteenth sorts; all the others generally produce plenty of seeds, especially the whole plant which came from seeds; for those which are propagated by cuttings are very subject to become barren, which is common to many other plants.

The seeds of these plants may be sown in the spring upon a common border of light earth, where the plants will come up in six or seven weeks, and, if they are kept clear from weeds, and thinned out, they are too close, they will grow eight or ten inches high the first year; but as these plants, when young, are liable to injury from hard froil, then they should be transplanted when they are about an inch high, into small pots filled with light earth, that they may be removed into shelter in winter, and the others into a warm border, at about ten inches distance each way; those which are potted, must be put in a shady situation till they have taken new root; and those planted in the border must be shaded every day with mats till they are rooted, after which the litter will require no other care, but to keep them clear from weeds till autumn, when they should have a mat placed over them, that they may be covered in frost; in the spring, if they are in the pots, they may be removed into an open situation, if they have taken new root, where they may remain till the end of October, but during the summer they must be shifted into larger pots, and be frequently watered; in the end of October they should be placed in a hot-bed of straw to screen them from the cold in winter, but, at all times, when the weather is mild, they should be fully exposed to the open air, and only covered in froils; with this management, the plants will thrive much better than when they are more tenderly treated.

The above method is what the gardeners generally practise; but those who are desirous to have their plants come forward, should sow the seeds in a moderate hot-bed in the spring, which will bring up the plants very soon; but these must have plenty of air when they appear, otherwise they will draw up very weak; when the plants are to be removed, they should be each planted into separate small pots, and plunged into a very moderate hot-bed, observing to have plenty of air admitted to them every day in good weather, to prevent their drawing up weak; and by degrees they may be hardened, so as to be removed into the open air the beginning of June, and then they may be treated in the same manner as is directed for the other feeding plants. By the bringing

of the plants forward in the spring, in the first year they will grow to the height of two feet, or more, the first summer, and will bear many lateral branches, so will be strong enough to stand in the open ground in the spring, and will flower the first summer where they are sown; the flowers which are sown in the open ground, rarely flower till the year after.

The plants which are sown in the open ground, in the first year, are to be removed into the open ground in the spring following, and to be planted in the open ground, with all the earth preserved, and planted in the places where they are to remain (for they are bad plants to K: old.) observing to give them now and then a little water, until they have taken fresh root; after which time, they will require no farther care than to train them upright in the manner you would have them grow; but those plants which are sown in the open ground, should be covered over, and covered with mats in cold weather, during the first winter, but may be transplanted the following spring. In moving these plants, you should be careful to preserve as much earth about the roots as you can; and if the plants are to be sown in a hot and dry soil, you may water them until they have taken fresh root; which will be in about two months time, when you may transplant them into pots filled with good soil.

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The fourth sort of *Cistus* is the most beautiful of all the flowers, which are as big as a large Rose, and of a fine white, with a deep purple spot on the bottom of each leaf. These plants are full of a sweet glutinous liquor, which exudes through the pores of the leaves in a plentiful manner in hot weather, that the surfaces of the leaves are covered therewith; this plant is thought to be gathered in great quantities in the mountains of Spain, where he law vast quantities of this shrub growing.

The fifth sort of *Cistus* is the most beautiful of all the flowers, which are as big as a large Rose, and of a fine white, with a deep purple spot on the bottom of each leaf. These plants are full of a sweet glutinous liquor, which exudes through the pores of the leaves in a plentiful manner in hot weather, that the surfaces of the leaves are covered therewith; this plant is thought to be gathered in great quantities in the mountains of Spain, where he law vast quantities of this shrub growing.

Mon. Tournefort also relates the same in his travels, where he says, that the shrub, which produces the ladanum, grows in the mountains of the Archipelago, and that he observed several of the country fellows in their itineraries and drawers, that were filled with the ladanum, which they had drawn out of the leaves of the shrub; he also relates, that he had seen several of the country fellows, who had taken the ladanum, and had kicked upon the leaves, which he supposed to be part of the shrub, which is the plant, which exudes through the pores of the leaves, where it remains till it is taken up, in which it is clear as turpentine.

When the shells are sufficiently laden with this ^reafe, they take a knife, and scrape the e clean off the ifraps and make it up into a mass of cakes of oilers; :-flzes; this is what comes to us under the name of ladamim, or labdanum. A nv.i that is diligent, will y, or more, whkh this work is r.ithi-r. Hi, btraufc it must be done in the hotted time o in the greatitcalm; and yet tht piirett Udanum is nut free from filth, becaofe illt? winds of the preceding dim have blown upon thrfc Ihrilbs. which, by the glewy fubfiance u;vm the furfuts of the k: .l and mixed therewith. But to add weight to this d it up with a very fine blackifh l. which is found in thofc parts, as if nature hcr- Do teath them how to adulterate this commodity. It is noeafy thins; to difcover thkeheat, when I the Und has been well blended with the ladanumi in order to which you must chew ir fur time, to find whether it crackles between the teeth* and if it doth, you mull firft difflbvc it, and then (train it, in order to purify away what has been added l.

CII II UtKXYLUM. Lin. Gen. Plant. U7S. Fiildh'-wood.

TheCFjAR^CTiRS arc, The rmpaimrttt nf tbt firwer is bell-Jhaped, of one leaf, indxl/din five parts. The flower is sf em leaf, funnell shaped, divided at the top inst five equal parts, 'xbi(b fprend epts. ft bslb fear jtamixa which adhere la the tube, tvxt of than being longer tbaa tbt etbr, terminated by clr'sng jwnnati "asilb (we hbet. l> tbt etHter ii ft- isated the rcundijh germtit, fuppert:ng a JImdr Jlyt*, ertwined by an nhttfje dmtble-besded Jligina. Tie gertnen afterxard bitomts J copfult vn'lb t-um (ells, toA having uftegle feeJ.

This genus of plants is ranged in the fecond fction of Linn. s's fourteenth dkii, intitld Didynarnb Augiolpermtai the plants of this lection have two kwig, and two ihort It.imiru, and the feeds are included in a capl.

The S'SCIKS 3TC. I. CirtAtt.EXVLOU (Citrexm) ramis anguktis, foliis "OvatO-lanccolatis vcnts candicantibus. Fiuidt-wccdtaiib emiiler br'n^hes, and oval fptir-jbapcd leaves, having wliVe vans. C'ithawxylutn arbor laurifolia Americana, -j-mvenit latin candicanribus. Pink. Almag. 10K. Fiddlt-tzwd with mal fpinr-futped leaves, which are iirt! h threes, angular branches, end fvxers gr^wixg in lcojg btatcbs. This is tbt tomnton



i. CmuvnacYJHU [Albtm] foliis oblongo-ovatis, integris oppoGti?, ramis nnKULiitis, flonbus fpicatis. Meng, ovijf, entire leaves growing opposite, angular tmtbts, and flwtrs growing in fpikes. Berberis afrulu wccifera, racemofa, foliis integris obrulis, (lore albo penta)etalo odoratidimo, fruSu nro mnyjrt-no. Sloan. Cat. Jam. -wefit/, orFiMit-vxti-

The firft fort grows coalman in moA of die iflands in the Wd Indies, where it rife to a great height, and becomes a ray large timber-tree -, the wood of which is great!; ur buildings, being very durable.

This haih an upright trunk fifty or fifty fc< high, ing out branches on every fide, which ha ve I logics, or ribs, running longitudinally, garniticJ by three oval fpcar-Shaped leaves at every joint, (landing in a trisngle, upon flwrt fuoi-ftalk*. The ITSVM arc almuc four inches long, and one or two broad, of a lively green colour, pretty much notched on their edges, ivtng fiverAl deq running from the miJrib to the cdegi, which i a whole colour on their upper fide, mdverr prominent ort thrir under. "I he flowers come out from the fides, and alfo at the c, of the br iches, Ill loole bunches, which sre fuccerJed by fniial pulpy berries, indofmg two fi*k iii each.

The feconU fort is a native of the fame iflands with

the firft. This li alfo a very large tree, whole lim is greatly valued iii America, for build: being very durab'i-s and from thence I have been l -most the y -ntfi gwe it ihe title of Fidelte-wood, which the Engliib have rendered I-iddle-wood v and fome hive fuppofed that the wow! was ufed for making thole n'lilical intrumenti, -which h a great miltake, I hii tret ril'ts with a ilrong upriglic trunk to the Jvtgthi of fixty f<t or more, lending out many angular branches, {landing oppofite, which arc covered with B loofc whitilh baric, {tmm whence the inhabitants giw ittite name of white I-iddle-wowl., narnilhed will: <vi) oblong leaves, Handing epiKifite, on ihort fiiof-filks; [hcic ire of a lucid green, and are rounded ax tlicir ends. The flowers comeout in long loofc spikes, toiv^rd the tnd of the branches, which are white, and fmcll very fwct l thefe aft followed by Im all, roundifli, puljiy berries, each inclofing a Jingle Iced. The (infc fort hath In-en long pri:Jervid in fomc of the curious gartlens in England, for tlic falte of variety. The leaves continuing through the year, and being of a fine green colour, make a pretty variety in the itove during the winter feufbn: this may be propagaictt either by feeds, or cuttings; the latter is the ufual method in England, where the lccds arc not produced; but when feeds can be obtained from abroad, the plants whitth rife from them are much better than thofc railed from cuttingj.

The feeds of this fort Jhould be fown in ftmall poo early in tht fpring, and plunged into an lrdh hot-bed t? tanners bark, and treated in (lie lame manner as other exotic feeds, which are brought from hot countries. If die feeds are fresh, the plan's will appear in fix or feven weeks, and in about 0 h more

will be fit to rranfplant; when th' the Jibnts Oioukl be carefully Cepantod, or break of iturir roots, md each p pot filled with light fresh earth, the hot-bed again, obferving to (h have taken fresh root; alter which they (hould a large fhare of air admittcd to them in -wam weak and mifVbc frequently w.itercd-, in autumn the plains ihmild be removed into (he bark-Hove, where ir will be proper to keep them the iirt winter, till the here obwned Aicugtli) dien they may be afercra kept in a dry dove in winter, and in the middle lummer they may be cxfiated in the open air for iwo or three month*, in a warm ikuaimi, with which management the plants will make better progrcii than when they are more tenderly treated. If the cuttings of ihcf j plants are p iptediafaullpou during the funimr months, and plunged ijiti a niot^ran; hot-bed, they will uike root, and may afterward be treated in ihe lame manner as thefeeding plants.

The leeds of the itcond fort were lent me by William Williams, lifqj from Jamaica, which havt fuccceded in the phyfc garden at CheHei *, but as the plants have not yet flowered, I cjin giie no 01 her si l of them, than wb -mentioned; howi thry lccm to be filt) of the firft f and make full as great piogrds. The Iri- of the fort continue ill tnc year, and having a glo colour, make a pretty appearance in l lcaibn,

CITRUS. Lin. Gen. Plant, B07. Citrexim. Tourn. Jnft- K. H. bio. tub. ^95, 300. The Citron-tree.

The CHARACTER arc, The tnpiditKihf cj the fozzer n t>fime kef, iwdattdm five pmSs. -The fixxet bulb fiye ctmg, ibi.t J'pread spat, end art a little minmie; it bab ten i:r. thret faditi si vlotjg fmmnit). The tvsigermeH center /upper!* a cylindrical fiylt, ertmmed bj a rftigma; the %ermea afterward b/tou OK I with a think jlejltx Hi a jkcadegit pklp^ Living many edit, Cueb containing raw oval bard feeds. Dr. Linnmcu'j hav joinwl the Aurantium ind Li men 10 thii genus, making them only different Ipct: of the faint genus; but ali the Tirictkl of Citron which

I have examined, have but ten ftamfru in their flow-
ers, whereas thofe of the Orange have more, fo that
they may be feparated on that difference; but Tour-
nefort adds, as a diftinguifhing chara&er to this ge-
nus, the appendix which grows to the foot-ftalk of
the leaf. However, I fhall not fo clofely follow Lin-
naeus, in joining thofe things together, which have
by all the writers on botany and gardening been
kept feparate, left I fhould render this work unin-
telligible to thofe who have not made botany their
ftudy.

The SPECIES are,

- i. CITRUS (*Medico*) fruftu oblongo, majori, mucrona-
to, cortice craffo rugofa. Citron with a larger, oblong,
pointed fruit, having a thick rough rind. Malum
Citreum dulci medulla. Fer. Help. 72. *The Sweet
Citron.*

- 2< CITRUS (*Tuberofa*) fru&u oblongo, cortice tuberofa
rugofa. Citron with an oblong fruit, having a rough
knobbed rind. Malum Citreum vulgare. Fer. Help.
57. *The common Citron.*

There are feveral varieties of this fruit, with which
the Englifh gardens have been fupplied from Genoa,
where is the great nurfery for the feveral parts of Eu-
rope for this fort, as alfo Orange and Lemon-trees ;
and the gardeners who cultivate them there, are as
fond of introducing a new variety to their colle&ion,
as the nurfery-men in England are of a new Pear, Ap-
ple, Peach, &c. fo that the varieties being annually
increafed, as are many of our fruits from feeds, there
is like to be no end of the variety of thofe, nor of
the Orange and Lemon-trees.

The fruit of the Citron is feldom eaten raw, as thofe
of the Orange, but they are generally preferred, and
made into fweetmeats, which are by fome perfons
greatly eftemed; and as thefe are kept till winter
id fpring, when there is a fcarcity of fruit for fur-
tiffing out the defert, they are the more valuable;
>ut unlefs the feafons are warm, and the trees are
veil managed, the fruit rarely ripens in England.
Some of the faireft fruit which I have feen growing
in England, were in the gardens of his late grace the
Duke of Argyle, at Whitton, where the trees were
trained againft a fourth wall, through which there
are flues contrived for warming the air in winter,
and glafs-covers to put over them when the weather
begins to be cold. In this place the fruit were as
large, and perfectly ripe, as they are in Italy or Spain.
The feveral forts of Citrons are cultivated much in
the fame manner as the Orange-tree, to which I fhall
refer the reader, to avoid repetition; but fhall only
remark, that thefe are fomewhat tenderer than the
Orange, and (hould therefore have a warmer fite in
winter, -otherwife they are very fubje&t to call their
fruit. They fhould alfo continue a little longer in the
houfe in the fpring, and be carried in again iboner in
the autumn; as alfo have a warmer and better de-
-ended fite in the fummer, though not too much
expofed to the fun in the heat of the day.

And as their leaves are larger, and their fhoots
ftronger, than thofe of the Orange, they require a lit-
tle more water in the fummer; but in winter they
fhould have but little water at each time, which
muft be the oftener repeated. The foil ought to be
much the fame as for the Orange-tree, but not quite
fo ftrong.

The common Citron is much the beft flock to bud
any of the Orange or Lemon kinds upon, it being
the fraiteft and freed growing tree. The rind is
fmoother, and the wood lefs knotty, than either the
Orange or Lemon; and will take -either fort full as
well as its own kind, which is what none of the other
forts will do: and thefe flocks, if rightly managed,
will be very ftrong the fecond year after lowing, capa-
ble to receive any buds, and will have ftrength to
force them out vigorously, whereas it often happens,
when thefe buds are inoculated into weak flocks, they
frequently die, or remain till the fecond year before
they put out; and thofe that fhoot the next fpring af-
ter budding, are oftentimes fo weak as hardly to be

fit to remain, being incapable to make a frait hand-
-fome fte;n, which is the great beauty of thefe trees.

C I T R U L SeePEPO.

CLARY. SeeScLAREA.

CLAYTONIA. Gron. Flor. Virg. Lin. Gen. Plant.
253.

The CHARACTERS are,

*The flower hath a two-leaved oval empalement, with a
tranfverfe baje: it hath five oblong oval petals, which
are indented at the top, and five awl-jhaped recurved fla-
mina, which are fhorter than the petals, terminated by
oblong fummits. In the center is fituated an oval germen,
fupporting a Jingle ftyle, crowned by a trifid figma. The
germen afterward becomes a roundifh capfule, having three
cells, opening with three ebjtic valves, and filled with
round feeds.*

This genus of plants is ranged in the firft fe&iqn of
Linnaeus's fifth clafs, intituled Pentandria Monogynia,
the flower having five ftamina and but one ftyle.

The SPECIES are,

1. CLAYTONIA (*Virginica*) foliis linearibus. Lin. Sp.
Plant. 294. *Claytonia with very narrow leaves. Orni-
thogalo affinis Virginiana, flore purpureo pentapeta-
loide. Pluk. Aim. 272.*

2. CLAYTONIA (*Siberica*) foliis ovatis. Lin. Sp. Plant.
294. *Claytonia with oval leaves. Limnia. A&. Stockh.
1746.*

The firft fort grows naturally in Virginia, from
whence it was fent by Mr. Clayton to England, and
received its title froiji him.

It hath a fmall tuberous root, which fends out low
(tender ftalks in the fpring, about three inches high,
which have each two or three fucculent narrow leaves
about two inches long, of a deep green colour. At
the top of the ftalk are four or five flowers produced,
ftanding in a loofe bunch, thefe are compofed of
five white petals which fpread open, and are spotted
with red on their infide; after thefe fall away, the
germen becomes a roundifh capfule divided into three
cells, which are filled with roundifh feeds. The flow-
ers appear in April, and the feeds ripen in June, fbon
after which the plant decays to the root.

The fecond fort grows naturally in Siberia. This la
a low plant, feldom riling more than two or three
inches high; the root is tuberous, fending out three
or four oval leaves * the foot-ftalk of the flower arifes
immediately from the root, fuftaining two or three
fmall white flowers of the fame fliape with thofe of
the firft fort, fo make but little figure in a garden.

The plants are both propagated by feeds, and alfo
from offsets fent out from the roots: the feeds fhould
be fown upon a fhady border of light earth, or in
pots filled with the like mould, foon after they are
ripe; for if they are kept out of the ground till
fpring, the plants will not come up till the next year;
whereas thofe which are fown early in the autumn,
will grow the following fpring, fo that a whole year
is gained. When the plants come up, they will re-
quire no other care but to keep them clean from
weeds, and in the autumn, if fome old tanners bark
is fspread over the furface of the ground, it will fe-
cure the roots from being injured by froft, which, if
i: fhould prove very fevere, might injure the young
plants, but in mild winters they will not require pro-
tection.

The beft time to tranfplant the roots is about Micha-
elmas, when they are inactive -, but as they are fmall,
if great care is not taken in opening the ground,
the roots may be buried and loft; for they are of a
dark colour, fo are not eafily diftinguifhed from the
ground.

CLAVICLE [Clavicus, *lat.*] a clafper or tendril.

CLEMATIS. Lin. Gen. Plant. 616. Clematitis.

C. B. P. 300. [K*ip<r2r, of K>^*, a twig or clafper,
&c. becaufe it climbs up trees with clafpers, like
thofe of Vines. Hence it is called Virgultum duc-
tile, Ranunculus obfequiofus; and alfo Antrogeno-
mene, and Flammula, as though producing a car-
buncle; for the leaves being bruifed, and applied to
the fkin, burn it into carbuncles, as it is in thepefti-
k-nee;

lence; and Flammula, because if brise leaf be cropped in a hot day in the summer season, and bruised, and presently put to the nostrils, it will cause a smell and pain like a flame.] Virgin's Bower.

The CHARACTERS are,

The flowers have no empalement^ they have each four loofe oblong petals, with a great number of stamina, which are shorter than the petals, and the stamens adhere to their side. They have many germen, which are roundish and compressed; the awl-shaped style, which is longer than the stamina, is crowned by a single stigma. The germen afterward become so many roundish compressed feeds* with the styck fitting on their top, and are collected into a head, the styles of the several species being of various forms.

This genus of plants is ranged in the seventh section of Linnaeus's thirteenth class, intitled Polyandria Polygynia, the flowers of this section having many stamens and several styles.

The SPECIES are,

- i. CLEMATIS (*Refta*) foliis pinnatis, foliolis ovato-lanceolatis, integerrimis, caule erecto. Hort. Cliff. 225. *Clematis with winged leaves, whose lobes are oval, spear-shaped, entire, and an upright stalk. Clematis five flammula fure&a alba.* J. B. 2. 127. *Upright white Climber.*
- %. CLEMATIS (*Integrifolia*) foliis simplicibus, ovato-lanceolatis. Hort. Cliff. 225. *Clematis with single leaves, which are oval and spear-shaped. Clematis caerulea, crefta.* C. B. P. 300. *Upright blue Climber.*
3. CLEMATIS (*Hifpanica*) foliis pinnatis, foliolis lanceolatis, acutis, integerrimis, caule erecto. *Clematis with winged leaves, whose lobes are spear-shaped, pointed, and entire, and an upright stalk. Clematis Hispanica fure&a altera & humilior flore albicante.* H. R. Par.
4. CLEMATIS (*Vitalba*) foliis pinnatis, foliolis cordatis, scandentibus. Hort. Cliff. 225. *Clematis with winged leaves, whose lobes are heart-shaped and climbing. Clematis latifolia integra.* J. B. 2. p. 125. *Climber with broad entire leaves* commonly called Viorna, or Traveller Jay.*
5. CLEMATIS (*Canadensis*) foliis ternatis, foliolis cordatis, acutis, dentatis, scandentibus. *Clematis with trifoliate, heart-shaped, pointed leaves, which are indented, and climbing. Clematis Canadensis latifolia & triphylla.* Sar. *Broad-leaved Canada Climber.*
6. CLEMATIS (*Flammula*) foliis inferioribus, pinnatis, laciniatis, fummis simplicibus, integerrimis, lanceolatis. Hort. Cliff. 225. *Clematis whose lower leaves are winged and jagged, and the upper ones single, spear-shaped, and entire. Clematis five flammula repens.* C. B. P. 300. *Creeping Climber.*
7. CLEMATIS (*Cirrhofofa*) cirrhofo scandens foliis simplicibus. Hort. Cliff. 226. *Clematis with climbing tendrils, and simple leaves. Clematis peregrina, foliis pyri incifis.* C. B. P. 300. *Foreign Climber with cut Pear-shaped leaves.*
8. CLEMATIS (*Viticella*) foliis compofitis decompositifque, foliolis ovatis, integerrimis. Hort. Cliff. 225. *Clematis with compound and decomposed leaves, whose small leaves are oval and entire. Clematis caerulea vel purpurea repens.* C. B. P. 300. *Single blue Virgin's Bower.*
9. CLEMATIS (*Alpina*) foliis compofitis ternatis ternatifque, foliolis acutis ferratis. *Clematis with compound leaves, whose lobes are sharply fawed. Clematis Alpina geranii folio.* C. B. P. 300. *Alpine Climber with a Cranes-bill leaf*
10. CLEMATIS (*Viorna*) foliis compofitis decompositifque, foliolis quibusdam trifidis. Flor. Virg. 62. *Clematis with compound and decomposed leaves, some of whose lobes are trifid. Clematis purpurea repens, petalis florum coriaceis.* Raii Hist. 1928. *Creeping purple Climber, with coriaceous petals to the flower.*
11. CLEMATIS (*Orientalis*) foliis compofitis, foliolis incifis angulatis lobatis cuneiformibus, petalis interne villofis. Lin. Sp. 765. *Clematis with compound leaves, whose small leaves are cut into angular wedge-shaped lobes, and the inside of the petals are hairy. Clematis Orientalis folio apii, flore ex viridi flavefcente, poste-*

rific reflexo. Tourn. Cor. 20. *Eastern Climber with a Smallage leaf, and a reflexed, greenish, yellow flower.*

12. CLEMATIS (*Sibirica*) foliis compofitis & decompositis, foliolis ternatis, ferratis. Gmel. *Climber with compound and decomposed leaves, whose small leaves are fawed and trifoliate.*
13. CLEMATIS (*Dioica*) foliis ternatis, integerrimis, floribus diocis. *Three-leaved Climber, with entire leaves, having three lobes, and male and female flowers on the same plant. Clematis foliis ternis.* Sloan. Cat. 84. *Three-leaved Climber.*
14. CLEMATIS (*Americana*) foliis ternatis, foliolis cordato-acuminatis, integerrimis, floribus corymbosis. *Three-leaved Climber with heart-shaped pointed lobes, which are entire, and flowers collected in round bunches. Clematis Americana triphylla, foliis non dentatis.* Houft. MSS.
15. CLEMATIS (*Crippa*) foliis simplicibus, ternatifque, foliolis integris trilobifve. Lin. Sp. Plant. 543. *Climber with single and trifoliate leaves, whose small leaves are either entire, or have three lobes. Clematis flore crifpo.* Hort. Elth. 86. *Climber with a curled flower.*

The first sort grows naturally in the south of France, Italy, Austria, and several parts of Germany, but hath been long cultivated in the English gardens for ornament. This hath a perennial root. The stalks are upright, about three or four feet high, garnished with winged leaves standing opposite, which are composed of three or four pair of lobes, terminated by an odd one, they are oval, spear-shaped, and entire: the flowers are produced in large loose panicles at the top of the stalks, these are composed of four white petals, which spread open; and the middle is occupied by a great number of stamens, furrrounding five or six germen, which afterward become so many compressed feeds, each having a long tail or beard fitting on the top. It flowers in June, and the feeds ripen in September.

The second sort grows naturally in Hungary and Tartary, but hath been long an inhabitant in the English gardens. The root of this is perennial, sending many slender upright stalks, from three to four feet high, garnished with opposite single leaves at each joint, having short foot-stalks; the leaves are near four inches long, and an inch and an half broad in the middle, of a bright green, smooth, and entire, ending in a point: the flowers come out from the upper part of the stalks, standing upon very long naked foot-stalks, each supporting a single blue flower, composed of four narrow thick petals which spread open, and many hairy stamens furrrounding the germen in the center. After the flowers are pail, the germen become so many compressed feeds, each having a tail or beard. It flowers and feeds at the same time with the former sort.

The third sort is very like the first, from which it differs in having pair but two or three pair of lobes in each leaf, which are narrower and stand farther asunder: the stalks are shorter, and the flowers larger.

The fourth sort grows naturally in the hedges, in most parts of England. This hath a tough climbing stalk, sending out claspers, by which it fattens to the neighbouring bushes and trees, and sometimes rises more than twenty feet high, sending out many side branches, so as often to cover all the trees and bushes of the hedge. This puts out many bunches of white flowers in June, which are succeeded by several flat feeds joined in a head, each having a long twisted tail fitting on the top, which is covered with long white hairs; and in autumn, when the feeds are near ripe, they appear like beards, from whence the country people call it Old Man's Beard. The branches of this being very tough and flexible, are used for tying up faggots; from whence, in some countries, it is called Bindwith.

There are two varieties of this, one with indented leaves, which is the most common, and the other hath entire leaves, but as these are supposed to arise accidentally from feeds, they are not distinguished by later botanists.

tlir fifth fon grows naturally in molt parts of fvorl America, from whence the fecht have twen brought r> Kuropr. Tins ii in its iirit appenmice very like tic hit tort, bur th* leaves arc brosrJer, and grow b) threes on the lame foor-ftalk, whereas chute of the former have five or Seven lobes in each leaf. The flowers appear at the fame rime with rite former, but the feeds do not ripen it) England, unV the feafon is very warm. There ts little beauty in chit fon.

The Mi forthaihahdimbirig flak like the fourth ; rhc lower leaves of this arc winged, and deepl on their ctUtta, but the upper leaves are [ingle, fpcar-shaped, and enure. The flowers of this fort arc U'hirc, and niiprar in June or July. This grow* naturally in the Jourh of France, and in Itjdy.

The ibvenrli for mirilly in Spain and Portugal. Thiis hath adimbm; li ilk, which will rift to the height of eight or ten feet, finding out branches from every joint, whereby it becomes a very thick bulhy plant; the lcm are fometimes double, at other times double, and frequently trifoliate, bcinz indented on their edges. Jiirle k^rp their verdure all the year: oppofiteto the leaves come out fppers, tvhii hatten themselves to i he neighbouring Dirthti, by which the branches are fupport&l, ottiCrwif: they would fall fo theground. The flowers ^reproduced from the fide of the branches j thec arc large, of an herbaceous colour, and appear ihs;)'s alout ilie wid of Dccomber, or beffinningaf January, which being a faubn wjen few perlbn s vifit gardens for information, thdb Bowers have ricped their notice, fo that many have Itippofnl thk Tort dotl not produce flowers in England; and the flowers being nearly the fame colour of the leaves, tliofc who have been more confant vilitors of gardens, hart' paffed by this plane, without noticing the flowers; but for many years rogettier, it hath produced plenty of flowers in the gar-3cn at Chcfica, and always at the rainrcnfon.

The feventh fort is cultivated in the nrrfery; fpeaks for f.,c, and ti known by the title (if Virgin's Bower. There are four varieties of ir which arc preferred in ihe gardens of the curious, and have been by fome trrected as fo many difinft ipecics j but ai their only difiotneet confifi either in thecojooi ofihdr Howera, or the multiplicity of their petals, they arc now only efteemed asfemii: al variations; but m th(-y ire iliftioguilhed by tlic nurlery-gardenurs, I (hall juft mentiou client.

- 1. Single hluc Virgin's Bower.
- 2. Single j:trj>lc Virgin's Bower,
- 3. Single red Virgin's Bower.
- 4. Double purple Virgin's Bower.

Thec have no difference in their Italics or kavtet, fo I hat tilt fame defcription will (it them all, excepting tlic colour or multiplicity of petals in their flowers. Tin-IbJks of ihcfe plants are very (ender and weak, bivin many jnils, from whence come out fidt lcafo, which arc again divided into fmal. If thcfe arc lupponct, they will rife to the height of r-^ht or ten ttcc, and arc garnifhed with comj winged leaves, placed oppofite at the joints. Thec beav ti out into many divilions, ca-h of which hath • fleidcr fiut-llalk, with three final! leaves, which are oval and tniire: from thrCtmejoint, generally four fbot-ftidks arifr, two on each fide i the two lower hive three of rhec <liv i i i i, re each com-PCted offline imalltcavrsorloheSi but the two uj^)cr haveonly two oppofite leavei on each, and b' woen thec wife three flendef foot-ftalks, each foppting one flower. The Howm have each four; rcale, which are nttfov at their bafe, but arc broad it the top and rounded: in one they afeof a dark woi n-out purple, in another blue, and lilt third of 3 bright purple or red colour. The double fort, which w common in the : English gardens, is of the worm-on ii purple colour: but the foreign crails ounmention double fiowm of both the other colours, which may probably be found in fome of their gardens s but as I have not icen ihcm mjfdf, I haw not noticed

them. T he double Bower, have no Jhin: germen, but in lieta of them, thew is a multiplicity of peilil, IF] :-i: sr- narrow, and turn inward' at the rop.

The plants grow naturally in the woods in Spain and Portugal, but have been long cultivated in the English gardens for ornament. They flower June iiiiid July, bu: i ripen feeds m EngEtmI, and,the double fort continues with end cf Auuiihl. The ninth fon grown in the Jie Alps, u: other mountains in Italy, I received it from mount Bald us.

where It growi in plenty. This hath a flender climbing talk, which rics three or four feet high, fupporting itfclf by latching to the neighbouring plants or (hrubi. The icam of this arc compofed of nine lobtt orfv.rili leaves, Van: <: (UnJing upon c^hfoot-ftalk, fo that it is what the forriKi write, - flie a nine-leaves i pbur. The flowers come out w the j>-: of the Ihlk, in rhr fame manner as the common Travellers Joy, wbkh arc white, fo mike no great appearance. This fort (towers in May.

The tenth fort groiv'i naturally in Virginia and Carolina, from both"; these countries I have reced "d die feeds. Thii hath many flender flalks, garnifhed with comiMund luingtd l«M at each joint, and are generally compofed of m(r leave), (landing by threes, it be tholi; ot tie tight It fort, but the fmal feaves or lubti of thii are nearly of s he*rt-fhape. The flowers of this fhnc! upon nSort foot-italkt, which come out from the wings oi the leaves, one on each fide thetalk. The flowers arc compofed of four thick p<ak, which are purple on llicir outside, aiid blue within. They appear in July, and if the autumn proves warn, the feeds .siU ripen in September.

The fcvenni fort was difcovered by Dr. Tournefort in the Levant, from whence he fent ihe feech to tlic myal gmdtn it Paris, whete they fuccceded and perfctterl letd fo that trol of the gatilens in Europe hjvc been tumillHrJ with the feah fram thence: this hwh weak climbing ilalk*, which fatten themiHves by their claffer, to ^ny pbnu or flirubs which ftand near tliem, and thereby rife to the height of fevenor eight feet, ^riiifltd with compound winged leaves, confiding of nine fmal leaves (or lobes) which aru angular and fhai; pointed. Thr lower^ come out from the winjp ul the leaves, which areof a yt-Ji-with grcen, and the ptwis aic reflexec! backwiud; they come out in April and May, and in warm ieafoni the fcils will ripen very well, il'he pi inn have a good fit it:.

The twelfth fort grows natural; in Sitjert.i, from whence the [cediwere fine rathe imperial garden at Penrfburgh, where they fuccceded and produced feeds, part of which were fent me in the year 1733. Thec grfw, and the JIJHW have flowered feveral year in tile ChellM ganlcn. I* liatl weak elimbbg flalks, which require Kippon, that rife from four to fix or eight feet high t the joints are fr nunder; at each <• thcfe come out two compound winged leaves, whoibfmal! caves of lobes are placed by threesithec are deeply fawed • at their edges, and terminate in fharp points. The flowers come om from tin; wings of the leaves fmgk ftanding upon long naked foot-ftalks, and aiv compofeirffiwr broad obtiie pi shs, which rced open in form of a crofi, of a whitish yellow colour. In the center is place! feveral germen, furrounded by a peat numbe of flamina, with flat comj L-fled tirttrmits, of the fane i colour with the petals of the Dower (after theft arc julV, the grnncn txcron? to many comprcted feeds, each having a bearded tail. It flitwec in February Mjrch am April, and the leedirpccil in Jul or Augul.

The thirteenth fort was first met from Jamaica by the Ute Dt. Houliout. This hath flender climbing flalks, which fiden themselves to the trees and tvTrutii which ftand near them, and thereby rife to the height of eight or twelve feet, garnifhed with trifoliate leaves, coming mil on each fide the flalk, the lobes are large, 01 sh, and entire, having three longitudinal veins. The foot-ftalks of the flowers are it tlie

same joint, close to those of the leaves, one on each side the stalk: these are long, naked, and jointed horizontally, extending beyond the leaves before they divide and branch; then there comes out three or four pairs of narrow petals, which are notched back, but the lamina all hand-reft,

Thji hath been by liirac perfons Cupped to be the fame with the com/no.. Travellers Joy, but some who have seen the PO plants cannot doubt of their being distinct species.

The fourteenth sort was sent me from Cimpeath by late Dr. J. Tournefort. This is a strong climbing plant, which falls themfeive by their clasping to the neighbouring trees. there by they are supported, and rise to the height of twenty feet or more, garnished at each joint by trifoliate leaves, which are heart-shaped, pointed, and entire. The growing stem is naked, bearing a pair of spreading foot-stalks, which rise from the wings of the leaves (they are white, and collected in bunches); these are succeeded by licks Jhaped like thole of the comon fart, but have a DS curling Uiriir. to card, which art finely fringed.

The fifteenth sort grows naturally in Carotin*) from whence I received the seeds in the year 1726. This hath weak stalks which rise near the ground, and their leaves fall themselves to the neighbouring trees, whereby they are supported. The leaves come out opposite at the joints, these are sometimes single, sometimes double, and some of the leaves are divided into three lobes. The flowers are small, and arise singly from the sides of the branches upon short stalks, which have one or two pair of leaves below the flowers which are oblong and bluish.

The flowers have four or five peals, like those of the common fart, their colour is purple, and their smell is sweet. The SOWCH in July, and the seeds ripen in Septenibur.

The three last sorts have perennial roots, which multiply yearly, but their stalks die away every year, and new ones arise in the spring, in which particular they differ from all the other species, therefore require different management, and are propagated in a different manner; the first give directions for their culture.

The second sort is propagated by cutting the roots into pieces of an inch or two long, and planting them in a bed of earth, which should be kept moist, and the plants will rise in the spring. The best season for parting the roots is in October or November, either just before they decay, or before they rise again in the spring.

They will grow almost in any soil or situation, but if the soil is very dry, they should always be watered in the autumn, otherwise their flowers will not be so large, but if the soil be wet, it is better to defer it until the spring. The roots should be cut through with a sharp knife, observing to leave an inch or two of the crown, and the pieces should be planted in a bed of earth, which should be kept moist, and the plants will rise in the spring. The best season for parting the roots is in October or November, either just before they decay, or before they rise again in the spring.

These plants are extremely hardy, enduring the coldest winters in the open air, and are very proper ornaments for large gardens, either to be planted in large borders, or intermixed with other hardy flowers in quarters of flowering shrubs, where, by being placed promiscuously in little open places,

they will up to the beginning of autumn, and are supported by the beginning of autumn, and often continue to produce fresh flowers until August, which renders them valuable, especially if they require very little care in their culture; for they may be suffered to remain several years without being cut down, where there is no want to part them, which will not in the least prejudice them.

The fourth sort is issued wild in several parts of England, growing upon the sides of banks under hedges, and extends its trailing branches over the trees, and shrubs that are near it. This plant in the autumn is generally covered with seeds, which are collected into little heads, each of which having, as it were, a tough plume adhered to it, hath procured the country people the name of OH Man's-hear. It is taken by Label and German, Vitorrt; and by Do-doivci. Vitis alba: it is native of the country people in the name of OH Man's-hear. It is taken by Label and German, Vitorrt; and by Do-doivci. Vitis alba: it is native of the country people in the name of OH Man's-hear. It is taken by Label and German, Vitorrt; and by Do-doivci.

The fifth and sixth sorts have no more beauty than the first, but they are both very useful for the Dike of viridity. They are both very useful for the Dike of viridity. They are both very useful for the Dike of viridity.

The seventh sort retain its larva all the year, which warden it is a great advantage. This was formerly preferred in green-houses in the winter, supposing it too tender to live in the open air in England; but now it is generally planted in the full sun, and the plants thrive much better in pots, and produce plenty of flowers, which they never did when they were more tenderly treated, nor have I found that the plants have suffered from severe frosts; for those which have been growing in the open air at Chelsea, more than thirty years, have withstood the greatest cold without coming to any damage.

This sort does not produce seeds in England, but is propagated by layers, and also from cuttings. If they are propagated by layers, it will be done in the beginning of the month of October, when the lame year only (should be chosen for the purpose) for the older branches do not put out roots in less than two years, whereas the new ones will put out roots in a good many months. The plants should be cut down into the ground, in the first year, and in the second year they will have two or three inches of root, which being cut off, may be injured by severe frosts; therefore these layers will not be taken from the following autumn, when they may be taken from the plant, and planted in a bed of earth, which should be kept moist, and the plants will rise in the spring.

When the plants are cut down by cutting, they should be planted in a bed of earth, which should be kept moist, and the plants will rise in the spring. The best season for parting the roots is in October or November, either just before they decay, or before they rise again in the spring.

These plants are extremely hardy, enduring the coldest winters in the open air, and are very proper ornaments for large gardens, either to be planted in large borders, or intermixed with other hardy flowers in quarters of flowering shrubs, where, by being placed promiscuously in little open places,

Season from the former part: for when they are bid in the autumn, their flooB are become t... fully pu; out roots amarttwo years; an... after tying... Juna in tie pftnmd, noc one in tirei > : them will have made good roots; so that many have supposed these plants were difficult to propagate, but since they have altered their season of doing it, they have found these layers have succeeded... Mtl :5 rlluk- of Ofiir pints.

The heftttmc fortying dwn the branches !s in the beginning it JuJ, fonn -liter they have nistde their first floooy, for it if, thai- young branches of the Time year, whi' i fivly !jkr root; but ai ti... are •verf i nides, thi' <• fiooth! he nrcut care raktn not to break them in the oper... therefore tiolc bntiu-hci from which these floooy were produced, llioult be k... brought down to the ground, and fastened VI pr.-vcilt :

... into the earth, with their tops raised upright, three or four inches above ground; and after the layers are placed down, if the surface of the ground be covered with straw, rotten manure bark, or other decayed matter, it will prevent the ground from drying, so that the layers will not require watering above thrc- 0... four times, which should not be at less than five (> six days interval, for when these layers have too much wet, the tender shoots frequently rot; or

... the young fibres are easily put out, they are so tender, as to perish by having much wet: therefore where the method here directed is practised, the layers wilt more rtr... take root, than by any other yet prt... A* molt of thtff... plants have climbing branches, they sh... be always planted where they may be supported, otherwise the branches will fall to the ground and appear unightly. In that order they are properly disposed, instead of being obstructed to a plant, they will become the reverse. Where there are ajours or fc... with trellis work round them, these plants are very proper to train up against it; or where any walls or other fences require to be covered titim the light, these plants are very proper to the purjwf; bur th... are by no means proper -or optn bonier!-, r,yr do ttry uwver ilw expectation, wnci they are intermhw with Hi rubs; tor mile! their brun... have room to ewtnd, thty will not be productive... of many II... Tire furl with iJoable flow.

... the most beautiful, so that it is preferred to those with double flowers, as they only should be planted for variety. They are all equally hardy, so are seldom injured by frost, excepting in very severe winters; when sometimes the very tender flowers are killed; but if thric are cut off in the spring, the stems *IJ put out new (hoou. The tenth, tieventli, ;od fifteenth sorts ^re also very hardy plants, and have climbing branches, so may be disposed in the same manner as the other: they are also propagated by layers, which will succeed, if performed at the same time, and in the same manner as is directed for them. The other sorts are natives of the vrarorf. ;arts of America, so will not thrive in this country, unless they are preserved in hives; but as these are great rarities and plants of no great beauty, they are seldom preserved in Europe, but in botanic gardens for the sake of variety. These may be propagated by layers, in the same manner as the other sorts; or may be raised from seeds, obtained from the countries where they naturally grow; but these must be treated in the same manner as other exotic plants from the same country.

CLEOME L. 1. Gc^, Plant. 740. Sinapiftrum. Tourn. Inst. R. 1. i. ;jt. tab. 116. The Characters are, The flower hath a four-lobed imbricatum which spreads open: it hath four petals which are indistinctly spread and spread open, the two lower being less than the other; in the ietrrm tbrtr art thru mlttr Jeforaldt fa lit twf... H. 1. :>fx »r nmrt I

The first sort grows naturally in Asia, Africa, and America; I have received the seeds of it from Aleppo, and the coast of Guinea, and in the earth which came from the West-Indies with other plants; this bush comes up as a weed. It rises with an herbaceous stalk about a foot high, furnished with smooth leaves, composed of five small leaves or lobes, joining at their base to one center, and spread out like the fingers of a hand. The leaves on the lower part of the stalk stand upon long foot-stalks, which are gradually shortened to the top of the stalk, where they almost join it: the flowers are produced in loose spikes at the end of the stalks and branches; these have four petals of a flesh colour, which stand erect, spreading from each other, and below these are placed the filament and style, which consist at the bottom, and are stretched out beyond the petals, where they spread open, after the flower is past, the germen which fits upon the style, becomes a taper pod, about two inches long, filled with round seeds. This is an annual plant, which dies soon after the seeds are ripe.

The second sort grows naturally in the Levant, from whence Dr. Tournefort sent the seeds to the royal garden at Paris, and from thence most of the botanic gardens in Europe have been furnished with it: this

... in the Levant, from whence Dr. Tournefort sent the seeds to the royal garden at Paris, and from thence most of the botanic gardens in Europe have been furnished with it: this

... which are incurved, having rising funnits fast to their stalk: it hath a single flou, supporting an oblong germen, which is of the same length as the funnits, and crowned by a short stigma. The germen afterward becomes a long cylindrical pod, fitting open at the top, having one cell, opening with two valves, and filled with round seeds.

This genus of plants is ranuwl in the JI-toitit] feSaaa of Linnæus's strength (this, named Tetrastemma Sidaquata, the plants of this section have in the flowers but long and two short funnits, and their seeds are included in long pods.

The Species are,

1. Cleome (Polemonia) floribus pyramidalibus, foliis quinatis caule terribi. Linn. Sp. 923. Grows with flowers having such and such parts, five lobes, and simple ll. ilb. Sii;^; arum Indicum, pentaphyllum, flore rubro, minus, non spinosum. H. L.

2. Cleome (Gratiopisoides) floribus hexandris, foliis ternatis, lobulis ovato-lanceolatis. Linn. Sp. Plant. 940. Grows with leaves having five funnits, ovate lobes, and four-angled stalk. Sinapiftrum Orientale, triphyllum, ornithogalli siliqua. Tourn. Cor. 17.

3. Cleome (Lappacea) floribus hexandris, foliis ternatis, lobulis linearibus, siliquis bisulcatis. Grows with flowers having five funnits, trifoliate leaves, narrow four-angled stalk, and pods having two valves. Sinapiftrum Linnæicum, triphyllum, flore rubro. Tourn. Inst. R. H. 151.

4. Cleome (Vicia) floribus hexandris, foliis quinatis ternatis. Linn. Sp. 141. Clam; with flowers having seven funnits, trifoliate and quadrifoliate leaves. Sinapiftrum Zeylanicum, triphyllum & pentaphyllum videlicet, flavo fere. Mart. Dec. 2.

5. Cleome (Triphala) floribus hexandris, foliis ternatis, lobulis intermedio majore. Grows with flowers having five funnits, and trifoliate leaves, which middle lobe is the largest. Sinapiftrum Indicum, triphyllum, flore viridato non spinosum. H. L.

6. Cleome (Eragrostis) floribus hexandris, foliis septematis, caule spinoso, siliquis pendulis. Grows with flowers having five funnits, leaves with three lobes, a prickly stalk, and hanging pods. Sinapiftrum Egyptianum, hi'pr. iplijllurn, in ramco, iiiijs spinosum. H. L.

7. Cleome (Spiraea) floribus quinatis ternatis, caule spinoso. Grows with flowers having five funnits, leaves composed of five oval lobes, and a prickly stalk. Sinapiftrum Indicum spinosum, flore caeruleo, hinc triudo vel quinquedo. H. 1. MSS.

8. Cleome (Mimosa) floribus hexandris, foliis simplicibus, petalis ovato-lanceolatis. Flor. Zeyl. 243. Grows with five funnits in the flowers, and five lobes, which are equal four-angled. Sinapiftrum Zeylanicum viciniam, folio linnario, flore flavo, siliquis terribi. H. 1. Tab. 117.

The first sort grows naturally in Asia, Africa, and America; I have received the seeds of it from Aleppo, and the coast of Guinea, and in the earth which came from the West-Indies with other plants; this bush comes up as a weed. It rises with an herbaceous stalk about a foot high, furnished with smooth leaves, composed of five small leaves or lobes, joining at their base to one center, and spread out like the fingers of a hand. The leaves on the lower part of the stalk stand upon long foot-stalks, which are gradually shortened to the top of the stalk, where they almost join it: the flowers are produced in loose spikes at the end of the stalks and branches; these have four petals of a flesh colour, which stand erect, spreading from each other, and below these are placed the filament and style, which consist at the bottom, and are stretched out beyond the petals, where they spread open, after the flower is past, the germen which fits upon the style, becomes a taper pod, about two inches long, filled with round seeds. This is an annual plant, which dies soon after the seeds are ripe.

The second sort grows naturally in the Levant, from whence Dr. Tournefort sent the seeds to the royal garden at Paris, and from thence most of the botanic gardens in Europe have been furnished with it: this

with an upright (talk about the fame lwU>ht as the firli, garnished with leaves coEnpofed of three (pear-lhaped lobe*, Handing upon lthon foot-ftalks; the flowers come out (ing!; frwh the Bk • of the (talks, and have (bur red petals, wlich stand In the lame form as thofe of the former fort: th-Jc art fucceded by (lenderpod? tv-o inches long, which fweli in every divifion, where each feed is lodged. : appear like joints, *s thoi;- do of" the Bira's-ibot Trts foil; when the feed* are ripe, the whole plant decays. If the feedi of this arr (own in autumn the plants will flower in June, and their feeds will rijjen in Auguft, but thofc which are fovii in the fbting do no: Rower nil July; fo that unleli the iijfun provet favourable, the tents will not ripen: if the feds of this fort are permitted to fcater, the plants will come •up without care, and require only to be thinned and kept clean from weeds, for t In-/will nor bear transf-

The third fort crows naturally in Portugal and Spain, from whence I have received the feeds. TI an hertraccouiftalk about a foot ;ind half high, (ending out a few fhort fide- branches, which IP with leaves compoied of three narrow leber, (landing upon lhorn foot-ftalks, The flowers come out fingly from the fidt of the (talks, arc of a deep red colour, anil arc fuccceded by "thick taper pods, filled with round frck This a an annual pant, which wfl thrive in the open air, and requires the fame treatment as the former.

The fourth fort grows naturally in the iflaml of Ceylon, from whence the feeds «we brought to Hoi Inn il, where they fuccceded, and the feeds were Tent me by the late Dr. Boer'. > feet high, fending our frveral title branches, garnished with leaves, fome of which have five, and others three round jib lobes ftand ina UJJOII fhnt luiry tbot-ftnlks. The flowers come out lingly it the foot-ftalks of rhc leaves, they are of a pale yellow, and are llicceded by taper pods between two anil thirc inches long, ending in a point, which are full of round feeds. The whole plant fweati our a viicous tbrnniy juice. This is alfo an annual plant.

The fifth lurt was fent me from Jamaica by the late Dr. Houftmntn, in the year 173d This ij ? ,n annual ant which rHes two feet high, (ending oi: many lc branches jMmifbfii with Ic'.es, with one large fp--lhaped lobe in the middle, and two very fmall ontfli- ••• Gt clofe to iihc branchei

ms come out fingly from die fide of the branches, m long fbot-lhjEs: theft have four largi >ured petals, and six long imina, which ftatid it beyond the peul-;: when the Sowers fade, rite •men vkhk fin upon the (tyle becomes a taper pod our inches long, filled with round feedi,

The filth fort was ten: me from Jamaica by the Intc Dr. HouJtoun, who ft". and it grows naturally there in great plenty, ft allb grows naturally in ypt. This riles with a flortg thick herbaceous Ik two feet and 3 half I , and ing into many branches, which are garnifhed wih leaves compofJ >ng fpear-flupid lobes, joining in a cTMter at their baft, ••• upon a long Ornder foor-fljlk: tuft below the iM-flalk comes out

two Jhurt, thick, yellow (pines, which 3re verj- (Hagi. 'Che flowers «ie fjut fingly from thf fide of the bnactirs, &rmin • long • jf, Ipifcc at t)ieir extrimi'-. this fpeal' • liath Single broad leav«, which half furround the (talk's at their bafe, fmm the bofom of which, come out the fbot-ftalkj of the flowers, which arc two inches long, each Juftaining a Urge fkh-crtloured flower, wlmfe ftylc and ftamtna are eKtfndei; two inrh« beyond the petals. After the flower is pft, the germrn, which lits upon the ftylc, becomes a thick taper }od (ive :. ••• which hangs donTiward, and u fillcil with riund feiU. This • an annual plant, which pertfhes foon nfter the feed* are ripe.

The fcvntti i>rr wj', lent me from the Ihvannah in w I; JI, by the late Dr. Houttoun. ;

The fevntti i>rr wj', lent me from the Ihvannah in w I; JI, by the late Dr. Houttoun. ;

The fevntti i>rr wj', lent me from the Ihvannah in w I; JI, by the late Dr. Houttoun. ;

olio rn annual plant, wlitdi rife near two fee. branching out on every i co/utxjkJ of five oblong 1 foot lBili-i, but thole m tht but tlute lobes, and II31' main ftilk and .iilil> the braithci, »to teroii lated by loofc jijikei of purple (iovcn, en' (lender foot-ft:dK, at die bale or' whiji is [UUllK ova] leaf! Trie :alks are armed with the (pines, which are ftitued jufl oodar the firx>t-

becoms a Mprt Dud, two inches lo'g, filled with round feeds,

The eighth fort grows naturally in Ceylon l d an annual plant, WIJLI rife witi an 1 a foot and hidf hi'h, gam; died v th long, na :row, fiugk leaves, (landing alternately oti the from the wings of the leaves come out the fhpt-ftdla r,C the fiowfti eacli fiiftaining a fngit: yellow flower, which h lncceeded by a very (lender dipcT pod.

All riefc plants except the fecond and Lliid lbel native? OI very wtm coootries, fo nJl ooi [In, England without anficial heat; thierfort their feeds uuifl be ibwn upon a good hot-bed in the lj and when the (i I ants are fit to rvniove, they fhould lie planted in feparate fmall pots, filled with irefli light earth, and plunged into a frelh hoi-hM- "H»™—

they have taken frelh root, after have air admitted to them every day m proportion ro the w.in.Kh of the liaion and their waimgi fhould be i but not ewn m too «« pJ,nty [when the plants have filled thec imaUpots with their roots, they fhould be er, and plunged again into a hot-bed July, when they are too bed, they fhould be re- free, where they may be in warm weather management the and perfect their feeds and third forts may be fown in the open borders o. he garden, where they are deligned to remain, for they do not require any artificial warmth.

may enjoy the fr,T ^ wI' h ^ in warm weather management the and perfect their feeds and third forts may be fown in the open borders o. he garden, where they are deligned to remain, for they do not require any artificial warmth.

CLEONIA, Portugai Self-heat c-nms

The CHAR... It hath a bilobated empainment of one leaf, which is trifoliate and angular; the upper lobe is broad, plain, and indented in three parts, the under is four and divided into five. The flower is of the grazing kind, with one petal; the upper lobe is oval and divided into two parts, the lower is trifid, the middle fegment having two lobes, the two lateral broad & round; it hath four flamina, the two lower being the longest, whofe outer tips of their filaments form a crefc. It hath four germes, feparating a flender gema, having four equal bristles; the germes four feeds, included in the hairy en-

This genus of pUnts is ranged in the rirl fifftioo of LiMaA fourteen* dah, Uded Did>TOmi G nopper,nta, the flower having two b g so that feeds filling in

his pUt gnwis naturally in Spain a«t Port , annual, perifl^ fca after ifhai ripe.LdH It w«formerly ranged under ihr TML of TMOAR fcrwwd tided i, cUpodiurn^nd father Barreher pja«d it with the Pruned "" Eenus it is nearh related.

It is propagated by feeds, which, when fown in the autumn the plants wii come up thefoi but th, feds which are fown in th jwntly lie in d* ground till the foll^viL & fomem^ till the n «t fpring brfoc tin te W^ the plant, come up an! phnt, l few of them may be planted totca bonier Where they may remain to produce their flowca and iwdi, ai they require but little culture l fo a few pUnu may be allowed to have place » Ihjall fmrden; where they «,ll nke much Voom. ®^

feLETHR A. Groni. Fl. Virg. 43. Lin. Gen. Plant. 489.

The CHARACTERS are*

The flower hath a permanent empalement of one leaf which is cut into five parts; // bath five oblong petals, which are longer than the empalement; it hath ten ftamina which are as long as the petals, and are terminated by oblong ereft fummits; in the center is fituated a roundifh germen fupporting a permanent erell ftyle, crowned by a trifid ftigma. The germen afterward becomes a roundifh capfule inclofed by the empalement having three cells, which are full of angular feeds.

This genus of plants is ranged in the firft fe&ion of Linneus's tenth clafs, intitled Decandria Monogynia, the flowers having ten ftamina, and one ftyle.

We know but one SPECIES of this genus at prefent, viz.

CLETHRA (*Alnifolia*) Gron. Virg. 47. *There is no Englifh title to this plants it is the Alnifolia Americana ferata, floribus pentapetalis albis in ipicam diipofitis. Pluk. Aim. 18. American Shrub with an Alder fawed leaf and white five-leaved flowers, difpofed in afpike.*

This fhrub is a native of Virginia and Carolina, where it grows in moid places, and near the fides of rivulets, rifing to the height of eight or ten feet, but in this country it rarely rifes to half that height: the leaves are in fhape like thofe of the Alder-tree, but are longer; thefe are placed alternately upon the branches: the flowers are produced at the extremity of the branches, in clofe fpikes: they are compofed of five leaves, are white, and have ten ftamina in each, which are nearly of the fame length with the petals, this plant flowers in July, and when the autumn proves favourable, there are often fome fpikes of flowers again in Oftober.

This is hardy enough to bear the open air in England, and is one of the mod beautiful fhubs at the feafon of its flowering; which is very little later than in its native country, being commonly in flower here by the beginning of July; and if the feafon is not very hot, there will be part of the fpikes in beauty till the beginning of Auguft; and as moft of the branches are terminated with thefe fpikes of flowers, fo when the fhubs are ftrong, they make a fine appearance at that feafon.

This will thrive much better in moift land than in dry ground, and requires a flickered fituation, where it may be defended from ilrong winds, which frequently break off the branches, where they are too much expoied to its violence. It is propagated by layers, but they are generally two years before they get root, fo that at prefent it is rare in England. The fineft fhubs of this kind, which I have yet feen, are in the curious garden of his grace the late duke of Argyle, at Whifton near Hounflow, where they thrive as well as in their native country. They may alfo be propagated by fuckers, which are fent out from their mots -, if thefe are carefully taken off with fibres in the autumn, and plained into a nurfery-bed, they will be ftrong enough in two years to tranfplant where they are to remain.

It may alfo be propagated by feeds, which muft be procured from the countries where it grows naturally, for the feeds are not perfected in England. But as thefe feldom arrive here till fpring, fo when they are ibwn at that feafon, the plants will not come up till the following fpring. Therefore the feeds fhould be ibwn in pots, and placed in a fhady fituation till autumn, then placed under a frame in winter -, the plants will come up the next fpring, and in autumn may be tranfplanted into a nurfery-bed, to get ftrength before they are placed to remain for good.

CLIFFORTIA. Lin. Gen. Plant. 1004.

The name was given to this genus of plants by Dr. Linnaeus, in honour of Mr. George Clifford of Amfterdam; a great collector of plants, and a patron of botanifts, who has printed a folio book of the plants in his garden, with feveral copper-plates, exhibiting the figures of many of the moft curious plants. We have no Englifh name for it*

The CHARACTERS are,

// hath male and female flowers in different plants: ihi. male flowers have a fpreading empalement, compofed of three fmaU, oval, concave leaves. It hath no petals* but agiat number of hairy upright ftamina, which are the length of the empalement, terminated by compreffed, oblong; twin fummits. The female flowers have a permanent empalement, compofed of three leaves which are equal, fitting upon the germen; thefe have no petals, but the oblong germen which is fouated below the empalement, fupports two long, fiender, feathered ftyles, terminated by a Jingle ftigma 5 the germen afterward becomes an oblong taper capfule, with two cells crowned by the empalement, including one narrow taper feed.

This genus of plants is ranged in the tenth fe&ion of Linneus's twenty-fecond clafs, intitled Dicecia Polyandria -, the plants of this fe&ion and clafs have male and female flowers on different plants, and the male flowers have a great number of ftamina.

The SPECIES are,

1. CLIFFORTIA (*Ilicifolia*) foliis fubcordatis, dentatis. Lin. Sp. Plant. 1308. *Cliffortia with hearUfhaped indented leaves. Arbutula Afr. folio acuto ilicis caulem amplexo rigido. Boerh. Ind. alt. 2.*
2. CLIFFORTIA (*Trifoliata*) foliis ternatis, intermedio tridentato. Prod. Leyd. 253. *Three-leaved Cliffortia, whose middle leaf is cut in three parts. Myrica foliis ternatis, intermediis cuneiformibus tridentatis. Hort: Cliff. 456.*
3. CLIFFORTIA (*Ruscifolia*) foliis lanceolatis, integerrimis. Hort. Cliff. 463. *Cliffortia with fpear-Jhaped leaves which are entire. Frutex /Ethiopicus conifer, fructu parvo, fparfim intra folia rufci, feminibus cylindracei?.*

The firft fort grows naturally at the Cape of Good Hope, but hath been long cultivated in many of the Englifh gardens; however it was not reduced to any genus, till Dr. Linnaeus eftablifhed this, and gave it the title. By fome former writers it was called Camphorata, to which genus it had no relation.

It riles with a weak fhubby ftalk four or five feet high, fending out many diffuled branches, which fpread out on eveiy fide, requiring fome fupport: thefe are garnifhed with leaves, which are heart-fhaped at their bafe, but broad at their ends, where they are fharply indented. They are very ftiff, of a grayifh colour, and clofely embrace the ftalks with their bafe, and are placed alternate on the branches; from the bofom of thefe arife a fingle flower, fitting clofe to the branch, having no foot-ftalk. Before the empalement is fspread open, it forms a bud, in lhape and fize of thofe of the Caper 5 this empalement is compofed of three green leaves, which afterwards fpread open, and then the numerous ftamina appear ftanding ereft; thefe, as alfo the inner furface of the empalement, are of ayellowifh green colour. The flowers appear in June, July, and Auguft, but the leaves continue in verdure through the year.

AH the plants which I have feen of this fort, either in the Englifh or Dutch gardens, were male, nor have I heard of any female plants being in any of the European gardens.

This plant is eafily propagated by cuttings, which may be planted in any of the fummer months 5 if thefe are planted in fmall pots filled with light earth, and plunged into a very moderate hot-bed they will foon take root, provided they are fcreened from the fun and duly watered; when they have taken root, they muft be gradually inured to bear the open air, to which they fhould be expofed, to prevent their drawing up weak: therefore they fhould be placed abroad till they have obtained fome ftrength, then they may be each tranfplanted into a feparate fmall pot, and placed in the lhade until they have taken frefh root; after which they may be placed with other of the hardy kinds of exotic plants in a fheltered fituation till October, when they fhould be removed into the green-houfe, or placed under a common hot-bed frame, where they may be fcreened from the hard froft, but

*noy the free air at all times when the weather is mild.

When the plants advance in height, their stems and branches must be supported, otherwise they will trail upon the ground. In summer they must be placed in the open air, with Myrtles and other hardy green-house plants, and in winter the plants may be treated in the lime matter as those, but must have little water in winter. This plant has endured the cold of our ordinary winters* when planted near a south-west wall without covering, but in severe winters they are always destroyed.

The second sort is a native of the same country as the first -, this hath very slender ligneous stalks, which must be supported, otherwise they will fall to the ground. These send out slender branches on every side, which are closely garnished with trifoliate leaves standing close to the branches -, the middle lobes of these are much larger than the two sides, and are indented in three parts. The flowers of this come out from the bottom of the leaves, having very short foot-stalks, and are shaped like those of the first, but are smaller *, these appear in July and August. Of this sort we have only male plants in the English gardens, which can only be propagated by layers; and as these are two years before they take root, the plants are at present very rare in England. This sort requires the same management as the first, and is equally hardy, but must not be over watered in winter. The leaves of this sort continue green all the year, and being singularly shaped, they make a variety in the green-house during the winter season.

The third sort rises with a weak shrubby stalk about four feet high, sending out lateral branches, which are covered with a whitish bark, and are garnished with leaves, placed in clusters without order; these are stiff, of the confidence and colour of the Butchers Broom, but are narrower, and run out to a longer point. Between these clusters of leaves the flowers come out in loose bunches, these have a great number of yellowish stamens, included in a three-leaved empalement. We have only the male plant of this sort, which is very difficult to propagate, so is very rare in Europe at present.

This plant is tenderer than either of the former sorts, so should be placed in a warm green-house in winter, and during that season, they must have but little water. In the summer they may be exposed to the open air in a sheltered situation, but they should not remain abroad too late in the autumn *, for if there should be much rain at that season, it would endanger these plants if they are exposed to it.

CLIMATE [of Kxi]*, Gr. an inclination,] is a part of the surface of the earth bounded by two circles parallel to the equator; so that the longest day in that parallel, nearest to the pole, exceeds the longest day in that parallel nearest to the equator by some certain space of time, viz. half an hour, till you come to places situated nearly under the arctic circle and a whole hour, or even several days when you go beyond it.

The ancient Greek geographers reckoned only seven climates from the equator towards the north pole, and denominated them from some noted place, through which the middle parallel of the climate passed but the moderns reckon up twenty-four.

The beginning of the climate is the parallel circle, wherein the day is the shortest.

The end of the climate is that wherein the day is the longest.

The climates therefore are reckoned from the equator to the pole; and are so many bands or zones, terminated by lines parallel to the equator though in different parts there are several climates in the breadth of one zone.

Each climate only differs from its contiguous ones, in that the longest day in summer is longer or shorter by half an hour in one place than the other.

As the climates commence from the equator, the first climate at its beginning has its longest day pre-

cisely twelve hours long; at its end twelve hours* and a half: the second, which begins where the first ends, viz. at twelve hours and a half, ends at thirteen hours: and so of the rest, as far as the polar circles.

Here what geographers call hour-climates terminate, and month-climates commence.

As an hour-climate is a space comprised between two parallels of the equator, in the first of which the longest day exceeds that in the latter by half an hour; so the month-climate is a space between two circles parallel to the polar circles, whose longest day is longer or shorter than that of its contiguous one by a month, or thirty days.

The ancients, who confined the climates to what they imagined the habitable part of the earth, only allowed of seven, as had been said: the first they made to pass through Merbe, the second through Sienna, the third through Alexandria, the fourth through Rhodes, the fifth through Rome, the sixth through Pontus, and the seventh through the mouth of the Borysthenes.

The moderns, who have failed farther towards the poles, make thirty climates on each side -, and because the obliquity of the sphere makes a little difference in the length of the longest day, some of them make the difference of the climate but a quarter of an hour instead of half an hour.

The term climate is vulgarly bestowed on any country or region differing from another, either in respect of the seasons, the quality of the soil, or even the manners of the inhabitants, without any regard to the length of the longest day.

CLINOPODIUM. Lin. Gen. Plant. 644. Tounu Inf. R. H. 194. tab. 92. Field Basil.

The CHARACTERS are,

// bath an involucre cut into many parts, is the length of the empalement, Upon which the whorls sit. The empalement is of one leaf with a cylindrical tube, which is divided into two lips -, the upper lip is broad, trifid, acute, and used; the under lip is cut into two narrow segments, which turn inward. The flower is of the lip kind, with a short tube enlarging to the mouth the upper lip is ereff, concave, and indented at the top, which is obtuse the under lip is trifid and obtuse, the middle segment being broad and indented. It hath four stamens under the upper lip, two of which are shorter than the other, terminated by roundish summits in the center is situated the quadrupartite germen, supporting a slender style the length of the stamens, crowned by a single compressed stigma. The germen afterward become four oval seeds shut up in the empakment.

This genus of plants is ranged in the first section of Linnaeus's fourteenth class, intitled Didynamia Gymnospermia. The flowers of this class and section, have two long, and two short stamens, which are succeeded by four naked seeds.

The SPECIES are,

1. CLINOPODIUM (*Vulgare*) capitulis subtundhr, hispida, bracteis fetaceis. Lin. Sp. Plant. 587. Field Basil with roundish prickly heads, and bristly bractea* CK-nopodium Origano simile* elatius, majore flore. C. B. P. 225. Common English Field Basil.
2. CLINOPODIUM (*Incanum*) foliis subtus tomentosis, verticillis explanatis, bracteis lanceolatis. Lin. Sp. Plant. 588. Field Basil with leaves which are woolly on the under side, broad plain whorls, and spear-shaped bractea. Clinopodium menthae folio incanum, & odoratum. Hort. Elth. 87.
3. CLINOPODIUM (*Rugosum*) foliis rugosis, capitulis axillaribus, pedunculatis, explanatis, radiatis. Lin. Sp. Plant. 588. Field Basil with rough leaves, plain beads growing on the sides of the stalks, which have foot-stalks, and are radiated. Clinopodium rugosum, capitulis scabiosis. Hort. Elth. 88.
4. CLINOPODIUM (*Humile*) humiliter ramifolium, foliis rugosioribus, capitulis explanatis. Low branching Field Basil with rougher leaves, and plain heads. Clinopodium Americanum humile, foliis rugosioribus. Dale.

§. CLINOPODIUM (*CaroHniahūn*) caule erecto, non rambfo, foliis fubtus villofis, verticillis paucioribus, bracteis calyce longioribus. *Field Bafil with an upright unbranching ftalk ^ leaves hairy on their under fide ^ fewer whorls ^ and fraSea longer than the empalement.* Clinopodium Amtricanum, eredtum, non rimofum foliis longioribus, internodiis longiffimis. Dale.

6. CLINOPODIUM (*JEgyptiacum*) foliis ovatis ttigofis, verticillis omnibus diitantibus, i. e. *Field Bafil with ayal rough leaves, and the whorls of flowers ftanding at to great diftance.* Clinopodium -fEgyptiacum, vulgari fimile. Dill. *Jgyptian Field Bafil like the common.*

The firft fort grows naturally by the fide of hedges and in thickets, in many parts of England; this hath a perennial fibrous root, which fends up feveral ftiff fquare Italics afoot and a half high, from which come out a few lateral branches toward the top, garnifhed with oval hairy leaves, placed oppofite; at the top of the italics the flowers come out in round whorls, or heads; one of thefe terminate the (talk, and there is generally another which furrounds the ftalk at the joint immediately below it. The flowers are fometimes purple, at others white, for they vary from one colour to the other, when they are propagated by feeds, fo that both colours are found naturally in the fields. The whorls (or heads) grow very clofe, and each foot-ftalk fuffains feveral flowers; each flower hath a tubular empalement, ending in five fharp points, which ftand eredt; at the bafe of the empalement ftand two brittle fpines, which Linnaeus terms the bradtea; thefe ftand almoft horizontal under the empalement. The flower is of the labiated, or lip kind, according to Tournefort, Ray, &c. which is now ftyled ringent, or grinning, from the appearance which the upper part has to the mouth, or chaps of animals. The upper lip is broad and trifid, but the under is cut into two narrow fegments; each flower is fucceeded by four naked feeds, fitting at the bottom of the empalement. This flowers in June.

The fecond fort grows naturally in Penfylvania and Carolina, from both of thefe countries I have frequently received the feeds, this hath a perennial root, which fends up many fquare ftalks about two feet high, which put out a few fhort fide branches toward the upper part, garnifhed with oblong oval leaves, about the fize of thofe of Water Mint, ftanding oppofite, clofe to the ftalk; they are hoary, and foft to the touch, and have a ftrong odour, between that of Marjoram and Bafil. The upper furface of the leaves is of a pale green, but their under fide is hoary and woolly, they are lightly indented on their edges. The flowers grow in flat fmooth whorls round the ftalks, each ftalk hath generally three of thefe whorls, the upper which terminates the ftalk being fmaller, the other two increafing, fo that the lower is the greateft. The flowers are of a pale purple colour, and fhaped like thofe of the firft fort, but the ftamina of this ftands out beyond the petal, and the bradtea at the bafe of the empalement are large, fpear-fhaped, and indented on their fides. This plant is called Snake-weed in fome parts of America, fuppofing it a remedy for the bite of rattle fnakes. This flowers in July in England.

The third fort grows naturally in Carolina, from whence the feeds were fent me by the late Dr. Dale: this hath a perennial root, which fends up feveral fquare ftalks, which are clofely covered with brownilh hairs; thefe rife between two and three feet high, garnifhed with leaves which are very unequal in their fize, thofe at the bottom, and alfo toward the top, being above three inches long, and one inch and a quarter broad, whereas thofe in other parts of the ftalk are not half fo large; they are rough on their upper fide, hairy below, and fawed on their edges, ftanding oppofite: all the lower part of the ftalk, but immediately below the foot-ftalks of the flower-heads, there are three large leaves ftanding round the ftalks; between thefe arife two flender hairy foot-ftalks, about three inches long, one on each fide the ftalk.; thefe fuffain fmall heads of flowers, fhaped like thofe

of the fcabious; they are fhitt, fhaped like thofe of the other, but fmaller; the bradtea immediately under the empalement, fpread out like rays. This plant flowers in September in this country; but never ripens its feeds here.

The feeds of the fourth fort were fent me from Carolina, by the late Dr. Dale; this hath fome appearance of our common fort, but the ftalks do not grow more than half fo high, and divide into many long fide branches; the leaves are fmaller and rougher, and the whorls of flowers are produced half the length of the branches, whereas the common fort hath rarely more than two; the bradtea at the bafe of the empalement is alfo much longer. This flowers in June and July, and hath a perennial root.

The fifth fort was fent me by the late Dr. Dale, from Carolina; this hath a perennial root, which fends up ftrait hairy ftalks, almoft round; the joints of thefe are four or five inches afunder, at each of thefe come out two oblong leaves, hairy on their under fide, ftanding upon fhort fobt-ftalks; at the bottom of thefe come out on each fide a flender branch, half an inch long, having two or four fmall leaves, fhaped like the other. The flowers are produced in fmall whorls, ftanding thinly; thefe are white, and the bradtea are longer than the empalement. This flowers in Auguft.

The fixth fort is a native of Egypt, from whence the feeds were fent to Europe, and the plants have for fome years paff grown in many curious gardens. It hath a *perennial root*, the ftalks rife a foot and an half high, garnifhed with oval leaves, having many tranfverfe deep furrows, of a dark green colour, placed oppofite, at about five or fix inches afunder. There are commonly two or four fide branches from the main Item, produced toward the bottom; and the whorls of flowers are produced at every joint toward the upper part of the ftalks: thefe are pretty large and hairy. The flowers are fomewhat larger than thofe of the common Field Bafil, and are of a deeper colour, ftretching a little more out of the empalement. The leaves of this have at firft fight much the fame appearance; but when they are obferved with attention, the difference is foon obferved between the two forts: but the greateft difference is in the leaves and whorls of flowers being placed at a greater diftance, and the ftalks growing fpardely in this fpecies; nor do the plants continue fo long as thofe of the common fort.

This fort flowers in June, commonly a fortnight or three weeks before the common Field Bafil, and the feeds ripen in September; which, if permitted to fcatter, the plants will come up in diltumn; and if the winter proves favourable, they will live in the open air, provided they grow on a dry foil; but in moift ground they are frequently deftroyed, efppecially when the plants are young.

This plant approaches near to the Clinopodium Orientale Origani folio, flore minimo. Tour. Cored. 12. But by comparing this with a fpecimen of that fort from the Paris garden, I find the leaves of that are fmoother, and placed much nearer together on the ftalks than thofe of this fort; the flowers are fmaller, fo that it may be deemed a diftinct fpecies, as thefe differences are permanent, and do not alter in any of the plants which arife from the feeds.

Thefe plants may be propagated by feeds, and alfo by parting their roots, the latter is generally practifed in England, becaufe few of the forts perfed their feeds here. The beft time to tranfplant and part their roots is in autumn, that they may take root before winter. If thefe are planted in a dry foil, they are all, except the third fort, hardy enough to thrive in the open air in England, and require no other care but to keep them clean from weeds, and every othef year they may be tranfplanted and parted. The third fort muft be planted in pots, and in winter fheltered under a frame, where the plants may enjoy the free air in mild weather, but fcreened from froft, otherwife they will not live in this country.

CLITORIA. Lin. Gen. Plant. 796. Ternatea. Tourn. Aft. Reg. 1706. Clitorius. Dill. Hort. Elth. 76. We have no English title for this plant.

The CHARACTERS are,
The flower hath a permanent empalement of one leaf which is tubular* creft, and indented in five parts at the top. The flower is of the butterfly kind, having a large spreading ftandard, which is ere ft, and indented at the top -, the two wings are oblong, obtufe, and fhorter than the ftandard, which is do fed. The keel is fhorter than the wings \ it is roundifh and hooked \ it hath ten ftamina, nine of which are joined, and one ftands feperate, which are terminated by fingle fummits. In the center is fituated an oblong germen, fupporting a rifing ftyle, crowned by an obtufe ftigma. The germen afterward becomes a long, narrow, compreffed pod, with one cell, opening with two valves inclofing feveral kidney-fhaped feeds.

This genus of plants is tanged in the third fection of Linneus's feventeenth clafs, intitled Diadelphia Decandria; the flowers of this fection have ten ftamina, which compofe two bodies.

- The SPECIES are,
1. CLITORIA (*Ternatea*) foliis pinnatis. Hort. Cliff. 360. *Clitorea with winged leaves.* Ternatea flore fimplici caeruleo. Tourn. Acad. Reg. Sc. 1706.
 2. CLITOREA (*Brafiliana*) foliis ternatis, calycibus campanulatis folitariis. Hort. Upfal. 215. *Clitoria with trifoliolate leaves, and a fingle flower with a bell-fhaped empalement.* Planta leguminoia Brafiliana, Phafeli flore, flore purpureo maximo. Breyn. Cent. 75. tab. 32.
 3. CLITORIA (*Virginiana*) foliis ternatis, calycibus campanulatis fubgeminis. Flor. Virg. 83. *Three-leaved Clitoria with two flowers joined, whofe empalements are bell-fhaped.* Clitorius trifolius flore minore caeruleo. Hort. Elth. 90. tab. 76.
 4. CLITORIA (*Mariana*) foliis ternatis, calycibus cylindricis, Lin. Sp. Plant. 753. *Clitoria with trifoliolate leaves, and cylindrical empalements to the flowers.* Clitorius Marianus trifolius fubtus glaucis. Pet. Hort. Sice. 243.

The firft fort grows naturally in India; the feeds of this were firft brought to Europe from Ternate, one of the Molucca Iflands, and this induced Dr. Tournefort to give the title of Ternatea to this genus. There is a variety of this with white flowers, and another with large blue flowers, which make a fine appearance. The feeds which I received of the latter, produced all the plants with very double flowers, without the leaf variation; but in cold feafons the plants do not produce any pods here.

This rifes with a twining herbaceous ftalk to the height of four or five feet, in the lame manner as the Kidney-bean, and requires the like fupport for in the places where it grows naturally, it twills itfelf about the neighbouring plants; the ftalks are garnifhed with winged leaves, compofed of two or three pair of lobes, terminated by an odd one; thefe are of a beautiful green, and are placed alternate on the ftalks; from the appendages of the leaves, come out the foot-ftalks of the flower; each of thefe is encompassed by two very fine leaves about the middle, where they are bent, fupporting a very large, gaping, beautiful flower, whofe bottom part feems as if growing to the top.

The flowers have a green membranaceous empalement, which is cut into five parts. The ftandard of the flowers is large, and is fpread open very wide; and the flowers are of fo deep a blue colour, as to ftain paper, after having been many years dried, almoft as blue as indigo; thefe flowers are fucceeded by long (lender pods, containing feveral kidney-fhaped feeds.

The fecond fort grows naturally in the Braffils, from whence thefe feeds were brought to Europe. This hath a twining ftalk like the former, which rifes five or fix feet high, garnifhed at each joint with one trifoliolate leaf, Sanding upon a long foot-ftalk. The flowers come out fingly from the foot-ftalk of the leaves, ftanding upon pretty long foot-ftalks, which

are encompassed about the middle: with two filial oval leaves; the flowers are very large, the ftandard being much broader than that of the firft fort, and the two wings are larger; the flowers are of a fine blue colour, fo make a fine appearance. The flowers appear in July, and in warm feafons the feeds will ripen in autumn, loon after which the plants decay.

There is one with a double flower of this fort, which I raifed in the Chelfea garden fome years paft, from feeds fent me from India *, but the plants did not produce feeds here, and being annual, the fort was loft. The flowers of this were very beautiful.

The feeds of the third fort were fent me from the Bahama Iflands; this feeds out from the root two or three (lender twining ftalks, which rife to the height of fix or feven feet, garnifhed at each joint with one trifoliolate leaf, whofe lobes are oblong and pointed. At the oppofite fide of the ftalk, the foot-ftalk of the flower aries, which is little more than an inch long, naked, and fupports a fingle flower, which is of a purple colour within, but of a greenifh white on the outfide, not half fo large as either of the former: thefe flowers are each fucceeded by long, (lender, compreffed pods, ending in a point, which contain one row of roundifh kidney-fhaped feeds. This fort flowers in July and Auguft, and the feeds ripen in autumn.

The feeds of the fourth fort were fent me from Carolina, where the plants grow naturally. This rifes with a twining weak ftalk about five feet high, garnifhed with trifoliolate leaves like the former, whole lobes are narrower, and of a grayifh colour on their under fide -, the flowers come out by pairs on the foot-ftalks 5 their empalements are cylindrical. The flowers are fmall, and of a pale blue colour within, but of a dirty white on the outfide. This flowers in Auguft, but rarely ripens any feeds in England.

All thefe forts are annual with us in England, fo that unlefs the feeds ripen, the fpecies are loft; and as the two forts with double flowers have not formed any pods in this country, fo far as I have been able to learn, therefore the feeds of thefe muft be procured from the countries where they naturally grow. Indeed thefe are fuppofed to be only varieties, which accidentally arife from the fingle. If this be true, I cannot account for the fuccefs of thofe plants which grew at Chelfea, for they were all of the lame double kind, without the leaf variation *, and this was not from a fingle experiment, but in three different years when I received the feeds, the plants did all of them produce double flowers.

The feeds of thefe plants muft be fown upon a good hot-bed early in the fpring; and when the plants are two inches high, they fhould be carefully taken up, and each planted in a fmall pot filled with light frefh earth, and plunged into a hot-bed of tanners bark* obferving to fhade them till they have taken frefh root, and refrefh them with water as they may require it. After they are well rooted in the pots, they muft have air every day in proportion to the warmth of the feafon, to prevent their drawing up weak; their waterings fhould be repeated * 2 or three times a week, but they fhould not have too much at each time. As thefe plants have climbing ftalks, they will foon grow too tall to remain under common frames, therefore they muft then be removed into the ftove, and plunged into the bark-bed; but if their roots have tilled the pots, they fhould be removed into larger, and afterward they muft be treated in the fame manner as other plants from the fame countries,

CLUSIA. Lin. Gen. Plant. 577. Plum. Nov. Gen. 20. tab. 20. The Balfam-tree.

The CHARACTERS are,
// bath an fabricated mpalement, compofed of roundifh concave leaves which fpread open, it bath five or fix large, roundifh, concave, fpreeding petals. In the bottom is fituated a globular neSlarium, including the germen, which is pervious at the top, from which place the ftigma arifes.

// hath a great number of stamina, which are shorter than the petals, terminated by single summits. The oblong ovalgermen is terminated by a plain star-like stigma, with six obtuse indentures. The germen afterward becomes an oval capsule, with six furrows, and six cells, opening with six valves, which spread in form of a star, including many angular seeds fixed to a column, surrounded with pulp.

This genus of plants is ranged in the first section of Linnaeus's twenty-third class, intitled Polygamia Monoclea, having male, female, and hermaphrodite flowers on the same plant.

The SPECIES are,

1. CLUSIA (*Flava*) foliis aveniis corollis tetrapetalis. Jacq. Amer. 34. *Clusia whose leaves have no veins, and the flower has four petals.* Terebinthus folio fingulari, non alato, rotundo, fucculento flore pallidè luteo. Sloan. Hift. Jam. 2. p. 97. *Commonly called Balsam-tree in America.*

2. CLUSIA (*Venosa*) foliis venosis. Lin. Sp. Plant. 510. *Clusia with veined leaves.* Clusia flore roseo minor, fructu flavescente. Plum. Nov. Gen. ii

There are three varieties of the first sort, which differ in the size and colour of their flowers and fruit; one hath a white flower and scarlet fruit, another hath a rose flower and a greenish fruit, and a third hath a yellow fruit: but these are supposed to be only femal variations, though Plumier has enumerated them as distinct species, but as the plants have not flowered in England, I can give no particular account of their difference: the singular beauty of the leaves of this plant, renders it worthy of a place in every collection of rare plants.

The first sort is pretty common in the British Islands of America, where the trees grow to the height of twenty feet, and shoot out many branches on every side, garnished with thick, round, succulent leaves, placed opposite. The flowers are produced at the ends of the branches, each having a thick succulent cover: these are of different colours in different plants, some being red, others yellow, some white, and some green. After the flowers are past, they are succeeded by oval fruit, which are all of different colours in different plants: from every part of these trees there exudes a sort of turpentine, which is called in the West Indies Hog-gum; because they say, that, when any of the wild hogs are wounded they repair to these trees, and rub their wounded parts against the stems of them, till they have anointed themselves with this turpentine, which heals their wounds. The turpentine of these trees is also greatly recommended for the cure of sciaticas, by spreading it on a cloth, and applying it as a plaster to the part affected.

The plants are at present very rare in Europe: there were some years ago some fine plants in the garden of Mr. Parker, near Croyden in Surry, these were brought over, growing in tubs of earth, from Barbadoes, which is the best method of procuring them; for the seeds seldom succeed, and the young plants grow so slowly, as not to make any figure in some years; but in the bringing over the plants, great care should be had, that they do not receive much wet; for as these plants have very succulent stems, moisture will cause them to rot.

The plants are tender, so they must be constantly kept in the stove, otherwise they will not live through the winter in England, they must also be watered very sparingly, especially in winter, for they naturally grow in those parts of the islands, where it seldom rains, therefore they cannot bear much moisture.

They may be propagated by cuttings, which must be laid to dry when they are cut off from the plants for a fortnight or three weeks, that the wounded part may be healed over, otherwise they will rot. When the cuttings are planted, the pots should be plunged into a hot-bed of tanners bark, and now and then gently refreshed with water: the best time for planting these cuttings is in June or July, that they may

be well rooted before the cold weather comes on in autumn. In winter these plants may be placed upon stands in the dry stove; but if in summer they are plunged into the tan-bed, they will make great progress, and their leaves will be large, in which consists the great beauty of these plants.

The second sort was discovered by the late Dr. Houc-toun, growing naturally at Campeachy, from whence he sent me some dried samples and seeds: this hath very large oval spear-shaped leaves, ending in points, which are placed alternate on the branches, and have several ribs, which go off from the midrib alternate, rising upward to the side of the leaves; and also a great number of small veins, running horizontally between these ribs. The borders of the leaves are faded, and their under sides are of a shining brown colour. The branches are covered with a woolly down, and the flowers are produced in loose spikes at the end of the shoots; these are smaller than those of the former sort, and are of a rose colour. This tree rises to the height of twenty feet; it is propagated by seeds, which must be obtained from the countries where the trees naturally grow, for there can be little hopes of obtaining any of the seeds in Europe. The plants are tender, so must be placed in the tan-bed of the bark-stove, otherwise they will not thrive in this country; and they must be treated in the same manner as is directed for other tender plants from the same countries.

CLUTIA. This genus of plants was constituted by the learned Dr. Boerhaave, professor of botany in the university of Leyden, in honour of Augerius Clute, a curious botanist.

The CHARACTERS are,

It is male and female in different plants. The male flowers have a large spreading empalement, composed of five oval concave leaves & they have five heart-shaped petals which are shorter than the empalement, and spread open. They have five exterior nectariums, which are situated in a circle at the bottom of the petals & five interior, which are situated within the other, having small apices with a mellow liquor, and five stamina situated in the middle of the style, which spread horizontally, terminated by roundish summits: these have no germen, but a long truncated styk in the middle of the stamina. The female flowers have permanent empalements, and petals like those of the male; these have five double exterior nectariums but no interior; they have a roundish germen, supporting three bifid reflexed styles the length of the petals, crowned by obtuse stigma: the germen afterward becomes a globular capsule, with six furrows, and three cells, each containing a single seed.*

This genus of plants is ranged in the thirteenth section of Linnseus's twenty-second class, intitled Dioecia Gynandria. This section and class include those plants which have the different sexes on separate plants, and the male flowers have their stamina adhering to the style.

The SPECIES are,

1. CLUTIA (*Alaternoides*) foliis sessilibus lineari-lanceolatis floribus foliariis erectis. Hort. Cliff. 500. *Clusia with linear spear-shaped leaves fitting close to the stalks, and solitary erect flowers.* Alaternoides Africana telepii legitimi imperati foliis. Hort. Amft. 2.
2. CLUTIA (*Pulchella*) foliis ovatis integerrimis, floribus lateralibus. Lin. Sp. Plant. 1042. *Clusia with oval entire leaves, and flowers growing from the sides of the branches.* Frutex -Ethiopicus, portulace folio, flore ex albo virecente. Hort. Amft. 1. p. 177.
3. CLUTIA (*Eleutheria*) foliis cordato lanceolatis. Flor. Zeyl. *Clusia with heart spear-shaped leaves.* Ricinus dulcis arborefcens Americanus, populnea fronde argentea. Pluk. Aim. 321.

The two first sorts are natives of Africa, from whence they were brought to some curious gardens in Holland, and have since been communicated to most of the botanic gardens in Europe. The first sort with male flowers has been long an inhabitant of some curious gardens in England, the other with female flowers has been lately introduced,

The feccmd fort has alfo been fome years in the Eng- I lilh gardens, where we had not that fort with male flowers till lately, when I was favoured with one by my learned friend Dr. Job Batter, of Zirkzee in Holland.

The firft fort rifes with a Ihrubby ftalk to the height of fix or eight feet, putting out many fide branches which grow eredfc; thefe are garnifhed with fmall, linear, fpear-fhaped leaves, placed alternate, fitting clofe to the branches: they are of a grayifh colour and entire. The flowers come out from the joints, at the fetting on of the leaves: toward the upper part of the branches thefe are fmall and of a greenilh white; they appear in June, July, and Auguft, but being fmall make no great appearance.

The fecond fort rifes about the fame height with the firft, but hath a ftronger ftem; the branches are garnifhed with oval leaves, which are much larger than thofe of the firft fort, (landing upon foot-ftalks which are an inch long; they are of a fea green, and entire; the flowers are like thofe of the firft fort in fhape and colour, but thofe on the male plants are fmaller, and grow clofer together than thofe of the female, but both are fuftained upon (hort foot-ftalks. Thefe flowers appear at the fame time as thofe of the firft fort, and the feeds ripen in autumn. I have raifed feveral of thefe plants from feeds, which have all proved female, the fame as the parent plant.

Thefe plants are eafily propagated by cuttings during any of the fummer months: if the cuttings are planted in fmall pots, and plunged into a very moderate hot-bed, and (haded from the heat of the fun in the middle of the day, they will foon take root, and (hould then be inured to the open air, otherwife they will draw up very weak: afterward thefe plants may be each put into a feparate fmall pot, and placed in a flickered fituation, where they may remain until the middle of Oftober, or later, if the weather continues mild, when they (hould be removed into the green-houfe, and placed where they may have the free air in mild weather, for they only require to be prote&ed from froft, therefore require no warmth in winter; but if the green-houfe is (hut up too clofe, or the plants are much (haded by others, the tender (hoots are fubjedt to grow mouldy, which deftroys more of thefe plants than the cold. In fummer they muft be placed abroad in a (heltered fituation, with other hardy exotic plants.

As thefe plants are always green, they took well in the green-houfe during the winter feafon; and in fummer, when they are placed in the open air with other exotic plants, they make a pretty variety.

The third fort grows naturally in India, from whence the feeds were brought. This rifes with an upright Ihrubby ftalk, not more than three or four feet high in England *, but in the places where it grows naturally, it rifes upward of twenty feet high, and fends out matny branches at the top, fo as to form a large fpreading head: the branches arc garnifhed with leaves, (haped like thofe of the black Poplar, which are of a lucid green, and are placed alternate (landing upon (lender foot-ftalks. As theft plants have not yet flowered in England, I can give no account of them, but the feed-veffels are very like thofe of the fecond fort.

This plant will live through the winter in an airy glafs-cape, without artificial heat; but in that fituation they (hould have very little water, for the plants abound with a milky juice like the Euphorbia, fo muft at no feafon of the year have too much wet. If thefe plants, when young, are placed in a very moderate warmth in winter, it will greatly forward their growth, but they muft not have too much heat, fbr that will force them too much; and when the plants have obtained ftrength, they may be treated more hardily. This fort may be propagated by cuttings during the fummer feafon j but the cuttings (hould be laid in a dry place for a few days, when they are taken from the old plants, that their wounded parts may dry and be healed over before they are

planted. Thefe muft be planted in fmall pots filled with light fandy earth, and plunged into a moderate hot-bed of tanners bark; and if the feafon is very warm, the glaffes (hould be (haded in the heat of the day, and raifed up to admit frefli air to the cuttings every day; thefe muft be fparingly watered. When they have taken root, and begin to (hoot, they muft have a greater (hare of air, and by degrees be inured to the open air *, and when their roots have filled the pots, they (hould be carefully parted, and each planted in a feparate pot of the fame light fandy earth *, then they (hould be placed on the back part of the (love, behind the other plants, where they may be fcreened from the fun till they have taken frefli root, after which they may be brought forward, and expofed gradually to the open air. In the fummer they fhould have free air confantly in warm weather, but they muft be fcreened from heavy rain; and in winter placed in an airy glafs-cape, where they may enjoy the fun, and during that feafon have very little wet.

CLYPEOLA. Lin. Gen. Plant. 723. Jonthlafpi. Tourn. Infl. R. H. tab. 99. Treacle Muflard.

The CHARACTERS are,

The flower bath a permanent empalement cotnpofed of four oblong oval leaves. It hath four oblong entire petals* placed in form of a crofs* and jixftamina which are Jhorter than the petals* two of which ftanding oppofite are jhorter than the other* terminated by Jingle fummits. In the center is fituated a round jh compreffedgermen* fupporting a Jingle ftyle* crowned by an obtufe figma. The germen afterward becomes an orbicular pod* which is compreffed* ere Si* and indented at the top* with a longitudinal Jiffure* opening in two cells* containing round compreffed feeds.*

This genus of plants is ranged in the firft feaion of Linnaeus's fifteenth clafs, intituled Tetradynamia filiculofa, the flower having four long and two (horter (lamina, and the feeds growing in (hortpods.

The SPECIES are,

1. CLYPEOLA (*Jonthlafpi*) filiculis unilocularibus monofpermis. Hort. Cliff. 329. *Clypeola with pods* banking but one cell and a Jingle feed. Jonthlafpi minimum fpicatum lunatum. Col. Ecp. 1. Leajl Buckler Muf-tard with fpiked flowers.*
2. CLYPEOLA (*Maritima*) filiculis bilocularibus ovatis difpermis. Sauv. Monfp. 71. *Clypeola with oval pods having two cells and two feeds. Thalpi Alyffon dictum maritimum. C. B. P. 107.*

This genus of plants was named Jonthlafpi by Fabius Columna, and the fame title was continued by Dr. Tournefort, and other late writers on botany before Dr. Linnaeus, who has altered the name to this of Clypeola.

The firft fort is a low annual plant, which feldom rifes more than four inches high 5 the (lender branches commonly lie prostrate on the ground; thefe are garnifhed with fmall leaves, narrow at their bafe, but are broader at their ends, where they are obtufe. The flowers are produced in (hort clofe fpikes at the extremity of the branches, which are fmall, yellow, and compofed of four petals, placed in form of a crofs; thefe are fucceeded by orbicular compreffed feed-veffels, each having one cell, containing a fingle feed. It flowers in June and July, and the feeds ripen in autumn.

The fecond fort is perennial. This fends out from the root feveral (lender branches, which divide again into many fmaller, that lie prostrate, garnifhed with very narrow hoary leaves, fitting clofe to the branches. The flowers are produced in fpikes at the end of the branches; thefe are fmall, yellow, and (haped like thofe of the other fort, but the (pikes terminate in a roundiffi bunch. It flowers in June, and the feeds ripen in autumn.

Thefe two forts are low plants, which grow naturally in the fouth of France, Spain, and Italy, and are preferred in botanic gardens for the fake of variety, but have little beauty; their leaves and ftalks are of a hoary white, which is much lighter in the warm countries

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countries than in England; these are propagated by feeds, which should be sown upon a border of light earth where they are to remain, and will require no other culture, but to thin them if they come up too close, and keep them clean from weeds. The feeds may be sown either in the spring or autumn; those which are sown in autumn will grow much larger, and flower earlier than those which are sown in the spring, and from them there will be a greater certainty of having ripe feeds. If the feeds scatter, the plants will come up, and, if kept clean from weeds, they will thrive without farther care.

The second sort is a perennial plant, so should be sown upon a warm border and on a dry soil. This grows naturally on the borders of the sea, in the south of France and Italy *, but when it is cultivated in a garden, if the soil is rich and moist, the plants generally grow luxuriant in summer, and are thereby too replete with moisture, so that they are frequently killed by the frost in winter *, but when they grow on a poor, dry, gravelly soil, their stalks will be short, ligneous, and tough) so will endure the cold of this climate, and continue several years. This is propagated by feeds, which should be sown where the plants are designed to remain; or if any of them are removed, it should be done when the plants are young, for they do not bear transplanting well, when they are grown pretty large.

CNEORUM. Lin. Gen. Plant. 47. Chametea. Tourn. Inf. R.H. 651. tab. 421. Widow-wail.

The CHARACTERS are,

The flower hath a small permanent empalement, indented in three parts. It hath three narrow oblong petals, which are creft, and three stamina which are shorter than the petals terminated by small summits. In the center is situated an obtuse three-cornered germen, supporting a firmer style, crowned by a trifid spreading stigma. The germen afterward becomes a globular dry berry, with three lobes, having three cells, each containing one round seed.*

This genus of plants is ranged in the first section of Linnaeus's third class, intitled Triandria Monogynia, the flower having three stamina and one style.

We have but one SPECIES of this genus, viz.

CNEORUM [*Tricoccum*]. Hort. Cliff. 18. Widow-wail. Chamelasa Tricoccos of Dodonaeus and Caspar Bauhin.

This is an humble shrub, which seldom rises more than two feet and a half high in this country, but spreads out on every side with many lateral branches, so as to form a thick bush. The stems are ligneous, and almost as hard as those of the Box-tree, and the wood is of a pale yellow colour under the bark: the branches are garnished with thick stiff leaves, of an oblong oval shape, about an inch and a half long, and a quarter of an inch broad, of a dark green colour, having a strong vein or rib through the middle. The flowers are produced singly from the wings of the leaves, toward the extremity of the branches, which are of a pale yellow colour, composed of three petals, which spread open, and a round germen at the bottom, having a single style, which doth not rise above half the length of the stamina, which are three in number, hanging erect, and are situated between the petals. After the flowers are fallen, the germen becomes a fruit, composed of three feeds joined together after the same manner as those of *Tithymalus* or *Spurge* *, these are first green, afterwards turn of a brown colour, and when ripe are black. The flowers begin to appear in May* and are succeeded by others during the summer months; and, when the autumn proves favourable, these shrubs will continue in flower till the end of October.

As this is a low evergreen shrub, it may be very ornamental, if placed in the front of plantations of evergreen trees and shrubs; for as the branches grow pretty compact, and are well garnished with leaves, it will hide the ground between the taller shrubs better than most other plants, and, being a durable

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shrub, will not want to be removed: it rises better from scattered feeds, than if sown with care.

This was formerly preserved in green-houses, and thought too tender to live in the open air in England 5 but of late years people have planted it in the full ground, where it resists the cold of our ordinary winters very well, and is seldom injured but by extreme hard frosts; nor do these kill the plants which grow upon dry, rocky, or rubbishy soils, where their shoots are generally short and firm 5 but in moist rich ground, where the shoots are more luxuriant, they are sometimes injured.

It is propagated by feeds, which should be sown in autumn soon after they are ripe, and then the plants will come up the following spring; whereas those which are not sown till the spring, will remain a year in the ground, and often miscarry: these feeds may be sown in a bed of common earth, covering them half an inch deep, and will require no other care but to keep the plants clear from weeds the following summer; and in the autumn following, the plants may be transplanted where they are to remain.

CNICUS. Lin. Gen. Plant. 833. Tourn. Inf. R. H. 450. tab. 257. Bleffed Thistle.

The CHARACTERS are,

*The empalement of the flower is composed of many oval scales, placed over each other; those toward the top are terminated by branching spines. The flower is composed of several hermaphrodite florets, which are uniform *, these are funnel-shaped, and cut at the top into five equal segments, standing erect, each having five short hairy stamina, terminated by cylindrical summits. In the center is situated a short germen, crowned with down, supporting a slender style, terminated by an oblong stigma. The germen afterward becomes a single seed, crowned with down, and shut up in the empalement.*

This genus of plants is ranged in the first section of Linnaeus's nineteenth class, intitled Syngenesia Polygamia /Equalis. The plants of this section have only hermaphrodite flowers, which are fruitful.

The SPECIES are,

1. CNICUS (*Eriophyllum*) caule erecto, foliis inferioribus laciniatis, superioribus integris concavis. Hort. Cliff. 394. *Cnicus, with an upright stalk, whose lower leaves are lacinated, the upper entire and concave.* Cnicus pratensis, Acanthi folio, flore flavescente. Tourn. Inf. 450.
2. CNICUS (*Spinosiffimus*) foliis amplexicaulibus, sinuato-pinnatis, spinosis, caule simpliciter, floribus sessilibus. Lin. Sp. Plant. 826. *Cnicus with winged, sinuated, prickly leaves embracing the stalk, and flowers fitting close on the top.* Cirsium Alpinum spinosiffimum, floribus ochroleucis inter flavescencia folia congestis. Haller. tab. 20.
3. CNICUS (*Cernuus*) foliis cordatis, petiolis crispis spinosis amplexicaulibus, floribus cernuis. Hort. Upsal. 251. *Cnicus with heart-shaped leaves, having curled prickly foot-stalks which embrace the stalks, and a nodding flower.* Carduus foliis ex cordato-lanceolatis, margine serratis & spinosis, squamis calycum membranaceis, lacris spinosis, capitulis nutantibus. Flor. Sib. 2. p. 47-

The first sort grows naturally in the northern parts of Europe. Mr. Ray found it growing on the Rhine near Basil. This hath a perennial root, which sends out many long jagged leaves, spreading on every side near the ground, so as to form a thick tuft; these are jagged almost to the midrib, in form of a winged leaf. The stalks are striated, smooth, and rise above four feet high, dividing at the top into smaller branches: the leaves which grow upon the stalks are entire, heart-shaped, concave, and embrace the stalks, and are sowed on their edges, each indented ending in a weak spine: the stalks are terminated by large heads of flowers, growing in clusters; they are of a whitish yellow colour, and inclosed in a scaly empalement, and are succeeded by small oblong feeds, crowned with a bristly down. It flowers in June, and the feeds ripen in autumn*

This fort may be propagated by feeds, or parting the roots \ the latter is commonly praftiled where there ate any of the plants, but the feeds are more eafily conveyed to a diftant place. The beft time to part the roots is in autumn *, it delights in fhade, and requires no farther care but to keep it clean from weeds.

The fecond fort grows naturally on the Alps, and on the piountains of Auftria. This rifes with an upright fingle ftalk near four feet high, garnilhed with finuated leaves, which are very prickly, and embrace the (talks with their bafe. The flowers afe produced at the top of the ftalk, furrounded by a clutter of broad prickly leaves, fitting clofe to the ftalk *, they are of a whitifli yellow, and appear at the fame time with the former fort. It is a perennial plant, which may be propagated in the feme manner as the former," and requires a moift foil and a lhady fituation.

The third fort grows naturally in Siberia, from whence the feeds were fent to the imperial garden at Peterburgh, where they fucceeded, and produced feeds, part of which were fent me by the profefibr of botany; this hath a perennial root, compofed of thick flefhy fibres. The leaves which rife immediately from the root are near a foot long, and near fix inches broad in the middle, diminifhing toward each end, and at a little diftance from the bafe are much contradted, but are wider at the end *, thefe have fcarce any foot-ftalks; they are of a deep green on their upper fide, but white on their under, and fliarply fawed on their edges. The ftalks rife more than fix feet high, fending out on each fide fmall branches above a foot long; the ftalks are {mated, and of a reddifh colour; they are garnifhed with heart-fhaped leaves, which almoft embrace the ftalks with their bafe, and are of the fame colour with thofe below *, each branch is terminated by one large globular head of yellowifh flowers, included in a fealy empalement, each feale ending with a fharp fpine. This flowers in June, and the feeds ripen in autumn. It may be propagated in the fame manner as the two former forts, but requires a moift foil and fliady fituation j and if the weeds are kept down, there will be no farther care required. The inhabitants of Siberia eat the tender ftalks of this plant, when boiled, inftead of other vegetables.

This is a perennial plant, which may be propagated by parting the roots : the beft time for doing of this is in autumn, that the plants may get good root in winter *, for thofe which are tranfplanted in the fpring, do not flower well the firft year, unlefs they are planted in a moift foil. As thefe plants grow very large, they are not proper furniture for fmall gardens, • where they will take up too much room *, for they fhould not be planted nearer than four feet from each other, for if they are too near any other plants, they will rob them of their nourifhment; for the roots of thefe extend to a great diftance, fo that two or three of thefe plants, for variety, are fufficient for any garden, which may be planted at a diftance from choicer plants.

It is alfo propagated by feeds, which may be fown in the fpring on a bed of common ground, in the fame manner as the other forts -, and will only require to be thinned, and kept clean from weeds till autumn, when they may be tranfplanted where they are defigned to remain.

C O A. See HIPPOCRATEA.

COAST-MARY. See TANACETUM.

C O C I G R I A. See RHUS.

C O C H L E A R I A. Lin. Gen. Plant. 720. Tourn. Inf. R. H. 215. tab. 101. [fo called of Cochleare, Jjat. a fpoon, becaufe the leaves of this plant are hollowed likeafpoon.] Spoonwort, or Scurvy Grafs.

The CHARACTERS are,

The empalement of the flower is cempofed of four oval concave leaves. The flower hath four petals, placed in form of a crofs, which fpread open, and are twice as large as the leaves of the empalement \ it bath fix ftamina,

four of which are longer than the other two; thefe are terminated by obtufe comprejfed fummits. The germen is beart-Jhaped, fupporting a Jhort Jingle flyle crowned by an obtufe ftigma: this afterward becomes a gibbous, heart-Jhapedj comprejfed pod, faftened to the Jyle, having two cells, in each of which are lodged four roundjib feeds.*

This genus of plants is ranged in the firft jfecHon of Linnseus's fifteenth clafs, intituled Tetradynamia Siliculofa. The flowers of this clafs have four long and two fhort ftamina, and thofe of this fedlion have very fhort pods.

The SPECIES are,

1. COCHLEARIA (*Officinalis*) foliis radicalibus fubrotundis, caulinis oblongis fubfinuatis. Flor. "Lapp. 256. *Scurvy Grafs whose lower leaves are round: Jh, and thofe on the ftalks oblong and finuated.* Cochkaria folio fubrotundo. C. B. P. n. o. *Round-leaved Scurvy Grafs.*
2. COCHLEARIA (*Anglica*) foliis ovato-lanceolatis, finiiatis. Flor. Ang. 248. *Scurvy Grafs with oval fpear-Jhaped leaves, which are finuated.* Cochlearia folio finuato. C. B. P. 110. *Sea Scurvy Grafs.*
3. COCHLEARIA (*Granlandic*) foliis reniformibus, carnofis integerrimis. Hort. Cliff. 498. *Scurvy Grafs with kidney-Jhaped leaves* which are flefhy and entire.* Cochlearia minima ex montibus Walliae. Sher. Boehr, Ind. alt. 2. p. 10.
4. COCHLEARIA (*Danica*) foliis haftatis, angulatis. Flor. Suec. 196. *Scurvy Grafs with angular fpear-Jhaped leaves.* Cochlearia Armorica. H. R. Par. *Danijb, or Ivy-leaved Scurvy Grafs.*
5. COCHLEARIA (*Armoracia*) foliis radicalibus lanceolatis, crenatis, caulinis incifis. Hort. Cliff. 332. *Scurvy Grafs whose lower leaves are fpear-Jhaped and crmated* and thofe on the ftalks jagged.* Raphanus Rufficanus. C. B. P. 96. *HorfeRadijh.*
6. COCHLEARIA (*Glaftifolia*) foliis caulinis cordato-fagittatis, amplexicaulibus. Hort. Cliff. 332. *Scurvy Grafs whose upper leaves are arrow-pointed, beart-Jhapedj and embrace the ftalks.* Cochlearia altiffima glafti folio. Inf. R. H. 216.

The firft fort grows naturally on the fea-fhore in the north of England, and in Holland, but is cultivated for ufe in the gardens near London. This is an annual plant, for the feeds are fown, and the plants decay within the compafs of one year, but the feeds fhould be fown early in autumn; this hath a fibrous root, from which arife many round fucculent leaves, which are hollowed like a fpoon -, the ftalks rife from fix inches to a foot high; thefe are brittle, and garnifhed with leaves, which are oblong and finuated. The flowers are produced in clutters at the end of the branches, confiding of four fmall white petals, which are placed in form of a crofs, and are fucceeded by fhort, roundifli, fwelling feed-veffels, having two cells, divided by a thinjpartition; in each of thefe is lodged four or five roundifli feeds. It flowers in April, and the feeds ripen in June, foon after which it decays.

This fort is propagated in gardens for medicinal ufes, which is done by lowing the feeds in July, foon after they are ripe, in a moift fhady fpot of ground; and when the plants are come up, they fhould be thinned, fo as to be left at about four inches diftance each way. The plants that are taken ouc may be tranfplanted into other fhady borders, if there is occafion for them, otherwife they may be hoed out (as is pra&ified for Onions, Carrots, &c.) and at the fame time all the weeds may be hoed down, fo as to clear the plants entirely from them, that they may have room to grow ftrong. In the fpring thefe plants will be fit for ufe; and thofe that are fuffered to remain will run up to feed in May, and perfect their feeds in June. If this plant is fown in the fpring, the feeds feldom grow well, therefore the beft time is fown after they are ripe. The plants rarely live after producing feeds, fo that it fhould be fown every year, to have it for ufe. .

The Sea Scurvy Grafs is alfo ufed in medicine -, but this grows in the fait marflies in Kent and Eflcx, where

where the water overflows it, almost every tide, and can rarely be made to grow in a garden, or at least 10 htr longer there than one year; but it being easily gathered in the places before-mentioned, the markets are supplied from thence by tile herb-women, who make it their business to gather herbs.

This fort differs from the first in the shape of its leaves, these being longer, and situated on their edges. It flowers a little later in the season; both these sorts are used in medicine.



The little Welch Scurvy Graft is a biennial plant, and may be preserved in a garden, if planted in a frosty soil and a shady situation. This is perceived in curious gardens of plants, but is not of any use in medicine, though it is by far the warmest and most pungent of all the forts. This grows plentifully in Italy, as seen in DJvis's Streights.

The fourth sort is a low trailing plant, whole (talks grow six inches long, and lie prostrate on the ground; the leaves are angular, and in all appearance like those of Ivy. This is found growing naturally in some parts of England, and is annual. It flowers and feeds about the same time as the first fort.

The sixth sort is a biennial plant, which usually grows about a foot and a half high, with upright stalks, garnished with angular heart-shaped leaves, embracing the stalks with their joints, the flowers are produced in loose spikes at the end of the branches; they are very small, white, and are succeeded by short swelling pods filled with round seeds. It flowers in May, and the seeds ripen in July and August. This may be propagated by seeds as the common fort, and if sown in autumn, will more certainly succeed than in the spring.



The Morie Radiis propagated by cuttings or buds from the sides of the old roots. The best season for this work is in October or February in the former for drylands, the latter for moist, the ground should be trenched at least two spits deep, or more if it will allow of it. The manner of planting it is as follows: provide yourself with a good quantity of offsets, which should have a bud upon their crowns, but it matters not how short they are; therefore the upper part of the roots which are taken up for use, may be cut off about two inches long with due regard to it, which is esteemed the best for planting. Then make a trench ten inches deep, in which you should place the offsets at about four or five inches distance each way, with the bud upward, covering them up with the mould that was taken out of the trench: then proceed to a second trench in like manner, and continue the same till the whole spot of ground is planted. After this, remove the surface of the ground even, observing to keep it clear from weeds, until the plants are so far advanced, as to be strong enough to overbear and keep them down. With this management the roots of the Horfe Radish will be long and straight, and free from small lateral roots, and the second year after planting will be fit for use. True, they may be taken up the first year, but then the roots will be short (tender; therefore it is the better way to let them remain until the second year. The ground in which this is planted ought to be very rich, otherwise the roots will make but a small progress.



O C t S. Lin. Gen. Plant. 1. j. The Cocoa Nut.

There are made an...
The CHARACTERS are.
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m, Tbt <i> I fpcibt. Tbt tmpMcmtus
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der the title of Monoica Hexanilia, the same plant! having hermaphrodite and female flowers, the hermaphrodite having six stamens.

We know but one SPECIES of this genus, viz. Co cos (Nunera) Trontibus pinnatis, foliis enfimbri- buri raphicatu. Jacq. Hilt. IUI. Cree Nut nrtrb winged bratitbi, -ebsiptitit leaves art furd-jheptd and f&ldai. Palma Imlica coccifera angulola, C. B. F. 502. This tree is cultivated in both Indies, but is generally supposed to grow naturally in the Maldives, and other adjacent islands of the East-Indies. The trees grow to a great height in their native places, but their stems are composed of strong fibres like net-work, which lie in several lamina over each other, out of which come the branches (or rather leaves,) which grow twelve or fourteen feet long. The stalks are garnished with sword-shaped small leaves, whose borders fold backward: the broad leaves which push out from the stem when planted, are very different from those which are afterwards produced, for they are very broad, and have many folds in each: whereas, after leaves have a broad midrib, of great length, on which the smaller fibres are placed alter-

nate; these are from six to eight or nine inches long, and are triangular, having very sharp points, and are very brittle. The flowers come out round the top of the trunk of the tree in large clusters; they are enclosed in a large tubular calyx, and the nuts afterwards are formed in large clusters; these are included in large net-work covers, which adhere closely about them; the nut has a hard shell, with three holes at the upper end. The kernel is large, firm, and the lower part of the shell, when tinted with red, is used with yucca liquor, which the inhabitants of the countries where the trees grow, call milk, and they are very fond of it. From this milk I have been informed by persons of credit, there has been extracted a great quantity of oil in Jamaica. The plains are planted by planting the nuts in the furrows where they are designed to be raised for the plants will not bear transplanting, until they are formed whilst they are very young, for their roots are deep and wide; so that if they are cut or broken, the plants will not survive it, which is generally the case with most of the kind of trees.

Where any persons are desirous of having a plant or two of this kind, they should procure some of the nuts from the nearest plantation of their growth, which, on their arrival in England, should be put in a warm bed of tan, or bark, tying them on one side, that the young ones may grow out from one of the three holes may not be injured by wet, covering them about six inches deep with the tan. In this situation, if the nuts are good, they will put out roots in six weeks or two months, so should be then carefully taken up, and each planted in a separate pot filled with kitchen-garden earth, and plunged into the tan-bed in the tub, where the plants should always remain, for they are too tender to thrive in any other situation, but as the plants advance in their growth, they should be shifted into larger pots or tubs, being careful not to cut or tear their roots in the transplantation.

This is one of the most useful trees to the inhabitants of America, who make many uses of it from the several parts of it. The outer cover of the nuts is made into cordage; the shells are used into drinking bowls, the kernel of the nuts is for them a wholesome food, and the milk is cooling liquor. The leaves of the tree are used for thatching of their houses, and are also wrought into baskets, and many other things which are made of them.

COCCOLOBA, Srt-e-k Grape.

The CHARACTERS are.
Tit infatentit is tf SJX leaf, ait into Jhe parts,
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rmir^i::d by TO, i- It bat <in e* </
tt/ra-cerwu gi fart
ijlt, :ard fcorus a thit Jery, haying a
2 2 2

pointed nut* with one cell, boning a fingle fed of the fame form.

This genus of plants is ranged in the third fection of Linnaeus's eighth genera, intitled O&andria Trigynia, the flowers having eight ftamina and three ftyles.

The SPECIES are,

1. COCCOLOBA (*Uvifera*) foliis cordato-fubrotundis nkidis. Lin. Sp. 523. *Sea-fide Grape with neat, roundifh* heart-fhaped leaves.* Guajabara racemofa, foliis coriaceis fubrotundis. Plum. Nov. Gen.
2. COCCOLOBA (*Rubefeens*) foliis orbiculatis pubefcentibus. Lin. Sp. 523. *Sea-fide Grape with orbicular hairy leaves.* *Scortea arbor Americana, ampliflimis foliis averfapartenerisextantibus.* Pluk. Phyt. 222. f. 8.
3. COCCOLOBA (*Punffata*) foliis lanceolato-ovatis. Lin. Sp. 523. *Sea-fide Grape with oval fpear-fhaped leaves.* *Uvifera arbor Americana, fruftu aromatico pun&ato.* Pluk. Aim. 394.
4. COCCOLOBA (*Excoriato*) foliis ovatis, ramis quafi ex-corticatis. Lin., Sp. 524. *Sea-fide Grape with oval leaves* and the branches cafting their bark.* Guajabara alia racemofa, foliis oblongis. Plum. Icon. 146. f. 1. *Called Mountain Grape.*
5. COCCOLOBA (*Tenuifolia*) foliis ovatis membranaceis. Amon. Acad. 5. p. 55j. *Sea-fide Grape with oval membranaceous leaves.*

The firft fort rifes with many ligneous items to the height of ten or twelve feet, having feveral knots or joints* covered with a gray bark: at each joint is fet on one large, roundifh, fsmooth leaf, a little indented at the top. The flowers come out from the foot-ftalks of the leaves, in long bunches like thofe of Currants; they have no petals, but the empale Ant is cut into five fegments, including eight awl-fhaped ftamina, terminated, by twin fummits. The germen afterward becomes a fucculent berry, including an oval-pointed nut, having one feed of the fame form.

The fecond fort feldom rifes fo high as the firft, but divides into feveral lateral branches, garnifhed with large roundifh leaves, having feveral deep veins* the flowers and fruit come out from the fide of the branches in like manner as thofe of the firft, but are larger.

The third fort is a lower fhrub than either of the former; the leaves are oval and fpear-fhaped -, the fruit is fmaller, fomewhat aromatic, and ipotted; thefe proceed from the fide of the branches in like manner as the former forts.

The fourth fort grows to a much larger fize than any of the other; the leaves of this are much larger, of an oblong oval form, very fsmooth, and of a lucid green: from the wings of the leaves, the flowers and fruit are produced, which are in form like thofe of the other forts, but are larger.

The fifth fort is of humbler growth than either of the former; the leaves are membranaceous, of an oval form; the flowers and fruit are fmaller than thofe of the other forts. Thefe plants all grow naturally in the warm iflands of America; ibme of them on the fea-fhores, where they form very clofe, almoft impenetrable thickets *, the fruit of the firft fort are frequently eaten by the inhabitants of the iflands, but dpecially by the negroes. Thofe of the other forts are food for birds.

The plants of all the forts are eafily propagated by feeds, when they can be obtained frch from the places of their natural growth (for none of the forts have as yet produced either fruit or flowers in England.) The feeds fhould be fown in fmall pots filled with earth from the kitchen-garden, and plunged into a hot-bed. If the feeds are good, and the bed of a proper temperature of warmth, the plants will appear in five or fix weeks after, which will be fit to transplant in about a month after -, when they fhould be ftaken out of the pots, feparating their roots carefully, and each planted in a feparate fmall pot filled with the like earth, plunging them into a hot-bed of tanners bark, being careful to (hade them in the day-time, until they have taken new root; after which they

Should be treated in the fame way as other tender exotic plants, which require to be kept conftantly in the bark-ftove.

CODLIN-TREE. SeeMALus.

COFFEA. Lin. Gen. Plant. 209, Juff. A & Reg. Scien. 1713. Jafminum. Com. Cat. The Coffee-tree.

The CHARACTERS are,

the flower hath a fmall impalement divided into four parts fitting upon the germen. It hath one petal which is funntUfhaped* having a narrow cylindrical tube* which is much longer than the empalement* but is plain at the top* where it is indented in five parts. It hath five ftamina which are faftened to the tube* and are terminated by longftender fummits. The roundifh germen fupports afingle ftyle* crowned by two thick reflexedftignas. The germen afterward becomes an oval berry* containing two bemifpherical feeds* plain on one fide* and, convex on the other.*

This genus of plants is ranged in the firft fection of Linnaeus's fifth clafs, intitled Pentandria Monogynia, the flower having five ftamina and one ftyle 5 it hath been generally included in the genus of Jafmines *, but as the flowers of Jafmine have but two ftaipina, fo by Linnaeus's fyftem, this is feparated and ranged in another clafs.

We have but one SPECIES of this genus, viz.

COFFEA (*Arabica*.) Hort. Cliff. 59. The Coffee-tree. Jafminum Arabicum Caftaneae folio, flore albo odoratiffimo, cujus fru&us Coffea in officinis dicuntur nobis. Juff. Aft. Par. 1713.

This tree is fuppofed to be a native of Arabia Felix, where it was firft cultivated for ufe, and to this day, is the country from whence the beft Coffee is brought to Europe, though the plant is now propagated in many parts of India and America; but the produce of thofe countries being greatly inferior to that of Arabia, hath occafioned its prefent difrepute in England, fo that it is fcarce worth importing; but this might be remedied, if the Coffee planters in the Weft Indies could be prevailed on to try a few experiments, which I (hall hereafter propofe, being founded on thofe which have been made in England, upon the berries produced here. But I (hall firft treat of the plant, with its culture in England.

This is a low tree in the native country of its growth, where it feldom rifes more than fifteen or eighteen feet high, but in England I have not feen any above ten or twelve. The main ftem grows upright, and is covered with a light brown bark; the branches are produced horizontally and oppofite, which crofseach other at every joint, fo that every fide of the tree is fully garnifhed with them: the lower branches being the longeft, the others gradually decreafing to the top, form a fort of pyramid; the leaves are alfo produced oppofite; thefe when fully grown, are about four or five inches long, and one inch and a half broad in the middle, decreafing toward each end; the borders are waved, and the furface is of a lucid green. The flowers are produced in clufters at the bafe of the leaves, fitting clofe to the branches; thefe are tubulous, fspread open at the top, where they are divided into five parts, and are of a pure white, with a very grateful odour, but of fhort duration: they are fucceeded by oval berries, which are firft green, when fully grown, they turn red, and afterward change to black when fully ripe; thefe have a thin pulpy (kin, under which are two feeds joined, which are flat on the joined fides, with a longitudinal furrow, and convex on their outer fide.

As the Coffee-tree is an Evergreen, it makes a beautiful appearance at every feafon in the ftove, but particularly when it is in flower *, and alfo when the berries are red, which is generally in the winter *, fo that they continue a long time in that ftate, therefore there is fcarce any plant that more deferves a place in the ftove than this.

It is propagated by the berries, which muft be fown foon after they are gathered from the trees, for if they are kept out of the ground a fhort time they will not grow. I have frequently fent the berries abroad

by the poft, but when they have been a fortnight in their journey they have all failed; and this has conftantly happened every where, for the berries which were fent from Holland to Paris did not grow, nor did thofe which were fent from Paris to Eiigland grow; fo that wherever thefe trees are defired, the young plants muft be fent, if it be at any diftance from the place where they grow.

The berries fhould be planted in fmall pots, filled with light kitchen-garden earth, and plunged into a hot-bed of tanners-bark; the pots muft be watered gently once or twice a week, but the earth muft not be too moift, left it rot the berries. If the bed be of a proper temperature of warmth, the plants will appear ki a month or five weeks time, and in about two months more will be fit to tranfplant. For as many of the berries will produce two plants, fo the iboner they are parted, the better their roots will be formed; for when they grow double till they have made large roots, they will be fo intermixed and entangled, as to render it difficult to feparate them without tearing off their fibres, which will greatly prejudice the plants. When thefe are tranfplanted, they muft be each put into a feparate fmall pot, filled with the fame earth as before, and plunged into the tan-bed again; which fhould be ftirred up to the bottom, and if required, fome new tan fhould be mixed with it, to renew the heat. Then the plants fhould be gently watered, and the glaffes of the hot-bed muft be fliaded every day till they have taken new root; after which the plants fhould have free air admitted to them every day, in proportion to the warmth of the feafon: during the fummer they will require frequently to be refrelhed with water, but they muft not have it in too great plenty: for if their roots are kept too moift, they are very fubjeft to rot, then the leaves will foon decay and drop off, and the plants become naked; when, this happens, they are feldom recovered again. The firft fign of thefe plants being difordered, is, their leaves fwearing out a clammy juice, which attracts the fmall infefts, that too frequently infeft the plants in ftoves; when they are not in health, thefe infe&s cannot be deftroyed, till the plants are recovered to vigour: for although the plants are ever fo carefully walhed and cleaned from them, yet they will be foon attacked by them again, if they are not recovered to health, for thefe infe&s are never feen upon any of the plants while they are in perfect vigour; but when they are difordered, they foon ipread over all the leaves and tender parts of the plants, and multiply exceedingly; fo that upon the firft attack, the plants fhould be fhifted into freffi earth, and all poffible care taken to recover them, without which all the walhing and cleaning of the plants will be to little purpofe. The diforders attending the Coffee-trees, generally proceed from either being put into pots too large for them, nothing being of worfe confluence than over potting them 5 or from the earth being too ftiff, or overhung by other plants, or being over watered. If thefe are properly taken care of, and the ftove kept always in a proper temperature of heat, the plants will thrive, and produce plenty of fruit.

I have made trial of feveral compofitions of earth for thefe plants, but have found none of them equal to that of a kitchen-garden, where the foil is naturally loofe, and not fubjeft to bind; and if it has conftantly been well wrought and properly dunged, this without any mixture is preferable to any other.

The plants fhould not be too often tranfplanted, for that will greatly retard their growth. If they are new potted twice a year at moft, it will be fufficient; though unlfs the plants make great progrefs, they will iiot require to be removed oftener than once in a year, which fhould be in fummer, that they may have time to get good roots again before winter. During the warm weather in fummer, thefe plants fhould have a large ihare of air, but they muft not be wholly expofed abroad at any feafon: for although they may have the appearance of thriving in the open air

during the heat of fummer, yet when they are removed into the ftove again, their leaves will fall off, and the plants will make but an indifferent appearance the following winter, if they fhould furvive it: therefore it is the better method to keep them conftantly in the ftove, and admit a proportionable fhare of air to them every day, according to the heat of the feafon; they will require water two or three times a week in warm weather, but in the winter they muft have it more fparingly; and the ftove in which they are placed, fhould be kept to the heat affigned for the Ananas upon the botanical thermometers.

There has been fome of thefe plants propagated by cuttings, and alfo from layers; but thefe are long before they make roots, and the plants fo raifed, are never fo ftrong and thriving as thofe which arife from berries, therefore where the berries can be produced, it is much the beft method to propagate the plants by feeds.

When the plants are tranfplanted, their roots fhould not be too much cut or trimmed, the decayed or rotten fibres fhould be pruned off, and thofe which are clofely matted to the fide of the pots fhould be trimmed, but not cut too near to the item; for the old fibres do not put out new roots very kindly, e&pecially thofe which are become tough, fo that there fhould always be a fufficient number of young fibres left to fupport the plants, till new ones are produced.

The Coffee plants were firft carried from Arabia to Batavia by the Dutch, and from thence they were afterward brought to Holland, where great numbers of the plants were raifed from the berries which thofe plants produced, and from thefe moft of the gardens in Europe Hive been furnifhed. A great number of thefe young plants, which were raifed at Amfterdam, were fent to Surinam by the proprietors of that ifland, where the trees were foon propagated in great plenty, and from thence the plants have been difperfed to moft of the iflands in the Weft Indies: for as the plants raifed from the berries, produce fruit in two years from planting, and in the warm countries fooner, fo plantations of thefe trees may be foon made in any of thole countries, where the temperature of the air is proper for their produftion, but the trees will not grow in the open air any where if there is a winter Hb that in all countries without the tropics, they cannot be expected to grow abroad.

The French have made great plantations of thefe trees in their fettlements in the Weft Indies, and alfo in the ifle of Bourbon, from whence they import great quantities of Coffee annually to France; which although greatly inferior in quality to the Arabian, yet h is confumed, otherwife they would not continue that branch of commerce. In the Britifh colonies of America, there have been fome large plantations made of Coffee-trees: and it was propofed to the parliament, fome years paft, to give a proper encouragement for cultivating this commodity in America, fo as to enable the planters to underfell the importers of Coffee from Arabia. Accordingly there was an abatement of the duty payable on all the Coffee which fhould be of the growth of our colonies in America, which at that time was fuppofed would be a fufficient encouragement for the planters to improve this branch of commerce: but the productions of thofe countries, being greatly inferior in quality to that of Arabia, hath almoft ruined the projet; and unlfs the planters can be prevailed on to try fome experiments to improve its quality, there can be little hope of its becoming a valuable branch of trade; therefore I fhall beg leave to offer my fentiments on this article, and fincerely wifh what I have to propofe may be found ufeful for the inftru&ion of the Coffee planters; for as my opinion is founded upon experiments, fo it is not mere theory or fuppoftion.

The great fault of the Coffee which grows in America, and alfo in the ifle of Bourbon, is the want of flavour, or having a difagitable one. The berries

we much larger than those which are imported from Arabia, and consequently have not so much spirit or flavour. This may be owing to several causes, the first is that of its growing in a soil too moist, which is always known to increase the size of fruit and vegetables, but their quality is greatly diminished thereby. The second is from the gathering of the berries too soon; for I have been credibly informed, that it is the constant practice of the planters* to gather the fruit when it is red: at which time the berries are much larger, and of greater weight, than those which are permitted to ripen perfectly on the trees, which is not till they are turned black, and their outer pulp becomes dry, and the skins shrink: then the berries are much smaller than before, and the outer cover will easily separate from the berry; which I have always been informed, has been the complaint of the planters, that this was with great difficulty and trouble effected. A third cause I imagine may be in the drying of the berries when gathered; which must be constantly attended to, for they cannot be too much exposed to the sun and air in the day time, but they must be every evening removed under cover, and carefully screened from dews and rain, nor should they be placed near any sort of liquid or moisture, for these berries are very subject to imbibe moisture, and thereby acquire the flavour of the liquid or if it be pure water, the berries will be enlarged, and the flavour diminished by it, as from many experiments I can affirm: for a bottle of rum being placed in a closet, in which a canister of Coffee berries closely stoppered, was hanging on a shelf at a considerable distance, in a few days had so impregnated the berries, as to render them very disagreeable; the same alibi has happened by a bottle of spirits of wine (landing in the same closet with Coffee and Tea, both which were in a few days spoiled by it. Therefore from many experiments of this nature, which I have made with Coffee, it appears to me that it should never be brought over in ships freighted with rum, nor should the berries be laid to dry in the houses where the sugars are boiled, or the rum distilled. I have also been informed by a gentleman who has a very good estate in Jamaica, and who has lived many years in that island, that the planters frequently boil the Coffee berries before they are dried. As this information comes from a gentleman of great skill and veracity, so I cannot doubt of the fact and if so, this alone is sufficient to spoil the best Coffee in the world so that I am at a loss to guess the reason for this practice, which, as it appears to me, can only be intended to increase the weight, therefore must be imputed to avarice, the bane of every public good.

There was some time past an imperfect account printed in the papers, of the cause why the American Coffee was not so good as that which comes from Arabia, in which it is supposed, that the goodness of the latter proceeded from the length of time which the berries had been kept: therefore the author proposes that the American Coffee berries should be many years kept, which he says will render them equally good. This is contrary to all the experience I have had, or can learn, from those who have seen the whole progress of Coffee in Arabia, with their manner of drying and packing it to send abroad; for two gentlemen who had lived there some years assured me, that the berries, when first gathered, were much better than those which are kept any time. And a curious gentleman who resided in Barbadoes two years, also told me, that he never drank better Coffee in any part of the world, than what he made from the fresh berries which he gathered himself, and roasted as he had occasion for them; which is also confirmed by the trials which have been made with the berries which grow in the stoves in England, which make a better flavoured liquor, than the best Arabian Coffee berries which can be procured in England; therefore I wish those who are inclinable to cultivate these trees in America, would make

choice of a soil rather dry than moist, in which the trees will not make so great progress as those which grow in a wet soil, nor will the produce be so great, but as the quality of the produce will be so much improved, it will certainly be of greater advantage to them.

The next thing is, to permit the berries to remain so long upon the trees, till their skins are shrivelled and turned very black, which it is true will greatly diminish their weight, but then the commodity will be more than double the value of that which is gathered sooner.

When the berries are fully ripe, they should be gathered, or rather shaken from the trees, when they are perfectly dry, and spread abroad upon cloth: in the sun to dry, carrying them every evening under cover, to prevent the dews from falling on them, or the rain if any should happen: and when they are perfectly dry, they should be carefully packed up in cloths or bags, three or four times double, and consequently kept in a dry situation: and when they are shipped for England, it should be on board those vessels which have no rum, lest the Coffee should imbibe the flavour, which cannot be prevented when flowed in the same place. For some years past, a Coffee ship from India had a few bags of pepper put on board, the flavour of which was imbibed by the Coffee, and the whole cargo spoiled thereby.

As the quantity of Coffee now consumed in Britain is very much increased of late years, so it will certainly be worthy of public consideration, how far it may be necessary to encourage the growth of it in the British colonies: and certainly it deserves the attention of the inhabitants of those colonies, to improve this commodity to the utmost of their power and not to have so much regard to the quantity, as to the quality of it; for although the former may appear to have the advantage of the latter in point of profit, yet the goodness of every commodity must always claim the preference, and thereby will be found of more lasting advantage to the cultivator.

COIX. Lin. Gen. Plant. 927. *Lachryma Jobi*. Toum. Inf. R. H. 531. tab. 306. Job's Tears.

The CHARACTERS are,

// both male and female flowers on the same plant; the male flowers are disposed in a tuft spike the chaff of these have two valves, inclosing two flowers, the valves are oblong and bearded; the petal has two oval valves* the length of the chaff, with narrow beards: these have each three hairy stamens, terminated by oblong four-cornered summits. there are a few female flowers situated at the base of the male spike in the same plant, these have bivalvular chaff; the valves are roundish, thick, and smooth \ the petal hath two oval valves, the outer being larger and bearded at both ends. They have a small oval germen, supporting a short style divided into two parts, crowned by two horned stigmas which are longer than the flower, and covered with fine hairs; the germen afterward becomes a hard, roundish, smooth seed.

This genus of plants is ranged in the third section of Linnaeus's twenty-first class, intitled Monoecia Triandria. The plants of this class have male and female flowers on the same plant, and the flowers of this section have three stamens.

The SPECIES are,

1. Coix (*Lachryma Jobi*) *feminibus ovatis*. Hort. Cliff. 434. Coix with oval seeds. *Lachryma Jobi*. Cluf. Hist. p. 2. Job's Tears.
2. Coix (*Angulatis*) *feminibus angulatis*. Hort. Cliff. 438. Coix with angular seeds. *Lachryma Jobi Americana altissima*, *Arundinis folio & facie*. Plum. Cat. The first sort grows naturally in the islands of the Archipelago, and is frequently cultivated in Spain and Portugal, where the poor inhabitants grind the grain to flour in a scarcity of corn, and make a coarse sort of bread of it.

This is an annual plant, which seldom ripens its seeds in England, unless the season proves very warm; from a thick fibrous root is sent out two or three jointed stalks, which rise near three feet high, garnished.

ribbed with fine, one, narrow leaver at each joint, resembling those of the Reed, at the base of the ... COLIC. <ann- on the fingers of llovcn, fjuidirig on show foot stalks; these spikes are coinposed of mah flowers only, and below them is frujcti one or two it-male flowers. ... flowers ... (ticca) tton after they hire [lied tliif fsrina; but thegennen of the 6 main flowers fwcU 10 a large oval feed, which i* harv), smooth, and of i gray colour, greatly refcmline the feeds of G... i. ... qm whence thii plan has been by fev... il wi ucrr titled Lithofprrouin, Thofc who are deftrouj ro cultivate this plant in England, may procure ihc ti#ds from Portugal, thcli- fhoude be Town on a moderate hot-bed in [he Ipring, tn bring the pantj forward, and afterward tranplant il, rui on a warm border, allowing each two teet room at le A, and when VIL- plants have taken root, they will require no farther care, but to keep them ckan from v... Thefe will Bower about Midi'imnicr, and in wirm feafon*, (he feeds will ripen at Michaemas. There is n varicij of thU with much broader leav*, which I received from Smyrna fome years jail, which did not pettedt feeds here, Ib I cannot &y whether it is only a variety, or a different fort from th...

The fa&ad fort will grow to tlic height of feven or eight feet, and the firms become hard, like the Reed, or Indian Com: thefe branch out, and produce ftvcral spikes of Dwen; hut this fort will not live in the own air in England, therefore fhoi^ld be plunged into ihc bark-ftove, where it will live through the winter, and produce ripe feeds the fecond year; and may liL-com; mud longer, ifdcAred.

COLCHICUM, Lin. Gen. Plant. 415. Toum. Inf. (L. H. 348. (ah, 181, 182. [So called from ColchoE, a province of tlic Levant (now called Mingrelia, becauil- this plan; waj formerly very common in that place.] Meadow Saffron,

CHUIACTERS
Tie fisvKr hash wither tntfaljiuut er fratbt -, it b.tfb out pttt, rtag vritb tot ntigukr tube fivm the rets, ... i tbt top irjofit eoel, eexcevt, trrti fg/r; eni^ it hath fix Jtamim v>hkb arcJburter than the fctiU trm&utid by cbkn? fummits having fctir vafoa. ibtgeTmeMifutittAihTberxt, fuppm-trng ibreejlenctr
*h if ibt Jtamhs, crowned by rrfixed ebon-
*llal jligMUS; tttgemm afterward kumes a a>Oult
*wib tbrtt kb&, having a fiaa «a lit htfade, *
it suit tbrtt ct!ti, tslUb eeitum JcvtraJrau!ijji r&ugb fids.

This genus of plant* is ranged in die third fcclion of Litmxus's lixu ... ^nia, Uir* flower laving fw Hamina and three flyles.

The SPECIE? are,
1. ColicHictH (jiftumMuk) fblib plunis lar. ... it. Cliff. I +0. Ccirbieum viitb phi*, triti, wr-Jbtyeit boots. Colchicum commune, C. B. P. ... mmsn Mtadow Saffron.

2. COLCmcim [MmtiKtim] tbliis linearibus, pattntiffimis. Lin. Sp. Plant. 34:. Mndov: Saffron v:iti>-very narrow ... Colchicum Montmum angulofolum, C. B. P. 41. Narrow-leaved Mountain Mto ... Mffrm

3. COLCHICUM (Varietatum) foliis undulatii psc Hart. Cliff. 140. Mead ... red/pnadinj; t. Colefaicum I ... itillarib; • tefulaiis, I ... lift. 1, p. 141. Meadm Soffrm of Chios, ttiitb cbequtred jtemrs Bit Frititltry, a .

4. IU CTjffitlatiurij fblis planis patentitttl! Col- prtaditig kovti. Colchicum Horibttis ink. Mor. H p. 3., ... -i, with cbtquerd jhtotr i:it

There is B greater variety of the ft (lowcn than iny here enutiicated, which differ in die colour of their flowers, and other little accidenu, which are not lading, fo mull not be ringed as dill-act fpecim. But an miny of them are cultivated in f.o. ... gardens, I ihili beg Irave to teorion thofc varieticj, which

are frequently •TOpagated by fl^-ills. Thefe are maft of them :- [i 1 i nal v.ir : tie fi rit fort.

The nwft comttfion Meadow Saffron ftatli a purplilh flower,

The Meadow Sif&im *Wiwhi flowers.
Meadow Sutftron with I ... flowers.
• ... Meadow Saffron.
Striped-leaved Meadow Saffron.
Many flowered Meadow Saffron.

Meadow Saffron with double purplilh Rowi,
Meadow Saffron with double white flowers.
Meadow FW Saffron with many white p...

The firll: fort grow* nai rally both in the w^ \, and north of England- I have! ... in the meidows near C ... wick- (l) i re. i n tlic btgi T re m bt r. The country pcopli: cull the flowers Naked Ladks, becaofe they come up naki-d, witho\ u any Irvcj or covcr. Thii hath a bulbom root, about tlic fuc and ilv of thofc of the Tulir>, but no: ... at I* top, the tkns or cover is ailu of a darker colour. Thefe bulbs arc renewed every yci., for thofc w/h a produce the floVrftis decay, and new roots arc rbrmcii abwve. Tlic (lowers cumc out in s'j ... the irile widi long flcndcr tubes Iran the I ... about four Inch* high, lhaped like chop of the Saffron, but larger-, they arc of a pale purple colour, and divided into fix parts at the top, which ... the number of fkiwers is generally in proportion to the fuc of the ruois, from two to feveu or ciglit: in March the "teen leaves appear, ihcfc ate aimonly four to a full grown toot; they are folded over each other below, but Ipread open above ground, standing croft ways; *th(-y arc of a deep green, and when fully ^rown, arc five or fix 1; ... uid one and ahalfbroad. The leed-veBel comes our from between the leaves in April, and the feeds ripen in May, foon after which the leaves decay.

The other varieties of this, are fuppofed to have accidentally riien from the it-cdj of 11 ... who arc defirouj to olytain a varic-, of thofc flowers, fhould propagate them from feeds, by which method there may be a. greater variety railed.

The fecond fort grows micurallly on the mountain; in Spain and Portugal, This hath a I mailer root than the firft, and a darker coat; the flowers appear in Augur nr September^ thffe arc cut into lue kmg narrow ibgnent!, of a n-tidifli pur; ... aving fix yellow (lamina. The leaves OI rfiU (bit crime up from ... tlic flowers decay, and continue gi.- on all the winter. Ilkcthe SifTron 1 thefe arc lon ... narrow, and fpcal un the ground; in Jul< thofc decay like the firft fort.

The third and fourth fom grow naturally itt the Lt-varst, but are commonly cultivated in the Englilh gardens. Thefe Rower at the fame time as ihc firft fort, wd Uic green leaves come up in the fpring. The root of one of thefe fpecici, is fuppofed tolw the Hermodactjl of the ti...

Thiefe are all vfy pretty varierlei for a Bower-g^rden, producing their Bowers in autumn, when few other plants ire in hnury; and are theri"o<. by fome, called Naked Ladies- "MIL- green leave] come up in ihc Ipring, which arc ex:ceded to a great length in May, then the green leaves begi ... to decay; foon utter which time, is the proper lealbn r. transplant their roots j for if they arc fultem! ... to remain in the ground till AuguH, thry will fend fortii I ... fibres, after which h time it will be roo bit- to remove them. Tlic roots ni ... be kept above ground until the beginning of Aut^ift, at which time, if they arc not planted ... they will produce triel- flowers u they lie out of the ground, but this will greatly •weaken their roots. The manner of planting thtir root* being the 6mi; ai Tuttrrs, &c. I (ball farbt.tr mentioning it here, rcterru. • ihc rcjdr to tlftt arritic: and allo for fowing the feeds, iij which means new varieties may be obtained: I fhall refer to die article Xirruon; where will be proper directions fi>r this work.

C O L D signifies something devoid of heat, or which does not contain in it any particles of fire; according to which definition, cold is a mere negative term. And this is agreeable to the sentiments of most of our modern philosophers, who suppose cold to consist in a mere privation or diminution of heat.

Others much on the same principle* define cold, to be that state of the minute parts of a body, wherein they are agitated more slowly and faintly than those of the organs of feeling. And in this sense, cold is a mere term of relation: and hence the same body becomes liable to be perceived hot or cold, as the particles of it are in greater or lesser degree of motion than those of the sensible organ.

Heat is supposed to consist in a particular motion of the parts of the body; and hence the nature of cold, which is its opposite, is easily deducible; for we find that cold extinguishes, or rather abates heat. Whence it seems to follow, that those bodies are cold, which check and restrain the motion of the particles, wherein heat consists.

There are three kinds of bodies that can do this; viz. either those whose particles are perfectly at rest, or those whose particles are indeed agitated, but with less violence than those of the hot body to which they are applied; or, lastly, such whose particles have a motion proper for exciting the sensation of heat, but move with a different determination, so as to retard and change the motion of the particles of the organ.

Hence three different kinds of cold, or cold bodies, do proceed.

The first, That cold is common to all hard bodies; which consists in the rest of their parts.

The second is, That which arises from plunging any part of the body in water, which consists in this, that the parts of our praeordia, being more briskly agitated than those of the fluid, communicate part of their motion to it.

The third, The cold felt on the collision of warm air with a pan, or in blowing hot breath out of our mouth with the lips close shut, which consists in this, that the direct motion of the particles of air does, in some measure, change and rebate the motion and determination of the parts of the body; and hence it is, that a cold body cannot cool another without heating itself.

Hence also it proceeds, that the more the parts of a frigid body are at rest, the more the particles of a warm body that is applied to heat them, must lose of their motion, and consequently of their heat.

Thus, there being more quiescent parts in marble than in wood, which is full of pores and interstices, the marble is felt colder than the wood: and hence also we may understand why air near marble, and other dense bodies, feels somewhat colder than in other places.

On this principle the two latter kinds of cold appear somewhat more than privations: the particles inducing the cold may be esteemed real frigorific corpuscles; and coldness may be deemed a real quality, as well as hotness. These particles do not only check the agitation of those continually diffused from the inner parts of an animal to the outer; but having an elastic power, they bend, and hang about the filaments of the body, pinch and squeeze them; and hence is that acute pungent sensation called cold.

That cold is more than a mere relation or comparison, is evident from its having real and positive effects; such as freezing, congelation, condensation, rarefaction, bursting, &c.

Dr. Clarke takes cold to be owing to certain nitrous and other saline particles, endowed with particular figures proper to produce such effects. Hence sal-armoniac, salic petre, salt of urine, and many other volatile and alkalizate salts, mixed with water, increase its degree of cold very sensibly.

Hence also comes that popular observation, that cold prevents corruption; which, however, must not be admitted without an exception \ since if an hard po-

rous body have its interstices filled with water* and this be too much dilated by freezing, the including body will be burst. And thus it is that cold proves destructive to the parts of some plants: as it happened in the winters, anno 1728, and 1739-40, in several trees, whose trunks were much exposed to the louth-west, the sap being thereby rarefied by the warmth of the sun, which, for several days, at the beginning of the severe frost, (gone with an uncommon heat, and the nights coming on to extreme cold, whereby the rarefied sap was so suddenly condensed, that the sap-vessels could not contain it, and thereby burst off* the bark of many trees almost from top to bottom -, and this chiefly on the south-west side of the trees; as it did of several large trees in the physic-garden at Chelsea; and several Pear, and other fruit-trees, in the nurseries of Mr. Francis Hunt at Putney, &c. And thus it is that great quantities of trees are rendered shaken, and the timber, when cut, of little value-, which is generally the case in very severe winters. In the hard frost of the year 1739-40, there was great damage done to the Oak-timber in most parts of England, by the frost penetrating to the sap-vessels of the trees; and by freezing the sap, the vessels could not contain it, but burst with great noise* so that the woods resounded with a noise somewhat like the breaking down of the branches of trees, when they are lopping.

Dr. Boerhaave says, That there is no such thing in all nature as absolute cold, that the most severe he had ever known, was in the year 1728, that then the water would freeze while it ran down his hand; and yet even then the cold was not so complete, but that he could make an artificial cold greater by twelve degrees.

Though much might be said as to the effects of cold on plants, I shall only conclude with an observation of the Reverend Dr. Hales, who, in the conclusion of his excellent treatise of Vegetable Statics, says 5

The considerable quantity of moisture, which is perspired from the branches of trees during the cold winter season, plainly shews the reason why, in a long season of cold north-easterly winds, the blossoms, and tender young-set fruit and leaves, are, in the early spring, so frequently blasted, viz. by having the moisture exhaled faster than can be supplied from the trees -, for, doubtless, moisture rises slower from the root, the colder the season is, though it rises, in some degree, all the winter; as is evident, as he says, from his sixteenth experiment in the said book.

And from the same cause it is, that the leafy spires of Corn are by these cold drying winds often faded, and turned yellow; which makes the husbandman, on these occasions, wish for snow: which, though it be very cold, yet it not only defends the root from being frozen, but also screens the Corn from these drying winds, and keeps it in a moist, florid, supple state.

It seems therefore to be a reasonable direction, which some authors, who write on agriculture and gardening give, viz. During these cold drying winds, when little dew falls, to water the trees in dry soils, in the blossoming season, and while the young-set fruit is tender*, and provided there is no immediate danger of a frost, or in case of continued frost, to take care to cover the trees well, and at the same time to sprinkle them with water; which is imitating nature's method of watering every part.

As to sloping shelters over wall-trees he says, I have often found, that when they are so broad, as to prevent any rain or dew coming at the trees, they do more harm than good in these long easterly drying winds, because they prevent the rain and dews falling on them 5 which would not only refresh and supple them, but also nourish them: but in case of (hard frost after a shower of rain, these shelters and other fences must needs be of excellent use to prevent the almost total definition occasioned by the freezing of the tender parts of vegetables, when they are saturated with moisture.

COL

COLDENIA. Lin. Gen. Plant. 159. This plant was first named by Dr. Linnæus, in honour of Dr. Colden, of North America, who is a very curious botanist, and has discovered several new plants which were not known before.

The CHARACTERS are,

The empalement of the flower is composed of four erect leaves, which are long as the petal. It hath a funnel-shaped flower of one petal, spreading at the top, and obtuse; it hath four stamina, which are inserted in the tube of the petal, terminated by roundish summits. In the center is situated four oval germen, each supporting a hairy style the length of the stamina, crowned by permanent stigmas. The germen afterward become an oval, compressed, rough fruit, with four cells, terminated by four beaks, inclosed by the empalement, each of the cells containing a single seed, convex on one side, and angular on the other.

This genus of plants is ranged in the third section of Linnæus's fourth class, intitled Tetrandria Tetragynia, the flower having four stamina and four styles.

There is but one SPECIES of this genus, viz.

COLDENIA (Procumbens). Flor. Zeyl. 79. This is by Dr. Pluknet titled, *Teucris facie biihagarica tetra-coccus rostrata*. Aim. 363.

This is a native of India, from whence the seeds have been brought to some of the curious botanic gardens. It was sent me by Dr. Linnæus, professor of botany at Upsal in Sweden. It is an annual plant, whose branches trail on the ground; they extend near a foot from the root, and divide into many smaller branches, garnished with (short leaves, fitting close to them) these are deeply crenated on their edges, and have several longitudinal veins -, they are of a glaucous colour, and come out without order. The flowers are produced at the wings of the leaves, growing in small clutters; these have one funnel-shaped petal cut into four segments at the top; they are of a pale blue colour, and very small 5 they have four stamina and four styles, having hairy stigmas. "When the flower decays, the germen becomes a fruit, composed of four cells, wrapped up in the empalement, each containing a single seed.

This plant is propagated by seeds, which must be sown upon a hot-bed in the spring, and when the plants are fit to remove, they should be each put into a separate small pot, plunged into a hot-bed of tanners bark, observing to shade them till they have taken fresh root -, after which they should have air admitted to them every day in proportion to the warmth of the season, and gently watered two or three times a week in warm weather, but they must not have too much moisture. These plants must remain in the hot-bed, where they will flower in June, and the seeds will ripen in September.

COLEWORTS. See BRASSICA.

COLLINSONIA. Lin. Gen. Plant. 38. The title of this plant was given to it by Dr. Linnæus, in honour of Mr. Peter Collinson, F. R. S. a most distinguished promoter of botanical studies, and the first who introduced this plant, among many others, to the English gardens.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five equal segments at the top, the three upper being reflexed, and the two under erect. "The flower is funnel shaped, of one petal which is unequal, and much longer than the empalement, cut into five parts at the top, the upper being short and obtuse, two of them being reflexed the lower up or beard is longer, ending in many points. It hath two long bristly stamina which are erect, terminated by incumbent summits. It hath a quadrifid obtuse germen, with a large gland, supporting a bristly style the length of the stamina, crowned by a pointed bifid stigma. The germen afterward becomes a single roundish seed, situated in the bottom of the empalement.

This genus of plants is ranged in the first section of Linnæus's second class, intitled Diandria Monogynia the flower having two stamina and one style.

COL

We have but one SPECIES of this plant, viz.

COLLINSONIA (Canadensis) foliis cordatis oppositis. *Co*
lymbia with heart-shaped leaves growing opposite.

This plant was brought from Maryland, where it grows wild, as it also does in many other parts of North America, by the sides of ditches, and in low moist ground, where it usually rises to the height of four or five feet but in England it seldom grows above three feet high, and unless it be planted in a moist warm situation, or in dry weather is duly watered, it rarely flowers well; therefore many people keep the plants in large pots, for the more convenient watering them, but these plants seldom produce good seeds; whereas those which are planted in the full ground, and are constantly watered, will ripen seeds very well in good seasons.

This hath a perennial root. The stalks decay in the autumn, and fresh shoots come out in the spring. The stalks are square, garnished with heart-shaped leaves, placed opposite, which are sawed on their edges. The flowers are produced at the extremity of the stalks in loose spikes, these have long tubes, and are divided into five parts at the top; they are of a purplish yellow, and the lower segment is terminated by long hairs. The flowers appear in July, and the seeds ripen in autumn.

This plant may be easily propagated by parting the roots in October. These roots should be planted at three feet distance, for they require much nourishment, otherwise they will not thrive. This plant will live in the open ground, if it is planted in a sheltered situation.

COLOCASIA. See ARUM.

COLOCYNTHIS. See CUCURBITA.

COLUMBINE. See AQUILEGIA.

COLUMNÆA. Plup. Nov. Gen. 28. tab. 33.

Lin. Gen. Plant. 710. The title of this genus was given to it by Plumier, in honour of Fabius Columna, a nobleman of Rome, who has published two curious books of botany.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five parts at the top; it hath one petal, of the (ringent) or grinning kind, having a long swelling tube, divided above into two lips, the upper being erect, concave and entire; the lower is divided into three parts which spread open: it hath four stamina, two being longer than the other, these are inclosed in the upper lip, and are terminated by single summits. In the center is situated the roundish germen, supporting a slender style, crowned by a bifid acute stigma. The germen afterward becomes a globular berry with two cells, fitting on the empalement, and is of the same magnitude, containing several oblong seeds.

This genus of plants is ranged in the second section of Linnæus's fourteenth class, intitled Didynamia Angiosperma. The flowers of this class have two long and two (short stamina, and those of this section have their seeds inclosed in a capsule.

We have but one SPECIES of this plant in the English gardens, viz.

COLUMNÆA (Scandens). Lin. Sp. Plant. 638. Columnæa scandens, Phoeniceo flore, fructu albo. Plum. Nov. Gen. 28. *Climbing Columnæa with a scarlet flower and a white fruit.* Plumier mentions a variety of this, with a yellowish flower and a white fruit. But this is only a femal variation supposed to have accidentally arisen from the seeds of the first.

I received seeds of the scarlet sort from Carthage in New Spain, where the plants grew naturally. This hath a climbing stalk, which fattens itself to the neighbouring plants, whereby it is supported. The leaves are oval, sawed on their edges, and stand upon short foot-stalks 5 these, and also the stalks, are very hairy; but the plants decayed the following year, before they produced any flowers, so that I can give no description of them.

These plants are natives of the warmest parts of America, so are too tender to live in England, unless they are preserved in the stove, they are propagated

by feeds, which muft be fown in a good hot-bed; and when the plants come up, they muft be treated in the fame way as other tender exotic plants which are kept in the bark-ftove.

COLUTEA. Tout a. Inft. R. H. 649. tab. 417. Lin. Gen. Plant. 776. Bladder Sena.

The CHARACTERS are,

// hath a bell-Jhaped permanent impalement of one leaf, indented in five parts, The flower is of the butterfly kind. Theftandard, wings* and keel* vary in their figure in different fpecies. It hath ten ftamina* nine of which- are joined* the other ftands feparate^ which are terminated by Jingle fummits. In the center is ftuated an oblong germen, which is cemprejfed* fupporting a rijing • fijk* crowned by a bearded line, extended from the middle of the upper part of theftyle. The germen afterward becomes a broad fwelcn pod with one cell, including feveral kidney-Jhaped feeds.

This genus of plants is ranged in Linnseus's third fection of his ieventeenth clafs, intitled Diadelphia Decandria. The flowers of this clafs have ten ftamina, nine of which are joined, and the tenth Jlands feparate.

The SPECIES are,

1. COLUTEA (*Arborefcens*) arborea, foliolis obcordatis. Hort. Cliff. 365. *Tree Bladder Sena with heart-jhaped lobes.* Colutea veficaria. C. B. P. 396. *Common Bladder Sena.*
2. COLUTEA (*Iftria*) foliolis ovatis, integerrimis, caule fruticofo. *Shrubby Bladder Sena with oval leaves which are entire.*
3. COLUTEA (*Orientalis*) foliolis cordatis minoribus, caule fruticofo. *Bladder Sena with fmaller heart-jhaped leaves* and a Jhrubby ftalk.* Colutea Orientalis flore fanguinea colons, lutea macula notato. Tourn. Cor. 44.
4. COLUTEA (*Frutefcens*) fruticofa foliolis ovato-oblongis. Hort. Cliff. 366. *Shrubby Bladder Sena with oblong oval leaves.* Colutea flEthiopica flore Phceniceo, folio Barbaejovis. Breyn. Cent. 1. 73. *JEthiopian Bladder Sena with a fcarlet flower.*
5. COLUTEA (*Americana*) foliolis ovatis, emarginatis, leguminibus oblongis compreffis acunrynatis, caule arboreo. *Bladder Sena with oval leaves indented at the top* oblong* compreffed* pointed pods* and a tree-like ftalk.* Colutea Americana, veficulis oblongis compreffis. Houft. MSS. *American Bladder Sena with oblong compreffed pods.* Dr. Pluknet titles it Colutea Verae Crucis veficaria. Aim. 111.pl. 165. f. 3. *Bladder Sena of Vera Cruz.*
6. COLUTEA (*Herbacea*) herbacea foliolis linearibus. Hort. Upfal. 266. *Herbaceous Bladder Sena with narrow leaves.* Colutea Africana annua, foliolis parvis, mucronatis, veficulis compreffis. Hort. Amft. 2. p. 87. tab. 44.
7. COLUTEA (*Procumbens*) caulibus procumbentibus, foliolis ovato-line&ribus, tomentoifis, floribus alaribus pedunculis longiflimis. *Bladder Sena with trailing Jtalks* oval narrow leaves which are woolly* and flowers growing from the fides of the ftalks, with very long foot-Jtalks.*

The firft fort is commonly cultivated in the nurfery-gardens, as a flowering fhrub, to adorn plantations. This grows naturally in Auftria, in the fourth of France and Italy, from whence the feeds were originally brought to England; this hath feveral woody ftems, which grow to the height of twelve or fourteen feet, fending out many woody branches, garnifhed with winged leaves, compofed of four or five pair of oval lobes, placed oppofite, terminated by an odd one; thefe are indented at the top in form of a heart, and are of a grayifh colour. The flowers come out from the wings of the leaves upon (lender foot-ftalks, about two inches long, each fupporting two or three flowers of the butterfly kind, yhoft ftandard is reflexed and large^ . The flowtrs are yellow, with a dark-coloured mark on the petal j thefe are fucceeded, by inflated pods an inch and a half long, having a (earn on the upper fide, containing a fingle row of kidney-jhaped feed\$, fattened to a placenta. This

flowers in June and July, and the feeds ripen in autumn. There is a variety of this with reddifh pods, which is equally common in the gardens, and is fuppofed to be only an accidental variety, for the plants do not differ in any other part.

The feeds of the fecond fort were brought from the Levant by the Reverend Dr. Pocock, which fucceeded in the garden at Chelfea; and fince Dr. Ruffel, who'refided many years at Aleppo, brought over dried famples of this forty which he affures me grow common near that city. This fort feldom grows more than fix or feven feet high 5 the branches are very (lender, and fpread out on every fide, garnifhed with winged leaves, compofed of nine pair of fmall, oval, entire lobes, terminated by an odd one-, the flowers ftand upon (lender foot-ftalks, about the fame length of the former. The flowers are alfo like thofe, but are of a brighter yellow. This fort begins to flower early in May, and continues flowering till the middle of October.

The third fort wjis difcovered by Dr. Tournefort in the Levant, from whence he fent the feeds to the royal garden at Paris, where they fucceeded, and fince have been communicated to moft of the curious gardens in Europe. This hath a woody ftem, which fends out many branches on every fide, which do not rife above feven or eight feet high; thefe are not fo ftrong as thofe of the firft fort, and are garnifhed with winged leaves, compofed of five or fix pair of fmall heart-jhaped lobes, terminated by an odd one. The flowers proceed from the fide of the branches, Handing upon foot-ftalks, each fupporting two or three flowers, (haped like thofe of the firft fort, but fmaller; they are of a dark red colour, marked with yellow: thefe appear in June, and the feeds ripen in autumn.

The fourth fort grows naturally in Ethiopia, from whence the feeds were brought to Europe. This hath a weak fhubby ftalk, which fends out fide branches, growing ereft, garnifhed with equal winged leaves, compofed of ten or twelve pair of fmall, oval, oblong, hoary lobes. The flowers are produced at the upper part of the branches from the wings of the leaves, each foot-ftalk fupporting three'or four fcarlet flowers, which are longer than thofe of the other forts, and are not reflexed; thefe are fucceeded by inflated pods, containing one row of kidney-jhaped feeds. The ufual time of this plant producing its flowers is in June; but when the feeds are fown early in the fpring, the plants frequently flower the following autumn.

The fifth fort was fent me from La Vera Cruz, in New Spain, in the year 1730, by the late Dr. Houftoun. This hath a fhubby ftalk, which Yifes to the height of twelve or fourteen feet, fending out many branches, garnifhed with winged leaves, compofed of three pair of oval lobes, terminated by an odd one; thefe are indented at the top, and are of a light green. The flowers are of a bright yellow, and ftand two or three upon each foot-ftalk, and are fucceeded by compreffed winged pods near four inches long, which end in long points.

The fixth fort grows naturally at the Cape of Good Hope. This is an annual plant of little beauty, fo is rarely cultivated' but in botanic gardens for the fake of variety. It rifes with a (lender herbaceous ftalk about a foot and a half high, dividing upward into three or four branches, garnifhed with winged leaves, compofed of five or fix pair of very narrow lobes an inch long, which are a little hoary. The flowers are fmall, of a purplifh colour, Handing three together on (lender foot-ftalks, which are fucceeded by flat oval pods, each containing two or three kidney-flaped feeds. It flowers in July, and the feeds ripen in autumn, and the plant decays foon after.

The feeds of the feventh fort were fent me from the Cape of Good Hope, in 1753, which have fucceeded in the garden at Chelfea. This plant hath many (lender ligneous (talks, which trail on the ground, and

are divided into many smaller branches, garnished with winged leaves, composed of twelve or fourteen pair of small, narrow, oval lobes, terminated by an odd one; these, and also the stalks, are covered with a whitish down. The flowers are very small, of a purple colour, and stand upon very long (tender foot-stalks, each sustaining three or four flowers; these are succeeded by compressed pods little more than half an inch long, which are a little bent like a fiddle, each containing a single row of small kidney-shaped seeds. It flowers in June and July, and the seeds ripen in autumn. This is a perennial plant, which, if sheltered in the winter, will continue several years; but the branches do not extend more than a foot in length, and unless they are supported, always trail upon the ground.

The three first mentioned sorts are very hardy (shrubs, which thrive in the open air extremely well, so are generally propagated for sale in the nurseries-gardens; but the first sort hath been longer in England, so is more generally known and propagated than either of the other, which have* been but few years in the English gardens, nor has the third sort been long known in this country. This is not mentioned in any of the botanic books; but as the seeds ripen here very well, in a few years it may be in as great plenty as the first sort.

The three first sorts are propagated by sowing their seeds any time in the (spring, in a bed of common earth; and when the plants are come up, they must be kept clear from weeds; and the Michaelmas following they should be transplanted either into nursery rows, or in the places where they are designed to remain; for if they are let grow in the seed-bed too long, they are very subject to have downright tap-roots, which renders them unfit for transplantation; nor should these trees be suffered to remain too long in the nursery before they are transplanted, where they are to remain for the same reason.

The first sort will grow to the height of twelve or fifteen feet, so is very proper to intermix with trees of a middling growth in wilderness quarters; or in clumps of flowering trees, where the oddness of their flowers and pods will make a pretty variety, especially as these trees continue a long time in flower; for they usually begin flowering by the end of May, and from that time to September they are seldom destitute of flowers, but especially the second sort.

These shrubs make great hoots annually, which are frequently broken down by strong winds in the summer; so that if they are not (sheltered by other trees, their branches (should be supported, otherwise they will be broken and split off, whereby the trees will be rendered unfitly.

The third sort does not grow so tall as the common, but makes a more regular shrub and is less liable to split. The flowers of this sort are of a dusky red colour, spotted with yellow, so it makes a very pretty variety, and is as hardy as the common sort, therefore may be propagated by seeds in the same manner.

The fourth sort is tender, so will not live through the winters (when they are severe) in the open air in England; but in mild winters, if they are planted in a dry soil and a warm situation, they will thrive very well; and those plants which live abroad will flower much stronger, and make a finer appearance, than those which are preserved in the green-house; for these plants require a large (share of air, otherwise they are apt to draw up weak, so seldom produce their flowers in plenty; therefore when any of the plants are (sheltered in winter, they must be placed as near the window as possible, that they may have all the advantages of air; and in the spring they must be hardened, to bear the open air as soon as possible.

This sort is propagated by seeds as the former. If the seeds are sown early in the spring upon a warm border of light earth, the plants will flower in August; and, if the autumn proves favourable, they will sometimes ripen their seeds very well; but there are some persons who sow the seeds upon a moderate

hot-bed in the spring, whereby they bring their plants so forward as to flower in July, whereby the seeds are generally perfected from these plants. When the plants are transplanted, it should always be done while they are young, for they do not bear removing when they are large. This sort will sometimes live in the open air for three or four years; when they stand in a well (sheltered situation; and these will grow to have large heads, and make a very fine appearance when they are in flower; they will also continue much longer in beauty than those plants which are treated more tenderly.

The fifth sort grows naturally in warm countries, so is too tender to thrive in the open air in England. It is propagated by seeds, which must be sown on a hot-bed in the spring; and when the plants are two inches high, they should be each transplanted into a separate small pot filled with light earth, and plunged into a hot-bed of tanners bark, observing to shade them till they have taken fresh root; after which they must be treated in the same way as other plants from the same climate, always keeping them in a stove, which should be of a moderate temperature of heat.

The sixth sort is a low annual plant, which seldom grows more than a foot and a half in height; the flowers being small, and having little beauty, it is seldom preserved but in botanic gardens. The seeds of this sort must be sown upon a moderate hot-bed in the spring, and the plants must be planted into small pots, and brought forward in another hot-bed. In July they will flower, when they may be exposed in the open air, in a warm situation, where the seeds will ripen in September, and the plants will soon after decay.

The seventh sort may be raised on a moderate hot-bed in the spring, and afterward exposed to the open air in summer; but in winter they must be (sheltered under a frame, otherwise the frost will destroy them.

COLLIFLOWER. See BRASSICA.

COLUTEA SCORPIOIDES. See EMERUS.

COMA AUREA. See CHRYSOCOMA.

COMARUPYL. Lin. Gen. Pl. Jant. 563. Pentaphylloides. Tourn. Inf. R. H. 298. Marj's Cinquefoil.

The CHARACTERS are,

The flower hath a large spreading empalement of one leaf, divided into ten parts at the top, which is coloured. It hath five oblong petals, which are inserted in the empalement, but are much smaller. It hath twenty or more permanent Stamina which are inserted into the empalement* terminated by moon-shaped summits. It hath a great number of small roundish germen colle Redintoa bead, having Joint Jingle styles arising from their sides, which are crowned by single stigmas. The common receptacle afterward becomes a large fleshy fruit, having many pointed seeds adhering to it.*

This genus of plants is ranged in the fifth section of Linnæus's twelfth class, intitled Icosandria Polygynia, the flower having many stamens and a great number of styles.

We know but one SPECIES of this genus, viz.

COMARUM (*Palustre*). Fl. Lapp. 214. Pentaphylloides palustre rubrum. Inf. R. H. 298. *Red Marj's Bastard Cinquefoil* 5 and the *Quinquefolium palustre rubrum** C. B. P. 326. *Red Marj's Cinquefoil*.

There is another variety of this, which grows plentifully in Ireland, and also in several places in the north of England, from whence I have procured many of the plants, which after one year's growth in the garden, have been so like the common sort, as not to be distinguished from it; so that the different appearance which it has in the places where it grows naturally, may be supposed to arise from the soil and situation. This is by Dr. Plukenet titled *Pentaphyllum palustre rubrum, crassis & villosis foliis Suecicum & Hibernicum*- Aim. 284. *Red Marj's Cinquefoil of Sweden and Ireland, with thick and hairy leaves*.

This plant hath creeping woody roots, which send out many black fibres, penetrating deep into the ground, from which arise many herbaceous stalks about

two feet high, which generally incline to the ground; these are garnished at each joint with one winged leaf, composed of five, six, or seven lobes, which rise above each other, the middle being the largest, the lower diminishing, and with their base embrace the stalks; these are deeply fawed on their edges, smooth above, of a light green, and hoary on their under side. The flowers are produced at the top of the stalks, three or four together on short foot-stalks; these have a large spreading empalement, which is red on the upper side, and divided at the top into ten parts, in the center fits the five petals, which are red, and not more than a third part the size of the empalement; within these are situated many germen, attended by twenty or more stamens, terminated by dark summits. After the flower is past, the receptacle which fits in the bottom of the empalement, becomes a fleshy fruit, somewhat like a Strawberry, but flatter, including a great number of pointed seeds. It flowers in July, and the seeds ripen in autumn.

As these plants are natives of bogs, they are with difficulty preserved in gardens, for they must be planted in a soil as near to that of their natural growth as possible; they are very apt to spread much at the root, when in a proper situation: so whoever is inclinable to preserve these plants, may remove them from the places of their growth in October; and if they are planted on a bog, there will be no danger of the plants succeeding. There are a few of these plants now growing upon a bog at Hampstead, which were planted there some years ago; but the nearest place to London, where they grow wild in plenty, is in the meadows near Guilford in Surry.

COMMELINA. Lin. Gen. Plant. 58. Plum. Nov. Gen. 48. tab. 38. Zanonina. Plum. Nov. Gen. 38. tab. 38. This plant was so called by father Plumier, from Dr. Commeline, a famous professor of botany at Amsterdam.

The CHARACTERS are,

It hath a permanent spathe, which is large, heart-shaped, compressed, and shut together. The flower hath six concave petals three or four of which are small and oval, (these are frequently taken for the empalement) the other are large, roundish, and coloured. It hath three nectarines (which have been supposed to be stamens,) these have proper stamens, which sit horizontal, and are shaped like a cross. There are three awl-shaped stamens, which recline, and sit about those of the nectarium, which are terminated by oval summits. In the center is situated a roundish germen, supporting a twining style, crowned by a single stigma. The germen afterward becomes a naked globular capsule, with three furrows, having three cells, *each containing two angular seeds.*

This genus of plants is ranged in the first section of Linnaeus's third class, intitled Triandria Monogynia, the flower having three stamens and one style; to this genus he has joined the Zanonina of Plumier, which was separated by that author from Commelina, because the flower has three petals, and his Commelina but two, whereas the several species of this genus most of them differ in the number of their petals, some having two green, and four coloured petals, others are equal, and some have four green, and but two coloured petals.

The SPECIES are,

1. COMMELINA (*Communis*) corollis inaequalibus, foliis ovato-lanceolatis, acutis, caule procumbente, glabro. Hort. Upfal 18. *Commelina with unequal petals, oval, spear-shaped, pointed leaves, and a smooth trailing stalk.* Commelina procumbens annua, faponariae folio. Hort. Elth. 93. tab. 78.
2. COMMELINA (*Ereffa*) corollis* inaequalibus, foliis ovato-lanceolatis, caule erecto, scabro, simpliciflora. Hort. Upfal. 18. *Commelina with unequal petals, oval spear-shaped leaves, and a single, upright, rough stalk.* Commelina erecta, ampliore subcaeruleo flore. Hort. Elth. 94. tab. 78.
3. COMMELINA (*Africana*) corollis inaequalibus, foliis lanceolatis, glabris, obtusis, caule reptante. Lin. Sp.

Plant. 41. *Commelina with unequal petals, smooth, spear-shaped, obtuse leaves, and a creeping stalk.* Commelina procumbens, flore luteo. Prod. Leyd. 538.

4. COMMELINA (*Tuberosa*) corollis aequalibus foliis ovato-lanceolatis, subciliatis. Hort. Upfal. 18. *Commelina with equal petals, and oval spear-shaped leaves, which are hairy on their under side.* Commelina radice anacampferotidis. Hort. Elth. 94. tab. 79.

5. COMMELINA (*Zanonina*) corollis aequalibus, pedunculis incrassatis, foliis lanceolatis, vaginis laxis marginibus hirsutis bracteis geminis. Lin. Sp. Plant. 61. *Commelina with equal petals, thick foot-stalks to the flower, spear-shaped leaves, a loose hood, and double bractea.* Zanonina graminea perfoliata. Plum. Nov. Gen. 38.

There are some other species of this genus, but those which are here enumerated, are all that I have seen growing in the English gardens.

The first sort grows naturally in the islands in the West-Indies, and also in Africa, this is an annual plant, which hath several trailing stalks, that put out roots at the joints, which strike into the ground, at each joint is placed one oval spear-shaped leaf, ending in a point, embracing the stalk with its base, and hath several longitudinal veins: they are of a deep green, and smooth. The flowers come out from the bottom of the leaves, included in a spathe, which is compressed and shut up, each having two or three flowers, standing upon short foot-stalks, composed of two large blue petals, and four small green ones, which have generally been termed the empalement of the flower; within these are situated three nectariums, each having a slender stamen fixed on the side; these surround the germen, which afterward becomes a roundish capsule having three cells, in each of these is lodged two angular seeds. It flowers in June and July, and the seeds ripen in autumn. The plant was titled Ephemeron flore dipetalo, by some of the older writers on botany.

The second sort grows naturally in Pennsylvania, from whence I received the seed; this hath a perennial root, composed of many white fibres; the stalks rise a foot and a half high, are upright, rough, herbaceous, and about the size of quills; these have a single leaf at each joint, shaped like those of the first sort, and embrace the stalks with their base; the flowers come out from the bottom of the leaves at the upper part of the stalk, fitting upon short foot-stalks; they are of a pale bluish colour, and are succeeded by seeds as the first sort. This flowers about the same time with the first, but the seeds do not often ripen in England.

The third sort grows naturally in Africa; this hath a fibrous root, which sends out many trailing stalks three feet long, which send out roots at every joint, and from them many more shoots are produced; so that where the plants are in a proper degree of warmth, and have room to spread, they will cover a large surface of ground. The leaves of this sort are very like those of the first, but the flowers are larger and of a deep yellow colour; the petals of this are heart-shaped, and the seed-vessels are larger. This flowers in July, and the seeds ripen in autumn.

The fourth sort grows naturally near Old Vera Cruz in New Spain, from whence the seeds were sent me by the late Dr. Houftoun. This hath a thick fleshy root composed of several tubers, somewhat like those of Ranunculus, several joining together at the top, where they form a head, and diminish gradually downward; from this arise one or two inclining stalks, which send out side branches from their lower parts; these are garnished with oval spear-shaped leaves, part of which have long foot-stalks, the others embrace the stalks with their base; they have short hairs on their under side, and toward the stalk, but are smooth above, of a deep green colour, and close every evening, or in cold weather. The flowers are produced toward the upper part of the stalks, from the bottom of the leaves, standing upon slender foot-stalks; these are composed of three blue petals which are pretty

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pretty large and roundish, and three smaller which are green; the feeds are like those of the other forts. It flowers in June, July, and August, and the feeds ripen in autumn, *loan* after which the folks respectively, but the roots may be preferred two or three years; it they sic plant in a llove in winter.

The fifth fort grows naturally in the West-Indies; the feeds of this were lent me from the island of Barbuda. This fifth trailing (talks like the fifth, which are garnished with narrow grassy leaves, embracing the stalks with their bast, etc. etc. etc. Juice of the emerald stalks, upon thick foot-talks, three flowers generally fining on each. The flowers have three equal large petals of a sky Hue, and three (smaller) which are green. The flower in July and August, but have not perfected feeds in England.

All the forts are propagated by cuttings, (1st first will grow if Town in the full ground but if the feeds are low upon a warm border of light earth in autumn, like plants will rise early in the Spring; ^{from} *dw* feeds grow readily be expected, if the *l* proves favourable; whereas those which are often in the ground, are under their feet. These plants live but little beauty, in that two or three of each fort, is *JW* many as most of choice to have; their fore if the feeds are *hym* in autumn where the plant is designed to remain, or the feeds permitted to eat, the plants will require no father care, but to keep them clear from weeds. The second fort hath a perennial root, this fourth right feeds in England, but the roots find out often, *!* plant is easily propagated. But it is tender to live in the full ground in winter, unless it has a warm flickered *B* it should be planted in pots, and (helmed) common frame in winter, and *ae* abroad in summer, the best time to transplant and put these roots about the end of March.

The other forts are tender, for their feeds must be sown on a moderate hot-bed in the Spring, and when the plants are two inches high, they should be transplanted to a fresh hot-bed to bring the plants forward; when they have taken fresh root, they should have 3 large shares of fresh air admitted to them every day in warm weather, to prevent their growing weak; and in June these may be carefully taken up, and transplanted on a warm border of light earth, observing to shade them till they have taken fresh root, after which they will require no other care, but to keep them clean from weeds. With this management the plants will produce good feeds. The third and fourth forts may be continued, if they are planted in pots, and in autumn placed in the bark-hove; or if the roots of the fourth are taken out of the ground in autumn, and kept in a warm place in winter, they may be planted again in the Spring, placing them on a hot-bed forward their freshening, and these will produce stronger plants than those which rise from feed.

COMMONS and COMMON-FIELDS. See L a m

COMPARTMENTS are beds, plats, borders, and walks, laid out according to the form of the ground, and ingenuity of the artist, and depend more on a good fancy than any rule. These are divided into knots, flower-gardens, or parterres, of which there are great variety, and may be diversified infinitely, according to the fancy of the designer. Plain compartments are pieces of ground divided into equal square and round beds, marked out by the line, of equal length and breadth. Some permit to these squares, borders of two feet in breadth, and not more, if the plot is small; but if they be leifimably crissed, three fire borders with borders with borders, or upright hardy Thyme, or some other aromatic herbs or flowers, for their like of the greater neatness. And in order to prefer the paths and alleys of compartments from, even, and durable, they lay them with a coat of sand or gravel, two or three inches

COM

thick, keeping them hoed and cleared; most often there they will be observed.

These compartments were much damaged by the Trench, «*these gardens were all laid out into several compartments, alleys, beds, etc. etc. the manner of an garden in buildings; but these that, unnatural g-jidierii ^K- now justly* exploded, and a much better taste has since prevailed in the English gardens.

COMPOSTS are formed of compost, or compofica, /af. com. *compost*, or coolpbltre, £*/. compound or mix; -itid in hulshnd/y and gardening they signify several (of folk or variety) mixed together, in order to make a mixture for afflicting the nature of the soil in the work of vegetation, by way of amendment or improvement.

Composts are various, and ought to be different, according to the different nature, or quality of the soils which they are designed to improve: some according to the nature of the soil, some heavy, some light, or cloddy. A tight loose land requires, a compost of a heavy nature, and the (coming of deep ditches, ponds, etc. etc.)

So on the other hand, a land that is heavy, or cloddy, requires a light soil of 3 more sprightly and fiery nature, that will infiltrate and loosen the clods, which if they were not thus managed, would very much obstruct the work of vegetation.

The best use of compost is in the garden; and some prefer manure or tubs in final beds or borders of flower-gardens; which are here mentioned, and shall treat of those composts or dressings, which are used in gardens and fields, under the name of Soma and MANURE.

All these plants do best in a rich light soil, and some in a poor sandy soil, and some in a heavy soil. The best use of compost is in the garden; and some prefer manure or tubs in final beds or borders of flower-gardens; which are here mentioned, and shall treat of those composts or dressings, which are used in gardens and fields, under the name of Soma and MANURE. All these plants do best in a rich light soil, and some in a poor sandy soil, and some in a heavy soil. The best use of compost is in the garden; and some prefer manure or tubs in final beds or borders of flower-gardens; which are here mentioned, and shall treat of those composts or dressings, which are used in gardens and fields, under the name of Soma and MANURE.

Almost every one who hath a garden on this subject, hath dirt-steeled the produce of the upper part of the earth from a pasture ground. This is the principal ingredient in most composts; and is certain) a very good one, provided it has been mellowed, and mixed up with a quantity of earth proper for the plants; therefore the compost will require more care, and should be mixed a considerable time longer before they are used; that they may have the advantage of heat, and meliorate and improve them, and should be frequently turned over, that the parts may be well mixed and incorporated, and the clods well broken and killed. Almost every one who hath a garden on this subject, hath dirt-steeled the produce of the upper part of the earth from a pasture ground. This is the principal ingredient in most composts; and is certain) a very good one, provided it has been mellowed, and mixed up with a quantity of earth proper for the plants; therefore the compost will require more care, and should be mixed a considerable time longer before they are used; that they may have the advantage of heat, and meliorate and improve them, and should be frequently turned over, that the parts may be well mixed and incorporated, and the clods well broken and killed.

fotfri dung, from old hot-beds i or for the plants Which delight in a cool foil, a quantity of rotten Heats dung is preferable. The proportion of this mull be according to the quality of the earth; for if that is poor j there should be one third part of dung, but if it be rich, a fourth part oriel's will be sufficient. These, when well incorporated and the parts divided, will require no other mixture, unless the earth is inclinable to bind, in which case it will be proper to add some sand or sea-coal ashes to it *, if sea-sand can be easily procured, that is the best, the next to that is drift-sand; but that from pits is by no means proper. The proportion of this must be according to the nature of the earth, for if that is stiff, there must be a greater proportion used, but this should not exceed a fifth part, unless it is very strong, in which case it will require more, and a longer time to lie, and must be often turned over before it is used.

The next compost, which is designed for plants which do not require so good earth, and naturally grow on loose soils, should be half of the before-mentioned earth from a pasture, or that from a kitchen-garden and if these are inclinable to bind; there should be a third part sand, and the other part rotten tan, which will be of great use to keep the parts divided, and let the moisture pass off.

The composition for most of the succulent plants, is prepared with the following materials; the earth from a common, where it is light, taken on the surface, one half, the other half sea or drift-sand, and old lime-rubbish screened of equal parts; these, well mixed and often turned over, I have found to answer better than any other compost, for most of the very succulent plants.

The other sort of compost, which is designed for plants that delight in a very loose, light, rich earth; should be made of light earth taken from a kitchen-garden, which has been well dunged, and thoroughly wrought, like those near London, one half * of rotten tanners bark one third, and the other part mud from the scouring of ditches, or from the bottoms of ponds, where the soil is fat: but this mud should lie exposed in small heaps a whole year, and often turned over before it is mixed with the other, and afterward frequently turned and mixed, for eight months or a year before it is used.

In all mixtures, where rotten wood may be required, if the rotten tanners bark, which is taken from old hot-beds is used* that will answer every purpose of the other; and wherever sand is necessary in any compost, the sea-sand should always be preferred to all other, as it abounds with more salts; but this should not be used fresh, because the salts should be exposed to the air, which will loosen the particles, and thereby render them better adapted for the nutriment of vegetables.

There are some who have directed the life of rotten leaves of vegetables, as an excellent ingredient in most composts -, but from many years experience, I can affirm, they are of little use, and contain the least quantity of vegetable pasture, of any dressing which is used. Others, who never have had any experience in the culture of plants, have directed different composts for almost every plant; and these composts consist of such a variety of ingredients, as greatly to resemble the prescriptions of a quack doctor; for no person who has been conversant in the business of gardening, could be guilty of such gross absurdities: for it is well known, that a few different composts will be sufficient for all the known plants in the World. But those who pretend to give direction for the culture of plants from theory only, begin at the wrong end, for the true knowledge of gardening or agriculture, must be from experience, and is not to be obtained in 9 garret.

The several sorts of dressing for land, will be particularly treated under their respective titles, and in general they will be mentioned under the article of DONG and MANURE.

In making of any compost, great care should be had,

that the several parts are properly mixed together, and not to have too much of any one sort thrown together; therefore, when three or four several sorts are to be mixed together, there should be a man or two placed to each sort, in proportion to the quantity of each; for if two parts of any one sort are requisite to be added, there should be two men put to that, and but one to each of the other: and these men must be careful to spread each sort in such a manner over each other, as that they may be exactly mixed together. Another thing which should be observed is, never to lay these composts in too large heaps, but rather continue them in length, laying them up in a ridge, so that the sun and air may more easily penetrate through it: and, as these composts should (if possible) be made a year before they are used, that they may enjoy a summer's sun, and winter's frost, they should be frequently turned over, which will prevent the growth of weeds, and expose every part of the heaps equally to the sun and air, which is of great advantage to all sorts of composts; for the more they are exposed to the influences of these, the better will the earth be prepared for vegetation, which is evinced by the fallowing of land, which, when rightly managed, is equivalent to a dressing.

COMPOUND FLOWERS are such as consist of many florets, or semiflorets, or both together, which are included in one common empaleme;ic, fo make up what is commonly called one whole flower.

CONE. A cone is a hard, dry, feed-vegetal of a conical figure, consisting of several woody parts; and is, for the most part scaly, adhering closely together, and separating when ripe.

CONIFEROUS-TREES are such as bear cones; as, the Cedar of Lebanon, Fir, Pine, &c.

CONIUM. Lin. Gen. Plant. 299. Cicuta. Tounu Inf. R. H. 306. tab. 160. Hemlock.

The CHARACTERS are,

// is an umbelliferous plant-, the general umbel is composed of several small ones termed rays, which spread open, the rays or small umbels are also spread in the like manner. Both these have involucrems* composed of many brittle leaves. The petals of the greater umbel are uniform; each flower is composed of five unequal heart-shaped petals* which turn inward; they have five stamina* which are terminated by roundish funnits. The germen* which is situated under the flower* supports two reflexed styles* crowned by obtuse stigmas. the germen afterward becomes a roundish channelled fruit* divided into two parts* containing two seeds* which are convex and furrowed on one side* and plain on the other.

This genus of plants is ranged in the second section of Linnseus's fifth class, intitled Pentandria Digynia, the flowers having five stamina and two styles.

The SPECIES are,

1. CONIUM (*Maculatum*) feminibus striatis. Hort. Cliffi 92. *Conium with striated feeds*. Cicuta major. C. B. P. 160. *Greater Hemlock*.
2. CONIUM (*Tenuifolium*) feminibus striatis, foliis tenuioribus. *Conium with striated feeds and narrower leaves*. Cicuta major, foliis tenuioribus. C. B. P. 160, *Greater Hemlock with narrower leaves*.
3. CONIUM (*Africanum*) feminibus aculeatis. Hort. Cliffi 92. *Hemlock with prickly feeds*. *Caucalis Africana, folio minore*, Rutse. Boerh. Ind. alt. Sp. 63.

The first sort grows naturally on the side of banks and roads in many parts of England -, this is a biennial plant, which perishes after it hath ripened feeds. It hath a long taper root like a Parsnep, but much smaller. The stalk is smooth, spotted with purple, and rises from four, to upwards of six feet high, branching out toward the top into several smaller stalks, garnished with decomposed leaves, whose lobes are cut at the top into three parts * these are of a lucid green, and have a disagreeable smell. The stalks are terminated by umbels of white flowers, each being composed of about ten rays (or small umbels) and have a great number of flowers, which spread open, each fitting upon a distinct foot-stalk ; the feeds are small and channelled, and like those of Anifed.

Aniferd. It flowers in June, and ihe feeds ripen in autumn. The incoatl fort differs from the firll, in having talk (talks, which arc not lb much Ipotted. Tht leave are much narrower, and ot' a paler green i and thidifference is confuit, for I have-cultivated it nca twenty years in the Chelfea garden, whtre it has no varied. The feeds were I at me from Germany where it grows naturally. Tliis is biennial as the former.

The third for: grows naturally near the C.ipe of Gox Hope, in Africa, from whence the feeds were farre the pbnc have been | preserved in some of their curious gardens of I Iams. Th feeds of this plant v/crufcu me by the lite Br. Boerhuave profeffjr ol" itowR at Leyten. This plant rarely grows more than nine inches high, tht lower leaves are divided fomewhaiiikedtoeof i he small wild Rue, and are of iigrayilh, colour; thoic i much narrower, but of die fame colour j theft arc trrmiiated by umbels of white flowers, each of th larger umbels being conipottt) ot" [bra: Itmdl UHCS the involucre hah three nart under the umbel. This (lowers in July and ripens in autumn, foiv ifcet which die plaa decay.

The lirt fort gnivi wild in most parts of England, fo is (eliom allowed room in ga... because it is foppoCedtohavea pot; ... some physicians have iljimed thi... ill aiimiils. while other; haw allured us, th-at it is eaten by the inhabit; of form- parw of Italy when it is young, and v; by them efieCThesl a jircat dainty- Mr. H*y mfntioiw th.lt he has thund ihe gizzard of a thrufli, full of Hi... with four or five gr... of Corn, imentized with it, which, in the time ot'harvdt, that bii neglected for Hemlock, iu very fond wa; it ef th;u feed which vr'rckort pernicious. I lowever, it i > very certain, that icarcc any animal will eit the green herb; for it is very common to Ox thegrjls, ami moll other weeds cat ctofr where cattle are allowed to feed) anJ all the plant* of Hemlock, which were growing left untouched.

The plant is eftwmed by many phyfidins, us an excellent remedy to didblve fchirrous tumors; and fomc htve greatly recommended it for cancers, and mr.ft of them agree, that it may be preferibwi at a good narcotic.

The fecond fort is preferred in fume botuic gardens tor the fake of variety. If the. feeth of this ire permitted to featter, the plants will come up in plenty, lii if they are nat rooted out, will become ai trouble-ibmc wfedtas ihe lirt fort.

The hind fort is an nble plant, and being tender, will never become troublbtne \ iif un!tj the winters are very favourable, d... plant will not live in the open air in England. >lic feeds of this fart 0... could be (own in pots in autumn Toon after they are ripe, and placed under a common fame... where they may be expofed to the open airat alltime when the weather is miid, and only covered in bad we... The plants will in[c upver/ early in the fpring, and mult then be expofed to the open airconfittly when the vromhir will permit, otherwil'e they will d... up very weak. As i... plants do not bear traff] lanting «it, they fhould be thinned, ind not pioi... than four or five left in each pot, and as the plants have no great beauty, a few of them will be fufficient to routinue the fort, wlicie a variety of plants are preferred. The other ail Lue fa only to keep them clear from weeds, and i> very ilry weather to water them.

There it another fpecies of this genus... HK t... mod of" ihe botanii... which is now feperated... from IL... nti placed fingiv, under the title of Echola. This was uled, Cicus minor ptofeli... by C... Bnuhin, i... f... with the appearance e/ Pnflr. I... itl which firw^... only is found in gardens... and is p... r... very pernicious; fome perfons who We ignore... gathered this herb, and ufed it for PwOey, batit... been pofoned by it. Therefore

it was formerly called Fools Parley. This may be dillinguifhtd fWi Parfley, by the narrawtcfi of the fmall lc.v, which are all more peatred, and of a dark:1 green. But thofe who are afraid of bein iglk- ceiyed in tttiii, Ihnuld always... fo... -iiair it Cinnor b;

CONNAUS. Zyloa Smith.

The CHARACTER is, /;ball... The genus of plants is ranged in the fecond order of Linnæus's fuccinea class, under Monadelphis Decandria, the flower having fix flamina, which are joined... We know but one Species of this genus, viz. CONNAUS (Albomiza, Flor. Zeyl. 144. One feldt... Rhiz Zanthoxylum mitchellii, plantifolia, foribus capitis squatis. Bern. Zeyl. 199. tab 89. This plant grows naturally in India; it rifes with a lignous ftalk eight or ten foot high, which is hard, rigtc, and covered with a black bark, and divides upward into two or three branches, garnifhed with trifoliate leaves, having long foot-ftalks placed alteriiatej tin lobes arc al... thc remain greelf... produced in :... brani:!!... they are small, hairy, and of a greenish yellow colour, but are rarely fucceeded by buds in Europe. This plant is usually propagated in the garden... by laying <... the young branches, which, if wrapped, (in the manner prafticed for Connarus) an ! "duly Watered, will pur... out roots in twelve months, when they l;... be cut off from the old phnts, and each plantii... tcfaiial pot, filleJ wU... tanli, 1... rate hot-bed, to forward their taking new roots, >t, ubfen-irto to iliae their fhcn... the fun every day, and when the plants fhould be they ;... require it; after this the plants fhould be (rented, in tl... the fame way as other exotic plants which are not too tender, placing them in a dry ftove in wint-i... and for about three months in the llimmer they may be removed into the open air, in a warm fheltered ftuation.

CONOCARPODENDRON. See PASTRA.

1 loufl... plunged into a moderate hot-bed, and when the plants are fit to remove fhould be feperated, planting each in a feparate pot, and plunged into a moderate hot-bed, treating them in the manner as the lars.

CONOCARPODENDRON. See PASTRA.

1 loufl... plunged into a moderate hot-bed, treating them in the manner as the lars.

Tiis gertus of plants is ranged in die fn ft feftion of Linnieus's fifth clafs, infilled PentandrU Monogynia, from the Bower having five Itamina and one

The Species art. 1. CONVALLARIA (Majoli) foliis lanceolatis erefla. Lin. Sp. - Irpright CexncarpHS viitbfpti--'naped frowes. Rudbeckia ertfiit [ongifutta. Hoult. MJS. Cmmsnly c*3ki Bstteii-trtt in tbt Weft-India.

2. CQS. (Vnembeti) frutlcens, procumbens, foliu ovotis, cradiSi Horibus .ilaribus & terniinofibus. • !:ig Csnicarfat 'Mtb ova! thic'i • :be Jsdet) as tbt cuds of [be hi. i iiiiariimaprocurnbcnsrorundii MSS. Maritime trailing RtuUxkia, tiitib & nand

The first tun grows plentifully in moft of du sandy bays, in ail the iiliniis of the Weft-Indies. It rifcs with a woody ujmght Jk-m about fixteen fetr high, lending out many • branchcj, whitii rrrft-, tilde arc garnitried with (pear-shaped leaves, laving broi i; i; falks, ami arc placed al- re on every Tide the branched The lmv upon I hort branches, which arife from the wings of the k re Uirec or t'nur linall !. on their lower; unttter the Howers; each o' bnnchci ire ttrminated by Ex or eight conica! heads of (lowers, which have iumt rdembiance to t! Acacia, buteachafthefcpmcouofafcalYioi the flowers are linall, of a rciliillii colour, liaving five (fnder ftamina, and one llyic, which ftw farther than the IK. The ;fivrcs are fuceeiled by fvv feeds, which arc included in the feals cd conica!

Thic fecond fen haili fhorr crooked branchts, which divide and fprtrad out on every fiile upon the ground; thefe arc covered with a grayifh bark, nnd thdr upper parti areg-jriuii with on-l chick leaves, i Bttle larger thin thofe of the Dwarf Box; they have very (hort foot-ftalki, and arc placed on every fide the branches without order. The flower art round heads, which conic out (ngle from the fide tff the brinchr, and in looie fpikei at the end ; thefe arc fmall, and at an herbaceous colour-, the iiales arc rough, and iJir cones arc of a loofcr texture than thofe of the bnncr ian.

This dScovered by the late Dr. William Henif. toun, growing]! in :lie marfhy grounds near the fea, at the Iiavannan, from whence he Fen die feeds to England, in 1770.

Both thefe forts are preserved' in (ode curious gardens for the fok of variety, but tSicy ire plants of DO great bcAiiity : they arc propigatitl from Iccds, which mult be obtained from tw places of their natural growth, for they never produce WJl g<>d feeds in Europe: thefe feeds, if they ate frodi, will come iijf very faon, if they are fown upon * goad luit-bcil-. and if t.: plants arc potted, and prelt-vc in the hark-ftovt, they will make great pro KIT; JO tender to live in this tommy, unlcfi they arc confiderably kept in the ftovc, and treated in the fame manner with other exo\ic plants ubiferving; they are natives of fwomps, to fupply them ofa*n with WA;CT; but in winter they mufl have it very (paring)'. The plants arc Rver^rcn, calling off their old leaves when lite new cornc out.

CONSOI.DAMAJOR. Sec Snmn 01,1 DA MED I A. Sec BUOLA. CONSOI DA MINIMA SPCBEUH. (SOLJDA RE GALIE. See Dm uitniM V ALL AREA. Lin. Grm. Lilium • • lourn. Inf. R. H- 77- ub. 14. Uh t,j IULI Dr. Jjir; ued tile Polygonatum of Vournefan, or Solomon's Seal.

The CHARACTERS are. The flower hath six petals, which is bell-shaped, and is divided at the top into fix oblong segments which spread open and are reflected. It hath six compartments. It hath fix Stamens, which are inserted into the petals, but are shorter, terminated by long filaments, which are oval. In the

rtmttr itjtutlde gkhtlar germntt / reporting a feckly Jlyki wtieb II knrer (ban the femina, created in a three cornered ohvfe fuggau. 'i'ke gnr.oi ej . . j-ius e ikbular birrj, vritb tbrtt re.'j, caiteimtv txe rtamdifb fui.

Thk genus of plants v ranged in the first feftion of Linnieus's fourth clafs. Dided Hcxandria Mor.j [he flower having lilt ftamina and ..

The SPECISS arr. 1. CONVALLARIA (Majoli) [X] nudo. Mir. ! 1(3. ConnaUarit •snb a nuked Jli.k. Litiuni convallium ilbum. C. i. I'- 304, WMT 7-Vv tf tbt I'a&y. There is a variety of this with reddifli lloiven, *)icli is prefirveil in giulejis, titled by Cafpjr BauJiio L- lium Convattium (lore rubentt, ijb. 304.

I. C ON VAIL Ait 1A (L.Mftiia) I' uliit la;ori- bus. Co irf; I' naked stalk and L. Lilitum Convallium latifolium. C. B. (' r jtf, Mret- L' Ljij of tbt Polity. Tb \-arkty of this with doable viriegtted Bo in gardens. This Toutnefon titli LILIO viriegaw. Inf. R. H. 77. Small-leaved Lily of the Valley, mib a largt vtrUgttd f.&toer.

3. CONVALLARIA (Wultji&ra) folia aitermis, amplexi- caulibus caule tereri aKiKaribus peduculic tnil- . / eltermut, tmtrgritg the titprjstii, xbofoe fai'jhilks best any jfaxrs. Poly- gantnm latifolium vulgre., C. B. I*. 305. Cantrnm

CONVALLARIA {pdmfS) foli- cauli UJ/i .

fkre majore Oiloro. C. B. T.

5. CONVALLIKIA I' foliis alternis amplexi- caulibus, caule andpti, pexlunculis . I' lloribus tubuni- lloris. Lin. Mat. Med. 168. CewatOsrU Um-ti embracing the jhlki, and feot-filkt baang m:e jfavw. Polygonalum floribus ex iinguU trib- dunculis. C. B. j. p. 5JO. Cfmmta Sdaw*!*

6. CONVALLARIA {Stdltua) foliis amjilexicaulibus piurimis. Lin. Sp. 452. Cccvalkria uifb mam ttrr:is emb- brtKng the fialkt. Polygonatum Caoadenc ipicaiuni fenile. Cornut. Cmtd.

7. CoKVALLAii (Vtrlrillat*) foliis verticil'atit. Flor. p. 114. CcnvaUoria rtriib haves grtehg in vrberh. Polygonatum angustifolium, non ramofuro. C. B. P.

8. rVAIXAttU {Rtemitifii) foliis feffUibus, racemo terminili compofito. Lin. Sp. Plant. 45 s. Ct#val'xria x'i.b ifnvifiUtXT defo to tbcjU&l, teArci art tr. nmpMtiid fpiker ifft&tsets- Porygonitum num cream, Ibicatum, (lure lieLito (Unli. Mar. Hift. 3.537,

9. CONVALLAKIA (Bifefic) Mtis conJaik > ur. Lapp. u \ CexualMa will IHOTH' Thb u the iniiifo humitima. Toum. Inf. Ap; 354. rfi ajmgk Utif; oxd tbt Liltui"; Convallium minus. C. B. P. 304. Tie Uajt Lih of tl-e

The first fort growi naturally in great plenty in the we Ji near Wobura, in Bedford!! markcu in London are generally : quid with tin. llowen. It is also cultivated in gj; linc for the fwceinels of the (loner), and formerly it gnay in great plenty on Hampdend^heath, but 01 late years it has been feldomfound there; fur lint, all the trees have Ixen dePiroycTj, the plants have n/- flowered there in formerly, nor have the roots increafed.

This hadi A slender fibrous roor, which L the iirUcc of the ground, and til creby propagates in great lenty. The leavei come 1 up by pairs; thefe are ;aikE, which are about three vrr; \ ed together in one cov*, andstlht 1 into two parts, each fuftaining a fnfjc leaf, • one of which riles a little above du other • the leaf vet iiv i fotir to 5vc iivihes long, and 1 near an inch, and a hilt' broad in the middle, lowering gradually to •: endsj tlicy h»v many longitudinal veat, running parallel

parallel to the midrib, which is not situated exactly in the middle, but diverges to one side; the footstalks of the flowers arise immediately from the root, on one side the leaves; these are naked, about five inches long, adorned toward their upper parts with pendulous white flowers, ranged on one side the stalk, which decline to one side; each flower stands upon a short separate foot-stalk, which are bending and crooked. The flowers are of the finest bell-shaped kind, their brims being reflexed, which are (lightly cut into six parts; they have six stamens, which are inserted in the petal of the flower, and are shorter than the tube, and a single style arising from the germen, which is triangular, crowned by a three-cornered stigma; the germen afterward becomes a globular berry, of a red colour when ripe, inclosing three roundish seeds. It flowers in May, from whence it has been titled May Lily. The seeds ripen in autumn. The flowers of this sort are used in medicine, they are esteemed cephalic and cordial, so are recommended for palsies, epilepsies, and spasms; there is prepared a conserve, and a compound distilled water of the flowers. This compound water is by the Germans titled *aqua aurea*, or *golden water*, because of its excellent virtues.

There is another variety of this mentioned with narrow leaves, which I suppose may arise from the soil, or situation, for the roots which I have taken up in places where they have naturally narrow leaves, when planted in the garden, have produced leaves as broad as the common sort; but the sort with red flowers has constantly continued the same above forty years, without any variation. The flowers of this are smaller, the stalks are redder, and the leaves of a darker green than those of the common sort; but as I have not propagated this sort by seeds, I cannot be sure if it is a distinct species, or only a femal variety.

The second sort I received from the Alps, where it naturally grows; this has retained its difference in the garden, where it grew in the same soil and situation with the common sort, so I make no doubt of its being a distinct species. The other with a double variegated flower is supposed to be only a variety of this, therefore I have not enumerated it as a different sort, but the flowers are much larger, and beautifully variegated with purple and white. I received a plant of this sort from the royal garden at Paris, which has flowered several years in the Chelsea garden, but the roots do not increase so much as the common sort.

These plants require a loose sandy soil, and a shady situation; they are propagated by parting of their roots, which multiply in great plenty. The best time to transplant and part the roots, is in autumn. They should be planted near a foot asunder, that their roots may have room to spread, for if they agree with the soil and situation, they will meet and fill the ground in one year. If these roots are planted in a rich soil, they will spread and multiply greatly, but will not be so productive of flowers.

The only culture which these plants require, is to keep them clean from weeds, and to transplant and separate the roots every third or fourth year, otherwise they will be so greatly matted together, as not to have proper nourishment, so the flowers will be small, and few in number.

The third sort is a native of the Alps and Appennines; the stalks of this (when growing in good ground) generally rise three feet high; they are taper, and garnished with oblong oval leaves placed alternate, embracing the stalks with their base; they have several longitudinal veins, resembling the leaves of white Hellebore: the foot-stalks of the flowers are produced from the wings of the leaves, which support four or five flowers on each; these flowers are larger than those of the common sort, but their tubes are more contracted, and are succeeded by pretty large berries, which when ripe turn of a bluish colour; it flowers in May and June, and the seeds ripen in autumn.

The fourth sort is the broad-leaved Solomon's Seal,

which is said to grow naturally in England, but I doubt ours is different from that mentioned by Caspar Bauhin under that title; for in two places where I have found it growing, the stalks were much shorter, the leaves were broader, and their borders turned inward, and this difference continues in the garden where it grows in the same soil and situation with the common sort.

The fifth sort is the common Solomon's Seal; this hath a fleshy white root, as large as a man's finger, which multiplies in the ground, and is full of knots, from whence it had the name of Polygonatum, or many knees. In the spring arise several taper stalks, which grow near two feet high, adorned with oblong oval leaves, placed alternate, having many longitudinal veins running parallel to the middle, and embrace the stalk with their base; these are ranged on one side of the stalk, and on the opposite side come out the foot-stalks of the flowers, which are about an inch long, dividing at the top into three or four smaller, each sustaining a single tubulous flower, cut into six parts at the brim, where it is green, the lower part of the tube being white, they have each six stamens, surrounding a single style, which arises from the germen, and is crowned by a blunt stigma; the germen afterward becomes a round berry, about the size of Ivy berries, each inclosing three seeds. This flowers in May, and the seeds ripen in autumn, and then the stalks decay.

The sixth sort rises with an upright stalk about two feet high, garnished with long narrow leaves, which stand in whorls round the stalk; there are generally five of these placed at each joint, which are four inches long, and half an inch broad, smooth, and of a light green. The flowers come out from the same joints, standing upon short foot-stalks, each supporting five or six flowers, which are smaller, and have much shorter tubes than either of the former sorts; they are of a dirty white, tipped with green, and (lightly cut into six parts at the top. It grows naturally in the northern parts of Europe.

The seventh sort grows naturally in most parts of North America; I have received plants of this from New England, Philadelphia, and several other places. This rises with an upright stalk near two feet high, garnished with oblong leaves, ending in sharp points; they are near five inches long, and two and a half broad, having three large longitudinal veins, with several smaller between, which join at both ends. The leaves are alternate, standing close to the stalks, and are of a light green on their upper side, but are paler on their under. The flowers are produced in branching spikes at the extremity of the stalks, each being composed of several small loose spikes of star-like flowers, of a pale yellow, which fall away without producing any seed. This flowers the latter end of May, or the beginning of June, and the stalks decay in autumn; but the root is perennial, and propagates by offsets.

The eighth sort is a native of the same countries as the last mentioned; this sends up stalks two feet high, garnished with many oblong leaves embracing the stalks with their base. The flowers are produced in single spikes at the top of the stalks, which are in shape and colour like those of the seventh; but these are succeeded by small red berries, about the size of those of the Lily of the Valley. This sort flowers the beginning of June, and the berries ripen in autumn.

All the sorts of Solomon's Seal are very hardy plants, they delight in a light soil and a shady situation, so are very proper to plant in wildernesses under tall trees, where if they are not crowded by lower shrubs, they will thrive and multiply exceedingly; and during the summer season will make an agreeable variety, the whole appearance of the plants being very singular.

They all multiply very fast by their creeping roots, especially when they are planted in a proper soil and situation. The best time to transplant and part the roots

roots is in autumn, fonn nfte: their stalks decay j those which art removed it that fealbn, wiilgtOW niucli frorger than thole which are planted in [fie Ipring, which is (he reifon of my preferring that feafon ; hut they- may be lately transplanted anv time a tier the filks decay, til) die roots begin to Jhoot in (he faring. As thfle roota areas: increafe, they fliouli) be planted ac a wide d... I each other, that the) may have room to fprcatl j for they ihould not be removed oftener than every third or fourth year, where they are expected to I to £ i w (Inina, and produce agootl number of (talks, in which their beauty confite. The only culture theft plants require, is la d g ound between them every Ipring, and keep them Inn from weeds.

The roots of the fifth fort are ufed in metticiw, and are greatly recommended for their efficacy in nil manner of contufons. The dffWed w«er of the plant clean the uee and beautifies the comulevion: a de-coft ion of it cures thic itch, anJ (uth like cutaneous aitempers.

CONVOI. VULVUS, L3n.Gen. Plant, toft. Tovim. [nil. R. II. Si. tab. 77, Bindweed. It is fo titled trotn convolvntdo, Las. rolling tounci, ur twining about.

The CHARACTERS are, It is a pzrmentnt empaU matt of 'em kr.f., lilich it At-vided into Ji-vc pem at tin top -, rbi fltxtr bath one Urge beli-fopst, i pit <il, uibich fprtads cpm. It bmb/he jborl flaz:ina, terminated lymfletapTejpdfuaiM!.. and a nmiAifb gormcn, fupperti/ig a leader jtyle, cruxu by tms breed oblong figmss. The tnpimst afterward becomes a reunaib expfalt, zvitl> one, teo, ur ibrte calicem, cmlairm:* fiverit fiedi vabhb art iOKxm ttir twiftd, bxt ta lit :r/hd angular.

The gmiuofpla is found in the firft feflion of]jnnwa's fifth dafs, intitl'd Pttitandria Monoiaynia, the Hower having five ihmina a<il one ilyle,

The SPECIES arc,

- 1. COMVOLVULUS (*Arvensis*) foliis, fagittatis utrinque actitis, pedunculis unifloris. *lur. Jtuic. 1 73. Hind^e/d lylilb mrmv-Jbaped Ua^cs pointed on lidb JiAcs^ and it jwglf fewer en ea(b fiei-Jtuik. Convolvulus mi; arvenfis. C. B. P. 29+. Smaller Held Bindweed, mnanathf exiled Gravel Bindweed.*
- 1. Lij-VOLVULUS (*Septum*) foliis figittatis fiocfic truncatis, pedunculu tetngona unillorii. *Prod. Leyd. UuMneiduuib arrtw-jkitfid leaves-, 's>hUb art tern -, ,ind ajbtgljtjoiver an eatb fecl-jl/iH: Convolvulus najor albus. C. B. P. Largtr 'xbii> Bastfoxtd, enUd Bet*
- 3. CONVULVUS (*Samnoma*) foliis, ovatis, pedunculis teretibus subtriDoris. *Protl.Leyl. 17. Bindweed with oTrem-Jbaped leaves tern fabind, two Jleu/rrs in caeb feol-Jla'k. Convolvulus Syria-&HcaminoniaSyriaca. Mor. Hift-i. p. 12. Syrian Bindweed and Syrian Scammony.*
- 4. COSVOLVULUS (*Purpureus*) foliis conlaris indivifis fructibus cernuis pedicelliis incralS-Ds. *1.in. Sp. 3 ig. vrith brarl-fuape.: Convolvulus purpureus, follo tntm-tumio. C. B. P. 205. I Purple Bindweed with rtwAijh tfaf, ctomnenfy tailed Convolvulus major, cr Grace Bindweed Yf.*
- 5. CONVULVUS (*Nidivus*) foliis cordatis, acuminatis, unculis mfiom. *Bmjntd'jeiitb *ein;id *•, and three jicw *fijlk. Convolvumajor, folio fxibriuindo, tinir amplo purpurto, m. Cat. Jam. 55. Gra.: Bindweed taib a rztrJtjh leaf, ni a large pxrpfz flz*
- 6. CONVULVUS (*Nidivus*) foliis cordatis rribbis vitlofn, calycibus brevibus, pedunculis bifloris. *1.in. Sp. 3 ig. Bindweed with heart shaped leaves, having three fls, and two flowers on each foot-stalk. Convolvulus caeruleus hederaceo angulatis foliis C. B. P. 295. Blue Bindweed with an angular leaf.*
- 7. CONVULVUS (*Batatas*) foliis cordatis hastatis quinquefidis, caulibus repentibus, tuberositate. *Lin. Sp. Plant. 154. Binthreid •xib Jprar btirt-jheptii.*

ji.'i *arvensis*, and • crtepm* Jt'at^g JIM ? Convolvulus ratlicc vul *arvensis* cucurbita muree purpurea. *Slow. Cat. Jam. 54. B'mivittdwih pit, tKbtrvti, tfenkxt rott, cmmtnfy ca Pfafits.*

8. CONVULVULUS (*Palmar*)! foliis palmwis, lubu fcjji-tes, unculis acutis, pedunculis unioria, edribm mwdflds patentibus. *Bnnhxc iA palmattd hunts, va 'n fent-jhth, and a large j. Convolvulus pentapbyl Plum. Cat.*

f). CONVOLVULUS (*Arifiskcbh/cUm*) foliis haf- tis, unculis totundntis, pedunculis millt florib. *Bindawrf failb fptar-paatted , g runded ; ; 1 and mam fowen en each fo&i-jhik. Convolvulus Aineri- canus, Ariflotolii: e tolto lon bus, rionbus phirin; i m lino pi'diculu in LiJi-n; bus. Honft. M! S.*

vilbfu, caule pctiolrfq ue pilids, peduncaln imulti- floris. *Lin. Sp. Plant. 159. Ifind'jxedwiibbcirr; femexrg: ffear-fsinStd end devnt\ tsilb bnirj ftats eudjeefic: Convolvulus Amerinnu' i Tolyanthus, Althia; folio villob. Houft. N.*

ii. CosvoiruLUS (*Gliil-ms*) foliis nvato ohiontri^ o|s. bris ; dunculis unifloris, calycibus • vrtiis. *Unfrtt. L o |i volvulus fo i i s 0 bio n g is bus amplit purpurci.; Houll M.SS.*

11.. Cui- (pbyltsi) hifurifri 'iU *with lueea tm; .:itf :i?o flewm. Convolvul Plum. Cat.*

1^ CONVOLVULUS (*Friurfftss*) caule rraricolb, lobis, pedunculis PL *Minis. Bfithattdwi jTmvr, and :rd-xijjils. Convolvulus pen- villos, flore & rVudhl purimreis maximis. Plum. Cat.*

14. COKVOLVVLOS (*Brajitimfit*) folii* emargrnaris, baft biglaudulois, pedunculis trifloris. *Lin. Sn. Plant. 159. hindtedc Keirb indented leaves, having tins glaiiit iSijim>t-fe'it, <xilb three fbutrs. Convolvut: marinus Catharticus, folio ronmdo, fiore pumurco. Phtm. Pl. Amer. S9. tab. io^*

15. Cowvolvuiia (*Muhfortti*) foliis ebnlitis, gfctbrk, prdunculis multifloris, k-m-m- vitlofo fermginco. *Birdtititd mth fntentb htort-jhaped ltavu, fiQI-fielks (1 tevrtd wiib aw brn-n- huriidown. Convolvulus Aincricanus vulgaris folio, capfulis iriquetris mnnerofis, «c uno punifn, bngii petiolis projntnlcnribuj, femin laingine ferrugnci vitlofi. Pluk. PhyT. tab. it7: f- >*

16. CONVOLVULUS (*rieti/is*) foliis corckris ptabd- crenatis, cauk- vitlofo, (l)lb, prJt>; caulis multi- floris. *Lin-Sp. Plant. 15^ ft -{keptA CBWJ, a hairy firamtl Jialk, eta 'having zamy fr.nm, "s itienBs fempervireJis, foliis molibuj Sc incanis. Hon. J. p. 101.*

17. CoHVplvuurs (fflfcwftuf) foliis triangularibus acutis, llyribus piurimis liilililubis patulis, calycibus acutis tr.uluGJU. *Bindweed 'Jt'ub Jborp-ptitlled triangular scute empakntis ending in Sfiaxp point.: ConvoJvuis folio hederaceo, angi i i i o, lamcp "Ib, fiore tnagno, cscnilco, patulo, S>L; Cat. Jam. 65.*

iS. CoKVOLTULVi (*JRD/tia*) foliis cordatis, ICL::: pedunculii bi (1 ori s. *Bindweed i-itl, be art -pispid plotted Jfitviii andfscf-fialkj having tv.t, j Convolvulus tnerjeanus hirtutus, folio acuminato, fore am- plo rofeo. Houft. MSB,*

nt. CONVOLVULUS (*iUpetis*) foliis repentibus, caule tpcBMi pwlunculii uniflor; *Lin. Sp. Pljnt. 158. BixAwetdwlbn • art ekn/c <U tbt fu-fialk, * (TV^f Jlni^ at J cr.t*

fructus ex - ub fiabftik. Convolv. maritima catliar-
tku., folia Acetose, bore nveo. Plum. Pl. Un. 89.
tab. 105.
;i. C. : *convolvulus* (• *convolvulus*) foliis cordato ... gitMK,
pedunculis unifloris. *Blindweed with narrow spear-shaped*
arrow-pointed leaves, and few flowers. ... *single flower.*
Convolutus carolin. *Bennice folia bore nwgna*
albo fundo purpurea. Cat. Hort. R. Par.
21. *Convolutus (Acetosa) foliis cordato ... vatis, pectin-*
collis unifloris, bractea lanceolata, flore cilio. Hort.
Chiff. 68. *Blindweed with oval heart-shaped leaves,* ... *frnt-*
folia having one flower, four-angled bracts, ... *the*
flower being like to the fait. Con'divulu!; liculu;
minor, bore parva ancilaro. Bort. Pl. Sic. 3[^].
... *convolvulus (Elegans) foliis palmatis tri-*
angulis, pedunculis bifloris, calycibus acutis. ... *with*
three-angled leaves, four-angled bracts, ... *two flowers,*
and sharp-pointed calyx. TipaiemMI: *Convolutus ar-*
gentulus, elegantissimus, foliis reniformibus incisitis. Tournef.
Inlt. R. H. 35.
23. *Convolutus (Albida) foliis cordatis incifw &*
incemis, pedunculis bifloris, ralytibus obtulii. Juff(S)
weeds with narrow heart-shaped leaves, which are jagged,
four-angled having two flowers, and about equal-length.
Convolutus segetum folio alba. C. B. P. 295.
... *convolvulus (Tricolor) foliis lanceolato-ovatis gla-*
bris, caule decumbente, floribus glaucis. Vir. Chiff. 68.
Blindweed with oval spear-shaped leaves, a descending f-
with one flower on each foot-stalk. *Convolutus Lan-*
tauctus bore Cyanea flore, ... *miKshicuiiUiiM.* ... *with*
three flowers.
25. *Convolutus (Cantaria) foliis laciniatis* ICiiri
caule ramoso subkicatum calycibus pifidis. Lin.
Sp. 225. *Blindweed with narrow spear-shaped leaves, a*
branching milk, and lua'ry mpalmi'nts. *Convolutus*
linaris folio arripens. Tournef. Inlt. R. H. 35.
26. *Convolutus (Lacerta) foliis laciniatis* inceoUtu, : *erectis,*
laciniis petiolatis pedunculis bifloris, calycibus ser-
iceis lobulatis. Lin. Sp. 225. *Blindweed with five*
foot-shaped leaves, having few stalks, with two flowers
on each foot-stalk, bearing five ... pa/cmmtj. *Convolutus*
minor, <•• minor, repens, acutis ferris. H. R. Par.
27. *Convolutus (Cantaria) im) folju lanceuUtis tomento-*
sis, floribus ... *capimtij, olyelbus liirfum taur*
culis. Lin. Sp. 224. *BinAcitJ -with ftprcr-fimpai*
weeds leaves, four-angled and flowers growing in bunch,
terminating the stalk, which are erect. *Convolutus*
linaris argentea umbellata, erectis. Journ. Inlt. k.
II.
28. *Convolutus (Unarifui) Fo lits 1 tneari I nneul nti,*
aculis caulis ramoso, recto, pedunculis unifloris. Hort.
Chiff. 68. *Blindweed with narrow spear-shaped leaves,*
which are jagged, upright branching stalks, ... *nut fist-*
folia with one flower. *Convolutus carolin.* UUtOIDitt,
foliis palmatis. C. B. P. 295.
29. *Convolutus (Sedum) foliis reniformibus, to-*
mentosis unifloris. Hort. Chiff. 67. *Blindweed with kid-*
ney-shaped leaves, and one flower on each foot-stalk. *Sol-*
danella maritima minor. C. B. P. 295. *Leafy sea*
Blindweed.
30. *Convolutus (fia-pHim'i) foliis car;* ... *regula-*
ris, caule umbellato, quadrangulato, pedunculis
multiBorii. Flor. Zej. 72. *Blindweed with regular*
heart-shaped leaves, a quadrangular umbellated stalk,
and foot-stalks bearing many flowers. *Convolutus Zey-*
lanicus, alatus, maximis, foliis lobis reniformibus
lobis angulatis. It. II. Lud. 177. tab. i; *English of*
tbjbjpi.
31. *Convolutus (7*^V*) fijl'iis viiriis, pedunculis*
unifloris, radice [llulTOj]. *Buui* ... *with variable*
leaves, four-angled ... ;n%lf fismxi, and 0 lubr ... *at root.*
Convolutus radice tuberosa ... *iruci llouH* MISS.
The first sort is a very tommofi upon drj banks, and
in gravelly ground. . . . that parts of England, and
is generally a sign of gravel lying under the
surface. The roots of this weed very deep into to (he
gran, . . . from whence (bme cauntry people call it
Devils lumps.
I Vom the root arfei many <cak (talks, which trail

on the ground, and fulfil themselves about the rely-
bouring plants; these are furnished with triangular
arrow-pointed leaves. The flowers are produced
from the side of the branches, bearing long foot-
stalks, each sustaining a single flower, which is some-
times white, at other times red, and frequently is va-
riegated. This is a troublesome weed in gardens, so
should be constantly rooted out.
The second sort is also a troublesome weed in gar-
dens, when the roots are intermixed with those of
trees and shrubs, or under hedges, where the plants
cannot be easily destroyed; but in an open clear spot
of ground, where the plants are carefully hoed down
for three or four months, they may be effectually de-
stroyed; for when the stalks are cut, a
milky juice flows out, and this juice the more it
exhults and decays. The roots of this sort are petty,
and are white. The
stalks rise in bunches, twisting themselves
about trees or hedges, and are furnished with large
arrow-pointed leaves, which are torn at their base.
The flowers come out from the side of the branches
upon long foot-stalks, each sustaining one large white
flower, which are succeeded by roundish seed-vessels,
having three cells filled with seeds, which are convex
on one side and plain on the other. The flowers in
[tine, and the seeds ripen in autumn, soon after
when the stalks decay to the root; but as every small
piece of the root will grow, it renders this a trouble-
some weed to destroy.
The third sort grows roundly in Syria, where the
roots of the plants are wounded, and the
juice which receives the milky juice which
flows out, which is insipid, and afterward put up
and preserved in the manner in the
shops; it is a very juicy plant, and will thrive very
well in the open air in England, provided it is on a
dry soil. The roots of this weed, run deep into
the ground, and are covered with a dark bark. The
branches extend themselves on every side to the dis-
tance of four or five feet, they are slender, and trail
on the ground, if they are not supported, and are
furnished with narrow spear-shaped leaves. The
flowers are of a purple color, and come out from the
axils of the leaves, two sitting upon each long foot-
stalk, which are succeeded by roundish seed-vessels,
having three cells, filled with seeds shaped like those
of the former sort, but smaller. It flowers in June
and July, and the seeds ripen in autumn. If the
seeds of this sort are sown in the spring, in a border
of light earth, the plants will come up, and require
no other culture but to keep them clear from weeds,
and thin the plants where they grow too close, for
as the branches extend pretty far, the plants should
not be nearer than three feet asunder. The stalks
decay in autumn, but the roots will abide many
years.
The fourth sort is an annual plant, which grows
naturally in Asia and America, but has been long
cultivated for ornament in the English gardens, and
is generally known by the title of *Convolutus major*.
Of this there are three or four lasting varieties, the
most common hath a purple flower; but there is one
with a white, another with a red, and one with a
whitish blue flower, which with white seeds. All
these varieties I have cultivated many years, without
observing either of them change. If the seeds of
these sorts are sown in the spring, upon a
border where the plants are designed to remain, they will
continue to grow, but in open culture but to keep them clear from
weeds, and place some tall stakes down by them, for
their stalks to twist about, otherwise they will spread
on the ground, and make a bad appearance. These
plants, if they are properly supported, will continue to
grow to five or six feet high, they flower in June, July, and
August, and will continue till the frost kills them.
Their seeds ripen in autumn.
The fifth sort grows naturally in Jamaica, from
whence the late Dr. Huxham sent me the seeds; this
sort grows in bunches, which twist about the
ground,

ecs, and rile to a great height i the ICJUTS are fmooth, heart-shaped, . . .Jing in long points, and tl v ears at the base ire largei, ii-uuin^ Upon fig (lender foot-flalks. The flowers COLU- out on the oppo . . . e SJe of the IUUKs, upon long fee stalks, each sustaining three flowers, whh longer tubu, than those of the termer, and ire of a deeper purple colour I this flowera thai 'he latter end i June, till the fruit ^llroys if. As this B not ib hardy as thinner, the [ceds lould be fown upon a hoi-ried in the foun g, (o bring UK plan L- fmr^ird i :md to wit >: the end if May, iltey ihould be plannrdout in wirtn I orders, and treated in the fame marniff as il:c former u- iixih ibrt grows natural!y in Africa and America ; this ij an annual pLinr, which rifea with a twining stalk ozhl >r ten feet high, gjriiiiicJ with ligcrt-shaped leav . . . , divided into three lobes, which end in sharp points, these are wo . . . , utd tend upon long fo-t.lalks-, the v flcn . . . jut on longtoot-ftalks, each fu(tuin(r two Bowers of a very deep blue colour, froi . . . whence it has b xa titled Anil or Irtdigo. This is One Ot the most beautiful flowers MS ut this genus, and is undoubtedly i dtltintt f though feme liav luppoictt it t> k- Oat) a variety of the fourth tort, for I have cultivated ti man years, and have never tuind it aller . . . , the kavcs of ii* having three deeply divided lotes, and ttioc of the |purch ion being entire, is lutfideBC to dcttffiamic the Iprti- (ic JhiltCnce . . . this fort is annual, and mud be propagated in the lame manner as the titti . . . ti flowers . . . li the titter pan of funnier, and, in good ierfun, the . . . Is ripen well in the open air. The . . . ufnihfirt is thai whole roora arc eaten, and U gene rail > titld Spanih Pontoe s thrfe (ouo arc annually imported from Spain and Portugal, where they ir/- greatly ouUivated for the table, but they are too lender to thrive well :n the open air in Eng- lajtd; they ire cultivated by the roow in die lame way is the common Potatoti but require much more rooai; fat uut many trail ing .(talks, which

extend four or fn fcei every waj-, and at their joints ferul out roots, which, in warm countries, grow to be large tubers, ta th« from a iingle root planted, funy or fifty large roou arc produced. TI. is ibmctimes piop^jated by vnty of Ckffiofiy ia but the roois fhould be planted on s hot-bril in the tpring-, anl ii" the plants arc kept covered in bi weather with glafk's they will prodmn flowers, j>alDy jmall roots vyll be productti fr^ni the joints ; but if they are expoled to the open air, they i Fiwke much progreei. The eighth fort grows DniraQji it La Vera Cruz in pain, from whence the feeds were itnt me by the late Dr. Houftoin. This riles with a ltrong wir-ling talk to the height of iwimy feet, dividing into Jeveral fmaller, whih i'siten tfaemfetvea nbout tiny of he ntighbourmg trees andihrubs-. thde arc gar- dled with Uavei in fliajn: of a hand, having Jeven . . . , which are fjicar-ftuped, and deeply cut on . . . ine in ftiwji pointj. The Doncn arc fingle or. (KV foot-flalk, whitli ire very lojig, . . . [npalment of the Dover is l'рге, l'pmding open, atid is dividixi deeply into five : . . ff in each of thde is lodged a fingle feek. This plane is ten-. er, fo the feeds ihould be fown on a hot bed in the fpring; and when the plants are fit . . . > remove, they muft be tranfplanted each into a le- parate pot filled with light earth, and plunged into a moderate hot-bed, obferving to fhade them from the fun till they have taken new roots; then they ihould have a large floue of air admitted to them every day, to prevent their drawing weak, and alfo ihould have moderate waterings thre or four times a week. When the plants are grown too tall to remain in the hot-bed, they muft be fhifted into larger pots, and placed in the bark-houfe, where, if they are allowed room, they will rife to a great height, and produce flowers, but it rarely produces feeds in England.

The both fort is an annual plant. The feeds of this were lent me from Cam igni in Hew Spam, where the plant grows naturally. This riles with a twining stalk ten feet high, which is garnifhed with arrow-pointed leaves, white ears at the base are round The flowers are produced in small clusters, ftanding upon long foot-ftalks are Vclioy, and are fucceeded by three-cornered feed-vellids, having three cells, in each of thde are lodged two feeds. I im |Ltn. is annual, and too tender to thrive in the open air in England; fo the feeds ihould be in on a hot-bed in the fpring, and the plants may be aft- ward treated in the lame way as the eighth fort, with which nian.igaa i they will flower and produce ripe feeds. The feeds of the ninth fort were lent me from [J- maica by the late I)r. H utton, who foui id the plants growing naturally there in great plenty. This is an annual plant, riling witii [lender, fliff, twining l stalks, eight or nine feet high, g.iniihlrt! with heart-shaped jiavo. which -downy. The flowm ftaml mdiiv ng foot-O-ilk their are purple, and are fucceeded by roundifh feed-vellids, with three cells, contain nij fevtni Inwil Imls. This fort requires the fame treatment as the eighth, being KM raider Ed tlriv- air. The eleventh fort was few roc (TO the ifland of Barbuda. This is an annual plant, which riles with twining stalks four or eight feet high, garnifhed with oblong, oval, fmooth leaves. The flowers come out at every joint on a flender long-foot l.Ulu, each fupporting a large purple flower, whole round- meat 13 cut to the bottom, in two parts. The lead* and cipj'ule M like the Ic < the other fp- This is a tender plant, ftanding in the fame way as the eighth fort. JC tiered in the fame manner. The twelfth fort grows naturally in Cathagena in New Spain, ijQm wirtice l received the feed^ This is a tender plant, with ribs with ftiong winder stalks to the height of twelve or fourteen feet, and are garnifhed with leaves, divid- i into live , ftanding upon fhort foot-ftalks; the flowers ftand upon long foot-ftalks, each fustaining two purple flowers. I ix lial'M, Ic of a l light brown colour. This fort is tender, fo muft be treated in the fame way as the eighth. The thirteenth fort grows naturally about Teda in New Spixii. M r H : This hath a liguous stalk covered *ith a purpk-bjrk, H each twines about the tr<3, ami rif< to the l of thirty feet or tnwr, ami is ^arnitheii with lejevci, whi^ are deeply dididrii intti five flnarp j pointed lobes. The flowers (bnd u)>n long iiavr r. luier in tile middle ; (he) are VL:V Urge, and of a purple cotoyf; chcfte ate fucceeded by round feed-vellids, as large 15 anmMliii | Apple, divided into three cells, etefa containing I a very large fmooth feek. Tl) < plant is too tender to thrive ii the ojer air in England. lo muift be inited, in the fann too tall for rJw I here. I have had thde plants upward of twenty feet high, which have put out many fide branches, extending fo wide on every fide, as to cover moft of the neighbouring plants, fo that I was obliged to remove them into a cooler ftuation, where they would not thrive. The fourteenth fort grows naturally on the fra shores in moft of the iflands in the Weft-Indies, where the stalks trail on the ground, which are garnifhed with oval leaves, rounded at the top. The flowers are large, of a purple colour, and are produced by three, or very long foot-ftalks; thde are fucceeded by large oval feed-vellids, with three cells, each containing a fingle feek. This hath a perennial stalk, which trails on the ground, and fpreads to a great diftance, but is too tender to thrive in the open air in England, fo muft be treated in the fame manner as the eighth fort.

and may be continued two or three years in a stove; but it is apt to spread too far for a small stove, so that where there is not great room, it is not worthy of culture.

The fifteenth sort grows naturally in Jamaica; this rises with (lender twining stalks eight or ten feet high; the leaves of these are (haped a little like those of the common great white Convolvulus, but the foot-stalks, which are pretty long, do each sustain many purple flowers, growing in bunches. The seed-vessels of this sort are three-cornered, and have three cells, each containing a single seed. This is an annual plant, which requires a hot-bed to raise it, and must be kept in a glass-case or a stove, otherwise the seeds will not ripen here.

The sixteenth sort has been long preserved in several curious gardens in England. It grows naturally in the Canary Islands; this hath a strong fibrous root, from which arise several twining woody stalks, dividing into many smaller ones, these, where they have support, will grow more than twenty feet high, and are garnished with oblong heart-shaped leaves, which are soft and hairy. The flowers are produced from the wings of the leaves, several (landing upon one foot-stalk; these are for the most part of a pale blue, but there is a variety of it with white flowers. This plant flowers in June, July, and August, and sometimes ripens seeds here, but as the plants are easily propagated by layers, and also from cuttings, the seeds are not so much regarded; nor indeed will those plants which are raised by layers or cuttings produce seeds, though those which come from seeds seldom fail. As the leaves of this plant continue green all the year, the plants make a pretty variety in winter in the green-house, for it will not live abroad in winter in this country, though it only requires the same protection as Myrtles, and other hardy green-house plants. It may be propagated by laying down the young shoots in the spring, which generally put out roots in three or four months; then they may be taken from the old plants, and each planted in a separate pot filled with light earth, and placed in the shade till they have taken new root; after which they may be placed with other hardy green-house plants till autumn, when they should be removed into the green-house, and afterward treated in the same way as Myrtles, and other green-house plants. If the tender cuttings of this are planted during any of the summer months, in pots filled with light earth, and plunged into a moderate hot-bed, shading them from the sun, they will take root, and afterward should be treated as the layers.

The seventeenth sort is an annual plant; the seeds of it were sent me from Jamaica, where it grows naturally. This rises with a very (lender twining stalk four or five feet high, garnished with triangular leaves, which are pointed. The flowers grow in dufters, fitting close to the stalks, which are blue, and are succeeded by seeds like those of the fourth sort. This sort will not ripen seeds in England, unless the plants are brought forward on a hot-bed in the spring, and afterward* placed in a glass-case, where they may be defended from cold.

The eighteenth sort grows naturally in Jamaica, from whence the seeds were sent me by the late Dr. Houtton. This is one of the most beautiful kinds, the flowers being very large, and of a fine Rose colour. It rises with a winding stalk seven or eight feet high, which is garnished with heart-shaped leaves, ending in long (harp points; fitting upon very long foot-stalks. The flowers also have long foot-stalks, each supporting two flowers, whose empalement is divided deeply into five parts, the seeds of this are large, and covered with a fine down. This is an annual plant, which is too tender to thrive in the open air in this country, so the seeds (should be sown on a hot-bed in the spring, and the plants afterward treated in the same manner as is directed for the eighth sort.

The nineteenth sort grows naturally near the sea at Campeachy, from whence I received the seeds. This

hath strong, smooth, winding (stalks, which send out roots at their joints, and are garnished with arrow-pointed leaves, whose ears or lobes are obtuse; the flowers are large, of a sulphur colour, and fit upon very long foot-stalks, which proceed from the side of the stalks, each supporting one flower, with a large swelling empalement, these are succeeded by large, smooth, oval capsules, having three cells, each including one large smooth seed* This is a perennial plant, whose stalks extend to a great distance, and put out roots at the joints, whereby it propagates in plenty; but it is too tender to thrive in England* unless it is preserved in a warm stove, where it requires more room than can well be allowed to one plant. It must be treated in the same manner as the eighth sort.

The twentieth sort grows naturally in Africa, from whence the seeds were sent to the royal garden at Paris, and from thence I received it in 1730. This rises with a (lender winding stalk five or six feet high, garnished with heart-shaped arrow-pointed leaves; the flowers stand on long (lender foot-stalks 5 these are white, with purple bottoms. This sort may be treated in the same manner as the common great Convolvulus.

The twenty-first sort grows naturally in Spain and Italy. This is an annual plant, which rises about two feet high, with (lender twining stalks, garnished with oval leaves. The flowers are small, and of a bluish colour, each foot-stalk supporting one flower of little beauty, so is not often cultivated in gardens. If the seeds of this sort are permitted to scatter, the plants will rise in the spring, and require no other culture but to keep them clean from weeds, or if the seeds are sown in the spring, where the plants are to remain, they will flower in June, and the seeds will ripen in August.

The twenty-second sort grows naturally in Sicily, and also in the islands of the Archipelago. This hath a perennial root, which sends but many (lender (stiff stalks, twisting themselves round the neighbouring plants, and rise five or six feet high; these are garnished with leaves, which are divided into five or seven narrow lobes, and are of a soft texture, like latten, (landing on short foot-stalks. The flowers are produced from the side of the stalks upon long foot-stalks, which sustain two flowers of a pale Rose colour, with five (triples of a deeper red. This sort creeps at the root, so seldom produces seeds in England, but is propagated by shoots taken from the old plants. The best time for parting and transplanting these plants, is about the beginning of May, when they may be taken out of the green-house, and exposed in the open air; but the young plants which are separated from the old ones, should be placed under a frame, and (shaded from the sun till they have taken new root; after which they must be gradually hardened to bear the open air, to which they must be exposed all the summer; but in autumn they must be placed in the green-house, and may be treated in the same way as the Canary Convolvulus before-mentioned.

The twenty-third sort hath some appearance of the twenty-second, and hath been supposed to be the same species by some writers; but I have cultivated both many years, and never have found either of them alter, so that I make no doubt of their being distinct plants. This sort hath a perennial root like the former, which sends out many weak twining stalks, rising about three feet high, twisting about the plants which stand near it, or about each other, and if they have no other support, fall to the ground; these are garnished with leaves of different forms, some are (haped almost like those of Betony, being (lightly cut on their edges, others are almost heart-shaped, and are deeply cut on the sides, and some are cut to the midrib; they have a (hining appearance like latten, and are soft to the touch, (landing on (short foot-stalks. The flowers are produced on the opposite side from the leaves, having very long foot-stalks, each sustaining two flowers of a pale Rose colour, very like those

of the former species. It flowers in June, July, and August, but rarely ripens seeds in England. It has a perennial root, which feeds our cabbages, by which it is propagated in England, in the same manner as the last mentioned, and the plants must be treated in the same way.

The twenty-fourth sort grows naturally in Portugal, but hath been long cultivated in the flower-gardens in England for ornament; this is usually titled *Cerise de la Chine*, by the fondness and goodness. It is an annual plant, which hath several thick, herbaceous stalks, growing about two feet long, which do not arise from the other roots, but decline toward the ground, upon which many of the lower branches lie prostrate; these are furnished with spear-shaped leaves, which in close to the branches; the flower-stalks of the bottom come out just above the leaves in the June month, and on the same side of the stalks; these are about two inches long, each sustaining one large open bell-shaped flower, which in some is of a fine blue colour, with a white bottom; in others they are pure white, and some are beautifully variegated with both colours. The white flowers are succeeded by white seeds, and the blue by dark-coloured seeds, and this difference is partly constant in both; but those plants with variegated flowers, have frequently plain flowers of both colours intermixed with the striped; therefore, the only method to continue the variegation, is to pull off all the plain flowers when they appear, never suffering any of them to remain for seed.

The last is propagated by seeds, which should be sown on the borders of the flower-garden when they are delighted to remain. The usual method is to put two or three seeds in each place where they are intended to flower, covering them half an inch with earth; and when the plants come up, if the seeds all grow, there will be sufficient; the others should be drawn out carefully, so as not to disturb the roots of those which are left; after which they will require no other culture, but to keep them clean from weeds. If the seeds are sown in autumn, the plants will flower in May; but those which are sown in the spring, will not flower till about the middle of June, and will continue flowering till the frost stops them. 1 ht feeds much in August and September. 1 ibIT.

The twenty-fifth sort grows naturally in Italy and Sicily. This hath a perennial root, which runs deep in the ground, from which three or four upright branching stalks near two or three feet high, furnished with narrow leaves about two inches long, which rise to the top of the stalks; these are furnished with narrow pointed leaves, rising close to the stalks, which are hoary. The flowers come out singly on the side of the stalks, being very close to them, having scarcely any foot-stalks; these are of a very pale blue colour, and spread round about to the bottom. It flowers in June and July, but rarely produces any seeds in England. This sort is propagated in the same manner as the twenty-fourth, and the plants require the same treatment. This plant must have a dry soil and a warm situation, otherwise it will not live through the winter in the open air in England. As the stalks of this sort decay in autumn, so at the surface of the ground about their roots is covered with some old rottens bark, it will preserve them in the hardest frosts. The twenty-sixth sort is also in vogue. This is called *Salsola*, and *Salicaria*; it grows naturally on the sea-beaches in many parts of England, but cannot be long preserved in gardens. This hath many small, white, stringy roots, which spread wide, and send out several weak trailing branches, which twine about the neighbouring plants like the common nightshade, and are furnished with kidney-shaped leaves about the size of those of the lesser Celadine, standing upon long foot-stalks, and are placed in clusters of three or four together. The flowers are produced on the side of the branches in each joint. These are shaped like those of the first sort, and are of a reddish purple colour; they appear in July, and are succeeded by round capsules, having three cells, each containing one black seed, every part of the plant abounding with a milky juice. This is esteemed a good medicine to purge off watry humours, and is given in drops. The twenty-seventh sort grows naturally in the island of Crete. This is a perennial plant, having thick fleshy roots, which spread far in the ground, and shaded with a milky juice, which rises two or three inches above the surface, and from thence sends a reddest substance, which is equal to the last sort. From the root several thick woody bearing branches

are produced on the side, and at the top of the stalks, in small clusters, sitting close together, these are much smaller than those of the former sort, but are of a deeper Rose colour; this seldom produces seeds in England, but the roots propagate in plenty. It thrives in a light dry soil, and requires no other care but to keep the plants clean from weeds; it may be transplanted either in the spring or autumn. This is by some supposed to be the same as the last mentioned sort, but whoever has cultivated them, can have no doubt of their being different species.

The twenty-eighth sort grows naturally in Italy, Sicily, and the island of the Archipelago. It rises with straight woody stalks about three feet high, chiefly furnished with blunt, spear-shaped, fleshy leaves, which are placed on every side of the stalks; they are near two inches long, and a quarter broad, standing at their ends. The flowers are produced in clusters at the top of the stalks, being very close; they are of a pale Rose colour, and come out in June and July, but do not perfect seeds in England. This plant will live in the open air in mild winters, if it is planted in a light soil and a warm situation, but in hard winters it is destroyed; therefore some of the plants should be kept in pots, and sheltered under a common frame in winter, when it may enjoy the fire as in mild weather, and be provided with the frost, and in summer placed abroad with other hardy exotic plants, where as the fleshy leaves will make a pretty appearance; it may be propagated by laying down the branches, and also by cuttings, but both very seldom put out roots the same year, and many of them will not; in that the best way is to procure the seeds from Italy, for those plants which come from seeds, grow much larger than those which are propagated the other way.

The twenty-ninth sort grows naturally in Cambric, and several of the islands in the Archipelago. This hath a perennial root, which sends up several erect branching stalks about two feet high, which are furnished with very narrow pointed leaves, rising close to the stalks, which are hoary. The flowers come out singly on the side of the stalks, being very close to them, having scarcely any foot-stalks; these are of a very pale blue colour, and spread round about to the bottom. It flowers in June and July, but rarely produces any seeds in England.

This sort is propagated in the same manner as the twenty-fifth, and the plants require the same treatment. This plant must have a dry soil and a warm situation, otherwise it will not live through the winter in the open air in England. As the stalks of this sort decay in autumn, so at the surface of the ground about their roots is covered with some old rottens bark, it will preserve them in the hardest frosts.

The twenty-tenth sort is also in vogue. This is called *Salsola*, and *Salicaria*; it grows naturally on the sea-beaches in many parts of England, but cannot be long preserved in gardens. This hath many small, white, stringy roots, which spread wide, and send out several weak trailing branches, which twine about the neighbouring plants like the common nightshade, and are furnished with kidney-shaped leaves about the size of those of the lesser Celadine, standing upon long foot-stalks, and are placed in clusters of three or four together. The flowers are produced on the side of the branches in each joint. These are shaped like those of the first sort, and are of a reddish purple colour; they appear in July, and are succeeded by round capsules, having three cells, each containing one black seed, every part of the plant abounding with a milky juice. This is esteemed a good medicine to purge off watry humours, and is given in drops.

The thirtieth sort grows naturally in the island of Crete. This is a perennial plant, having thick fleshy roots, which spread far in the ground, and shaded with a milky juice, which rises two or three inches above the surface, and from thence sends a reddest substance, which is equal to the last sort. From the root several thick woody bearing branches

which twigt about each other, or the neighbouring plants, like the common Bindweed. Thefe are garnifhed with heart-fhaped leaves, which are foft to the touch, like thofe of the Marfh Mallow. The flowers are produced at the joints on the fide of the ftalks, feveral (landing together on the fame foot-ftalk, they are white, and fhaped like thofe of the common great Bindweed. Thefe are fucceeded by round capfules, having three cells, which contain two feeds in each. The roots of this plant, which is the only part ufed in medicine, are brought to us from India. It is titled Turpethum, or Turbith in the (hops.

This plant is tender, fo will not live in the open air in England; it is propagated by feeds, which muft be fown on a hot-bed; and when the plants are fit to remove, they fhould be each planted in a feparate pot, and plunged into a hot-bed of tanners bark, and fcreened from the fun till they have taken frefh root, and afterward muft be treated in the fame manner as hath been directed for the eighth fort.

The thirty-firft fort is the Jalap which is ufed in medicine. This grows naturally at Haleppo, in the Spanifh Weft-Indies, fituated between La Vera Cruz and Mexico. The root of this plant hath been long ufed in medicine, but it was not certainly known, what plant it was produced from. The old title of this was Mechoacana nigra, but father Plumier afferted that it was the root of one fpecies of Marvel of Peru; from whence Tournefort was induced to conftitute a genus from that plant, under the title of Jalapa. But Mr. Ray, from better information, put it among the Convolvuli, and titled it Convolvulus Americanus, Jalapium di&us. This was by the late Dr. Houftoun certainly afcertained, who brought fome of the roots of this plant from the Spanifh Weft-Indies to Jamaica, where he planted them, with a defign of cultivating the plants in that ifland, where he obferved them to thrive, during his abode there: but foon after he left the country, the perfon to whose care he committed them, was fo carclefs as to fuffer hogs to root them out of the ground, and deftroy them; fo that there was no remains of them left, when he returned there; nor have I heard of this plant being introduced into any of the Britifh iflands fince.

A few years paff I received a few of the feeds of this plant, which fucceeded in the Chelfea garden, where the plants throve very well, but did not produce any flowers. This hath a large root of an oval form, which is full of a milky juice * from which come out many herbaceous triangular twining ftalks, rifing eight or ten feet, garniied with variable leaves, fome of them being heart-fhaped, others angular, and fome oblong and pointed. They are fmooth, and ftand upon long foot-ftalks; and from a drawing of the plant, made by a Spaniard in the country, where it grows naturally, who gave it to Dr. Houfton, and is now in my poffeffion, the flowers are fhaped like thofe of the common Great Bindweed, each foot-ftalk fupporting one flower. But as it is only a pencil drawing, fo the colour is not expreffed, therefore I can give no farther account of it. The feeds of this are covered wkh very white down like cotton.

As this plant is a native of a warm country, fo it will not thrive in England, unlefs it is preferved in a warm ftove *, therefore the feeds muft be fown on a hot-bed, and the plants put into pots, and plunged into a hot-bed of tanners bark, and treated in the fame manner as the eighth fort *, with this difference only, that as this hath large, flefhy, fucculent roots, fo they fhould have but little water given them, efpecially in winter, left it caufe them to rot. They fhould be planted in light fandy earth not too rich, for the fame reafon, and the plants fhould always remain in the bark-ftove.

The root of Jalap is efteemed an excellent cathartic medicine, purging ferous watery humours efpecially, and is of fingular fervice in dropfies, and for rheumatic diforders. But the quantity of the root which is ufed in medicine, is not fufficient to render the in-

trodu&ion of this plant into the Britifh colonies, & matter of great concern. But fince the diftillers and brewers have found put its ufe for exciting a fermentation, the confumpti&n of it is now fo great, as that it would become a national benefit, if it were produced in the Britifh iflands* which might be foon effected, were die inhabitants of thofe iflands a little more attentive to their own, and the public benefit.

CONYZA. Lin. Gen. Plant. 854. Tourn. Inft. R. H. 454. tab. 259. [of KooWJ, Gr. becaufe the leaves, being hung up, drive away gnats and fleas, as Diofcorides fays:] Flea-bane.

The CHARACTERS are,

It hath a compound flower wade up of many hermaphrodite florets which compofe the dijk, and female half floret?* which are ranged round the border* and form the rays \ the hermaphrodite florets ate funnel-fhaped^ and cut into five parts at the brim* which fpread open* thefe have each five fhort hairy ftamina, terminated by cylindrical fummits-y in the bottom of each floret is fituated a germtn fupporting a flender flyle* crowned by a bifid ftigma. The female half florets or rays, are funnel-fhaped* and cut into three parts at the top * thefe have a germen, with a flender flyle* terminated by two flender ftigmas* but have noftamina. All thefe are included in a common fcafy empalement* which is oblong and fquare* the fcales are pointed* and the outer ones fpread open. The hermaphrodite and female florets* are each fucceeded by one oblong feed* crowned with down* fitting upon a plain receptacle, and are included in the empalement.*

This genus of plants is ranged in the fecond fe&ion of Linnaeus's nineteenth clafs, intitled Syngenefia Polygamia fuperflua. The plants of this feftion have hermaphrodite and female florets, which are both fruitful.

The SPECIES are,

1. CONYZA (*Squarrofa*) foliis lanceolatis acutis, caule annuo corymbjofo. Hort. Cliff. 405. *Flea-bane with pointed fpear-Jhaped leaves* an annual ftulk* and flowers growing in roundifh bunches.* Conyza major vulgaris. C. B. P. 265. *Common greater Flea-bane.*
2. CONYZA (*Bifrons*) foliis ovato oblongis, amplexicaulis. Hort. Cliff. 405. *Flea-bane with oblong oval leaves embracing the ftalks.* Eupatoria Conyzoides maxima Canadenfis, foliis caulem amplexantibus. Pluk. Aim. 141.
3. CONYZA (*Candidis*) foliis ovatis tomentofis, floribus confertis, pedunculis lateralibus terminalibusque. Hort. Cliff. 405. *Flea-bane with oval woolly leaves** flowers growing in clifters* and foot-ftalks proceeding from the fides and terminating the ftalks.* Conyza Cretica fruticofa, folio molli candidiffimo & tomentofo. Tourn. Cor. 33.
4. CONYZA (*Lobatd*) foliis inferioribus trifidis, fuperioribus ovato lanceolatis obfolete ferratis floribus corymbofis. Hort. Cliff. 405. *Flea bane whose under leaves are trifid* thofe above oval and fpear-Jhaped* and flowers growing in round bunches.* Conyza arborefcens lutca, folio trifido. Plum. Cat. 9.
5. CONYZA (*Tomentofis*) arborefcens, foliis oblongo ovatis, tomentofis, iubtus cinereis, floribus terminalibus pedunculis racemofis. *Tree Flea-bane with oblong woolly leaves* of an jibolour on their under fide* and flowers terminating ihe branches* ftanding upon branching foot-ftalks.* Conyza arborefcens, tomentofa, foliis oblongis, floribus in fummitatibus racemorum, ramofis fparfis aibicantibus. Houft. MSS.
6. CONYZA (*Salicifolius*) foliis linearibus decurrentibus ferratis, floribus corymbofis terminalibus. *Flea-bane with narrow running leaves* and flowers in round bunches terminating the ftalks.* Conyza herbacea, caule alato, Salicis folio, floribus umbellatis purpureis minoribus. Houft. MSS.
7. CONYZA (*Corymbofa*) arborefcens, foliis lanceolatis, floribus corymbofis, terminalibus pedunculis racemofis. *Tree Flea-bane with fpear-fhaped haves* and flowers growing in round bunches at the end of the fhoots* having branching foot-ftalks.* Conyza arborefcens, foliis oblongis floribus fingulis tribus flofcultis confantibus. Hpuft. MSS.

- g. CCHTIA (*Fififia*) caule herbaceo, foliis ovatis ferratis, villosis, floribus alaribus & terroinalibus. *Flea-ban toibnn bertaceus jtcli, vzal, fawed, baity leaves, and flowers proceeding from the fiiUs, and at the ends of tbt branches.* Conyza odorau, Bellidit tblio villola & vifaifa. Houft. MSS.
- o. CONVZA (*fjbrstj'aHi*) foliis ovatis intngnrinw *KXtai* fubtus toinenlofiE, fpicis rectivatis Cecondu, bracteis ifllexts. Lin. Sp- 1209. *Flea-bane with entire malpoid leaves, vt, isillj art their underfide, recurved abettid-ikts of fiwxrs, and reflex fd braifia.* Cony/a fruticofa, flore pallide purpuri.ii, capitillis & latenhus ramulorum Jpicatum **exrantftnB.** Sloan. Lic. Jam. 134.
10. COVYKA (*Sympbytifdia*) foliis obiongo ovatis fcabris, floribus rawnofi! tcrnialibus.!, caule herbaceo. *Fka-haiu with itleng, siNil., rough leaves, flowers gressing in bunches at the ends of th brsnebes, and an herbaceous ftalk.* Conyza Symphyti facie, (lore lutco. Houit.-MSS.
11. COVVKA (*ScamStits*) foliis janceolatis fcabrte, nervosis. >US, racemis recurs at is, floribus adfceinjentibus, iduncutis literati bus caule fraticofa fcantknte. *Flea-lie vsiuh rough, nervous, fpcar-jbapd lewis fitting daft St the branches, recurved fpikes, with flowers standing upward, foot-fialfo proeeduigt Jnm the fide of the branches, ssd climbing fhrtibby fitz&s.* Conyza Americana fcandeni, Lauri folio fitpero, floribus fpicatK albis. Houft. MSS.
12. CONVZA (*Cfrinryiis*) foliis ovatis gtabm, rrinerviii itegerrimis, lioribus fpicatis lurmalibus, caue frutitolo. *'Ua-iant <L.*J oval fmeeb leaves, wbi.1 three veins and are entire, flowers gcyng in fplk't at the eidt of the brambes, and a/hrvbly jtalk.* Conyn Americana frutefcens, foliis ovatis trinerviis fir inicgrh, floribtis fpicatis albi. Houft. MSS.
13. CONYZA (*Utaflora*) foliis lanccolatis aciiri^ fufTiJibus, floribus fingulu lateralibus, cilycibus color.itis, caule fn)tico/rj ra mofo. *Flea-bane 'jtithpsintctfpear-fbapedkave/ fitting dSfe So the brsititbs,finrl (flowers en the fide <tf'.he branch::, 'vhkb hive aloured empabttitits, and a jbrublj branching Jti'.k.* Conyza Americana fmet'cci» foliis oblongii acuti?, cajiitult* & nmulorum cxeuntibus, i..lv^ibus purpurafc;enribu3, lioiifl. MSS.
14. CONVZA (*rate*) fiiiEicufa foliis ovatis trinerviis, Huribus fpicatis ilirihus. *Sbrthhy h'Ua-bmc -wi bval d's having three ttrvei, andJtewrss graving infpikei front tbcji.it of the branca.*
15. Coyt^A (*Petkxculatti*) foliis ovato lanccolatis H-nrvvii., pedunculis loagifTitnb icrmialibus floribus corymbofw. *Flea-bane with tool fpcar-Jbtift/i haw having three vaas, faatftalks which arc very lung ter-nan-nj tU hrntbti, &sd /erasers growing in nund bunches.*
- ifi. COXVZA (*Bacchant*) foliis ovau> oblotigis, obtufis ferratis, femliniplexk:lulibus, floribus corymbofister-miulii-jiii. *FL-a-iiar - with along oval leaves - 'eeb are ebtMfe ami • oHdjloers In raimJ hums terminating the jlelh.* Koriu Cony^oidciSinicmBacchiridis folio rarius cernis, fummo caule ramolb, floribus pirvis cororuo. Pluk. Amxih. So.
17. COVYZA (*JCderaiBJ*) foliis Uncedntis ferratis, pciiohtis, cvii:lc frueofo ramofo, floribus corymbofu tet-minifibus. *Flethbane wA fptar-fupcil foiled Uisi-ti bating fwi-ftalks, and Jlewerj greuixg in round bmebts at the end of the brimcha.* Conytt m.jor odorato five llaccharit "tiaribw juurjureis nudis. SIOMI. C«. Jam. 131.
18. CONVZA (*rlf.rfuie*) foliis ovalibus inreccmmts leabrU fubtus hirir. Lin. Sp. 1209. *Flea-bane K with ...:irt, rm<b I,*
The first fort grows naturally upon dry places in several part, 1 England, fo is seldom allowed a place in gardens. This is a biennial plant, which decays the first year • the ferfi arc ripe; it hath (even) large, oblong, pointed leaves, growing near the ground, which are hairy; between these the stalks come out, which rise two feet and a half high, dividing upward into several branches, garnished with small lieroblonginvei,

standing alternate •, at the ends of the stalks the flowers are produced in round bunches, which are of a ditty yellow colour; the first are succeeded by oblong feeds, crowned with down, it flowerj in July, and the feeds ripen in autumn. If the feeds are permitted to scatter, the plants will come up the following spring, and require no other care but to keep them clear from weeds.

The second fort grows naturally on the mountains in Italy, and is preserved in botanic gardens for the sake of variety. This, is a biennial root but an annual stalk. It grows from a thick fibrous root arile many upright Polkj, garnished with oblong oval leaves, which are rough, and embrace the stalks with their base; the leaves have appendages running along the stalk, from one to the other, whereby the stalk is winged. The upper part of the stalks divide into many smaller branches, garnished with leaves of the first kind as the other, but smaller, tending alternately the branches and main stalks, are reeminated by yellow flowers growing in round bunches; these are succeeded by oblong feeds, crowned with down. It flowers in July, and the feeds ripen in autumn. This is a tender plant, and will not bear much frost. It is sown in a hot-bed, and when the plants are fit to be transplanted, they must be sown in a rich soil. The third fort grows naturally in Crete. The first is a short fleshy stalk, which in this country seldom rises more than six inches high, dividing into several branches, which are chiefly garnished with oval, woolly, very white leaves (from the branches arise the flower-stalks, which are woolly, about nine inches high, garnished with small, oval, white leaves, placed innumerable. The flowers are produced at the sides, and end of the stalk, singly but not in other times two, and sometimes three flowers. It is sown in the open field, and sometimes three flowers. It is sown in the open field, and sometimes three flowers. It is sown in the open field, and sometimes three flowers.

The third fort grows naturally in Crete. The first is a short fleshy stalk, which in this country seldom rises more than six inches high, dividing into several branches, which are chiefly garnished with oval, woolly, very white leaves (from the branches arise the flower-stalks, which are woolly, about nine inches high, garnished with small, oval, white leaves, placed innumerable. The flowers are produced at the sides, and end of the stalk, singly but not in other times two, and sometimes three flowers. It is sown in the open field, and sometimes three flowers. It is sown in the open field, and sometimes three flowers. It is sown in the open field, and sometimes three flowers.

be shaded in the winter, and they have been planted a fortnight, the glass should be raised on one side to admit air to the cuttings, and when they have taken root, they should be exposed to the open air. In autumn they should be carefully taken up, and dried in the sun, and then they may be preserved under a frame in the winter, and the others should be planted in a warm border of dry peat, where they will endure the cold of our ordinary winters very well, and continue many years. This is preferred in gardens, more for the beauty of its flowers than its fruit, which have not much to recommend them.

The fourth fort grows naturally in Jamaica, from whence it was sent me by the late Or. Henslow. This is titled by Sir Hans Sloane Virga aurea major. It is a biennial plant, which rises to the height of six feet, and is divided into several branches, which are garnished with rough leaves four inches long, flipped like the point of a halbert. The flowers are produced in small round bunches, at the extremity of the branches, they are yellow, and stand close together. These are sown in a hot-bed, and when the plants are fit to be transplanted, they must be sown in a rich soil.

pot filled with light fandy earth, and phirigfd into a hot-bed, obfcrving to fcren liem from tite fun rill they have uken new root-, then they mult lave free air admitted to titem tvzry day, in proportion to the warmth of the kilon; they mull aitt be frequently watered in warm wcuher, but rJity fhould not have it in too great plenty. As the plum advance in ilringth, l> they itfuit have a greater fruit: of air •, and if the lesion is warm, they nmy be expofed to the open air for a. few weeks in the lie.it of lummer, provided they are plnced in a warm fitu.-tion j but if the nights prove cold, or much wet fliould iall, they mult viu removed into flicker: if tofc plants are placed in a moderate iluvc in winter, they will thrive benxr lian in greater heat, and in fummer ticy ftould nave a Urge uiare of air. With th!> iii:uu;:cment l htw bad the plants Mower well in July, though they have nm perfected feeds here.

The fifth fort riles with a woody (folk (en or twelve frei high, dividing into many brandies, whole b-irk Is covered with a brown down v thde are garnittied with oblong oval leaves, which uv green on their upper fide, W o f an Alhcolouroti tlier under, placed •taroMB, on Jhorr foor-ftilks. The i lower, ant produced ai the end of the branches, upun long brandling foot-Mks, in loofc fpikes range!

They are whiic, and are focceeded by long fa crowned with down. This plant grows Li Veri Cruz in New Spain, from whence Dr Houi- IOUn fent me the feed*. It is a tender plant, lo mini be created in the fame manner as iurb been directed

for Ebc former fort.

The finth fort grows naturally at La Vera Cruz in New Spain. This harh a. perennial roor, from which arile fcrcral upright talks three feet liigh, farnittied with long narrow leave*, (awed on their edges, placed alternate, and have appendages "Which run along cbc ilalk from one to the other, forming a border or winp to die Jtidkj. The flowers are produced at the end of the fWks in round lumenes, they ate ftnall, and of a purple colour, and arc fucceded by oblong fiat Jeeds, crowiwU with down. Thus is propagated by i«di, twhicb mult be lown upon a

hot-bed in the fpr<g, and the plants mult afterward be tranblanied into pots, and plunged into a finCh luii-bed, oocirving to tin-en them from the fun till tin-y hive taken frcihroot-, after which they mult have a large fhare •fair, and about Mid-fommer they may be placed in the open *ir in a fheltered fhade n, vlicic thej nmy remun tiL the end of September, when dw>- ihould be removed into the ; >vc, and during tie winter kept in a Temperate degree of warmth. The lectind yeir thefe plants will Bower, but they du net perfect feeds in England. The ieventh fen wss few me from La Vera Crus by the late Dr Houftaun, wiw found it growing there naturally. This hath * itiong woody tern, wiikh rile, to the hd"ht of fourteen or fatten fret, covered in Alh-tobured bark, and is divided upward into many ligneous braoclics, garnilhed with fuear. Jhaprd leaves Ibnding alternate, on ihon foot-ftalks. Theft branches are txxiem

of wh K fiowen, tilting upon loiii foot-ftalks, A'c'c' r al £ t)cm beitiH jyoied on tic fame »oi-iblk. Tliclc an; njt ftitecled by. feeds in England, to that the feeds mult be proture<l fmm abroad, and thole mult be lown on a l>tf-bed, and the plants at- trd treated in the lime manner as the fourth (bit.

The eighth fort po**s mrrally at \& Vera Cru^i fruii whence it \ was fent me by the late Dr. Houltoun, this is an annual plant, which grows in low moist places, where the water floods in winter, it hath an herbaceous branching ftalk, which rifes about one foot high, garnilhed at each joint with one oval leaf, fitting clofe to the branches; thefe are flow: on ihrir edges, and covered with a white hairy down. The flowers are produced from the fide of the branches on flender foot-ftalks, each for the moft part fullain- ing three flowers, which are white, and are focceeded

by ch*Ty feeds, crownid witi down : the whole plant is viicous, and will flick to the lingers of thot who handle it.

The leeds of this plant niufl IK (own on a hot-bed in the fpring, and when the pl) are fit to be move fjicy Ihuuid U¹ cadi tnu planted into a feparat - pot, and plunged into a fhallow hot-bed, and t. Jled in the 6mc manner as tiw other tender forts, but niuji have a "ak" fhare of a^r in warm weather, and frequently rerrtdid with water, in July tie/e ptinu will rtower, and if tic aiiuun, grows favulUrable, thej will j ceu their &ei!sj (^plam or two of thL iun may be fcyedfw die lake of variety, but there u little l eany in it.

The ninth fort grow* naturally in Jamaica, from whence the lewis were lent me hy the latc Dr. I toul-touii; this riles with a fhubby ftalk fix or feven feet liigh, •ftanding in a many Itgacotu lirani have a fmothy bark, and I gftniftied with (pear-leaned leaves, fitting clofe to the brattchc4; they arc b rry, and of t L: r colour iib> their under lide, and arc ed alternate. The flowers come out from the

C of the branches, generally in loufe fpikei, which grow fucculent, and hand on the upper fide of the ftalk, but fometimes they are •Tie out (ngle, fitting dole between the leaf and bandit Uicfe are of a pale [i. rple colour. Kd are liicceeded by d a % (ixds, frowned with a tit.

This fort is propagated by feedi, whit' h mult be obtained from the country where it grows aaturatlJE, for it tbih nur produce feeds in England, though a bu flowered levtral years in the C. This is propagated by feeds in the fame manner as the fifth ibrt, Mid the jibnti nuut U- treated in the fame way. h will flower the fecond yr. it, but ^ U'ih mat ripea feeJi in England.

The tenth fort grow* naturally at La Vera. Cruz, from whence it was lent me by the i. e Uv. Villum Houf. toun; this hath a perennial r'jot, and an annual (talk. It grows about three feet i high; the kaves arc : on tour : o five inches l"5g, and one and a half broad in die i . and are tough like thole of C. unfrey. The ftalks are terminated by branching flower-ftalks, cadi l oon-ftalk fullainng feveral yellow flowers, not much unlik

• ibtL This is propagated by feeds in the fame manner as the fifth ibrt, Mid the jibnti nuut U- treated in the fame way. h will flower the fecond yr. it, but ^ U'ih mat ripea feeJi in England.

The eleventii ibrt wai fnt me li-oui La Vera Crui by the Lite Dr Moufioum thi iuii a dimling thrubby Mk which rife fourteen or fixteen feet high, and divider into many branches, garnilhed with leaves ftbout the fite of thofe of tije lky-tree, and full ai diick in their texture, having nny deep t rale nerves, running from the "midrib to the fides-, they are of J pak-green colour. The flowers art produced in long f.-tkcJ, ranged on the upper fide of i e fpike ody, which come out from tisc iide of the branches pointed upward; thefe are large and white, and arc fucceded by rUt dark-coloured I eeds, crowned with down.

This plant make, a One appearance in the ftovc when it flowers, and at it retain!; its lean all the year, fo in the vf inter fcagan it aliordi an agree j; le variety among other tender plants. The culture of this plant is the fame as hath been directed for the -;Juth fort, fo need not be repeated.

The twelfth fort was fnt me fion Canliagena in New •pain, whei it grows naturally, by the l. cMr. Roben Millur, lu foon; this rife with a fhubby ftalk fix or feven feet high, dividing into feveral ligneous branches, garnilhed with oval, fmothy entire leaves, having three longitudinal veins, placed alternate, clofe to the branches. The flowers are produced in fhort clear fpikes at thp end iif the branches; thefe are white, and are fucced i l-d fi; iiiiis fan is tender, fo mult be treated in the fame manner as the feventh, and will abide f. -;J.Tal yeait wth tiw r management.

'the thirteenth fort grows natically in the feme country as the laft mentioned^ and was fent me by, the fame gentleman; this rifes with a fhrubby ftalk eight, or ten feet High, dividing into many long (lender branches,' garnifhed with fpear-ftaped leaves,' three inches long, and three quarters of an inch broad in the middle, ending in acute points; the fmaller branches are fet with very narrow, oblong, pointed leaves, which grow clofe to the ftalks; and at each joint is produced one pretty large white flower, with a*purple empalement; thefe flowers come out the whole length of the fmall branches, fitting clofe to the bafe of the leaves, fo that the plants make a pretty appearance in flower. This may be propagated in the fame way as the fourth, and with that management it hath flowered very well, but it doth not produce feeds in England.

The fourteenth fort was fent me from Carthagen a by the before-mentioned gentleman, who found it growing there in great plenty. This hath a ftrong woody ftem, rifing ten or twelve feet high, divided upward into many fhort ligneous branches, whofe joints are very clofe to each other. The leaves come out alternate on every fide the branches, to which they fit very clofe; they are fsmooth, one inch long, and half an inch broad, ending in acute points, having three longitudinal veins. The flowers are white, and produced in fhort clofe fpikes, which come out from the fide of the branches, and are fucceeded by oblong flat feeds, crowned with down.

This is a tender plant, fo requires the fame treatment as the fourth fort, with which it hath flowered very well, but hath not produced feeds in England.

The fifteenth fort rifes with a fhrubby ftem to the height of fix or feven feet, dividing into feveral branches, which have a dark brown bark, and are dofely garnifhed with oval, fpear-ftaped, fsmooth leaves, having three longitudinal veins, ftanding on fhort foot-ftalks, placed alternate on every fide the branches. The flowers are produced on long naked foot-ftalks, which extend five or fix inches beyond the end of the branches; thefe are purple, and form a-kind of round bunch: the empalement of the flower is compofed of fhort chaffy feales.

This grows naturally at Campeachy, from whence the feeds were fent me by Mr. Robert Millar. It is a tender plant, fo muft be treated in the fame way as is directed for the fourth fort, with which it hath flowered, but hath not produced feeds in this country.

The fixteenth fort grows naturally at Campeachy, from whence I received the feeds; this rifes with a fhrubby ftalk to the height of ten or twelve feet, fending out many ftrong ligneous branches, covered tyith a dark-coloured bark, garnifhed with oblong, oval, blunt leaves, fawed on their edges, and half embrace the ftalks with their bafe: the flowers are purple, growing in round bunches at the end of the branches, and are fucceeded by flat feeds, crowned with down.

This is alfo a tender plant, and requires the fame treatment as the fourth fort, with which it hath flowered, but doth not produce feeds in England.

If the feeds of thefe plants are fown in autumn foon after they are ripe, there is no danger of their mif-carrying; but as thefe are moft of them brought from abroad, they do not arrive here in good time, fo the plants rarely come iip the firft year; therefore the feeds fhould be fown in pots, that they may be preferred through the winter, and the following fpring the plants will come up.

The fevenceenth fort grows naturally in Jamaica; this rifes with a fhrubby branching ftalk about four or five feet high. The lower branches and ftalk are garnifhed with fpear-ftaped leaves about four inches long, and one broad in the middle; they are fawed on their edges, and have fhort foot-ftalks; the leaves on the upper branches are much narrower, and end in acute points.. The flowers are purple, and are produced in round bunches at the end of the branches, and are fucceeded by downy feeds like the other fpe-

cies. This is tender, and requires the fame culture As the fourth fort.

The feventeenth fort grows naturally in China: this is a¹ biennial plant, which perifhes foon after the feeds are ripe. The ftalks are hairy, rifing about two feet high,¹ garnifhed with oblong oval leaves, which are entire, rough on their upper fide, but have many ftrong pale hairs on their under, placed alternately on the branches. The flowers are purple, coming out from the fide of the branches in oblong fpikes.

This fort is propagated by feeds, which fhould be fown in pots in the autumn, if they can be procured at that feafon; but the pots fhould be placed in a garden-frame in winter, to prevent the feeds fuffering by-cold and wet. If the feeds are fown in the fpring, the plants rarely come up the fame year, therefore it will be proper to fcreen this in winter *, when this is obferved, the plants will rife the following fpring. When the plants are fit to remove, they fhould be each planted in a feparate pot, and placed into a very moderate hot-bed, where they muft be fcreened from the fun until they have taken root *, after which they fhould be gradually hardened to bear the open air, into which they fhould be removed the beginning of June, placing them in a fheltered fituation, where the fecond feafon they will flower, and if the fummer is good, they will ripen their feeds.

CONSERVATORY. See GREEN-HOUSE.

CONVAL LILY. See CONVALLARIA.

CO PAIFERA, the balfam of Capevi.

The CHARACTERS are,

// hath no empalement; the flower confifis of five leaves+ which expands in form of a Rose; it hath ten jbertftamina crowned by hngfummitis. The pointal is fixed in the center of the flower* which afterward becomes a pod, in which are contained one or two feeds* which are furred with a pulp of a yellow colour.*

We know but one fort of this tree, which is, * CoPAIFERA(Q^ftifi/tf)foliis pinnatis. *The balfam of Capevi.*

This tree grows near a village called Ayapel, in the province of Antiochi, in the Spanifh Weft-Indies; this is about ten days journey from Carthagen a. There are great numbers of thefe trees in the woods about this village, which grow to the height of fifty or fixty feet. Some of thefe trees do not yield any of the balfam, thofe which do are diftinguifhed by a ridge which runs along their trunk* *, the trees are wounded in their center, and they place calabafh fhells, or fome other veffels to the wounded part to receive the balfam, which will all flow out in a fhort time. One of thefe trees will yield five or fix gallons of the balfam * but though thefe trees will thrive well after being tapped, yet they never afford any more balfam.

As this balfam is ufed in medicine, it deferves our application to procure the trees, and cultivate them in fome of the Ehglifh colonies of America; for as the Englifh are poffeffed of lands in fo many different latitudes, they might cultivate moft kinds of trees and plants from the different parts of the world, which are ufeful in medicine, dyeing, or for any other purpofe of life.

The feeds of this tree were brought from the country of their growth by Mr. Robert Millar, furgeon/ who fowed a part of them in Jamaica, which he informed me had fucceeded very well; fo that we may hope to have thefe trees propagated in great plenty in a few years, in fome of the Englifh colonies, if the flothfulnefs of the inhabitants doth not fuffer them to perifh, as they have the Cinhamon-tree, and fome other ufeful plants, which have been carried thither by curious perfons.

There arc not at prefent any of thefe trees in Europe, that I can learn * for thofe feeds which Mr. Millar fent over to England, were all deftroyed by infe&s in their paffage, To that not one fucceeded in the feveral places where they were fown j but could frefh feeds be procured, the plants might be raifed in England, and preferred very >vell ; for the country of their growth is much more tempe* rate than tpany others, from whence we have be..

furnished with a great variety of plants, which flourish very well in the fives, and some of them arrive to a great degree of perfection.

CORALLO'1" LINDRUM. See ERYTHRAEA.
CORCORI'OR U K. Lin. Gtn. Plant. 6; J. Town. Inf. tab. : : : Jews MJUUK.

The CHARACTERS are,
lit impaleme of the fixer is cempefid tffitt
four-pointed leaves, which are ••• tril. Tlii Jitfiver ixiib
lingh'uK! ; : : : tire ••• Ha l&xgor than the im-
paleme. It hath many hair; P.jmina, "Jibich artjborter
than the potato, terminated by small summits. In the
center is placed an oblong filament, rmen, fypertixg a
flora thick fib, crowned by a leafy penna. •lit gtrmtn
upward becomes a cylindrical ped base, g fivt ceils,
•svhkb are filial -will' tingxittr-pesiftd fids.

This genus of plants is ranged in the list of the Linnæus of Ltmnuus' china with class, under the Polyntiria Monogjvua, the flowers having many Qamina and but one style.

The following are,

i. CuKLitOKU3 (G. uraria) capsulis oblongis, ventricosis, toborum minutis [exmniru lctaceis. Lin. Flm Zeyl. 21 j. Jews Malava with oblong, pointed pods, and the fast i ••• under side of the leaves terminating with bristles. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

z. CORCHORUS (J. uraria) capsulis oblongis, fexfulcatis [exmniru lctaceis. Lin. Flm Zeyl. 21 j. Jews Malava with oblong, pointed pods, and the fast i ••• under side of the leaves terminating with bristles. Corchorus Americana, capsulis oblongis, fexfulcatis. Pluk.

3. CORCHORUS (C. uraria), capsulis subrotundis, denticulatis, rugosis. Flot. Zeyl. 214. Jews Malava with roundish, pointed pods, which are rough. Corchorus Americana, capsulis subrotundis, denticulatis, rugosis. Pluk.

4. CORCHORUS (T. uraria) capsulis ovatis, cordatis crenatis, capsulis tetragonis, apicibus reflexis. Jews Malava with oval heart-shaped leaves, which are crenate, and the upper part of the pods, which points are reflexed. Corchorus four-conitn
cliyru flor (lavo, fru&i nrophykudc. Pluk.

5. CDRCFIORT'S (Unctxrii/Mi) folia lunceol'Jti^, ferrato [JiitutLi, capitiis linearibus, compreiTis, bivaO Jews Malava with oval, pointed leaves, which are serrated, and the upper part of the pods, which points are reflexed. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

fj. Cop.tHoa.un \Bifurce/it) fuli capsulis linearibus, compreiTis, apicibus reflexis. Jews Malava with heart-shaped leaves, which are serrated, and the upper part of the pods, which points are reflexed. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

7. CORCHORUS (M. uraria) capsulis linearibus, compreiTis, foliis lanceolatis, equaliter serratis. Lin. SJJ. J46. Jews Malava with lanceolate leaves, which are serrated, and the upper part of the pods, which points are reflexed. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

8. CoaCHORUS (tlirfute) capsulis subrotundis lanatis, foliis ovatis obtusis, mucronatis, equaliter ferratis. Lin. Sp. 747. Jews Moilvw with roundish, pointed pods, which are serrated, and the upper part of the pods, which points are reflexed. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

9. CoaCHORUS (tlirfute) capsulis subrotundis lanatis, foliis ovatis obtusis, mucronatis, equaliter ferratis. Lin. Sp. 747. Jews Moilvw with roundish, pointed pods, which are serrated, and the upper part of the pods, which points are reflexed. Corchorus five Meloc. ; i. j. B. 2. oSi. Omni: Jews Msllyw.

The following are, Rauwolf Civs, is fewn in great plenty iixjuc Aleppo, as a pot-herb, thr Jews boiling the leaves of this plant to eat with thuir meat; this he supposes to be the Olus Judicum of Awcenna, and the Corchonira of Winy.

This plant grows in the East and Welt-Indies, from both whidi ptoCM I have several times received the seeds. In the East-India the herb is used in the same manner as in the Levant, as I have been informed; but I do not hear that it is used by the inhabitants of America.

It is an annual plant, which rises about two feet high, dividing in several branches, garnished with leaves of different sizes and forms, some are spear-shaped, others are oval, and some small heart-shaped; they

are of a deep green, and (lightly indented on the edges, having two bristly spots on the upper part of the branches. The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches.

The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches. The flowers are chiefly of the color of the branches.

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by flat i«d»vcfcls new' three incl. 5 long, end :H2 ill two horns -, thefe open in two cells, which are fitkd with final! angular ietds.

The fecdi ti' the feventh fort were lent me from Barbados, wh«e the plant grows naturally, for I have EUC had it rife in the earth whk came over from the.tcc in tubs with growing planes: this fites abtrnt the fame height ia the fixth, lending out fevtral weak fide branches, Eamilhd with long narrow leaves, which are rough, and fewed on their edgea, : in a clofe to the branches; between the larger leaves come out fcvL'raHmall ontF, which are placed irregularly on the branches. The flowers arc mini I at a pale yellow, and come OUL on the lide of the branches oppofre to the 'saves ; thefe are fucceded by very narrow comprH j pads two inches lons, opening with two valvei, and SB with S«H •ogulir feeds. It (lowers und lecdsat the fame time with die former.

The eighth firt grows naturally in Jamaica j th» rhes with a (limby fbik four feet high, dividing into a great number of final! braiches, which are cloclly garni lhed ••h fmall, oval, leaved leaves, fitting clofe tottie branches; between titie are en:UJ very fmail leaves, plsteii without order: the flowers arc produced on the fide of the branches on very ihort footrtall Imoll, and the petals loon fall off, fo that it Jtat been fupposed to have no petals. The flow, i cded by comprfled ftrd»vcfcls three inch» long, Aich arc rounded at their points, and open with two valve: at die top, containing i great number of ftnall angular frrd.. This plint bath a initial flok, fo may be p re ferved through the winter in a moderate Itove, und the fcond year will Tower in June, and produce, ripe feeds it autumn •, but when die plants are brought forward ib I to flower the firtyear, they ieldoin perfect their feeds, and thefe plants cannot'be fo wdi preferred as tholi; which are treated hardily in the fummer.

All thefe Ions arc too tender to thrive in England in the open air, therefore their ieeda mull be fov.11 on i hot-bed in the fpring ; and when the phuits arc conic up fit to remove, they fhouUl be tranfpkuued on x frdh hot-bed to bring the planis forward, otherwili: they wIH not ripen ieeda. After the plants art n«ced in the new hot-b't'd, they mull have free air admitted to them every day, in proportion to the warmth of die (afon, for they muft not be drawn up weak; when the phot) luvit: obtained ftrenghi, they fould be ti.; •planted each into a Liarate pot, und pit uped iitu A hnt-bed, obferving to Ihaik- ilicm Irani tht fun iill they have taken root j chen they mull have a large IKireof air every day, and Ilioukt be [i-eijucnil) nrtrellid with writer; and in June they fhouid be gradually inure: to the opqn air, anJ p.irt 01 them may be lhaken out of the iiofs, and planted in 3 warm bonier, where, if the fcafon prove* warm, th« will flower; and perfect thier feeds v but a; thelc will sometimes liiil, it will be proper to put one or two phui of each fort into pots, which mould be placed in a glats-cafe, where they may be icrcned tram bad •weather, and from cicfc good leei? nmy always be obtained. The laft (bt may alib lie treated in ILL-fame manner during die fummer j i.ifon, but in autu: in they muft |je removed u into the fluve, and lunged into the bark-bed, and thefe will flower early the fecond year, and ripen ieeda.

C O R D I A. Plum. Nov. Gen. 13. ub. 14. Sc *brilena*. PUKn,Hori I • beften.

The CUKALTERS ate,

I'bf jbatir bath a pirmsmt empatemctii cf rue tiif, in d««« in tbraperli. ft halh out '... 'Anife lmk is the letiflb O/ the mpal ... • ixlefeur, fi-ji, » ... r, and m the ivttr, ... rmtn, fupporting a ftd flye, rewuJ ij ; ... 'mis a cry imy, which itg'.s-irviir ... t, fafiated to th; empacmat, ami k- ... : JIPTWCJ mtt vAth fair tiit.

This genus of plants is ran ... in die first section of Linnsus's lifih dad, intitled Pentandria Mom die flower having five ftsniiiiia and one !

The SPECIES are,

1. COEOIA (*Sdvjiina*) fblik oblongo watis, repandis, fcabris.L: Sp. Plant. 130. *Cordia with oblong, oval, rough leaves, turning bl. ... Caryophyllis Iperisus modesta, folio nitrotaudo, scabra, flore rubeola, hcxupetaloi!* *... roccinea, Span. Cat. 176. Commonly called Uptum J6*
2. COILUIA (*Alora*) folio tententulis, corymbis lateralibus, «!», • bot decemftriatis. Lin. Sp. 277. *Cordia with oval woody leaves, flowers growing in a corymb from thbftv ... • beftini doroe* Amlt. 1. 139. *The coloured beftini.*
3. CoiDix [*mttrej*] folio ovatis, villetis frifquepedalibtu. Lin. : Sp. Plant. 277. *Cordia with oval woody leaves half a foot long. Prunus racemosa, folio oblongo bilfutis m-iximi?, IV: du tuba. Bloem. Cat. Jan. 174.*

The first fort grows naturally in several •! mdi in the "Well Indies: • it riles with several tin:nbh>- ftिल्ks eight • one foot high, which arc garn [bed toward the top with oblong, oval, roughIcayc, ftandrrigai-wornate on ttiort foot-ftalks; they are of a dev) green on their ujiper fide. The flowers terminate the branches, growing in large clutters upon branching foot-ftalks, fome fuffaining: one, others two, and some have tlve Hovers, which arc I- ce, jumcl-lhaped, having long tubes, which Ipfad C open at tin- tiip, v.!: ... diled into five thufe ligit ... they are of » bciuti'ul learlet, 1b make & fine appearance.

I he Second fort is by moll botamfti blsievd to be the MyjLa of Caifidpinus, which is the bdt Sebctn-n; of the Ithops; the fniit of which was formerly used it medicine, but of Lite years has Iwen feldntn brought n> EngUnd, therefore is rarely ordered. This i called Allyri.in I am, fr • : /c counry where i; r, usually grows. It riles wthc height of our common I ham-trees, but was very rare in this countrj till the year 176s, when there v some rf •! fruit feat (mm ligyjit, by rhofc J«rl*oia who were fen; to travel at die kin^ 01" Denmark's expi-nee, from which fruit fome plants luvc been railed in die Chelfci garden.

The third fore was difcovered by father Pltm-r, in fome of the French i l iaidt of America; and fince • was found in the bay of Cijr?;xachy, by ^tr. Rolirt Millar, who fent the bah ro !-plant: this fort grows to the height of eighteen or twenty feet: in the natural placeswhere it is WL: ... Jnged leaves, which arc Urge, entin\ and fmooth ; but it hith not as yec Mowrd in England, fo I can give no farther account >

Thefe plants, being natives of warm countries, are toot' tender to live thro'gh the wrnicrin tliii o country, unlcs they.uc preferred in flowers they are] propagated by feeds, which muft be procured from the country of then njacural growth ; thefe feeds n uld be fown in fm'll pots, which muft be plunged into a hot-bed or tanbers ba't in the Tprimr 1 ind il'

Rleeds are Irclli and good, die plants will hav mo appear in lix or eight weeks after. Thefe muft be hroug't forward in the hot-bed, by being treated as other tender exotic planrv obTenring frequently to wuicr them in fomDCTJ ar.d in july, if the plants have made roucl advances, they fould be gradually hirriened, othenvile they will grow fo weak as not to be eafily prefCTTed through the winter. A- thdcptaox ob«an ilrngth, ; they will become moretharty; bin during tlietwo firt winters, it will be[irapertt] plunge ilmn into (he unbed in the (love-, but who lienii. to have woody ftems, they may bephu on ibeives. in .1 dry ftoTC; where, if ihty ire kc; moderate degree of ILLVII, they may be prfrvrti.

•BTII (especially the first sort) which is u • • rv. hit dier than the others. This may allb be pUcd abrc. in a warm fliuitiorij hi the beginning of j itiy.

the plants may remain till the middle of September provided the feafon continues warm, officwlc they mull be removed into [lie (tuvc limner.

The KHt fort protiiitLt very fiu- (lowrrs, of n liarle colour, in large bunches, at the cxttemhy of th< branches, after the iamc manner as the Oleander or Jtofc-bay i but thefe flowers are much larger, ar.d of a mud; liner coknir.

A Baal piece of the wood of this tree being put on a pan of lighted coali, will lend forth a ir.Ctli agrcca bk odour, tnd will perfumes whole houfc.

OREOPSIS. Lit. Gen. IL S79. Tickfeed.

Lit. QMHAC-IUS are,

m amtnvmpalmeitt if thijkwtr is dcuLL; sieettttr fiag tmptfd ef tight ievati, pkoil armlarfy; tie inner is in r-r.y part larger, mtmbnmateeiu, hti calitrtid. The Mjk <f I fa ftatr is amptfd sf many hrrmpbnidii fSrtlt, which ere mtkr, and divided into Jive p.

tie top; tbtfi bo< i tad) jhx by cyntat. = fummiti. la th< prtjptd gimcn tvitb twe haras.

trfumaHy aancast bifidJifms. Tit gtnni nfttrvnni btmut-a fatfc vrbicvlr feed, cotrjex on cntjid!, and boUvE en tit vitlxr, ixiving a mentrMaceeiu ierdr, and two horns tm tht lep. I

fiovstr is tdmfoped eftigl) fimal'e fiords which arc large, and tmgui-)bnp:i, indented is Jive parts; theft twit no jlamuikt, liut agermn Skctis etbfr,v'itbext any fiytt • < Jigma, and are obertrvi.

The 1 genus of plants is mnged in 1 third fection of Ijintiaiiis's nineteenth ctfts, intkli-• Syngentia Polygamia Fnfifranra i the tiowers of tl arc conpced of hrrmaphrodite Botets which arc fruii- i'ul, and female bJf Horets which arc bai

viesES are,

1. Coneopsis {Altermfelm) foliis lancckokds, frnruis, alternis, petialjtis dL-currtmibus. J-lort. • Tictlfcfdwithjpa, ItavrA plated aStmuitt, eyj vmgtdfcit-fljh. dnyy&othawoin Virginianum,

•le aJato, nimoliitj, flort minore. Rut Aim. 100. •OPUS (Laauefata) folib tmoEolatij, integrcrri- ILiiti. Lin. Sp. Plant. 12§j. tickjcid-Jiith

•aptldtovf- totire. Bide us tucul's folio, radio amplo laciniatu. I fort. Elth. 55.

COREOPSIS (VirtidSait) foliis decomposito pinnaris, lincaribus. Lin-Sp. Plant joy. Titkftud with item- pemicd> winged, w n n leories. Ccratociiijj'i del- pliinii foliis. VaiU. Aft, 1710.

4. CoRtopsis (7'ripJtris) fotiij fubternads, intcgemimis. Hon. Dplai 369. "Thhftci with Itnta grewiig by tbrtts, "xbi<b art entire. Chryfcwhtmuin VTrguii- num, folio aajoore, bin, trifoliato, lc. anagyiidis folio. MUF, X lift- 3- p. •<

5. CtMitai'si*. Raxatv) 6His linear; li coolari, acute frriaris, oppofitiis radio amplo integro. TUftud with nanvm fpiar-jbapr. i • i ••• ippsfite rfidjbarp- lyfiwid, and the rfyi of thfwlwr Urge and

The &ft fort grows naturally in N'rvh America tray •where. TJiifiauh a perennial n>e i the itiiitLi demy to the twit every winter, which arc flron^ herbaseous, and rife to the height of eight or Wii tt-t, garnihcd withfpear-fluptionleavcsfaWedori their >• from three, to four indies long, and one bfoad in the middle, placed alternate on every fute the fl

lavy Ig (liort foor-iblk, with a border or wing running from one to the other, the whole length of the (bit). The flom •* grow at the top of the fl, forming a lbrt of corymbus, each foor-fialk l'ulhin- ing out, two, or three yellow fiowcri, fhaped like Sun-flowers, but much smaller. This re is in Septe- ber and OSobr, but cloth not produce feeds in Eiiirrhml. It is a very barriy plane, and may be propa- gated in plucky by parting the toots. The bft time for that is in autumn, when the (talks begin to decay. It will thrive in almof every foil and

The fecond fort is an annual ptant. The frtdj of this • brought me from Carolina by Mr. Cai •, in 17% 6. TMj hjlh m upright ftaUt, gami l>>i with lineo iit, narrow, fpear-ftjpcd leaves, bH

oppofite, which are entire; from the wings of 1:• come out the foot-(talks of the flowers, by pain oppofite, and ftand ereft; die lower pan of theft have out it ram pair of very narrow feaves, but the upper is nak> •, and terminated by one hr- 1°* lower, whole border or rays are neidccply cin

inged feveral fcgments; thefe are fucceeded by an foot- ftslfc of the •, I hasi a iboi •ong. This mult i< down upon a gentle hot-bed in the fpring, and when the pl- ma are fil to tranfplant, they • hold

beraih planted in • feparate fmall pots, anrtpluic: cd int. a fresh hot-bed in bringing them forward; and in June they Ihou d be rooted by degrees, ro tlicopen air, and ad ward fome of them may be shaken out of the pots, and planted in a warm border, where, if the feafon is good, they will flower in the middle of July, and ripen their feeds the beginning of Sep- tember

The thiiil fort haih a ptrnnial root, lending up 1 many ftiff angular flalks, which rife upward of three feet high, garnifhed at each joint with decompofed wing- ed leaves, ftanding oppofite; thefe are very narrow and entire. The branches alfo rife out by pairs oppofite to the flalks of the ftower;

thcJe arc lonjr, (c arr being oval in a dark purple col- continue till September, during which time they make a fine appearance. This grows naturally in Marytmd and Pennfylvania. It is propagated by parting the ro

thcJe arc lonjr, (c arr being oval in a dark purple col- continue till September, during which time they make a fine appearance. This grows naturally in Marytmd and Pennfylvania. It is propagated by parting the ro

arr being oval in a dark purple col- continue till September, during which time they make a fine appearance. This grows naturally in Marytmd and Pennfylvania. It is propagated by parting the ro

The fourth fort haih a perennial root. [It grows nat- urally in many parts of North America, but has been long cultivated in the English gardens; the (alks of this are ftiff, round, and fmooth, ending fix or : : en feet high, garnifhed at each joint with lunie imbricate leaves, which ftand oppofite. The ftoivcri bUnchta at the top of the Ibilki, tending U] in long ftalks iksj chq-aicofa pale yellow, with a dark purple dL; It flowers in July, but li-dotn produce good feeds in England.

This fort is propagated by parting the roots in the lame munnti as the firft, but requires a bet'crfoillind pofition. The fifth fort giwi n>tvinllj' in South Carolina, from whence the feeds were first me by the late Dr. Dale. This is an annual plant, which rife with upright ftalks to the height of four feet, garnifhed with narrow fpear-ftaped leaves, ending in long points, and rfe do

hji an inch broad in the middle, of a iet-pgn on their upper fide, and pale on their under. At all thi per y> with two or i by onL

with two or i by onL The fifth fort giwi n>tvinllj' in South Carolina, from whence the feeds were first me by the late Dr. Dale. This is an annual plant, which rife with upright ftalks to the height of four feet, garnifhed with narrow fpear-ftaped leaves, ending in long points, and rfe do

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after which, those which are planted with forked roots require no other treatment but to keep them clear from weeds; and as they advance in height, they should be supported by sticks, otherwise they will in summer often break down, and those which were placed in a nursery-bed, when they have obtained proper strength, should be taken up and transplanted with balls of earth to their roots, where they are designed to stand for flowering.

CORIANDRUM. Lin. Gen. Plant. 318.

Link. R. H. 116, tab. 169. (of Coriandrum, or Coriaria, a tick; so called, either because it has the form of a tick, or, as others say, because it drives away all kinds of insects, and is therefore preserved, but in botanic gardens for the sake of variety.)

The CHARACTER is,

... with an axillary flower, the axillary axillary leaf but few rays, the axillary we have here a stem-leaved one, the proper ray is divided into five parts, the rays of the principal umbelliferous flower which form the disk, have five small hairs (single petals, which are reflexed, but those of the rays have five unequal points of the same form, they have each five fimbriae, the grooves which is situated under the flower, supports two lobes, enclosed by small rounded segments; it is green afterward becomes a spherical fruit, divided into four parts, each having a hemispherical convex part.

This genus of plants is ranged in the second section of Linnaeus's fifth class, entitled "the flower having five stamens and two fruitles."

THE SPECIES ARE,

1. Coriandrum (Skriww) frufflitnu globofw. Hort. Clijt loo. Csw frw*. Coriandrum inijus. C. H. P. i; 3. Major Coriander.

2. Coriandrum (T. glaberrimum) frufflitnu d. lynnij, Hort. Clijt 103. Coriander with small fruit. Coriandrum minus villosissimum. C. H. P. 158.

The first of these species is the most common kind, which is cultivated in the European gardens and fields for the seeds, which are used in tiK'didne. The second kind is less common than the first, and is found but in botanic gardens in their parts of Europe. These plants grow naturally in the south of France, Spain, and Italy; but the first is more long cultivated in the gardens and fields, though at present there is not near so much of it down in England as was wont to be.

These plants are easily raised from their seeds in the autumn, in an open foilation, on a bed of ootnl fish earth. When the plants are come up, they should be horcl out to about four inches distance every way, clearing them from weeds; by which management these plants will grow strong, and produce a greater quantity of good seeds. The first sort was formerly cultivated in the gardens as a salad herb, and in the East Indies is still much cultivated; for the plant is of great use in most of their compound dishes, as a culinary herb, and the seeds are also much esteemed for the like purposes. The second sort will rise easily in summer, if they are sown in the autumn, but dmtewhich are sown in the spring rarely succeed, or M ICJII da not come up till the filluwin...

CORIARIA. Lin. Gen. Plant. 318. Nidd. Ad. Rep. 1711. Myrtle-leaved sumach, &c.

The CHARACTER is,

... with an axillary flower, the axillary axillary leaf but few rays, the axillary we have here a stem-leaved one, the proper ray is divided into five parts, the rays of the principal umbelliferous flower which form the disk, have five small hairs (single petals, which are reflexed, but those of the rays have five unequal points of the same form, they have each five fimbriae, the grooves which is situated under the flower, supports two lobes, enclosed by small rounded segments; it is green afterward becomes a spherical fruit, divided into four parts, each having a hemispherical convex part.

the four quarters of petals, and in the center are placed fist jviatals, which tsar, I & a berry, including five hairy-pointed seeds.

This is ringed in da ninth section of Linnaeus's town f-fecood class, entitled Dianca Di auirii, (the plants having uS' and hermaphrodite flowers of different roots.

The SPECIES ARE,

1. Coriaria (Myrtifolia) foliis ovato obtusis. Here Upl. 200. Myrtle-leaved sumach, with white oval larjn. Coriaria vulgaris Linn. Nidd. A. t. j 11.

2. Coriaria (Femina) vulgaris Linn. Hort. Clijt. Female Myrtle-leaved sumach.

The first with male flowers has been the most common in England, the other having been very rarely raised in our gardens; a few years past, when some planter was raised from seeds, which came from Italy, in the Chelsea garden, where the plants so raised have since been proved of the hermaphrodite sort, and have produced great quantities of seeds, which have grown, though there is not one plant of the male loci at present in the garden; but these with male flowers, occasioned my writing about them. These grow wild in great plenty about Montpellier in France, where it is used for tanning of leather in its seed, from this use, has been named by the French icoriariorum, i. t. J. sicut sumach.

These plants seldom grow more than three or four feet high, and as they creep at the root, they send forth many stems, whereby they form a thicket, so they may be planted to fill up vacancies in wildernesses, but they are improper for small gardens, where they will take up too much room; and as there is no great beauty in the flowers, they are only raised for variety.

It is strange that Monsieur Nidd, who lived upon the place where these grow so plenty, who confirmed this genus, in the Memoires of the Academy at Paris, has taken no notice of their being of two different kinds in different plants.

It may be propagated plentifully from the seeds, which are produced from the creeping roots in great abundance; these should be sown in March, and planted into a nursery, to form good roots, where they may continue one or two years, and then must be removed to the places where they are to remain.

This plant delights in a loamy soil which is not too stiff, and which is not too cold. It may here dicker from the north and cold winds, when it will flourish the cold of our ordinary winters very well, and will flower better than if it were preserved in pots and transplanted in the winter, as is usually done by some gardeners.

CORIKDUM. See CAROTHEDUM. CORIS. Lin. Gen. i. tab. 218. roun. Ir.; 652. tab. 213. We have no English name for this plant.

THE CHARACTER is,

... with a pedicel, the pedicel is of the leaf, with a pedicel leaf, but divided at the top, where it is divided into five unequal parts, the proper ray is divided into five parts, the rays of the principal umbelliferous flower which form the disk, have five small hairs (single petals, which are reflexed, but those of the rays have five unequal points of the same form, they have each five fimbriae, the grooves which is situated under the flower, supports two lobes, enclosed by small rounded segments; it is green afterward becomes a spherical fruit, divided into four parts, each having a hemispherical convex part.

This genus of plants is ranged in the first section of Linnæus's fifth class, entitled Pentandria Monogamia, the flower having five stamens and one style.

We have but one SPECIES of this plant, viz.

Coris (Mongolica). Hort. Clijt. 61. Coris crucea maxima. C. B. P. 160. The mongolic Coris.

There are two other varieties of this plant, one is a red, and the other a white flower, but these are only accidental varieties arising from the same seeds.

These plants grow wild about Montpellier, and many other parts of the south of France, and also in Italy; they seldom grow above six inches high, and

spread near the surface of the ground like heath; and in June, when they are full of flowers, they make a very pretty appearance.

They may be propagated by sowing their seeds in the spring, on a bed of fresh earth; and when the plants are about an inch high, they should be transplanted, some of them into pots filled with fresh light earth, that they may be sheltered in winter; and the others into a warm border, where they will endure the cold of our ordinary winters very well, but in severe frost they are generally destroyed; for which reason, it will be proper to have some plants of each sort in pots, which may be put under a common hot-bed frame in winter, where they may be covered in frosty weather; but when it is mild, they should have a great share of free air: these plants sometimes produce ripe seeds in England; but as they do not constantly perfect their seeds, it will be proper to increase them from slips and cuttings, which will take root, if planted about the end of August on a very gentle hot-bed, and shaded from the sun and duly watered.

CORISPERMUM. Lin. Gen. Plant. 12. Juss. Aft. R. S. 1712. Tickseed.

The CHARACTERS are,

The flower hath no empatement, it hath two compressed incurved petals, which fit and opposite and are equal; it hath one, two, or three stamens, which are shorter than the petals, terminated by single summits, with a compressed germen, supporting two hairy styles, crowned by acute stigmas. The germen afterward becomes one oval compressed seed, with an acute border.

This genus of plants is ranged in the second section of Linnæus's first class, entitled Monandria Digynia, the flower having one stamen and two styles.

The SPECIES are,

- x. CORISPERMUM (*Hylophilium*) floribus lateralibus Hort. Upfal. 2. *Tickseed with flowers on the side of the stalks.* Corispermum Hylophilium. Juss. Aft. R. S. 1712. *Hylophil-leaved Tickseed.*
2. CORISPERMUM (*Squarrosum*) species squarrosus. Hort. Upfal. 3. *Tickseed with rough spikes.* Rhagrostis foliis arundinaceis. Buxb. Cent. 3-p. 30. *Rhagrostis with heath-like leaves.*

These plants are preserved in botanic gardens for the sake of variety; but as they have no beauty, are seldom cultivated in other gardens.

The first sort is an annual plant, which, if suffered to scatter its seeds, the ground will be plentifully stocked with the plants, which will require no other care but to prevent the weeds from over-growing them.

The second will not grow but in marshy places, where there is standing water; over the surface of which this plant will soon extend, when once it is established.

As we have the English name to this genus, I have given it the Greek name of Tickseed, which corresponds with the Greek name.

COR K-T REE. See QUERCUS.

COR N-F LAG. See GLADIOLUS.

CORNICULATE PLANTS [Plantæ Corniculatæ,] are such, as after each flower, produce many horned seed-pods, called Siliquæ,

COR N-M A R I G O L D. See CHRYSANTHEMUM.

CORN-SAL LAD. See VALERIANA.

CORNUS. Lin. Gen. Plant. 139. Tourn. Inf. 641. tab. 410. [so called, of Cornu, Lat. a horn; because its wood, or the shell of its fruit, is hard as a horn.] The Cornelian Cherry.

The CHARACTERS are,

It hath many flowers included in one common four-leaved involucre, which is coloured. The flowers have each a small empatement, sitting on the germen, which is indented in four parts. They have four plain petals, which are smaller than the leaves of the involucre, and four erect stamens, which are longer than the petals, terminated by roundish summits. The round germen situated between the empatement, supports a slender style, crowned by an oblong stigma. The germen afterward becomes an oval, roundish berry, inclosing a nut, with two cells, having an oblong kernel.

This genus of plants is ranged in the first section of Linnæus's fourth class, entitled Tetrandria Monogynia, the flowers having four stamens and but one style.

The SPECIES are,

1. CORNUS (*Sanguinea*) arborea, cymis nudis. It. Westgoth. Jyn. Sp. Plant. 117. *Dogwood-tree with naked shoots.* Cornus femina. C. B. P. 447. *Female Dogwood, and the Virga Sanguinea.* Matth. .
2. CORNUS (*MGS*) arborea, umbellis involucre sequantibus. Hort. Cliff. 38. *Tree Dogwood with umbels equal to the involucre.* Cornus hortensis mas. C. B. P. 447. *Male Cornel, or Cornelian Cherry-tree.*
3. CORNUS (*Florida*) arborea, involucre maximo, foliis obverse cordatis. Hort. Cliff. 38. *Tree Dogwood with a very large involucre, and obverse heart-shaped leaves.* Cornus mas, Virginiana, flocculis. in corymbo digestis, a perianthio tetrapetalo albo radiatum cindlis. Pluk. Aim. 120.
4. CORNUS (*Femina*) arborea, foliis lanceolatis, acutis, nervosis, floribus corymbosis terminalibus. *Tree Dogwood with spear-shaped acute leaves which are veined* and flowers disposed in a corymbus, terminating the branches.* Cornus femina Virginiana angustiore folio. Edit. prior. *Female Virginia Dogwood with a narrower leaf.*
5. CORNUS (*Amomum*) arborea foliis ovatis petiolatis, floribus corymbosis terminalibus. *Tree Dogwood with oval leaves having foot-stalks, and flowers collected into a corymbus at the end of the branches.* Cornus Americana fylvestris, domesticae similis, bacca cserulei coloris elegantissima, Amomum Novae Angliae quorundam. Pluk. Phyt. tab. 169. f. 3. *By some supposed to be the true Amomum of New England.*
6. CORNUS (*Candidissima*) arborea foliis lanceolatis, acutis, glabris, umbellis involucre minoribus, baccis ovatis. *Tree Dogwood with smooth, spear-shaped, pointed leaves, umbels smaller than the involucre, and oval berries.* Cornus femina candidissima foliis Americana; Pluk. Aim. 120.
7. CORNUS (*Tartarica*) arborea foliis oblongo ovatis, nervosis, inferne albis, floribus corymbosis terminalibus. *Tree Dogwood with oblong, oval, veined leaves, white on their under side, and flowers growing in a corymbus at the end of the branches.* Cornus fylvestris fructu albo. Amman. Ruth. *Wild Dogwood with a white fruit.*
8. CORNUS (*Suecica*) herbacea ramis binis. Fl. Lapp. 55. *Herbaceous Dogwood with double branches.* Cornus pumila herbacea, chamaepericlymenum dicta. Hort. Elth. 108. *Low herbaceous Dogwood, called Dwarf Honey-suckle.*

The first of these trees is very common in the hedges in divers parts of England, and is seldom preserved in gardens. The fruit of this plant is often brought into the markets, and sold for Buckthorn berries, from which it may be easily distinguished, if the berries are opened to observe how many stones there are in each; which in this fruit is but one, but in the Buckthorn four, and they may be easily distinguished by rubbing the juice of the berries on paper, that of the Buckthorn will stain the paper green, whereas the juice of this stains it purple. This tree is called Virga Sanguinea, from the young shoots being of a fine red colour. There is a variety of this tree with variegated leaves, which is preserved in the nurseries, but is not much esteemed.

The second sort is very common in the English gardens, where it was formerly propagated for its fruit, which was by some people prized to make tart. It is also used in medicine as an astringent and cooler: there is also an officinal preparation of this fruit, called Rob de Cornis. Of this there are two or three varieties, which differ only in the colour of their fruit, but that with the red fruit is the most common in England.

As the fruit of this tree is not at present much esteemed, the nursery-men about London propagate it as one of the sorts which is commonly sold as a flowering shrub, and is by some people valued for coming forward early to flowers for if the season is mild, the

ITS will appieir by the beginning i February; and though tltre is no great beittcy in the flowers, yet, as they are generally produced in ylemy, at a iMfhn when few other flowers appear upon trees, i ftiv plants of them may be admitted for variety. The fruit of this tree is fdtioin ripe before September. The tree will grow eighteen or twenty feet high, and make a Sarge lit

The third fort is an Amerkan, from whence the feeds have been brought to England: this is found in all •urdicm parts of Amenta, as are allb the fourth, fifth, and i jxth forts, being natives of the woods in Virginia, New England, Maryland, and Carolina. Thec arc all of them very hardy, and thrive well in the open air in England, fo are cultivated by the nurfery-men near London, to acid to the variety of their hardy trees: thefe grow to the fame height with our common female Dogberry, and make a much better appearance. The (hoots of the fifth fort are of a beaulitnl ivd colour in winter-, and in fummcr the leaves being large, of a whitilth colour on their under fide, and the bunches of white flowers growing at the extremity of every branch, render; this Ihrub valuable i and in autumn, when the large bunches of blue berries Me ripe, they make a line appearance.

Tiic third fort ii now very common in the nurseries, where it is known by the name of VirginiaDogwwxi. This fort is of 'nuch humbler growth than either of the former, feldom rifing above feven or eight feel high, but is [jene rally well gamified with leaves, which are larger than either of the oilier forts. This does not flower Jo plentifully as the other forts, nor have I yecfeen anyof chefc (hrubs, which have produced berriic in England, though they are as tardy as the -nher.

There is a variety of this with a m) involucreum or cover to the Bowers, which adds to the beauty of the plant; this was found wild in Virginia by Mr. Ba* nillcr, and afterward by Mr. Careftiy. This and the former fort arc great ornaments to the woods in A-mtrica, firft by their early flowering in the fpring before the green leaves appear; and in the winter they are alib beautiful when the berries arc rijic, which hang upon the Ihrubs tili the fpring.

The eighth fort grows upon Cheviot-hills in Northumberland, and alfo upon the Alps, and other mountainous places in the northern countries, but ii very difficult to prriirve in gardens i the only method is, to remove die plants from the places oi their natural growth, with good balls of earth to their roots, and plant them in a moift (hady fittuation, where they are not annoyed by the roots of other plants. In fuch a fittuation they may be preferred two or three years, but it rarely happen* that they will continue much longer. This is a low herbaceous plant; whofe ftalks decay in the auum.i

All the forts of Dogwood may be propagated by dietr feeds, which, if fown in autumn foon after they are ripe, will molt of diem come up the following t'pring; but if the feeds are not fown in autumn, they will lie a year in the ground before the plants will appear, and when the year proves dry, die>'will fomenmes remain two yetra in thr ground; chasfore the place mould not be difturbed, where thefe feeds art fown, under two yeau, if the planes (lunik) not come up fcontr. Wlrcn the plants are come up, they fhould be duly watered in dry weather, and kept clean from w«ck\ and die autumn following they may be renwved, and plinted in beds in the nurfery, where they may remain twoyeara, by which time they will be fit to tranfplant where they arc to remain for good. They art; alfo propagated by fuckers, and laying down the brandies. Mofl of the farts produce plenty of Tuckers, efpccially when they ire plants! on moill light foil, which may be taken offrom the old lu a mtaaa, and pkated into > nurfery for y or two, and then may be t ran fp I anted into the f ari; to remain; but ihofc plant* in p fuckers, rarely have fogoott roof is twfc which are propagated by layer;

being mvidi more inclinable to (hooi out fuckers; whereby they will fill the ground round them with cheir frivwn, they are not near fo valuable Its draft planu which are railed from layers.

CORNUTIA. Plum, Nov. Gen. ij. Lin. Gen. Plant. 684. Agnanthus. !Vaill. Aft. R. 17*3. We have 110 Englifh name for [his pliant. It is fo called from Cornutus, a ptylicctn of l'>ria, whopublished a hiftory of Canada /••

The CHARACTERS are,

Tlxjhsitr hath a finall ptrmaxtni twpaUmMt ef tut leaf, nUrb is tuluhir, and indinud ix Jht purls & l th top. I"bijSauier is ef tnt fatal, having a tjlinjr tvbc, which is much longtr timu tht rmpaimtfit, <. • vidtd into four farts at tht top; tht upper [tgtniin < Tiiind and critit, the two/ult mas fprtd apart, el ltuir is ramd andmiirt. ii bnt'efeurfamiwi, rzw ef tbeft art kiigtr than tht lubt, tbember are fberltr; iby tirt terminated iy iuuHnrHgfinimis. In tht trnicr iu/im- sld tht routtJifb girmat, fupp<,rtinz alatgjjic, divided into live parts, < rewntd (? two tbi, k jligmaj. Tbt gr- mm aUcfuiittd ittMmtS a ghbidnr btrn, fitting upen tht empclcmAt mctafhigjhrM tidnij-fhaped fidi.

This genus of plants is ranged in the Second fc&ion of Linneus'i fourteenth tlal'i, intitied IVxlyiunia Angiofpcrma, the flowers having two lung and two (hurt fcunina, am! the ft-cis arc included in a capfuk.

There is but one SrEctss of this genus, viz.

CORNUTIA (Pyramidal«). Hort. Cliff. 313, Cornutia flore pyrtmidato cairoleo, foliis i-icanis, Nov. Gen. 31. Carmitia with a bhapyramidfmstr and beery Ita'cts.

This plant was firft: discovered by father Plumier in Amrcctes, whn^ne It die Mine. It is found in plenty in feversl «t [he illants in the Weft-Indies, as alfo at Cinraetdf and La ^era Crai, from both which places I received the feeds, which were collected by my bte ingoitou friend Dr. William Houftoun, and afic: -ard by Mr. Robert Millar, from the famecountry. [t grows to the height of ten or twelve feet 5 1 lies arc four-cornered, grow ibaggling, ana the leav B IN placed oppolite. The flow-rs are pr-rjuccd in ipikes at the enti of die brancies, which arc of a fir,c blue colour; tht-fc uually ap>eflr in nurvimm, and fomctimes will remain in beauty for two months or more.

I; a l •••) 1 '••' by fccdi, which fhould befnwncar!'. in the Ipring on a lior-bcJ -, and when die planes aic come up, tny fhould be [r.inlpUmcd each into a fr-parate halfpenny pot, filled with lij; 1 fresh cart l; ami plunged ii; to a h« bed of tanncrs -irk, obfeivng to lhade ihum until diry have [aken rcmt; after which [hey fhould liavt felh air let into the bed, in propo- tion to the warmth of the leath, and fhould be fre- quently watered (for it naturally gra*t on iVampy fane). When the plinu have fted thefe pots wtri their roots, City fhould be thitcd into othen of a larger (ize, and plunged into a hue-bed again, where they fhould be continued till Odober, when they niult be removctd into th- bork-ilove, and plunged into the tan, for otherwile it will be very difficult to prelervf them through the wnttr. The ftovc in which thefe jil.ir:s arc placed fhould be kept to the temperate beai marked on Mr. J'owler's thermometers, wtich will bcttr with them than a hotter iluve. The third year from lecdi thefe plants will flower, when they make .1 fine appewmce in the itovr, but they never perfect their feeds in England.

The; may alfo be propagated I by cuttings, which, it" planted into pots filled with earth, and pi nged into a b'rk-b*d, obfeivng 10 lhade and water tlifin, will take root, and mull be afterwards created as the feed- line p] .

CORONA IMPERIALIS. Sec FRITILLARIA.
CORONA SOLI.S. Sec HELIANTHUS.

CORONILLA, Jointcd-podded Colu •

[WRACTu' are,

Tbt fimrr hath afi>ertfermaiUji onp. > leaf, Kbth ii ttnxpr^td, htftii md

Tjt Jbirir, roiwf flandard is heart-jtxiptd, and r-fieftd in eachjide. h'ie vfcgt cm ra/, and join a: the lep, lilt kitt h Jforter than the -wixgi, is printed and temprej/ed. U hatb nmflatnina tuhieb art unhid, an/ cm JiamMng Jingle, vihkb art broad at the mf% terminate) by linallfummiu. fa thi cotter kfitmtid an ebnhtg toper grnten, fupprctim a tirijlty rifng ftyie, srowned by an el'tttfc Hipua. Tie germin afterward iccsmet • taper j&inttd fed, indoing obfoxg ffrtd.

I M gMiin uf jll.ims is ringed in the fecond lection of LinnKui's feventccnih clals, imitled Diadelphia Dccandria, the Hower hiving ten Ihmina, nine of •which are united, and one (raruls Angle. To this genus Dr. Linnieos has joined the Emerus of CseMpinus, and the Securusca of Toorjcoft, whereby he multiplies the fpecics; but as thefe differ essentially in that fru&ficarioa, I Jhall treat or' them feperateiy, following the example of' all the former botaniils.

The SPECIES are,

- i. COROXJLLA (*j'laiuii*) fmiticofa, foliis feprcnis, (Upulis i ncEoUdi. Lin. Sp. 10+7. *Shrubby C<W/<J with fivni pdir if fault leaves, and fpiar-fbaped Jipuld. Coronilla matiuma glauco folio. Tourn. Inf. G50.*
- S. COKOMLUJ* [*Argent™*] fruticofa rbiolis undtnii, extirno mijore. Lin. Sp. PLint. 10+9. *Sbruity Csirenilta with (menpoir ef fmat Itavcj, lie cuter M tit iargefi. Coronilli argentea Crecicui Tourn. Inf. 650.*
3. Co«WNiu.A(yai7MiM)frutk-oi-i foliis fubnovenis fuborbiciliaus. Lin. Sp. Pbiu. xo+7. *Sbrukty CoremLi viitb Him loia itihitb are criritular. l'oljrgih Valentia.*
4. CoawitLA (*Ilifpatiica*) fruticol* cneaphylli, foliolis emarginatis, ftipulis niajonbiia fubruuncis. *Shrubby Kim-ita"jtdCoTdm'ik-, wbofe frutillsleavei ore indented, md luegonxajdiifpup!s. Coronilla Tiliqua U JtminiUis craffioribus. Tourn. Inf. k. H. 050.*
5. Coaosti.i.A(M>i«fl)foliolis plurimis, ovitis, catile fuSruilwfo dectintto, pedunculis longioribus. *Coramta with many oval Mr.'. a deftining fialk fixuvibat Jbridby, and lunge /mf-jMti « '& Jbtetri. Coronilla minima. Tourn. It.it. R. H. 650. Smallef! Co-ila.*
- ...oBOfillA (*Varia*) herbacea, legjumibus erectJs, tcntibus, lorofc, numcrofis, folus glsbris. HorL Clitf. 363. *Btrbutwi CoromUa. with many taper erili ptxis. andfin&oitb kava. Coreoilla herbat* Here v«rw. Tourn. Inf. 650.*
- r. CoaoNiLLA (*Cretka*) hrbacca, legunubus qumis, ereftis, toctiliui, aruculatis. Prod.Leyd. 3B7. *Herbixtwi Cvrovulla with five taper, ereSjomttd po, is. Coronilla Cretica herbatta, (lore parvo purpurafcente, Tourn. Cor. 4v*
1. CoaomiA (OWOHU/IJ) herbacw legummibus numcrofis, rtJfeis, craffioribus, ankohus, foliolis fobtlis abucis *Herbictiiu Cronala xtlb many tbukjeinttd ptdfdiifpufed Uktrays, «i/>«&rAww ofafta-peen 'theirtaidirpt, CoroouU onftntahs herbaceo, More magno luteo. Tourn. Cor. 44.*
2. w w u u (7»iKffl) fruticof'a, folns qitinwis tem.v (lie linrari-laiiceolatis lubeamofis obtuiis. I..n. Sp. 3047. *Sbrthby Concilia, with five and tuptl linear, fpear-fixped faves, vibitb are thufc and fiefy. Doric um luteum Hifpanicum camofius. Barrel. Icon.*
10. OJKONIM-A (*Scandni*) ciulc lurfuto, volubili, foliolis quini ovatis, floribtu bins, ereLis, willaribus, Icgurnibus ereftis, villois. *Crenilla wtiba twining hairy jialk, jhe ova! leaves, KM fi<rj>cn griming tritt m jhcJiJes if lie intitebcs, and upright hairy pad). Coronillo feamleus peophyH^ l'ium. Car. 19 *Climbing Jve-leaveJ Cirmulla.**

The firft Ion is an humble flinib, which feldom ntes nt> • thun two or three feet liigit, with a ligneous Jung Ililk, garniW clofly with winged li being generally compel: MI ut vniM ; [or lobes) terminated by an odd one; thieft ur'ow at their bafe, and broad at the top, • are roundilh and indcnied, they are of a kx-

green colour, am) continue nil the year. The I arc produKil on Illemicr foot iilks from thewingsof the tnvcS| on tlic upper part of the branches, feveral Itiinding togethi-T in a roundfil bunch ^ they are of the butterfly, or Pea-bloom kind, and of a bright ytluw colour, having a very ftrong odour, which to ibmc perfon is agreeable, buc u> ucliers the contrary. This flowers in April and May, and die feeds ripen in Aiiguft.

This plant is propagated by lowing tht feed* in iht fpring, either upon a gentle hot-bed, or on a warm border of light frHi C2nh, and when the plants arc come up about two inches high, they Ihould be trai>f-planted either into pots, or a bed of good rich earth, at about four or five inches diltante every way, where they may remain until they have obtiintJ ftrngth enough to pSant out for gtiod ; which fhould be eitha into pots filled with gbod frlh cinh, 01 ft warm li wiled border; in which, if the winter it not too fevere, thty will abide v'ry well, provided they are in a dry foil.

The fecond fort is a lhrub of the feme fae wil the firft, from which it differs in the numba of small leaves (or lobts) on each midrib ; thtfe having nine or eieven, ind are of 1 iilver cultiur, but the flowers and pods are the fame. It flowers It the fame time, and requires [fie fame treatment as the former.

The third fort b a lhrubby pkht, rifing four or five: fta high \ the Halks are flirubby g,milhed with winged leaves, compoVJ of many small oval lobes along tltit midrib by pairs, and ending 'n an odd one. The flower* Itand upon long foot-fcdk^, which arife from the fi'.le of the biancbett they are yellow, and grow togetiipr in dole bunches. This flowtrs in winter and fpring, anJ the feeds are ripe in Auguft.

Tiiti is it perennial lhrubby plane, which it propagated J> l<di; ihry may be foiv n on a bed of light earth in April, and when the pluits arc fit (ouatiJplam, I t> them fhould be planted in a warm border, clot to a warm wall or pale, to which tlic branches fhould lie trained-, obferving to lhfuk lhaiifrom the lun tit' they hav« taken frlli rouE, and alib 10 n-irelh them with water when they requax it Afiei thej arc wdl rooted, they will require no other culture but to keep I them dean from weeds, and falen ihrir brjn,hes to the wall i the next year they will Sower, ami if they are on l dry foil «ad in a warm fittuation, they will continue many yesn. Sonic of Hi mi Id bs JIUL into jxir% that they iniy bt removed into lhelctr in winter •, where, if they ire not too tenderly treated, they will Sower gitnl purr cif that feafon ; but thdc will rarely produce feeds, whereas thofe in tht full ground generally do, [irovided they arc covered with mats in Trolly WCthcr.

Tlic fourth fort is nearly like the firft, but hath fewer pinns: on each midrib. The flowers are larger, and have little fecnt. Tht penis and feeds are much larger, and die plants arc not quite fo hardy, i his flowers in May and June, but rarely perfCSi feeds in England; it requires the lame treatment as the lirft, but in winter the plants ihouJ be ttcltered, oierwife hard frjtb will tcllroy them.

The fifth fort is a low trailing plant with fbrubb faltw, which fpread near the ground, gamimed with winged leaves, compofrd of many pair of finwll lube jilacel along (he midrib, terminated by an odd theft are wA, puid of a bright grrn; the H> find upon long fuot-fhlks in t-tofe bunches, they arc yellow, and withovii (lowers in Ma arid the feeds ripen in autumn. This h p<>pagat< by Iteds in the fame manner as die third, and require* the fame triMtricit.

The fifth fort dies down mry winter, but riicia^ in the fuccceding fpring; tlic (alkn of ihii rift to l height of five or fix fete, where they have fuj ; oierwife they trail on rje ground, and are ^arnifhed with winged leases, com poled of leveral oblong linall pinnjc, wWdi arc funiftimes placid by pairs, n d at other times are alternate, endag in a fmgle one, they

C O R

of a tcep gred. The (lower; come out on long B Jks from the wings of *tivi* leaves, many trowing t'g*ilicr ui roundbunches; (hey *tac* variable trown a deep to a l'gl" purple, mixed with white, and arc fuctieded by (lender puds from iwo to thii:e inches long, Chmding creft Tins plant flowers in June, July, and Augutt, anil the (teds ripen in autumn. Trie mots of this plant creep very far under triHind, bj which the plant increafes greatly; which, *when perniticid to remain tonremoved for two or three years, will fpread anil ovrbe.tr what plants grow nr.ir It, for which reafon the roots fhould be confiiifd, and it (limikl be planted at .1 diftance from an)- other plants; it will j*row in almoft any foil and fitintion, but thrives bell in a warm funny expofure, in which the Bowers wll .ilfa be much fairer, and in greater quantifies. This pbnt was formerly cultivated to (eed cattle.

The (ivehth fort hath an herbaceous (talk, wliich rilis two feet high, g-mifhed with winged leaves, compofed of Hit pair of final! leaves, plactti along the midrib, which is terminated by an odd one; thec are larger than thofc of the fixth furt, nnd. broader at III; top. The toot-ftalks of the flowers come out from the fide of the ilalks, bur they arc Blotter than thijt'c of the lixth fort, and fulhtin fmaller hcstils or flowers, which are fuceceeded by five taper jointed [Kids, nvar two inches long.

Tfia is III annual plant, which grows naturally In the-Ardiipelago, from whence Tuurnefort fenc the feeds to the royal garden ai Paris. The feeds of this fort fhould be (own on & bed of light earth in the fpring, where the plants arc defigned to remain, and v.tan (he plants conn: up, they fhould he thirinci! where they lire too dof, and afterward kept dean from weeds, which is all the culture they will require. In June they will flower, and the feeds ripen in autumn.

The cidirh fort -was difcovered by Dr. Tournefort in the Levant, from whence lie lent the feeds to the royal garden at Paris -, this hath a perennial root, ami an annual [talk, which riles upward of two feet high, Handing erect. The leaves arc compofid of live 01 fix pair of l'mall oWong leaves, ringed, alotg JLL-midrib, which is terminated by an odd one. The foot-ftalk of *dtr* flowers are trrang, and upward tit fix inches in length, fuppomng Targe biiiKhci of yellow flowers, which arc Juceceeded oy (bon thick pods about an inch long. This (lowers in June and July, and in warm leafons the fecdi will ripen in autumn; there b a variety ui" this with Urge white flowers.

This fort is propagated by feeds, which fhould be finwn on a warm reorder of light earth in the Ijwmg; and when the plants come up, they muft be catctiity cleaned from weeds j when they are fit to remove, they mould be tr.inf]>lant<l inco a warm border, where they are to remain, Ihadinj them from tl. till they have taken firth root, after which they will jitre no farther cart in [timmrr, bit to keep [Jiem in from weeds; and in autumn, when the ilalks are dec • H, if the furface of the "round is l • covered with fame ohl tin to keep out the trait, it will be a fit-cure method to pre&rve tht- roots. The (econd year the plants will llower, nnd, if the fame care is taken in winter, the roots may bt continued ib the year.

The nintli fort grown naturally in Spain; this rife from two to tour fret high, having many (lender ligneous brandies, gamilhed with narrow fj<car-fliapttl leaves, which arc lbmerimes trifoiiate, and at odier times have five loliesciji each foot-ftalk; the fIowtrs ftand upon pretty long twit-Halks whirri a>n. out from the wings of the (talk, and art eolkifteii in (hiali bunt; they are of a bright .How colour, and appear for fix or II^cn months together, but have not been fuceceeded by feeds

boeatycb
This is propagated by fmls in the fame manner as the firft fort, and fame of the **planes fhmild** be planted in pots thit they may be ihettcTed under a common.

C D R

franic in winteh braufe in hard frolls the plants are often **defttoyed** i but in **mild** weather they mould. **be** ixpulkl t'j the ait, orlwrwife tlity will draw up weak.

The tenth Jort was difwvered by father Plumier in America. I received the feeds of this plant from Carthajjena, which were feat me by my late ingenious friend Dr. William Houftoun •, this huth a IIeodes, hairy, twining (talk, of a brown colour, twifting round any of the fhubs which iland near it, whereby it rifee eight or ten feet high, and u gamified with winged leaves, for the molt pan ton>o:ld of tive ovai lobes, one inch lung, ana li.iii' an inch broad, nt' a deep gTein. The flowers come out by pairs at each joint, itanding on very Ihon lparate toot-llalki ~~trick~~, they are large, and of a pale yellowi thefe are fuceceeded by taper jointed podis, more than three indies long, which arc rove red with lhort, lbf, white, hairy down, and itand erect. This plant is prnpri-Eated by feeds, wliich fhould be. ibwn early in the Spring On a moderate hot-bed ; and when the plants are come op, they fhould be each tran (planted into a halfpenny pot filled with frcii rich earth, and plunged into a hot-bod of tanners bark, obltTving tu fhadc. them until they have taken root; after winch time they fhould have air and water in projjortion to the warmth of the fecon, and when they have filled thefe pfiti with theirroots, they fhould be fhifted into pots of a larger fize, and plunged bio tie hot-bed again, where [hey mud remain until autumn, when they fhould be removed into the ltove, and plunged into the can. Tflicie plants muft be conltntly kept in the bark-Jlove, and placed among plants which require a moderate heat-, where they will thrive and flower, and fhould be fupported by tall flicks, round which they will twine Bl Hop* do ; for if they have nor thib fupport, they Wilt raift round other planta and fpoil them. Thefc are very pi-opet pluntt tu place again It in epalier on the back part of the nmongit other climbing plants, where they will makt an ngrrcable vancy.

If die plants are carefully managed in the winter; they may be prelcrrved two or three years, and will annually flower in July, and fometimes they will produce upc feeds in England.

CORONOPUS. See PLANTACO.

CORTUSA. Lin. Gen. Plmr. tgi. [This plant is fo called from Cortufu], a famuus botanft, wlto tidt brought it into tile.] Bears-tar Sanide.

The CHARACTERS are,

Tic fivwtr bath a /mall, fpria&ng, firmanrat errfaf' wou, which is iitdtuilted at tht brim m fivi partt; tht bath ent vihtd-PiOfiiprt<l, ffrtadng tptit to the bottom, fmi cut into jhc fms a) tht brim, having five ft ittbixtts at tht lafe. It bath Jive jhamp!i<:th jiantins, •&bic!> an tmmtwtea' fy oMinsg treff pbtimils. Is the center isf.tuatfd en ovalgtromoi, fuppartng a fltdrrjhk, crewiKd ly afingkligmti. Tbtgtmai aftnvariti betmnis &ji Wtl, eblstVi psiniSil ~~capit~~, h<: > < f<EQ iGXgiudwll furrew:, and cat cell, tpatm ttrfiros vulva, filltii with fual oblong feed.*

This genus of [>]ints is r.incw! in the firft lection of P'innx-us's filth clali, intidedPentandr Monogjnia, the flower having five ftimiru and one Iryle,

The Spscn are,

i. CORJ-USA [*Mattb/i*] calycibus corall'i brevioribu?i, Lin. Sp. Plant. i4-f. *Bears Ear Sanidt, with e> m- ••'! fierier than tht fitai. Conufa Mattluoti. CluJ".* Hilt. i.). 30-. *Stnri Ear Saviclt nMn!-*

I. COKTUSA (*GaeUni*) calycibus corollum txcendentibttt. Aipn Acad. p. 540. *Stars Ear Samdt with an tmplstuttm hngir than the ftial.*

The firft ibrt grot naturally on the Aim, uidalfo on the mountains in Auftrij, and in Siberia. This plant fends out many oblong finooth kaves, whicli^ arc a little indented on (lie edges, and form a fort of head, like the Auricula. The fout-ftdks O' the flowers come out in the center of the !> avcs; thefe rife about four in dies high, and pjpport an u.. of flowers, each fitting en » Qcndcr, feparate, flit.

stalk, they are of a fith colour, and spread open like those of the Auricula. It flowers; it doth not produce feeds in the garden*, for this plant is with great difficulty kept in a gar(kn. The only method by which I could ever ptfciW it. li,u been by planting the plants in pnts, and placing them in a Ebady (ituation, where they we:: dily was id in dry weather-, in thu place they constantly remained both Runnier and winter, for the coW will not ricftroy tiem; the earth far this plant floukl be light, and not too rich, for dung k very injuriou to it. As thw very rarely produi/ any seeds in England, (he only method to propagate it is, by parting the roots in the fame manner as is practifed for Auriculas -, the belt time for this is about Michaelmas, foon after which the leaves iccty.

The fccoad fort is very like the first, l"i the fimrcrs are- much Id's, and their cmpalements .ire forger i thi i prowi naturally in Siberia, but is naih great onHculty kept in a garden.

CORYLUS. Lin. G>u. Plant. 953. T •onro.lnft.R. H. g8i. [fo called from K'au*ft«, Cr. a Hazel, or Filbert arc. It is ilib called Avellniia, frwn Avella, a town in Campania, whercitgrcw in gr<i]>|rmy.j TI ic H a zcl, or N ut-tree.

The CKAFtAcritl arc.

*Tt batb male and ftnak fteutri mKvi** ft remutt £f- lomts in the fame tree. The male flowers are produced in long f.cfy kath each feal including •fijigt fiervtr, bovirtf no puds, hiBmei to tbt*
fic feste, i
Tbsfmoleftwvrt tire included in the future l<<, fitting cUfe to the branch's •, theft I'tve a thick fat-kir:*
astbinn, tent at tbt fardr, fining under the fiowr •whit it tsfm!, but afiera/arJ ii enlarged to the fat if the fruit ; it baib at •
•crntJ rermen waipits tbf tenter, fupprcling ftoa brijfy coloured jlyltz, tebicb ere hnger tbn tbt empalrei-t
h Rtia fitgUftigmas. Tbf germtn afterward I:-
•ml, paved at tbt baft, axdtmpnffed at the t<f, endisi

This genus ofpUnts ia ranged in the eighth Je ul Litnicus's twenty-firf cUS, imkled MQIHT' in Pol- byan Iria, from there bdi)^ mak and female flowm on it ic (imc plant, slid the oiale flowers having many ftamina.

The SPECIES arc.

1. CORVLVS (jh'flititii) iliptil b ovata obtuim. Hon. Cliff. 4^3. ftori Niil tuib •. Cory- 1m SylveiWs. C. B. P.
2. Coavtif* {Mntime) flipul. oblonga, obtu it, mmh ctt&ioT'ibux. HiTzrfv)ii> obhg !.. ami tit

N

braitba rrvwblg tun trtZt. Cory!
longo. C HJV41S. 9
mrios pfcenM) fHpulis lineah'bus acut!

Enoland, from whence • rwrw atoufcprl. Coryilts mna. ti. l. r^i. fyzMtint*

The iirft of dicfc trees is common in many woods in e the fruit is gathered in

antTbrtiu^ht to the London on a moil | the country people. This rror is feldom plowed in gardens (ex- cept by perfons curious in collections OI tree^ :inj flmbs) (-

md maybe | xraftomthe

old pbnw, whiick,

in one year's tinx, will take fuffickiit rv planting; and tilde will be mueli h>

wwied jilanti than fackeis, and will greiiJy oogigtow them, dpeda

There is 1 vorim l"i:t growing in |

cluihrj at the cm! of the branches, which i^ 1

Suiffed by the tide of Clufter Nut; but j. fupposed ro be only a variety, which ae:H

eririe from the othJr, I have not^i^ngyrlhed h; however, the m>y be continued by Uverj, in Ac kind

ma- always chn prefer but this is very doubt ill, for I

revert, for is by many lupjiofirt to be only t Te- from the firft, whi .ll im-

but never have found t!ir:n vary from one td I.e oilier, though tiny have illeL-red in the fitz: and co- fodd ui their fruir, from ttit forts which wen= tovm \ but as the flirubj of this grow more ereft tJun thofc of dtt other, and the IVipulx ne • fterre in iheir liajff, (b I have enumerated i as a diftinct fort, of tlm (here- an- the red ai: white Filberts, both which are l' • will known, as to need no cctcription.

I hv third fun grows naturally near Conllantinople i the nuts ei this are liirgi-, roundifh, and in (hi!! he like thofe of the comnr, l l.m-1, but arc more than twice their Gsc The cups in which the nuts grow arc very large, fo as almoliro cover the nut, and is deeply tut at the- brim. This fort is not common in lijiigluici but I take thole large nuts which are annually im- ported from Barcefoft in Spain, I o be of the fame kind, the nuts being in a fmall Ice, u not to be dUtn- guilhej when out of their cups, and thofe •- ([li= Spanish k;i conic oier naked, fo I cannot with cer- tainty for how they cfentially thifer.

All thefe l:nts may be -propagated by fowing iheir nuts in Fe miarj i which, in order to prelerve them good, IthuU be kept in land in a moil cellar, where the vermin cannot conic at the'i to tlestroy them nor fiiould the external air be excluded from them, which would occafion their gronin^ mo

The manner of lowing the fcetls being well i co cv. ry one, I need not here mention it, especially fince : h not t. Purrell way to obtain the fan de- fired t for they feldom prove fo good as the nut* which were low, or at leaft not one in four of them will; and the method of propagating them by 'opera being not only he fureft, but alfo moft exv- li h what I would recommend to every one who wouid cultivate thufe trees for the like nt their fruits.

CORYHBIFEROUS JPLAN

have n compound difcous floier, but their feeds hve rw down ntlhuring ro them. The name > : fkm from the manner of bearing ita (lowers in tuftera, ^reading round in the form of an umbrella. Of this kimi h the Corn Marigold, common itx Eye, the Daily, Cimoniilc, Mugwort, Feverfew, iirc Mr. Ray dil ugnifies ;iem into fuch as have a ra- ! flower, as the Sun Fl i r, Marig Id, 6cc. and fuch as have a naked flower, as the Lavender Cotton and : in Icy, and allb thofe that arc akin to diem, as Scabious, TeaJcl, Carduus, &c.

CORYMBIUM.

The CHARACTERS arc.

ll is/4 ah mpiiftittjii cuf two itava, bavisjgr ..
*tbt fmaU US*M art trtS and deft tsgeibr tbtir whek*
tr^th, HJJJ MT trtimgaSer en their enfide, ntr into thru
jigaxnts, and an ftrmiuimt- TitJ; over has on ptai;
which is cptel, having a ray fieri tube, tut into Jht
... : lire brim, whitb j'lrm'd spin; ii tmb fist
... in the tub; crtrniwi j'filb oblexg
... it, fierier than the pteJ, joining in a (ylin-
der: the germm is Jittatrd mbm tot titTpalmm, at
the bottom of the ped, fupporting a fingle oval fola
length of the ped, terminated by a bold ... ipn jjiifma;
ticgermen ... toward brmas an obhg jte, being a
frt lf dew ottering te H.

This genus of plants is "jnged in the fixth fection of Lin nicus" nineteenth dafi, in tit led Svngenefil Mo- nogamie, tnc flower having five llanuna which join by their fummirs, and b furccctletl by one feed.

We know but one Sto<... of th: ;TCnii», viz.

Corymbi i (jffritamia). Hort CtrK 404. Affum C~

Buplirufolia Jiminc pappofo, vultriinoide umbelretJ, cauliculi fcabro. Pluk.*

This plant grows nattiraliy at the Cape of Good Hope; it rtes with an erra: -mgh ftilk abimt 3

fxit high, with A fingle leaf at each "joint, which half embrace the lhlk wiilt their bid-. The leavj ate •

i. irow, and triangular, anil hive a downy lub-

ftanc inter...xcii with them at their baf-, the upper p.ut of the ifcilk divides into iever:il foor-ft

whiich are Mrmtnated by purple flnw of one petal, cut into live parts at the brim, eajh being fuccced by an oblong feed.

COS

It is propagated by seeds, which should be sown in a... Tilled with light soil as soon as it is received from abroad in the jars should be plunged into a bed of tanners bark, where the heat is near [pent, and raved with a common frame in winter, Eoprotce: the first from trol, (now, a hard raised. In the fruiting, if the pots are removed into a moderate hot... the plants will soon appear; when they are about an inch high, they should be each transplanted into a Jeparie final pot, observing to limit than until they have not new roots; in an if(er) which they should be gradually inured to the open air, and in June they should be placed abroad in a flickered situation; where they may remain till October, when they should be placed in a common tub, where they may be protected from frost, being too tender to live abroad in England.

ORYMBUS f. e. o. Gr.] signifies among botanists round dufters of berries, > tub of Ivy. Jungius ufa ii [o tigrity the excrecency . . . i . . .] •Jubdividiil and laden with flowers, or fruit, as to compute a ipherital figure. It a Mo by modern Botanists "fed to signify a compound ilicutu flower, which do not My away in down, as the Chrylinihemum, Dailj-, CKrylix-ome, Sec. For ihce kirtU of fiwerj, being spread into bicuilth, lio, after a fort, referable an urabrclb, or bark of Ivy-berries.

COSTUS. Lin. Gen. Plant. 3.

The CHARACTERES are, Tt kith a M . . . and jfaih-t, omfc a fmnU an- . . . "ra peril, futing m tie gtrmtn. . . . i m *TH ind . . . uiHarhim of mt . . . J. < ; *J aj leng as li . . . rnr mot ffft'jbtfta, ••• "ajitiui to tie uppr tip of . . . is. a bipartite sammit. 'Tbt garsta uf- . . . Ttctplatli tf tbt fismcr, iL'btfb is . . . ijb, jkppertisg a Jlatiar fjilt, owned by . . . ; teai- . . . Tbtgirmtn aftneerd teonti ii . . . twfi ibrtt ctily tentawig fcvtral trias-

This genus of plants is ranked in the first section of Linnæus's first class, intitled Monocotylia Monogynia, the flower having but one stamen and one style. We have but one Species of this genus, viz.

COSTUS (Arebirus). Hort. Cliff. 1. Costus Arabicus, C. B. P. 16. jfrabim Osfiui.

Thj* hal.li a Bcflj jtiinted root like that of Ginger, which propugates under the surface of the earth; from which arise many round, taper, hollow stalks, garnish'd with oblong smooth leaves, embracing the stalks like those of a Reed; these stalks rise to the height of two feet high, & at the center, the stalks are parted into two, which is near two inches long, the thick net; of a narrow, and blunt at the top, composed of several leafy scales, out of which the flowered combs arise; these have but one thin white sepal, which is of short duration, seldom continuing longer than one day before it falls, and is never succeeded by seeds in this country. The time of its flowering is very uncertain, for sometimes it flowers late in the autumn, and at other times it has flowered in summer. It is not common to any part of England, it grows naturally in most parts of India. This is propagated by parting of the roots, which are cut into small pieces in the spring, before the roots put out new italics. The roots must not be divided too small, because that will prevent their flowering. They should be planted in pots, filled with light kitchen-garden earth, and plunged into the tan-bed in tin: irove, where they mouki comfortably in the sun, and may be treated in the same manner. The Ginger, which is fully treated of under the article AMOV.

The roots of this plant were formerly imported from India, and were much used in medicine; but of late years they have not been regarded, the roots of Ginger being generally substituted: for the

COT

COTINUS. SPERHUS. COTONEA MALUS. COTONEASTJ. R. See Man'itus. COTULA. Lin. Gen. Plant. 868. An. ihccyduj. Vail. Ad. Keg. Seko. (719. Mayweed

THE CHARACTERES are, // Itub 4 JSmetr tempestid if' hermapbradht pr,ts m tbt £J£, and Jamie Imif Jleritj -j/bich farm lit nr/s \ . . . «rt Mndti in ent OHKIUIH certvtx tizptu.iittit!* divided txe fei-ertf mm! ports, 'jbt brru. . . taluks and M tint far aitquai fy . . . tbtfe hjr. <t few fndi jlaniae, termhmi., . . . mill, 44J t*Bi tec cbluff Jigima, i . . . •I ngviar ftd U acb. -TLt fas. . . an etvti lemptrffat gtn. < . . . avwntd by KM figmat, hi . . . fsitttdt byfrngifbart-fbapt 1, . . . is the tbttr, (o/J

This genus of plants is ranked in the second section of Linnæus's nineteenth class, intitled Syngnesia Polygamia liipi. The plants of this section have hermaphrodite and female flowers, which are inhiitful.

The Spici)? arc, • COTULA (. . .) foliis pinnatis-multifidis . . . cotula radiis delictatis. Hort. Cliff. 417. Mayweed with narrow four-angled leaves embracing the stalks being very fine. Cotula capite apophyllo, C. B. P. 125. Cotula (Furcata) receptaculis lobatis . . . itii.itis m- . . . buutii. UorL Cli. 417. Mayweed which resembles m-tfianUta and tin: . . . licce el . . . LA [Gnw

until, cajjiic aphylo, Chamxitid nuili lick. Bielyn, Ccat. 156.

The first sort grows naturally in Spain, Italy, and the Archipelago; this is an annual plant, which rises with a branching black half a foot high, garnished with leaves which are finely divided like those of Chamomile. The flowers are produced singly at the end of the branches, which are very like those of naked Chai, but the heads rise higher in the middle like a pyramid. This flower in May, June, and the seeds ripen in August. If the seeds of this plant are permitted to [carter, the plant will come up in the spring, and require no other care but to keep them clean from weeds, and thin the young plants when they are too close.

The second sort grows naturally in the Ope of Good Iujuk, from whence I have received the seeds; this is an annual plant, which grows out many bunching stalks from the root, which are like a bond, and are garnished with very fine flowers, which are produced singly upon long foot-stalks, arising from the side of the branches; these have a narrow border of white nyi, which is a pale yellow disk. It flowers in June and July, and the seeds ripen in August. This plant may be sown on a moderate hot-bed in the spring, and when the plants have obtained strength, they may be transplanted into a worm bank, where they will ripen their seeds very well.

The third sort is an annual plant, which grows out in the middle of the stalks about six inches long, garnished with succulent leaves, in shape like those of Buckhorn Plantain. The flowers grow from the divisions of the stalks upon short weak foot-stalks, being distinct in rays, they are of a sulphur colour, and appear about the same time with the former. If the seeds of this sort are sown on a warm border where the plants are required, they will require no other culture but to keep them clean from weeds. The flowers of the two last sorts stand erect, and appear, but so soon as the flowers are in, and their colour changes, the foot-stalks become succulent, and the flowers change colour, but when the seeds are ripe, the foot-stalks become

fiff, and the heath (land creft for the winds to difperfe die feclt's.
COTYLEDON. Lin. Gen. Plant. 512. Tourn. luft. R. 11. go. tab. it>. [£&***», &]. of KJ 3 cavity v b caufe the leaves of this are hollow'd like the navel, or becmife it resembles a veffel wiraewdi the ancients uled 10 dm

The O'AH • The fewer hub a ixtti Jfw parts nl (be lip. It tai, cut /n.'ajfw/ •** batkiwd. It bath five jmfitna, tmch biivfte.bafqitamitmatvi urn at (bdi ty a • ita, whiub art trnaimittj iy criS imamiti, be furrvwi. "Tbcxrrnua • ititgi;uJitaiik, a. filed wtofbafUfifdt.

This genus of planu is ranp fi-ndi cbli, the tiowtr hivin™ ten Ibiniiia an-

L.COTVLRDO- dentaria, alterna, caule ramofa, floribus erectis. Lin. Sp. Plant. 429. [•htukJUavrifarpfy is-dmt^: fywtn. Cotyledon major, CTOUP Umbil

Cor. hlongis fpinofo-mucronatis, caule fcapito. Lin. Sp. Plac. : 4.19. t/m i'kf with a JtaK, e'f a fpiktd

j. Co-rvLEm • (Serrata) f. ovalibus, crenatis 1 mule MUDlerwtt and cfok: liobiongo,

4. COTYLEDON (Hemipharis) foliis reniformibus. Hort. Cliff. 126. ledon Cape tab. Vt-

5. Cotyledon (Or) nmis, Hon- Cliff ^idl, afin £*«i. Stum Affiemum fruteceas, in-cannot, orbcti - 349-

6. Co: Kimeffim) 1 rotundtJ, 1 , toib furfif t t

7. COTYLEDON (Serrata) caule ramofa, fucculentis, jbliis obverse ov. UK* nure prxpU her*. &Aür iirhi? irbo- ; :- ma-

S. Co: yLEDON (-<'a) < lib o cam and euaLJmn. p

9. COTYLEDON (Serrata) foliis alternis spatulatis carnofis integrifimis. Lin. Sp. 614. longo& tngufto, aj. cab

10. C. foliis laminatis, floribus quinquenatis. Hort. Cliff. 125. into laciniato, fifticillo quercu. Boerh. Ind. It. 213.

The fifth fort, which is that ufed in medicine, grows upon old walls and buildings in divers parts of England, particularly in Shropshire and Hereford; in both which counties it greatly abounds upon old buildings, and on rocky places, but is not often found near London, nor when cultivated in gardens. This hath many round fucculent leaves, whole alki arc n!.

surface of the leaves are huUow in the middle, where the foot-ftalks are joined on the tower tide, as to rclembk" i r. vel, from whence the plant was called Navelwort. From between the leaves arife the foot-ftalks 0 the flowers, which in fome places grow near three feet high, and in others not more than fix inches, their lower part being garnifhed with leaves, and their upper part with flowers, which ftand clofe to the fide of the branches, and grow erect; they are of a whitifh yellow colour, and appear in June. It requires a dry rubbing foil, and to have a th.viy au-

ate flattered on walls and old buildings as Qxo as it is ripe, or if the feeds are j mmi when once the plants are eftablifhed upon an old wall or building, they will fix their roots, and maintain their place better than when cultivated with more care. The fecond fort grows naturally in Siberia, from whence it was brought to the imperial garden at Peterburgh. This was feft me by Dr. Amman, the late profeflor of botany in that garden. It is a low plant. in fhape like the Houfleck, but the leaves are longer, and terminate in foft fpuces. The flower-ftalks rife about four inches high, and fupport four or five whitifh flowers, which are cut at the brim into five parts. Thefe appear in April, and are fometimes fucceeded by feeds in England. This (an K-quires it very fturdy fiteuation, for if it is expofed to the fun in Wimmer, the plants will foon die, I- is propagated by offsets like the Houfleck, indreqt

The third fort grows naturally in the Levant. This hath a fibrous root, from which it produces a fingle upright fucculent ftalk, garnifhed with oblong, thick, fucculent leaves, placed alternate, which are fawed at their edges. The upper part of the ftalk is garnifhed with purple flowers, growing in a loofe fpike, two or three being joined on the fame foot-ftalk, which is very fhort. The flowers appear in June, and feed ripen in autumn. It is a biennial plant, which decays foon after the feeds are ripe. If' thi- let it down upon a wall, it will thrive better than in the ground, and be lefs liable to fuffer b froft; (a ihat h the feeds fatten themselves in fuch fiteuations, the plants thrive better than when they are cultivated • il.

The fourth fort grows naturally at the Cape of Good HOJK. This hath a thick fucculent ftalk, which rarely rife above a fpan high, dividing into many branches, garnifhed with fhort, thick, fucculent leaves, which are very convex on their under fide, but plain on their upper, and more than half an inch long, and of a purifh colour spotted over with white veins, and fit clofe to the branches: the foot-ftalks of the flower rife from the top of the branches, >> are fix inches long, naked, and fupport two or fix flowers, which come out alternate from the fide, ftanding very clofe to the ftalks; they are tubular, and cut into five parts as a fin; [op; thec an; greenifh, with purple tips. It flowers in June and July, but never produces feeds in England.

The fifth fort grows naturally upon dry gravelly fites at the Cape of Good Hope. It hath a thick fucculent ftalk, which by age becomes ligneous, and rife three or four feet high, tending into crooked branches, which are irregular, garnifhed with thick, fleshy, fucculent leaves about two inches long, and near so wide toward the top; they are narrow at their bafe, and rounded at the top, of a frefh green colour, with purple edge, which is frequently irregularly indented. The flowers grow upon thick fucculent foot-ftalks, which arife from the end of the branches, and are near a foot long, naked, and fupporting eight or ten flowers, growing in an irregular circle at the top; thefe are of a pale yellow colour, having long tubes, which hang downward, cut into five parts at the brim, which turn backward, the ftamens and fyft being longer than

the ftalks, and fupporting eight or ten flowers, growing in an irregular circle at the top; thefe are of a pale yellow colour, having long tubes, which hang downward, cut into five parts at the brim, which turn backward, the ftamens and fyft being longer than

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the ftalks, and fupporting eight or ten flowers, growing in an irregular circle at the top; thefe are of a pale yellow colour, having long tubes, which hang downward, cut into five parts at the brim, which turn backward, the ftamens and fyft being longer than

thaii the tube of the flower, hanging downward. This fort flowers in July* Auguft, and September, but doth not ripen feeds in England.

The futth fort is alfo a native of the Cape of Good Hope. This hath a fhort, thick, fucculent ftalk, which rarely rife more than afoot high, branching out on every fide, fo as to fpread over the pots in which they are planted: they become woody by age, and are clofely garnifhed with thick round leaves, of a grayifh colour, with purple borders, plain on their upper fide, but convex on their under, and very flefhy, of an herbaceous colour within, and full of moifture. This fort hath not flowered in England, fo far as I can learn, for I have kept plants of it which were tv/enty years old, but never attempted to flower. It is undoubtedly a different fort from thp former, although they have been fuppofed to be the fame by fome writers.

The feventh fort is fomewhat like the fixth, but the ftalks rife higher, the leaves are much larger, and flaped more like thofe of the fifth, but are fotted on their upper fide with ^{^reat number^} of dark green fots -, they have a deep border of purple on their edges, and fit clofe to the branches. This hath not as yet flowered in England. This is alfo a native of ^{^Ethiopia.}

The eighth fort hath been of late years introduced into the gardens in Holland, from the Cape of Good Hope, where it grows naturally, and was fent me by Dr. Adrian Van Royen, late profefibr of botany at Leyden. This rife with a fucculent ftalk near three feet high, which divides into many branches, growing erect, garnifhed with oval fucculent leaves, placed oppofite-, they are of a lively green, and end in points, and half embrace the ftalks with their bafe. This fort hath not as yet produced any flowers in England.

The ninth fort grows on rocky places at the Cape of Good Hope, from whence it was firft brought to the gardens in Holland, and hath fince been fpread into moil parts of Europe, where there are curious perfons who preferve exotic plants in their gardens: this hath a fhort, greenifh, fucculent ftalk, which feldom rife more than a fpan high, dividing into feveral irregular branches, garnifhed with thick fucculent leaves four inches long, and half an inch broad, and as much in thicknefs, having a broad concave furrow on their upper fide, running almoft their whole length, and are convex on their under fide, of a bright green, with a purple tip. The foot-ftalks of the flowers are produced at the end of the branches, and rife near a foot high, having here and there an oblong pointed leaf, growing on their fide. The flowers ftand upon fhort foot-ftalks, which branch out from the principal fte'm; thefe are yellow, having pretty long tubes, which are cut at the top into five parts, and are reflexed backward. The flowers of this fort hang downward, and the ftamina are longer than the tube of the flower 5 the reflexed parts of the petal are tipped with purple. Dr. Linnaeus has fuppofed this to be the fame with the fifth fort, but whoever has feen both plants, cannot doubt of their being diftindt fpecies.

The tenth fort grows naturally in the warm parts of Africa, ib is much more tender than either of the other forts: this rife with an upright ftem about a foot high, which is jointed and fucculent, garnifhed with broad leaves, which are deeply cut on their edges; they are of a grayifh colour, placed oppofite, and almoft embrace the ftalks with their bafe. The foot-ftalks of die flowers arife from the end of the branches, which are about fix inches long, fuffaining feven or eight fmall flowers of a deep yellow colour, which are divided into four parts almoft to the bottom. The ftamina of thefe flowers are not longer than the fhort tube. This flowers at different feafons of the year, but never produces any feeds in England. This fort requires a warm ftove to preferve it through the winter in England, nor fhould it be expofed abroad in fummer; for if it receives much wet, the ftalks are

vety fubjeft to rot *, fo that it Qiould conftantly ~~remain~~ either in the ftoves, or in fummer fhould be placed in an airy glafs-cafe with other tender fucculent plants* where they may have free air in warm weather, and be fcreened from cold and wet 5 but in autumn they muft be removed into the ftove, where they fhould be kept in a moderate temperature of warmth: this is propagated by [#]cuttings, which fhould be taken off in fummer, and planted into fmall pots, and plunged into a moderate hot-bed, and when they have taken root, they fhould be removed into the ftove: This plant mult have but little water, efppecially in winter.

The African kinds are all of them propagated by planting cuttings in any of the fummer months, which fhould be laid in a dry place for a fortnight or three weeks after they are taken from the plant, before they are planted; for thefe abound with juice through every part of the plant, which will certainly rot the cuttings, if they are not fuffered to lie out of the ground, that the wounded part may heal over, and the great redundancy of fap evaporate. The foil in which thefe plants thrive beft, is one third frefh light earth from a pafure, one third fand, and the other third part lime-rubbifh and rotten tan, in equal quantities; thefe fhould be well mixed, and laid in a heap fix or eight months before it is ufed, turning it over five or fix times, that the parts may the better incorporate; and before it is ufed, it will be proper to pafs it through a fcreen, to feparate the large ftones, clods, &c. therefrom.

Having prepared the earth, and your cuttings being in a fie order for planting, you mult fill as many half-penny pots with earth as you have cuttings to plant; then put one cutting in the middle of each pot about two or three inches deep or more, according to their ftrength; then give them a little water to iettle the earth clofe about them, and fet the pots in a warm fhady place for about a week, to prepare the cuttings for putting forth roots; after which they fhould be plunged into a moderate hot-bed of tanners bark, which will greatly facilitate their rooting; but obferve to give them air, by raifing the glaffes at all times when the weather yill permit, as alfo to fhiae the glaffes in the heat of the day.

In about fix weeks or two months time after planting, thefe cuttings will be rooted, when you muft begin to expofe them to the open air by degrees, firft drawing the pots out of the tan, and fetting them on the top, then raife the glaffes very high in the day-time j and in about a week after remove the pots into a green-houfe, and there harden them for another week *, after which they may be expofed to the open air in a well defended place, obferving not to fee them into a place too much expofed to me fun, until they have been inured to the open air for fome time. In this place the plants may remain until the beginning of Ofober, at whiel^time you fhould remove them into the confervatory, placing them as near the windows as poffible at firft, letting them have as much free opep air as the feafon will permit, by keeping the windows open whenever the weather is good; and now you muft begin to abate your waterings, giving it to them fparingly; but you fhould not fuffer their leaves to fhrink for want of rpoifture, which is another extreme fome people run into for want of a little obfervation *, for then they are fuffered to fhrink for want of fufficient moifture to keep their veffels diftended, they are rendered incapable of difcharging this moifture whenever they receive it again. The tenth fort fhould be placed in a moderate ftove in winter, nor muft it be fet abroad till Midfummer, for it is much tenderer than any of the others.

The beft method to treat moft of thefe plants is, to place them in an open, airy, dry glafs-cafe, among Ficoideffes and African Houfleeks, where they n ay enjoy as much of the fun-fhine as poffible, and hav:a free, dry, open air; for if thefe are placed in a common green-houfe among fhrubby plants, which pe, • ffire freely, it will fill the houfe with a damp air, which

which these succulent plants are apt to imbibe, and thereby becoming too replete with moisture, often call their leaves, and many times their branches also decay, and the whole plant perishes.

COURBAIL. See HEMEROCALLIS.

COWSLIP. See PRIMULA.

C R A B - T R E E. See MAURUS.

CRAMBE. Lin. Gen. Plant. 739. Tourn; Inf. R: H. 211. tab. 100. [KppCii, Gr^A Sea Cabbage.

The CHARACTERS are,

The empalement of the flower is composed of four oval concave leaves which spread open. The flower hath four petals placed in form of a cross* which are large* oblong* and spread open, it hath six stamina* two of which are the length of the empalement* the other four are longer and bifid at their points \ thef\$ are terminated by single fimmits* which branch into threads on their outside. The petals have honey glands on their inside* which are longer than the stamina. It hath an oblong germen* but no style* crowned by a thick stigma. The germen afterward becomes a round dry capsule* with one cell* inclosing one round seed.* This genus of plants is ranged in the second section of Linnaeus's fifteenth class, entitled Tetradynamia filiquosa, the flower having four long and two short stamina, and the seeds growing in pods.

The SPECIES are,

1. CRAMBE (*Maritima*) foliis cauleque glabris. Fl. Suec. 570. *Sea Cabbage with smooth stalks and leaves.* Crambe maritima brassicae folio. Tourn. Inf. 211.
2. CRAMBE (*Suedica*) foliis profunde laciniatis, caule erecto, ramofo. *Sea Cabbage with leaves deeply cut* and an upright branching stalk.*
3. CRAMBE (*Orientalis*) foliis scabris, caule glabro. Lin. Sp. Plant. 671. *Sea Cabbage with rough leaves and a smooth stalk.* Crambe foliis & foliolis alternatim pinatifidis. Prod. Leyd. 330.
4. CRAMBE (*Hispánica*) foliis cauleque scabris. Hort. Upfal. 193. *Sea Cabbage with rough stalks and leaves.* Rapistrum maximum rotundifolium monopermum. Corn. Canad. 147.

The first sort sends out many broad smooth leaves, which are deeply jagged on their sides in obtuse segments, and are of a grayish colour, spreading near the ground; between these arise a thick smooth foot-stalk about one foot high, which spreads out into many branches, which have at each joint one leaf of the same form as those below, but much less; these foot-stalks subdivide again into many smaller, which are garnished with white flowers, growing in a loose obtuse spike, composed of four concave petals, placed in form of a cross, these are succeeded by round dry seed-vessels about the size of large Pease, having a single seed in each. It flowers in June, and the seeds ripen in autumn. The roots of this sort creep under ground, whereby it propagates very fast.

The seeds of the second sort were sent me from Peterburgh for the first sort, from which it differs greatly. This hath a perennial root, which sends out several oblong, smooth, pointed leaves, irregularly cut on their sides into acute segments almost to the midrib, these are very smooth, and of a sea-green colour: between these arise the stalk, which grows three feet high, garnished below by oblong pointed leaves, which are acutely indented on their edges. The stalks branch out into many smaller, and these subdivide again into less, which are garnished with loose spikes of white flowers like those of the first sort, which are succeeded by seeds of the same form. This differs greatly from the first in the shape of its leaves, which are longer, ending in points, and the segments do the same, whereas those of the other are blunt, and not half so deeply cut. The stalks rise more than twice the height of the first, branch out more, and the branches grow more erect; and these differences are constant, where the plants of both sorts grow in the same soil.

The third sort grows naturally in the East. This hath a biennial root, from which arise many leaves in the spring, that are alternately divided to the middle and these divisions are again alternately cut on

their edges into many points, so that they have the appearance of winged leaves, and are of a grayish colour. The stalks rise about two feet high, and divide into many branches, which are terminated by loose panicles of small white flowers, placed in form of a cross, which are succeeded by small round capsules, each containing a single seed. This flowers in June, and the seeds ripen in autumn, soon after which the roots decay.

The fourth sort is an annual plant, which grows naturally in Spain and Italy. This rises with a very branching stalk near three feet high, garnished with roundish heart-shaped leaves, indented on their edges, standing upon long foot-stalks; the branches subdivide into many slender ones, which end in long loose spikes of small white flowers, which are succeeded by small, round, dry seed-vessels, which contain a single seed. The leaves and stalks of this sort are rough. It flowers in June, and the seeds ripen in autumn.

The first species is found wild upon sea-shores in divers parts of England, but particularly in Suffex and Dorsetshire in great plenty, where the inhabitants gather it in the spring to eat, preferring it to any of the Cabbage kind; as it generally grows upon the gravelly shore, where the tide overflows it, the inhabitants observe where the gravel is thrust up by the floods of this plant, and open the gravel, and cut the floods before they come out, and are exposed to the open air, whereby the floods appear as if they were blanched; and when they are cut so young, they are very tender and sweet; but if they are suffered to grow till they are green, they become tough and bitter. This plant may be propagated in a garden, by sowing the seed soon after it is ripe, in a sandy or gravelly soil, where it will thrive exceedingly, and increase greatly by its creeping roots, which will soon overpread a large spot of ground, if encouraged, but the heads will not be fit to cut until the plants have had one year's growth: and in order to have it good, the bed in which the plants grow, should, at Michaelmas, be covered over with sand or gravel about four or five inches thick, which will allow a proper depth for the stalks to be cut before they appear above ground, and if this is repeated every autumn, in the same manner as is practised in earthing of Asparagus-beds, the plants will require no other culture. This may be cut for use in April and May, while it is young; but if die stalks are suffered to remain, they will produce fine regular heads of white flowers, which appear very handsome, and will perfect their seeds, by which they may be propagated.

The other sorts are only preserved in curious gardens of plants for variety, but are not of any use or beauty. The perennial sorts may be propagated in the same manner as the first.

C R A N E - B I L L. See GERANIUM.

CRANIOLARIA. Lin. Gen. Plant. 670. Martynia. Houft. Gen.

The CHARACTERS are,

The flower hath a permanent empalement composed of four joint narrow leaves which spread open* with a large swollen head* which is cut longitudinally on the side. The flower hath one petal* which is unequal* having a very long narrow tube* whose brim is divided into two lips, the upper being roundish and entire* but the under is divided into three parts* the middle segment being the largest. It hath four stamina, two of which are the length of the tube* and two are shorter & these are terminated by single fimmits; at the bottom of the tube is situated an oval germen* Supporting a slender style* crowned by an obtuse thick stigma. The germen afterward becomes an oval leathery fruit* pointed at both ends* opening with two valves* inclosing a depressed woody nut* pointed at both ends* and recurved* having two or three furrows* so as to resemble a skull* opening in two parts.*

This genus of plants is ranged in the second section of Linnaeus's fourteenth class, entitled Didynamia Angholperma, the flowers having two long and

two (hort (lamina, and the feeds being included in 1 csppile.

- The SPICIES are,
- 1. CRANIONAHIA (/imm) foliis cordatis, angulnris lobark Lin. Sp. Plant. 861. *Crematoria with axgufar hcert-fbapt&Usvtt*. Manynia annua, villnlL, IL vilcofa, acris folio, flore albo, robo longiffiino. Houft. MSS.

2. CRAKIOLASI* (*Frittiefa*) folns lanceolatis dentatis. Lin. Sp. Plant. 618. *Craniefoia with Jprar-jkapid IB-imltd fievti*. Gefncrt arborefcen* «mplo Horc fimbri-a:o & manilofn. Plum. Nov. Gen. 27, The firft **fer** is nwd in the neighbourhood of Carthagem in New Spain, by the lite Dr. William Houftuan, who fent the feeds to England. This a an **tnmu!** plant, which rifes widi a branching (talk about two feet high -, the branches come out oppotUe, which are hairy and vifcous j the leaves silo ire placed appofisc, ujron very long foor-ftalks -, thdc arc of different fhape*. Fomi? of them arc divided into five lobes, others into three, and fome art- slmoft heart-fhap«l, endin™ in acute points; they arc hoiry and damn. The jwen are produced from the llde-, and ilfo at the^nd of the brandies, landing on fhort foot-^LJdks, having an inflated (heath or *covet*, out of whid the tube of the flower nifes, which is feven or eight inch.* long, and very (lender; but at the lop is divided into two lips, the under being large, divided into three broad legments, the middle being larger than tiie other two -, the upper lip is t&odqilb and entire: the fiowers are focceeded by oblong fmiit, having a thick dry fldn, which opens it-nghways, in-clofing s hard furrowed nut, with two recurved horns. This is an enniwl plant, whofe feediirniift befo*n on a hot-bed in^hefpring-, and when the plants arc fit to remove, they (hould Be racli planted in a feparatefsmall pot; filled witi light freih eanh, antl plunge'l tnroa moderate hot-bed^ carefully fhading them from the fun till they have taken new root; after which they flould have free air admitted to them in jiroportion to the warmth of the feaibn, to prevent thrir drawing up wck, and afterward; **netted** in the fame manner as Other tender exotic plants, being too lender to thrive in the open air in England; fo that V

grown too large to remain timlrr the frames, they fhouM ll-removed into the bark-dove, and plunged into the tan-bed, where ihry will flower in Julv, and with good management they often perfrA tficir feeds in aurumrt. But the feeds of thu plant (honkl remain on till they drop, othiTwile they will not grow, for the outer covers of thefe feeds (plit open and drop offlike thofe of the AlnKrnd, before the feeds ate fully ripened.

The fecond fort grows naturally >t the Havannah, and^ in foiiic of the 01 her iHands in America. This rifes with 1 fhnbfiy ftalk to tlic height of ten or twelve tVcr, dividing upward into a tew branches, which arc girittihed wii li fpi -shaped leaves, jut on their ciigei; and thefe ire (*oil* and hairy. Thi.- Roweni arcproduct] from (lie Jkteoi^ rhcli/ inches, growing feveral together on the fame foot-ft Ik; they are fliapeti like thnfi of the *Poplove*, of a r.Tecnilh yd-low cokmr, with brown spots oil the inBdej the flowers hairc a fwslling nibe, whkh is recurvi, and the brim is (lighly ividctj into five unequal fegments, T hie appear in July, but are not fceceeded by fruds in England.

This fort is propagated by feeds, -hkb mtift be procured from the countries where it grows naturally, and (hould be fown on a hot-bed in the fpring, when the plants arc fit to remove, they fhould be each planted into a feparate fmall pot, filled with light kitchen garden eardi, and plunged into a freih hot bed, where they muft be fhaded from the fun till they have taken frith root; then they n. muft have air admitted to them, according to the warmth of the fealbn, until frrequentl; watered during the heat of fummer. In autumn they muft be removed into the bark-frve, and plunged into the tan-bed. During the feafon, the plants fhould not have much wa-

ter, and m>y be treated in the fame manner at other rrnder plant-) from thofe ••••• The plants ftdom flower in Eogknd till the ittir year; and as they do not produce feeds lure, it is wjh difficulty the fort b prderved **St** the European garden.; at there is no other method of propagating the planti but by feeds.

C R A S S U L A . nillcn. H<irt. Elih. 114. Lin. Gen. Plant. 351. Leffir Orpine, or Live-ever. Thii name was formerly applied to the Anacampfaos, or Orpine.

The CHARACTERS are,
Tie Jfsavr haib a she-k&wi tmptdmtxl, Yte cvrvLU emtjijls I -bi-b are jeintd n: the befir ••••• fprcad open at tbt brim- h ike titam of ••••• filiitcd^jke ntSurii, mJ tbr ••••• !:d rvm d ;bcfi, •mbiib arifi fha i ••••• Iftlsm of ti ••••• intend ta the him. At ibr & - torn of tbt tut I jht tdkw printed gen ••••• aftrr the fewer is pnft ti ••••• i:c espfuls, epatag ••••• feeds,

The renui of plants is by Dr. Linnxu? ranged in hi* fifth clah of pbnis, Snd in the tmh divifion, intitled J'mr-i^lm Pentigynis, which iticlu'iei thofe plants whote tiow^rs ha'it five ftaminiwd Bveftflts.

- The Spfcn are,
- 1. CKA^ (Greece) folis plinis eafriaginra-dliarii, bafi connato vaginanribus. vir. CLIT 10. *Ufer Orpine with fi ••••• h&g fi^W efyii fit wiltr JhtT hain, <isi thtir heft fumitxldr.g tbt falk lite Jbt&tbs*. Cotyledon Afncfna fnitefcens, flore unibe. l-lato Coctinco. Cam. K.u. 24.

2. CITASSULA (*PafitHtUa*) tuliis lanccohto-fubuiarb fef-ryliiuk ci)im:uii, ciimiiicul:t:ii, tiil>:ii conve.tij I hor. Cliff. 116. *L\$ (r Orpine aub fpttir-jbstpd <r,t;!-fafbivK-ellmvei, furtuxAixg tbt fialh •mbt tbtir bafi, th.iv-netted -1 ••••• w felt, and ranvnt en ib^dr mdor. CraiFuta altiinni pctoli.ira. Dill. Hort. Eldi. 114.*

3. CRASSULA (*Gizra*) foliis oppofitis, ovilibus, plurimiculis, diftactis, clatis, corymbis terminalibus. Hort. Cliff. 496. *Leafy Orpine with oval heart leaves placed oppofit, which art enri*, and grows at this age. *Cralla* [3 An*-campofita folio. Hort. Eih. 115, tab. 65.

4. CRASSULA (*Gizra*) foliis oppofitis, ovilibus, plurimiculis, diftactis, clatis, corymbis terminalibus. Hort. Cliff. 496. *Leafy Orpine with oval heart leaves placed oppofit, which are bearded with fiver hairs, and ftalks terminated by a corymb of flowers. Cralla* •4 cau-ptefcens, folE5 fempervivi cruciatis. !Io i. Elch. tit tab. i>8.

5. CRASSULA (*Gizra*) foliis oppofitis, pitentibus, con-natis fcabris ciliaris, [i.>ry:iii]ii lerminalibus. Lin-Sp. PLuir. zSr-, ljElr Orp ••••• rough fprading leaves trowing eppf:tt. Cotyledon Africana troncans, foliis aperis, angulU?, acun^ ••••• Mart. CenL 24.

6. CR.A. (*Nadivahy*) folis fribaliuts, raflicatit, caule nudo. Hort. Cliff. • ii° - te\$- fl)ap<: fl-£- 'Cralla Carpinea longifolia. Hort. Eih. 116. ih. 9S.

7. CRASSULA (*Pafitata*) caule faccido, foliis connatis, ctinir: ••••• rrmangitr: **luvts**, which are heart-fhapd and farrnat, and fowers growing in clusters at the end of the branches.

8. CRASSULA (*Pafitata*) foliis lanceis, terminalibus, alternis, caule fruticofa, ramata. *Leafy Orpine with ••••• taper heart placed alternat, and a branching frubh ftalk.*

9. CRASSULA (*Sabida*) caule faccido proli- ro, dc-terminat-Galata, foliis parastichis, alternis. Hort. Cliff. 496. *Leafy Orpine with a proftrata weak ftalk, which is leafy, and leaves placed in the manner of ••••• Sedum fuccidum. in rotam vna-compofita. Buchh. bid, lit. 1. •••••*

10. CRASSULA (*Pafitata*) caule faccido, foliis oppofitis. Lin. Sp. Plant. 351. *Leafy Orpine with a weak creeping ftalk, leaves placed oppofit, and a fevally juncidus ftalk. Crallula portulaca ••••• Hort. Eih. 119.*

Mcie repen.-.

- ii. CRASSULA (*Portulacaria*) foliis obovatfe, oppofitis, caule arboreo. Lin. Sp. 406, *Leffer Orpine with obverfe oval leaves placed oppofite, and a tree-like ftalk*. Craffula portulacae facie arborefcens. Hort. Elth. 120. tab. 90.

The firft fort hath a round reddifh ftalk, which is jointed, rifing about three feet high, which divides upward into many irregular branches, garnifhed with oblong plain leaves placed oppofite, having a griftly border, fet with fmall filver hairs, and clofely embrace the (talks with their bafe. The flowers are produced at the end of the branches in clofe umbels, fitting very clofe to the end of the branches, thefe are funnel-ftaped, having Qretty long tubes cut at the top into five parts, which fpread open *, they are of a fine fcarlet colour, and ftand ered *, the ufual time of their flowering is July or Auguft. This is propagated by cuttings during any of the fummer months -, thefe fhould be cut off about a fortnight before they are planted, and laid in a dry place that the wounded part may heal over; then they fhould be each planted in a fmall pot filled with light fandy earth, and plunged into a moderate hot-bed, giving them but little water. In about fix weeks thefe will have put out roots and begin to grow, when they fhould have a large fhare of air admitted to them, and muft be gradually inured to bear the open air, into which they fhould be removed, placing them in a flickered fituation, where they may remain till autumn; when they muft be removed into a dry airy glafs-cafe, where they may enjoy the fun as much as poffible, and be fcreened from the wet and cold. In warm dry weather, during the fummer months while they are abroad, thefe plants fhould be gently watered two or three times a week-, but in winter they fhould have very little water, left it rot their ftems. Thefe plants require no artificial heat in winter, but they muft be fecured from froft and wet.

The fecond fort will rife with an upright ftalk ten or twelve feet high, if it is not broken or injured, but it requires fupport for the (talks being tender, and the leaves very weighty, they are very fubjeft to break, efppecially if they are expofed to the wind. The leaves of this plant are about three inches long; they are hollowed on the upper fide, and have a convex ridge on their lower, and are placed oppofite, furrounding the ftalks with their bafe *, thefe alternately crofs each other-, they are very thick, fucculent, and of a pale green colour, ending in acute points; at the top of the ftalk the flowers are produced in large clufters; they are of a whitifh herbaceous colour, having fhort tubes, which are cut into five parts at the brim, fpreading open. The ftalk which fuftains the flowers is pretty thick and fucculent, generally turning firft downward, and then upward again, almoft in the form of a fyphon. It flowers in July, but doth not produce feeds here. This fort is propagated by cuttings in the fame manner as the firft, and the plants require the fame treatment.

The third fort rifes with a weak fucculent ftalk about two feet high, fending out many irregular branches, garnifhed with oblong, oval, thick leaves, plain on their upper fide, but convex below, of a deep green -, their borders are fet with a few filvery hairs. The ftalk which fupports the flowers rifes from the top of the branches, and is from four to fix inches long, putting out feveral fide branches, which grow eredfc; thefe are terminated by large clufters of Snail greenifh flowers, which appear in June and July. This is propagated by cuttings in the fame manner as the two former, but being pretty hardy, fhould not be fo tenderly treated *, for if the cuttings of this are planted in a border of light earth, they will put out roots, and may afterward be taken up and potted, to be flickered in winter.

The fifth fort hath a very weak fucculent ftalk, which rifes about a foot and a half high, dividing upward into fmall branches, garnifhed with thin rough leaves which are flat, near two inches long, and a quarter broad at their bafe, gradually narrowing to a point 5

thefe ire fough, placed oppofite, and embrace th* ftalks with their bafe. The flowers come out in final* clufters at the end of the branches; they are fmall, and of an herbaceous colour, fo make no figure; they appear in June and July. This may be propagated by cuttings, which may be treated in the fame manner as the fourth fort.

The fixth fort never rifes with a italk, but the leaves come out clofe to the ground, forming a fort of head j they are taper, fucculent, ending in points, and frequently put out roots; out of the center of thefe arife the flower-ftalk, which grow about fix inches high, branching into two or three (hoots upward, each being terminated by clufters of greenifh flowers, which pake no great appearance. It flowers in May, and fometimes again in the latter part of fummer. This is propagated by taking off the heads, or fide offsets, which fhould be laid to dry three or four days before they are planted; then they may be treated in the fame manner as the other hardier forts before-mentioned.

The feventh fort hath been lately introduced to the gardens in Holland, from the Cape of Good Hope 5 it was fent me by Dr. Adrian Van Royen, late profefibr of botany at Leyden. This hath very flender ftalks, which are full of joints, fo trail upon the ground, unlefs they are fupported, clofely garnifhed with thick, fucculent, heart-ftaped leaves, placed oppofite, which are clofely joined at their bafe, fo that the ftalks run through them; they are of a grayifh colour-, the ftalks are divided, and grow about eight or nine inches long, and are terminated by clufters of fmall white flowers, fitting very clofe to the top of the ftalks \ thefe appear in the fpring, and alfo again in the latter part of fummer. It is propagated by cuttings in the fame manner as the other hardier forts* and may be treated in the fame way.

The eighth fort was fent me from Leyden, by the gentleman before-mentioned \ this rifes with a fhubby ftalk four or five feet high, dividing into many branches, which at firft are taper and fucculent, but by age becomes ligneous; they are garnifhed with very flender, taper, fucculent leaves, which arc near three inches long, and are flaccid, generally turning downward, efppecially in winter, when they are in the houfe; but as it hath not as yet flowered here, I can give no further defcription of it. This is equally hardy with the former forts, and takes eafily from cuttings, fo may be treated in the fame way as the former.

The ninth fort is a low plant, with the appearance of Houfleeek, Having open fpreading heads very like thofe of fome forts of Houfleeek, which grow on the ends of very flender trailing ftalks, which are produced in plenty on every fide the parent plant, in like manner as the childing Marigold. The flower-ftalks arife from the center of thefe heads, which are naked, about four inches long, and are terminated by clofe clufters of herbaceous flowers, which appear in different feafons of the year. This plant propagates very fall by the fide heads, which come out from the parent plant, which frequently put out roots as they trail on the ground, fo may be taken off and potted, during any of the fummer months j this is equally hardy with the former forts, fo the plants may be treated in the fame way.

The tenth fort hath very flender, trailing, fucculent ftalks, of a reddifh colour, which put out roots at the joints as they lie upon the ground. The ftalks and leaves of this fort have the appearance of Purflane, but trail upon the ground like Chickweed. The flowers are produced in fmall clufters at the end of the branches *, thefe are white, with a bluff of purple at their brim *, they appear in fummer at different times, and are often fucceded by feeds, which grow eafily. This fort is eafily propagated by its trailing branches, and the plants require the fame treatment as the other hardy forts, but unlefs they are often renewed will decay.

The eleventh fort rifes with a very thick, ftrong, fucculent ftalk to the height of three or four feet, fending out branches

branches on every fide, fo.is to form i kind of pyramid, the lower branches beine extended to a great length, and the other diroinilhinij gradualj) (to he top; ihcficareof i red or a purplih colour, and very fucculent; they ire garnilhed with roundilh fucculent leaves very like thofe of Purllane, from whence the gardeners have titled it the [urflane-ttw. This fort hath not flowered in England, though it lias been many ytars in the gardens, 1b that we are no: Cure if it is properly ranged in thlis genus; bise from the outward appearance it fecms to be nearly allied to form- of the otW fpecics, on which account Dr. Dillenius tuts placed^ here.

It is propagated with great;... [ings, which may be planted during any of the fummer months; but du-ic (houd be bit! to dry for (ami: diys before they are planted, that ihc wounded pan may be healed over, otherwife they will rot. This fortii foine- what tenderer than the four fwjtj lalt mentioned, lii mull be placed in a warm glafi-Mfi: in winter, where it may enjoy the full fun, and fhmiM have very little wtgr during that le.ilbn. In lumnier the plants fhould be placed abroad in a ihrltered fituation, 3HU in warm weather will require to be refVethd with water twice a work i but as the fhks are very fucculent, too much wet at any leafon is very hurtful to rhdi; plants.

All the hardy forts of Crafula may be treated in the fame way as the Ficoides, and othi: hardier ki; > of fucculent plinu, with this difference only, not to give them fo much water; but the firft, fecond, and eleventh fora require to be placed in A warm dry gW> C&e in winter, and muft not be fo longeirpofcd abroiul in the fummer as the other fpecics, nor fhould liave much water, cpecialty itt the winter.

Thetc flant5 -ire preferred in nioll curiou gardens for the fake of variety, which confifmorein the outward appearance of their plants, ih-ia in the beauty oillicir flowers, except the lirl (on, whofe flowers art of a beautiful fearlct, and grow in clofc bunche at the end of the tranche* j (a that when frveril of the branches arc garnilhed with dowers at the lame rimr, they mike a fine appearance, nnt! tholi flowers continueir in beaut) a long rime ; but thic (lowers of the other Tom arc fmall, and mad of them arc of an htr- baccons colour, lbrnikc nofigure.

Pr. DMleiniB, who firft etablilhird this genus, and feparawd the fpeciw from Cotyledon, fo which many of them had been joined by former bntanifts, made their difference to cotifill in the flupc of the flower; fo that all tht forts with long rubulous flowers of one leaf, he placed under the genu of Cotyledon, and thofe whole flowers hare five petals, he pticed under this: genus of Crafula : but Dr. Unnira makes tht 1 r difference ro confit in thr number of their fbniin.!, fo that all thofe whnfc flowers have but five Etamin, he ranges under tht title of Craffitb, and thofe which have ten (lamina, he puts under that of Cori ledon ; fo that by his fyftem they are removed to a great diftance from each other, and the firft forr here nientiojied is brought from Cotyledon, with whole characters in every other rcfpecl. it agrees, and is pbccd here.

CRAT/EG US. Toum.'liift. K. H. 6JJ. Lin, Gen. Phut. 547. The Wild Service.

The CrtAHAcrtlts nre.

Tie fisvrx butb a fenueixi rmpalmtnt of ctti kaf, tut into five witevt figments, •Kbichfpnad fper.. It hath fine tetindijh axtave pdeis, which are bifritii irJo the impelmtxt, arj mmj Jlaahra, ter>mn <i <<.

The fpecies is found under the flower, fupplies ... Jletiltir

A CTowitt rhb reitlSff J: ... m*:?it fstrvitrd breentns on aval or row. - associated ... ry, infitf rwl e & fsxg bard feeds.

This genus of plants is ran,xd in the E cond fection of Linnæus's twelfth clafs, entitled tetandria Digenis, the flower having two or more lamina, which are inserted in the -tnp.ilement, anil two ftyles, 1 arc,

1. CkATmtrot [Aria] foKis ov<ti> iniquiliter lerrriis,

fubtus tornenwiis. Htin.ClitV. 'SmUt mat le.iva in ... tltf en tbtir ftdt. Cratsgui folio iubratundo, ferrfco, cano. Tourn. Inf. K. M, djj. ... in &me countries, TU Whit Beam, or ivbht Le/f-t.

CitATJBocs {Ten lobi? in(lm); diva ... Sp.

Serz-iit with bea isbsfe towel niato. Tourn. Inf. 612. Wild Service with alling, 1704.

CRAIVLCl.: ; folSs oblor, utrinque nientib) faired leaves, vsbich at- Ab /ides. L. Craigii folio oblotlgo, terrato, utrine.

4. CkATA:(ui [Cotctxeti] foil is ovati: ferr>tis elabi ... fmcoib,fiijtd lev.->

5. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

6. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

7. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

8. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

9. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

10. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

11. CRAYATA (Cra Cray) folis lanceolatis ovatis ferratis ... C. B. P. 421.

The firft fun. grmvs nauiniily on the chalky hills in Kent, Surrey, and ... feet, with a large trunk, dividing upward into many ... the young shoots have a brown bark, covered over with a tncally clown, gamiied with t-vjl teavo between 'w;i tVA ihrec inchS lonj, ai • (one ami a half broad in the middle. He, of 3 li^lit green on the upper fide, but very white on the lower, having many prominent tranf. i. ... from the midrib to the border, when they are unequaly fawwi, fome of the indentures being much deeper, and the fegmem : ... The flowers are produced at the end of the branches in bunches, the flalks being woody, as are alfo the entire ... mentiof the flowers, whkx arc cut into five oBUlc fegmcnif, and arc n-flexed. Tk flowers have five fivwri petal?, which fprcad open like thofe of the Trar-tnf, han'ng a great numbt of lamina of the fame length with the petals, terminated by oval funmir?.

Thegermrn, which isfrtuatcd IKIOW I>I flowers, arterwirds becomit an (... crowned with the » ... It flowers in M^1, and the fruit ripens in autumn.

This tree may be propagated by feeds, which fhould be fom in ... they remain at least out 01 the ground till fpring, they remain at least out 01 the ground before the plants appear: fo that the fruit fhould be buried in the ground, as is practifed with the common Hawth, Holly-berries, and thoft other hard f ... they may be treated in the fame manner as the Hawth, but they fhould

... the fruit fhould be buried in the ground, as is practifed with the common Hawth, Holly-berries, and thoft other hard f ... they may be treated in the fame manner as the Hawth, but they fhould

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should by no means be headed or cut down; when these plants are upon a poor chalky soil, they make great progress, and the wood is very white and hard, so has been often used for making cogs for mills, and many other purposes where hard tough timber is wanted.

It may also be propagated by layers in the same manner as the Lime-tree and Elm, but these should be laid in the young wood; but they are two years before they have sufficient roots to transplant. I have also raised a few plants from cuttings, which were planted in autumn, in a shady border, but there was not more than one eighth part of the cuttings which succeeded; therefore I would recommend the raising them from seeds, for the trees so raised grow much larger and firmer than those which are raised either from layers or cuttings.

The tree will take by grafting, or budding it upon Pear-stocks very well, and Pears will take by grafting upon these trees, so that there is a nearer affinity between the Crataegus and Pear, than there is between either of these and the Medlar; for although both these will sometimes take upon the Medlar, yet neither of them thrive so well, or last so long, when grafted, or budded upon those stocks, as they do upon each other; therefore Tournefort, who has joined the Crataegus in his section, with the Pear and Quince, has come nearer to the natural division of their genera, than those who have joined the Crataegus to the Medlar.

There is another species of this tree which grows naturally about Verona, from whence I have received dried samples of it, but they were without flower and fruit, and came over by the same title as the former; for as there is no other growing in that neighbourhood, they have supposed it to be the common fort; but if that is the Aria of Theophrastus, those trees which grow in England are not, for the leaves of the fort from Verona are spear-shaped, and above an inch long, and not so broad by an inch as those of the English, and the nerves on the under side of the leaves are purplish, the leaves terminating in acute points, so that I make no doubt of its being a different species; but as I have not seen the growing tree, I would not enumerate it till I had been better informed.

The second fort grows naturally in many parts of England, and is chiefly found upon strong soils; it formerly grew in great plenty in Cane-Wood, near Hampstead; and lately there was some young trees growing in Bishop Wood, near the same place; but in many parts of Hertfordshire there are large trees now growing: this rises to the height of forty or fifty feet, with a large trunk, spreading at the top into many branches, so as to form a large head. The young branches are covered with a purplish bark, marked with white spots, and are garnished with leaves placed alternately, standing on pretty long foot-stalks; these are cut into many acute angles, like those of the Maple-tree; they are near four inches long, and three broad in the middle, having several smaller indentures toward the top, of a bright green on their upper side, but a little woolly on their under. The flowers are produced in large bunches toward the end of the branches, they are white, and shaped like those of the Pear-tree, but smaller, and stand upon longer foot-stalks; these appear in May, and are succeeded by roundish compressed fruit, which are shaped like large Haws, and ripen late in autumn, when they are brown; and if kept till they are soft, in the same way as Medlars, they have an agreeable acid flavour. The fruit of this tree is annually sold in the London markets in autumn.

The wood of this tree is hard, and very white, and is very useful for many purposes; but particularly so to the millwrights. It may be propagated in the same way as the former fort, but requires a strong soil.

The third fort grows naturally upon mount Baldus, from whence I received it, and on other mountainous

parts of Italy; this rises with a woody trunk about twenty feet high, dividing into many branches, which are covered with a purplish spotted bark, and closely garnished with oblong sawed leaves, standing alternate, on very short foot-stalks; they are about three inches long, and one and a half broad, in the broadest part, lessening toward both ends; they are flightly sawed on their edges, and of a deep green on both sides. The flowers are produced at the end of the branches in small bunches, which have rarely more than four or five flowers in each; they are white, and much smaller than those of the former forts; these are succeeded by fruit about the size of the common Haw, which is of a dark brown colour when ripe. It flowers in May, and the fruit ripens in autumn.

The fourth fort is a native of North America, but has been many years cultivated in the English gardens, where it is known by the title of Cockspur Haw. Of this there are two species, one of which has no spines on the branches; but the other has strong thorns which are curved downwards, greatly resembling the spur of a cock, from whence it had this appellation: in other respects both forts agree in the form of their leaves, their flowers and fruit. However, Dr. Linnaeus has been ill informed of the two forts by Kalm, who went to America, and is now professor at Abo in Sweden; for the doctor has added the appellation of Cockspur to the fifth fort here mentioned, which has long been known in England by the title of Virginia L'Azarole.

The fourth fort rises to the height of near twenty feet in England, where the trunk becomes large, and divides into many strong branches, so as to form a large head; the leaves are large, oval, and deeply sawed on their edges, so as almost to divide them into lobes, which are placed without order; the flowers come out from the side of the branches in clusters, they are large, composed of five petals, which spread open, and are succeeded by pretty large Pear-shaped fruit of a scarlet colour. It flowers in May, and the fruit ripens in September.

The fifth fort is generally known by the title of Virginia L'Azarole; this rises with a strong stem to the height of fifteen feet or more, sending out many irregular branches covered with a light brown bark, and have a few thorns on their sides; the leaves have short foot-stalks, they are narrow at their base, but widen upward so as to become almost of an oval figure, of a lucid green on their upper side, and pretty deeply sawed on their edges; the flowers are white, pretty large, and composed of five petals which expand; these are succeeded by large fruit of a scarlet colour; it flowers the end of May, and the fruit ripens in September.

The sixth fort grows naturally in North America; this rises with a strong stem to the height of ten or twelve feet, sending out many strong irregular branches, which, while young, is covered with a bright brown bark, but that on the older branches is of a lighter colour; the leaves are oval, spear-shaped, flightly sawed on their edges, of a bright green on their upper side, but paler on their under; sometimes they are placed by pairs, at others three or four come out from the same joint; the flowers are produced in large clusters toward the end of the branches, forming a sort of corymbus, and are succeeded by roundish fruit of a middling size, and a deep red colour. As the branches of this fort shoot very strong, and are generally interwoven with each other, being armed with very long strong thorns, it is very proper for outward fences round gardens or fields.

The seventh fort grows naturally in Italy and the Levant, where the fruit is served up to table with their desert, this hath a strong stem rising twenty feet high, having many strong irregular branches, covered with a light-coloured bark; the leaves are in shape somewhat like those of the common Hawthorn, but they are much larger, have broader lobes, and are of a paler colour; the flowers come out in small clusters from the side of the branches, which are in

Ihape like thofe of the common H.iwthorn, but aiv much larger; as is alfo die fruit, which when fully ripe has an agreeable acid tafa, for which it is citcicirs J by the inii-ibkants of the countries where it grows MDOJ . . .

The **••** fort is the common Hawthorn, which is generally ptir.ee J for fences In molt parts of England, therefore being univerfally known to the inhabitants, it requires no dclcripuon: there are two or three varieties of this fort, which differ in the fixe of their leaves and ths ftrength of their lliooocs; however, thofe with the {mallei I leaves :ire generally preferred for hedges, as tfeir branches always grow dofti together; the method of raifing the plants, and pi them for hedgn, being fully trciid of under the article of Hr.DGEs, I nctd not repeat here.

The ninth fort grows rimirally in North America, thti has a flender thubby (talk, riling about fix or feven feet high, fending out many irregular branches, aimed with lona (lender thorns, and garnifind with fliori, oval, wetfge-lhaped leaves, which are : on their edges, and are woolly on their under fide ; die flowers art final!, proceeding from the fide of rlie branc!

Sometimes fingle, and at other tiines Lvu or three upon the fame foot-ftalk, having large leafy cmpalcms, and are ficceded by finall roundifh fruit, with a large leafy umbilicus which WM before the cmpalement of the flower : thr Howers appear the beginning of June, and the fruit ripens very late in the autumn.

Tins fort may be propagated in the fame manner as the firft, but rctjuirei a ttrong deep foil, otherwife it •will not thrive. It is very Lardy in rct;c& to cold, but at prefer. is very rare in England.

All lie forts of Haws may be propagawd by fteds, which should be : -3vfa m autumn, in the fame manner a; hath been directed for the firft fort; but as thefe IJ-c.b .ire frequently brought from America, and do not arr:c lie-e till fpring, thie fruit may be buried in the ground til! the autumn following, when they msy be taken up and lbwn in drills, being careful to coivr ths m fo as to prevent the birds from defraying them. In the fpring following the pl.inti will come up, which flould be moderat i. . .irered twoor three times a week, it lie Ipring fiiuuld prove dry; during the fummer, they moil be keijt clean from weeds, which it tuffcrea to grow, will fon owrb;... the plants auld ticirroy them. The following fpring ! the plants flould be planted out before they begin to (boot, into a nurfeiy-bi el, where they n ly gruw two years to get ilrngth, when tht-y may be tranfplantL-d where • they are to remain. I; thefe plants are planted m a I: • in light i ail, their root? will extend to aeondderable tiltaiice, and put up many Ill ocs, which may be taken off in the Ipring, and thereby may be increased; this will ilib t.ike if grafted on the Pear, and if the young branches ire laid down, they will take root, fo tht c. plants may be propagatetj either way.

The other Iorts of Hawthorn are generally planted among flowering fhubs of the fame growth, where they add to the variety.

J R A T K V A. Lin. Gen. Plant. 223. Tappia, Plum. Nov. .. Gen. 12. tab. II. Cjrbc P< . .

I lie CuAaACTitJ arc

The copper matt />/ tht fiouitr is efmt kaf, cut at the top into four equal fegments, which fpend open. The flower hath four root points, which are narrow at their bafe, and broad at the top. In both ways rlyh fegments, which are longer than the ftalk, terminated by alony very fine till. It hath a long narrow flie, upon which fit the root organs, crowned by the ...V^M, filt'nr ttp. Tiv *t?rattii aftavmrd b*iom;s a lane • The fruit of this plant, including many other fpecies. This genus of plants is ranged in the fevt fection of Linnaeus's eleventh clafs, named Dodonaeana Monogyna, the plants of this clafs and Jiionhave i twelve fpecies in their flowers, and one il

The Nervus are, A (Tigra) w

Jaterilib v b . . . viorib us. Li n. S p. (; • > . Sweet's Crataegus, or Gard. Ftsr. Tjpia arbun-a triphylla. Hum, Nov. Gen. zi.

CtATEVA (Marrtttihs) fpinofa foliis ferrarij. Vtar. Zi-yl. aji. Prictfy Qrettva. Cucurbitiferarrifoiis pinofa medic*, truaup paSpa Cydoaii teatola. Flut. Aim. . .

The firft fort grows naturally in both liuii received the fru:- of this from Jamaica. uliere ic grows in great quantities in the mountains. I icy, which were fent me In William Williams, Efp. of St. Antti-V.; in that ifhnd, who has betn fo kind as to furnMh nit with many other curious fctels which h« . . . succeeded .:i the Chel-fca garden.

Tiis tree tiatii a very largi; mink, which rift; to the height of thirty- feet or upward, covered with a dark green bark, fending out many braiictirs, lo as to form a large • head. '1 • branches . ate gamiiniil whh tiifoliati- leaves, ftanding on pretty long fo the flalk; the middle leaf, which is much larger titan ci; ; of the other, is oval, about five treh« long, .ind two and ?- . . . broad in the middle. The tw • side leaves are . . . ililiqu, thole fides which join the middle leaf being much nafrowr than the other, and turn jt both ends to wa tl middle, fb that their midrib is nt^ parallel to the fideci-, tYxir; two end in acute i . . .

The I . . . • • Ooth, of :t! . . . the green on the upper fide, 1^ . . . pale on their under; their edges are entire. The Bowers arc produced at the ends of the branches, flandinj; upon long foot-llilks; [lu'fc bsvc cmpalcinenK ut' one leaf, which art-cut into four (egn . . . , almoft to tk- bottom. The flown liaih i'fiiv oblong petals, which fpred open, and are rcEexed, having many IOD^ Qendi . . . flamina, which are connecte3 at tKtir bafe, but I'predojien above, and are terminated by oblong purjile lummiry theIV furroun . . . a flender long fhlt, upon which is fUuatrd the ovil germen, which is crowiird by an olitule fugiriii. i . . . the germen afterward becomes a round fruit, about tffc fize '7 an Orange, having a hard brown Ihell, or cov . . . inclofing a meally pulp, filkii with kiilney.flwfjrd feeds. This fruit hath a ftrorif fmell of Garlic, which is communicated to the Is that fo . . . on it.

This n prop^atrJ by ll-cds, -which mult be- [rimrn! from the counvien ivhcr; the trees grow nst . . . ally, and r . . . i on a hot-bed in the faring T . . . when the plants come up, ilwy muft be treated in ihi . . . mane maninT a^ hatJi I eon dirccti : d for the Awiy . . . , to which arid J the reader is dcfireii to turn for thie culture.

Thf fecone! fort grows naturally in India, where ir grows w a gwit htight, with a large trunk, fending out many long I . . . branches, garnifhed with trifoliate leaves, which art oblong, entire, and end i . . . cuic points; between th . . . thefe the branches are armed with long Erap tiar^F, which come out by pairs, and Ipirad afund . . . towers Htprodndeb il, imall duftt-rs from the fide of the branches; five or feven ftanding upon a eomroo . . . branchin; fiwt-flalk : thefe have each five acme p ; . . . which are reflexe?, and many ftamin.i wlitd) Hand round n I angle ftyle of the funt: length; die jj^tjls are green on the outfctie. whitifli withini . . . and have a grateful odour. After the flower is fall, the germen fwells to a large fruit die Ew ol' an < * orange, having a har | (hell, WILLI indoi is a fleshy vilcous pulp, t: n yillinvitI colour, having many oblong plain feeds inclofed within it; the pulp of this fruit hath an agreeable flavour when ripe, i' . . . is frequently eaten in India, where they ferve up the fruit, mixed with Sugar and Orange, as their delerts, and is esteemed a great delicacy.

This fort is propagated by feeds, which muft be procured from theplceiw . . . where it grows naturally; thefe muft be fown uj . . . on a good hot-bed in the fpring, and when th . . . plants are fit to remove, they flould be eazily h tratifplair- . . . into a fmall pot filled with light kitchen-garden earth, and plunged into a hot-bed of runners back, flanding them every day from the fun, until i . . . they have taken fresh root, after which they may be trci:t J il . . . the fame manner as the Amocia, but

but iliould be fparingly watered in the winter lea ion. C K KH1S. Lin. Ccn. Plant. 619. Hieracioidt Vaill. Aft R. Sc, 1721. Illicraiciutn. Tourn. Bafjrii II ..*:-].-weel.

The CHARACTERS arc, ft bulb a fewtr campofid of many hermaphrodite fcrel,\ which are included in a dvtbtie impalement\ the eu;er is fberty fprcading, midfalls off; tht inner tint is permanent, fintt, muS farrowed, havii% many xarrw? fedn, • art eentraSat together at tbt top. The birma-fbrodstt florets art ef me Uufi they art uniform, tngue- .. ami art indenltd at the tap in five parts \ theft fprid ever each other ltr the fcatts if fjih •, ther bout tilth five port baity jliitnina, terminated by cylindrical fummit. The germ™ is fiiuatfd in the center if tbt finrtti, fttppring a flender ftjc, crowned ty tMS refuted fitgaas. Tht germm afterward btesmes a &blmg fad, crowned •with a long feathery down, which Jit) apsn little foat-fiaUts.

TJiis genus of plants is ranged in die firft fc&ion of Linnius'B nintw-nth etaft, intitlot! Syngenelii Polyzamia Aquali. The fflowers of this fitSbn are compolct! of benniapJiroditc florets, which are fruitful.

- 1. CaiPi" \Rttbra) fojiiis amplexicaulibus, lyrato-runcinatis. Vir. Cliff 70. *Crepis Kilb tyrt-jhtptd leaves embracing tbt futiks.* Hieracium dctttu l™nis folio, Hore fuave rubente. C. B. P. 127. *Ha-vhfe/J with a Dux-dtliion leaf.*
- 2. CREPIS (*Bsr&ntii*; filiis pinnaris angutaris, petiolitric, Llcntatis. Hrod. Exyd. 126. *Crepiswith angular, h... id, v'nyA tmvt, having fatftalks.* Hieraciuni fojii; Cjdiorei lylvefrtu viliofis, odore Cjltorei. Bot. Monlp.
- 3. CRIPIS (*Belies*) involucris calyce longioibui incurvatis, foliis lancrolatis tlentatis. *Cupis -jiiith an incurv; wfaerum Urngr than the tiupti/mint, md fpttir-... -iv€j.- Hirneium inedkvniBrum, Bo... .r. Bat, (85. Greater Sfamfi HeeahiceeJ*

4. CUE?!' - .., I; tlliiianipleKicaitlibui, oblongis, acumitiati* inferioribu?, fopernJ, fummis interne, den- [icil]jeis. Uort. UpUl. 3j8. *Crepis inith ebfongjminutd leavts embracing the futil); tbt lwer bitit\$ indtr. : upwardj "id the upper downzvard, Hieraciuin Alpinuiu Scraonerx- folio. Tourn. Infl. 471.*

There are lWeral oilier fpecics of this g<u, fome of which crow naturally ins England, and othen art-weeds in diven parts of Europe, fu are rarely admitted into gardens, therefore i frail not enumerate them here, The firft fort grows naturally in Apulia, but is now commonly cultivated in iinglilfi gardens for ornament; it is an annual plant, which perithe* after it hath ripencil feeds. This hath ..any spear-shaped leaves which fspread on the ground, di ..e jagged on their li'ieff between them arile the brsr;...ng stalks .. which grow a fool and a half high, dividi .. riyndendchranches.gimiflicLi' with oblong leaves deeply indented on their tdgw, embrit: .. the stalks with their baft l the folks arccadi I .. t^onc large radiated Sower, of a loft red colour, ewni .. many half norm, which are iucceedtd by .. crowned with a feathery down. It flowers in June ami July, to prevent their being broken by winds orrain. Ifthc ll-eds ate fown in aiitu: .. or permitted la fcafter, tnt pi .. will come up and tiwci': .. inter without belter, and ilieft v.\ flower early in the fpring.

The feeds of this plant mould be fowm in the (pring, .. the borders Ot rite flower-garden whert they are defigned to remain, (b that if fix or eight feeds arc fown in cadt patch, when the plant* come up, licy may be reduced to three or four; and if thrce arc kept dean from WL-ads, they wilt require nc other culture, excepting the putting fmail ficks dij, .. Men the llalki, to prevent their being broken by winds orrain. Ifthc ll-eds ate fown in aiitu: .. or permitted la fcafter, tnt pi .. will come up and tiwci': .. inter without belter, and ilieft v.\ flower early in the fpring.

The fei/or.d Tjt frows naturally in the fourth of France, and in Italy. This is I Hieracii plant, and lbmetiineii, wln-n ic is in puor groui-tl, it will • continue longer^ it hnth a tliuk rap- .., which ftrikes deep into tte ground, fending OUT many fmall flars, the lower leaves are fijin lcjiir i • .. inches long, and about a quarter of ail inch broad, having li .. equal deep ja's on their cilges, the fegmenJ l ending in acute point; from the fanic root ..ries four or five flalks, which grow about nine or ten Inches high, the • lower port of ifific arc garnilhtU with leaves of the form witJi thofc near the root, but =w fmalln, more jagged i the upper part of the ihlks arc n and branch out imo two, and tomeimtrs three branches, each being terminated by otic Bow gold colour, indiniip to copjHT, compelled of many florets which are included in a fingie empsdei: the flowers are li ..ceded by oblong narrow feath, crowned with a lathery d ..vn: ti^t: whole plant, when bruifeii, emits a llrong odwr of Call or. It flowers in June, and the (feds riptn in mtunm. This is frequent!)' prefcrved in girdens tor tic fake of va- (icty.

It K proj)3(p;cd by fceJis in the fame manner a the firft farr, but as this contimips longer, the Teedj need noc be annually fown. i be phnli ivijl te .. ure no other culture but to keep them clean from v. .. nti if ihc feeds are permitted to l .., the .. iuiti will ronie up without any trouble, fo need only be thiancti where thty are too I • ..

The third foci ti an annual planr, which grows naturally in Spain, but ii now fincqu ..ly propagated in the rtnwer-gaKlfm lbr ornament. This put-out leaves near the rout, wtikli arc nint inches long, and alnioft two broad in die middle, oi a light g 11 volour, and 3 linle .. based on their ftalks the flalks riie a foot and a half high, dividing into man branthes, grmitfad with leaves of the lam .. form as thufe at bottom, but findler, and .. in die to the bnmi .. the flowers are produced at the end of the bnocfao l thdc have n douLic ..mpalcment, compofed of many long very narrow .. leaves the outer lcties arc rHclLcd downw ..rd, and .. turn upward again, and arc inflated at their extremi: .. The flowers are compofed of many florets, which arefreicht .. out on one fide at the top likeatongt', thec arc m at th .. extremities into Jour or five parti; .. tkijy Ipriid regularly in form ot r ..y*, and a;c fituated over each ottr like fcalei of filh; ihert' are two var: .. of this one with a deep yel ..aw, and the other of J fulphuir i luur intlinins; to white \ but both have .1 dark black brttmtn or muitlc, Co make u pref .. appears in a garden. It flowers in June and July, and dii feeds rijen in autumn. This plant requites [he iltr .. culture as the firft. and is equally lindry, to ilut where the feeds are permitted 6 .. feater, the plants will .. come up without l ..

The fourth fert crows naturally on the Alps; this is » also an anULd plant, Hrhidi (cndi out many oblo poiittfi leaves near the root; they av; five inches long, and almost two broad at their L .., beforeing gradually to apu .. the wtt --r pan oft; .. are fcarcely imlcnewl, but their lower par .. art l .. the flalks ire lliving and upright, tiling l .. two feet high, dividing into three or .. four branches, which grow erect, and arc terminated by pale .. white flowers, included in a ibujig hiiry tuipalcment, which contracts clofe to .. ward the top; the flalks are garnifhed with leaves of the fame form ar, the lower, which embrace them v-itli theirbafei where .. are flightly indented, but their in .. per parts are erect; their leaves are hairy and rough, it floMera in jui .., and the feeds ripen in autumn. This rejuite .. the fame culture as the firft, and tht leeds will leaner aboi .. the garden, fo that if the planti are not .. i .. ma .. in win t .. can .. lctts without any ..

CRESCENTIA Lin. Gen. Pl. n. 680. Cujc .. Plum. Nov. Gen. a{. tab- if. Calabafli-irct. The CiiARAcREmt arc, Tbt ftwter hath eitfttal, toUii u ..rgular, lcting a .. re ..

I gibbous lU, ... meqtd figmtti, which art rejixtj; tih I tab an cmpclmait, •Kktib irfieri, tj ent Uaf, cut into (wo abtaft Jegmait, izbbk are (uniOve. It balh fear fiamama, two <if wheli art efjhe length ef thi fttid% the alter art fnti)tr, tr-

This genus of plants is ranged in the :tcnnd ftiction of Lemna's touster ith cliih, initted Didynamia Atigi diermia. The lower having two long and two thurt fcumiut, and the feds being included in a caplule.

The -virus arc, i, Cai;:ct*TU (Ctjtiti) fnlii. lanceolmis, uninqie aicenuatb. Hon. Cliff 357. Crtftntiawi.' ... Cujett IJ- ... Calaijib-lrei isish ohkng luurmi kovti, end i forgt eval fritti.

a. Caisera' ... oblongO-nvatis, fmi to nax: ... Cujett IJ- ... »5. SrooA-knvd Cafoflafo-tree tv&ofe fritti imtb a imitir fir!!

There arc fume varieties of thefe trees, which only differ in the fee and fliape of thnt fruit; but thofe are variations which arite from feeds of the liunc tree, fo sic not to bE enume ...

The first ... CTOWS naturally in Jamaica, and h all the Leeward Islands. The bath a i iick mink, covred with a lutifli batk, which riles from twenty to thirty feet high, having fveral knots all the 1. ...

The feeds of this fruit are cleaned of their pulp, and the outer flin taken off, by the inh.il;

ing aips, fome of whi h are tipped with filver, and CO til, necks they falten handies, and fove of till! lone fmall froic arc formed inn the Ehapi of fpoons or ladles, and are uiid a fudi; I the round eods are cut throught the middle, and art* ufed M cups : of Chd. •late. The !.rdian'i pur a number (: small tines inc* thefc lhells, when clearrd at 11 n pulp, to make a fort of rattle: in fhort, they convert thtl; thels into mmy fbn (• furniture, which is the principal uli' mmie i-! the rfor XIII- pulp i. (t-ldii.n eate, ...

The fecond fort icldoci tifes more than five-n or two •• feet high; iliis hath .m imri^ht truak, covered with a white Tmoolh burk, iendin^ out m^iyy : lateral branches at thct' p, garnifhed with leaves three in length, and one and a qu.inor broad ; thei- arc ranged alternately •• i ll- branches, filling Ufui: thux four stalks ; they ar i 'l' 3 Jct)er gm-n than tholr of tlic Grt ibtt, and thit'r edges .Arc entire. The law-

crank i d&c& are fimBer, and •• de [el low cqlour thon thirfe of the firft; the fruit qj tins a fomctjmia r>und, at c •ers oval, fome being much larcer Uan die IH ...

These trees are rooicndcr to li* shroul in E. viand, fo require a warm (love to b< ...

CRESS the Garden. See LYSIMUM. CRESS the Indian. Set Tkoil'.(EoLii<. CRESS the Water. CRINUM Lin. Gen. Plant. 366. Lilio-Aphididat. Com. Rir. j^.. iillen. Hort. Edh. 171. Aphidid Lily.

"I he CHAACTIR are, The wood of this is compofed of two oblong berries, in form of a ...

in the bottom of the flower* supporting a long slender style, crowned by a small trifid stigma. The germen afterward becomes an oval capsule with three cells* each containing one or two oval seeds.

This genus of plants is ranged in the first edition of Linnaeus's sixth class, intitled Hexandria Monogynia, the flower having six stamina and one style.

The SPECIES are,

1. CRINUM (*Africanum*) foliis sublancoatis planis, corollis obtusis. Lin. Sp. Plant. 292. *Crinum with plain spear-shaped leaves* and obtuse petals.* Hyacinthus Africanus tuberosus, flore caeruleo umbellato. Hort. Amst. 1. p. 133. *African tuberous Hyacinth* with a blue umbellated flower.*
4. CRINUM (*Ajaticum*) foliis carinatis. Flor. Zeyl. 127. *Crinum with keel-shaped leaves.* Liliium Zeylanicum, bulbiferum & umbelliferum. H. L. 682.
3. CRINUM (*Americanum*) corollam apicibus introrsum unguiculatis. Lin. Sp. Plant. 292. *Crinum with the tops of the petals formed on the inside like the nails of a finger.* Lilio-aphodelus Americanus sempervirens, maximus Polyanthus albus. Com. Rar. Pl. 15. tab. 15.
4. CRINUM (*Latifolium*) foliis ovato-lanceolatis acuminatis sessilibus planis. Lin. Sp. 419: *Crinum with oval* spear-shaped* plain leaves* ending in acute points.* Jovanna-pola-tali. Hort. Mai. vol. 11. p. 77.

The first sort grows naturally at the Cape of Good Hope, from whence it was brought to the gardens in Holland, and hath since been spread into most of the curious gardens in Europe. The root of this plant is composed of many thick fleshy fibres, diverging from the same head, which strike deep into the ground, and put out many smaller fibres, which are white and fleshy* from the same head arises a cluster of leaves surrounding each other with their base, so as to form a kind of herbaceous stalk, about three inches high, from which the leaves spread only two ways; appearing flat the other two. The flower-stalk arises by the side of these leaves, which is round, hollow, & is near three feet high, terminated by a large head of flowers, included in a kind of sheath, which splits into two parts, and is reflexed. The flowers stand each upon a foot-stalk about one inch long*, they are tubulous, have but one petal, which is cut almost to the bottom, into six oblong blunt segments, which are waved on their edges; in the center is situated an oval three-cornered germen, supporting a long style, which is attended by six stamina, two of the same length, two somewhat shorter, and the two which rest upon the lower segments are the shortest. The flowers are of a bright blue colour, and grow in large umbels, so make a fine appearance. They begin to flower in September, and frequently continue in beauty till spring, which renders them more valuable.

This plant is propagated by offsets, which come out from the side of the old plants, and may be taken off the latter end of June, at which time these plants are in their greatest state of rest, when the plants should be turned out of the pots, and the earth carefully cleared away from the roots, that the fibres of the offsets may be better distinguished, which should be separated from those of the old roots, being careful not to break their heads. But where they adhere so closely to the old plant, as not to be so separated, they must be cut off with a knife, taking great care not to wound or break the roots of either the offsets or the parent plant. When these are parted, they should be planted each into a separate pot, filled with light kitchen-garden earth, and placed in a shady situation, where they may enjoy the morning sun, giving them a little water twice a week, if the weather proves dry but they must not have too much wet, especially at this season, when they are almost inactive; for as the roots are fleshy and succulent, they are apt to rot with great moisture. In about five weeks time the offsets will have put out new roots, when the pots may be removed to a more sunny situation, and then they may have a little more water, which will strengthen

their flowering, but it must not be given them too liberally for the reasons before given. In September they will put out their flower-stalks, and toward the end of that month the flowers will begin to open, when, if the weather should not be good, they should be removed under shelter, to prevent the flowers from being injured by frost or too much wet; but they should have as much free air as possible, otherwise the flowers will be pale-coloured and weak. Toward the end of October they should be removed into the green-house, and placed where they may enjoy as much free air as possible, and not be over-hung by other plants; and during the winter, they may have a little water once a week or oftener in mild weather, but in frost they should be kept dry. This plant only requires protection from frost and moisture, so should not have any artificial warmth in winter, and must be placed in the open air in summer.

The second sort hath large bulbous roots, which send out many large fleshy fibres, having bulbs formed at their ends; the leaves are near three feet long, hollow on their upper side, and closely fold over each other at their base, spreading out on every side; the outer leaves generally turn downward at the top; they are of a deep green, obtuse at their points, with a ridge on their under side. The flower-stalk arises on one side the leaves, which is thick, succulent* hollow in the middle, and a little compressed on two sides; this grows two feet high or more, and is of the same colour with the leaves, and are terminated by large umbels of flowers, with a sheath or cover, which splits lengthways, and reflexed back to the stalk, where it dries and remains*, the tubes of the flowers are narrow, near four inches long, and the upper part is deeply cut into six long segments, which are reflexed back almost to the tube, in the center arises the style, attended by six long stamina, which stand out beyond the petal, and is terminated by oblong protruded summits of a yellow colour. After the flowers are past, the germen, which is situated at the bottom of the tube, becomes a large, roundish, three-cornered capsule, having three cells, two of which are generally abortive, and the third hath one or two irregular bulbs, which if planted produce young plants.

The third sort hath broader leaves than the second, which are plain, and not hollowed on their upper side, but they are shorter and of a lighter green*, these embrace each other at their base; by the side of these arises the flower-stalk, which is compressed and hollow, rising about two feet high, and terminated by large umbels of white flowers, like those of the former sort, but the segments of the petal are broader and not so much reflexed.

The fourth sort hath roots like those of the second sort*, the leaves of this are narrower at their base, and are stained with purple on their under side; the flower-stalks are purple, and grow to the same height as those of the second; the flowers are in shape like them, but the tube is purple, and the segments have a purple stripe running through them*, the stamina also are purple, which renders this more beautiful than either of the other sorts; and these differences are constant in all the plants which rise from seeds, so there can be no doubt of its being a distinct sort.

These three sorts grow naturally in both Indies, so are very tender, therefore must be kept in a warm stove, otherwise they will not thrive in England; they are easily propagated by offsets, which the roots put out in plenty; or by the bulbs which succeed the flowers, and ripen perfectly here. These must be planted in pots filled with rich earth, and if plunged into the tan-bed in the stove, the plants will make greater progress and flower oftener, than when they are placed on shelves; though in the latter way they will succeed very well, provided they are kept in a good temperature of heat. The roots should be transplanted in the spring, and all the offsets taken off, otherwise they will fill the pots and starve the old plants: they must be frequently refreshed with

but it must not be given them too plentifully* especially in winter. These sorts flower at every season of the year, which renders them more valuable; for where there are many plants, there will be almost a perpetual succession of flowers, which emit a very agreeable odour.

CRITHMUM. Lin. Gen. Plant. 303; Tourn. Inf.; 11. H. 317. tab. 169. Samphire.

The CHARACTERS are,

It is a plant with an umbelliferous flower 5 the great umbel is hemispherical, and composed of many smaller of the same figure, the involucrum of the general umbel is composed of several spear-shaped leaves*, those of the particular umbels have very narrow leaves the length of the umbel & the general umbel is uniform; the flowers have five oval inflexed petals* which are almost equal they have five stamina the length of the petals* which are terminated by roundish summits. The germen is situated under the flower, supporting two reflexed styles, crowned by obtuse stigmas. The germen afterward becomes an oval compressed fruit, - dividing into two parts, each having one compressed, elliptical, furrowed seed.*

This genus of plants is ranged in the second section of Linnaeus's fifth class, entitled Pentandria Digynia, the flowers having five (lamina and two styles).

The SPECIES are,

1. **CRITHMUM** (*Maritimum*) foliolis lanceolatis carnosis. Hort. Cliff. 98. Samphire with spear-shaped fleshy leaves. Crithmum five Feniculum maritimum minus. C. B. P. 288. Samphire.

2. **CRITHMUM** (*Pyrenaicum*) foliolis lateralibus bis trifidis. Hort. Cliff. 98. Samphire whose smaller leaves on their sides are doubly trifid. Apium Pyrenaicum thapifacae facie. Tourn. Inf. 305.

The first sort grows upon the rocks by the sea-side, in many parts of England. This hath a root composed of many strong fibres, which penetrate deep into the crevices of the rocks, sending up several fleshy succulent stalks, which rise about two feet high, garnished with winged leaves, which are composed of three or five divisions, each of which hath three or five small, thick, succulent leaves near half an inch long; the foot-stalks of the leaves embrace the stalks at their base. The flowers are produced in circular umbels at the top of the stalks*, these are of a yellow colour, composed of five petals, which are near equal in size, and are afterward succeeded by seeds somewhat like those of Fennel, but are larger. This herb is pickled, and esteemed very comfortable to the stomach, and is very agreeable to the palate; it provokes urine gently, removes the obstructions of the viscera, and creates an appetite; it is commonly used for sauce*, it is gathered on the rocks where it grows naturally, but the people who supply the markets with it, seldom bring the right herb, but instead of it they bring a species of After, which is called golden Samphire, but hath a very different flavour from the true, nor has it any of its virtues. This grows in greater plenty, and upon the plain ground which is overflowed by the salt water; whereas, the true Samphire grows only out of the crevices of perpendicular rocks, where it is very difficult to come at. It flowers in July, and the seeds ripen in autumn.

This plant is with difficulty propagated in gardens, nor will it grow so vigorous with any culture, as it does upon rocks; but if the plants are planted on a moist gravelly soil, they will thrive tolerably well, and may be preserved some years. It may be propagated either by seeds or parting the roots.

The second sort is by Tournefort ranged in his genus of Apium. This grows naturally on the Pyrenean mountains. It is a biennial plant, which doth not flower till the second year, and perishes soon after the seeds are ripe. There are two or three sorts of this plant, which differ in their outer appearance, but I am not certain of their being distinct species. One of these is titled by Mr. Ray, Apium montanum five pteris album. This is of humbler growth than the other; the small leaves are broader, and not so much cut on their edges, and we of a paler green:

these plants are preserved in a few gardens for the sake of variety; they are propagated by seeds, which should be sown in the autumn where they are designed to remain, and will require no other culture but to keep them clean from weeds* and thin them where they are too dense.

CRISTA GALLI. See PSDICULARIS;

CRISTA PAVONIS. See POINCIA*A.

CROCUS. Lin. Gen. Plant. 53. Tourn. Inf. R. H.; 350. tab; 183, 184. [isfo called of the youth Crocus, who (as the poets feign) loved Smilax with so violent a passion, that, by reason of impatience, he WAS turned into a flower of his name.] Saffron;

The CHARACTERS are,

It hath spathe or sheath of one leaf. the flower hath one petal, which is deeply cut into six oblong segments^ which are equal. It hath three stamina which are shorter than the petal, terminated by arrow-pointed summits. The roundish germen is situated at the bottom of the tube supporting a slender style, crowned by three twisted stigmas, which are jawed. The germen afterward becomes a roundish fruit, with three cells, filled with roundish seeds.

This genus of plants is ranged in the first section of Linnaeus's third class, entitled Triandria Monogynia, the flower having three stamina and one style.

The SPECIES are,

1. **CROCUS** (*Sativus*) spathe univalvi radicali, corolla tubo longissimo. Lin. Sp. Plant. 36. Saffron with a spathe near the root, having one valve, and a long tube to the flower. Crocus fativus. C. B. P. 65. Cultivated Saffron.

2. **CROCUS** (*Autumnalis*) spathe univalvi pedunculate,* corolla tubo brevissimo. Saffron with a spathe on the foot-stalk, having one valve, and a very short tube to the flower. Crocus juncifolius autumnalis, spire jenagno purpurascete. Boerh. Ind. alt. 2. 120.

3. **CROCUS** (*Vernus*) spathe bivalvi radicali, floris left filibus. Crocus with a bivalve spathe near the flowers fitting close to the ground. Crocus: lius, flavo flore varius. C. B. P. 66. £ Bihop's Crocus.

4. **CROCUS** (*Biflora*) spathe biflora corolla brevissimo. Crocus with two flowers in each spathe, having very narrow tubes. Crocus vernus, striatus, vylgnris. Par. Bat. Ordinary, spring, striped Crocus.

There are a much greater variety of these flowers than are here enumerated -, but as most, if not all of them are only femal variations, I thought it would be needless to particularize them here, especially as there are frequently new varieties obtained from seeds. Those which are here enumerated, I think must be allowed to be specifically different, since they have many distinguishing characters, which are sufficient to determine the specific difference in plants.

The first sort is the plant which produces the Saffron; which is a well known drug; this hath a roundish bulbous root as large as a small Nutmeg, which is a little compressed at the bottom, and is covered with a coarse, brown, netted skin; from the bottom of this bulb is sent out many long fibres, which strike pretty deep into the ground; from the upper part of the root come out the flowers, which, together with the young leaves, whose tops just appear, are closely wrapped about by a thin spathe or sheath, which parts within the ground, and opens on one side. The tube of the flower is very long, arising immediately from the bulb, without any foot-stalk, and at the top is divided into six oval obtuse segments, which are equal, of a purple blue colour. In the bottom of the tube is situated a roundish germen, supporting a slender style, which is not more than half the length of the petal, crowned with three oblong golden stigmas (which is the Saffron) these spread alunder each way. The style is attended by three stamina, whose bases are inserted in the tube of the petal, and rise to the height of the style, where they are terminated by arrow-pointed summits. This plant flowers in Q&ber, and the leaves keep growing all the winter, but it never produces any seed* here.

The fecond fort grow) natuially on the Alps stru l Idveiiian mountains: this haili ;i final ler bulbous root than the firft, which is more comprcItt by the flowers appear about the fame feifon with tht former, bur they rite with a (horc foot-Italkj having 3 floiit fpattia or (heath juft below the flower, which covers it before it expands. The tube of the flower • very iliort, tlit petal being divided xlmoft to the bottom, and tie fegments terminate in acute points; the Ihmina and ftyle are fiiorr, and tlic leaves oi' tlic plant arc very narrow. The flower is of a d « p blue; but there is a variety of this with a (ky blut Bower, which is liippofed to have been produced by leech. flr. Linnxus has fuppoieil thefc, and alto all the varieties of the Spring Crocus, to be but one (nedes, but there can be no doubt, of thclb being Jiftinfnt from thole of the Spring.

The third fort hou i a pretty large, comprefled, bulbous root, covered with a light, brown, netted Ban, from which, arife four or five leaves, like thofeof the the other Vernal Crocuies, of a purpiifh colour on their lower parts; from between thcle come out one or two flowers of a deep yellow colour, fitting clofr between the young leaves, never rifing above two inches high; thefe have an agreeable odour; the outer Jcgments of the petal arc marked with three black ftreaks or ilripes running lengthways from the bottom to the top of the feemenr; thde arc narrower than the inner fegmcnc. From the double arrangement of thefe fegmenrs -fame have called it s double flower. Thefe frgments have dark purple bottoms, and the tube of the flower hath is many purple a-, there are fegments in the petal. Out of the center of the tutic arifes a (lender ftylc, crowned by a gokctn ftigma, which ts broad and flat, and is attended by three (lender (lamina of the lame length, termiruieil by yellow III mm its, After the flower is pill:, thrgrer-IV ~ "••' of the ground, and fivefa to a nwtnd- •d feed-vefli-L, which opens in three i with rundifti brown feeds. This •; Lrocufcsin the fpring.

The fourth fort rill-s with a few very narrow leaves, which are, together wkh the flower-buds, dofdy wrapped round by a fpathaor lheaiah, out of which arw two flowers, one of which hi'h a longer tube than the other, but ihefc arc wry (lender, tnd do not rile much above the fpatvi; there the petal enlargei, and a divided into fa obtufc fegment.*, which are of equal fac; they are of a dirty white on their outside, with three or four purple Urines in e>th -, the jniidc of the petal is of * purer wliite; tie B omms and Iryle Fie nearly the fame as thofe a/ the former fort. This is one of the earlicft fores which Bowers

- The VAftir-nr.! of the autumnal Crocus are,
- 1. The fwi-ct-finclling autumnal Crocus, whole flowers tome before the leaves- C. B. Thb is our iecond fort.
- s. The autumnal awOTitin Crocia. C. B. This barh a pter blue flower. r- r -a
- 5. The many flowering bluiifi autumnal Crocus. C. B. ThU hath many (ky blui; flowers.
- 4. The (mall flowering autumnal Crocus. C. B. / lus liath 3 itnall deep blue flower.

- The V^RUTits of the Spring Crocus arc,
- t. Broad"l«vcd, purple, variegated, Spring Crocus. C B. Tlus hath broad leavei and a deep blue flower
- a. Broid-leavtt) Crocus of the fpring with a purple flower. C. B. This hach a plain purple flower.
- 3- Broad-ieaved Spring Crocus with a Viotet-coloured flower CB Thi> h«h³ large deep blue flower.
- 4- Spring Crocus, with a white flower and. a purple bottom. C. B.
- 5- Bro»d-kaved, white, Tiriegsted, Spring Crocus. C B.
- 6. BrowMesved Spring Crocus, with many purple VioletBOWCIS ftriped with white. C. B.
- 7. Broad-leaved Spring Crocus with an Mvcolourml flower.

- 8. BraiiMearci} Sprirtg Crocus with a laws yeltow fioiver. C. B.
- 9. Broait-leavud Spring Crocus with a fmallcr and paler yell w Bower. C. B.
- 10. Broad-leaved Spring Crocus, with fmallcr yellow Bow
- 11. Narrow-leaved Spring Crocus with a fmallcr l (lone-cvijL red l
- 11. Narrow-ieaved Spring Crocus with d Emsll white flower.

Their arc dtE jmriLipid varieties wliicll I Jjave oblercvtd in ii: English g.trdMs, but there arc many m7ntianed in tlic foreign amloBDc of flowers, many of which iro fo nearly alikr, is ic;rocc to be t' unguished 1 md if the heads of these Bowers wete fown, there may :t be 3 greater variety of them obtaintit than is at prejl-nt; btl as they propitiate v«y fail by i)fi;ets, the l«ds arc very rarely rrpuril«J. All tl; the feveral varieties of Croctuf:s arc vt-ry hart •nd * ill inende exceeding I y Iry ;. their roots, i' -wciil. if O., are fulli ed to temnin two or three vearj unrr move I -, (lie) will grow in slmoST any foil or fitt and tte vcrj^l great otamenK 10 ag.,rdrn early in ih fpring of the year, before maiky otluT Rowers appear. They areconxmunly plinM(lr>sr the edges of border on the lides of walks •. in doing of which, you fhould be careful to plant fuch forw in tlic fame line as flow at fti: liime time, and arc of an equal growth, Olf (r-wid the lines will feem imperfect. Thiefe roots, lofi- ing their fibres with their leaves, may then bo laken up, and kept dry until the beginning of Septe, obferving to keep them from vermin, for the l mice are very fond of them. When you plant ftufe roott {after liaving drawn a line upon the border,) make holes with n dibble about two inches deep or more, according to the lightnefs t>r the toil, and two in dilbin; h other, in which you mull plj the roots with the bud uppeTmoftj then with a l rill up the holes in iVnth a manner as that tlic L part of the root may bi' covered an iriefi or m' . le- mg cartiil not to leave any of the lioesopen; fo this will entice the mice to them, wliichj when on* they have found out, will deftroj all your roots, if they are not prevented.

This is the way in which thefe flowers are common^l dilpofed in gardens, hut the be!ter way is > plan them fix or ci^hi near each other in bundles bemce; ftiiis! fhruvs, or on die borders tff rthe flout r-garden -, «"hvrc, if the viiietin of thefe flotven are planted in different ji arches, and properly intermiied, they wi) make a much : ter appearance tbin when they lre dif>olcd in the olt! method of (trait td;:ii)^5. In January, if the weather is mild, theCrocus will < fira appear above ground 1 nnd in February (their flowers will fpear, before the green leaves arc grown to : lei^tii, fo that the flower feems at firH to be laken; but iboji after die flowers decay, the crecti leaves grow to be Dr or right inches long, which (liould f be cut off until they decay, notwithstanding diey : appear a little unCghtly; tor by cutting off the leave the root* will be (b weakened as not to arrive at hi their ufual bignft, nor will [licir flowers theii ing year be half fo large. Their tictls arc common ripe'about tite Litter end of April, or the begin of May, when the green leaves begin it) decay. The autumnal Crocufes are not Jo great increalers m are thofc of the fpring, nur do they produce ll mir climate ; fo that they are left common in thtr j den*, except the tnie Saffion, which Is for ufc in Kfeat plenty in many para 'A T.n; i ihrfc muftlie taken up every third year, as was directed for the Spring Crocufes, oihcrwife ihe rooo will mn long, and produce no Bower* j but they iliould not bAept out of tite ground longer than the bejfinning of Augaft, rbr they commonly produce their flowers the beginning of October, fo that if tility remain too long out of the ground, they will not produce their fluiwei-s fl) fron-T nor n fuvii plency, as when they *io Ranted early.

*The method of cultivating Saffron being somewhat curious, I thought it not improper to insert in this place an abstract of it, as it was presented to the Royal Society by Dr. James Douglas.

As Saffron grows at present most plentifully in Cambridgehire, and has grown formerly in several other counties of England, the method of culture does not, I believe, vary much in any of them, and therefore I judge it sufficient to set down here the observations which I employed proper persons, indifferent seasons, to make, in the years 1723, 1724, 1725, and 1728, up and down all that large tract of ground that lies between Saffron-Walden and Cambridge, in a circle about ten miles diameter.

In that county Saffron has been cultivated, and therefore it may be reasonably expected, that the inhabitants thereof are more thoroughly acquainted with it than they are any where else.

I shall begin with the choice and preparation of the ground. The greatest part of the tract already mentioned is an open level country, with few inclosures; and the custom there is* as in most other places, to crop two years, and let the land be fallow the third. Saffron is generally planted upon fallow ground, and, all other things being alike, they prefer that which has borne Barley the year before.

The Saffron grounds are seldom above three acres, or less than one; and in choosing, the principal thing they have regard to is, that they be well exposed, the soil not poor, nor a very stiff clay, but a temperate dry mould, such as commonly lies upon chalk, and is of an Hazel colour; though if every thing else answers, the colour of the mould is pretty much neglected.

The ground being made choice of, about Lady-Day, or the beginning of April, it must be carefully ploughed, the furrows being drawn much closer together, and deeper, if the soil will allow it, than is done for any kind of corn; and accordingly, the charge is greater.

About five weeks after, during any time in the month of May, they lay between twenty and thirty loads of dung upon each acre, and having spread it with great care, they plough it in as before. The most rotten dung is the best; and the farmers, who have the convenience of making it, spare no pains to make it good, being sure of a proportionable price for it. About Midsummer they plough a third time, and between every fifteen feet and an half, or pole in breadth, they leave a broad furrow or trench, which serves both as a boundary to the several parcels, when there are several proprietors to one inclosure, and to throw the weeds in at the proper season.

To this head likewise belongs the fencing of the grounds, because most commonly, though not always, that is done before they plant. The fences consist of what they call dead hedges, or hurdles, to keep out not only cattle of all sorts, but especially hares, which would otherwise feed on the Saffron leaves during the winter.

About the weather we need not only observe, that the hottest summers are certainly the best, and therefore, if there be gentle showers from time to time, they can hardly miss of a plentiful crop, if the extreme cold, snow, or rain of the foregoing winter have not prejudiced the heads.

The next general part of the culture of Saffron is, planting, or setting the roots; the only instrument used for which is a narrow spade, commonly termed a *spade* (hovel).

The time of planting is commonly in the month of July, a little sooner or later, according as the weather answers. The method is this: one man with his spade (hovel) raises between three and four inches of earth, and throws it before him about six or more inches, wipers, generally women, following with heads, place them in the farthest edge of the trench he makes, at three inches distance from each other, or thereabouts; as soon as the digger or spitter has gone once the breadth of the ridge, he begins again at the

other side, and digging as before, covers the roots last set, and makes the same room for the setters to place a new row, at the same distance from the first, that they are from one another. Thus they go on, till a whole ridge, containing commonly one rod, is planted; and the only nicety in digging is, to leave some part of the first stratum of earth untouched, to lie under the roots, and, in setting, to place the roots directly upon their bottom.

What sort of roots are to be preferred (shall be) hewn under the fourth head, but it must be observed in this place, that formerly, when roots were very dear, they did not plant them so thick as they do now; and that they have always some regard to the size of the roots, placing the largest at a greater distance than the small ones.

The quantity of roots planted in an acre, is generally about 16 quarters, or 128 bushels, which, according to the distances left between them, as before assigned, and supposing all to be an inch in diameter one with another, ought to amount to 392,040 in number.

From the time that the roots are planted, till about the beginning of September, or sometimes later, there is no more labour about them; but as they then begin to (pire, and are ready to (hew themselves above ground (which is known by digging a few out of the earth,) the ground must be carefully pared with a (harp hoe, and the weeds, &c. raked into the furrows, otherwise they would hinder the growth of the plants,

In some time after appear the Saffron flowers, and this leads us to the third branch of our present method. The flowers are gathered as well before as after they are full blown, and the most proper time for this is early in the morning. The owners of the Saffron get together a sufficient number of hands, who place themselves in different parts of the field, who pull off the whole flowers, and throw them handful by handful into a basket, and so continue 'till all the flowers are gathered, which happens commonly about ten or eleven o'clock.

Having then carried home all they have got, they immediately spread them upon a large table, and fall to picking out the filamenta styli, or chives, and together with them a pretty long proportion of the styli itself, or string to which they are joined; the rest of the flower they throw away as useless. The next morning they return into the field again, whether it be wet or dry weather, and so on daily, even on Sundays, till the whole crop be gathered.

The chives being all picked out of the flowers, the next labour about them is to dry them on the kiln. The kiln is built upon a thick plank (that it may be moved from place to place) supported by four flint legs; the outside consists of eight pieces of wood about three inches thick, in form of a quadrangular frame, about twelve inches square at the bottom on the inside, and twenty-two inches at top, which is likewise equal to the perpendicular height of it. On the fore-side is left a hole about eight inches square, and four inches above the plank, through which the fire is put in 5 over all the rest laths are laid pretty thick, close to one another, and nailed to the frame already mentioned, and then are plastered over on both sides, as are also the planks at bottom very thick, to serve for a hearth. Over the mouth, or widest part, goes a hair cloth, fixed to the sides of the kiln, and likewise to two rollers, or moveable pieces of wood, which are turned by wedges or screws, in order to stretch the cloth. Instead of the hair cloth, many people now use a net-work, or iron wire, with which it is observed that the Saffron dries sooner, and with less quantity of fuel; but the difficulty in preserving the Saffron from burning, makes the hair cloth be preferred by the nicest judges in drying.

The kiln is placed in a light part of the house, and they begin by laying five or six sheets of white paper on the hair cloth, upon which they spread the wet Saffron between two and three inches thick \ this they

cover with other sheets of paper, and over these lay a coarse blanket five or six times doubled, or, instead thereof, a canvas pillow filled with straw; and after the fire has been lighted for some time, the whole is covered with a board, having a large weight upon it. At first they give it a pretty strong heat, to make the chives sweat (as their expression is;) and in this, if they do not use a great deal of care, they are in danger of scorching, and of spoiling all that is on the kiln.

When it has been thus dried about an hour, they take off the board, blanket, and upper papers, and take the Saffron off from that which lies next it, railing at the same time the edges of the cake with a knife; then laying on the paper again, they slide in another board between the hair cloth and upper papers, and turn both papers and Saffron upside-down, afterwards covering them as above.

The same heat is continued for an hour longer; then they look on the cake again, free it from the papers, and turn it, then they cover it, and lay on the weight as before. If nothing happens amidst during these first two hours, they reckon the danger to be over; for they have nothing more to do but to keep a gentle fire, and to turn their cakes every half hour till thoroughly dry, for the doing of which as it ought, there are required full twenty-four hours.

In drying the larger plump chives they use nothing more, but towards the latter end of the crop, when these come to be smaller, they sprinkle the cake with a little small beer, to make it sweat as it ought; and they begin now to think, that using two linen cloths next the cake, instead of the two innermost papers, may be of some advantage in drying, but this practice is followed as yet but by few.

Their fire may be made of any kind of fuel, but that which smokes the least is best, and charcoal, for that reason, is preferred to any other.

The quantity of Saffron a first crop will produce, is very uncertain; sometimes five or six pounds of wet chives are got from one rood, sometimes not above one or two, and sometimes not enough to make it worth while to gather and dry it; but this is always to be observed, that about five pounds of wet Saffron go to make one pound of dry, for the first three weeks of the crop, and six pounds during the last week; and when the heads are planted very thick, two pounds of dried Saffron may, at a medium, be allowed to an acre for the first crop, and twenty-four pounds for the two remaining, the third being considerably larger than the second.

In order to obtain these, there is only a repetition to be made every year of the labour of hoeing, gathering, picking, and drying, in the same manner as before set down, without the addition of any thing new, except that they let cattle into the fields, after the leaves are decayed, to feed upon the weeds, or, perhaps, mow them for the same use.

About the Midsummer after the third crop is gathered, the roots must be all taken up and transplanted; the management requisite for which, is the fourth thing to be treated of. To take up the Saffron heads, or break up the ground (as the term is,) they sometimes plough it, sometimes use a forked kind of hoe, called a pattock, and then the ground is harrowed once or twice over, during all which time of ploughing, or digging, and harrowing, fifteen or more people will find work enough to follow and gather the heads as they are turned up.

They are next to be carried to the house in sacks, and there cleaned and rased, this labour consists in cleaning the roots thoroughly from earth, and from the remains of old roots, old involucra, and excrescences, and thus they become fit to be planted in new ground immediately, or to be kept for some time without danger of spoiling.

The quantity of roots taken up, in proportion to those which were planted, is uncertain; but at a medium, it may be said, that allowing for all the accidents which happened to them in the ground, and in

breaking up from each acre, may be had twenty-four quarters of clean roots, all fit to be planted.

The owners are sure to choose for their own use the largest, plumpest, and fattest roots, but do least of all approve the longest pointed ones, which they call spickets, or pickards, for very small, found, or flat roots, are sometimes observed to flower well.

This is the whole culture of Saffron in the county above-mentioned, and we have only now to consider the charges and profits which may be supposed, one year with another, to attend that branch of agriculture; and of these I have drawn up the following computation for one acre of ground, according to the price of labour in this country.

	l.	s.	d.
Rent for three years	—	—	—
Ploughing for three years.	—	0	18
Dunging	—	—	—
Hedging	—	—	—
Spitting and fetting the heads	—	—	—
Weeding or paring the ground	—	1	4
Gathering and picking the flowers	—	6	10
Drying the flowers	—	—	—
Instruments of labour for three years,	—	—	—
with the kiln, about	—	0	10
Ploughing the ground once, and har-	—	—	—
rowing twice	—	0	12
Gathering the Saffron heads	—	—	—
Raising the heads	—	—	—
		23	12
		0	0

Total charge 23 12 0

This calculation is made upon supposition, that an acre of ground yields twenty-six pounds of nett Saffron in three years, which I stated only as a mean quantity between the greatest and the least, and therefore the price of Saffron must be judged accordingly, which I think cannot be done better than by fixing it at 30 shillings per pound since in very plentiful years it is sold at twenty, and is sometimes worth between three and four pounds 5 at this rate, twenty-six pounds of Saffron are worth thirty-nine pounds, and the nett profits of an acre of ground producing Saffron, will, in three years, amount to fifteen pounds, thirteen shillings, or about five pounds four shillings yearly.

This, I say, may be reckoned the nett profit of an acre of Saffron, supposing that all the labour were to be hired for ready money; but as the planter and family do a considerable part of the work themselves, some of this expence is saved; that is, by planting Saffron, he may not only reasonably expect to clear about five pounds yearly per acre, but also to maintain himself and family for some part of each year; and it is upon this supposition only, that the result of other computations can be said to have any tolerable degree of exactness, but the calculations themselves are undoubtedly very inaccurate.

I have said nothing here concerning the charge in buying, or profits in selling, the Saffron heads, because, in many large tracts of ground, these most at length balance one another, while the quantity of ground planted yearly continues the same, which has been pretty much the case for several years past.

Dr. Patrick Blair, designing to treat concerning the Crocus, in his sixth Decad of his Pharmaco-Botanologia, did, in the year 1725, send me the following queries:

1. After what manner the species are propagated?
2. Whether the tap-root springs first, or the bulb?
3. At what season the leaves spring forth?

To these queries I sent him the following answer:

1. As to the propagation of the species.

This is only by the roots or offsets, which the old roots produce in great plenty, for I never saw any thing like a seed, or a seed-vessel produced, though I have let stand great quantities of flowers purposely to try.

2. As to the query, Whether the tap-root springs first, and the bulb be afterwards formed?

As food as the roots begin to (hoot upwards, there arc commonly two or three large uproots lent forth from the fide of the old root, which will run down riglic two inches and halt or more, into the ground at the place where thefe bulbs firft come out from the old one, will be formed « bulb ibmctimes (rough not always, as you wil) hear prefently :) and rhistap root decays. The bulb will increafe in its hignefs, tiil at laft it quite fijlli tiV, and is then left entire, which commonly happens in April, when the greti begins ro decay j bui many times thefe tap er « r rotry roots never produce any bulbs, but always retain the fame figure, and forever after, I believe are barren ; for I planted a parcel of thefe carrotry root four years ago in a little bed, where they have ever lince remained, but have not produced one fingi* flower, notwithstanding they have produced a plentiful offspring of the fame carmnty roots. And the people about Saffron "Waklen are well apprifed of this birrenntls, and therefore ihrow mntj all Juch roots wvhen they make a new plantation \ bu, as ihis change of the root is not peculiar to the Sat' (Von only, permit me to digrefi a little, to give you fome account at" this matter.

In the parifh of Fulham, near London, (the gardeners ufed K> drive (great trade in the jonquil, or Narciffu juncifolius, flore multiplici, it which place the great quantity of thofe roots was riefed for fale, as perhaps was in any part of England, and turned co as great account for die matter, as any crop they could employ dieir ground in, till of late years, that molt of dieir roots have turned carrotty, and (b proved barren, or have produced only Gnglc Howen ; Lo that the gardeners being hereby difheartened, hjuv thrown them out entirely, neglecting co cultivate them, fatisfying themfelves with this reafoiij that their ground was tired wtili diem.

But to return to the- Crocus. Befides thofe roots already mentioned, there will be three or four final] bulbs formed upon the upper part tit" the root, and fome underneath, whkh from the firft appearance aflume the round Jhape of its parent root, and luvtno tap-root belonging to them : thiofe on the upper part of the root rarely emit fa much u a fibre, but receive their nourilhment immediately from the old root; but thofe on the under fide lend out many fibres all around, by which they draw their noiriilhment from the ground; thefe being parted from tl root much fooner than the other, Hand in need of fit organs for receiving their nourittiment.

I have fometimes taken up fome, through the middle of which hath been a root of the Gramen caninuro, or Couch Grafs, which fame people have imagined bid ilength enough to forte its way through the Crocus root) but the truth is, the root of the Graff clofely adhering to the old root of the Crocii

at the place where the young roots were emitted, theft young roots being quick of growth, inclofed the root of the Grafs, and thus I have ten feveral roots run through each other in the lame manner.

But befidej theft offsets mentioned, directly upon the upper part of the root is otic large mot formed, of equal bignels with the old one, and this b the time that the root ii Radix gemina, as Tturncfort calls it • for they .ire not To at any other Eeafat, Old therefore I think, it a very improper appellation; for when tjw new roots arc perfectly formed, the old ones, with their coats, fall off and die, and leave the new roots all fingie. This has occafioned feveral poeijle to doubt of what Toumefort had raid of the roots, till I took uji lame plants at that fenfon, and with them the two roots of Mjual bignck, i. e. the old at the bottom, and the new one at the top.

Dr. Blair alio happening, in viewing a root, to be furpriced with a different appearance from what he had fren before or heard of, lent me another letter.

The manner of the root was thus ; from the upper part of the bulb, where it fends forth all the i within a common tunide, at the exit there was »n appendix about an inch ind a half long, about [be graff*.

nefs of a large turkey or goofe-quill, cylicvJricid and blunt, without die iealt "radical libra, by which it might rective the nou: *thromat*, *th* uoth or polifhttl, anilbluilhin tic furfac, cunfitting of Jeveral circular lines, when cut tranfverfy; white, with a hard greenifli center like a Carrof, when it hurl) pulhed toirh the floweriig-Item, mil unli • the *thromas* of of lomc running root, fuch as the Mints b;: *low ground*, only the extremity defended obliquely, inleid of ascending, to fend torth leaves to produce anew pjant; and what is moll remarkdLik, tiis did not happen to one or two plants, but to die whole bundle, which were- above iwei *thromat* > <, differing in nalhing but majus and minus-, the bulb feemed ac *the* tamo tune to be pined and ciaciuted, though, ttt, *thromat* large radical fibrci like thofe of a Leak.

I having receivni this account *fitWa* htm by letter, fent him the following aniv...

I received yours in anfwer to my Lilt, with tic figure of die roots of fome feti of Crocm Autuinns: you have taken out of the ground ; I have found a figure in I kodonseus which coirHjwnd^; will; ii, and itiolb rooni are, no new riling with the Saffron gar, *thromas*, who always throw thicm away when they make ireih *thromas*.

Your figure does not agree with my tep-rev *thromas*, as you will lee by dv *thromas* taken as juft from the lito as I iould. In mLie you will find the bulb : *thromas* Tideways, which I Jllil lind to be conlUnc in all the roots I frfw wramiitfd, whiich have been a gnai rminy, and makes me fufpect thefe up-n *thromas* occifiofled by the accidental txilkion of lix roots in ptanung, which may retard the alctiding fsp, thu towering-ftctn being thereby turned into a crooked liguie, and the tap-roots are full of longitudinal veil, *thromas* of a con filterable diinenfion, fo that the greater att rafting power of die Jap being hereby ilivrsced dnwards, the fiowar-fitna may be quite defti^ per nouriffment.

The method you propofe to remeJ ency, will not do, for I have remove *thromas* ur thdt roots at the feafon wlien the up-rooti were forming, and this alone ddroyeti thrm all i lu lliit I am jilLr- iuadt-d, the cutting; them off entirely will kill them.

The method I uicd with ilio Jo;iqi:ls was, to lay fome tiles Jult under the roow, to pitvmt their running downwards, but this has not a *thromas* *thromas* I think it poffible wholly to recover them ; *thromas* al- terarjon is not only in the, root and Dower, bu, *thromas* in the leaf and blade, which beibre was fruitulou, but after this alteration in the root, becomes a pjwb cated leaf, and if it ev<r blolloms after, i<: iowera aic large and tingle, whidi before wenc imall and doubles but the Saffron, after the change of its roots, produces a final narrow blade, lelduin half the lengtk of thofc in a natural ftate.

Lifon this Dr. Blair formed this condution:

Thefe additional obiervations plainly iliciv, diat nrlicr tiie carrotry *mat*, nor the blafted taji-root, may call it, are merely icckkntal, ur what ma) be called lufus naturae but certain dileafes inddenc tu fuch roots ; for were they accidental, they would not haw the fame appearances to diftercut perfoii in different loils and climates, nor would Jo many taken up together have luch a referenblance LO each otL I have twice obferved.

ROTOLARIA. Lin. Gen, Pbnt. ; ; i. Dill, tilth. iil. Toum. loft. R. H. 644. *Ui K^TILT*, Gr. rattle; becaufe its feetis in the psis, whtm ripe, make l rattling noile when lhaken, or becauf the *thromas* of the Indians make ufeot the branches of this plant fumilhed with pods inttead of rattles.]

The CHijtACTEas are,

The *impdaaail* of *tbl* /awtr u *dn&d* tutu tkr; *large* *figmnti*; *tbl* lwe tt&tr rtjlixg ax the jUxiar, *the* *lewtr* it *CMcavty* trijid, *arJ* is *fitxctai* ivJ«j lit iuL *V* it fierjw L of il BnUerfix kind; the *Ji* -tidjrd it krgt, *Uurt*-fuiptJ and pawns; lit lahigt etc ovdend *the* *Uitgl* cf *tbejtutjurtl*; the *kri* u *px&td* and us ta>g *si* thi *sh* tsu ^,yjuzs. wUct art tattud, to-

minated by Jingle fummits, and an oblong reflexed germen, supporting a Jingle Jiyle, crowned by an obtuse stigma. The germen afterward becomes a Jhort turgid pod with one cell, opening with two valves, and filled with kidney-Jhaped feeds.

This genus of plants is ranged in the third fe&ion of Linnaeus's feventeenth clafs, intitled Diadelphia Dendandria the flowers of this clafs and feftion having ten ftamina joined in two bodies.

The SPECIES are,

1. CROTOLARIA (*Verrucofo*) foliis fimplicibus ovatis, ftipulis lunatis declinatis ramis tetragonis. Flor. Zeyl. 277. *Crotolaria* with Jingle oval leaves, tunated declining ftipuU, and four-cornered branches. *Crotolaria* Afatica folio fingulari verrucofo, floribus cseruleis. H. L. 199.
 2. CROTOLARIA (*Pilofa*) foliis fimplicibus lanceolatis pilofis, petiolis decurrentibus. *Crotolaria* with Jingle, hairy, fpear-Jhaped leaves, and running foot-Jialks. *Crotolaria* Americana, caule alato foliis pilofis, floribus in thyro luteis. Martyn. Cent. 43.
 - 3* CROTOLARIA (*Sagittalis*) foliis fimplicibus lanceolatis ftipulis folitariis decurrentibus bidentatis. Hort. Cliff. 357. *Crotolaria* with Jingle fpear-Jhaped leaves, and Jingle ftipuU indented. *Crotolaria* hirtuta minor Americana herbacea, caule ad fumum fagittato. H. L. 202.
 - 4- CROTOLARIA (*Fruticofa*) foliis fimplicibus, lineari-lanceolatis hirtutis, petiolis decurrentibus, caule fruticofa. *Crotolaria* with Jingle, narrow, fpear-Jhaped leaves, which are hairy, running foot-ftalks, and Jhrubby ftalk. *Crotolaria* frutefcens hirtuta, flore luteo, ramulis alatis, foliis mucronatis. Houft. MSS.
 5. CROTOLARIA (*Juncea*) foliis fimplicibus lanceolatis, petiolatis caule ftriato. Hort. Cliff. 357. *Crotolaria* with Jingle fpear-Jhaped leaves having foot-ftalks. *Crotolaria* Benghalenfis foliis geniftae hirtutis. Pluk. Aim.
 6. CROTOLARIA (*Perfoliata*) foliis perfoliatis cordato-ovatis. Lir[^] Sp. Plant. 1005. *Crotolaria* with oval heart-Jhaped leaves perforated by the ftalks. *Crotolaria* perfoliata folio. Hort. Elth. 122. tab. 102.
 7. CROTOLARIA (*Retufa*) foliis fimplicibus, oblongis cuneiformibus retufis. Flor. Zeyl. 276. *Crotolaria* with Jingle, oblong, wedge-Jhaped leaves, reflexed at the top. *Crotolaria* Afatica, floribus luteis, folio fingularo cordiformi. H. L. 200.
 8. CROTOLARIA (*Villofa*) foliis fimplicibus ovatis villofis, petiolis fimpliciffimis, ramis teretibus. Hort. Cliff. 357. *Crotolaria* with Jingle, oval, hairy leaves, Jingle pedicles and taper branches. *Crotolaria* arborefcens Africana, Styrcis folio. H. L. 170.
 9. CROTOLARIA (*Jngulata*) foliis ovatis feffilibus, ramulis angulatis hirtutis, floribus lateralibus fimpliGiffimis. *Crotolaria* with oval leaves Jitting clofe to the tranches, which are angular, baity, and Jingle flowers proceeding from the fides of the branches.
 - *o. CROTOLARIA (*Labumifolia*) foliis ternatis ovatis acuminatis, ftipulis nullis, leguminibus pedicellatis. Flor. Zeyl. 278. *Crotolaria* with oval, trifoliolate, pointed leaves, no ftipula, and foot-ftalks to the pods. *Crotolaria* Afatica frutefcens, floribus luteis amphis tnfu-Uata. H. L. 196.
 - H. CROTOLARIA (*Alba*) foliis ternis lanceolato-ovatis, caule laevi herbaceo, racemo terminali. Hort. Cliff. 499. *Crotolaria* with oval, fpear-Jhaped, ternate leaves, finooth herbaceous ftalks, which are terminated by loofe fpikes of flowers. *Anonis* Caroliniana perennis non Ipinofa, foliorum marginibus integris, floribus in thyro candidis. Martyn. Cent. 44.
- The firft fort grows naturally in India. This is an annual plant, which hath an herbaceous four-cornered ftalk, rifing about two feet high, dividing into three or four branches; thefe have allo four acute angles, and are garnifhed with oval warted leaves, of a pale green colour, ftanding on very fhort foot-ftalks -, the flowers are produced in fpikes at the end of the branches, which are of the butterfly fhape, and of a light blue colour, fucceeded by fhort turgid pods, which inclofe one row of kidney-Jhaped

feeds. It flotteft in July and Auguft, and the feeds ripen in autumn.

This plant is propagated by feeds, which muft be fown upon a hdt-bed in the fpring, and when the plants are come up an inch high, they fhould be tranfplanted to another hot-bed to bring them forward, obferving to fhade them from the fun till they have taken new root -, after which they fhould have free air admitted to them in proportion to the warmth of the feafon, to prevent their being drawn up weak. When the plants have acquired ftrength in this bed, they fhould be carefully taken up, with balls of earth to their roots, and each planted in a feparate pot, filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark, carefully fhading them till they are rooted again j then they muft be treated in the fame manner as other tender exotic plants, giving them proper air and water in warm weather j when the plants are grown fo tall as to nearly reach the glaffes of the hot-bed, the pots may be removed into an airy glafs-cafe, or ftove, where they may be fcreened from inclement weather, and have proper air in hot weather *, with this treatment the plants will flower in July, and continue to produce frefh fpikes of flowers till the end of Auguft; and thofe fpikes of flowers which appear early in the feafon, will be fucceeded by ripe feeds in September, foon after which the plants will decay.

The fecond fort grows naturally at La Vera Cruz in New Spain, from whence the feeds were fent me by the late Dr. Houftoun -, this rifes with a coffpreffed winged ftalk near three feet high, putting out feveral fide branches, garnifhed with fpear-Jhaped leaves near three inches long, and one broad, covered with foft hairs, and fit clofe to the branches* alternately; from the foot-ftalks of each there runs a border or leafy wing, along both fides of the branches; the flowers are produced in loofe fpikes at the end of the branches, which are of a pale yellow colour, the ftandard being ftretchedout a confiderable length beyond the wings. Thefe are fucceeded by fhort turgid pods, which, when ripe, are of a deep blue colour, having one row of fmall kidney-Jhaped feeds, which are of a greenifh brown colour. This flowers and feeds about the fame time with the former, and requires the fame treatment.

The third fort was fent me from South Carolina by the late Dr. Dale, and alfo from Jamaica by Dr* Houftoun, fo that it grows naturally in feveral parts of America; this is an annual plant, which rifes with a (lender ftalk a foot and a half high, dividing into three or four fpreading branches, garnifhed with oblong oval leaves fitting clofe. The upper part of the branches have two leafy borders or Wings, running from one leaf to the other, but the lower part of the branches have none; the foot-ftalks of the flowers arife from the fide of the ftalk, thofe from the lower part of the branches are above a foot long, the upper are about fix inches, they are very flender, and iuftain one or two pale yellow flowers at their tops, which are not more than half fo large as the former fort, and are fucceeded by very fhort turgid pods, in which are inclofed three or four fmooth kidney-Jhaped feeds. This fort requires the fame culture as the two former, and flowers at the fame feafon.

The fourth fort grows naturally in Jamaica, from whence the feeds were fent me by the late Dr. Houftoun 5 this rifes with a fhubby taper ftalk near four feet high* fending out many fide branches which are very flender, ligneous, and covered with a light brown bark, garnifhed with very narrow fpear-Jhaped leaves, which are hairy, fitting clofe to the branches; the younger fhoots have a leafy border or wing on two fides, but the old branches have none; the flowers are produced near the end of the branches, three or four growing alternate on a loofe fpike; they are of a dirty yellow, and fmall; the pods which fucceeded them are about an inch long, very turgid, and of a dark blue when ripe. This fort is propagated by feed, which ihould be fown cm a hot-bed, and the plants

treated in the time manner as thole before *, but in autumn they should be placed in the (love, where they will live through the winter, and flower early the following summer, so will perfect their seeds very well.

The seeds of the fifth fort were brought me from the estate of Malabar, which succeeded in the Chelfa garden. This sifes with an angular stalk near four feet high, dividing upward into three or four branches garnished with narrow pinnate leaves, placed alternately on very short foot-stalks; they are pretty distinctly covered with soft silvery hair. The flowers are produced at the end of the branches, in loose spikes, they are large, and of a deep yellow colour, and the style stands out beyond the standard. The stems are succeeded by large kidney-shaped seeds.

This plant is annual in England, but by the lower part of the stalk growing woody, it appears to be of longer duration in the country where it naturally grows; though it will not live through the winter here, for if the plants are placed in a stove, the heat is too great for them, and in a green-house they are very subject to mouldiness in damp weather. I have sown the seeds of this in the full ground, where the plants have grown upward of three feet high, and have flowered very well, but no pods were formed on them, and when they have been treated tenderly, the pods have grown much larger, and produced a greater number of flowers, but these have produced few seeds. The only way which I could ever obtain seeds, was by raising the plants in pots upon hot-beds, and the beginning of July, turning them out of the pots into the full ground on a very warm border under a wall, in which situation they flowered very well, and some few pods of seeds were ripened. The sixth fort was sent me by the late Dr. Dale from South Carolina, who had the seeds lent him from the country, at a great distance from the English settlement. By the description lent me with the seeds, it grows with a shrubby stalk four or five feet high, but the plants which were raised here, perished at the approach of winter, so that they only flowered, without producing any pods. The leaves of this are round, and covered with a tight brown bark, garnished with smooth, oval, heart-shaped leaves, which are about ten inches long, and near three broad, forming the stalk in such a manner, as if it were run through the middle of the leaves. The flowers grow singly fitting close to the bottom of each leaf, toward the upper part of the branches; they are of a pale yellow colour, and appear here in August but as the plants did not produce any pods, so I can give no account of them. This is one of the most angular plants of the gentian family I have yet seen.

The seventh fort rife* with an herbaceous stalk near three feet high, dividing upward into several branches garnished with oblong leaves, which are narrow at their base, but gradually widen to the top, where they are rounded and indented in the middle in the shape of a heart; they are of a pale green, and smooth. The flowers are produced in spikes at the end of the branches, they are pretty large, and of a yellow colour, and appear here in July, and the seeds ripen in autumn, provided the plants are brought forward in the spring, and afterward treated in the same manner as has been directed for the first fort. This grows naturally in the island of Ceylon, and is an annual plant, perishing soon after it produces seed. I received the seeds of this from J. L. i. » rv

The eighth fort was sent me by the late Dr. Boerhaave, and is of a yellow colour.

This plant grows naturally at the Cape of Good Hope, from whence I received the seeds. It rises with a shrubby stalk about five feet high, dividing into several branches, garnished with roundish leaves, fitting close to the stem, they are of a hoary grey colour, and at the top of the branches are taper and imooth, the down is produced at the end of the brine leaves; they are about the size of those of the first fort, and of a fine blue colour.

This plant flowers in June and July, and in warm countries will ripen its seeds in autumn. It is propagated by seeds, which must be sown upon a good hot-bed in the spring, and when the plants are fit to remove, must be each transplanted into a small half-penny pot, and plunged into a hot-bed of rannen bari, and after must be treated in the same manner; they have been directed for the fourth time, that the plants should be in a moderate (love in winter, others if they cannot be preserved in England; the seeds sown in the spring will flower, and with proper care their seeds will ripen.

The ninth fort was sent me from Campradi, where the plant grows naturally, this rises with a stem upright five feet high, dividing upward into several hairy branches, which grow garnished with oval kidney-shaped leaves, of a pale green colour, the flowers are produced singly from the side of the branches, which are of a light yellow, and are succeeded by short kidney-shaped pods, having one row of kidney-shaped seeds. It flowers in July and August, and with the same treatment as hath been directed for the first fort, will produce seeds in autumn. This is an annual plant, which sown after the seeds are ripe.

The tenth fort grown naturally in India; this rises with a shrubby stalk four or five feet high, dividing into many branches, garnished with smooth oval leaves ending in points, the flowers are large, yellow, and produced in large bunches from the side of the branches; they appear in July, August, and September, but I have seen many pods produced here. However, when the plants are in flower, they make a fine appearance.

It is easily raised by cutting, during the summer months, if the cutting is planted in a moderate hot-bed, being careful to shade it till they have taken root, and to water them with water: during the months of July, August, and September, the plants may be exposed to the open air in a sheltered situation, where they will produce many flowers, but in the autumn they should be placed in a temperate stove, to preserve them in winter.

The eleventh fort grows naturally in Virginia and Carolina, from both these countries I have received the seeds; there are two varieties of this species, one with a white, and the other a blue flower; but the seeds of one will produce both varieties as I have more than once experienced. The root is perennial, sending up every spring a number of leaves, in proportion to the size of the root; the foot-stalks of the leaves are smooth, rising two feet high, dividing upward into three or five branches, garnished with smooth leaves, whose lobes are: mil, five-lobed, and entire; the foot-stalks of the flowers arise immediately from the root, and advance rather higher than the leaves, being terminated by a three-lobed butterfly-shaped flower; the flowers, near a foot in length in one variety they are white, and in the other deep blue: these are succeeded by large kidney-shaped seeds of a black colour when ripe, having one row of kidney-shaped seeds. It flowers in June, and the seeds ripen in autumn.

It is propagated by seeds, which should be sown in a moderate hot-bed in the spring when the plants are fit to remove, they should be gradually inured to the open air; in the autumn they should be placed in a moderate frame, or covered with mats in winter to shelter them; but the following spring they should be transplanted into the open ground, where, if the soil is dry, and the situation sheltered, they will live in many years producing flowers in autumn.

A* molt of rlic/i plants are annual, fa they require to be brought forward in the spring, otherwnc the funimen are too Diort for them to perfect fruits; fo that uncliei they arc carefully managed, they will not flower well here* forin general, die liimncrs in this country we not very favourable for tliclt; tender pliii . Therefore in >jrdr to have theft itrndtr annual |ants in p... tftion, then- Hioiil b a low glairale erected about live or fix feel high, which fliaiiilit f% m... ::(tci to open or llufe down OH every fide, as thoul... :!e wp on bich fides, having fliding glair... [htt the ptan... and ur... on every fide, in this there fooul... I lie a pit lor tanners... ;a nuke a hot Ixit, the whole exit' at, («... defcription of «... the article STOVE) in this hot-bed may be pis... the very... :rion tender annual plant*. «... the fun... will oonftandy Ihirce on dii-m, fo lon^ ,u h<... be horiwn •, z:v^hen: Ui... have plenty of... rce air ndi... limes, whi... ttie weathr is warm, (it may be brought tu ctjuJ lion, ai in the wirm countries where ll... v »nw; tbr t'i; warmth of the un... roots, and the heat of the fan through the gfcitcs, will in l'ummer, be equal to the heat, of moft countries. Thefc phnts naturally grow on lkndy light fails, fo they f]... the pots in which they are plan'il, mult not fe>c too large, for in Inch they will not tlirivr... r they have filled the fniail pot.i with their rooti in which they were lirit planted, they fhoulil be fhaken ant ef ami pot into penny pot?, which will be large a... for ni •... -final kin:... ii are of longer duration, -will reqi... The waterings of thefc plants fhould be performed wuti moifture will roi tiu iibres of tiidr roots; fo that in fum:... ironies a Wi... in hot weather, it will be fufticient.

CRO TON. Lin Gen. Plant. 910. Ricinoides. Toura. Int. 655. tab. 413. Baitarti iidnus.

The QiAitJICTem arc, b ball/ malt W fmr.lt fit:- the f me plant; tit Jhuxrj iww ii jfcie-Uavti trnptlmju they have the 'ai; theft tftiv vule tang no krgr the the leaves of >bt <ntpdmt\ tbt nub btm >-r ntHaritu: Kbith art fatall, W fond U the rump; they have "a or fiftt*fiaxisa, whitb t... Tbefaval/tevxrj biiu a rth% dm rfiadajpr**&Mgfj/a. StigmUi tbt gntux afterward bicemes a r*k*4* ibm-ttrKmd tapfkU, <i(4 tin 'acb emtaixiQ

This genus oJ' pinna if ranged in the nimh feftion tft T... rwcIUT-firt d>5, "inriiled Montsch Mo- nodripa. The plants of this cunz sin... have male and female flo«en in the iame plant, ami the male p... nti are joined in one body.

CV (crism) f< & m. rhonibea repandii, cap- fulls pe*1-... caule iicrbaceo. i hort. Upal. 199. Cnra...

I

Int. 655. Bglard R... the Young of the Fire... a coruus-erata... in Hort. Cliff. 444. Cnra... with oval heart-shaped leaves, which are... Ricinoides herbacea, folio fubrotund... parva complanata. Hort. MSS.

with rlrmbad rffltxd liavo, ffxdtlutJ CffjwTS, and an kriaitHt* Jlaui. Rkinoida ex TournfJ. Gallorum. Tour: n'ntu frem vi: f>... k * * * & .

. CHOTON (S « W) foliis conhto-ovmw futu* to- fuentons inteeris subferratis. -kith tariMirtMimflI* brotumlo Jcraio Iruttu

3. C>OTo>7Aii. -jio-Janeecolatu pfiottB fer- ratil\ fiWdbKU.w'.-ubgr:?!*- cinoidei e

. : Serum) foliis inermi-fetrMii, quir., \jdbiu Hon. Cliff. 445- Crit. J, the inner-> lw^ S-L* Wu, xvJ tbt « " ikrtt, Rictnoidri hctiMct*,

folle trifoli| vcl quinquefolia & /cmwil, (Linn. MSS.

5. CROIOM {Uumitt) tetraphyllum, foliis lanccollatis. Kuminasi) futbujtieliis, cauk herbacco i... Four- leaved Cro... m.v. 'itbfprrar-jbaptdpciiieiiJMveii gnn rhar under/Lie, mii a iriuchiag tc) liatcevs jlaL Rif Iiumilo full h oblong bicumin am, lobnnaetui, • Linn. MSS.

6. CBOTOV {Frutii-efam) fo]m LuKCohtil el abrin, caule tinucofOi floribus alarlui it tej... Cnra... into juuth four-lobed leaves, a finally full, and flowers growing from the sides and... pi of l... cal'ce ampulamo vindi. Hort. MSS.

7. Cnron (Popul Jala) foliis cordtm, futbus toiiciKoi... Uriliuj liililibus, caule fruticolo. Cnra... nnotbttrtrj... as their under fide, and flowers growing from the sides, which are finally... Ricinoides herbacea, lamm folio, cal'ce ampulamo vindi. Hort. MSS.

8. Cnron (Cajaria) oiii Unccolatis atrutis integer rima petiolatis ubtus turn en tois, caule ar... Anxsn. At.i.J. 5. p. 411. Crzien <sub fpor-j... tity, unto round leaves, which in their under fide, and a tree-like fruit. Ricinoides fruticosa odorata, foliis ovatis subtus albocanibus. Hort. MSS. Cncailla.

9. Cnron (Althaea) folia oblongo-cordata terminata, caule fruticolo rictolo, floribus fpicatis terminabuj. CTBKM vitlb elicng, btert/bepJ, woelty leozw, O jhn... end of the leaves. Ricinoides Amer... fruticosa, Althaea folio.

10. Cnron (Sesuv Jala) iim Cat 70... acuds, lubtus Qoribui r... TTina* tonicnrolUt e... feintud ktart-jkapti Uoi-fS, rnhhrJU, ar.d firtstrs

The first four grow naturally in the south of France, from whence I have frequently received I the iceUs; this is an arr... herbaceous branching stalk about nine inches high, gar... with irregular, or rbumboiOal n^urnl leaves, which are near nvo inches long, and one inch and a quarter broad in thtir widest part; the Hand upon slender iboc-talks, near four inclKi lone. The Howers are produced in fliorl fpikr... from the fide... (the stalks, at the end of the branches; the upper part of the fpike is comjxihnl of male flower', luvng many lbtrnina, which coalelc at the bottom; the lower part hath femaic flaver', which have each H ruujKllh three-cornered grmen-, thele afterward become a rountifli capfulc vriti rfirec lob*, laying three cells, each including one roundifli fe(J. This (towers in July, but unieft the plant* are brought forward in 3 hot-bed, they do not ripen feeds in ihUcoi... The feeds of thb plant fhould be fown in the autumn, foon after they are ripe, in a jmall pot filled with v.ht cirth, and plunged into an old mn-bed in a frame, where they may be freeend from cold in the winter i and in thr fpruig fiiH&wing the pot rtioutd be removed to a frell hot-bed, which will bring up the plants in a month's rrovT, they fhould be each planted in a large enough to r... and plunged inty a fresh hot-bed, bring circul ") lhaoc the glaffe; daily, unt I the plants have taken new root; tiren they ihouJd have air daily... Kited actor ding; to the warmth of the feafon, <nd but linte water given to them : with this managenwm I have had the pluin SOWCT and producee good feeds here, but nevrr could obtain an/ with other treatment.

This is the plant... jm which the Tournfolc u made, which is us... gwino anJ jcllic-; it ll made of the juice which is... todge-J between the tm-palernent and the feeds, which, it rub... ! on clotha, •t firt Jj>[H-jn of » li... itfoon changei to a bluish purple colour; if thele ch... ire put into water, and afterward wrung, they will dye the water to a 4...

made of the juice which is... todge-J between the tm-palernent and the feeds, which, it rub... ! on clotha, •t firt Jj>[H-jn of » li... itfoon changei to a bluish purple colour; if thele ch... ire put into water, and afterward wrung, they will dye the water to a 4...

to England, and fold in the druggifts Ihops by the name of Tournfole.

The fecond fort grows naturally at La Vera Cruz in New Spain, from whence the feeds were fent me by the late Dr. Houftoun; this is an annual plant, which rifes about a foot high; it hath an angular ftalk ^ the branches are naked from their divifions to the top, where they are garnifhed with a few oval fpear-flaped leaves, which are fawed on their edges; they are an inch and a half long, and three quarters of an inch broad, ftanding on fbot-ftalks one inch long. The flowers are produced in clofe fhort fpikes at the end of the branches, thole on the upper part being male, and the lower female; they are white, and the male foon falls away, but the female are fucceeded by roundifh capfules, having three lobes; thefe grow in clofe clutters, they have three cells, each containing one roundifh feed. It flowers in July, and the feeds ripen in autumn.

The third fort was difcovered by the late Dr. Houftoun at La Vera Cruz, from whence he fent me the feeds; this is alib an annual plant, which grows naturally in low marfhy grounds, where it hath a very different appearance from what it puts on when fown upon dry land; thofe of the watery places have broad flat ftalks, and leaves three inches long, which are fcarce a quarter of an inch broad; thefe are rough, and but little indented on their edges; but thofe plants upon dry ground have oval leaves three inches long, and upwards of two inches broad, which are fawed on their edges. The flowers are produced at the wings of the leaves, in fhort loofe fpikes, having four or five herbaceous male flowers at the top of each, and three or four female flowers at the bottom, which are fucceeded by roundifh capfules with three lobes, covered with a prickly hufk; thefe have three cells, each inclofing a fingle feed. It flowers and feeds about the fame time as the former.

The fourth fort was difcovered by the fame gentleman, at the fame place as the former; this is an annual plant, which rifes with a taper herbaceous ftalk a foot aqff a half high, dividing into feveral branches, garnifhed with fmooth leaves, ftanding upon very long foot-ftalks, and are for the moft part placed oppofite, as are alfo the branches; the lower leaves are divided deeply into five oblong fegments or lobes, and the upper into three, which are (lightly fawed on their edges, ending in acute points. The flowers are produced in loofe fpikes at the end of the branches, thofe on the upper part being male, and the lower female, they are of an herbaceous colour; the female flowers are fucceeded by oblong capfules, having three lobes, which open in three parts, having three cells, each containing one oblong feed. This flowers and feeds at the fame time as the former forts.

The fifth fort was found growing naturally at the Havannah, by the late Dr. Houftouri, who fent me the feeds -, this is an annual plant, which rarely grows more than fix inches high, dividing into two or three branches *, the lower part of thefe are garnifhed at each joint with four leaves placed in form of a crofs, two of which are three inches long, and one inch broad near their bafe, ending in acute points; thefe ftand oppofite, and the other two leaves between thefe are about two inches long, and a quarter of an inch broad; they are of a light green on their upper fide, and of a gray or Afh-colour on their under. The flowers are produced in long loofe fpikes at the top of the ftalks, two or three of thefe fpikes arifing from the fame joint; the upper part of thefe fpikes have male, and the lower female flowers, of an herbaceous colour; the female flowers are fucceeded by round capfules with three cells, each containing one roundifh feed. This flowers and feeds about the fame time *with the former forts.

The fixth fort was difcovered by the late Dr. Houftoun in the ifland of Jamaica, where it grows naturally. It rifes with a fhubby ftalk to the height of feven or eight feet, which is covered with an Alt-

coloured bark, and divides into many (lender branches upward; fome of thefe branches are terminated by five or fix fmaller, which arife from the fame joint; thefe are naked below, but toward their upper part they are garnifhed with fmooth fpear-flaped leaves, about two inches and a half long, and three quarters of an inch broad, ftanding on pretty long foot-ftalks without order; the flowers are produced in fhort fpikes at the end of the branches, in the fame manner as the former; they are of an herbaceous colour, and incloied in large green empalcments.

The feventh fort was fent me from Jamaica, by Mr. Robert Millar *, this rifes with a fhubby ftalk feven or eight feet high, fending out many irregular branches, covered with an Afh-coloured bark, and garnifhed with heart-flaped leaves, near four inches long, and two inches broad in their wideft part, ending in acute points; they are of a light green on their upper fide, but woolly on their under, ftanding on flender foot-ftalks without any order, fometime fingle, and at others, two or three arife from the fame joint. The flowers are produced in fhort fpikes from the fide of the branches; they are of a whitifh green colour, and the female flowers are fucceeded by capfules, having three cells, each including a fingle feed.

The eighth fort grows naturally in Jamaica, from whence the feeds were fent me by the late Dr. Houftoun; this rifes with a fhubby ftalk about fix or feven feet high, fending out many fide branches, which are covered with a fmooth bark, of a yellowifh white colour, garnifhed very clofely with narrow ftiff leaves near three inches long, and about one eighth of an inch broad, of a light green on thsir upper fid? » but their under fide is the fame colour as ile bark -, the midrib is furrowed on their upper fide, and very prominent on the lower; the upper pare of ths branches divide into four or five fmaller, which arife from the fame joint, and are nearly equal in their length, and between thefe arife a long loofe fpike of whitifh green flowers. The whole plant hath an aromatic odour when rubbed. The feeds grow in roundifh capfules having three cells, each including a fingle feed.

The ninth fort grows naturally in Jamaica, from whence it was fent me by the late Dr. Houftoun; this rifes with a fhubby ftalk fix or feven feet high, dividing upward into feveral branches, which are covered with a yellowifh down, garnifhed with long heart-flaped leaves, ending in acute points; thefe are two inches and a half long, and one broad in their wideft part, ftanding on long foot-ftalks, covered on both fides with a woolly down of the fame colour as the branches. The flowers are produced on long clofe fpikes at the end of the branches; the male flowers, which are fituated on the upper part of the fpikes, have white flowers of one leaf, divided into five parts almoft to the bottom, and have five taper ftamina, fituated in the bottom. The female flowers on the lower part of the fpikes, have large woolly empalements, and are fucceeded by round capfules with three cells, each including a fingle feed.

The tenth fort rifes with a fhubby ftalk near four feet high, dividing into many fmaller branches, which have a filvery bark, and are garnifhed with fmall heart-flaped leaves, about three quarters of an inch long, and half as broad at their bafe, ending in acute points; thefe are woolly on both fides, but their under fide is filvery, their upper fide of a yellowifh green. The flowers are produced in fhort fpikes at the end of the branches, which are fmall, white, and have woolly empalements. The female flowers on the lower part of the fpikes are fucceeded by roundifh capfules with three cells, each containing one feed.

All thefe plants except the firft, are natives of warm countries, fo will not thrive in England, unlefs they are tenderly treated. They are all propagated by feeds; thofe which are annual perfeft their feeds in England *

England; but the flirubby forts very rarely irrive to
 the pi-icction, fo their feeds muft be procured from
 (the countries where they naturally grow. The feeds
 muft be lbwn on a hot-bed early in the fprinfr, and
 when the plants art fit to remove, they flould be
 each tr.m (plained into a fmaUpot, and plunged into
 a moderate hot-bed of tanners bark, where they
 lould be jhailed from the fun till they have taken
 freth roor; rhtn they triult have air itimitt(1 to liem
 daily, in proportion to (be warmth of the lea&n;
 they muft allo be frequently re&fshed with u-nt-r,
 particularly tin- bcond, third, and fourth forts. • nich
 yil! often require water, but the others hould have
 it more lparingly. After the plants art grown too
 utl to remain in the frames, d they flould be removed,
 i into the ftovc, or a glids-cafc, where there is
 a hotbed of tanners bark, into which the pets (houkl
 ^ plunged, and there the annual forts will flower
 ^d per&t their feeds; but the lhrublij- kindl moft
 « removed into the b,irk-ftovc in the autumn, anf
 during the winter fealbn tlity lhouJl have but little
 water-, and the ltovc flould IK kept in a good tern-
 pen arc of hear, otherwife they will not live through
 thr winter in England.

As thefe plants retain their leaves all the ywr, fo
 they niatc A pretty variety in winter, wien they are
 intermixed with other plants, whofe leaves ire of dif-
 ferent form* and cutoitr-i from dtclr.

CROWN IMPEV I - \ I - See PITHWA.
 CRUCIA NELLA. Lin. Ges; Mnnt. nS. Ru-
 beola. Toum. Intl. II. H- > a. tab. jo. Petty
 Madder.

The CHARACTERS are,
 Thejlcvier bath a *tatJtttd cr.-piikmait*, which is rigid
 i: .>pr?ffrd. It bath we *petal*, with a *flem*
 l><trial tube which is laigrr than lie *empairmn*
 *M Mo fair parts at the brim, h bath four, :JOBIII
 /"noted in (hi math if iht tule, *unamatd fa fi*gl*
 kite, of the tub, ilrpjmr; aJUXdr bifid fa¹*, m
 ii-igirmaiaaftiraierdbtcb.
 , caib tentsfiring mt chng fied.

This gen us of plants is ranged in the firft fecVion of
 LinrLUs5 fourth cl'fs, intitlei! Tetrandi'la Monogy-
 'ia, tie flower hiving fout Rimina and one (tyle.

The SPECIES are,
 • CnuctASELi.A (An'ufiifiiUa) crecti, foliis Fenii li-
 Wariba. JIort. Lp&l. zj. Vmbt Creimdk with Jut
 Xarrem leaves. Rubcola anguftiore folio. 'ourn. In ft.
 '30- Ptiij MuiMr.

• CRUCIATELLA (Labi) iii) pracunibcns, foliis quater-
 n'is iantcolatb, floribus iuicat«. Hflrt Uj>&l. 17.
 Trailing *CndaatBa* ivitb fiat ipar-jhapid leaves tutii
 ffikt.lfmctrs. Rubeda latiorc iolio. Tourn. Inft. 130.

3- CKUCIANILLA (Mmlitaa) procumbeni fuffiutkoljt
 quaternis, fioribus oppofitis quinquefidis. Lin.
 *V. i'iant. 158. *Crurieaikvib tr*, , ftalks,
 fyrfeawat eechjesr.i, and fiesetr grev-ixg '» mbvli.
 ^ubeola maritima. C. B. P.

+ CRUCIATA (Jiiipitk) caule hifpid, f°»« Luü-
 ceoUtis hirfutLi 0
 naibus. *Crucian*
 kavispUcta
 ** at iht ends w

11. iit. M3S.

51 9* Wus«tLA (sitxeriouta) foliis imeari-ljncroJwis
 l'itufji oppofitis, caule crectri rill 19 ibli-
 •ariis a11ri: -lla m'tb sa

file Irt fort grows naturalj in d e South of Fatnce
 s11d Italy., thu is an annual jftnt, while ri(
 & ttjiri^t Iblks a foot high, having (1st or feveti
 very curv'v linear leaves laced in whic¹1^ "each
 J'U'nt. The flowers grow in dofe fpx< at the top
 and from the fid • ofthir bisHichoj thieil arc imall,
 *hicc, and not longer -i, in the empalemt, fo makr
 no great appearance. It ikwen m June ant July,
 and the feeds ripen in autumn.

The lecontl fort grows in die Minds of the *Ardnpe-*
la<?o, and a bo about Montpellier; thvis is alfo an annual
 pl.itu, lending out fveral branching lilk<>; from the
 root, ivliidi lie prodrate, and are garniflted with four
 f^ar-fiaaped leaves at each joint. Ths Bowers are
 produced in lung i'pilw at the externity of the
 brunches! thdc are very Small, (b make no gTeat ap-
 pearance. U Bowers about the fame time as the
 • tncr.

Tire third fort is like the il-cond in the appearance of
 leave 1 in J (talks, lmt the flowers grow on the fide of
 the lbltu, almoit in whorls, ami jnakv little appear-
 ance. This grows narorally on the bonjers of the
 fcs, in die fuuth of France and *lulf*.

Thie three, forts are preferved in fome gardens for
 die iivke of variety -, ii the lertk are fown on 3 bed
 of I bt earth eirly in the fprinjj, where they are de-
 loped I to remain, they will require no other culture,
 but to thin them when: they are too dole, and keep
 them clean from weed? i or if the feeds arc permitted
 to fe:itrt, the *A.insz* will come up in the bring, and
 require nu other treatment; but the diird lbrt will
 not ripen its feeds lure, when the autumn is not fa-
 vour

The luurtJi fort Imh four-cornered, rough, prickly
 ll ilk<, which bend dowiwani, and ire garni died widi
 ih.iptd leaves, whi'h arc hairy and (land op-
 /*Kifuc* i the (lowers are produced in final! cluilers at
 the em' of the brunches, which arc blue, and cut into
 foil! parts at the rop j after thefe decay, they arc fuc-
 ceed .: ! by win cap'lufes joined, incachof rite) -
 obbgng lt •.

The fifth (brt ! pill whh i (hnbly) branching ftalk
 near three feet high* whic • garnifhed with narrow
 fpear-fhaped lez'es, covered with dingy hairs. The
 lloivtra ive l) rod Lit fd from the win^i oil ilic leaves,
 on each Gdc the (talk finely; dide nre of a pale
 blue colour, and are iucedced by twin fruit like LIJ.
 fort,ter.

Both theii: JbrtJ grow naturally it La VCT> (.
 New Sp.iiti, from whence the leeds v/ct: i ;
 the litt- Or, Houttoun; and the " lints
 Chellei gardn very well durina <••••
 but perihed in the autumn before thei
 ripic.

CRUCIATA, See VAIASTIA.
 CRUCIATA BELGARLJM SecS
 CUCUBALUS. Lin. Gen. Plant. 108. Toum.
 Intl. ft H. 3J9, i*b. 176. Ben y-bearing Chick weed.

The CttAKACT:BI are,
 The Jiewer bulb ait ehby permanent tnpoinmt of snt
 kaf, ml title fivi. It bjjb jf:v ptals, with
 toi'e\$ lotg as (be rmpalcment. Aw fprrai &pin at the
 icf. h bath ten jiamina, fivi cf<abüü art allmnttelf

tdistbtaii •••• or, ' icrminated by
 ei-kng fmmti. In tit tattr isfitaatti the cbUag ger-
 D0t, , bearing the -irks which ere longer than the
 fmoie, covered by a txg hairy JiijpMt, Tbt tnpit-
 cent ofward become l prinlid iloji cepfute mtb thren
 cells, tfining at tin lop in fist parts, ant JHUd with

Tlii. 'ints is ranged in the third fection of
 Liu naxia's tenth claf, 2ed Decamiria Trigyma,
 ihc . • >g W" iUmina and three ilyles.

TheSPta;
 1. CucasALin) (*Beeiffrus*) calycibus campamil.iis, pe*
 tails diftantibu*, pericarpis coloratis, nunis divari-
 catis Lin. Sp. Plant. +14, *duulmlus <s>Hb a id*
 fttpalnmnit, pete*! fif-ing *efmulir*, a celeureJ nier to
 tbt fruit, atid divaricated brunches, Cucu bolus P) in ii.

Lugd. 1439
 1. CUCUBALUS (Labi) esulibm -
 calycibus fubglobosis,
 faifinitinah'fr thm the ptwk- *Lycfani* fylveltris
 (jira: behen album vulsu. C. U. P. 105. Cemmeat/

and Spiller. Pp.
 1. CUCUBALUS (*Agopoides*) s. s. cibusfobglobofij, caule
 mu,!:; tinearibus acutij. Cu
 tnt fphalar *impaitmMI** a broxtixg fpremiing

- and narrow-pointed leaves. *Lychnis fylveftris cjuæ behen album vulgò, foliis anguftioribus & acutioribus.* C. B. P. 250. *Spatting Poppy* with narrower pointed leaves.
4. CUCUBALUS (*Behen*) calycibus fubglobofis glabris reticulato-venofis, capfulis trilobularibus corollis fubnudis. Flor. Suec. 360. *Cucubalus with fmooth globular mpalements which have netted veins, capfules having three cells* and naked petals.* *Lychnis Suecica behen album folio, habitu, calyce ampliffimq; gumfepungar five ferotum arietis ditte.* Boerh. Ind. alt. 212. *Called Gumfepungar in Sweden.*
 5. CUCUBALUS (*Fabarius*) foliis obovatis carnofis. Prod. Leyd. 448. *Cucubalus with oval flejhy leaves.* *Lychnis maritima faxatilis, folio anacampferotis.* Tourn. Cor. 24.
 6. CUCUBALUS (*Dubrenfis*) floribus lateralibus decumbentibus, caule indivifo, foliis bafi reflexis. Lin. Sp. Plant. 414. *Cucubalus with declining flowers on the fides of the ftalk, which is undivided, and leaves reflexed at their bafe.* *Lychnis major noftiflora Dubrenfis perennis.* RaiiHift. 995. *Greater perennial night-flowering Lychnis of Dover.*
 7. CUCUBALUS (*Stellatus*) foliis quaternis. Hort. Upfal. n. o. *Four-leaved Cucubalus.* *Lychnis carophyllæus Virginianus, gentianæ foliis glabris quatuor ex fingulis geniculis caulem amplexantibus, flore amplo fimbriato.* Rail Hift. 1895.
 8. CUCUBALUS (*Noftiflora*) calycibus ftriatis acutis petalis bipartitis, caule paniculate, foliis linearibus. *Cucubalus withftriatis acute empalements, petals divided in two part Si a paniculated ftalk, and narrow leaves.* *Lychnis noAiflora anguftifolia odorato.* Tourn. Inft. R. H. 335. *Narrow-leaved, fweet-fcented, night-flowering Lychnis.*
 9. CUCUBALUS (*Otites*) floribus dioicis, petalis linearibus indivifis. Hort. Cliff. 272. *Cucubalus with male and female flowers on different plants, and linear undivided petals.* *Lychnis vifcofa* flore mufofo.* C. B. P. 206.
 10. CUCUBALUS (*Acaulis*) acaulis. Flor. Lapp. 184. *Cucubalus withoutftalks.* *Lychnis Alpina pumila, folio gramineo, five mufcus Alpinus Lychnidis flore.* C. B. P. 256.
 11. CUCUBALUS (*Catholicus*) petalis bipartitis, floribus paniculatis, ftaminibus longis, foliis lanceolato ovatis. Hort. Upfal. i. n. *Cucubalus with bifid petals, flowers growing in panicles, longftamina, and fpear-Jhaped acute leaves.* *Lychnis altiffima, ocymaftri facie, flore mufofo.* Triumphet.
 12. CUCUBALUS (*Paniculatus*) foliis radicalibus ovatis acutis, caulinis lanceolatis oppofitis, floribus paniculatis ereftis. *Cucubalus with lower leaves oval and pointed, thofe on the ftalks fpear-Jhaped, oppofite, and flowers growing in panicles which are ere&.*
 13. CUCUBALUS (*Italicus*) petalis bipartitis, caule paniculato, foliis radicalibus ovato-lanceolatis caulinis linearibus. *Cucubalus with petals divided in two parts, a paniculated ftalk, whofe lower leaves are oval and fpear-Jhaped, and thofe on the ftalks very narrow.* -

The firft fort grows naturally in France, Germany, and Italy, in fhady places, and is feldom kept in gardens, unlefs for the fake of variety ^ it fends out many climbing ftalks, which grow four or five feet high where they meet with fupport, otherwife they trail on the ground; thefe ftalks fend out fide branches oppofite, at each joint; the leaves are like thofe of Chickweed, and are placed oppofite. The flowers come out fingle at the end of the branches, which have large inflated empalements; they confift of five petals, which are white, cut at the brim into feveral narrow fegments, and are placed at a diftance from each other; they are fucceeded by oval berries, which, when ripe, are black and full of juice, inclofing feveral flat fhining feeds. It flowers in June, and the feeds ripen in autumn. This hath a perennial creeping root, whereby it is apt to multiply too faft in gardens. It delights in {hade, and will thrive in almoft any foil.

The fecond fort grows naturally in mod parts of England, where it is generally called Spatling Poppy. This ftands in the catalogue of medicinal plants,

under die title of Behen album; the roots of it are fometimes ufed, and are accounted cordial, cephalic, and alexipharmic. It hath a perennial root, which ftrikes deep into the ground, fo that they are not eafily deftroyed by the plough, therefore it is frequently feen growing in bunches among corn. It is a rambling weed, fo is feldom cultivated.

The third fort grows naturally on the Alps; this differs from the former, in having much longer and narrower leaves, and the ftalks being more divided and fpreading, nor do the roots creep under ground like that. Thefe differences are confiant, for I have fown it above thirty years, and never found it vary.

The fourth fort grows naturally in Sweden, and fome other northern countries, where it paffes for the common fort; but although it is there fo, yet is very different from the fecond here mentioned, which is the fort that grows common in moft other parts of Europe. The ftalks of this are much larger, the leaves longer and more pointed *, the empalement of the flower is curioufly veined like net-work, of a purplifh colour, whereas that of our common fort is plain. Thefe differences are lafting, when the plants are cultivated in a garden.

The fifth fort was difcovered by Tournefort in the Levant, who fent the feeds to the royal garden at Paris. This puts out many oval, thick, fucculent leaves near the ground, out of the middle of which, arifes an upright ftalk about fifteen inches high, the lower part of which is garnifhed with leaves of the feme form and confidence as thofe at bottom, but are fmaller; thefe are placed oppofite *, the upper part of the ftalk divides into two fmaller, on which ftand a few fmall herbaceous flowers at each joint. It flowers in June, and fometimes ripens feeds in autumn. The plant is biennial, generally perifling when it has produced feeds; but unlefs it is fown upon a very dry rubbifh, and in a warm fituation, the plants will not live through the winter in England *, for when they are in good ground, they grow large, and are fo replete with moifture, as to be affected by the firft froft in the autumn; but where they have grown upoa an old wall, I have known them efcape, when all thofe were killed which grew in the ground.

The fixth fort grows naturally upon the cliffs near Dover. This hath a perennial root, from which arifes a fingle ftalk about a foot and a half high, garnifhed with long narrow leaves placed oppofite; the flowers are produced from the fide of the ftalks, each foot-ftalk fuftaining three flowers-, the foot-ftalks come out by pairs oppofite, the empalement of the flower is long and ftriped, the flowers are of a pale red. Thefe appear in June, and the feeds ripen in autumn.

The feventh fort grows naturally in Virginia, and feveral other parts of North America. This hath a perennial root, from which arife two or three flender upright ftalks about a foot high, their lower part being garnifhed with four leaves at each joint, placed in form of a crofs; thefe are fmooth, of a deep greeHf about an inch and a half long, and half an inch broad near their bafe, terminating in acute points; the joints of the upper part of the ftalk are garnifhed with white fringed flowers, Handing fingle upon prett/ long foot-ftalks, which come out by pairs oppofi ^ The flowers appear in June, and in warm feafons xbf/ feeds will ripen in England.

The eighth fort grows naturally in Spain and Itaty* This is a perennial plant, which rifes with an uprig ^ branching ftalk a foot and a half high, garnifhed with very narrow leaves placed oppofite; the upp < part of the ftalk is very branching; fome of thef branches are long, and others fhort; the flowers ftan < upon long naked foot-ftalks, each fupporting three or four flowers, which have long tubes, with ihrip ^ empalements; the petals are large, and deeply & * vided at the top; they are of a pale bluifh color ^ Thefe flowers are clofed all day, but when the W * leaves them, they expand, and then they have a very agreeable fcent. This fort may be propagated 9/

may be thereby separated from each other to a greater distance; then give them a little water (if the weather be dry) to fettle the earth about them* which you must afterwards repeat as often as you (shall find it necessary, 'till being careful to keep the ground clear from weeds.

When your Cauliflowers are quite drawn off the ground from between the Cucumbers, you must hoe and clean the ground, drawing the earth up round each hole in form of a basin, the better to contain the water when it is given them; you must also lay out the plants in exact order as they are to run and extend, so that they may not interfere with each other; then lay a little earth between the plants left, pressing it down gently with your hand, the better to spread them each way, giving them a little water to fettle the earth about them, repeating it as often as the season (shall require, and observing to keep the ground clean from weeds. The plants thus managed, will begin to produce fruit toward the latter end of July, when you may either gather them young for pickling, or suffer them to grow for large fruit. The quantity of holes necessary for a family, is about fifty or sixty * for if you have fewer, they will not produce enough at one gathering to make it worth the trouble and expence of pickling, without keeping them too long in the house, for you cannot expect to gather more than two hundred at each time from fifty holes -, but this may be done twice a week during the whole season, which commonly lasts five weeks; but that from fifty holes you may reasonably expect to gather about two thousand in the season, which, if they are taken small, will not be too many for a private family. And if so many are not wanted, they may be left to grow to a proper size for eating.

CUCUMIS AGRESTIS. See MOMORDICA.
 CUCURBITA. Lin. Gen. Plant. 968. Tourn Inf. R. H. 107. [so called from Curvata, Lot. bended, because the fruit of this plant generally bends,] the Gourd.

The CHARACTERS are,
It hath male and female flowers in the same plant. The flowers have a bell-shaped empalement of one leaf whose borders are terminated by five bristles-, the flowers are bell-shaped, adhering to the empalement and are of one petal, which is veined and rough divided at the top into five parts. The male flowers have three stamens, which are comelated at their extremity\ but are distinct at their base, where they adhere to the empalement; these are terminated by linear funiculi running up and down. The female flowers have a large germen, situated under the flower* supporting a conical trifid style, crowned by a large trifid stigma. The germen afterward becomes a large fleshy fruit, having three soft membranaceous cells which are distinct, inclosing two rows of seeds which are bordered.*

This genus of plants is ranged in the tenth section of Linnaeus's twenty-first class, intitled Monoecia Syngenesia, the plants having male and female flowers on the same plant, and the stamens of the male flowers being conned.

The SPECIES are,

1. CUCURBITA (*Lagenaria*) foliis cordatis denticulatis tomentosis basi subtus biglandulosis; pomis lignosis. Lin. Sp. 1434. *Gourd with heart-shaped, indented, woolly leaves, having two glands at their base, and a ligneous shell to the fruit.* Cucurbita longa, folio molli, flore albo. J. B. 2. 221. *Commonly called the Long Gourd.*
- * CUCURBITA (*Pepo*) foliis lobatis, pomis lsevibus. Lin. Sp. Plant. 1010. *Gourd with lobed leaves and a smooth fruit.* Cucurbita major rotunda, flore luteo, folio aspero. C. B. P. 213. *Commonly called Pumpum, or Pumpkin.*
3. CUCURBITA (*Verrucosa*) foliis lobatis, pomis nodoverrucosis. Lin. Sp. Plant. 1010. *Gourd with lobed leaves, and a varied knobby fruit.* Cucurbita verrucosa. J. B. 2. 222. *Warted Gourd.*
4. Cucurbita (*Melopepo*) foliis lobatis, caule erecto, pomis depressis-nodosis. Lin. Sp. Plant. 1010. *Gourd with lobed leaves, an erect stalk, and a depressed knotty fruit.* Metopepe clypeiformis. C. B. P. 312. *Commonly called Squish.*

5. CUCURBITA (*stignofus*) foliis lobatis asperis, flore luteo, pomis lignosis. *Gourd with rough-lobed leaves* a yellow flower, and fruit having a hard shell-, commonly called Calabash.*

The first sort is sometimes propagated in the English gardens by way of curiosity, but the fruit is very rarely eaten here * though, if they are gathered when they are young, while their (kins are tender, and boiled, they have an agreeable flavour. In the eastern countries these fruit are very commonly cultivated and sold in the markets for the table, and are a great part of the food of the common people, from June to October. These fruit are also eaten in both the Indies, where the plants are cultivated as culinary, and in those countries, where the heat of their summers is too great for many of our common vegetables, these may be a very good substitute.

This sort doth not vary like most of the others, but always produces the same shaped fruit. The plants of this extend to a great length, if the season proves warm and favourable, and will then produce ripe fruit-, but in cold summers, the fruit seldom grows to half its usual size. I have measured some of these fruit when growing, which were six feet long, and a foot and a half round -, the plants were near twenty feet in length: the stalks of this, and also the leaves, are covered with a fine soft hairy down -, the flowers are large, white, and stand upon long foot-stalks, being reflexed at their brim *, the fruit is generally incurved and crooked, and when ripe, is of a pale yellow colour. The rind of this fruit becomes hard, so that if the seeds and pulp are taken out, and the shell dried, it will contain water; and in those countries where they are much cultivated, are used for many purposes.

The second sort, which is commonly known by the title of Pumpkin, is frequently cultivated by the country people in England, who plant them upon their dunghills, where the plants run over them, and spread to a great distance; when the seasons are favourable, they will produce plenty of large fruit: these they usually suffer to grow to maturity, then they cut open a hole on one side, and take the seeds out of the pulp as clean as possible, after which they fill the shell with Apples sliced, which they mix with the pulp of the fruit, and some add a little sugar and spice to it; then bake it in an oven, and eat it in the same manner as baked Apples; but this is a strong food, and only fit for those who labour hard, and can easily digest it.

These may be propagated by sowing their seeds in April, on a hot-bed; and when the plants come up, they should be transplanted on another moderate bed, where they should be brought up hardily, and have a great deal of air to strengthen them; and when they have got four or five leaves, they should be transplanted into holes made upon an old dunghill, or some such place, allowing them a great deal of room to run, for some of the sorts will spread to a great distance. I have measured a single plant, which had run upwards of forty feet from the hole, and had produced a great number of side branches; so that if the plant had been encouraged, and all the side branches permitted to remain, I dare say it would have fairly overspread twenty rods of ground which, to some people, may seem like a romance, yet I can affirm it to be fact. But what is this to the account printed in the Transactions of the Royal Society, which was communicated to them by Paul Dudley, Esq; from New England, wherein mention is made of a single plant of this kind, which, without any culture, spread over a large spot of ground, and from which plant were gathered two hundred and sixty fruits each, one with another, as big as a half peck.

There are several varieties of this fruit, which differ in their form and size *, but as these are annually varying from seeds, so I have omitted the mentioning them, for they seldom continue to produce the same kinds of fruit three years together.

The third fort is very common in most parts of America, where it is cultivated as a culinary fruit; of this fort there are alfo several varieties* which differ in their form and fize *, some of these are flat, others round * some are shaped like a bottle, and others are oblong, their outer cover or rind being white when ripe, and covered with large protuberances or warts. The fruit are commonly gathered when they are half grown, and boiled by the inhabitants of America to eat as a sauce with their meat; but in England they are only cultivated by way of curiosity, few persons having a relish for them here, where they have a great variety of better esculent plants at that season, when these are fit for use. These may be propagated in the same manner as the second fort.

The fourth fort is alio very common in North America, where it is cultivated for the same purposes as the third. This very often grows with a strong, bulky, erect stalk, without putting out runners from the side, as the other forts, but frequently varies; for after it has been cultivated a few years in the same garden, the plants will become trailing like the others, and extend their branches to as great distance *, and yet I have known when part of the feeds, taken out from the same fruit have been sown in another garden, at a considerable distance, the fruit have been the same, and the plants have grown erect, when those which were sown in the same garden, have produced trailing plants with larger fruit of a different shape.

The fruit of the fifth fort hath a hard shell when ripe like the first, which may be dried and preserved many years: these are of very different forms and fize; some are shaped like a Pear, and are no bigger than a large Catherine Pear; some are as large as quart bottles, and almost of the same form; others are round and shaped like an Orange, and are of the same fize and colour, but these are very variable; for I have cultivated most of the forts near forty years, and have not been able, with all possible care, to preserve the varieties longer than two or three years in the same garden, without procuring fresh feeds from some distant place. Whether these changes are brought about by the admixture of the farina with each other, or from what cause I cannot say, because I have frequently planted them at as great distance from each other as I possibly could in the same garden, and yet the effect has been the same as when near.

The first fort requires to be treated more tenderly than the others, in order to procure ripe fruit 5 to the feeds should be sown upon a moderate hot-bed in April, and the plants afterward planted each into a penny pot, and plunged into a very moderate hot-bed to bring them forward; but they must not be tenderly treated, for if they have not a large share of free air admitted to them every day, they will draw up weak. When the plants are grown too large to be continued in the pots, there should be holes dug where they are designed to grow, and three or four barrows full of hot dung put into each *, these should be covered with earth, into which the plants must be planted, and covered with hand-glasses till they run out.

There are some people who plant these plants by the sides of arbours, over which they train the vines j so that in a short time they will cover the whole arbour, and afford a strong shade, and upon some of these arbours I have km the longest fruit. There are others who plant them near walls, pales, or hedges, to which they fatten the Vines, and train them to a great height: the Orange-shaped Gourd is the fort which is most commonly so planted for the ornament of its fruit, which has a pretty effect, especially when seen at some distance. All the forts require a large supply of water in dry weather.

These plants requiring so much room to spread, and their fruit being very little valued in England, hath occasioned their not being cultivated amongst us *, we having so many plants, roots, or fruits, which are

greatly preferable to those for kitchen uses: but in some parts of America, where provisions are not in so great plenty, or so great variety, these fruits may be very acceptable.

G U I E T E See C&ESCENTIA.

C U L M I F E R D U S P L A N T S [so called of Culmus, Lat. straw or haulm.] are such as have a smooth jointed stalk, usually hollow, and at each joint wrapped about with single, narrow, sharp-pointed leaves; and their feeds are contained in chaffy hulks, as Wheat, Barley, &c.

C U M I N O I D E S. See LAGOECIA;

C U M I N U M. Lin. Gen. Plant. 313. Mor. Umb. Köpwi, Gr. Cumin.

The CHARACTERS are,

It hath an umbelliferous flower; the general umbel is composed of many, which are divided into four parts; their involucre is longer than the umbel The great umbel is uniform \ the flowers have five unequal petals, whose borders are inflexed, and five single stamina, terminated by slender filaments. It hath a large germen situated under the flower \ supporting two small styles, crowned by single stigmas. The germen afterward becomes an oval striated fruity composed of two oval feeds, which are convex and furrowed on one side, and plain on the other.

This genus of plants is ranged in the second section of Linnæus's fifth class, intitled Pentandria Digynia, the flower having five stamina and two styles.

We have but one SPECIES of this genus, viz.

CUMINUM (*Cuminum*.) Lin. Mat. Med. 139. Cumin: Cuminum femine longiore; C.B. P. 146. Cumin with a longer feed.

This plant is annual, perishing soon after the feeds are ripe 5 it seldom rises more than nine or ten inches high, in the warm countries where it is cultivated; but I have never seen it grow more than three or four inches high in England* where I have sometimes had the plants come so far as to flower very well, but never to produce feeds. The leaves of this plant are divided into long narrow segments like those of Fennel, but much smaller; they are of a deep green, and generally turn backward at their extremity; the flowers grow in small umbels at the top of the stalks; these are composed of five unequal petals, which are of a pale bluish colour, and are succeeded by long, channelled, aromatic feeds.

The feeds of this plant is the only part used in medicine; these are ranged among the greater hot feeds; they consist of very warm distilling parts, and are esteemed good to expel wind out of the stomach and bowels, so they are frequently put into clysters for that purpose, and are sometimes given in powder; and outwardly applied, they are of great service to ease the pains of the breast or side.

This plant is propagated for sale in the island of Malta, where it is called Cumino aigro, i. e. *hot Cumin*. But Anise, which they also propagate in no less quantity, they call Cumino duke, i. e. *sweet Cumin*. So that many of the old botanists were mistaken, when they made two species of Cumin, viz. acre and dulce.

If the feeds of this plant are sown in small pots filled with light kitchen-garden earth, and plunged into a very moderate hot-bed to bring up the plants, and these after having been gradually inured to the open air, turned out of the pots, and planted in a warm border of good earth, preserving the balls of earth to their roots, and afterward kept clean from weeds, the plants will flower pretty well, and by thus, bringing of the plants forward in the spring, they may perfect their feeds in very warm seasons.

C U N I L A. See SIDERITIS.

C U N O N I A. Buttn. Cun. tab. 1. Antholyza. Lin. Gen. Plant. 56.

The CHARACTERS are,

The flowers grow alternate in an imbricated spike, each having spatula orbicath, composed of two spear-shaped concave leaves \ the flower hath one ringent petal, having a short slender tube, which is dilated at the chaps, and compressed on the sides \ the upper lip is arched, and

Jretched

stretched out a conjiderabk length beyond the ale or wings, and is rounded at the top: it hath thne long flender ftamina which arefituated in the upper lip, terminated by oblong fiat fummits^ which are fastened in their middle and lie profrtrate. It bath a flender fstyle, which isfhorter than the ftamina, crowned by three cylindrical ftigmas which jdn the fummits, and an included in the upper lip. ^be germen, which is Jituated below the flower? becomes &n oblong capfide with three cells, filled with compreffed feeds.*

This genus of plants is ranged in the first feftion of Linnaeus's third clafs, intitkd Triandria Monogynia, the flowers having three ftamina and one fstyle, but he has joined it to the Antholyza, making it only a fpecies of that genus-, whereas by the form and charadters of the flower, it fhould be feperated from that, there being full as great difference between the flowers of this and thofe of the Antholyza, as is between thofe and the Gladiolus •, for the flowers of Cunonia have no carina or under lip, but thofe of the Antholyza have, in which one of the ftamina is included, which is feperated from the other two, which are fituated in the upper lip; but in this all three are of equal length, and fituated in the hollow of the upper lip. The two wings of this are fhort, whereas thofe of Antholyza are long, fo that I think they fhould be feperated. •

We have but one SPECIES of this genus at prefent in the Englifh gardens, which is

CUNONIA (*Antbofyza*) floribus feffilibus, fpaxis maximis. **Buttn. Cun, 21r. tab. i. Cunonia with flowers fitting clofe to the ftalk, and very large fpath* or fheaths. Dr. Linnaeus titles it Antholyza ftaminibus omnibus adfcendentibus. Sp. Plant. 37. Antholyza with all the ftamina afcending.**

There is a plant of this kind figured in Cornutus's book of Canada plants, under the title of Gladiolus iEthiopicus, flore Coccineo, p. 78. but by his figure and defcription, it appears to be a different Ipecies from this, his flowers having much fmaller (pathae or iheaths, nor does the ftalks of his rife near fo high as this j there are alfo fome other differences between them.

The feeds of this plant I received from the Cape of Good Hope, where it grows naturally, which fucceeded fo well in the Chelfea garden, as to produce a great number of plants, which flowered well the third feafon after they appeared, and have continued to produce flowers, and perfed their feeds every year fince.

This hath a compreffed bulbous root, fomewhat like that of Corn Flag, covered with a brown fkin 5 from this arife feveral narrow fword-ihaped leaves, about nine inches long, and a quarter of jn inch broad in the middle, terminating in acute points ^ thefe have one longitudinal midrib which is prominent, and two longitudinal veins running parallel on each fide-, they are of a fea-green colour, and appear in autumn, growing in length all the winter-, in fpring theftalk arifes from between the leaves, which is round, ftrong, and jointed; at each joint is fituated a fingle leaf, which almoft embraces the ftalk for near three inches from the bafe, then by the curvature of the ftalk it is feperated, Handing ereft: the ftalks rife near a foot and a half high, which is generally curved two oppofite ways •, * the upper part of the ftalk is terminated by a loofe fpike of flowers, coming out of large fpathic or fheaths, compofed of two oblong concave leaves, terminating in acute points: thefe are at their first appearance placed imbricatim over each other, but as the ftalk increafes in length, fo thefe are feperated -, from between thefe two leaves comes out the flower, each having a flender Saffron-coloured tube near half an inch long, which is then enlarged where the petal is divided, and the upper fegment is extended two inches in length, being arched over the ftamina and fstyle. This is narrow as far as to the extent of the wings, but above them is enlarged and fpread open half an inch in length, and is concave, covering the fummits and fti^mas

which are extended to that length; the two wings arc alfo narrow at their bafe, but are enlarged upward in the fame manner, ending in concave obtufe points, which are compreffed together, and cover the ftamina and fstyle. This flower is of a beautiful fof: fcarlet colour, fo makes a fine appearance, about the latter end of April or beginning of May, which is the feafon of its flowering. After the flowers decay, the germen becomes an oval fmooth capfule, opening in three cells, which are filled with flat bordered feeds.

This plant is too tender to thrive in the open air in England, fo the roots muft be planted in pots filled with light earth, and may remain in the open air till Oftober, when they muft be removed into fhelter, either into an airy glafs-cafe., or place! under a hot-bed frame, where the leaves will keep growing all winter, and in the ipring the ftalks arife and flower. During the winter fcaibn, the plants will require a little water wlien the weather is mild, once a week, but it muft not be given in great quantities, efpecially in cold weather •, in the fpring they fhould be watered oftener; and when the flowers are paf, the pots fhould be removed into the open air to perfect their feeds, which will ripen the latter end of June, foon after which the ftalks will decay to the root, which will remain inafive till September. When the ftalks are decayed, the roots may be taken out of the ground, and kept in a dry room till the end of Auguft, when they fhould be planted again.

This plant is eafily propagated by offsets, which it fends out in great plenty, or by fowing of the feeds, which fhould be fown in pots about the middle of Auguft, and placed in a fituation where they may enjoy the morning fun, and in dry weather fhould be gently watered 5 in September the pots may be removed to a warmer fituation, and in Oftober they muft be placed under a frame, where they may be protected from froft and hard rains, but in mild weather enjoy the free air. The plants will appear in Odober, and continue growing all the winter, and in June their leaves will decay 5 then they may be taken up, and four or five roots may be planted in each pot, till they have grown another year, when they may be each put into a feperate pot* Thefe feedling plants muft be fheltered in the fame manner as the old roots in winter, and the third year they will flower.

CUPRESSUS. Lin. Gen. Plant. 958. Tourn. Inft. R. H. 587. tab. 358. Cyprefs [takes its name either of κυπ, to bring forth, and ψιδρα*, becaufe it produces equal branches on both fides •, or of Cyparifius, a certain infant whom the poets feign to have been transformed into a Cyprefs-tree.] The Cyprefs-tree,

The CHARACTERS are,

// bath male and female flowers growing at diftances on the fame plant\ the male flowers are formed into oval katkins, in which the flowers are placed thinly', among feveralroundi/b fcales, each having a fingle flower. Thefe have no petals nor ftamina, but have four fummits which adhere to the bottom of the fcales. The female flowers are formed in a roundifh cone, each containing eight or ten flowers\ the fcales of the cones are oppofitte, each having a fingle flower* thefe have no petals; the germen isfcarce vifible, but under eaehfeale there are many punctures orfpots, and a concave truncated apex inftead of a fyle \ this afterward becomes a globular cone, opening in angular target-Jhaped fcales, under which are fituated angular feeds.

This genus of plants is ranged in the ninth feftion of Linnaeus's twenty-first clafs, intitkd Monoecia Monadelphia-, the plants of this feftion have male and female flowers on the fame plant, and the male flowers are joined in one bdoy.

The SPECIES are,

1. CUPRESSUS (*Sempervirens*) foliis imbncatis, ramis crectioribus. Cyprefs with imbricated Uaves, and upright branches. Cupreffus meta in faftigium convoluta qua femina. Plinii. Dod. Pempt. 856. Female or common upright Cyprefs.

CUP

2. Cupressus Jutzntiitiims) foliis iirtbriettis acitits, ramis hortKomaitiis, Cyprifs <vilb imbricated atutt Jtavii, and hranchfi gra-ving btr>veti/afy. Cupfeuii ramus extra k fpargens qua: M;u, Plinii. Tourn, Intl. 1v. i. l. ; :- A. * : Iprta&Hg Cyprifs.

L IT ness us {IMIIOU'CO) foliis imbricatis, amcibus aculeatis, ramis tlependentibus. Cyprifi Jaitb itnmaidd lermiuiiing in spiiut, end bra/aba longing foam- -Aiiiril. Cupieiriis Lufitanica, patula, fruci u minore. Inft. R. H. 557- Portugal (pnsding Cyprifs with a /mailer frvt.

+ Cupressus (pif/kba) foliis dlrlichis patentibus. Horr. Cliff. 409. I... on (cut fides tbtbs: ... Cuprefius Virginians folia Acadffi dctikijs. Hart Am It. i. p. It3. ih-gimaCyprefswHtJBidsiisle&vej, mmaioufy CiiSkH Deiiddtauj Cyprifi.

5. Cur-ftEssus (tigaia) rblis imbricatis, frondibus ancijitibus. Lin. Sp. Plant. 1003. Cyprife zoitb itnbri-caSidUavts, and braxd>ti JIaxdixg (wo vitys. Cupref-fus nana Mji-iuia, fructu csmileo parvo. Pluk. Mant. Ci. Dwarf Maryland Cyprt/s viitb a /mall ike fruit.

CUPKISSUS (Afri(ato) lolis lirjnribus fimplicibus cructatim pofitis. Cyrefs tsilb narwsvfxgl leant j... Luprflus Africana of I (rmari and Olden-burgh. African Cyprifs-trice, called by tbt DuUb Cyrefi BOOM.

The firft of thefe trees is very common in moft of the old gardens in England, but at prdent is not lb much in rCJUelt as formerly, though it is not without its advantages, nor ilioiid it be entirely reject; although masy jjetfons are of that opinion -, for it feruea to add to CM ticauty of wiliicneffes, or dump* of Evcrgreeni, and whn they are ,>roptfly difpofed, they Tiave theit beauties. U was tormerU jilaiucJ to borders of plealun-gardens, and kept from into a pyramidal or conic form *, and ibme people, believing them [ubject to be killed if they cut them, tied them up with cords into a pyramidal figure, which form they are naturally diipoltd to grow in *, but this winding them about, prevented the air from entering [lie inward p:irts of the branches, fo that the leaves decayed, and became tinfightly, and greatly retarded ttitir growth. And diole which are ill cared, if the operation is not performed in the fpring, or early in the fummer, arc very fubjeft to be injured by {harp winds and cuttings irufil in winter. Wherefore, upon the whole, I think it much better to jiffier them w grow wild as they are naturally dilboicd, pi... tltirm only unooqfl other Evergreen Trees, where, by the darknef; of their green leaves, together with their waving heads, they will greatly add to di... The faroniiJ fort is by far the brgeir. growing tree,

and j die moll common timber in ibmc parts of the Levant. Th ti, if jilajited ujwn a warm, landy, gravelly liil, will proflper wonderfully s anJ tiot: of the plant 101 this fort are not fo finely fha>td as thok of the firft, yet they greatly recomptvk for thit defect, by j-nirou i growth and ilncaV i ng J! I wethers. This tree is very proper to intermix with Evergreens of a ftrict... he next to Tints and Fiis, tu fern Ganga, in which dafi it will keep pace with the ... of the land, and be v m liandlbmc. Befidtf, thieuud uj tl... tree is vcy vjl'uible, when pown to s 100f ii; for 1 hanks, who i l am convinced it will do in n... ftu... [hereibre, why ihuulJ nut this l-... ^ purpofc, fince there are many i-iceatn En-land where tht lbil is of... dj or wavtly naum, arui leluom pro-iuc« any dunij wonl cultivating? Now, if fuch places thec tree, will thrive wonderfully, and grad... ptlatfirc of the owner. while growing, and afterwards under as much protc to its ftocck, as perhaps the UrJ; plantation of Oaks, efpccially fhould the timber prove as good here, as to the iflands of the Aeckie-ligs, which I fee no reason to doubt of; tor wcmid it was fo painful a comrlity to ck- ifland tit Lm-dia, that the plantations were called Doo Fites, the falling of one of them being reckoned a dang iiter'j

portion.

CUP

The timber of this tree is faid to refit the worm, modi, IIIJ 4II putrefaction, and is faid to laft many huadred years. The doors of St. Peter's church ar Rome were framed of this material, which kited from the great Lotilantine to Pope Eugemij IViii'i time, whici) was eleven hundred years, and were then found and entire, when the Pope would needs change tic m rur gates of bra Is. The coffins were made of this material, in which Thucytlides tells us (he Athenians u'led to bury their heroes j and the mummy t liv!U, brought with thole conditcd boties out of I-gypt, arc many of them of this nMCeml.

Tins tree is by many learned authors re com mended for the improvement of the air, ami a Ipecific for the lungs, as fending forth great quantities of aromatic am! balfamic fccnts; wherefore many of [he jntient phyficians of the I... times uii-d to li-nd their patients, who were troubkd with weak lungs, to the tflund of Catidia, which at thai time abounded with thefe trees, where, from [lie L-ficfts of the air alone, wry few failed od a perfctd curc.

The fourth fort is a native of Amenta, where it grows in watery places, and riles to a prodigious height, and is or l wonderful bulk. I have been informt!, that there are trees of this kintt in America-which ire upwards of feventy feet high, and feveral fathoms in circumference, which trtesgrow conltantly in the water; therefore they may probably be of fingular advantage to plant in fuch Swampy or wet ibili, where few other trees wili grow, efpecULly of the refinous kind. That they arc very hardy in rcpteft to cold, is evident, from ibmc few trees of this kind which were formerly planted in England; particularly one in the gardens of John Tradefcant, at South Lambeth, near Vaix-Hall, which is upwards of thirty feet high, and of a conQdcrcble bulk, which, though in a common yard at pcfent, where no care u taken of it, but, on the contrary, many hooks art driven ir>to the trunk, to b&ttu cords thereto tor drying of cloaths, yet tixe tree is in great health and vigour, but hath not produced .my fruit ts yet, which may be occasioned for want i'; moifture : tor we often iVc many aquatic plants will grow upon a drier foil, but yet

are fo Ltom fo fuodudive Li either flowers or fruit, as thole which remain growing in the water.

There in alia 3 pretty lirje tree of this kind now growing in tie !?aukn. of the lite Sir Abraham JaniJi. (i. Bait. U Wiinblettin in .Surry, which ht5 pi'oduced great quantities of tones for ibmc years pull, whici, in favourable feaibns come to maturity, and the freik have been as good as tholii which have been brought from America. This :... it>Umcd when it was very large, which has dinted its growth y which, together with its being planted ujxm a dry toil, miy have occifioned its fruiffulnefs, tor it has mad: very little progrefi in its growth fince it wis removed.

Thic trees art all propagatci from feeds, which (liotild be lbwn early in the ipring on a bed ni warm, dry, liraiy on h, which muftice lcvilk-ii very fmoothi then fow thr leefs thereon pretty thick, fiffiinn tie-fame light earth over them half an inch chick. I the weather mould prove very warm and dry, it will be proper to (bade the bed from the fun in tilt day-time, and water the bed, which mult be doi:- very carefully, obferving not to walk the leeds nut... of the ground. In alxnit two months time (if your (< t... are good) the young plants will appear above ground. Which muft be contentJly kept clean from weeds, and in very visy weaiher Should beofitn rcfdrhrd-wuh water; but this [hould be done widi great l... can, let you beat ihd'c render ranted plants out of the pround. If the (ruh tit lbwn UOM a moderate li;... and the bed covered STh mats, they will tomr up much iboncr, tuid with greater certainly, than when they are lbwn inthec<... ground.

In this bed the young plants may fawwn two years, by which d... I have itreugh etioueh to be... I.tntid into a nutfrri)\ bui whic l... plants are young, they arc tender, fo lliuuk be covered in f... vcre frutl witi trues m prevent their be... thereby.

thereby. The best season for removing them is in the beginning of April, when the drying easterly winds of March are over, and, if possible, choose a cloudy day, when it is inclinable to rain * and in taking them out of the feed-bed, preserve the roots as entire as possible, and, if you can, a ball of earth to each plant. The soil in which these trees should be planted (as I before said) should be, for the two first sorts, a warm sand or gravel, which, when you have prepared, by carefully digging and cleaning from all noxious weeds, you must lay level. Then draw the lines where the trees are to be planted at three feet asunder, and plant the trees at eighteen inches distance in the rows, observing to clove the earth well to their roots, as also to lay a little mulch upon the surface of the ground about their stems; and water them well to settle the earth to their roots, which should be repeated twice a week, until the plants have taken their root.

These plants may remain in the nursery three or four years, according to the progress they make, or till your ground is ready where they are to be planted: but if you intend to let them remain longer, you should take up every other tree in the rows, and transplant out; for otherwise their roots will be matted together, so that it will render it difficult to transplant them, as also endanger the future growth of the trees. The plants should by no means be let stand too long in the nursery before they are transplanted out for good, because the roots do not mat together so closely as those of many other sorts of Evergreen Trees, whereby they may be taken up with good balls of earth to their roots; but the roots of the Cypress are apt to extend out in length, so it is one of the most difficult trees to remove when grown large; therefore most curious persons choose to plant the young plants into small pots, when they first take them out of the feed-bed, and to train them up in pots two or three years, until they are fit to plant out where they are to stand for good, and, by this management, they are secure of all the plants; for these may be shaken out of the pots at any time of the year without danger, and planted with their whole ball of earth, which is likewise a great advantage. When they are planted out for good (if they are designed for timber) they should be planted about twelve or fourteen feet distance every way, and be very careful in removing those in the full ground, not to shake the earth from their roots; to prevent which, you should open the ground about each tree, cutting off all long roots, then working under the ball of earth, cut the downright roots off; and after having pared off all the earth from the upper part of the ball, as also reduced the bulk of it, so that its weight may not be too great for the fibres to support, they may be carried upon a handbarrow by two persons to the place where they are to be planted; but if they are to be carried to a distant place, they should either be put into baskets, or their roots closely matted up. When they are planted, you must settle the earth close to their roots as before, laying a little mulch upon the surface of the ground about their stems, to prevent the sun and wind from entering the earth to dry their fibres; and water them well, to settle the ground to their roots, which must also be repeated, if the weather proves dry, until they have taken root, after which time they will require little more care than to keep them clear from weeds.

The first, which is the most common sort in England, seldom produces good seeds in this country; it is therefore the best way to have the cones brought over entire from the fourth parts of France and Italy, where they ripen perfectly well, and take the seeds out just before you sow them, for they will keep much better in the cones than if they are taken out. The method to get the seeds out is to expose the cones to a gentle heat, which will cause them to open, and easily emit their seeds.

The second sort grows naturally in the Levant, and from thence it has been formerly brought to Italy, but

at present this is pretty rare in England; yet what has passed under this title here, is only a variety of the common sort, whose branches grow much looser, and not so upright as the first; but the cones taken from these trees, and the seeds sown, have frequently produced plants of both varieties; but the true spreading Cypress extends its branches horizontally from the first year, and continues to extend them to a great length as the plants advance, and the plants raised from the seeds do not vary, so that it is certainly a distinct species. This grows to be a large timber tree in the Levant, and in Italy there are some of a considerable size.

The Virginian kind may also be propagated in as great plenty, for the cones of this may be easily procured from Carolina or Virginia, in both which places they grow in great abundance; and the seeds will rise as easily as any of the other sorts, and the plants are equally as hardy: these have been formerly kept in pots, and housed in winter, with which management they have not succeeded so well as they have done in England, since people have planted them into the full ground, and where they have had a moist soil, I have observed them to thrive best, which is since confirmed by Mr. Cateby, in his Natural History of Carolina; where he says, that this tree grows in places where the water commonly covers the surface of the ground three or four feet, so that it may be a very great improvement to our boggy soils. This tree, casting its leaves in winter, does not so well suit plantations of Evergreens at that season; though, in summer, when there is the greatest pleasure in walking among plantations of trees, it hath so much the appearance of an Evergreen, as to pass for such. It may also be propagated by cuttings, which should be planted in a bed of moist earth in the spring before they begin to shoot.

The third sort is at present pretty rare in the English gardens, though of late years there have been many plants raised here; but this sort is not quite so hardy, I fear, as the common Cypress, for the plants are frequently killed, or greatly injured in severe winters; and in the hard frost in 1740, there was a large tree of this kind entirely killed in the gardens of his Grace the Duke of Richmond, at Goodwood in Suffex, which had been growing there several years and in the year 1762, many large trees were killed. There are great plenty of these trees growing at a place called Bufaco, near Coimbra in Portugal, where this tree is called the Cedar of Bufaco, and there it grows to be a timber tree, so that from thence the seeds may be easily procured.

This tree grows naturally at Goa, from whence it was first brought to Portugal, where it has succeeded, and been propagated; formerly there were some trees of this sort growing in the Bishop of London's garden at Fulham, where it passed under the title of Cedar of Goa, by which it was sent from thence to the Leyden garden with that name.

The fifth sort is a native of North America, where it grows to a considerable height, and affords an useful timber to the inhabitants for many purposes. This sort is extremely worth cultivating in England; for as it grows in a much colder country, there is no danger of its thriving well in the open air in England, and being an Evergreen of regular growth, will add to the variety of wilderness quarters, or other plantations of Evergreen Trees.

This sort is propagated by seeds, which should be sown in the spring in boxes or tubs filled with light freestone earth, and placed where they may enjoy the morning sun till eleven or twelve o'clock. In dry weather they should be duly watered, and constantly kept clear from weeds. In this situation they may remain till Michaelmas, when they should be removed to a warmer place; for the plants seldom appear till the following spring, so that it will be proper to place the boxes or tubs near a south wall, pale, or hedge, during the winter season, lest, by being too much shaded, the wet of the winter season should rot

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the seeds. In the spring following, if these seeds or berries are placed on a moderate hot-bed, it will bring up the plants very soon, and greatly forward their growth; but as the spring advances, they should be shifted to heat the open air by degrees; and in May they may be taken out of the hot-bed, and placed in a sheltered situation, where they may enjoy the morning sun, being careful to keep them clear from weeds, and always water them duly in dry weather. The following winter it will be proper to remove the LAK near a south wall or park, for the plants being very young, are sometimes milder than they will be afterwards. Toward the latter end of March, or the beginning of April, just before the plants begin to (boot, they should be carefuly taken up (and the boxes) and having prepared a bed or two (with a fertile soil) to receive the plants, raised up fresh earth in a forked ULTit-¹¹ (not, the plants should be punted therein in rows about eighteen inches apart; and about a foot distance plant from plant into the rows. This work should be done in cloudy weather, when there is rain; for in dry weather, when castly winds commonly blow at this time, it will be very Ja nacrous to transplant these plants, so that it had better be deferred a fortnight: if there is an iteration of the snr, rfn hazard the pbuii. When the plants are planted, they (houk to be watned to fettle the earth to their roots; and when the lurt;tt« til' the ground ftiouM be covered iv h match, to prevent the sun and wind from penetrating to the roots of the plants; for nothing is more injiriuii to these plants, than to Live [their fibres dried when they are Lran'plnted; therefore the plants should not be taken cut of the tibi till you are ready to place them in the ground, for they will not be likely to Le out of the ground any time without great danger.

The branches of this tree are gamiOwd with flat evergreen leaves, resembling those of the Arbor Vita; and the cone; lire no Jarger than the berries of the Juniper, from which they are not easily distinguished at a little distance; but upon elderly viewing, they are peritfe cones, having many celklike thiolc of die common Cvprcis. li ilicfc iiecs arc plaiuct in a moist jTJonij loil, they make very great progrds, and in Luch IV: bit for timber; but however thb tree may Kitcoed for timber, yet it will be a great ornament to large plantations of evergreen trees, especially in ruth places when there is naturally a proper soil for them; because, in such situations, there are not many sorts of Evergreen Treu which thrive well, especially in cold places, and by increasing the number of lbro of tilLfc Evergreen, we add to the beauty of utir gajxkns and plannrom.

The third fort (ends forth its branches nmoll horizontally, so that they extend to a reotilitfaucic.erau way, and the trees are generally furnished with branchei fitim the ground upwani; but as thefegrow without much order, the tftca have a very different appearance from all the other forts. This grows to be a Urer limber irvc in Portugal, but the largest tree which I have fren in Engtuid, has not bet I above fifteen feet high, and the fide branches of this were extended more than eight feet on every side from the stem. This fort may be propagated from feeds in the lame manner as the common Cvprcis, sod the

This should be done in me fime 'inannc' hath been directed for a difference only; that it will be proper to cover these plants during the two first winters after they are come up, especially if the soil should be severe, which might destroy them, if they are exposed to it while they are young. This fort may also be propagated by cuttings, which if planted in autumn, and covered in winter, they will strike root; but it is generally two years before they will be rooted enough to transplant, not will the plants be raised above six feet in the seedling; therefore, when the seeds can be obtained, that is the best method to propagate this tree. The American deciduous Cypress may also be propagated by cuttings, as

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I have several times tried (b) that when seeds cannot be had, this method may be practised successfully. I suppose the common fan will take from cuttings. Lui this I have not experienced, in case you recommend it to practice.

These trees are very ornamental to garden, that no large garden can be compared with the 'rainy of' them; and it is to these trees that the Italian villas owe a great share of their beauty, for there is no tree so proper to place near buildings, the pyramidal upright form of their branches affords a picturesque appearance, and offsets the view or the bulkiness of the dark green of their leaves in the contrast with the whiteness of the buildings; that, wherever there are temples or other buildings erected in the vicinity, the tree is proper to place near them as a relief. In all the landscapes of Italian villas, we see many Cypress-trees represented, which have a very agreeable effect in the picture; and the trees, when they are disposed in a garden, afford a noble and agreeable prospect.

The leaves of the sixth fort were sent from the Cape of Good Hope, where the trees grow naturally, and by the account which I received with the seeds, the colour of the tree are black when ripe. The young plants which I have raised from the seeds have look like the branches, which are usually furnished with narrow linear leaves, which are not opposite, and are alternately trifoliate; their colour is green, and of a bright green colour; they continue in verdure all the year. I lick plants being young, are too tender to thrive in the open air in England as yet, but when they have obtained more strength, it is very probable they will do well in various situations. I had two of these plants growing in the full ground, which were killed in the winter season. But those which were placed under a frame, where there was no covering of glass, and only wooden flutrics, were not injured by the cold, although the earth of the pot was frequently hard frozen.

CURCUMA. Lin. Gen. Plant. G. Cambricis. Tourn. Infl. It. II. 367. Turmeric.

The CHABACTEKS are, *Thef* *hars* *hars-j-rai* *spath**, *vliUb* *art* *jixgU* *and* *strep* *off*, *the* *fitivier* *butlb* *BJIC* / (*kite*, "Mitbü (*ht* at *tin* *now* *into* *three* *segments* / *hath* *sts* *trj*," *partial* *rotation* *of* *one* *leaf*, *which* *is* *in* *the* *uditt* *ibjismii* *if* *the* *largest* *form* *of* *the* *petal*, *it* *is* *ihfvt* *Ji.wiixa*, *of* *which* *fit* *barren*, *and* *ow* *fruitful*, *which* *is* *found* *within* *the* *cellarum*, *and* *both* *the* *appearance* *of* *a* *petal*, *having* *a* *light* *point*, *to* *which* *the* *juvr*, *it* *adheres*. *It* *has* *a* *roundish* *germen* *fixed* *under* *the* *tblfiew*, *fappor::/* *is* *a* *single* *the* *length* *of* *the* *stamina*. *It* *is* *a* *single* *filicula*. *The* *germen* *is* *directed* *becema* *a* *niauBjh* *toftnt*. *bUsin** *tbrtt* (*till*, «*» *are* *filled* *with* *roundish* *seeds*.)

This genus of plants is ranged in the first section of Linnaeus's first class, entitled Monandria Monogynia, the flower having one lamina and one ray.

The Species are, 1. *Curcuma* (*Ravala*) *folia* *lanca* 'Isro-ovntis, *rtervis* *lateralibus* *radicibus*. Lin. Sp. Plant. a. *Cirtiimti* *viish* *spat* *spat* *and* *hars*, *having* *very* *few* *ntreet* *en* *tbt* *filia*. *Curcuma* *radice* *rotunda* C. 8. *Txriiuruivib* » *rcuHil* *not*.

2. *CL'H* (*Lappa*) *folia* *lanccolatis* *oervis* *lafrjlibitis* *numerofissimis*. Lin. Sp. Plant. 2. *Curcuma* *offetr* *spat* *spat* *hars*, *having* *many* *lateral* *seeds*. *Curcuma* *radice* *longa*. H. L. 281. *Tamaria* *with* *a* *long* *root*. The first sort has a fleshy pointed root somewhat like the *Kor'tjin*, but it stands, which sends up several upright stems, that rise upwards of a foot high; these have one longitudinal midrib, and a few transverse nerves running from the midrib to the sides. The arc of a leaf is green colour, from between these arise the flower stalks, supporting a loose spike of flowers of a pale yellowish colour, included in several different spathe or sheaths, which drop off. The flowers are never succeeded by seeds in the garden here.

The second sort hath longfleshy roots, of a deep yellow colour, which spread under the surface of the ground like those of Ginger; they are about the thickness of a man's finger, having many round knotty circles, from which arise four or five large spear-shaped leaves, standing upon long foot-stalks; they have a thick longitudinal midrib, from which a numerous quantity of veins are extended to the sides; these leaves are of a glaucous or sea-green colour. The flowers grow in loose scaly spikes on the top of the foot-stalks, which arise from the larger knobs of the roots, and grow about a foot high; they are of a yellowish red colour, and shaped somewhat like those of the Indian Reed.

These plants grow naturally in India, from whence the roots are brought to Europe for use. They are very tender, so will not live in this country, unless they are placed in a warm stove. As they do not produce seeds in England, they are only propagated by parting their roots: the best time for removing and parting these roots is in the spring, before they put out new leaves; for the leaves of these plants decay in autumn, and the roots remain inactive till the spring, when they put out fresh leaves. The roots should be planted in rich kitchen-garden earth, and the pots should be constantly kept plunged in a bark-bed in the stove. In the summer season, when the plants are in a growing state, they will require to be frequently refreshed with water, but it should not be given to them in large quantities; they should also have a large share of air admitted to them in warm weather. When the leaves are decayed, they should have very little wet, and must be kept in a warm temperature of air, otherwise they will perish. These plants usually flower in August, but it is only the strong roots which flower, so they must not be parted into small roots, where the flowers are desired.

CURRAN-TREE. See RIBES,

CURURU. See PAULLINIA.

CUSPIDATED PLANTS [so called, of cusps, Lat. the point of a spear] are such plants, the leaves of which are pointed like a spear.

CUSTARD-APPLE. See ANNONA.

CYANELLA. Rozen.

The CHARACTERS are,

The flower has no empalement; it hath six oblong concave, spreading petals, which join at their base, the three lower bending downward with six short spreading stamens, terminated by oblong erebbed summits, and a three-cornered obtuse germen, supporting a slender style the length of the stamens having an acute stigma. The germen afterward becomes a roundish capsule, having three furrows with three cells, inclosing many oblong seeds.

This genus of plants is ranged in the first section of Linnaeus's sixth class, intitled Hexandria Monogynia, the flower having six stamens and one style.

We know but one SPECIES of this genus, viz.

CYANELLA (*Capensis*). Lin. Sp. 443. Cape Cyanelle.

This plant grows naturally at the Cape of Good Hope. The root is shaped like those of the Spring Crocus; the leaves are long, narrow, and have a fulcus on their upper side; the foot-stalk of the flower arises immediately from the root, supporting one flower with six petals, of a fine blue colour, which appears in May, but the flowers have not been succeeded by seeds as yet in England.

It is too tender to thrive in the full ground in this country, therefore the roots should be planted in pots filled with light earth; and in winter must be placed in a frame, and treated in the same manner as is directed for Ixia, with which the plant will thrive and produce flowers annually.

CYANUS. See CENTAURIA.

CYCAS, the Sago-tree.

There are several small plants of this sort in the English gardens, but from these no changers of the tree can be drawn; nor are there any just accounts of these to be met with in the several authors who have figured and described the tree.

We know but one SPECIES of it at present viz: CYCAS (*Circinalis*) frondibus pinnatis circinalibus, foliis linearibus planis. Lin. Sp. 1658. *Sago-tree with full branches whose wings are placed circularly and the small leaves are plain.* Arbor Zagoë Amboinensis. Seb. Thef. 1. p. 39.

This tree has been ranged in the tribe of Palms, to which it has great affinity, especially by its buter appearance the branches and trunk having the same structure;

This tree requires to be plunged into tanners bark in a stove, which should be kept up full to temperate heat in winter; but in summer should be much warmer, when it should be frequently refreshed with water during hot weather, but in autumn and winter it should be given sparingly.

Most of the plants of this kind now in the English gardens, have been communicated to the possessors by Richard Warner; Esq; of Woodford; in Essex, who received a tree off this sort, which was brought from India by the late Captain Hutchenfon; but his ship being attacked by the French near home, the head of the tree was shot off but the stem being preserved, put out several heads, which being taken off, produced so many plants.

CYCLAMEN. Lin. Gen. Plant. 184. Toiirn. Inft. R. H. 154. tab. 68. Cyclamen; in French, *Pain de Pourceau*. [Κύκλαμ'ον], of Κύκλας Gr. a circle, because the root of this plant is orbicular; it is called Sowbread, because the root is round like a loaf, and the fowls eat it]. Sowbread.

The CHARACTERS are,

The flower hath a roundish permanent tinpament of one leaf divided into five parts at the top. It hath one petal with a globular tube which is much larger than the empalement, the upper part is divided into five large segments, which are reflexed it hath five small stamens situated within the tube of the petal, terminated by acute summits, which are connected in the neck of the tube. It hath a roundish germen, supporting a slender style, which is longer than the stamens, and crowned by an obtuse stigma. The germen afterward becomes a globular fruit with one cell opening in five parts at the top, inclosing many oval angular seeds.

This genus of plants is ranged in the first section of Linnaeus's fifth class, intitled Pentandria Monogynia, the flower having five stamens and one style.

The SPECIES are,

1. CYCLAMEN (*Europium*) foliis hastato-cordatis dngulatis. *Cyclamen with spear-pointed heart-shaped leaves which are angular.* Cyclamen hederæ folio. C; B. P. 306. *Sowbread with an Ivy leaf.*
2. CYCLAMEN (*Purpurascens*) foliis orbiculato-cordatis; inferne purpurascens. *Cyclamen with round heart-shaped leaves, purple on their under side.* Cyclamen orbiculato folio inferne purpurascens. C. B. P. 308. *Round-leaved Sowbread with a purple under side.*
3. CYCLAMEN (*Perficum*) foliis cordatis ferratis. *Cyclamen with sawedbeart-shaped leaves; or Perfian Cyclamen;*
4. CYCLAMEN (*Female*) foliis cordatis angulosis integris. *Cyclamen with heart-shaped angular leaves which are entire.* Cyclamen hyeme & vere florens folio anguloso amplo flore albo, basi purpurea, Perficum dictum. H. R. Par. .
5. CYCLAMEN (*Orbiculatum*) iodide inaequali, foliis orbiculatis. *Cyclamen with an unequal root and round leaves.* Cyclamen radice castaneae magnitudinis. C. B. P. 308.
6. CYCLAMEN (*Com*) foliis orbiculatis planis, jtediculis brevibus floribus minoribus. *Sowbread with orbicular plain leaves, shorter foot-stalks and smaller flowers.* Cyclamen Hyemale, orbiculatis foliis inferne rubentibus, purpurascens flore Coum Herbariorum. H. R. Pan

The first sort is the most common in the English gardens. This grows naturally in Austria, Italy, and other parts of Europe, so will thrive in the open air in England, and is never killed by the frost. It hath a large, orbicular, compressed root, from which arise a great number of angular heart-shaped leaves, upon

Tingle foot-ftalka, which are six or seven inches long, the leaves are marked with black in their middle, the BOWOT appear before the leaves, rising immediately from the root, with long fine foot-Harks; they appear in August and September, and come after the leaves come out, continue glowing all the winter and luring till May, when they become dried up. After the flowers are fallen, the root-twifts up like a icrow, inclosing the germen in the crinr, and Uj down dole to the surface of the ground between the leaves, which serve as a pruic&ton to the teed. This germen becomes a round Pefhy fred-vefcl with one tell, in doting fevErd angular feeds. The feeds ripen in June, and ihouM be lbv'n in August. There are two varieties of this, one with a white anil the other with a purple flower, which appear at the lime timr.

The second fort flowers in itiravn: isit¹. is at prfent very rare in England; the leaves of this fort are hr^r, orbicular, and heart-shaped at their bnfc, and of a purple colour on their under fide -, the leaves and Bowers of this come up from the root at the same time; the flowers are of a purple colour, and their bottoms are of a deep red. It Benrn law in the autumn, and requires protection from the froit in winter.

The third fort hath (riff hwri-shaped leaves which are tawci on their edges-, they have frong fldhy foot-lhklj near six inches long, of a purple colour, as are alib the veins of the leaves on their under fide, but the tipper fide is marbled with white. The flowers rise with finglc foot-ftalks from the root -T these are pure white with a bright purple bottom; the petals are divided into nine segments to the bottom, which are twisted and reflexed backward like the other fort. This flowers in March and April, and the feeds ripen in August.

The fourth loir is commonly called the Pcrfvn Cyclamen. This hath large, angular, heart-shaped leaves, whose edges are entire; they are veined and marbled with white on the upper fide, and stand upon pretty long foot-iULks; the flowera are large, of a pale purple colour, with a bright red or purple bottom. These appear in March and April, and the feeds ripen in August.

The fifth fort hath a (mat! irregular root not larger than 3 Nutmeg; the leaves are orbicular and (trull - the flowers are of a Hem colour, Imaill, and have purple bottomj. They appear to the autumn, but rarely produce feeds in England.

The sixth fort is not so tender as the four first mentioned, so may be planted in warm borders, where, if they are covered in hard froit, they will thrive in flower very well. This hath plain orbicular leaves, which have florcerand weaker foot-ftilks than either of the other; their under fides are very red in the beginning of winter, but that colour goes off in the spring; their upper fides are smooth, of a tucl-green; wd Ipreid open flat; wlvreas the other fons w^{kaN} are not, and are ed at their bale. The flowm are of a very bright purple colour, and appear in the middle of winter, at a time when there are foil other flowers, which renders the pbnu more valuable. The fee* of the fort ripen in the end of June.

There are several other varieties of this plant, -which chiefly dirJI-r in the colour of thtir Bo*ers, : articu- hub amor the Persian kind, or ^ c h t n e r; is one with an enl¹ white flower, which smells very sweet. ^"t a these are accidental variations, I have not enumerated them here, those which are here mentioned being undou¹ly distinct species; for I have many y^{care} pr.i; noted them from seeds, and have not found I tiem var¹, nor have I heard that any other person has observed either of them alter farther than varying of their colours. Though Dr. Linnæus supposes them but one species, it is well known at the last list will endure the greatest froit in the open air, whereas all the Persian sorts are tender, and require shelter in winter.

All the forts are propagated by se;ji*, **whkh** (hoolt

be down soon: in<er they are ripe, in 12:cie\$ or pots filled with light kitchn-girdi: earth, covered with a linen sand, and covered about half an inch deep, pbit in them where they may have only the nt of fine sun till the beginning of September, when they may be removed to « warmer expo lure. Those of the first fort may be plunged into the ground dole to a fourth wall, a pale, or Kead hedge, in October, where, if it should be very severe in winter, it will > proper to cover them either with mars or l'eide haulm, but in common winters they will not require any covering. The pots or tubs in which the l'crfan kind' are sown, should then be placed in a warm room, where they may be protected from frost and sun rains, but in mild weather the glass may be taken off every day > «djnii frefu aii ro them, the first fort will come up about Christmas, if the feeds were sown in August, and their leaves will continue green till May; and diof of the PerEun kinds will come up early in the spring, and continue green till June, when they will begin to decay; if they should be removed to an east aspect, where they will have only the moon's sun, in which situation they may remain till the middle of August -, during which time they should have very little water, for then the roots are in an inactive state, and the mud will rot them. The pots and tubs in which the rht7 are sown, must be constantly kept clean from «w¹, for if the weeds are permitted to grow, their roots will decay; single with tholbofuie Cyclamen-, that in pulling out the < m b, the other roots will be drawn out with them. In the beginning of October, liwre should be some fresh earth spread over the tubs or pots, which should be removed again into the shade, in the same manner as before-, and the following summer they must be managed also in the same manner till their leaves decay, when they should be carefully taken up, and thoir of the first fort placed in a warm border at three or four inches distance, but the other 1-orts must be planted till xns to be dickered in winter. The third, fourth, one! tilth forts, are more impatient of cold and wet than the other three; they must constantly be preclerved in a K>T hilt! cartli, and housed in winter, but should be placed near the glasses, where they may enjoy so much free open air as possible, when the weather will permit 5 for if they are crowded under other plants, and are kept too dole, they are very liable to mould. They nor should they have much water in winter, which is all very injurious to them, but when they want water, it should be given them sparingly. In summer the plants may be exposed to the open air, when their green leaves will decay; at which time you should remove them to a place, where they may have the morning sun until eleven o'clock: but during the time that the roots are delittut. of leaves, they should have very little water given them, because at that season they are not capable of discharging the moisture. This is all the proper season to transplant the roots, or to fresh earth them; and as the autumn comes on, when the heat decreases, they may be removed into a jilace* more exposed to the sun, where they may remain until October before they need be housed.

Toward Christmas, if the roots are in good health, the plants will begin to flower, and continue producing fresh flowers till the middle of February, and thde will flourish, excited by the Pertinn ibtts, which continue till May; but if you intend to have any feeds, you must let the pots be placed so as to receive a great share of fresh air, for if their flowers are drawn up in the house, they seldom produce any feeds. These feeds are ripe about July, when they should be immediately lbwn in pots or tubs of good light unclamped earth, which should be sheltered in winter under a frame, and exposed in summer in the same manner; if sowed for the older roots, observing to move them into pots at a wider distance when they are 3 years old, and so from time to time, as their roots increase in bulk, you must give them mot*

room; and in all but four or five years more they will begin to flower, tttion you (hould let each root hiv a fepir:il(; ... which at first may he fmall, but wlu: the roots a c growa larger, they mutt be put into hrger pots.

The v forts have been planted under wirtY wills ir the full ground, when: in mild winters the have doni- very well, but in fever: frofi all ik- roots have been destroyed, therefore, whew ver thole rooti art planed in an open border, there lliould ht r amon non-bed frames placed over them in winter, that ii bad weather t • y may be covered to protc; • them from froft: ai where they arc thus managed, die plants will produce more flowers, which wijl in much fairer than what are produced from ilir root: in the pots, and funi thcIi there may always be goo expected: theidwe filch periqns who are curious in flowers, mould have 3 border framed over on pur pofe for rhelt-, the Gurniey and BeDwtoni Lilies, with fume other of the curious bulbou; roored flow i in which border there may be many o curious flowers c toward, to more advantage thai in any other method now pr.ictifed.

CYDONIA. Tonrn. Infr. R. H. - 12. tab. 495. Pyrus. L in. Gen. Plant. 550. [lo called fi rom Cydon, a town of Grete-jfamous f r this fruit.] The Quince-tree.

The CHARJICTens arc,

The flew it tomprfd efjhe largt, raauBfi, concave fetch, which arc infer: ... Thugermij i ... Jleietr, ... fupporrsjk'JiBtdrjyk: ... are eftaiIni iy * ... i iwp, w&cb arc in- /ried in the impatmmh hut are net fi h>g as (he ptuls-, lif garttn afterward icctmi a pjanidal tr mtaiijl fruit, which is ft ... and divided into five tells, in which an!

This genus of plant* ; raised in the eighth section of Tonmefbrt's eweoty-firfl chfi, which inclod« the trct^ and thrubs with a Rofr flower, wliole llnpale- merit becomes a fruit pregnant with hard reed . Dr. LinKEil) has joined thii genus, and alb the to the Fear, making them only Ipecies of die Cunc genus, to which the Quinct' is norly allied by iti characters, which die Apple is not. However, though the joining of the Quince to the Peat lI ay be all • "tj in i lytkm of botany, y<t in :: • book of gardening, it may not be quite fo pmpr, thercrore I have cliuj'n to continue them under their own known ittles.

The SctciEs arr,

- 1. Cydonia (Linn.) folia oblonga-ovata fereina ... CYOONU (Mahferm) foliis ova: ... L-omb imundbril" ... itMty ** /&/> umliTf: ... 635., Cemneah w&d' ... 3. (5v) ONIA (Linn.) folia obverse-ovata ... niatofis. ... *»); • under file, Cydonia latifolia Linn.) ... Town. Inft. 633. Broad-leaved Portugal Quince.

There ire some otlter varieties of this fr:it which, arc propagated in fruit-gardens, and in the mirferks for ... one of which a a foft eatable fruit, r.crv is another with a very afringent fruit, and a third with a very fmiifl fruit, cotto:iy all over, and is scarce worth keeping: theJe J fuppole to be lemtna! v rations, but rliit: rli-cc forts before enumcraifd, I ukc eo be l (Inft. fpecies, having •Opagard them by feeds, and have not found th: m u> vary.

The Pom>a] Quince ii the mod valuable, (lic nulu of it urninVtoafincpurpI; when brewed or baked, and becomes much ferter W lcls will r "twnthc 'nhtrs, fo is much bet« for makc 'l' of mjr m" ... They arc all eafly prup.igitttd either by layers, fuck- ing, which muft be planted in a moif (ba. Ttwle nuu-ti from fuckm arc fcMool W well

mored as thole which are obtained from cuttings or layers, and are •oji-ct to produce suckers again in greater pknty, which ^ not fu proper fir fru' ... cuttings llinult! be planted early io

... in encoia ... after they hould be n oved into j nursery at three feet diftance row from row, and one foot afunder in the rows where they mull be m.r. ... in two tir rhtteyean,titaethefe trees will bt lit to iranlj.bnt, wticic the* arc to reni.nn ior cood, whirh iould be either by the Cdc ... In fome other tuoil place, whire they will produce • greater plenty, indmuch ! ... frun than in I dry foil; though ,hufe in a drj foil will be betwr cafted, iindcarrier r ... require very little pruning; ... luektrs, and cut off lueh branches as crol each oth: ^ likcwtle all upright human hoots from the mid I • of the tree fhould be taken entirely out, that tir head nuv not be too much crowded with wood, which is of ill confequence to all forts of trees. These forts may alio be propagated by budding or grafting upon (locks <icfd by cuttings, fo \ at the belt forts may be cultivated to greater plenty this way, than bv any other method; ami thefe trees will bear fruit much longer, and be more fruitful than tioli; whidit come from fucke: . or layers.

Thtfc arc ilfo in orcat eftcem for flocks to graft and bud Pears on, which for fummer and autumn fruits arcagrtrat improvement tOthcrs, efpetudlj thole defigned for walk and epalicri) foi the trees upon thefe' flocks & I not floot fo vi orouly as thofe upon free ftockhi ... be kept in left compafs, and are looner difpofed to bear fruit: but hard winter frofts do not succeed fo well upon thefe flocks; their fruit being very fubjeft to crack, and are commonly flony, efpccially all the breaking Pears; therefore ihdc ti flocks are only proper for the making Pears, and for a moif (oil. The bd flocks are thofe which are raied from cuttings or layers. As the Pear will take upon the Quince by pr ing, or budding, and lb vice verfa, we may conclude thera is a JI or alliance between them, out 35 ncitl of theti 'will take upon the Apple, nor that upon either of thefe, fo we fhould feparate them under different Ecetra, a^ will be further mentioned under the article MALUS.

CYNA NCIIUM. Lin. Cm.Plant. 26S, Apocynum. l'ourn. lii([. R. A. yi. IVriploca. Tours, [aft. 93. tab. 22.

The CHARACTERS are, The flower hath one petal; it has <b fi art* any tube, but is fiffad eptH, plain, and divided into five parts, this hath a feath, oris, permanent empolium of one leaf, divided into J)"c Jiarn; fi ... kitted Um!^.

This genus of jiiants k rans^d in the f«>md feftion of Li ... tlicflowrr having five (lamina and 1

- 1. CYRANCIUM (Linn.) caule volub. H hcit.iceo, foliis cordato-oblonga gibbera. Hort. Cliff. 79. Gynandium with a rooting herbaceous stalk, and oblong, smooth, heart-shaped leaves. Perriploca Mantipolca Millis nomenclat. Tourn. Inft. 93. Commonly called Mantipolca Scammony. 2. CYRANCIUM (Mantipolca) caule volub. li herbaces. foliis reniformi cordatis acutis. Hort. Cliff. 79. Gynandium with a rooting herbaceous stalk, and oblong, heart-shaped, pointed leaves. Perriploca Mantipolca

t
k

rotundioribus. Tourn. Inf. R. H. 93. *Round-leaved Montpellier Scammony**

3. CYNANCHUM (*Suberofum*) caule volubili inferne fuberofa fibra, foliis cordatis acuminatis. Hort. Cliff. 79. *Cynanchum with a twining fungous stalk, having fissures on the under side, and heart-shaped pointed leaves*. Periploca Carolinensis, flore minore stellato. Hort. Elth. 300.
4. CYNANCHUM (*Hirtum*) caule volubili fruticofo, inferne fuberofa fibra, foliis ovato-cordatis. Hort. Cliff. 79. *Cynanchum with a shrubby twining stalk, whose lower part is fungous, having fissures, and oval heart-shaped leaves*. Periploca scandens, folio ciiri, fru&u maximo. Plum. Cat. 2.
5. CYNANCHUM (*Erectum*) caule erecto divaricato, foliis cordatis glabris. Hort. Cliff. 79. *Cynanchum with an upright divaricated stalk, and heart-shaped smooth leaves*. Apocynum folio subrotundo. C. B. P. 302.
6. CYNANCHUM (*Aperum*) caule volubili fruticofo, foliis cordatis acutis asperis, floribus lateralibus. *Cynanchum with a twining shrubby stalk, heart-shaped, pointed, rough leaves, and flowers growing from the sides of the stalks*. Apocynum scandens foliis cordatis asperis, floribus amplis patulis luteis. Houft. MSS. The first and second sorts grow naturally about Montpellier, these have perennial creeping roots, but annual stalks, which decay to the root every autumn, and rise afresh in the spring; these stalks twist themselves like Hops, round whatever plants are near them, and rise to the height of six or eight feet; the first of these is garnished with oblong, heart-shaped, smooth leaves, ending in acute points, and are placed by pairs opposite on long foot-stalks, the flowers come out in small bunches from the wings of the leaves* they are of a dirty white colour, and divided into five acute segments, which spread open in form of a star. These appear in June and July, but are not succeeded by any seed-vesicles in England, which may be occasioned by their roots creeping so far under ground; for most of those plants which propagate themselves so much by their roots, become barren of seeds, especially if their roots have full liberty to extend.

The second sort differs from the first in the shape of its leaves, which are broader and rounder at their base. The roots of this sort are very thick, running deep into the ground, and extend themselves far on every side; so that where this plant hath got possession of the ground it is not easily extirpated, for every piece of the root will shoot, which may happen to be left in the ground. Both these plants abound with a milky juice like the Spurge, which issues out wherever they are broken, and this milky juice when concreted, has been frequently used for scammony.

These plants propagate too fast by their creeping roots when they are admitted into gardens, so few people care to have them: the roots may be transplanted any time after their stalks decay, till they begin to shoot in the spring.

The third sort grows naturally in Carolina, from whence the seeds were brought to England; this is a perennial plant with twining hairy stalks, which, if supported, will rise six or seven feet high; the lower part of the stalks are covered with a thick fungous bark, somewhat like cork, which is full of fissures; these stalks are tender, and garnished at each joint with two oblong, heart-shaped, pointed leaves, hanging on long hairy foot-stalks. The flowers are produced in small bunches at the wings of the leaves, these are star-shaped and green when they first appear, but afterward fade to a worn-out purple colour. They appear in July and August, but are not succeeded by seeds in England.

This plant will live in the open air in England, if it is planted in a dry soil and warm situation. It may be propagated by laying down some of the young shoots about Midsummer, which, if they are now and then refreshed with water, will put out roots, so may be transplanted in the autumn, where they are designed to remain. The roots of this plant should

be covered in winter with some rotten tan to keep clear the frost, otherwise in severe winters they are liable to be destroyed.

The fourth sort grows naturally in Jamaica, from whence the seeds were sent me by the late Dr. Houftoun, this rises with a twining stalk to the height of twenty feet or upward, provided it hath support; the lower part of the stalks are covered with a thick fungous bark, full of fissures, which gape open, the leaves are oblong and smooth, and placed by pairs opposite, hanging on long foot-stalks: the flowers are produced from the wings of the leaves in small bunches, they are star-shaped, and are of a yellowish green colour, but are not succeeded by pods in England.

This sort is tender, so will not thrive in this country unless it is placed in a warm stove, and requires the same treatment as other tender plants from the same country; and as it abounds with a milky juice, so the plants must have little water in winter. This may be propagated by laying down of the young shoots, which in three or four months will put out roots, and may then be transplanted into pots filled with light sandy earth, and plunged into the tan-bed in the bark-stove, where the plants should continue all the year.

The fifth sort grows naturally in Syria, this is a perennial plant, which rises with slender upright stalks about three feet high, garnished with broad, smooth, heart-shaped leaves ending in points, placed opposite; the flowers come out from the wings of the leaves in small bunches, (landing on branching foot-stalks, these are small and white, greatly resembling those of the common white *Aclepias*, or Swallow-wort, and are succeeded by oblong, taper pods, filled with flat seeds crowned with down, but these rarely ripen in this country.

It is propagated by parting of the root; the best time for doing of this or transplanting of the roots, is in the spring, before they shoot: this requires a warm situation, otherwise it will not live abroad in England.

The sixth sort grows naturally at La Vera Cruz in New Spain, from whence the seeds were sent me by the late Dr. Houftoun; this hath a shrubby twining stalk, which twists about whatever prop is near it* and rises to the height of twenty feet or upward 5 the stalks are very slender, and are armed with small stinging hairs, and garnished with broad heart-shaped leaves, which end in acute points; these are placed by pairs at each joint, which are far distant, and have slender foot-stalks; they are covered with rough hairs on their under side; the flowers are produced in small clusters, fitting close to the side of the stalks; they are pretty large, yellow, and star-shaped, spreading open to the bottom; they are succeeded by long swelling pods, filled with flat seeds lying imbricately, which are crowned with long down.

This sort is tender, so requires the same treatment as the fourth, and is propagated the same way.

CYNARA. Lin. Gen. Plant. 835. *Cinara*. Tourn. Inf. R. H. 44*- tab. 254. *Artichoke*, in French *Artichaut*.

The CHARACTERS are,
// hath a compound flower, made up of many hermaphrodite florets, which are included in one common scaly empalement, which is swollen in the bottom. The florets are tubulous, equal, and uniform, divided at the top into five narrow segments. These have five short hairy stamina, terminated by cylindrical summits, which have five indentures at the bottom of each situated an ovalgermen, supporting an oblong style, crowned by an oblong indented stigma. The germen afterward becomes a single, oblong, compressed, four-cornered seed, crowned with long hairy down.

This genus of plants is ranged in the first section of Linnæus's nineteenth class, intitled Syngenesia Polygamia aequalis; the plants of this class and section have only hermaphrodite florets which are fruitful.

Tin ?

1. *(Squarrosus) foliis lobipinatis, pinnatis in-*
verticillis, calycibus ♀, Iquarris Lin. Sp. Plant.
 817. *Artichoke with grey leaves which are winged and*
unsided, and an oval **C. B.** P. 257. *The great or French*
artichoke.

2. *CYNARA (H) TriHfii) faliis pitinatis inermibvi*
caly-
cibus spinosis obtusis enarginatis. Artichoke with winged
leaves having no spine, and single indented lobes to the
compaktust. Cynara hortensis jolin non aculr.
 B. P. 383. *Tbt Gkbt AnicUkt.*

3. *CYNARA ABA ifitirit:* *(Squarrosus) foliis vj pinnifnu, mnnil*
nntitidu, calycini Iquamis pviitis. Li: Sp. Plant.
 817. *Cynara will*
prickly leaves which are in winged
parts *and cyi: yla*al< t^ tbt*
nola, cjuis pediculi cluaticur. C. !). P. 11
 i/c5w, n; I'ititub Cluntan.

4. *CYNARA (H) TriHfii) faliis pitinatis, pinnatifida, subtri-*
angulatis, calycibus spinosis lobulatis. Lin. Sp.
Plant. 817. Cynara will
prickly leaves which are in winged
parts *and cyi: yla*al< t^ tbt*
nola, cjuis pediculi cluaticur. C. !). P. 11
 i/c5w, n; I'ititub Cluntan.

5. *CYNARA (H) TriHfii) faliis pitinatis, pinnatifida, subtri-*
angulatis, calycibus spinosis lobulatis. Lin. Sp.
Plant. 817. Cynara will
prickly leaves which are in winged
parts *and cyi: yla*al< t^ tbt*
nola, cjuis pediculi cluaticur. C. !). P. 11
 i/c5w, n; I'ititub Cluntan.

6. *CYNARA (H) TriHfii) faliis pitinatis, pinnatifida, subtri-*
angulatis, calycibus spinosis lobulatis. Lin. Sp.
Plant. 817. Cynara will
prickly leaves which are in winged
parts *and cyi: yla*al< t^ tbt*
nola, cjuis pediculi cluaticur. C. !). P. 11
 i/c5w, n; I'ititub Cluntan.

to the tentler leaves, which ; especially pendula them where there is not this covering, but this should be taken or again in mild weather, if this case is taken, the plants may be preserved for the most part of the winter.

if a few of the plants are santed out in a warm situation to stand for feed, they should not be blanch'd, but only ill verj hard frost sive light sower, or Peas-hiule, may be laid round i them to keep out frost, while b lhmild he resi covered in the spring, and the ground gently di between the plants, which will nut only di frost the weeds, but also encourage die rooi of the plants to shoot out on every side, where by ti their stems will be stronger, these will flower about the beginning of July, and if the frost proves dry, i their seeds will ripen in September, but in cold wet seasons, these seeds will not come to maturity in England.

The fourth fort grows naturally in Spain, and .dfo on the African shore, and is perfectest in gardens for the fake i variety, this is very like the third fort, but the stems of the leaves are much smaller, and do not ! low more rlwn half lb high. Tie heads of this have some itieflblaice to thofe of the Fren.li Artichuke, but haw no meat, or fldby iubib in their bottoms: this may be plant .! in the feme man as i third fort, at ibovu th<x or four ft I apart, and will require no offer treatment, ilsn the keeping them dean from weeds; the fctoral year chi will flower, and if the feS&n proves dry, chry will ripen their freds in Septmber, and die plants generally decay the following winter, efpedally if the winter moves li'vere, unless iticy are covered.

CYNOGLOSSUM. Lin. Gen. Pl. limit. 1&8. Toum, Inf. It. li. 119. tab. 57. Omph^llottw. Tourn. 14c. tab. 59. [*Asoparium*, of *Kaie*, a dog, and *Glossa*, Gr. the tongue, so called because the leaf* of this plant resemble a dog's tongue.] I i>unt's Tongue, in French, *Langue de Chien*.

TticCn,Ni
Is bulb a j:
utti;
parti,
pernumiil d uent, tat :ii: hv: ticiitf fegrtriKJ. The flower hath five stamens in the chaps, the bulb is...

ttmssd - indib Jummls, axi at (' 11' ' 11')
ink IT
fair germty betvxnv;
tiitgtb of tbt flemi.

This genus of plants is ranged in the first section of Linnæus's fifth class, entitled Pentandria Monogyn\, the flower having five stamens. vid otic fy.

The Genus are,
 1. *CYNOGLOSSUM (Glossum) flammibus emoll* brevifloris, foliis lato-lanceolatis tornentosis. (li)ibuj. Lin. Sp. Plant. 114. *Haw Ji Tongue with flanim shoritr (him tbt petal, end l/rsid fpear-jhnprd fovts, which are round, siting deep in the stalk. Cj'tiogbJTuni niijn vulg^re.* C. B. P. 257. *Cmmsm gculn- Hwmls*

2. *CYNOGLOSSUM (Glossum) ilaminihuj corolhm 1-*
quantibus. Hart Upal
flamibus
 R !

3. *CYNOGLOSSUM (Glossum) foliis oblongis serratis, simplicibus, caule erecto, specis surum longiflora. Haws Ji Tongue with abing wood leaves enclosing the stalk, a branching stalk, and very long hair like in its flowers.* *Cynoglossum Glossum latifolium Americum.* C. B. P. 257.

4. *CYNOGLOSSUM (Glossum) corollis calyce duplo longioribus, foliis lanceolatis. Prod. Leyb. 406. Haws Ji Tongue having a good row in the length of the espaignet, and four equal parts.* *Cynoglossum Glossum, agrestioo aquilis filio.* C. B. P. 257.

5. *CYNOGLOSSUM (Glossum) folis amplexic.* **iiibis**
 ovatis. Lin. Sp. 117. *Haws Ji Tongue with oval leaves which embrace the stalk.* *Cynoglossum Virginianum* *fructu minimo albo.* Basillie, Ca.

6. CYNOGLOSSUM (*Lufitanicum*) foliis lineari lanceolatis scabris. Lin. Sp. 193. *Hounds Tongue with linear* sparsely-shaped, rough leaves.* Omphalodes Lufitanica elatior Cynoglossi folio. Tourn. Inf. R. H. 140.

7. CYNOGLOSSUM (*Linifolium*) foliis lineari-lanceolatis glabris. Hort. Cliff. 47. *Hounds Tongue with smooth, narrow* spear-shaped leaves.* Omphalodes Lufitanica lini folio. Tourn. Inf. 140. *Commonly called Venus Navelwort.*

8. CYNOGLOSSUM (*Omphalodes*) repens, foliis radicalibus cordatis. Hort. Cliff. 47. *Creeping Hounds Tongue, whose lower leaves are heart-shaped.* Omphalodes pumila verna fymphyti folio. Tourn. Inf. 140;

The first fort grows naturally by the side of hedges and foot-ways in many parts of England, so is seldom admitted into gardens, the roots of this fort are used in medicine, which are gathered by the herb-folks in the fields. The leaves of this plant have a strong odour, like that of mice in a trap. It flowers in June, and the feeds ripen in autumn.

The second fort grows naturally on the Apennine mountains, the leaves of this fort are much larger, the petal of the flower is shorter, and the plants grow taller than those of the first, and come earlier to flower in the spring; this is equally hardy as the common fort, and where the feeds are permitted to scatter, there will be plenty of the plants arise without care.

The third fort grows naturally in Andalusia, I received the feeds of this from Gibraltar; this hath a tall branching stalk, garnished with oblong woolly leaves, which embrace the stalk with their base. The flowers are produced in loose spikes, which come out from the side of the stalk, and are from six to eight inches long, the flowers are thinly placed on one side; these are blue, striped with red, and appear in June. The feeds ripen in autumn, soon after which the root decays.

The fourth fort grows naturally in Spain, and also in the island of Crete; I received this from Gibraltar, with those of the former; this rises with an upright stalk little more than a foot high, garnished with long, narrow, silvery leaves, having no foot-stalks. The flowers are produced from the side, and at the top of the stalks, which are but thinly dispersed on the side, but at the top of the stalk are in small clutters; they are of a deep purple colour, and much longer than the empalement, these are succeeded by four broad buckler-shaped feeds, which are rough. It flowers in June, and the feeds ripen in autumn, soon after which the roots generally perish.

The fifth fort grows naturally in Virginia, and in other northern parts of America; this rises with an upright branching stalk near four feet high. The stalks and leaves are covered with rough hairs, the branches are spread out on every side, and are but thinly garnished with leaves, from three to near four inches in length, and little more than one inch broad in the middle, gradually lessening to both ends* they embrace the stalks with their base, and are placed alternate; the flowers grow scatteringly toward the end of the branches; these are small and white, they appear in June, and are succeeded by four small feeds, which ripen in autumn, and then the plants decay.

The sixth fort grows naturally in Portugal, where it was first distinguished from the seventh by Dr. Tournefort. The seventh fort had been long before that cultivated in the gardens for ornament, by the title of Venus Navelwort, but of late years that has been almost lost; and the sixth fort is now generally preferred in the English gardens, and the feeds are sold by the seedsmen under that title, and is a much larger plant than the other, so makes a better appearance. The leaves of the sixth fort are broad at their base, and are gradually narrowed to the end; they are (lightly covered with hairs. The stalks grow nine or ten inches high, and divide into many branches, each being terminated by a long loose spike of white flowers, standing on separate short-stalks, which are suc-

ceeded by four umbilicated feeds, from whence it had the title of Navelwort.

The seventh fort seldom rises more than five or six inches high; the stalks do not branch near so much as those of the sixth. The leaves are very narrow and long, of a grayish colour, and smooth. The flowers grow in loose panicles at the end of the branches; these are white, but smaller than those of the other fort, and are succeeded by feeds of the same form. This plant was formerly titled *Linum Umbilicatum*, i. e. *umbilicated Flax*, from the leaves having some appearance of Flax, and the feeds having a hollow like a navel.

These are both annual plants, and have been commonly sown in gardens, with other low annual flowers, to adorn the borders of the flower-garden, but these should be sown in autumn, for those which are sown in the spring often fail, especially in dry seasons, and the autumnal plants always grow much larger than those which arise from the spring sowing, and come to flower earlier in the year. The feeds should be sown where the plants are designed to remain, for they do not bear transplanting, unless it is performed while they are young. The plants require no other culture but to be thinned where they are too close, and kept clean from weeds. They flower in June and July, and the autumnal plants come a month earlier; their feeds ripen in autumn.

The eighth fort is a low perennial plant, which grows naturally in the woods of Spain and Portugal, where it usually flowers about Christmas, this hath trailing branches, which put out roots from their joints, whereby it propagates very fast. The leaves are heart-shaped, of a bright green colour, and stand upon long (tender foot-stalks. The flowers grow in loose panicles, which arise from the divisions of the stalk; they are shaped like those of Borage, but are smaller, and of a lively blue colour; they appear in March and April, and in a cool shady situation continue great part of May, but are rarely succeeded by feeds, but the plants propagate themselves so fast by their trailing branches, as to render the cultivation of them by feeds unnecessary. It delights in a moist cool situation.

CYPERUS, Cyperus Grafs.

There are about twenty species of this genus known, some of which grow naturally in England, but the far greatest number are natives of America, where they grow in moist equal places; and as there are not above two or three species which are preferred in gardens, so it will be to little purpose to enumerate the others.

The SPECIES are,

1. CYPERUS (*Longus*) culmo triquetro folio, umbella folio supra decomposita, pedunculis nudis, spicis alternis. Prod. Leyd. 50. *Cyperus with a three-cornered stalk* an umbel with many leaves, alternate spikes on naked foot-stalks. Long-rooted Cyperus of the hops.*

2. CYPERUS (*Rotundus*) culmo triquetro subnudo, umbella decomposita, spicis alternis linearibus. Flor. Zeyl. 36. *Cyperus with a three-cornered naked stalk, a decomposed umbel, and linear spikes placed alternate Round-rooted Cyperus of the hops.*

The first fort grows naturally in France and Italy* from whence the plant was brought for medicinal use, but at present it is very seldom used in England. The roots of this fort are composed of many strong fleshy fibres which root deep in the ground, sending up every spring a great number of grassy three-cornered leaves near two feet long, the flower-stalks are triangular, nearly of the same length, supporting an umbel at the top, having many narrow triangular leaves under it, the spikes of the umbel are like those of some sorts of grass, but the feeds rarely ripen in England; so the plant is here propagated by dividing the root in the spring, and if planted in a warm situation, will thrive here in the open air.

The second fort is tenderer than the first, so the round compressed roots should be planted in pots, and sheltered in winter.

CYPRIPEDIUM. Lin. Gen. Plant. 906. Calceolus. Tourn. Inf. R. H. 436. tab. 249. Ladies Slipper, in French, *Sabot*.

The CHARACTERS are,

It hath a firm spadix. The germen sits under the flower which is covered with a spathe or sheath. The flowers have four or five narrow spear-shaped petals, which expand. The nectarium, which is situated between the petals, is swollen and hollow, in shape of a shoe, or slipper. It hath two short stamens which sit upon the point, and are terminated by erect summits, which join to the upper lip of the nectarium below the flower is fixed a slender contorted germen, supporting a short style, adhering to the upper lip of the nectarium, crowned by an obsolete stigma. The germen afterward becomes an oval blunt pod with three corners, having three furrows, three valves, and one cell, which is filled with small seeds.

This genus of plants is ranged in the first section of Linnaeus's twentieth class, intitled Gynandria Diandria, the plants of this class and section have two stamens fixed to the style.

The SPECIES are,

1. **CYPRIPEDIUM** (*Calceolus*) radice fibrosa, foliis ovato-lanceolatis caulinis. Aft. Upfal. 1740. Ladies Slipper with fibrous roots, the leaves on the stalks oval and spear-shaped. Calceolus Marise. Ger. 3 59. Our Lady's Slipper.
2. **CYPRIPEDIUM** (*Bulbosum*) seapo unifloro, foliis oblongis glabris petalis angustis acuminatis. Ladies Slipper with one flower in a sheath, oblong smooth leaves, and very narrow pointed petals. Calceolus Mariae luteus. Mor. H. R. Blof. Yellow Ladies Slipper.
3. **CYPRIPEDIUM** (*Hirfutum*) foliis oblongo-ovatis venosis hirsutis, flore maximo. Ladies Slipper with oblong, oval, veined leaves, which are hairy, and a very large flower. Calceolus flore majore. Tourn. Inf. R. H. 437. Ladies Slipper with a larger flower.

The first sort grows naturally in some shady woods in the north of England. I found it in the park of Borrough-Hall, in Lancashire, the seat of the late Robert Fenwick, Esq; It hath a root composed of many fleshy fibres, from which arise, in the spring, two, three, or more stalks, in proportion to the strength of the root; these grow nine or ten inches high, and are garnished with oval spear-shaped leaves, having a few longitudinal veins, in the bottom of one of the upper leaves is enclosed the flower-bud, which is supported by a slender foot-stalk, which generally turns a little bud on one side. The flower hath four dark purple petals, placed in form of a cross, which spread wide open. In the center is situated the large hollow nectarium, almost as large as a bird's egg, shaped like a wooden shoe, of a pale yellowish colour, with a few broken streaks; the opening is covered with two ears; the upper one is tender, white, and spotted with purple, the lower is thick, and of an herbaceous colour. The flowers appear about the end of May, and the stalks decay early in autumn.

The second sort grows naturally in Virginia, and other parts of North America, this hath longer and smoother leaves than the former. The two side petals of the flower are long, narrow, and terminate in acute points, and are wreathed, or undulated on their sides. The nectarium is oblong, and narrower than in the first sort, and is yellow, spotted with brownish red. The stalks rise near a foot and a half high.

The third sort grows naturally in America, where the inhabitants call it Mo'ccasin Flower; this rises a foot and a half high. The leaves are of an oblong oval form, and are deeply veined. The flower is large, of a reddish brown colour, marked with a few purple veins. This sort flowers in the end of May.

All these sorts are with difficulty preserved in gardens; they must be planted in a loamy soil, and in a situation where they may have the morning sun only. They must be procured from the places where they naturally grow, for they cannot be propagated in gardens. The roots should be seldom removed, for transplanting them prevents their flowering.

CYSTICAPNOS. See **FUMARIA**.

CYTISUS Q-G E N I S T A. See **SPARTIUM**.

CYTISUS. Lin. Gen. Plant. 785. Tourn. Iri & R. H. 647. tab. 416. [so called from Cythos, an island in the Archipelago* where it grew in great plenty.] Bale-tree Trefoil, in French, *Citise*.

The CHARACTERS are,

It hath a butterfly flower, with a short bell-shaped empalement of one leaf, divided in two lips? the upper being bifid and acute, the under indented in three parts. The standard of the flower is rising, oval, and reflexed on the sides. The wings are obtuse, erect, and the length of the standard. The keel is bellied and acute. It hath ten stamens, nine joined, and one standing separate, terminated by rising summits. It hath an oblong germen, supporting a single style, crowned by an obtuse stigma. The germen afterward becomes an oblong blunt pod, narrow at their base, filled with kidney-shaped flattened seeds.

This genus of plants is ranged in the third section of Linnæus's seventeenth class, intitled Diadelphia Decandria, from the flowers having ten stamens divided into two bodies.

The SPECIES are,

1. **CYTISUS** (*Laburnum*) foliis oblongo-ovatis, racemis brevioribus pendulis, caule arboreo. *Cytifus* with oblong oval leaves, short spikes of flowers hanging downward, and a tree-like stalk. *Cytifus* Alpinus latifolius, flore racemoso pendulo. Tourn. Inf. R. H. 648. Commonly called *Laburnum*.
2. **CYTISUS** (*Alpinus*) foliis ovato-lanceolatis, racemis longioribus pendulis, caule fruticoso. *Cytifus* with oval spear-shaped leaves, long pendulous bunches of flowers, and a shrubby stalk. *Cytifus* Alpinus angustifolius, flore racemoso pendulo longiore. Tourn. Inf. R. H. 648. Commonly called *long-spiked Laburnum*.
3. **CYTISUS** (*Nigricans*) racemis simplicibus erectis, foliis ovato-oblongis. Hort. Cliff. 354. *Cytifus* with single erect bunches of flowers, and oval oblong leaves. *Cytifus* glaber nigricans. C. B. P. 390. *Black smooth Cytifus*.
4. **CYTISUS** (*Sejjilibus*) racemis erectis, calycibus bractea triplici auctis, foliis floralibus feffilibus. Lin. Sp. Plant. 739. *Cytifus* with erect bunches of flowers, three lamina under the empalement, and the leaves on the lowest branches sitting close. *Cytifus* glabris, foliis subrotundis, pediculis brevissimis. C. B. P. 390. Commonly called by the gardeners, *Cytifus fecundus* Cluffi.
5. **CYTISUS** (*Hirfutis*) pedunculis simplicibus lateralibus, calycibus hirsutis trifidis ventricoso-oblongis. Hort. Upfal. 211. *Cytifus* with single foot-stalks on the side of the branches, trifid hairy empalements, oblong and bellied. *Cytifus* incanus filiqua longiore. C. B. P. 390. Commonly called *hairy*, or *Evergreen Cytifus* of Naples.
6. **CYTISUS** (*Jrgenteus*) floribus feffilibus, foliis tomentosis, caulibus herbaceis. Lin. Sp. Plant. 740. *Cytifus* with flowers sitting close to the branches, woolly leaves, and an herbaceous stalk. *Cytifus* humilis argenteus angustifolius. Tourn. Inf. 648.
7. **CYTISUS** (*Supinus*) floribus umbellatis terminalibus, ramis decumbentibus, foliolis ovatis. Lin. Sp. 1042. *Low Cytifus* with umbellated flowers terminating the branches, which are trailing, and oval leaves. *Cytifus* fupinus foliis infra & filiquis molli lanugine pubescentibus. C. B. P. 390*
8. **CYTISUS** (*Auftriacus*) floribus umbellatis terminalibus, caulibus erectis foliolis lanceolatis. Lin. Sp. 1042. *Cytifus* with umbellated flowers terminating the branches, erect stalks and spear-shaped leaves. *Cytifus* floribus capitatis, foliolis ovato-oblongis, caule fruticoso. Diff. Hort. Commonly called *Siberian Cytifus*.
9. **CYTISUS** (*Mthiopicus*) racemis lateralibus trifidis, ramis angulatis, foliolis cuneiformibus. Lin. Sp. 1042. *Cytifus* with narrow bunches of flowers proceeding from the side of the branches, which are angular, and wedge-shaped leaves. *Cytifus* iEthiopicus, subrotundis incanis minoribus foliis, floribus parris luteis. Pluk. Aim. 128.
10. **CYTISUS** (*Gracus*) foliis simplicibus lanceolato-linearibus, ramis angulatis. Lin. Sp. 1043. *Cytifus* with single, linear, spear-shaped leaves, and angular branches. *Barba Jovis linariae folio*, flore luteo parvo. Tourn. Cor. 44.

11. **CYTISUS** (i..jivm) **racemis** 3M < *laburnum racem. foliolis III Wan Ltd I ins [omcrtufc, inintermedio longior petiolato. Flor. Zry). 357. (.: for each small leaf of the tree-flower; Intg fr & * tit JI. t h&vit tctWi are* *Jbi{<lu%ty* *Cytisus subcortens, maculosa* *i cdui alb.* *Thunb. C. p. CHM* only called *Fidens Prtf M jimtris.*
 The first sort is the • common broad-leaved Laburnum, which was formerly in great plenty in the Lanelih • nu introduced, it bag dmoft turned this out; titt uf flowen beinr much longer, they make * appearance when they are in flower, which has afforded their twinn more generally ctdtivated -, but the: firft grows to *IK* the lanjeft tree, and the wood oi' it: 11 very hard, of a fine colour, and will jiolifli ver) well. it approjclurs near to green Ebon;.. In by the French titled *Ebony of the Al|>s* and "is thr; used for many kinds of furniture •, In; in England there are few of thefe trees which have been l'ufr to ftand long enough to jr rive to any confiderable flux, for as they have been only confidered as an ornamental ire- the frequent alterations which moft of the gardens in England have • undergor. .
 In ui in iome of the' old garden in Scotland, » here they l' • ivt- been pcrmitcii to (Un.i. rers of this kind, which = re fit to con down for the ufr of the timber. I have feen two old tn ardens, which were more th : tetfrotn the ground, md thtli had been broken and abused, otherwife might lit hav been mutlg Urg- ruw \. • ajxin poor I expofed liniatiu: His Grace the Duke of Queensberry fowetlagreat qusnntity of the ii of this tree, upon the fide of the downs, at his li-at nej: Amelbury, in Wiltshire, where the Gruicion waj very mud xpofed, and the foil to Itiallow. LI titat few trees would grow there ; yet in this place : the young trees cm twelve feet I, i in four year's growth : b became a lilcl-er to the other plantations, for which urpo!< they were defigned, but the hart and rabbits are great enemies to thefe trees, by bark- g them in winter, to that where thefe trees'arc cultivated, hey (hould be fenced from th'du animals.
 Both thefe forts are eafily prup'jaiced by fectSs, • which the trees produce in great plenty. I thefe are fown upon a common bed in March, the plant will appear jly the middle or end of April, ar.ti will require no iclwr care but to be kept clean from werdj <iurinf Se foil wing fum ;cr-, anriii the plants are too choic e>geiher, they may be traufplanted ilu- .. rous following, either imu a nurery, whefe rhs; may grow a year or two to get frngth, or im the places where they are • firm i to remain: wlm thefe trees would cultivate them Tir their wood, it will be :he bet* way to low the freeds upon the fpot where they are intended to grow, becaui thefe trees tend out long, thick, flefhy •JOB to a g: out diftance, which will penetrate the jvel or i backs; and if their roots are cut or broken, it greatly retards their growth; therefore when they are not down upon the intended fpot, they fhould be tranfplanted thither young, otherwife they will not grow to near the fix, though where they are only defigned for ornament, the removing the plants twice will flop their growth, and caufe them to be more productive of flowers; but all trees intended for timber, are much better down on the ground where they are defigned to ftand, than if they are tranfplanted.
 If the freeds of thefe trees are fown in winter, the plants will rife in great plenty the following fpring, fo that a few trees will foon fupply any perfon with a fufficient number of the plants.
 Thefe trees flower in May, at which time they make a fine appearance, their branches being generally loaded with long fringes of yellow flowers, which hang down from every part. The freeds grow in long pods, which ripen in autumn. There is a variety of

both the: trees with variegated leaves, which fome pedbntve I and of cultivating; but • this is only to be flonc b cuttings or layers, for the feeds of the tie will produce plants with green leaves; the autumn's fliould be pl.mrrd :: autumn, when the l.iveibegiii ti fall, and !• plants -iitit have 11 M>or litit, b>r in good ground they are apt to become plain.
 If the first sort comes to be considered as a useful wood, which there is no reason to doubt it may be, it may be planted in large clumps in parks, where they will be very ornamental, and I am certain, from long expert see, that this tree will thrive upon many soils, and in filch ficuai and as few other trees will make any (-rogreli i [he ob, ction to fencing is the fame here, as (ur »ny other trees, for wherever paraaitM i are madi', they are not well fecurity from animsls, tit-y will not answer the defign of the planters.
 'The fecond I bet differs from the firft, in having narrower leaves, longer bunches of flowers, and the trees do not grow fo large and ftout; this difference I find is conflant from feed. There is another fort mentioned by Tournefort, with flatter bunches of flowers than either of ih', one tree of which kind I thought I had found in a garden; the bunches of the flowers upon this tree were clofe and almoft round, but I fow'd the feeds of it, and the plants proved to be O1 by the com' ion fort.
 The third fort grows naturally in Auflria, in Italy and • ain, and ;n preici it is pretty rare in the English gardens; it was formerly in fome of the curious gardens here, but had been long loft, till a few years ago, when I procured the feeds from abroad, • which I fucceeded • the Chelsea gardens, where the plants have flowered and produced ripe feeds, which have been communicated to feveral curious perfon's.
 This ftrub seldom rizes more than three or four feet high in England; it naturally puts out many lateral branches near the ground, which ftand out on every fide, to :n to farm a low (lirubby bulh, lo with dijciiliy- railed to a llrm : the branches are very tender, and teit ends are frequently kili • if the winter is irvercj thefc arc gamifhti.l with oblonge ova] U wcrs, growing by threes on each foot-ftalk; they are equal in fize, and of a dark green colour; the branches grow erect, and are terminated by spikes of yellow flowers, about four or five inches in length, ftanding upon •I; and as ill thic i en the flruu >rance ; >L Rowers in Jul; ; ure pail, am
 This is propagated by feeds, which fhould be fown upon a bn: of light earth in March, covering them about one third [] ni incli wiith mjc il.renccti IHUL. is the beginning of May the plants will appear, when they must be carefully weeded, and during the following summer ti:; y must constantly be kept clean, which is all the culture they require till autumn, when it will be v.; proper to arch the bed over with hoops, that in -rny weather the plants may be covered .l with mats, to prevent their t<nder fhoots from being killed; for as thefe young plants are apt to continue growing later in the autumn than thofe which are become woody, fo they are much more liable :ble at told therefore where there is not fome care ikcn to covet ihei, if the winter fhould prove fevere, many of the m tuncy In entirely deftroyed, and the others killed to the ground. I the fpring following, after the danger of hard froft is over, the plants fhould be carefully taken up, and planted out at the dlitkuice of one I one, row from row, and fix inches afunder in the rows; this fhould be in a fiftenced fituation, and as thefe plants do not fhoot till late in the fpring, fo they need not be tranfplanted before the end of March, or the beginning of April; and if the feafon fhould then prove warm and dry, it will be proper to give the plants fome water to fettle the earth to their roots; and if the drought continue, and the autumn is three times repeated at a week's interval time each, it will be of fervice to the plants. After they have akn new root, they will require

no farther care, but to keep them constantly dean from weeds; in this nursery the plants may remain two years, in which time they will have acquired strength enough to be transplanted where they are to remain. There is a figure of this shrub exhibited in the 117th plate of my figures of plants.

The fourth sort grows naturally in the fourth of France, in Spain and Italy, but has been long cultivated in the nursery gardens, as an ornamental flowering shrub, by the title of *Cytisus fecundus* Clusii. This rises with a woody stalk, putting out many branches which are covered with a brownish bark, and garnished by obverse oval, small leaves, growing by threes on very short foot-stalks. The flowers are produced in close short spikes at the end of the branches, (standing erect, they are of a bright yellow colour, and appear in June; these are succeeded by short broad pods, which contain one row of kidney-shaped seeds, which ripen in August. These shrubs will rise to the height of seven or eight feet, and become very bushy, they are very hardy, so will thrive in any situation, and upon almost any soil, which is not too wet. They are propagated by seeds, which may be sown upon a common bed of light earth in the spring, and kept dean from weeds the following summer, and in autumn the plants may be transplanted into a nursery in rows, one foot apart, and at six inches distance in the rows, where they may remain two years to acquire strength, and should then be removed to the places where they are designed to grow. The fifth sort hath a soft shrubby stalk, dividing into many branches, which grow erect, and frequently rise to the height of eight or ten feet; the stalks and leaves of this are very hairy, the leaves are oval, growing three upon each foot-stalk, and are placed dolely on the branches, the flowers come out from the side of the stalk, in short bunches; they are of a pale yellow, and appear in June, these are succeeded by long, narrow, hairy pods, with one row of kidney-shaped seeds, which ripen in September.

This sort, of late years, has been much cultivated in the nursery gardens near London, by the title of *Evergreen Cytisus* of Naples; but as in severe frosts these shrubs are sometimes killed, so they are not proper for every situation, therefore should only be planted on a dry soil, and in warm situations, they are also very difficult to remove, when grown to any size, for they shoot long roots deep into the ground, and when these are broken or cut, the plants seldom survive it. This may be propagated in the same manner as hath been directed for the third sort. It grows naturally in the fourth of France, in Spain and Italy. The sixth sort hath herbaceous stalks, garnished with woolly leaves; the flowers are produced sometimes single, at other times two, three, or more grow together at the end of the branches, these appear in June, and are succeeded by hairy pods.

This plant is propagated by seeds, which may be sown at the same time, and the plants should be afterward treated in the same way, as is directed for the third sort.

The seventh sort grows naturally in Sicily, Italy, and Spain, this is a perennial plant, from whose downright root proceed several weak branches which trail upon the ground, and extend to the length of eight or ten inches; these are garnished with oblong leaves, placed by threes upon pretty long foot-stalks; they are hoary on their under side, but smooth above, the flowers are collected in heads at the end of the stalks, having a cluster of leaves under them; they are of a deep yellow colour, and appear the latter end of June, and in warm seasons these are succeeded by flat woolly pods, containing one row of small kidney-shaped seeds, which ripen in September. This plant is propagated by seeds, which should be sown where the plants are to remain, and should be treated in the same manner as the sixth sort.

The eighth sort grows naturally in Tartary, from whence the seeds were sent to the Imperial garden at Peterburgh, and hath since been sent to many of the curious gardens in Europe, which have been tur-

hished with the seeds. This hath a shrubby stalk; which rises near four feet high, dividing into many branches, which when young are covered with a green bark, dolely garnished by oblong, oval, smooth leaves, which are of a hoary green colour; the flowers are produced in close heads at the end of the branches, having a cluster of leaves under them, they are of a bright yellow colour, and appear in the beginning of May; these are sometimes succeeded by short woolly pods, containing three or four small kidney-shaped seeds in each. This is propagated by seeds, which should be sown early in April, on a border of strong ground exposed to the east; for if they are sown where they have fill sun, the plants will not thrive. This requires a cold situation and a pretty strong soil, otherwise it will not thrive.

The ninth sort grows naturally about Algiers, from whence the Rev. Dr. Shaw brought the seeds, which succeeded in the Chelsea garden. This rises with a soft shrubby stalk to the height of eight or ten feet, putting out many slender branches on every side, garnished with small wedge-shaped leaves, which are indented at the top, of a dark green colour and smooth, the flowers come out frequently single from the side of the branches, these are large and of a bright yellow; they appear in June, and are sometimes succeeded by pods containing three or four kidney-shaped seeds, which ripen in autumn. This sort is too tender to live in the open air through the winter in England, therefore the plants must be created in the same way as those which are natives of the same country.

The tenth sort grows naturally in the islands of the Archipelago, it rises with a ligneous stalk six or seven feet high, sending out many angular lateral branches, garnished with single, narrow, spear-shaped leaves; the flowers are produced in short bunches from the side of the branches; they are small, yellow, and appear in July and August, but are not succeeded by seeds in England.

This is propagated by cuttings, which if planted on a bed of light earth the beginning of July, and are dolely covered with a bell or hand-glass, which should be shaded from the sun in the middle of the day, they will put out roots by the middle or end of September; when they should be carefully taken up, planting each in a separate small pot, carefully watering and shading them until they have taken new root, after which they may be exposed in a sheltered situation till the end of October, when they must be removed into shelter, for this plant is too tender to live in the open air in England.

The eleventh sort grows naturally in the islands of America, and also at the Cape of Good Hope. This rises with a weak shrubby stalk eight or ten feet high, sending out many erect side branches, which grow erect, and are garnished with spear-shaped woolly leaves, placed by threes, the middle lobe having a longer distinct foot-stalk, than the two on each side which grow close to the principal foot-stalk. The flowers come out from the side of the branches, sometimes single, at other times in clusters, they are of a deep yellow colour, and about the size of those of the common *Laburnum*; these are succeeded by hairy pods about three inches long, which are fickle-shaped, ending with a long acute point, swelling at the place where each seed is lodged, the seeds are roundish, a little inclined to a kidney-shape. These seeds are esteemed an excellent food for pigeons in America, from whence it had the title of Pigeon Pea.

This plant grows only in very warm countries, so cannot be preserved in England, unless it is placed in a warm stove. It rises easily from seeds in a hot-bed, and will grow three or four feet high the first year, provided they have a proper heat, and the second year they will produce flowers and seeds. The plants must be placed in the bark-bed in the stove, and treated in the same manner as other tender plants from the same countries: they should have but little water in winter, and in the summer should have a large share of free air admitted to them in warm weather.

D.

D A L

DAFFODIL. SM NARCISSUS.
 DAISIES. See BUMS.
 DALECHAMPIA. Lin. Gen. Plant.
 ion. Plum. Nov. Gen. 17. tab. jS.

This plant was fo named by father Plumier, in honour of the memory of Jacobus Dalchchamp, who was a

The Characters are

It bath male and female fleram en tie fume plant \ tht mahp < rjim arc filtuted tilwrcn two brailcay they bant J tommm iirvouierum em mta four treft fegmtvts-, th> empe. 'ejnem is empefid of fix obluft eve! leavst, refi/xtde/ their pants, fby havi ;w ptinh, but bavi a broad neelonian, bo-sing nany pt&m feldt fyng ever earb fiber, and man; jimma jcin/d in a long column, ttrminaid by rcun&Jb stanmits bavin fivr fimmvs-, tht fenwie flowers art elfi jtunted is tht fame manner m tht malt; lltifi have a permanent tbrte-Ucvtd iavducrum, and ttxh have-a pmaofint tin-lt sent; thty haee w> pa\$h, but a remidifh gtrt. an tht tnpalemnit, having three furrows fop} *? jlender styl'-- heading fp-asrJ tbc mak flowers, enrjned if a beaded figma; the germen aflemurd i/sc&mei a rottiidifh capfule •with three tills, ickfng em roundijh feed ix tath.*

This genus of plants is ranged in thc ninth TeAion of Linrueus's cwnty-firil clat, intitld Mon^cii Monaddphia, the plints having male and female flowers on the fame rooc, and the flamina of tht mate Bowers arc joined in one body co die Ityle.

We have but one SPECIES of this in England, viv. **D**ALSCHAMPIA {Sqmdaif} foliis trilobis glabns, flnribus aifilliribus caule volubili. *DaUebampio wiilf finwtb lare: I bevhtg three labes, flewm greying front the Jidts of the brmtebts, md a twitting fialk. Dalchcampii leandens, lupuli foliis, fructu cricocco glabro, colyce jiiipJo. Houil. MSS.*

This pLint grows naturally in Jamaica, from whence the late Dr. Moutoun frnt me the fredt, which fucted in thc thclfea gstrfen, where tht gtuil have flowered arti pi'rtcted their fceds. This mud \x a difTcrnt plant from that wjiiich Plunier found crawing in Martinico, or he li^i ciken the involucrum I > r the fcixl-vctel by his tide of it; for lie c4U it fruclu tricocco hupido, whereas this hath a fmooth iVuit with a hipid cmpalemcm.

It hatli A root compoieti rf many fibres, which extend to 3 great d'Jlance, from which arife fcvtral twining flalki, thiat fatten tiemfdves 10 the neighbouring plant), and mount up to a confiderable height; theft are garnifhed at each joint by one leaf, having three lobes, they arc fmooth, the rvo fide lb ^rc oblique to the midrib, but the middle one ii equal. The flowers arc produced from the fide of the folks, three ar four growing upon each foot-falk; lbme of thcle arc male, and others female; they ore of an hcrb«cwuj colour, anJ fmall, ibmake no append I li adouble Involi

ma de up of • in orders of leaves, which are narrow, and armed with fmall briftly hairs, which Hing the bunch of i. of wlio unwarily touch chr arc l accented by roundish capfules, having three j>minent lobei which are fmooth, each incbng a fingle

This plant is : • p'cd by feeds, which muK be fown early in the fpring / < i a hat-bed; and whci: the

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plnri are tome up three inches higt), thry lhouki be carcfilly trani'jilintcd, ejeh into a leparacc Email pot, Jitird with light rich tr.inh, and then plunged into a liot-bed of tanners bark, bting carvfut to lcreen them from the iun until they hve taken ^{new root,} after which lime the glafes of the hot-bed (houid be railed every day, in propotion co Lie heat of the weather, to admit frelli air to the plann t they mult alfo be frequently watered, for they nanirally grow in moift places. When the plants livve grown fo large a: to fill thefe \vnu wili their rook, th^y lhouid be removed ^{into large} pots, and placed in me b^rk-bed Ill thi: ftovc, wlicre thcy inuft be fupported either with (lakes or a trellis, round which they will twine, and rile to the height of eight or ten feet.

Thefe [il.ints muft be kept conilnntly in the tovn, for they arc too tender to bear the open air in this country, even in the Tummcr fcifon, therefore thty duHild IK; [il^iiLil widi Convolvuhices, and Other twining plants, ntar the back of the flovc, ^{where} •ii! be niatlean elpiUkr to lujijxirt them-, in which flouvc, in they will thrive, ;fid produce their Rowers, and lbmetimes wiU pcrfct their feeds in this country; but, in order to tins, they fiiould h.ivt a U^e flme: of frefti air in warm weather, by drawing down die upper gbies of the ftove j bui in winter the I love flioukl be kept to ft temperate heat, or rather higher. In uimmcr they will require a large ftarc of ivater, bui in winter it fhould be given to them in icK Wtatiitiics, but muft be frequently repeated. Thefc jilanis do not continue above two yi-ars, fo that young plants fliouid be raifed in qrJer to preieve ihc kind.

DAMASOKIUM, Star-htaded WaterPuntain.

The Characters are

*// bath a jlovitr rmpefed af thru Uaves, mbieh *rc plattA arbimlsrh, and txpaxd infcrn af a Refi: rat cf tbi Jisyver-cxp rifts tbt panlai, tvbith afiawerd ttama a Jlar-Jbflij-ed fruit, vntb mar) tlk, whieb art full cf cMini feeds.*

The Spicris are,

1. **D**amasokium {slifma} ftellatum, Lugd Star-bmdtd Water Puntain.
2. **D**iMATosium {Ftovs} American urn maximum, plant -inls itilio, flare fbvefcnte, fructu globofo. Plum. Gen. :tef AnKtictM Water I'LvUuin, •a-ib a Pim-tas leaf, •yrlJewiJh fiowtr, and a globular

The firft of thefe plants 15 a native of England; ir grows comriionly in Handing waters, which arc not very deep. It is fomctimes ufcd in medicine, but never cultivated in gardens, (b muft be gathered for ue in the places of its growth.

Tiic fecond fort j^rows in Jamaica, Barbadoes, and (even) other placis in the warm p.irti uf A mrica, where it is generally found in (fog: uring waters, and otiver fwampy pieces, fo that it .ould be difficult to pcrfrYc this plan: in England, for it will not live in the open air, and requires 1 bog to make ir thrive-, but as it is a plant of no gnut beauty or ufe, it a not worth the trouble of cultivating i" this country.

DA N D K L I O N. S< LEOMTOIW*.

DAPHNE Lin. Gen. Plant. 30. Th)mtl«a. Toun. Inft R, 11 594 all. /:•• Spurge Laurel, or Mezereum.

The

The CHARACTERS are,
Tbt Jjkawr bath TIO mpaltmtnt; it is tybiiritaU of me p/til, which ii cut into four parti at tbt tip, where it ffrtairt open; it bath tight jhort jltitiiw • tirtid in the lair, which are alternately lower, fr ... i'ihcuhrhjmtli. 'tbt F,n'...

This genus of ... is ranged in the first leaf of L.innaui'i eighrh dsf. ... ViaMonogonia, from the nWer having eight itamins and on gen: in.

The SPECIES are,
 i. n. ... ncentms oxilbribus, foliis lan ... iris, Lin. Sp. Plant. 337. *Dipbxt* ... liagfrm tbfidis of the h ... and ... iulii kmy ... inas, ... Tourn. In I ...

2. DAPHNE (Myrica) floribus ... feiWibw terni* eaulbis Iblis ... Dapbat will three Jbw>> ... laun folio deciduo, live laureate krmina. Tourn. ... Cmatsh called ...

3. DAPHNE (Thymela) floribus ... loribus frffitibus axilkribw, ... *ijtiactfb* ... *fAs. Thy* ...

4. DAPHNE (Larocary) floribus ... aggregate axilfaribus, folia ovatis utrinque ... i.in. Sp. Plant. ... *ie 'jilb fit,* ... covered -xi;b filly bars en Utb Jidis. ... inolljbus.

5. DAPHNE (Larocary) floribus ... i.fcgacii late btus xomen ... *Itepmb mth ikftrs if* ... *sbt Jtdis of tbt brand-* ... *blunt ttava 'Mw!ly on their under fide.* Clift-Uplni, folio itfbme incano. C. B. J. ;

6. DAPHNE (Larocary) floribus ... on) Horibus congeftis ... ieffilibur, folus ... *Htpi* ... *tftbt irmibet, ••* ... Cncorum.

7. DAPUM (fjaiAv) p: ... folii ... lanc. ... *Dapbitt* ... *toitb apc.r* ... *itarc.r. ffrur-fotped, peintrJ travel,* His.lini. C. B. ? .:bV

8. rJA ... termin.ihbiu ped until-Intii, iblv- ... patentibus rauci ... Lin. 8p. Plant. 358. C"/*:1 ... *l'feitj, cml Mtrme, fprcatkng,* ... *"hma'flattfjai* ... *Thymela capitata* I temigitiota, tblii; crebernmis minimi & 49> fsl ' ...

9. PHM (ybnrieatu' ... bus KUts, ilonbus ... raccm ... *least!, toul fitters grz-* ... *il ITO* 'k>!* ... *breitebts. T iymc [a* ...

More alba Plum. Cat,
 The first fort grows common in the woods in many parts of England, and is common! known by the **Lmrddi of**

The people, who-get the ... of the wiods, ... in the ... low evt-rgretn (hrvib), ... rifes with fever! ftalki ... of [V ... branches, csrnll'. ... they are of a yellowish green, and appear soon

after Chriitau; if the fralbn is not vrry fceveret thefe lire fucceded by oval bfrries, which are ge ... till June, when they ripen and turn black, foon after which they fall off. The whole plant a of a hoc ... burning and infhming the wouih stud ... The li, ...

• tfflc plants are Omar ... and ij they will thrive tinder call rees, they are very pr^>er to Jill up the fpaces iii planta:ii:is.

The second fort grows naturally in Germany, and there iuth \xcn a iGfcomry made of iw grou ... in ibme woods near Andover in Hampfliirc, from whence a great number of plunts have lu-cn t'iken of lute yeais. This his been long culti ... in the noriery-gardenJ as a flowering lhnib, and is a very omanicnul plant in gardens, very early in the iprtng, before others make their ^ipcarance. Tiirje arc

• diflnct forts of thil, one with a white tl ... which is fuccceded by yellow berries, the other with Poach -co loured flowers mnd red fruk. I ... lome lup]Y]cd to be ... from the lame feeds, but I have fever*! tunc raised thefe pkntj from feeds, and nWay^ found the plants come up the fame, as thic tro;n which the leeds were taken. Ib they do not vary, therefore mu: be tallied different (pecies. Ttierets a variefl of the Peach-coloured MreC'tcon, wnh (lowers <if a much deeper colour than the common, but theli; I fivve i ... found to var) in their colours when raicid from feeds.

This iirub -grow* tu the hdghl iif live ur fix feet, with a fron(5 woody ftaik, putting ou (many woody branches on every Me, lb e ... the flowers come out very early in the fpring, before the aves appear, growing in dutters all round the floots of the former year, ... hert are cummonly three flowci ... knot or joint, hanging on AK ... these have fhort fwelling tubes, which ire divided into fijur parts at the toj which fpread op ... they have .l very fragrant CKIDL. lb that where there JTO plenty of the fhrub* growii., together, they perfume the air to a conquerable dij

ance ... jilnd them: a'ier (he flower are ... come out, which ire fmoorh, fpear-lli ... iced without order*, they ar- ... and three ijjiarters broad in the middle, gradually leffening to both h end'ij the flowers are It ... rbi, which ripen in Ji ... of the Peach I coloured Rowers arc red, ami [hole li

titl- white yellow. The flowers appear in Februar and March, ^nd lijirntimes in mild winters they appear in January. This plant wu formerly uled m medicine, but is every pirt of it hai a dot a ... Wile, fo fewprtU-ribe [hr ufe of it .r jirefcent. This is ... which mould be (own on a bonier expolt'd to the east, ft>n after the berries are riOTI for if they are not fown till the ipring fol

low ... ^ they often mifcirry, and always remain a year in the- ground before the pLints appear-, whereas thofe which are fowl i i August, wll grow the following fpring, fo that vsar is liived, and thefe rCYer fail. When the plants come up, they will requi ... re but to keep them clean from w<d.i. and if the plants ire not too dofz together, th'y may condn ... sd-bed, to have the growth of two lumimers, efpecialy it' they do not make great pro-

gress the ... year-, thtn at Michaelmas, wien the Iww arc 8M ... they fould be carefully taken up fi) as not to break or tear their roots ... planted into a nuriery M about tkteen inchw row from row, ... ifundei in the rowi-, in this nuriery they may remain two yeau, by which time they will be fit to remove to the places where they are defigned to remain for

good: the belt fealbn to ... nin, for IE thefe plants begin to vegetate very early in the ... fprir^, ly it is not proper to tranfplant them at that feaf ... i. Theft plants grow belt in a light lin V earth which is dry, for in cold wet land the ... lil-comc molFv, and make little progreff, fo that upon the ii luils they never grow to any fize, and produce few flowers.

Although

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Although the berries of this tree are so very acrid, as to burn the mouth and throat of those who may incautiously taste them, yet the birds greedily devour them, as soon as they begin to ripen; so that unless the shrubs are covered with nets to preserve the berries* they will all be destroyed before they are fit to gather. There is of this and the former sort, some plants with variegated leaves, which some persons are fond to have in their gardens, but the plain are much more beautiful.

The third sort grows naturally in Spain, Italy, and the south of France, where it rises to the height of three or four feet, with a single stalk covered with a light-coloured bark -, the flowers come out in clusters on the sides of the stalks, which are of an herbaceous colour, so make but little appearance; they appear early in the spring, and are succeeded by final berries which are yellowish when ripe.

The fourth sort grows naturally in the south of France, from whence I received the seeds. This is a low shrubby plant, which sends out several weak stalks from the root, which grow about a foot long, and spread about irregularly, these seldom become woody in England, but are tough and stringy, covered with a light bark; the leaves are small, of an oval form, and are very soft, white, and shining like satin; these fit pretty close to the stalks; between these the flowers come out in thick clusters from the side of the stalks*, they are white, and are succeeded by roundish berries having one hard seed. This flowers here in June, but doth not produce ripe seeds.

The fifth sort grows on the mountains near Geneva, and in other parts of Italy, where it rises about three feet high -, the flowers of this come out in clusters from the side of the branches* early in the spring. The leaves are spear-shaped, ending in blunt points, and are hoary on their under side. The flowers are succeeded by small roundish berries, which turn red when ripe.

The sixth sort grows naturally on the Alps, as also upon the mountains near Verona, from whence it was sent me; this is a very humble shrub, seldom growing more than one foot high, with ligneous stalks, which put out several side branches; these are garnished with narrow spear-shaped leaves, which are placed round the stalks without order; the branches are terminated by small clusters of purple flowers which stand erect, having no foot-stalks; the tubes of these flowers are longer and narrower than those of the Mezereon, and the mouth is cut into four acute parts which are erect. These flowers emit a pleasant odour; they appear early in the spring* but do not produce seeds here.

The seventh sort grows naturally about Montpellier; this rises with a shrubby stalk about two feet high, dividing into many small branches, which are closely garnished with narrow spear-shaped leaves growing erect, ending in acute points; the ends of the branches are terminated by panicles of flowers, which are much smaller than those of the Mezereon, having swelling tubes, which are contracted at the mouth. These appear in June, but are not succeeded by seeds here.

The eighth sort grows naturally at the Cape of Good Hope; this shrub rises to the height of five or six feet, dividing upward into several branches which grow erect, and are covered with a white bark, and closely garnished with small narrow leaves, which come out on every side of the branches without order, spreading open; the tops of the branches are terminated by woolly heads, out of which the flowers come in small clusters -, they are white, having oblong tubes, which are divided into four obtuse segments at the mouth, which spread open. These plants do not produce seeds in Europe.

The ninth sort grows naturally in many islands in the West-Indies, it was sent me from Antigua. This shrub rises to the height of four or five feet, with a woody stalk, covered with a rugged bark of an Ash colour; the upper part of the branches are garnished

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with leave* about the size, and the same sort those of Rosemary -, between the leaves the flowers come out in small bunches, upon foot-stalks an inch long; they have short tubes cut into four parts at the top, and are white; these are succeeded by small round berries, of a brown colour when they are ripe.

The third, fourth, and seventh sorts are hardy, so will live through the winters in England in the open air, provided they are in a dry soil and a warm situation. The fifth and sixth sorts are as hardy as the common Mezereon, so are not in danger of being hurt by frost in England; but they are all very difficult to keep in gardens, because neither of them will bear to be transplanted. I have several times raised the plants from seeds, which have succeeded well in the places where they were sown, but whenever they were removed, they certainly died, though performed at different seasons, and with the greatest care, and the same has happened to every other person who has raised any of these plants; and some of my correspondents have allured me, they have frequently attempted to remove these plants from their natural places of growth, into their gardens, and have chosen plants of all sizes, from the youngest seedlings to the oldest plants, yet have never succeeded in it; though they have used their utmost care, and have performed it at different seasons. Therefore those who are desirous to have these plants in their gardens, must procure their seeds from the countries where they naturally grow, and when they arrive, they should be immediately sown where they are designed to remain, which for the third, fourth, and seventh sorts, should be on a very warm dry border, where, if there is a foundation of lime, rubbish, or chalk, under the upper surface of the ground, the plants will thrive better and continue much longer, than in better ground; and all the culture they require, is to keep the place clean from weeds, for the less the ground is stirred near their roots, the better the plants will thrive; for they naturally grow on poor shallow land, and out of crevices in rocks; so the nearer the soil approaches to this, the more likely the plants will be to succeed.

The fifth and sixth sorts may have a cooler situation; if these are sown where they may have only the morning sun, they will thrive better than in a warmer situation, and the ground near the roots of these should not be disturbed; therefore in the choice of the situation, there should be regard had to this, not to sow them near other plants, which may require transplanting, or to have the ground dug and loosened. The seeds of these plants coming from distant countries, rarely arrive here time enough to sow in autumn, so that when they are sown in the spring, the plants do not appear till the succeeding spring; and I have sometimes had the seeds remain till the second spring in the ground, before the plants have appeared; but as this may be too long for many people to leave the ground undisturbed, so they had better put the seeds into small pots of earth, and bury them in the ground the first summer, and in autumn take them up, and sow them where they are to stand; by this method, the seeds will be forwarded to vegetate the following spring.

The fifth sort is a beautiful sweet shrub, so deserves a place in gardens, as much as any of those we cultivate for ornament. The first and second sorts are sometimes used in medicine as was before observed, but being of a very caustic nature, are seldom prescribed; but if proper trials were with caution made, it is not doubted but they may be found very efficacious in many stubborn disorders, for some very ignorant quacks have performed great cures with these plants. The seventh sort produces the Granatida of the shops.

The eighth sort grows naturally at the Cape of Good Hope, so will not live abroad in winter in England, but requires a good green-house to preserve it. This plant is very difficult to keep or propagate in gardens.

The ninth fort will not thrive in England, unless it is preserved in the bark-frove; this plant will not bear transplanting, for I raised several from feeds which thrive pretty well while they continued in the pot where they were sown, but when they were transplanted, they all decayed.

D A T I S C A. Lin. Gen. Plant. 1003. Cannabina. Tourn. Cor. 52. Bastard Hemp.

The CHARACTERS are,

// is male and female in different plants \ the male flowers have an empalement composed of five narrow acute leaves -, these have no petals, and scarce any visible stamina, but have ten stamens which are much longer than the empalement. The female flowers have no petals, but the empalements are the same as the male, having an oblong perisperm germen, supporting three styles, crowned by single stigmas; the empalement afterward becomes an oblong triangular capsule, opening with three valves, having one cell filled with small seeds, adhering to the three sides of the capsule.

This genus of plants is ranged in the tenth section of Linnæus's twenty-second class, entitled Dodecandria, from the male and female flowers growing in separate plants, and the male flowers having ten (lamina.

The SPECIES are,

1. DATISCA (*Cannabina*) caule laevi. Lin. Sp. Plant. 1037. *Datisca* with a smooth stalk. Cannabina Cretica florifera & fructifera. Tourn. Cor. 52.

2. DATISCA (*Hirta*) caule hirsuto. Lin. Sp. Plant. 1037. *Datisca* with a rough stalk.

The first fort grows naturally in Crete, and some other eastern countries. This hath a perennial root, from which arise several herbaceous stalks, about four feet high, garnished with winged leaves placed alternately, each being composed of three pair of lobes, terminated by an odd one; these are two inches long and half an inch broad, ending in acute points, and are deeply fawed on their edges, of a light green. The flowers, come out in long loose spikes from the upper part of the stalks at the wings of the leaves, but having no petals, make but a poor appearance. The stamens of the male flowers being pretty long, and of a bright yellow colour, are the only visible parts of the flowers to be discerned at any distance.

The flowers on the female plants are succeeded by oblong three-cornered capsules, filled with small seeds, which adhere to the three valves. The plants flower in June, and the seeds ripen in September. The stalks decay in autumn and new arise in spring. This fort may be propagated by parting the roots, which should be performed in autumn when the stalks decay, (which is the best time to transplant the roots), but they must not be parted too small they may be planted in any open beds, where they are not under the drip of trees, and will require no other culture but to keep them clean from weeds.

It may also be propagated by seeds, but these should be taken from such plants as grew in the neighbourhood of male plants, otherwise they will not succeed -, and if the seeds are not sown in autumn, they seldom grow the first year. The seedling plants when they rise, will require no other care but to keep them clean from weeds till autumn, when they may be transplanted where they are to grow.

The second fort grows naturally in Canada, and other parts of North America. This differs from the former, in having hairy stalks, which grow taller the leaves are larger, and do not stand so near each other upon the stalks. It is equally hardy with the first fort, and may be propagated in the same manner, but should have a more shady situation and a moist soil.

D A T U R A. Lin. Gen. Plant. 218. Stramonium. Tourn. Inf. R. H. 118. Thorn Apple.

The CHARACTERS are,

The flower is of one petal which is funnel-shaped, having a long cylindrical tube, spreading open at the top, which in some species is pentagonal, each angle being pointed; the empalement of the flower is permanent, swelling in the middle five-cornered) and tubulous \ the flower hath

five stamina, which are as long as the empalement, terminated by oblong compressed stamens; // hath an oval germen, supporting an upright style, crowned by a thick obtuse stigma. The germen afterward becomes an oval capsule, divided into four cells by a cross intermediate partition, which are filled with kidney-shaped seeds adhering to the partition:

This genus of plants is ranged in the first section of Linnæus's fifth class, entitled Pentandria Monogynia, the flower having five stamina and one style.

The SPECIES are,

1. DATURA (*Stramonium*) pericarpis spinosis erectis ovatis, foliis ovatis glabris. Hort. Cliff. 55. *Datura* with an oval erect fruit having a prickly cover. Stramonium, fructu spinoso rotundo, flore albo simpliciter. Tourn. Inf. R. H. 118. Thorn Apple with a round prickly fruit, and a single white flower.

2. DATURA (*Tatula*) pericarpis spinosis erectis ovatis, foliis cordatis glabris dentatis. Lin. Sp. 256. *Datura* with an erect oval fruit with a prickly cover, and smooth, heart-shaped, indented leaves. Stramonium fructu spinoso oblongo, flore violaceo. Tourn. Inf. R. H. 119. Thorn Apple with an oblong prickly fruit, and a violet-coloured flower.

3. DATURA (*Mete*) pericarpis spinosis nutantibus globosis, foliis cordatis subintegris pubescentibus. Hort. Cliff. 55. *Datura* with a globular nodding fruit having a prickly cover, and heart-shaped, entire, hairy leaves. *Datura alba*. Rump. 5. p. 242.

4. DATURA (*Ferox*) pericarpis spinosis erectis ovatis, spinis supremis maximis convergentibus. Amoen. Acad. 3. p. 403. *Datura* with an oval erect fruit, whose upper spines are largest, and converge together. Stramonium ferox. Bocc. 50. Rough Thorn Apple.

5. DATURA (*Inoxia*) pericarpis spinosis innoxii ovatis pro-pendentibus, foliis cordatis pubescentibus. *Datura* with an oval hanging fruit, whose cover is beset with barbed spines, and heart-shaped hairy leaves. Stramonium folio hyocyami, flore toto candido, fructu pro-pendente rotundo, spinis innoxii ornato. Boerh. Ind. alt. 1.

6. DATURA (*Fastuosa*) pericarpis tuberculosis nutantibus globosis, foliis hecivibus. Lin. Sp. 256. *Datura* with a globular nodding fruit, whose cover is set with tubercles and soft leaves. Stramonium Egyptianum flore pleno, intus albo, foris violaceo. Tourn. Inf. 119. Egyptian Thorn Apple with a double flower, white on the inside, and violet-coloured on the outside.

7. DATURA (*Arborea*) pericarpis inermibus nutantibus, caule arboreo. Lin. Sp. Plant. 179. *Datura* with a nodding fruit having an unarmed cover, and a tree-like stalk. Stramonium arboreum, oblongo & integro folio, fructu tevi, vulgo. Flori pondio. Feuil. tab. 46. The first fort here enumerated is the most common Thorn Apple in Europe, and was probably first introduced from Italy or Spain, where it naturally grows; but it is now become so common about London, and near other great towns in England, as to appear like a native plant, for there are few gardens or dunghills without this plant in summer, though it is only near such places, where the plants may have been cultivated first in the gardens, and wherever any of these plants are permitted to feed, they will furnish a supply of the plants for some years to come, as their produce a vast quantity of seeds, some of which will lie years in the ground, and when they are turned up to the air will vegetate.

This fort seldom grows much more than two feet high, dividing into many strong irregular branches which are hollow, garnished with large smooth leaves divided into irregular angles, and emit a foetid odour. The flowers come out first from the forks or divisions of the branches, and afterward near the extremities of the branches they have long swelling tubes, which are dilated at the top into large pentagonal brims, each angle ending in a long point or ligula, these stand in long, green, five-cornered empalements, and are succeeded by large roundish feed-vessels, covered with strong thorns, divided by four furrows, to which adhere the partitions, which separate the four cells, filled with black kidney-shaped seeds. It flowers in July, August, and September, and the seeds ripen

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in autumn, which, if permitted to scatter, will fill the ground about them with plants the following years. There was formerly a cooling ointment made with the leaves of this plant and hogs lard, which was greatly esteemed for burns and scalds.

There is a variety (if not a distinct species of this) which grows naturally in North America the plants of this grow more than twice the size of the former; the leaves are smoother, and of a lucid green, but the flowers and fruit are of the same form as those of the other, so may be deemed a distinct species, especially as the difference continues in the plants propagated in England.

The second sort grows naturally in most parts of America, for I have frequently received the seeds of it from the islands in the West-Indies, and also from all the northern parts of America. This rises with a purple stem to the height of four or five feet, dividing into many strong branches, garnished with leaves shaped somewhat like those of the former sort, but larger, and have a greater number of angles and lacinae on their edges, the flowers have longer and narrower tubes, and are of a purple colour; the fruit is also longer, and these differences are permanent. This is equally hardy with the former, and if the seeds are permitted to scatter, the plants will become troublesome weeds. The third sort hath a strong stem, which rises three feet high, and divides into many woolly branches, the leaves of this sort are almost entire, having only two or three slight indentures on their edges; the flowers have long tubes, which extend beyond the bifid empalement, then they spread out very broad, where the brim is divided into ten obtuse angles, they are of a pure white above, but the tubes have a tinge of green within. These are succeeded by roundish fruit, closely covered with thorns, and are divided into four cells as the other, but the seeds of this are of a light brown colour when ripe.

This plant is not so hardy as the others, so the seeds must be sown upon a gentle hot-bed in the spring, and the plants must be afterward treated in the same manner as the Marvel of Peru, and other of the hardier kinds of annual plants, and may be transplanted into the full ground the latter end of May. They will flower in July, and the seeds will ripen in autumn.

There is a variety of this with double flowers, but unless the plants of this are placed in a glass-case, they will not produce seeds in this country.

The fourth sort is of humbler growth, seldom rising more than a foot and a half high, spreading out into many branches, which are garnished with leaves somewhat like those of the first sort, but are smaller, and stand upon longer foot-stalks; the flowers are like those of the first sort, but smaller; the fruit is round, and armed with very strong sharp thorns, the upper being large, and converge toward each other. The seeds of this are black when ripe.

This sort is too tender to be sown in the full ground in England, so the plants should be raised on a hot-bed, and afterward transplanted into borders as the former sort.

The fifth sort grows naturally at La Vera Cruz, from whence I received the seeds. This rises with a purple stem three or four feet high, dividing into several strong branches, garnished with oblong heart-shaped leaves. The stalks, branches, and leaves of this sort are covered with soft hairs; the flowers come out at the division of the stalks and branches, Handing credit; they are large, white, and are succeeded by oval fruit, covered with long, soft, innocent spines, opening in four cells, which are full of brown seeds. This plant is annual, and should be first raised on a moderate hot-bed, then may be transplanted into open borders, where it will flower and perfect its seeds in the autumn. If these seeds are permitted to scatter, the plants will rise the following spring, and if the summer proves warm, they will flower and often perfect their seeds.

The sixth sort grows naturally in Egypt, and also in India. This rises with a fine polished purple (talk four

D A U

feet high, dividing into several branches, which are garnished with large, smooth, sinuated leaves, standing upon pretty long foot-stalks. *The flowers are produced at the divisions of the branches, these have large swelling tubes, which expand very broad at the top, their brims being divided into ten angles, each ending with a long slender point. The flowers are of a beautiful purple on their outside, and a fatty white within; some of these are single, others have two or three flowers standing one within another, and some are double, having four or five petals within each other of equal length, so as to appear a full flower at the brim, they have an agreeable odour as first, but if long left to, become less agreeable, and are narcotic. If these plants are brought forward upon a hot-bed in the spring, and in June planted out on a warm border of rich earth, they will flower very finely in July and August, but unless they are covered with glasses, the seeds seldom ripen well in England. The fruit of this sort is round, and grows nodding downward; the seed-vessel is thick and fleshy, as are also the intermediate partitions which divide the cells. The outside of the fruit is covered with blunt protuberances, and the seeds are of a bright brown colour when ripe.

The seventh sort was sent me from La Vera Cruz by the late Dr. Houftoun, who found it growing there naturally. This rises with a woody stalk to the height of twelve or fourteen feet, dividing into several branches, which are garnished with oblique leaves six inches long, and two inches and a half broad in their broadest part, growing narrower at each end; they are oblique to the foot-stalk, which stands nearer to one side than the other, they are downy, and stand upon long foot-stalks. The flowers come out at the division of the branches; these have a loose tubular empalement near four inches long, which opens at the top on one side like a path or (heath, within the empalement; the tube of the flower is narrow, but immediately above it swells very large for near six inches in length, then spreads open at the brim, where it is divided into five angles, which terminate in very long points; they are white, with some longitudinal stripes, of a pale yellow on their outside; these are succeeded by round smooth capsules, filled with kidney-shaped seeds.

This tree is one of the greatest ornaments to the gardens in Chili, where the inhabitants propagate it with great care. When the flowers are fully blown, they make a fine appearance, and a single tree will perfume the air of a large garden.

This plant is tender, so requires to be kept in a stove in England. The seeds of this must be procured from the places where the trees naturally grow; they should be perfectly ripe when gathered, and carefully put up, so as that the vermin cannot get to them, for they will destroy them. Most of the seeds which were sent over by Dr. Houftoun, were devoured in their passage by insects, so that but few plants were raised. There were two or three of them raised in the gardens of the late Lord Petre, and two in the Chelsea garden; one of which came so far as to flower, but perished without producing seeds, so that at present I believe there is not any of the plants in England.

D A U C U S. Lin.Gen.Plant. 296. Tourn. Inft. R.H. 307. tab. 161. [Jay's, which some derive of foiiu, Gr. to burn, of its (harp and fiery power, or fervent taste.) The Carrot.

The CHARACTERS are,

// bath an umbelliferous flower, the principal umbel is composed of a great number of small ones called rays, which are short, and in clusters. The involucre of the principal umbel is composed of many narrow leaves, having winged points, these are scarce so long as the umbel, those of the rays are shorter and simple. The flowers have five beart-shaped petals which turn inward, those which compose the rays are unequal in size, but those of the disk are nearly so, these have each five hairy stamina, terminated by roundish summits. The germen sits under the flower, support-

supporting two reflexed styles, crowned by obtuse stigmas. The germen afterward becomes a finally roundish, striated fruit, dividing in two parts, each having a single seed, convex and furrowed on one side, and plain on the other. This genus of plants is ranged in the second section of Linnaeus's fifth class, entitled Pentandria Digynia, the flower having five stamina and two styles.

The SPECIES are,

1. DAUCUS (*Sylvestris*) feminibus hispida, radice tenuiore fervido. Carrot with a prickly feed, and slender hot root. Daucus vulgaris. Clus. Hist. 2. p. 198. Common wild Carrot.
2. DAUCUS (*Carota*) feminibus hispida, radice carnofo esculento. Carrot with a prickly feed, and a fleshy eatable root. Daucus fativus, radice aurantii colons. Tourn. Inf. R. H. 307.
3. DAUCUS (*Gingidium*) radiis involucri planis, laciniis recurvis. Prod. Leyd. 97. Carrot with plain rays to the involucre, and recurved jags. Daucus montanus lucidus. Tourn. Inf. 307. ~~Shing root & wild carrot.~~
4. DAUCUS (*Hispidus*) caule hispido, segmentis foliorum latioribus. Carrot with a prickly stalk, and broader segments to the leaves. Pastinaca Oenanthes folio. Bocc. Rar. PL 75. Parsnep with a Water Dropwort leaf.
5. DAUCUS (*Creticus*) radiis involucri pinnatifidis, umbellis duplo longioribus, foliis acutis. Carrot with wing-pointed rays to the involucre, which are twice the length of the umbel, and acute leaves. Daucus tenuifolius Creticus, radiis umbellae longioribus. Tourn. Inf. R. H. 308. Narrow-leaved Carrot of Crete, with rays longer than the umbel.
6. DAUCUS (*Mauritanicus*) feminibus hispida, flosculo centrali sterili carnofo, receptaculo communi hemisphaerico. Lin. Sp. 348. Carrot with bipid feeds, the central flower barren, and the common receptacle hemispherical. Daucus Hispanicus, umbella magna. Tourn. Inf. 308.
7. DAUCUS (*Vifnaga*) feminibus nudis. Hort. Cliff. 89. Carrot having naked feeds. Gingidium umbella oblonga. C. B. P. 151. Gingidium with an oblong umbel
8. DAUCUS (*Muricatus*) feminibus aculeatus. Lin. Sp. 349. Carrot with prickly feeds. Caulis major Daucoides Tingitana. Mor. Hist. 3. p. 308.

The first sort is the common wild Carrot, which grows by the side of fields, and in pasture grounds in many parts of England. The plants of this sort do not differ greatly in appearance from the Garden Carrot, which has led some persons into an opinion of their being the same plant; but those who have attempted to cultivate the wild sort, are fully convinced of their being distinct plants. I have tried to cultivate the wild sort for many years, but could never get the feeds which were sown in the spring to grow. Soon which I sowed the feeds in autumn, part of which have come up well; these plants I cultivated in the same manner as the Garden Carrot, but could not improve the roots in the least, for they continued to be small, stinky, and of a hot biting taste; and this has been always the case, wherever the plants have been sown, therefore there can be no doubt of their being different plants. The feeds of this sort are used in medicine, and are esteemed good to bring away gravel: it is an excellent diuretic, but instead of these feeds, the (hops are usually supplied with old feeds of the Garden Carrot, when they have lost their vegetative quality, then the feedmen sell them to the druggists for medicinal use; but certainly all feeds which are too old to grow, can have little virtue remaining in them.

There are several varieties of the Garden Carrots, which differ in the colour of their roots, and these variations may be continued, where there is proper care taken not to mix the different sorts together in the same garden; but the Orange Carrot is generally esteemed in London, where the yellow and the white Carrots are seldom cultivated.

The dark red, or purple Carrot, I take to be a distinct sort from either of these; but as it is much tenderer, I have not had an opportunity of seeing it in the flower, for the roots were all destroyed by the tint

frosts in autumn. The feeds of this sort were sent me from Aleppo, which succeeded very well; the roots were not so large as those of the other sorts of Carrots, and were of a purple colour, very like that of a deep-coloured Radish; they were very tender and sweet; the leaves were finer cut than those of the common Carrot, and were less hairy.

The second sort is commonly cultivated in gardens for the kitchen, and the different varieties of it are, in some places, esteemed* though in London, the Orange Carrot is preferred to all the other.

They are propagated at two or three different seasons, or sometimes oftener, where people are fond of young Carrots, whenever they can be procured. The first season for sowing the feeds is soon after Christmas, if the weather is open, which should be in warm borders, near walls, pales, or hedges, but they should not be sown immediately close thereto; but a border of Lettuce, or other young fallad herbs, of about a foot wide, should be next the wall, &c. for if the Carrots were sown close to the wall, they would draw up weak, without making any tolerable roots.

These delight in a warm sandy soil which is light, and should be dug pretty deep, that the roots may the better run down; for if they meet with any obstruction, they are very apt to grow forked, and shoot out lateral roots, especially where the ground is too much dunged the same year that the feeds are sown, which will also occasion their being worm-eaten; it is therefore the better method to dung the ground intended for Carrots the year before they are sown, that it may be consumed, and mixed with the earth; but in such places where there has not been ground so prepared the year before, and there may be a necessity for dunging it the same year as the Carrots are sown, the dung should be well rotted which is laid upon it, and should be thinly spread over the ground; and in the digging of it into the ground, great care should be taken to disperse it all through the ground, and not to bury it in heaps, for that will flop the roots of the Carrots in their downright growth, and cause them to be short and forky. Where the ground is inclinable to bind, there cannot be too much care taken to break and divide the parts, therefore in digging the land for Carrots, there should never be large spots taken, but they must be very thin, and the clods well broken; which, if not attended to by the matter, is seldom properly performed by workmen, who are too apt to hurry over their work, if they are not well observed.

The ground when dug should be laid level and even, otherwise when the feeds are sown and the ground is raked over, part of the feeds will be buried too deep, and others will be in danger of being drawn up into heaps; so the plants will come up in bunches, and other parts of the ground be naked, which should always be carefully avoided.

The feeds have a great quantity of small forked hairs upon their borders, by which they closely adhere, so that they are difficult to sow even, so as not to come up in patches; you should therefore rub it well through both hands, whereby the feed will be separated before it is sown; then you should choose a calm day to sow it in, for if the wind blows, it will be impossible to sow it equal, for the feeds being very light, will be blown into heaps. When the feed is sown, you should tread the ground pretty close with your feet, that it may be buried, and then rake the ground level.

When the plants are come up and have got four leaves, you should hoe the ground with a small hoe about three inches wide, cutting down all young weeds, and separating the plants to four inches distance each way, that they may get strength; and in about a month or five weeks after, when the weeds begin to grow again, you should hoe the ground over a second time, in which you should be careful not to leave two Carrots close to each other, as also to separate them to a greater distance, cutting down all weeds, and (lightly stirring the surface of the ground in every

place, the better to prevent young weeds from springing, as also to facilitate the growth of the young Carrots.

In about a month or five weeks after, you must hoe them a third time, when you must clear the weeds as before; and now you should cut out the Carrots to the distance they are to remain, which must be proportioned to the size you intend to have them grow. If they are to be drawn while young, five or six inches asunder will be sufficient, but if they are to grow large before they are pulled up, they should be left eight or ten inches distant every way; you must also keep them clear from weeds, which, if suffered to grow amongst the Carrots, will greatly prejudice them.

The second season for sowing these feeds is in February, on warm banks, situated near the shelter of a wall, pale, or hedge; but those which are intended for the open large quarters, should not be sown before the beginning of March, nor should you sow any later than the end of the same month, for those which are sown in April or May, will run up to seed before their roots have any bulk, especially if the weather should prove hot and dry.

In July you may sow again for an autumnal crop, and at the end of August you may sow some to stand the winter; by which method you will have early Carrots in March, before the spring sowing will be fit to draw; but these are seldom so well tailed, and are often very tough and sticky. However, as young Carrots are generally expected early in the spring, most people sow some at this season, but these should be sown upon warm borders and dry land, otherwise they are seldom good. If the winter should prove very severe, it will be proper to cover the young Carrots with Pease-haulm, the haulm of Asparagus, or some such light covering, to prevent the frost from penetrating into the ground, which often destroys the Carrots, where this care is wanting: but if in very hard winters the Carrots should be all destroyed which were sown in autumn, there should be a hot-bed made early in the spring to sow some, which will be fit for use long before any that are sown in the full ground; but these beds should be earthed fifteen or sixteen inches deep, that the roots may have a proper depth of soil to run down. If these beds are lined with no dung twice, at such times when the heat of the beds decline, it will greatly forward the growth of the Carrots, but there would be great care taken not to draw the plants up too weak; these may be allowed to grow clove together than those sown in the full ground, because they will be drawn for use very young. Many people mix several other sorts of feeds, as Leek, Onion, Parsnep, Radish, &c. amongst their Carrots; and others plant Beans, &c. but, in my opinion, neither of these methods are good; for, if there is a full crop of any one of these plants, there can be no room for any thing else amongst them, so that what is got by one is lost by another, and besides, it is not only more tightly, but better, for the plants of each kind to be sown separate; and also by this means your ground will be clear, when the crop is gone, to sow or plant any thing else; but when three or four kinds are mixed together, the ground is seldom at liberty before the succeeding spring: besides, where Beans, or any other tall-growing plants are planted amongst the Carrots, they are apt to make them grow more in top than root; so that they will not be half so large as if sown singly, without any other plants amongst them.

The covetousness of some gardeners will not permit them to cut out their Carrots to a proper distance when they hoe them, so that by leaving them clove, they draw each other up weak: and if they are drawn while young, they never recover their strength afterward so perfectly, as to grow near the size of those which are properly thinned at the first hoeing-, therefore where the Carrots are designed to have large roots, they must never stand too clove, nor should they have any other crop mixed with them.

This root has been long cultivated in gardens for the table, but has not till of late years been cultivated in the fields for cattle, nor has it been prattified as yet but in few parts of England, it is therefore greatly to be wished, that the culture of it was extended to every part of England, where the soil is proper for the purpose; for there is scarce any root yet known, which more deserves it, being a very hearty good food for most sorts of animals. One acre of Carrots, if well planted, will fatten a greater number of sheep or bullocks, than three acres of Turneps, and the flesh of these animals will be firmer and better tailed. Horses are extremely fond of these roots, and for hogs there is not any better food. I have also known these roots cultivated for feeding of deer in parks, which has proved of excellent use in hard winters, when there has been a scarcity of other food; at which times great numbers of deer have perished for want, and those which have escaped, have been so much reduced, as not to recover their flesh the following summer; whereas, those fed with Carrots have been kept in good condition all the winter, and upon the growth of the grass in the spring, have been fat early in the season, which is an advantage, where the grass is generally backward in its growth.

There is also an advantage in the cultivation of this root beyond that of the Turnep, because the crop is not so liable to fail; for as the Carrots are sown in the spring, the plants generally come up well, and unless the months of June and July prove very bad, there is no danger of the crop succeeding; whereas Turneps are frequently destroyed by the flies at their first coming up, and in dry autumns they are attacked by caterpillars, which in a short time devour whole fields, but Carrots are not attacked by these vermin: therefore every farmer who has a flock of cattle or sheep, should always have a supply of these roots, if he has land proper for the purpose, which must be light, and of a proper depth to admit of the roots running down.

In preparing the land for Carrots, if it has not been in tillage before, it should be ploughed early in autumn, and then ploughed across again before winter, laying it up in high ridges to mellow by the frost; and if the ground is poor, there should be some rotten dung spread over it in winter, which should be ploughed in about the beginning of February, then in March, the ground should be ploughed again to receive the feeds* in the doing of which, some farmers have two ploughs, one following the other in the same furrow, so that the ground is loosened a foot and a half deep. Others have men with spades following the plough in the furrows, turning up a spit of earth from the bottom, which they lay upon the top, levelling it smooth and breaking the clods; the latter method is attended with a little more expence, but is much to be preferred to the first, because in this way the clods are more broken, and the surface of the ground is laid much even.

If the land has been in tillage before, it will require but three ploughing; the first just before winter, when it should be laid in high ridges for the reasons before given; the second cross ploughing should be in February, after which, if it is well harrowed to break the clods, it will be of great service, the last time must be in March to receive the feeds, this should be performed in the manner before mentioned. After this third ploughing, if there remain great clods of earth unbroken, it will be proper to harrow it well before the feeds are sown. One pound and a half of feeds will be sufficient for an acre of land, but as they are apt to adhere together, it renders them more difficult to sow even than most other sorts; therefore some mix a quantity of dry sand with their feeds, rubbing them well together, so as to separate the Carrot feeds from each other, which is a good method. After the feeds are sown, they must be gently harrowed in to bury them and when the plants come up, they should be hoed in the manner before directed.

But in order to preserve your Carrots for use all the winter and (spring, you (should, about the beginning of November, when the green leaves are decayed, dig them up, and lay them in sand in a dry place, where the frost cannot come to them, taking them out from time to time as you have occasion for them, reserving some of the longest and frailest roots for feed, if you intend to have any j which roots should be planted in the middle of February, in a light soil, about a foot asunder each way* observing to keep the ground clear from weeds; and about the middle of August, when you find the feeds are ripe, you must cut it off*, and carry it to a dry place, where it should be exposed to the sun and air for several days to dry *, then you may beat out the feeds, and put it up in bags, keeping it in a dry place until you use it. This feed is seldom esteemed very good after the first or second year at most, but new feed is always preferred, nor will it grow when it is more than two years old.

The third sort grows naturally about Montpellier; this hath smoother (talks than the common Carrot, the segments of the leaves are broader, and of a lucid green; the umbels of the flowers are larger, and not so regular. This is an annual plant, but it succeeds best when sown in autumn.

The fourth sort is of lower growth than either of the former; the stalks are closely covered with short prickles, the segments of the leaves are broad and obtuse, the umbels are final, and the involucre is longer than the umbel, and the leaves are trifid which compose it.

The fifth sort rises with a (tender, rough, hairy stalk upward of two feet high -, the leaves are short, and have a few finally ones intermixed, which are thinly placed, and cut into acute segments; the umbels are not so large as those of the common sort, and the involucre is twice the length of the umbel; the leaves which compose it are divided into five or seven parts, ending in acute points; the flowers are yellow.

The sixth sort hath a channelled stalk rising near three feet, which is terminated by large umbels of flowers, with a wing-pointed involucre the segments of the lower leaves are cut into obtuse segments, and are of a deep green colour.

The seventh sort is an annual plant, which grows naturally in Spain and Italy; this rises with an upright, smooth, channelled stalk three feet high, garnished with smooth leaves, which are divided into many fine narrow segments like those of Fennel; the stalks branch out upward, and each branches terminated by a large umbel, composed of a great number of small ones; the involucre is (shorter than the umbel, and each of the leaves which compose it is trifid: the foot-stalks which sustain the small umbels (or rays) are long and stiff; these are by the Spaniards used for picking their teeth, from whence the plant had the title of Vifnaga, or Pick-tooth. The feeds of this plant (should be sown in autumn, for those which are sown in the spring frequently fail, or at least remain in the ground till next year before they grow; the plants require no other culture but to keep them clean from weeds, and thit them where they are too close.

The eighth sort grows naturally about Tangier. This rises with an upright stalk above two feet high, garnished with double-winged leaves which are hairy; the stalk branches upward into several divisions, each being terminated by an umbel of white flowers, which are succeeded by prickly feeds. •

If the feeds of this sort are not sown in the autumn, the plants rarely perfect their feeds in this country; for when they are sown in the spring, and the plants come up soon after, they generally run up to feed in autumn, so that the frosts come on before they have time to ripen.

These sorts are sometimes preserved in botanic gardens for the sake of variety, but being of no use, are not cultivated in other gardens*

CAUCUS CRETICUS. See ATHAMANTA.

D ^ A YENIA; Monien

This genus of plants receives its title from Monfeigneur Le Due D'Ayen, who is a great lover and promoter of the science of botany; and has a noble garden at St. Germain, which is well stored with rare plants from many different parts of the world, and has appointed Dr. Monier, member of the Royal Academy of Sciences, the superintendent of it.

The CHARACTERS are*

// hath an empalement composed of five small oval leaves which are dry. The flower hath five petals whose points are united to a plain fleshy nectarium; the nectarium sits upon a cylindrical column which is erect, and the length of the empalement; it is bell-shaped, having five depressed lobes at the margin: it hath five short stamens inserted into the border of the nectarium, terminated by roundish summits which are joined to the border of the petals. It hath a roundish germen in the bottom of the nectarium, supporting a cylindrical style, crowned by a five-cornered obtuse stigma. The capsule hath five cells, including five oblong feeds fastened to the capsule.

This genus of plants is ranged in the fourth section of Linnaeus's twentieth class, intitled Gynandria Pentandria, the flowers having five stamens, which are fastened with the style to the nectarium.

We at present know but one SPECIES of this genus* viz.

DVAYENIA (*Puffilla*) foliis cordatis glabris. Lin. Sp. 1354.

*Uyenia with heart-shaped smooth leaves**

The feeds of this plant were sent by the younger De Jussieu from Peru to Paris, where they succeeded, and have since been communicated to many other gardens in Europe. I received the feeds from Dr. Monier, intendent of the garden of the Duke D'Ayen at St. Germain, which have for some years grown in the Chelsea garden, where the plants annually flower and perfect their feeds.

This plant, hath a weak ligneous stalk* which divides into several (tender branches, rising from nine inches to a foot high, garnished by heart-shaped smooth leaves, which are (lightly indented on their edges, (landing upon pretty long foot-stalks; they are of 2 lucid green, and end in acute points, placed alternately on the branches. At the base of each foot-stalk, from the side of the branches, come out the flowers, two, three, or four, arising from the same point, each (landing upon a separate (tender foot-stalk; they have five (tender stamens, collected into a sort of column, like the malvaceous flowers, having a five-cornered germen at the bottom, which afterward becomes a roundish five-cornered capsule, having five cells, in each of these is lodged one kidney-shaped feed. The flowers are tubulous, (spreading open at the top, where they are cut into five acute segments, each being terminated by a (tender tail; they are purple, and continue in succession on the same plants from July to the winter.

This plant is propagated by feeds, which (should be sown upon a moderate hot-bed early in the spring; and when the plants are come up, and have four leaves, they (should be transplanted on a (hot-bed to bring them forward *, part of them may be planted in small pots, and the others may be planted on the bed: those in the pots (should be plunged into a hot-bed of tanners bark *, they must be (shaded till they have taken new root, then they must have free air admitted to them everyday, in proportion to the warmth of the season *, they require to be frequently watered in warm weather, but they (should not have it in too great plenty. The plants (should continue all the summer in the hot-bed, where they must have a good (share of air -, for those which are fully exposed to the open air will not thrive, and if they are too much drawn, they do not flower well. The plants will live through the winter in a moderate dove, but as they perfect their feeds well the first year, few persons care to continue the old plants. There is a figure of this plant exhibited in the 118th plate of our figures of plants.

D A Y-LIL Y. Sec HEMEROCALLIS,

£ > ECOKTICATION, is the pulling off the out-ward bark of trees, alfo the peeling or barking of roots.

DELPHINIUM. Lin. Gen. Plant. 602. Tourn. Inft. R. H. 426. tab. 241. [AfApi* Gr. a dolphin, fo called, becaufe the flower, before it opens, re-fembles a dolphin. It is called Confolida Regalis, from its confolidating virtue. Cafpar Bauhin calls it the Royal Plant, becaufe it has its cup turned backwards, like a nobleman's badgje. Csefalpinus, «Pliny, and the poets fay, this plant is the true Hyacinth, becaufe it has the fyllable ai infcribed on its flower, which is a particle of bewailing,] Larkfpur, or Larkheel.

The CHARACTERS are,

*The flower hath no empalement; it is compofed of five unequal petals placed circularly *, the upper petal is extended at the hinder part into a tubular obtufe tail; the two fide petals are nearly of the fame fize with the upper', but the two lower are fmaller; thefe fspread open. There is a bifid neffarium fituated in the center of the petals, and is involved in the tube by the back part. The flower hath many fmall ftamina which incline to the petals, and are terminated by fmall ere&l fummits; it hath three ovalgermen, fupporting three ftyles which are as long as the ftamina, crowned by reflexed ftigmas 5 the germen afterward become fo many capfules joined together', which open croffways, each having one cell filled with angular feeds.*

This genus of plants is ranged in the third fe&ion of Linnaeus's thirteenth clafs, intitled Polyandria Trigynia, the flower having many ftamina and three ityles

The SPECIES are,

1. DELPHINIUM (*Confolida*) neftariis monophyllis, caule fubdivifo. Hort. Cliff. 217. *Larkfpur with a one-leaved neffarium and a divided ftalk.* Delphinium fegetum. Tourn. Inft. 426. *Corn Larkfpur', and the Confolida regalis arvenfis.* C. B. P. 142. *Field Royal Confound.*
2. DELPHINIUM (*Ajacia*) neftariis monophyllis, caule fimplici. *Larkfpur with a one-leaved neStarium, and an treh ftalk.* Delphinium hortenfje, flore majore & ilmplici caeruleo. Tourn. Inft. R. H. 426. *Garden Larkfpur, with a larger fingle blue flower.*
3. DELPHINIUM (*Ambiguum*) neftariis monophyllis, caule ramofo. *Larkfpur with a one-leaved netlarium and a branching ftalk.* Delphinium elatius purpuro violaceum. Suvert. Flor. *Branched Larkfpur.*
4. DELPHINIUM (*Peregrinum*) neftariis diphyllis corollis enneapetalis capfulis teretis, foliis multipartitis obtufis. Hort. Cliff. 213. *Larkfpur with a two-leaved neffarium, a flower with eleven petals and three capfules, and leaves divided into many obtufe fegments.* Delphinium latifolium, parvo flore. Tourn. Inft. R. H. 426. *Broad-leaved Larkfpur with a fmall flower.*
5. DELPHINIUM (*Elatum*) neftariis diphyllis, labellis bifidis, apice barbatis, foliis incifis, caule erefto. Hort. Upfal. 151. *Larkfpur with a two-leaved neSarium, a bifid lip bearded at the top, cut leaves, and an ereSI ftalk.* Delphinium perenne montanum villofum, aconiti folio. Tourn. Inft. 426. *Perennial hairy Mountain Larkfpur with a Monk/hood leaf commonly called the Bee Larkfpur.*
6. DELPHINIUM (Gr^^^rww)neftaris diphyllis, labellis integris, floribus fubfolitariis, foliis compofnis linean-multipartitis. Hort. Upfal. 150. *Larkfpur with a two-leaved neStarium, an entire lip, flowers growing Jingly, and compound leaves divided into many narrow parts.* Delphinium humilium anguftifolium perenne, flore azureo. Amman. *Dwarf narrow-leaved perennial Larkfpur with an azure flower.*
7. DELPHINIUM (*Americaxum*) neftariis diphyllis, labellis integris, floribus fpicatis, foliis palmatis multifidis glabris. Plate 119. *Larkfpur with a two-leaved nettarium, an entire lip, flowers growing in fpikes, and palmated, multifid, fmooth leaves, commonly called American Larkfpur.*
8. DELPHINIUM (*Staphifagria*) ne&ariis diphyllis, foliis palmatis, lobis integris. Hort. Cliff. 213. *Larkfpur with a two-leaved empalement, andpalmated leaves having*

entire lobes. Delphinium platani folio, ftaphyagga didtum. Tourn. Inft. R. H. 428. *Larkfpur with a Plane-tree leaf, called Stavefacre.*

The feveral varieties of the Garden Larkfpur are not here enumerated, as they would fwell the work beyond its intended bulk, if all thefe were diftinguifhed, therefore here are only the diftinft fpecies mentioned; and as the gardeners diftinguifh the Garden Larkfpurs into thofe which are branched, and fuch as have upright ftalks; which difference is permanent, and never alters, whatever may be afferted to the contrary by ignorant pretenders-, fo I fiall juft mention the feveral varieties which there are of each fort, commonly cultivated in the gardens of the curious. And firft of the branched Larkfpur, there are of the following colours, with fingle and double flowers.

Blue, purple, white, flefh, Alh, and Rofe colours -, and fome have flowers beautifully fpotted, with two or three of thefe different colours.

The upright or unbranched Larkfpur, produces a greater variety of colours than the branched, and the flowers are larger and fuller than thofe-, but the principal colours run nearly the fame with thofe of the other, though many of the colours are deeper, and there are more different {hades of thefe colours in the flowers of this fort.

The firft fort grows naturally on arable lands, in France, Spain, and Italy, and is fuppofed to be the fame as the Garden Larkfpur, which is a great miftake; for I have cultivated it many years in the garden, and never found it alter: the leaves of this fort are broader, and not fo much divided as thofe of the garden kind, and are placed thinner upon the ftalks; the flowers are fmaller, and grow in longer fpikes; the ftalks are not fo much branched as that fort which is called the branched, nor are they fingle like the upright, fo that I think it may be allowed to be a different fpecies.

The fecond fort hath upright ftalks, which fcarce put out any branches -, the fpikes of flowers grow eredt, and the flowers are placed very clofe together, fo that they make a fine appearance. Thefe plants flower in July and Auguft, and are very great ornaments to the borders of the flower-garden.

The branching Larkfpur, which is the third fort, comes later to flower than the upright -, this rifes with a very branching ftalk three feet high or more; the branches come out horizontally from the fide of the ftalks, but afterward turn that part on which the fpike of flowers grow, which is at the extremity upward, fo as to make an angle; the leaves are long and finely divided *, the flowers are placed thinner in the fpikes than thofe of the upright fort *, they are large, and fome of them very double and of various colours.

Thefe plants are annual, fo are every year propagated by feeds, which fhould be fown where the plants are defigned to remain, for they do not bear tranfplanting well, efpecially if they are not removed very young; thofe feeds which are fown in autumn, produce the frongeft plants and moft double flowers, and ripen their feeds better than thofe which are fown in the fpring, as they come earlier to flower; but to continue a fucceffion of thefe flowers, there fhould be fome feeds fown in the fpring. When they are fown on the borders of the flower-garden for orttament, they fhould be in patches of about a foot diameter, in the middle of the borders, at proper diftances; in each of thefe patches may be fcattered ten or a dozen feeds, covering thim over about a quarter of an inch with earth; and in the fpring the plants may be thinned, leaving about five or fix of the upright fort in each patch to ftand for flowering *, but of the branching fort, not more than three or four, becaufe thefe require room; after this the plants will require no farther care but to keep them clean from weeds, and when they begin to flower fhould be fupported by flower-fticks to prevent their being broken by wind, efpecially if they are not in a flickered fituation. If the feeds were well chofen, there will be very few ordinary

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ordinary flowers among them; and if there are feeds of the different coloured flowers sown in each patch, they will make a pleasing variety: but the upright sort should never be mixed in the same patches with the branching, because they do not flower at the same time.

But in order to preserve the two sorts fine without degenerating to single or bad colours, there should be a bed of each sort sown in autumn, in some separate part of the garden, where the plants should be properly thinned, and kept clean from weeds, till they begin to show their flowers; when they should be carefully looked over every other day, to pull out all those plants, whose flowers are not very double nor of good colours; for if these are permitted to stand among the others till their farina has impregnated them, it will certainly cause them to degenerate; so that those persons who are contented with only marking their good flowers for seed, and suffer the others to stand for seed among them, will always find themselves disappointed in the goodness of their flowers the following season: therefore those who propose to have these flowers in perfection, should never gather the seeds of such as grew in the borders of the flower-garden; because there it will be almost impossible to preserve them so true, as when they are in beds at a distance from all other kinds.

When the seed-vessels turn brown, they must be carefully watched, to gather them before they open and discharge the seeds; so that those which are situated on the lower part of the stalk, will open long before those on the upper part of the stalk are ripe; for which reason the pods should from time to time be gathered as they ripen, and not suffered to stand till the stalks are pulled up, which is often practised. Those pods which are situated on the lower part of the stalks, are much preferable to such as grow near the top; for which reason those who are very curious in the choice of their seeds, crop off the upper part of the spikes of flowers, and never suffer them to stand for seeds.

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As these plants are very hardy, and require so little care in their culture, so they are worthy of a place in every good garden; for during their continuance in flower, there are few plants which make a better appearance; and for gathering to make flower-pots to adorn rooms, there is scarce any flower so proper; because by their upright growth and long spikes, they rise to a proper height above the pots; and when the several colours are skilfully intermixed they make a rich appearance, and continue long in beauty.

The fourth sort grows naturally in Sicily and Spain, I received the seeds of it from Gibraltar; this hath a very branching stalk, which rises about two feet high; the lower leaves are divided into many broad obtuse segments, but those which are upon the stalks are generally single; the flowers grow scattering toward the upper part of the branches, they are small, and of a deep blue colour, these are succeeded by very small seed-vessels, which are sometimes single, and at others double, and very rarely three together, as in the common sorts. This is an annual plant, whose seeds should be sown in autumn, and the plants treated as the common sort; it hath little beauty, and is only kept in some gardens for the sake of variety.

The fifth sort hath a perennial root, which sends out several upright stalks in the spring to the height of four feet, garnished with leaves which are divided into many broad segments, in form of a spreading hand; these segments are cut at their extremities into two or three acute points; the leaves are hairy, and stand upon long foot-stalks; the flowers terminate the stalks, growing in long spikes; they are of a light blue, covered toward their hinder part with a mealy down. This flowers in July and August, and in autumn the stalks decay to the root.

The sixth sort grows naturally in Siberia, from whence the seeds were sent to the Imperial garden at Pe-

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terburghi where they succeeded; and the seeds were sent me from thence by the late Dr. Anita an, who was professor of botany in that university. This hath a perennial root, which puts out two or three branching stalks every spring; these rise about a foot and a half high, and are garnished at each joint with leaves composed of many narrow segments, which terminate with several acute points; they are smooth, and of a light green colour; the flowers come out toward the upper part of the stalks singly, each standing upon a long naked foot-stalk; these are large, and of a fine azure colour; they appear the latter part of July, and are succeeded by seeds which ripen in the autumn.

The seventh sort grows naturally in America; this is a perennial plant, which rises with strong branching stalks six or seven feet high, garnished with hand-shaped leaves, which are divided into four or five broad lobes, ending with many acute points; these are smooth, and stand upon long foot-stalks; the flowers terminate the stalks, growing in long spikes; they are of a fine blue colour, with a bearded nectarium, having two lips; and of a dark colour, resembling at a small distance the body of a bee.

All the perennial Larkspurs are propagated by seeds, which, if sown in autumn, will more certainly succeed, than those which are sown in the spring; when the plants come up, they should be kept clean from weeds, and where they are too close together, part of them should be drawn out, to allow room for the others to grow till the following autumn, when they must be planted where they are to remain; the following summer they will flower, and the roots continue many years growing in magnitude, so will produce a greater number of flower-stalks.

The eighth sort is an annual plant, which grows naturally in the Levant, as also in Calabria; this rises with a strong hairy stalk about two feet high, garnished with hand-shaped hairy leaves, composed of five or seven oblong lobes, which have frequently one or two acute indentures on their sides; the flowers form a loose spike at the upper part of the stalk, each standing on a long foot-stalk; the flowers are of a pale blue or purple colour, and have a two-leaved nectarium: this is propagated by seeds, which should be sown in autumn, for those sown in the spring never grow the same year. The seeds should be sown where the plants are to remain, and require no other treatment than the common Larkspur. The common people use the powder of this seed to kill lice, from whence it has been titled Loufewort.

D E N S C A N I S. See ERYTHRONIUM.

D E N S L E O N I S. See LEONTODON.

D E N T A R I A. Lin. Gen. Plant. 726. Tourn. Lift. R. H. 225. tab. no. Toothwort; in French *Dentaire*.

The CHARACTERS are,

The empalement of the flower is composed of four oblong oval leaves, which fall off the flower hath four obtuse petals placed in form of a cross it hath six stamina, four of which are as long as the empalement, the other two are shorter these are terminated by oblong heart-shaped summits, which stand erect. In the center is situated an oblong germen, supporting a short thick style, crowned by an obtuse stigma the germen afterward becomes a long taper pod with two cells, divided by an intermediate partition, opening with two valves, including many round seeds.

This genus of plants is ranged in the second section of Linnæus's fifteenth class, intitled Tetradynamia Siliquosa, the flowers having four long and two short stamina, and the seeds being inclosed in long pods.

The SPECIES are,

1. PENTARIA (*Pentaphyllos*) foliis fummis digitatis. Lin. Sp. 912. *Five-leaved toothwort, whose upper leaves are hand-shaped.* Dentaria pentaphyllos, foliis mollioribus. C. B. P. 322. *Five-leaved Toothwort with soft leaves.*
2. DENTARIA (*Bulbifera*) foliis inferioribus pinnatis, fummis simplicibus. Hort. Cliff. 335. *Tooth-wort with lower leaves winged, and the upper ones single.* Dentaria

ria heptaphyllos baccifera. C. B. P. 322. *Seveir-leaved bulb-bearing Toothwort*.

- 3- DENTARIA (*Enneaphyllos*) foliis ternis ternatis. Lin. Sp. Plant. 653. *Toothwort with three-leaved trifoliate leaves*. Dentaria triphyllos. C.B. P. 322. *three-leaved toothwort**

The first fort rises with a strong stalk a foot and a half high, garnished with a leaf at each joint, composed of five lobes, which are four inches long, and near two broad in the widest part, ending in acute points, deeply fawed on their edges *, these are smooth, and stand on long foot-stalks; the flowers grow in loose spikes at the top of the stalks; they are small, of a bluish colour, and succeeded by long taper pods filled with small roundish seeds. It grows in the shady woods in the south of France and Italy.

The second fort rises with (tender stalks about a foot high; the leaves at the bottom have seven lobes, those a little above five, others but three, and at the upper part of the stalk they are single: the flowers grow in clusters at the top of the stalk *, these have four obtuse purple petals, and are succeeded by taper pods filled with roundish seeds.

The third fort rises with an upright stalk a foot high; the leaves are composed of nine lobes, three growing together, so that one leaf has three times three; the flowers grow in small bunches on the top of the stalks, and are succeeded by small taper pods filled with roundish seeds.

These plants grow on the mountains in Italy, and in the woods of Austria. The second fort is found wild in some parts of England, but particularly near Harefield, in moist shady woods, and is seldom preserved in gardens: this produces bulbs on the side of the stalks, where the leaves are set on, which, if planted, will grow and produce plants. These plants are propagated by seeds, or parting their roots 5 the seeds should be sown in autumn, soon after they are ripe, in a light sandy soil and a shady situation: in the spring the plants may be taken up where they grow too close, and transplanted out in the like soil and situation; where, after they have taken root, they will require no farther care, but to keep them clear from weeds: the second year they will produce flowers, and sometimes perfect their seeds.

The best time to transplant the roots is in October, when they should be planted in a moist soil and a shady situation; for they will not live in a dry soil, or when they are exposed to the sun.

D E W is by some defined to be a meteor bred of a thin cold vapour, or composed of the fleams and vapours of the earth; which, being exhaled by the heat of the sun, and kept suspended during his presence, do, upon his absence, convene into drops, and then fall down unto the earth again.

Others define it, a thin, light, insensible mist or rain, falling while the sun is below the horizon.

The origin and matter of dews are, without doubt, from vapour and exhalations of the earth and water, raised by the warmth of the sun and earth, &c.

There being many vapours in the air, though not always visible, hence it comes to pass, that even in dear weather great dews fall, especially in countries where it seldom rains *, for when it happens that the scattered vapours are collected and condensed together, and forced downwards, they must needs fall, and bedew the plants and grass.

The thin vesicles, of which vapours consist, being once detached from their bodies, keep rising in the air till they arrive at such a stage as is of the same specific gravity with themselves, when their rise is stopped: now, as it is the warmth or fire that dilates the parts of water, and forms those vesicles that are specifically lighter than the air, and are capable of ascending therein; so when that heat declines, or is lost, as by the approach or contiguity of any colder body, the vesicles condense, and become heavier and descend.

Therefore the sun warming the atmosphere in the day-time, by the continual influx of his rays, the va-

pours being once raised, continue their progress, and meeting with any thing to increase their gravity, till such time as they are got far beyond the reach of the reflected warmth of the earth in the middle region of the atmosphere, and there condense and form clouds.

Though some say, it is disputable whether dews ever congregate so as to form clouds, as they are only elevated by the sun; so that when that power is gone, as it is after the setting of the sun, they immediately descend; and this is more observable in very warm weather, and very hot climates.

The time for the falling of the dew is either before sun-rising, or after sun-set; that it may regularly fall at such times, it is necessary for the air to be calm, for windy or stormy weather hinders it; but when it is calm weather, and gentle breezes are felt from the west about the setting, and from the east about the rising of the sun, it is probable, that by moderately-cooling the air, they collect the vapours and precipitate them; and because the morning breezes are more general than the evening ones, for this reason the evening dews fall only here and there, but those in the morning seldom fail to be universal: or, as it may be otherwise expressed, when the sun is got below the horizon, the atmosphere cools the vapours, which have in the preceding day been raised by the warmth of the earth -, and the rays of the sun being lodged there, as soon as they are got out of the air, they begin to condense apace, and spend their flock of heat and fire on the cold moist air that they pass through.

Hence it is, that dews are more copious in the spring than other seasons, there being a greater flock of vapour in readiness, by reason there has been but a small expence thereof during the winter's cold and frost than at other times.

It is found by experience, that the dews are more copious in hotter countries than in cold, as Pliny observes of the summer nights in Africa, which he calls *Roscidæ æstatis* nodes; the reason of which seems to be this, that in the day-time the heat of the sun raises abundance of vapours out of the water; which vapours are so extremely rarefied by the same heat, that they are dispersed far and wide 5 but the cool of the night brings them together, and condenses them to that degree, that they fall to the ground, but not in such large drops as rain does -, but in colder countries, where there are frequent rains, and the vapours are less rarefied, most of them come down in rain, and but a small part turns to dew: besides, in Africa there is a great difference between the heat of the day and night, particularly in summer -, for their nights are long, and very cold *, whereas in northern countries they are little colder than the day, and much shorter than in places nearer the line.

Pliny likewise relates of Egypt, that it abounds in dews throughout all the heat of summer; for the air being there too hot to dissipate the vapours in the day-time, they never gather into clouds, and for that reason they have no rain. But it is known, in climates where the days are excessive hot, the nights are remarkably cold, so that the vapours that are raised after sun-set are readily condensed into dews: or, perhaps notable coldness may be rather the effect than the cause of the quantity of dews; for much vapour being raised by the great heat of the earth, and the flock of fire being spent on it in the day-time, the influx of such a great quantity of moisture must greatly chill the air.

The difference between dew and rain seems to be only this, that dew falls at some particular times as aforesaid, and in very small drops, so as to be seen when down, but scarce perceivable while it is falling; whereas rain falls at any time, and in grosser drops.

The reverend Dr. Hales, in his Treatise of Vegetable Statics, tells us, That in order to find out the quantity of dew that fell in the night on the 15th of August, 7 p. m. he took two glazed earthen pans, which were three inches deep, and twelve inches diameter

in surface: that he filled them with pretty moist earth, taken off the surface of the ground, and they increased in weight by the night's dew 180 grains; and decreased in weight by the evaporation of the day 1 ounce + 282 grains.

He says likewise, he set these in other broader pans to prevent any moisture from the earth (licking to the bottom of them. He adds, that the moister the earth is, the more dew falls on it in a night, and more than a double quantity of dew falls on a surface of water than there does on an equal surface of moist earth. The evaporation of a surface of water in nine hours winter's dry day, is $\frac{1}{2}$ of an inch: the evaporation of a surface of ice set in the shade during a nine hours day, was $\frac{1}{4}$.

So here are 540 grains more evaporated from the earth every 24 hours in summer than fall in dew in the night; that is, in 21 days near 26 ounces from a circular area of a foot diameter, and circles being as the squares of their diameters, 10 pounds + 2 ounces will in 21 days be evaporated from the hemisphere of 30 inches diameter, which the Sunflower's root occupies; which, with the 29 pounds drawn off by the plant in the same time, makes 39 pounds, that is, 9 pounds and $\frac{1}{2}$ out of every cubic foot of earth, the plant's roots occupying more than 4 cubic feet: but this is a much greater degree of driness than the surface of the earth ever suffers for 15 inches depth, even in the driest seasons in this country.

In a long dry season therefore, especially within the tropics, we must have recourse, for sufficient moisture to keep plants and trees alive, to the moist strata of earth, which lie next below that in which the roots are.

Now moist bodies always communicate of their moisture to more dry adjoining bodies; but this flow motion of the ascent of moisture is much accelerated by the sun's heat to considerable depths in the earth, as is probable, he says, from the twentieth experiment in the said book.

Now 180 grains of dew falling in one night on a circle of a foot diameter = 113 square inches; these 180 grains being equally spread on this surface, its

depth will be $\frac{1}{2}$ part of an inch $\frac{113}{233}$ He adds, that he found the dew in a winter night to be $\frac{1}{4}$ part of an inch; so that if we allow 151 nights for the extent of the summer dew, it will in that time arise to one inch depth: and reckoning the remaining 214 nights for the extent of the winter's dew, it will produce 2,39 inches depth, which makes the dew of the whole year amount to 3,39 inches depth.

And the quantity which evaporated in a fair summer day from the same surface, being as 1 ounce 282 grains, gives $\frac{1}{2}$ part of an inch depth for evaporation, which is four times as much as fell at night.

He says likewise, that he found by the same means, the evaporation of a winter's day to be nearly the same as in a summer's day, for the earth being in Winter more saturated with moisture, that excess of moisture answers to the excessive heat in summer.

Nic. Cruquius, N^o 381. of the Philosophical Transactions, found, that 28 inches depth evaporated in a whole year from water, i. e. $\frac{1}{2}$ of an inch each day at a mean rate: but the earth in a summer's day evaporates $\frac{1}{2}$ of an inch, so the evaporation of a surface of water is to the evaporation of a surface of earth in summer as 10: 3.

The quantity of rain and dew that falls in a year is at a medium 22 inches. The quantity of the earth's evaporation in a year is at least 9 + 4 inches; since that is the rate at which it evaporates in a summer's day: from which 9 + 4 inches are to be deducted 3,39 inches for circulating daily dew, there remains 6,2 inches, which 6,2 inches deducted from the quantity of rain that falls in a year, there remains at least 16 inches depth to replenish the earth with moisture for vegetation, and to supply the springs and rivers.

Dr. Hales proceeds to instance, in the case of a Hop-ground which he gives in the ninth experiment of his book of Vegetable Statics, that the evaporation there found, from the Hops, considered only for three months, at $\frac{1}{2}$ part of an inch each day, which will be $\frac{1}{2}$ of an inch: but before it be allowed 6,2 inches to form the surface of the ground, which added to the $\frac{1}{2}$ give 7,1 inches, which is the utmost that can be evaporated from a surface of Hop-ground in a year; so that of 22 inches depth of rain, there remain 15 inches to supply springs, which are more or less exhausted, according to the driness or wetness of the year.

Hence we find, that 22 inches depth of rain in a year is sufficient for all the purposes of nature in such flat countries as that about Teddington near Hampton Court. But in the hill countries, as in Lancashire, there falls 42 inches depth of rain water, from which, deducting 7 inches for evaporation, there remains 35 inches depth of water for the springs, benefits great supplies from much more plentiful dews than fall in plain countries; which vast stores seem to abundantly suffice to answer the great quantity of water, which is conveyed away by the springs and rivers from those hills, that we need not have recourse for supplies to the great abyss, whose surface at high water is surmounted some hundreds of feet by those vast hills from whence the longest and greatest rivers take their rise.

DIANTHERA. Lin. Gen. Plant. 37. Flon Virg. 6.

The CHARACTERS are,

The flower hath a permanent empatement of one leaf which is fabulous* and cut at the top into five equal parts* the flower is of the grinning kind* having one petal with a short tube* the upper lip is reflexed and bifid, the lower is divided into three parts* the middle being the broadest, it hath two short slender stamina adhering to the back of the petal* one of these hath a twin summit* the other is a little taller. It hath an oblong germen* supporting a slender style the length of the stamina* crowned by an obtuse stigma. The empakment afterward becomes a capsule with two cells* opening with two valves* which are alternately compressed at the top and bottom* and open with an elasticity* casting a single flat seed out of each cell*

This genus of plants is ranged in the first section of Linnaeus's second class, intitled Diandria Monogynia, the flower having two stamina and one style. This is one of the genera which, by Linnaeus's method, is separated to a great distance from their congeners; for by all their other characters they should be joined to his fourteenth class, but having only two stamina, they are put under his second.

We know but one SPECIES of this genus at present, viz.

DIANTHERA {Americana} spicis folitariis alternis. Lin. Sp. 24. Dianthera with folitary alternate spikes.

This plant grows naturally in Virginia, and other parts of North America, from whence the seeds have been sent to England, where they have succeeded. This is a low herbaceous plant with a perennial root, which sends out several weak stalks about four inches long, garnished with roundish leaves of an aromatic odour, (landing close to the stalks; they are hairy, and of a dark green colour; from the side of the stalks the flowers are produced in small spikes, placed alternately; these are in shape and colour very like those of the Clinopodium, but have only two stamina in each. It flowers the latter end of July, but rarely produces seeds in England.

This plant is very difficult to preserve in this country, for although it is hardy enough to live in the open air in England, yet it is very subject to rot in winter; and if it is placed under flicker, it is apt to draw up weak, and soon after decay, so that at present the plants are rare in this country.

DIANTHUS. Lin. Gen. Plant. 500. Caryophyllus. Tourn. Inf. R. H. 3*9. 9¹⁰ Gilly Flower, Carnation Pink; in French, *Oeillet*.

The OtARAeTEBS arc,

thfc flower balb a ling cylindrical mpalmmi <... permanent; it bathj-yt petals, tyhefc tailsan ashig a> the impakmint, but their upper part is tread, plain, and crawled an their borders; thife ere inferud in the bottom of the tube, andftread open above. It balb ten fi... icthib are as long a) tbt en'alemai, terminated by tibkng centpreffedfurmuiti. It the caster is fit uaUd an aval gtr-mtn, juipurtins tweffyla which are longer than the J!a-tw/llh, crxexca&y returned flignws. The germen after-ward btiofiK* a tylandricitil er.>ftt.lt viib out rill, opening mjour parts at the lop, endftledwthetmprffidatgular feeds.

This genus of plants is ranjjed In the fecond feffion of Lin nous's tenth dais, in titled Decandrtu I), the flowers having ten ftamina a-id two ilvrc.

Tnt SFEUCI are, t. Dujjrjius (DeltoiJrs) florib' fquamis calycinis tancenlcis binis, corollis crenatis. Hort. Cliff. 1C4. Dlaihus with a fwgle fwtr having a double fiaty empakmexl, and created petals. Caryophyllus iylvei* trb vulgari* laufoHus. C. B. P. ID

1. DuNTHifs (yfrgiuw;) tank fubunifloro, coruli nntis, iqmtmis calycinis brtvitTunui, Pulii, Tubulatis. Lin. Sp. Plant, 41: . Dhxlw *a-ith am: fewer on it fitik, crena'ed petals, very jhort fralej to tbt empeltmeit, and av: !-jbpafte leaves. Car. ... nor repens. Noltrns. Kaji. Syn. 335. Esglfb' (mill treeprng Ph'k, eemmnty called the mailed Pin. '.

2. DIASTHUS (GUUCKS) tkxih" a tubulatis L., fijuamis calyc'mis lanceolatus qumerrtij, corollis crenatis. Hort. Cliff. 164. Dianthus with <mt fims-tr an ajlali, having four fpear-Jsped fales to the empitiemem, end crexated ftots. Tunica rsmoSior fiore can dido cum corolli purpurei. Hart. Ekh. 400. Bituxbiig Pint with a vil'le fiowr, having a purple circle, ieimaimfy clltd Mountain Pint.

(. DIAKTHVS 'Pktmttriu) floribui foliariis, iquamis calycinis fubovatk brevtHiiini, corollis muliiidii fauce pubd'eentibus. Lin. Sp. Plant. 411. Dianthu with a jin^U fa-jier, having fieri erjal fcales to the empafimnt, end petals etit into maisy prints, with a baity fottm. Caryophyllus iimplejt Sore minnre paliido rtibente. C.B.P. 10S. Single wUPiai'tb a fail!, pale, reddif fowr.

5. DIANTHUS (Cmyepbillis) floribua folitirii fquamis calycinis i fub... corollaen... Hort. Cliff. 164. Dianthus with a i'ngle jic-jerr, bavng fieri cvalfales to the empakmint, and rrtV'Vitt pt;':s. Caryophyllus hortensis Cmplx, (lore majore. C. B. P. ao8. Single Garden Carnation rzith a

6. DIANTHUI (ffaneria) fiuribus aggregate tiili fquarnis calyciois toncolatis viiiofo tub bus. Hort. Cliff. i(i;-). Dianthi with four flowers gathered into famebts, boxing bitry Jpujrl.. the empistmest, as !&ig JJ sht lube of the phv-Hus bar AJI*, ea'kd Tkptfsrd Pint.

7. DIANTHUS (Barbana) floribus uis aggregatis fasciculafis, fquamis cilycitiii lint-aribus, foliis lonceolaus. Biait-thai -with iKuHrfouitrgathered in bunches. Living voy narrow fales u toe <> Cnyrophyi: a barbana hortensis lantius. C. U. I*: ad8. Broif: ... Garden Sweet William.

8. DIANTRI . (Pradjo) floribus -gregatiJ capicat, fquantis cai... antibus. Lin. Sp. Pb eliteted bits beads, axd sbtufi, iutp-'Jfm->!', which or; loi^gr than tie ... Caryophylli... lifer. C. B. P. 109. Wv

9. DIANTHUS (Fergiani) M'bus a^regatis capitati, fquamis calycinis lanceolatis anitatis, corollis irollii crens. (is. Dferjbia vx fpear-M

Obc 64S. htulu, :i, wit en varying frent

10. OIAS: [uainisc

lyciis folulath paniii, tv.bum Kqunnriilus, corollis aenaiii. Hon. CUIi. it>4. Diiioiis aib a fmgle fowr an end falk, and-faged fpearing fatk to the mpaüWO! <... atials. C-ryophyllus hncnu iupi Toum, Ait. t'itr. 170 -, ... the Golan Pink.

11. DIANTKUS (frendt'rus) c^ulibusunilorLsfqua i calycinis ovntii obiLI(is, corolli: tnuirifidu, ... aribus. Flor. Swc. -;|S, Dhmtbus baving S-jugU fiovrcr upon tfjll/i, trust-fiates to ib; empakmat, the petals of which we ml inila many points, and mirrt'j) fowr. Caryophyllus ... 1 Owe

C.JB. P.aog Q teiib me/ban*.

12. DIAKTH' . (Apas) caule uniloro, corolli tb, (quimis catydnis exterioribus tubum ... biu, toliis iincai ... Lin. Sp. Plant. 412. Diatilbm ti-i/i cue fitter he: ... i, the outer ... fades, ... tmdtur- ... Caryophyllus jii:::ilus litit'ojius. C. B, P. 109. D ... i'ixk.

Ij. DiASTROJ [Atfperfw] turibuli paniculus, Iquimis cjlvcinis brevibus .ik'Jtt.inatii, corolli mukifido-ta-pilfaribus, caule ereclo. Aoioen, A cad. 4. p. Dinnbw wilpplmatüUcdfiowi.tr. ... pain ul fcales to their emp. ... ptetb amen xprigh' ftall

14. DiAKTjos (Dwioau* flocibus folitarib, Iquimis calycinis octonis ! ... Lin. Sp. 417. Dianthus Wit* sj':... fiaiei tshuh rife ft

phyllm fylveftiii ... ibera. 1 liu. The I ... had ereeping ftalks, from which come our federal tut'ed limUs, clltily g ... row lcavet, wliiii; rjifi lie over each orh r embracing the ftilki; between the; ... grow abo] ... ripen in <Btinin.

The flower set in a low trailing plant, whole (biks ... row v-sy cloft iuppher, and arc £ ... flalk an; <rcmin:: ... h fbutding uj

This sort grows naturally in several ;:arts of ... j :t garde^ ... km; but formerly ch ... low to mal ... ibr tin. borders of the flower-garden by the 01 muted Pink, by winch ti, ... fold ... a the fnoops.

The ; ... rows natuntllv njon t-iiiiidr rocks in So: ... <ad fome 01 ... parts of Kngbnd. Tinj ... was formerly ... in the gardens I by the title 1>; ... r'rcmblance of ihcftv and firt, but the ... are ilioficr, and at a grayii colour, the fl:is^ gr^w <Uer, ... ad branch more 1 the Sowers arc larger, 01 a while col ... with a purple circle in die bottom, like th.I tort at Pink odkd Pliciiuits Kyc, ... thlis Cat have no lcent, die plants *it feldom k<pt in gardens.

The fourth t>rt jrrows naurially in tevtial pans of England, frequenuy upon old wal ... a small fingle J'ink, oi' I pale red clsour, to is notctiltivaied in gari

The 6fti Ion is 1 fmall finale Carnation, v\ll I has been lung call out of all thegukns-, fron: one of ... ;:jctl, many of the fine flowers now cultivated in (he gardens ia.ve been railed.

The fifth fort grows naturally in fevcrJ parts of England, and particularly in -\ meadow ncau ljtj ... in JCent, from whence it had the 1 ... of Deptford Pijk. This ii of the kind call ... Sweet William; the flowers. at thefc grow ia cluflers M the end of the bnncbj 1 they are red, and hive lo ... palemcms. I have cultivated tins (bit above forty years, and have never ohktvtd it 10 vary.

The

The seventh fort is the common Sweet William, which has been long cultivated in the gardens for ornament, of which there are now great varieties which differ in the form and colour of their flowers, as also in the size and shape of their leaves; those which have narrow leaves were formerly titled Sweet Johns by the gardeners, and those with broad leaves were called Sweet Williams; there are some of both these forts with double flowers, which are very ornamental plants in gardens.

The eighth fort grows naturally in the south of France, in Spain, Italy, and in England. This is an annual plant, which rises with an upright stalk about a foot high, garnished with narrow grassy leaves, and is terminated by a small head or cluster of pale red flowers, which are included in one common scaly empalement. These have little beauty, for the plants are seldom kept in gardens.

The ninth fort is a biennial plant, which rises with an upright stalk a foot and a half high, having two long narrow leaves placed opposite at each joint, which embrace the stalk with their base; they are of a deep green colour, stiff, and end in acute points. The flowers grow in close clusters at the top of the stalks, having stiff bearded empalements; they are yellow and iron coloured intermixed on the same stalk, and frequently they are of both colours in the same head. This plant flowers in July, and the seeds ripen in autumn.

The tenth fort came originally from China, for it is titled the China Pink; the flowers of this have no scent, but there are a great variety of lively colours among them; and of late years there has been great improvements made in the double flowers of this fort, some of which are as full of petals as the double Pink, and their colours are very rich. The plants seldom grow more than eight or nine inches high, branching out on every side; the branches grow erect, and are terminated each by a single flower. These flower in July, and continue in succession, till the frost stops them; they are commonly raised every year from seeds* but the roots will continue two years in dry ground.

The eleventh fort is found growing naturally upon old walls and buildings in many parts of England, this is a single small Pink, of a sweet odour, but of a pale colour and small, for makes no appearance; and since the great improvement which has been made in these flowers by culture, this has been entirely neglected.

The twelfth fort grows naturally on the Alps. This hath round, short, blunt leaves; the stalks seldom rise more than four inches high, each being terminated by a single flower of a pale red colour. It is sometimes preferred in botanic gardens for the sake of variety, but is rarely admitted into other gardens.

The thirteenth fort grows naturally in Germany and Denmark; the leaves of this fort are like those of the narrow-leaved Sweet William; the stalk rises more than a foot high, and is terminated by a single flower, having five large petals of a pale red colour, which are cut into many long segments. The roots of this fort will live three or four years, but the second year from seeds they are in greatest beauty; therefore as the seeds ripen well in England, young plants should be annually raised.

The fourteenth fort is a very diminutive plant, having short narrow leaves growing in close heads; the stalk seldom rises six inches high, which is terminated by a single flower, of a pale red colour, for has little beauty, therefore is only kept in botanic gardens for variety.

The forts here enumerated, are such as the botanists allow to be distinct species; and all the varieties of fine flowers, which are now cultivated in the gardens of the curious, are only accidental variations which have been produced by culture; and the number of these are greatly increased annually, in many different parts of Europe; for that as new varieties are obtained, the old flowers are rejected.

The plants of this genus may be properly enough divided into three sections. The first to include all the variety of Pinks, the second all the Carnations, and the third, those of the Sweet William; for although these agree so nearly in their principal characters, as to be included under the same genus by the botanists, yet they never vary from one to the other, though they frequently change and vary in the colour of their flowers.

I shall now proceed to treat of these under their different sections, and first I shall begin with the Pink, of which there are a great variety now cultivated in the gardens; the principal of which are, the damask Pink, the white Shock, the Pheasant Eye, with double and single flowers, varying greatly in their size and colour; the common red Pink, Cob's Pink* Dobson's Pink, white Cob Pink, and Bat's Pink. The old Man's Head, and painted Lady Pink, rather belong to the Carnation.

The damask Pink is the first of the double forts in flower. This hath but a short stalk, the flower is not very large, and not so double as many others; the colour is of a pale purple, inclining to red, but is very sweet.

The next which flowers is the white Shock, which was so called from the whiteness of its flowers, and the borders of the petals being much jagged and fringed; the scent of this, is not so agreeable as of some others.

Then comes all the different kinds of Pheasant's Eye, of which there are frequently new varieties raised, which are either titled from the persons who raised them, or the place where they were raised; some of these have very large double flowers* but those which burst their pods are not so generally esteemed.

The Cob Pink comes after these to flower; the stalks of this are much taller than those of any of the former; the flowers are very double, and of a bright red colour; these have the most agreeable odour of all the forts, for merits a place in every good garden. The time of the Pinks flowering is from the latter end of May to the middle of July, and frequently that fort of Pheasant Eye, which is called Bat's Pink, will flower again in autumn.

The old Man's Head Pink* and the painted Lady, do not flower till July, coming at the same season with the Carnation, to which they are more nearly allied than the Pink. The first when it is in its proper colours, is purple and white striped and spotted, but this frequently is of one plain colour which is purple; this fort will continue flowering till the frost in autumn puts a stop to it, and the flowers having an agreeable scent, renders them valuable. The painted Lady is chiefly admired for the liveliness of its colour, for it is not so sweet, or of so long continuance as the other.

The common Pinks are propagated either by seeds, which is the way to obtain new varieties, or by making layers of them, as is practised for Carnations*, or by planting slips, which, if carefully managed, will take root very well.

If they are propagated by seeds, there should be care taken in the choice of them, and only the seeds of the best forts sowed, where the persons are curious to have the finest flowers. These seeds may be sown in the spring, and the plants afterward treated in the same manner as is hereafter directed for the Carnation; with this difference only, that as the Pinks are less tender, they may be more hardily treated. Those which are propagated by layers, must be also managed as the Carnation, for which there are full instructions hereafter given. The old Man's Head and painted Lady Pinks, are commonly propagated this way, but most of the other forts are propagated from slips.

The best time to plant the slips of Pinks is about end of July, when, if there should happen rain, it will be of great service to them, but if the weather should prove dry, they will require to be watered every other day, until they have taken root; these should

should be planted in a shady border, and the ground should be dug well, and all the clods broken, and if no rain falls, it should be well soaked with water a few hours before the slips are planted; then the slips should be taken from the plants, and all their lower leaves stripped off, and planted as soon as possible after, for if they are suffered to lie long after they are taken from the plants, they will wither and spoil; these need not be planted at a greater distance than three inches square, and the ground must be closed very hard about them; then they must be well watered, and this must be repeated as often as is found necessary, till the cuttings have taken root; after which they will require no other care but to keep them clean from weeds till autumn, when they should be transplanted to the borders of the flower-garden where they are to remain. There are some who plant the slips of Pinks later in the season than is here directed, but those plants are never so strong nor flower so well, as those which are early planted.

We shall next proceed to the culture of the Carnation; these the florists distinguish into four classes. The first they call Flakes; these are of two colours only, and their stripes are large, going quite through the leaves.

The second are called Bizarrs; these have flowers striped or variegated with three or four different colours, in irregular spots and stripes.

The third are called Piquettes; these flowers have always a white ground, and are spotted (or pounced, as they call it) with scarlet, red, purple, or other colours.

The fourth are called painted Ladies; these have their petals of a red or purple colour on the upper side, and are white underneath.

Of each of these classes there are numerous varieties, but chiefly of the Piquettes, which some years ago were chiefly in esteem with the florists, but of late years the Flakes have been in greater request than any of the other kinds. To enumerate the varieties of the chief flowers in any one of these classes, would be needless, since every country produces new flowers almost every year, so that those flowers, which, at their first raising, were greatly valued, are in two or three years become so common, as to be of little worth, especially if they are defective in any one property. Therefore (where flowers are so liable to mutability, either from the fancy of the owner, or that better kinds are yearly produced from seeds, which, with good florists, always take place of older or worse flowers, which are turned out of the garden to make room for them) it would be but superfluous in this place to give a list of their names, which are generally borrowed either from the names and titles of noblemen, or from the person's name, or place of abode, who raised it.

These flowers are propagated either from seeds (by which new flowers are obtained), or from layers, for the increase of those sorts which are worthy maintaining; but I shall first lay down the method of propagating them from seeds, which is thus:

Having obtained some good seeds, either of your own sowing, or from a friend that you can confide in, about the middle of April, prepare some pots or boxes (according to the quantity of seed you have to sow), these should be filled with fresh light earth mixed with rotten neats dung, which should be well incorporated together; then sow your seeds thereon (but not too thick) covering it about a quarter of an inch with the same light earth, placing the pots or cases so as to receive the morning sun only till eleven of the clock, observing all to refresh the earth with water as often as it may require. In about a month's time your plants will come up, and if kept clear from weeds, and duly watered, will be fit to transplant about the latter end of July; at which time you should prepare some beds (of the same sort of earth as was directed to sow them in) in an open airy situation, in which you should plant them at about three inches square, observing to water and shade them till they have taken

new root, then you must observe to keep them clear from weeds; in these beds they may remain until the end of August, by which time they will have grown so large as almost to meet each other; then prepare some more beds of the like good earth (in quantity proportionable to the flowers you have raised) in which you should plant them at six inches distance each way, and not above four rows in each bed, for the more conveniently laying such of them as may prove worthy preserving, for in these beds they should remain to flower.

The alleys between these beds should be two feet wide, that you may pass between the beds to weed and clean them. If the season should prove very dry at this time, they should not be transplanted till there is some rain, so that it may happen to be the middle, or latter end of September some years, before there may be wet enough to moisten the ground for this purpose; but if there is time enough for the plants to get good root before the frost comes on, it will be sufficient. If the winter should prove severe, the beds should be arched over with hoops, that they may be covered with mats, otherwise many of the plants may be destroyed, for the good flowers are not so hardy as the ordinary ones of this genus. There will be no other culture wanting to these, but to keep them clean from weeds, and when they shoot up their stalks to flower, they must be supported by flicks to prevent their breaking. When your flowers begin to blow, you must look over them to see which of them proffer to make good flowers, which as soon as you discover, you should lay down all the layers upon them; those which are well marked, and blow whole without breaking their pods, should be reserved to plant in borders, to furnish you with seed; and those which burst their pods, and seem to have good properties, should be planted in pots, to try what their flowers will be, when managed according to art; and it is not till the second year that you can pronounce what the value of a flower will be, which is in proportion to the goodness of its properties; but, that you may be well acquainted with what the florists call good properties, I shall here set them down.

1. The stem of the flower should be strong, and able to support the weight of the flower without hanging down.
2. The petals (or leaves) of the flower should be long, broad, and stiff, and pretty easy to expand, or (as the florists term them) should be free flowers.
3. The middle pod of the flower should not advance too high above the other petals of the flower.
4. The colours should be bright, and equally marked all over the flower.
5. The flower should be very full of leaves, so as to render it, when blown, very thick and high in the middle, and the outside perfectly round.

Having made choice of such of your flowers as promise well for the large sort, these you should mark separately for pots, and the round whole blowing flowers for borders; you should pull up all single flowers, or such as are ill-coloured, and not worth preferring, that your good flowers may have the more air and room to grow strong, these having been laid at a proper season, as soon as they have taken root (which will be some time in August) they should be taken off, and planted out, those that blow large, in pots, and the other in borders (as hath been already directed).

Of late years the whole-blowing flowers have been much more esteemed than those large flowers which burst their pods, but especially those round flowers which have broad stripes of beautiful colours, and round Rose leaves, of which kinds there have been a great variety introduced from France within these few years; but as these French flowers are extremely apt to degenerate to plain colours, and being much tenderer than those which are brought up in England, there are not such great prices given for the plants now, as have been a few years past; from the present taste for these whole-blowing Flake flowers, many

> of the old varieties, which had been turned out of the gardens of the florists many years ago, to make room for the large flowers; which were then in fashion, have been received again \$ and large prices have been paid of late for such flowers as some years ago were sold for one shilling a dozen, or less, which is a strong proof of the variableness of the fancies of the florists.

But I shall now proceed to give some directions for propagating these flowers by layers, and the necessary care to be taken in order to blow them fair and large.

The best season for laying these flowers is in June, as soon as the shoots are strong enough for that purpose, which is performed in the following manner: after having stripped off the leaves from the lower part of the shoot intended to be laid, make choice of a strong joint about the middle part of the shoot (not too near the heart of the shoot, nor in the hard part next the old plant); then with your penknife make a slit in the middle of the shoot from the joint upwards half way to the other joint, or more, according to their distance; then with your knife cut the tops of the leaves, and also cut off the swelling part of the joint where the slit is made, so that the part slit may be shaped like a tongue; for if that outward skin is left on, it would prevent their pushing out roots -, then having loosened the earth round the plant, and, if need be, raised it with fresh mould, that it may be level with the shoot intended to be laid down, left by the ground being too low, by forcing down the shoot you split it off-, then with your finger make a hollow place in the earth, just where the shoot is to come, and with your thumb and finger bend the shoot gently into the earth, observing to keep the top as upright as possible, that the slit may be open; and being provided with forked sticks for that purpose, thrust one of them into the ground, so that the forked part may take hold of the layer, in order to keep it down in its proper place; then gently cover the flank of the layer with the same sort of earth, giving it a gentle watering to settle the earth about it, observing to repeat the same as often as is necessary, in order to promote their rooting. In about five or six weeks after this, the layers will have taken root sufficient to be transplanted *, against which time you should be provided with proper earth for them, which may be composed after the following manner:

Make choice of some good up-land pasture, or a common that is of a hazel earth, or light sandy loam; dig from the surface of this your earth about eight inches deep, taking all the turf with it; let this be laid in a heap to rot and mellow for one year, turning it once a month, that it may sweeten; then mix about a third part of rotten neats dung, or for want of that, some rotten dung from a Cucumber or Melon-bed; let this be well mixed together, and if you can get it time enough before-hand, let them lie mixed six or eight months before it is used, turning it several times, the better to incorporate their parts.

Observe, that although I have mentioned this mixture as the best for these flowers, yet you must not expect to blow your flowers every year equally large in the same composition; therefore some people who are extremely fond of having their flowers succeed well, alter their compositions every year in this manner, viz. one year they mix the fresh earth with neats dung, which is cold; the next year with rotten horse dung, which is of a warmer nature, adding thereto some white sea sand to make the earth lighter.

But, for my part, I should rather advise the planting two or three layers of each of the best kinds in a bed of fresh earth not over dunged, which plants should only be suffered to blow their flowers, that you may be sure they are right in their kind and colours; and when you are satisfied in that particular, cut off the flower-stems, and do not suffer them to spend the roots in blowing, by which means you will strengthen your layers. And it is for a these beds I would make

choice of some of the best plants for the next year's blowing, always observing to have a succession of them yearly, by which means you may have every year fine flowers, provided the season proves favourable: for it is not reasonable to suppose, that the layers taken from such roots as have been exhausted in producing large flowers, and have been forced by art to the utmost of their natural strength, should be able to produce flowers equally as large as their mother root did the year before, or as such layers as are fresh from a poorer soil, and in greater health can do. But this being premised, let us proceed to the planting of these layers, which (as I said before) should be done in August, or the beginning of September.

The common method used by most florists is to plant their layers at this season, two in each pot (the size of which pots are about nine inches over in the clear at the top); in these pots they are to remain for bloom; and therefore, in the spring of the year, they take off as much of the earth from the surface of the pots as they can, without disturbing their roots, filling the pots up again with the same good fresh earth as the pots were before filled with. But there is some difficulty in flickering a great quantity of these flowers in winter, when they are planted in such large pots, which in most winters they will require, more or less; my method therefore is, to put them singly into halfpenny pots in autumn, and in the middle or latter end of October, to set these pots into a bed of old tanners bark, which has lost its heat, and cover them with a common frame (such as is used for railing Cucumbers and Melons) -, and in two of these frames, which contain six lights, may be set a hundred and fifty of these pots: in these frames you may give them as much free air as you please, by taking off the lights every day when the weather is mild, and putting them on only in bad weather and great rains; and if the winter should prove severe, it is only the covering the glasses with mats, straw, or Pease-haulm, so as to keep out the frost, which will effectually preserve your plants in the utmost vigour. In the middle or latter end of February, if the season is good, you must transplant these layers into pots for their bloom (the size of which should be about eight inches over at the top in the clear); in the doing of which, observe to put some potsherds or oyster shells over the holes in the bottoms of the pots, to keep the earth from flopping them, which would detain the water in the pots to the great prejudice of the flowers: then fill these pots about halfway with the same good compost as was before directed, and shake the plants out of the small pots with all the earth about the roots; then with your hands take off some of the earth round the outside of the ball, and from the surface taking off the fibres of the roots on the outside of the ball of earth *, then put one good plant exactly in the middle of each pot, so that it may stand well as to the height, i. e. not so low as to bury the leaves of the plant with earth, nor so high, that the flank may be above the rim of the pot; then fill the pot up with the earth before-mentioned, doing it gently to the plant with your hands, giving it a little water, if the weather is dry, to settle the earth about it; then place these pots in a situation where they may be defended from the north wind, observing to give them gentle waterings, as the season may require.

In this place they may remain till the middle or latter end of April, when you should prepare a stage of boards to set the pots upon, which should be boarded as to have little cisterns of water round each pot, to prevent the insects from getting to your flowers in their bloom, which, if they are suffered to do, will mar all your labour, by destroying all your flowers in a short time; the chief and most mischievous insect in this case is, the earwig, which will gnaw off all the lower parts of the petals of the flowers (which are very sweet) and thereby cause the whole flower to fall to pieces *, but since the making one of these stages is somewhat expensive, and not very easy to be under-

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... which I shall describe a very simple one, which I have found to be the best, which answers the purpose full as well as the belt and most commonly our can do: first, prepare some common Hat pans, about fourteen or fifteen inches over, and three inches deep; place twelve two and two opposite to each other, at about two feet distance, and at every eight feet lengthways, two of these pans; in each of these wheel a Hower-jot, which should be about six inches over at the top, Upright-down, and lay a flat piece of timber, about two feet and a half long, and three inches thick, close from pot to pot, till you have finished the whole length of your stage-, then lay your planks lengthways upon these timbers, which will hold two rows of planVii for the free pots which were ordered for the Carnations-, and when you have lit your pots upon the stage, fill the flat pans with water, always observing, as it decreases in the pans, to replenish it, which will effectually guard your flowers against insects; for they do not care to swim over water, but that if by tick or any other contrivance, the passage from the ground to the llice, on which the pot is placed, in $I < f$ a measure of water three or

four inches broad, and as much in depth, it will effectually prevent these vermin from getting to the flowers.

This stage should be placed in a situation open to the sun, but defended from the west winds, 10 which these stages must not be covered, lest the pots should be blown down by the violence of that wind, which is often very troublesome at this season when these flowers blow; indeed they should be defended by trees at some distance, from the winds of every point-, but rather they should not be [at the] towers, nor by any means placed near walls, or tall buildings, for in such situations the flowers will draw up too weak. About this time, viz. the middle of April, your layers will begin to shoot up for flower; you must therefore be provided with some quart deal (licks, about four feet and a half long, which should be thicker toward the bottom, and planed off taper at the top; these should be carefully stuck into the pots near as possible to the plant, without injuring it; then with a slender piece of bawling mat, ratten the spittle neck thick to prevent it from being broken; this you must often repeat. As the spindle advances in height, and also observe to pull off all the side spindles; they are produced, and never let more than two remain upon one root, nor above one, if you intend to blow exceeding large. Toward the beginning of June your Mowers will have attained their greatest height, and their pods will begin to swell, and the earliest begin to open on one side; you must therefore observe to let it open in two other places at $\langle \text{jua! ang!} \rangle$; this must be done so soon as you see the JOJ break, otherwise your plants will run on one side, and be in a state of time; recovering, (as to make a complete recovery, and in a few days after the Rowen begin to open, you must cover them with glasses white) are made for that purpose; the soil must be in manner;

Upon the top of the glass, exactly in the center, is a tin collar, or socket, about three fourths of an inch square, for the brass stick to come through-, to this socket are soldered eight slips of lead of different distances, which are about six inches square; these are spread open at the bottom about four inches square, into three slips of lead of different lengths, which are soldered to the bottom of the glass, which, when they are fixed in, the bottom of the glass has eight angles, with the socket in the middle, and spread open at the bottom about seven inches wide.

When your flowers are open, enough to cover with these glasses, you must make a hole through your socket, exactly to the height of the under part of the pod, through which you should put a piece of small wire about six inches long, making a ring at

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one end of the wire to contain the pod, into which ring you should fix the stem of the flower; then cut off all the strings of bats, and thrust the stem of the flower into the hole from the back, as may give convenient position for the flower to expand without injury to the socket to which distance you may fix it, by turning your wire so as not to draw back through the hole; then make another hole through the back, at a convenient distance above the flower, through which you should put a piece of wire, an inch and a half long, which is to hinder the plants from falling down upon the Sowers; and be sure to observe, that the glass is not placed so high as to admit the sun and rain under them to the flowers, nor so low as to scorch their leaves with the heat. At this time all, or a few days after, as you judge necessary, you should cut the roots of the plants, or some of them, into small pieces, and about the middle of it about three fourths of an inch diameter, for the bottom of the flower to be stuck through; then place the plants about them, to support the pods.

This collar should be placed with inside the calyx of the flower, and should be fixed thereby, then proceed from day to day what progress your flowers make, and if one side comes out fitter than the other, you should turn it about, and shift the other side towards the sun, and all if the weather proves very hot, you should shade the glass in the heat of the day with Cabbage leaves, to prevent their being (torched, or forced out too soon; and when the middle pod begins to rise, you should take out the calyx thereof with a pair of nippers made for that purpose; but this should not be done too soon, lest the middle part of the flower (should advance) high above the sides, which will greatly diminish the beauty of it; you should also observe whether there are more leaves in the flower, than can properly be expanded for want of room, in which case you should cut some of the lowermost or most useless leaves to prevent the swelling of the pods at the time; and when the flowers are fully blown, you cut them off with a pair of nippers, and put on a fine paper collar of stiff paper, which should be cut to the size of the fire of the flower, that it may be put to their full width, but not to be taken off till the flower is in any part; when this is put on, you must draw out the widest leaves to form the outside of the flower, which although they should be in the middle (as it often happens,) yet by removing the other leaves they may be drawn down, and the next longest leaves upon them remain, that the whole flower may appear equally globular without any hollow parts. In the doing of this, some florists are so curious as to render an indifferent flower very handsome; and on this depends, in the case of the large flowers, the kind of the arid to produce large line flowers.

During the flowering season, particular care should be taken not to let them suffer for want of moisture, which should by no means be wanting (spring water; nor Jo I approve of compound waters but as are enriched with various sorts of dung-, and the best and most natural water is that of a fine (soft river-, next to dam pond water, or (landing water, but if you have no other than (firing water, it should be exposed to the sun and air two days before it is used, I think it will give the flowers the canker and spoil them.

The direction here given are chiefly for the management of those large flowers, which require the greatest care; It is ill of the florists, to have them in perfection; but as of late years there have not been so much in esteem as formerly, and those Sowers which do not break (their petals, and are termed whole flowers, have now the preference. These are generally planted in pots, and are sown in the same way as the large flowers, but do not require so much trouble to blow them; all that is necessary to be done is to be for them to fall on their flints and to Sower-sticks to prevent their being

noemg broken, md to take off the pa. which pro-
cess; from the Gtcc oi" the (hks, laving only the top
biiii u> tluyer, if die)' arc intended, tu !
fair, and when the (lowers begin so " on, if they
ate kTcenei) from the litn tin- heat of the day, and
illb from wet, they will continue muu> io:
beauty.

Biit ilthmigh die molt valuable of theft IW> are
usually planted iij'OK, and thus carefully treuced, yet
many at thi whole blowing flowers may be . I
in be •Is, or borders of the Hower-| garden, where they
are forme of flil! principal tirnmiicnii during their
toni inuance in lower, which is mnn ;... beginning
of July till the middle of Augi.:; especially if the
(veral colours are properly intcinu, for the Hakes
and Bizarrs (houidbc intermixal with th
and tot planted It panic, unitfc where they are de-
figined for living the teds; in which tail-, thole
whiich art the find: of each fort, flwuM be planted
fti beds at a diftance fruii cacti
where perfons arc dcllii
where the forts are blended together, there will be
an admixture of their frina

vary, and o . XIUL-C the particular kii
I do imt remember ew r to bnve leen any
arife from feeds of the Picqurttta, nor vice v
The flowers which are planted in the full ground,
fenerMy product feeds better than thole m
f IM wjionsx pro) J fupply ci
from fails, mufl always of ferve to 6vt ihe bed of
their feeding flowers for this pur •• a fur it u-well
known, that after any of theft flerwcb have been a
few . Lar* propagated by Ujren, they become barren,
and ilo nor iced; winch Isalfo tic caie"wid) moft
Other jhunii; whi

are propagated by lips, layers, or
tunings; (a that the ioung plants u li have been
newly obuineil from : seeds, are always the molt pro-
duclive ot leeds: ttie nhiru- which are propagated by
layers or (lips, will uwafi continue to produce the
SmeJowOT, fo that wliciu this variety is obtained,
it i>thiswftipro) and moft iwinedt bnt all the

new varieties come from feeds, fo thai -I! thofe who
are carious ifthci flowers, wmuaily low tin-:
I (hall new proceed to the culture of that fpeciei,
»hich b coimnunly known U- the titk of Sweet Wil-
liamj of this there an a great variety of ^lii-rcni
(colours, nulikh arc fingk. anil three or fuurwiihdouulc
flowers; fame of thefe Iw "arrow ktiffii, which
Were formerly cj
diftinfion! is not bec; • made, betaufc they arc found
to vary when rjiicll from Tccils.

Some of the Imgle Bowers have very rich colours,
which frequently vary in ihoi'c of the tame bunch;
there ire others with fine variegated flowei
and others wlfwr miiklks ue (f a foft red, bord«wJ with
white, which an
arc defirous to nrdervt an; rariene*
in perfecm the beft Sower* rf««hf
marked, and no offer pennhwd to "bnd
S e « T kft .heir feiw (hould iropregn^ ttam,
whi li wouldcaufe chean to vary-
Thai which b. called vhe PiinAd Lad| S«e« V, if
I..... is a very beautiful variety. the (talks <<« tnis
du not rife fo high as awft of ibe other, the bunches
offewtwa is larger, and produced moft .ttithe term
of an umbel, tl
Biack . become appearance: there are others wlfwc
tbUi. rife three foot high, and the flowers of • vch>
ilctu red or Icarlet colour.

These all flower at the
Done rime with the Carnations, which are I ..them
left valuable, becauli- th have no feent.
The finale kinds ofdu flowers are genera «y pi°-
legated by leafs, whkhjnufl be (gwn
of March/or the beginning ol .N|.ni. • a bed of
%ht earth, and in June ihr. v:U .

OHI; It » each time you mufl prepare fourc beds
ready for them, and l
every wcy: in iltefc beds itey TM-Y nrmam ti 1 Mi-
christmas, at which time they may be tranf-
i the bordcrj of the pkafure-B^"" be wildernefs.

Ttefc will Bo*ci the next year in June; I I perfect
their feeds in Auguft, which you fhould have from
the belt coloured SIMHs for a fupply.

They may be alfo propagated by dipping their roots
ai Michichnaj; but ti is feldom practifed, fince
their lcttiljng rot* will always blow the flmgcil, antf
new varieties are obtained yearly.

The four (brts wid double flowers ar -, t. Thebr ad-
k-ivctd (brt) which hitti very double Gw
deeeppurp!- colour inclining to blue, which be tdtfits
pods, fo that it is not ia much admired as the others,
and therefore has been lefs repeated, and is now al-
molt totally banifhed the gardens of the country.

>. The Double King Sweet William, whose flowers
are of 3 fine deep ROJL- a blue; and fince Sweet, this
is much valued, for the beauty ar. fweateners of its
flowers; the emp (ment (or pods) of them; :swen
never !iurll, in Lie flwven remain with their petals
fully expanded, and dn not hang down lo

as thofe of the former. p The Mole, or Saindard's
Sweet William, it hath narrower leaves than either
of the former, and is of that variety called -iyever
Jolnu dia .. lid tolvvc bee;ij f Iro
of a Carnatick, which had been propagated by the
farina of the Sweet Willun •, the flowers of this are
of a brighter colour than qtfecf or ttie fo
thrii buncho or not quite (b I... but the nowen
have on agreeable odour. The fourth lurt hjs fire
variegated flowers.

The double kinds are propagated by layers, as the
Carnations; they love a middling foil, nut tt> li^lc.
not ••) heavy or (till, nor loo much Av\<-nd, which
very often octsfionj their rratting: theic continue
flowering for a long iim- and ttrendr beat) oad,
elpcdaily th Mule, which prodw c. two iuH b!
or five •• • i June, add the ctha in July. This
is very fubjeit ro canltei and rot i
away, especially if
planted in 3 full vver
with fimp furion water. Thefe flowers being phmtfj
ifl pott, are very proper to aJum counnfajtL
in the dole they are in flower.

The China Pink is generally [iupposed an antrod plant,
becaufe the plants which are tailed from -eeds flower
and t'induce ripe feeds the fame lbafon, To thvir roots
art not often preferred s bur where they are planted
on a they will continue two years, and the
(econd year willpioduci a greater number of flowers
tliin tliu (jrt. There sre a great VKiew fj! very rich
colour! in thec (lowers, which annual! vary when
raifed from feeds. The rioul • flowers of this fort
arc moft efimwed, though ihe col . . . of the fingle
arc mi; a diftant and beautiful; (u: the multiplicity
of petals in the double flowera, in a great meafure,
hides the deep taint, which aa- toward tie !
lower pan of the petals.

These plants are propagated by feeds, Tiliicli I should
be fown upon a gentle hot-bed jbm the beginning
of Apr N; thb modenutti intended to be
ward .lie vrenation ot dw leeds, therdbntwhei
the plants come tip, diey mull !: e a large ;.ttt- of .nr
Bdmitcii ca thenii to prevent thcirdrawingupwfeatj
and as foon as the weather U flicrenir, th
U flicrenir, th
expofed to the open air; in about ihree weeks or a
raondi «6a» tllc p'ws will be Si ta t
they ihould be carefully rski'n up wtl
and planted in A bed of rich
at about three
fines avoiced, being careful to fhake them from the
fun till they hi^{ve} taken new root, and in they . iheret
they mufl have water three or four times a week.
The farther care is to keep them clean from weeds
nil n. end of May, at which time they may be
transplanted to the places bere they MX dt-igtnd to
remain for flowering, when they may be taken up
with large balls of earth to their roots, fo as to •-irtcly
their removal, efpecially if it iap] . . . to rain
at th.it time.

As theft pUntjd do not grow large, fo when they art
planted onlj in the borders of the flower-garden,
they do not make •• fo vance, as whic icthy
are planted by them lei ves in heda; or if they are
planted

planted in small clumps, of six or eight roots in each, where the flowers being of different colours, let off each other to advantage.[^]

Those who are curious in these flowers, take particular care in having their feeds, for they never permit any single flowers to (land among their double, but pull them up as soon as they (hew their flowers, and also draw out all those which are not of lively good colours; where this is observed, the flowers may be kept in great perfection % but where persons have trusty friends, who live at some distance, with whom they can exchange feeds once in two or three years, it is much better for to do, than to continue sowing feeds in the same place many years in succession, and this holds true in most sorts of feeds: but the great difficulty is to meet with an honest person of equal (kill, who will be as careful in the choice of his plants for feed, as if he was to sow them himself.

D I A P E N S I A. See SANICULA.

D I C T A M N U S. Lin. Gen. Plant. 468. Fraxinella. Tourn. Inf. R. H. 430. tab. 243. White Dittany, or Fraxinella; in French, *Fraxinelle*. This plant was titled Fraxinella, from Fraxinus the A(h-tree, the leaves of this having some resemblance in their form, to those of the A(h-tree, so it was called Little Afh. But as this plant has been long mentioned under the title of *Dicamnus albus*, i. e. *White Dittany* in the dispensaries, so Dr. Linnaeus has adapted that title to this genus.

The CHARACTERS are,

The empalement of the flower is composed of five small oblong leaves, ending in points. The flower hath five oblong petals which are unequal two of them turning upward, two are oblique on the sides* and one turns downward. It hath ten rising stamens* which are as long as the petals* which are situated between the two side petals -, they are not equal in length* and are terminated by obtuse four-cornered summits standing erect. In the center is situated a five-cornered germen* supporting a port incurved style* crowned by an acute stigma; the germen afterward becomes a capsule with five cells* each having a compressed margin* which spreads open at their exterior parts* but join together at their inner* opening with two valves* and inckling several roundish* hard* shining seeds.*

This genus of plants is ranged in the first section of Linnæus's tenth class, intitled Decandria Monogynia, the flower having ten stamens and one style.

We have but one distinct SPECIES of this genus, viz.

D I C T A M N U S (*Albus*). Hort. Cliff. 161. Fraxinella. Clus. Hist. 99. and the *Dicamnus albus*, vulgo Fraxinella. C. B. P. 222. *White Dittany* commonly called Fraxinella*. There are three varieties of this plant, one with a pale red flower striped with purple, another with a white flower, and one with (horter (pikes of flowers; but as I have observed them to vary when propagated by seeds, so I esteem them only femal varieties. This is a very ornamental plant for gardens, and as it requires very little culture, so deserves a place in all good gardens. It hath a perennial root, which strikes deep into the ground, and the head annually increases in size; these send up many (stalks, which rise from two to three feet high, garnished with winged leaves placed alternate, composed of three or four pair of oblong lobes, terminated by an odd one: they are smooth and stiff, fitting close to the midrib, which hath a longitudinal furrow on the upper side *, the lobes (or small leaves) placed on each side the midrib, are oblique, but those which terminate the leaf have their sides equal. The flowers are produced in a long pyramidal loose spike or thyrse) on the top of the (stalk, which is nine or ten inches long; the flowers of one sort is white, and of the other they are of a pale red, marked with red or purple (stripes. The whole plant when gently rubbed, emits an odour like that of Lemon peel, but when bruised has something of a balsamic scent. It flowers the latter end of May, and in June, and the seeds ripen in September.

These plants are propagated by seeds, which* if sown

in the autumn soon after they are ripe, the plants will appear the following April; but when they are kept out of the ground till the spring, the feeds seldom succeed -, or if they do grow, it is the following spring before the plants appear, so that a whole year is lost. When the plants come up, they must be constantly kept clean from weeds; and in the autumn when their leaves decay, the roots should be carefully taken up, and planted in beds at six inches distance every way; these beds may be four feet broad, and the paths between them two, that there may be room enough to pass between the beds to weed them. In these beds the plants may (land two years, during which time they must be constantly kept clean from weeds; and if they thrive well, they will be strong enough to flower* so in the autumn they (should be carefully taken up, and planted in the middle of the borders of the flower-garden, where they will continue thirty or forty years, producing more stems of flowers in proportion to the size of the roots. All the culture these require, is to be kept clean from weeds, and the ground about them dug every winter. The roots of this plant are used in medicine, and esteemed cordial and cephalic, refilling putrefaction and poison, and are useful in malignant and pettilential distempers, as also in epilepsies.

D I C T A M N U S C R E T I C U S. See OtiGANUM. D I E R V I L L A. Tourn. R. Par. 1706. Lonicera. Lin. Gen. Plant. 210.

The title of this genus was given it by Dr* Tournefort, after Mr. Dierville, a surgeon, who brought this plant from Acadia.

The CHARACTERS are,

The empalement of the flower is cut into five parts almost to the bottom *, the flower is of one leaf* having a tube at the bottom* but is cut into five parts at the top* and has the appearance of a lip flower; it hath five stamens* which are terminated by oblong summits* which are equal with the style. At the bottom of the flower is situated an oval germen fixed to the empalement* supporting afterward a style equal with the stamens* crowned by an obtuse stigma \ the germen afterward becomes a pyramidal berry* divided into four cells* which contain small round seeds.*

This genus of plants is ranged in the fourth section of Tournefort's third class, which includes the plants with a tubulous anomalous flower of one leaf. It is ranged by Dr. Linnaeus under his genus of Lonicera, in the first section of his fifth class, intitled Pentandria Monogynia, the flower having five stamens and one style.

We know but one SPECIES of this genus at present, viz.

D I E R V I L L A (*Lonicera*) *Acadiensis fruticosa, flore luteo*. Act. R. Par. 1706. *Shrubby Dierville of Acadia with a yellow flower*. This is the *Lonicera racemis terminalibus foliis ferratis*. Lin. Sp. Plant. 275. *Lonicera with bunches of flowers terminating the branches, and fawed leaves*.

This plant grows naturally in the northern parts of America, from whence it was brought to Europe, and is now propagated in the gardens for sale. It hath woody roots which spread far in the ground, and put out (shoots at a distance from the principal (stalk, whereby it multiplies greatly: the (stalks are ligneous, and seldom rise more than a foot and a half high; these are garnished with oblong heart-shaped leaves, ending in acute points -, they are very (lightly fawed on their edges, and are placed opposite, fitting close to the (stalks: the upper part of the (stalks are garnished with flowers, which usually come out from the side of the (stalk at the fitting on of the leaves, and also at the top of the (stalks; there are two or three flowers sustained upon each shoot-stalk: they are of a pale yellow, and being small, make no great appearance. These come out in May, and if the season proves moist and cold, they frequently flower again in August.

It is easily propagated by suckers, which it sends out in plenty, and loves a moist soil and (shady situation, where die cold will never injure it.

DtfGIT ALIS. Lin. Gen. Plant. 676. foun. Inft. R. H. 164. tab. 73. Raii Meth. Plant. 89. Foxglove in French, *Digitale*.

The CHARACTERS are,

*It hath a permanent empalement, which is cut into five parts -, the flower is bell-Jhaped, of one petal, with a large open tube, whose bafe is cylindrical and contracted, but the brim is divided into four parts flightly; the upper lipfpreading and indented at the top, the lower is larger. It hath four ftamina, which are infertedin the bafe of the petal, two being longer than the other, which are terminated by bipartite acuminated fummits *, the flower being paf, the germen fwells to an oval capfule, having two cells fitting on the empalement, inclofing many fmall angular feeds.*

This genus of plants is ranged in the fecond fe&ion of Linneus's fourteenth c&afs, intituled *Didynamia Angiofermia*, the flower having two long and two fhorter ftamina, and the feeds being included in a capfule.

The SPECIES are,

1. DIGITALIS (*Purpurea*) calycinis foliolis ovatis acttis, corollis obtufis, labio fuperiore integro. Hort. Upfal. 178. *Foxglove whose fmall leaves of the empalement are oval and acute, the petals obtufe, and the upper lip entire. Digitalis purpurea folio afpero. C. B. P. 243. Purple Foxglove with a rough leaf, or common Foxglove.*
2. DIGITALIS (*Thagi*) foliis decurrentibus. Lin. Sp. 867. *Foxglove with running leaves. Digitalis Hispanica purpurea minor. Tourn. Inft. 165. Leffer Spanijh purple Foxglove.*
3. DIGITALIS (*Lutea*) calycinis foliolis lanceolatis corollis acutis labio fuperiore bifido. Hort. Upfal. 178. *Foxglove with fpear-Jhaped leaves to the empalement, an acute petal, whose upper lip is bifid. Digitalis minor lutea, parvo flore. C. B. P. 244. Leffer yellow Foxglove with a fmall flower.*
4. DIGITALIS (*Magno flore*) foliolis calycinis linearibus, corollis acutis, labio fuperiore integro, foliis lanceolatis. *Foxglove with long narrow leaves to the empalement, an acute petal, whose upper lip is entire, and fpear-Jhaped leaves. Digitalis lutea, magno flore. C. B. P. 244. TeUow Foxglove with a larger flower.*
5. DIGITALIS (*Ferruginea*) calycinis foliolis ovatis obtufis, corollae labio inferiore longitudine floris. Lin. Sp. Plant. 622. *Foxglove with oval blunt leaves to the empalement, and the lower lip of the petal as long as the flower. Digitalis angustifolia, flore ferrugineo. C. B. P. 244. Narrow-leaved Foxglove with an iron-coloured flower.*
6. DIGITALIS (*Canarienfis*) calycinis foliolis lanceolatis, corollis bilabiatis acutis, caule fruticofa. Lin. Sp. Plant. 622. *Foxglove with fpear-Jhaped leaves to the empalement, an acute petal with two lips, and a Jhrubby ftalk. Digitalis acanthoides Canarienfis frutescens, flore aureo. Hort. Amfi. 2. p 105. Shrubby Canary Foxglove like Bearjbreech, with a golden flower.*
7. DIGITALIS (*Orientalis*) calycinis foliolis acutis, foliis ovato-lanceolatis nervofis. *Foxglove with acute leaves to the empalement, and oval, fpear-Jhaped, veined leaves. Digitalis lutea non ramofa, fcorzonrae folio. Buxb. Cent. 25. Tellow unbranched Foxglove with a leaflike Scorzonera.*

The firft fort grows naturally by the fide of hedges in fhady woods in mod parts of England, fo is rarely cultivated in gardens. This is a biennial plant, which the firft year produces a great tuft of long rough leaves which are hairy; the fecond year it fhoots up a ftrong herbaceous ftalk, which rifes from three to four feet high, garnifhed with leaves of the fame form as the lower, but they gradually leffen upward, fo thofe which are intermixed with the flowers on the top are very narrow. The flowers grow in a long loofe thyrfe, ftanding only on one fide of the ftalk; they are large, tubulous, and fhaped like a thimble, of a purple colour, with feveral white fspots oil the under lip *, thefe flowers are fucceeded by oval capfules with two cells, which are filled with dark brown feeds- It flowers in June, and the feeds ripen in autumn, if they are permitted to fcatter, the plants

will come up in the fpring, and becomie troublefome weeds; but whoever has a mind to cultivate it, fhould fow the feeds in autumn, for thofe which are fown in the fpring feldom fucceed, or at leaft lie one year in the ground before they grow. This plant ftands in the lift of medicinal fimples of the differifaries, and there is an ointment made of the flowers, and May-butter^ which has been in good efteem.

There is a variety of this with a white flower, which is found growing naturally in fome parts of England* which differs from this only in the colour of the flower and leaves; but this difference is permanent* for I have cultivated it more than thirty years in the garden, and have never found it vary.

The fecond fort grows naturally in Spain, from whence I received the feeds; this plant feldom rifes much more than a foot and a half high; the lower leaves are ten inches long, and three broad in the middle; they are foft, woolly, and roughly veined on their under fide; the (talks are garnifhed with leaves of the fame fhape, but fmall; the upper part of the ftalk hath a fhort thyrfe of purple flowers like thofe of the common fort, but they are fmall, and the fegments of the petal are acute. This plant retains its difference when cultivated in gardens.

The third fort hath very long obtufe leaves near the root; the ftalk is fmall, and rifes from two to three feet high, the lower part being pretty clofely garnifhed with fmooth leaves, about three inches long and one broad, ending in obtufe points: the upper part of the ftalk, for ten inches in length, is adorned with fmall yellow flowers, which are clofely ranged on one fide of the ftalk, having afew very fmall acute leaves placed between them, which are fituated on the oppofite fide of the ftalk; the upper lip of the flower is entire, and the petal is obtufe. It flowers in June, and the feeds ripen in autumn.

The fourth fort hath long fmooth-veined leaves at the bottom; the ftalk is ftrong, and rifes two feet and a half high, garnifhed with leaves which are five inches long, one and a half broad, ending in acute points; thefe have many longitudinal veins, and are lightly fawed on their edges; the upper part of the ftalk is adorned with large yellow flowers, nearly of the fize of thofe of the common fort, the brim having acute points, and the upper lip entire. This flowers and ripens its feeds about the fame time as the former.

The fifth fort hath narrow fmooth leaves, which are entire; the ftalk rifes near fix feet high, and puts out fome (ender branches from the fide toward the bottom; the lower part of the (talks is garnifhed with very narrow fmall leaves, three inches long, and one third of an inch broad; the flowers terminate! the ftalk, growing in a very long fpike, with very few leaves between them, and thofe very fmall; the empalement is divided into four obtufe parts, the lower lip extending much longer than the upper. The flowers are of an iron colour, and appear in June.

The fixth fort grows naturally in the Canary Iflands; from whence the feeds were firft brought to England 9 and many of the plants were raifed in the bifhop of London's gardens at Fulham, part of which were lent to the -royal gardens at Hampton Court, and foma were fent over to the gardens in Holland: thofe which were fent to Hampton Court, were preferred there a few years, but by the ignorance of the gardeners, to whose care thofe gardens were committed, this, with many other valuable plants, were foon deftroyed.

This plant hath a fhubby ftalk which rifes to the height of five or fix feet, dividing into feveral branches, garnifhed with rough fpear-fhaped leaves, near five inches long, and two broad in the middle* gradually decreasing to both ends, having a few fhort ferratures on their edges; thefe are placed alternately on the branches 5 each of thefe branches is terminated by a loofe fpike of flowers, about four inches in length; the empalement of thefe is cut into five acute feg-

D I O

ments nlmoll to the bottom; the upper lip is long and enure, this is arched, and immediLely under it lie an fl... ftyle are fituatcd; the town lp b obtvik-, and indented at the top; there are two scure legmeits on the fide, which compote the chaps of the flower; there are two of the flam inn longer than the other\ theie arc crowned with roundilh Summits, In the bottom oi' the flower is tituated the germen, fiipportin^ t iknder flyle, enmed by an oval figm.i; the germen afterward becomes M ov.il capfulc, filled with finall angular feeds.

Tiui plant begins to fltwer in May, and there is generally a luccellion rfflowers On III- lime plane, ill' die winter puts a flop to them, which renders the plant more valuable. It is propagated by feeds, which ihould be Town in pots filled with light earth, in the autumn, luon after the feeds are ripti thefe pou flouU! be plunged into an old bed oi' tanners b.irk, whole heat is gone, and in mild weather the glaHis ihould be drawn off to admit thu -At; but in hard rains and froft they ma& be kept on, to prated th- feeds from . ii frequently dettroy* than Jiere ...: in die spring the plants will coin.. foould enjoy the free air in mild

her, but mult be prute&cd from the cold. When thec art- large ex- *igh to trLinlphnt, they (lioum IX: each planted into a lparare fmal pot filled with light rarf, and {Jaf cd under the frame til) they linvc uken new root, tJien they would be gradually inured To the open ; During the fummer fealbn the plants Ihould remain abroad in a lhelterel fiuation, but in the winter they rouft be placed in a greenhoulc, for tiny wili not live abroad tn i-jiglaml; they muft not be kept too warm and clofc. in the houfe, for they only want pfoctefion from the froft; therefor in mild weather, they Ihould have free air contantly admitted to them, and they require frequent wateiiora, but they Ihould not have it in too great plenty in winter.

The ieventh fort grows naturally in Tartary, from whence ilii- lctds were lent to the imperial garden at Pcterburgh, and from thence I received them. This plant hath many oval fpcar-fliafed leaves, which are imooth, irifing from ihe root •, between thefe arife the flalk, which grows about a foot high, and is garnifhed below with linooth fpcar-lhaped leaves, from four to five inches long, and one and a half broad in the middle, lcfieini gradually at both ends ; thefehave no foot-ftajks, bat tiieir bale embraces the llalks half ruund ; the upper part of the ilalk is adorned by a fhort Uxjfe Jpikc of' yellow flowers, winch arc almoft as large au thole of the great yellow lbrt before-mentioned, but they are (hotter. This flowera in Majr ontlu feeds ripen in autumn.

All thrfe lons Ihould be lawn in the autumn j for if the feeds are iown in the fpring, they commonly fail, or at ltilt lie a wh'lc year in the ground brfor they vegewte. Tilt plants are biennial (except the fevent:?) Uy perifh foon after the feeds

arc ripe. DIOSCORGA. Plum. Nov. GCJI. 9. tab. 26. Lin. Gen. Plum. 995.

The L g are, /; Lath m.tU and at h iliffirttit flaxU j the xaitfo k-isc a idl-fhefi. •• :im ef cm Itaf, reiKpaUmnti they >uigU fmmitt). T'bi-< ;:Mhim* at, ibej i; tbrK-carna-td gir-am, juppi art treaimd tyfink :: a tr/axgultir

This th feffion of l'jimi il'cd Ilifflicia Hex-andria. The j<lin'£ of ihis cbfs and fection hjive male and tl-nalc flowers tin iliiierent plants, and the male H w luvc fix tLamina, 1 he • v* cortiaib alternij, a u k

D I O

Ixvi tcre'ti. Hart. Cliff. 455. VI jbpaid itavt pliietd dttnmlt, tiXil t Diofcorea fcandens, feliis tamni ITUCIB nKemtrb. Plum. Nov. Gen. ... frittir greviug in kngmti

*) DIOBOOEJIA (tiujalu: • IM cordads, ixv'i, raccmis l'ingi(Timi!). Dhfcoretii with fpitr-fmud buBTi'-fjopcd kaya, afmeeb!' of Jfaunri. Diofcorea (csndcti^, folio i; ncemofo. Houft, M.SS. CSmHiig Dhfirra j'pesc-pcinttd leaf, and fruit grsnemr In bknebt!. j. Diosco»tA(ViUofa) fbl a altemis, oppofitilqt'cjUUL*1;5.vi. Lin. S53. 1463. Disfoortawitbbiari-jbpaid kii'jtsfliuid eitmtait end ejtjpfle, and a fneeib fidk. Diofcomi (iibrotunto acuminato fruthi iinull. MSS. Climbing D10-ariMtnib amat&jbfamtttdUaf, amifnil hi

4. DIOSCOHEA [Tiulliftra) folii* cord.i: vibul-bifera. Flor. Zeyl. 360. Dfofiona •u'itb heart-ftiaptd :<imcele fu.' 'tis. Volubilis nigci, radice albi aui purpurej msxkm tuljerolh efcu- lcnia, OUIL- mcmbrjni; iis estandbus alaw, folio cbr- dato rtenrofo. Sloan, Cat. jam. 46. fht 2'am; nf 2'amnts.

5. DIOSCOREA (Oppujiiifotts) fuliis oppofuis ovaris acu- ti i Laim. Sp. 1483. Disfirtra wijb evut Itaotsgrawig ofp'djit.

6. DtoscoRBA {Digitata) foliis digitatis, Hort. Cliff- 459. Diofcorea with band-jhtped itovis. Nurent Ke- ; (lurt. Mai. 7. p.

The firft lbrt grows naturally in moft of the ijiintfa in die Weft India. I received the feeds of this fair from Jamaica, where the law Dr. l-loufoun found ic growing plentifully; This haili (lender clinibin; (talks, which fix themfelves to any fuupport near them, and rili: to the height of eighteen or twenty f«r, garnifhed with heart-Uiiiped leaves, ending with ucuviv jKjints, having five longitudinal veins, which arife from the foot-ftalks, which diverge toward the fides, hut meet again at the point of the kai'cs. They ftand l... long foot-lts lks, from the bafe of which sruc the branching fpikts ut' flowers, which arc rni.ili, and hnc no beauty; the female flowers air (ucoecodeci by three-cornered oblong capliile-:, having three cells, e^ch containing two con: [reiTcd feeds.

The fecond lbrt differs from the firftin the fhape of their leaves, thefe hiving two round ear 5 at their bafe, but the middle extends 10 an acute point, tike that of an halberc. The butjehej of flowew are longer, and are loofer piaccd than thofe of the former fort.

The third lbrt hath broad, round, heart-ill fped leaves, which end in acute points j thefe have many longitudi- nal veins which arife tiom the foot-!; il verge to the (iic, bur afterward join at the point of ihc leaf i tilt flowers come out on lon^ looie things, Handing on (hor: foot-flatk jnt arc

fucccedcd by three-cornered obloi capfules, with three cells; liaving comprelTfd bor... The fourth forthaih triant; trhftrh trail upon the ground and extend to a yrai length; rhefe frequently put out tnofs (rom the joitiK as they lie upon rlie ground, wiiLTby the plants are multi- plied. The roots of this plant art eaten in many parts of both Indies, where the plants ar* much cut-

llic fifth fan grows naturally in Virginia, and in other parts of North America. This harf .l imooth flalk which climbs on l... pl.int*, and tifes five or fix feet high, ; r... whidi are plat 1: they ace covered widi In.ill uuir5, and have leveral longitudinal veins. The liim-rs come out from the fide of the l! in the ne manner as the other ljrts, but have no beauty. Tiiefe plants are pfcncd in fcmc curioui bo- lirdem for the fake of variety; bu: •• they have no beauty, there are few perfons who will allow tWin a place, and l lally as moft of die lbrts require a good fare them through the and.

The (c pteiti may be propagated by living their brandies imo the ground, which in about throe months will lit out r/fj's, mil may then be taken from [the old plants, and planted LnttfjemniK pots, which Iliou Id be plunged into tin; can-bed in the (rove; during the winter thefe plums (hould have but little water given them; but in fummer, when they arc growing vigorously, they flroud be watered three or four times a week, inl tn warm westlier the gblfcs (hotfkt be opened to admit a Urge ihare of few air. Tixefe planti rarely flower in lingland, but ivhen the feeds are fan from America, (he? mould be immediately in pou, anil plunged inti> a hot-bed, where, if the ietds are Jciv.it early in the fpring, the plant; will come tip the [imc ical'un; bin when they arc (own late, the feeds often remain in the ground (ill the following fpring before they vegetate i thereto- when the plants do not come up the firft feafbn, the pen (hould be ferwntd from the (roll the fill) wint, and put into a nen hot-bed in the fpring,

witich'wiu bring up mi punts," h lite ittos-wtre-giJui. The fourth fon is mutli cultivated by the inhabitants of the illands in America, and is of great ule to them ibr feeding of their negroes-, and the white people make puddings of their roots, when ground to a tort of flour. This pknt is fuppoi to have "em brought from the Eoft to the Weft Indie;, for it has * been dtfeovrredtogrow wild in any pan of America, but in the illand oi' Ceylon, <nd tm the coiflr of M abar, it grows in die woods, and tiicre arc in thiofc places a fir< variety of

This fort, which isdtieRy cultivated in theWeft Indies, has a root as big as a man's leg, of an irregular form, and of a dirty brown colour on the oucfide, bur when cut, arc white and nit-ally within. The ftalks of this plant arc triangular and win^ the leaves are heart-liiapai like thole of Arum. J uf ten or twelve fti-t, when : lliirubs, to which they fatten themlefwa, otherwili: they trail upon rfeegine

This plant is propsgaced by cutting of the re. into pieces, obferving to prefervc an eye or bud to etch, as is praftifed in planting of Potatoes; each a' their being planted will grow, and produce three or four large roots. In America they arc commonly (it or tight months in the ground before the roots an: taken up for ufc. The roots are roaled or boiled, and eaien by the inhabitants, and foinetimw are made into bread.

In fomc curious gardens this plant w preferved for die Ske of litka, but ir is fo tender as nut to lue in Endand, unifs it is placed i « »enn ftove. &i thefe roots art frequently brought frum America, who- ever hath an intimation to prelVrve the- plan?, may cut them in the manrr before defenbed, aad plant each piece ir. a por filled with ftefh earth, and plunged into .hoc-bed of tanners bark, <d rire than tele water until they IW>t, left they fixwlc rot. Whh this management I have had the foouu ten fwt high, hut the roots have not grown to any great fire with me. This plant will not thrive in the open ait m the warm ft time of LIC year, lb mult conftitny TM k c P: in the bifk-ftovc.

DIOSMA. Lin. Gen. Plant. 341. Spines. Com. Rar. Plant. 2, African Spins, vulgo.

The CHARACTER! Titjbaier btb a frfanent tmpnkmiU tititcb ti at into fear acute figmtuli, whitb arepl-u* si iMr left; it barb Jits ehfife fiuh, which fprted vptntt& art « km at i- memftd h naltirea fummSt, md ejht-jwx, Jlttag OH thi rtrmeit, firm wbiitr erifis ••ld ij an vlijidfff figmtr- TlxgT" ••i it fruit tei*psA *f fiw whitb <pra bigilxLvys, mb adfog al."

Th genus of plants is ranged in the fir^ fcftion of Cannon's fish club, intitled Pefindria Monogyma, the flowers having five ftamina i one (lyl).¹

The SPECILG ur^

1. DIOSMA i.OppofstfoUm) folij fubuktis aetuis Gtis. Horr. ClilE 71. Dtifufa t-v.t ante eiel-Jhoptd lamn plated oppsjlit. Spirjca Africana, fotis erucia- tim poritis. Com. R.ir. Pljm. 1. tab. t. Afrim rita with leaves plsad in [inn nf.7 a

2. DIOSMA ((irj'uta) foM'a linearibus Jiirfutii. Hort. Cliff. yi. Eyojmg& with narr* w lary la.LJ. Spir^M Afrinaodorata, folia pilofa. Com. Rar. Plant. int. j. rab. 3. jftoc African Spirax with latv-lance.

3. DiolVA f A folia linearibus acuta glabris, carinatis liibtus btarium punifta-is. Lin.Sp.Plant. tgS. Diijhr. n-;!b j'mmib, narrvta, i;:u:£ k&ois, vibicb art fpotitJ an their unLr fit Spirax Africana odorata, Horitnis luaverubentibiK. Com. Rar. Plant. :. StBtet African Spirax with latv and flowers.

4. DIOSMA (• folia linearibus latii fbbflu Convexi-r, t-aria • imbricata, Lin. Sp. !Unt. lgH. Diefma with iwrrrj>fytar-jkftpti Uava, whitb an am. Spi-

Jjri^ African Spirax with leaves like the Berry-bearing limb.

5. UIOSMA \Ltiitiinlat) 1 folia lanceolata glabris Lin. Sp. 2B7. piefnui frith, Spirax Africana, Saturcj,; tblia brevioribus. Kaii Dendr. 91.

The firft fort rifes to the heighl of three fco the brancfcs are very long and Bender, and ... produced from the ftcm very irregularly; the leaves arc pbeed cruidways, and are pointed; their fire every evencel clofed up to the branches. The (lowers are produced along the branches from betwctn the It^r. and in the evcoiog, wicly the flowers arc expanded, and the leaves arc d fully embracing the ftalks, the whole plant ippe as if covered with fcales of white flowers; and at thofe places continue a long time in flower; they make a fine appearance when the plants are intermixed with other exotics in the open ait.

Thelecond fort I . from long, brown under the fide of Spirax Afric.a odorata, folia pilofa, or fmoct fetnij African Spirira, 1 with July leaves. This fort makes a very handfome (h shrub, growing to the height of five or fix feet; the ftalks are woody, fending out many flentier branches; the leaves come out al- tLtiutclynn every ftdc, which are narrow-pointed and hjiry. The flowers are pro. in fmall clufhers at the end of the fhoots, which are white; thofe are fcc- ceded by (brr) ftrawberrie, having five corners, like tholcof thellarrj^ Anitly each of thofe corners » cell, having one fmooth, flim r, oblong, black feed. thefe feed ••tiffels abound with a relin, whi haffords a grateful fcent, as does : flic the whole plant.

The third lbrt is of humbler growth than either of the former, feldom rifting aliovc 1! no feet high, and IWt-ac!; out into man; branches the leaves 1 . this forcare fmooth, and refrmbclthofcof the Heath, and this pliiit from chence had the name of Erica ALthio. pirn, 8rc. flititu it by Dh Pufher a • the flov lms of this kind are pw wood in Inflrn at [lie end 1 of the branches, like [hofe oi' the fecond I : t, but are firoller, and the bunches are not fa large.

All thefc pl.vnu are pn propagated by cuttings, which may be planted durinp any of [he wmoier mcrachs, in pau jillei with light frefh c.-ith, and plunged into a very moderate hot-bed, whi > they flitwW « (h d d in tnedty nme from the (iin, and frequently refreshed with water, in abotn two months the cuttings will have taken root, when the] flroud be each tran- i,l into a fmall pw, and placed in a ftat < fiti- vj un., and the plants have taken fir in root, when they may be placed among other cxolk plants. 111/ fhcl- icliil fituation: thefe plants may ' mjin abroad un- til the beginning of Ofiob*r <r later, it iht; leafoi comi favour i b i < v fi > r they only require to be (litltertd from ftio that in a djf airy green-hemfe they uray be preferred very fw in winter, and in furnn. er they may be cupoled to die open air with other green-houfe plants.

Thrl'e plants grow naturally at the Caj>e of CIOIXI J lope, Ifom whence ik: fctds were fent to Europe, w litre

where some of the species have been long preferred in the gardens of the curious. There have been some other species in the English gardens than are here enumerated, but these are all that are at present to be found here.

The second sort frequently ripens its seeds in England but if the seeds are not down soon after they are ripe, they rarely grow, or they commonly lie a whole year in the ground.

DIOSPYROS. Lin. Gen. Plant. 1027. Guaiacana. Tourn. Inft. R. H. 600. tab. 371. The Indian Date Plum.

The CHARACTERS are,

It hath hermaphrodite and female flowers on the same plant, and male flowers on separate plants; the hermaphrodite flowers have a large obtuse permanent empakment of one leaf which is divided into four parts, the flower hath one petal which is shaped like a pitcher, and cut at the brim into four segments, which spread open; it hath eight short briefly stamina firmly joined to the empakment, terminated by oblong summits which have no farina. In the center is situated a roundish germen, supporting a single quadrifid style, crowned by an obtuse bifid stigma, the germen afterward becomes a large globular berry with many cells, each including one oblong, compressed, hard seed. The male flowers have a one-leaved empakment, cut into small acute segments the petal is thick and four-cornered, cut into four obtuse segments which turn backward y they have eight short stamina, terminated by long, acute, twin summits, but have no germen.

This genus of plants is ranged in the second section of Linnæus's twenty-third class, intitled Polygamia Dioecia. The plants of this class and section have hermaphrodite and female flowers growing on the same plant, and the male on separate plants.

The SPECIES are,

1. **DIOSPYROS** (*Lotus*) folibrum paginis difcoloribus. Lin. Sp. Plant. 1057. *Diospyros with the surface of the leaves of two colours.* Guaiacana. J. B. 2. 138. The Indian Date Plum.
2. **DIOSPYROS** (*Virginiana*) foliorum paginis concoloribus. Lin. Sp. Plant. 1057. *Diospyros with the surface of the leaves of one colour.* Guaiacana Virginiana Pifhamin di&ta. Boerh. Ind. alt. 2. The Pijhamin or Perfimon, and by some Pitcurno* Plum.

The first sort is supposed to be a native of Africa, and was transplanted from thence into several parts of Italy, and also the fourth of France. The fruit of this tree is by some supposed to be the Lotus, which Ulysses and his companions were enchanted with. This is a tree of a middling growth in the warm parts of Europe, where there are several of them which are upward of thirty feet high but particularly in the botanic garden at Padua there is one very old tree, which has been described by some of the former botanists, under the title of Guaiacum Patavinum. This tree produces plenty of fruit every year, from the seeds of which many plants have been raised. In England there are none of these trees, but what have been raised within a few years past, in the physic garden at Chelsea; for the seeds of which I was greatly obliged to my much honoured friend, his excellency the Chevalier Rathgeb, his imperial majesty's minister at Venice, who has also supplied me with many other curious plants, trees, and fruits, from different parts of the world, where his extensive correspondence has been employed to collect whatever rare plants he could procure, and his generosity in communicating what seeds and plants he can procure to the physic garden at Chelsea, requires this public acknowledgment.

The second sort is a native of America, but particularly in Virginia and Carolina there is great plenty of these trees growing in the woods. The seeds of this sort are frequently brought to England, where the trees are now become pretty common in the nurseries about London. This rises to the height of fourteen or sixteen feet, but generally divides into many irregular trunks near the ground, so that it is very rare to see a handsome tree of this sort. This produces

plenty of fruit in England, but they never come to perfection here. In America the inhabitants prefer the fruit until it be rotten (as is practised by Medlars in England) when they are esteemed a pleasant fruit.

These are both propagated by seeds, which will come up very well in the open ground, but if they are sown upon a moderate hot-bed, the plants will come up much sooner, and make a greater progress, but in this case the seeds should be sown in pots or boxes of earth, and plunged into the hot-bed, because the plants will not bear transplanting till autumn, when the leaves fall off; so that when the plants are up, and have made some progress, they may be inured by degrees to the open air and in June they may be wholly exposed, and may remain abroad until November, when it will be proper to set the pots under a hot-bed frame to protect them from hard frosts, which, while they are very young, may kill the tops of the plants; but they must have as much free air as possible in mild weather. The following spring, before the plants begin to shoot, they should be transplanted into a nursery, in a warm situation, where they may be trained up for two years, and then removed to the places where they are designed to remain. These are both hardy enough to resist the greatest cold of this country, after the plants have acquired strength.

DIPSACUS. Lin. Gen. Plant. 107. Tourn. Inft. R. H. 466. tab. 265. [*Saxifraga*, Gr. i. e. thyrity. It is said to have taken its name by way of contrary, because it receives the dew or rain in the hollow sinus of its leaves that cohere together, by which it drives away the injuries of thirst. It is also called Labrum Veneris, from the position of its leaves, which form a sort of basin, containing a liquor that beautifies the face.] The Teazel; in French, *Chardon à Bonnetier*.

The CHARACTERS are,

It hath many florets collected in one common perianthium, which is permanent; the florets have but one petal, which is tubular, cut into four parts at the top, which are erect. They have four hairy stamina which are as long as the petal, terminated by prostrate summits; the germen is situated below the flower, supporting a slender style, crowned by a single stigma. The germen afterward becomes a column-shaped seed, inclosed in the common conical fruit, which is divided by long prickly partitions.

This genus of plants is ranged in the first section of Linnæus's fourth class, intitled Tetrandria Monogynia, the flower having four stamina and one style.

The SPECIES are,

1. **DIPSACUS** (*Sylvestris*) foliis sessilibus ferratis, ariftris frutibus erectis. Teazel with fawed leaves. *Je't clofe to the stalks, and erect beards to the fruit.* *Dipsacus fylvestris.* Dod. Pemp. 735. Wild Teazel.
2. **DIPSACUS** (*Fullonum*) foliis connatis, ariftris fru&ibus recurvis. Teazel with leaves joined at their base, and the beards of the fruit recurved. *Dipsacus fativus.* Dod. Pemp* 735. Cultivated Teazel.
3. **DIPSACUS** (*Laciniatus*) foliis connatis finuatis. Lin. Sp. Plant. 97. Teazel with jagged leaves joined at their base. *Dipsacus folio laciniato.* C. B. P. 385. Teazel with lacinated leaf.
4. **DIPSACUS** (*Pilosus*) foliis petiolatis appendiculatis. Hort. Upfal. 25. Teazel with foot-stalks having appendices. *Dipsacus fylvestris, capitulo minore, feu. Virga. Pactoris minor.* C. B. P. 385. Wild Teazel with a smaller head, or smaller Shepherd's Rod.

The first of these plants is very common upon dry banks in most parts of England, and is seldom cultivated in gardens, unless for the sake of variety.

The fourth sort grows naturally in many places near London, and is rarely admitted into gardens.

The third sort grows naturally in France, and is kept in botanic gardens for the sake of variety, this differs from the wild Teazel in having the leaves deeply cut and jagged.

But it is the second sort only which is cultivated for use, which is called *Carduus Fullorum*, or *Fullonum*, being of so singular use in raising the knap upon, woollen cloth, for which purpose there are great quantities

D O D

quantities of this plant. cultivated in the wet country, this plant is propagated by sowing the seeds in March, upon a soil that has been well ploughed: about one peck: > this seed, will sow an acre; for the plant will not be so large: it is in great quantity. When the plants are come up, you must hot them in the same manner as for Turneps, cutting down all the leaves, and singling out the plants to about six or eight inches distance; and when the plants advance, and the weeds begin to grow again, you must hoe them a second time, cutting out the plants to a width of four feet, for they should be left at a distance of a foot and a half: and you should be particularly careful to clear them from weeds, especially the first year, for when the plants have reached to us to cover the surface of the ground, the weeds will not be readily grown between them. The second year after sowing, the plants will shoot up in bunches, which will be lit to cut about the beginning of August at which time they should be cut, and set up in bunches, letting them in the sun till they are dry: if not, they will be in rot to dry. The common produce is about an hundred weight of bundles or faves upon an acre which they fall to 3 good method, for the one foils the other; nor can you easily clear them from weeds, as when the second year. The common wild Teazel; but I have cultivated both the kinds more than forty years, and have never found either of them alter, it that there can be no doubt of their being distinct species.

DIRCA, Leather Wood.

The CHARACTERS are,

There is a small tree, which is double-flowered, the fruit is round, turning a red-brown color, and is much used in the country.

This genus of plants is named in the first edition of Linnaeus's eighth class, entitled *Ofandria Monogynia*, the flower having eight (lamina and one style.

We know but one species, viz. *Dirca palupis*.

Dirca (*Palupis*). Amoen. Acad. a. p. *iz. Marji Netherwind*. *Thymetaphoribusaitis* ...

This shrub is, foliis oblongis, viminibus & conice valde reuactibus. Flor. Virg. 153.

This shrub grows naturally in swamps in Virginia, Canada, and other parts of North America. It is the common wild Teazel, but in Europe it rarely is more than half so high; it sends out many articulated branches near the root, furnished with oval leaves, of a pale yellowish colour, and in moist soil the flowers come out from the sides of the branches, two or three together. The stem is of a greenish white colour, and is very early in the spring, just as the time when the leaves begin to grow; the flowers are seldom produced by seeds in our island. This shrub is very difficult to propagate in Europe, as it does not produce seeds; it can only be increased by layers or cuttings, and these are generally two years before they put out roots; for the shrubs grow naturally in very moist places, they are with us very difficult to be raised, unless they are planted in wet ground, but they are seldom injured by cold.

HIT 1 A N Y. the white. Scr DICTAMNUS. HIT 1 T \ N V of Crete. S< ORIOAN-LM.

DOC K. Sec LAPATHUS. I> OJ) AKT 1 A. Lu». Gen-Plant 63!- To III 71. Cor. 47. tab. 478. [This plant was named by fir. Tournefort; but I Monnier Dodart, a member of the Academi; of Sciences at Paris. We have a youngling for this plant.]

The CHARACTERS are, *lie frivier bath a ptruatx w fliwrt/ tf "•*

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which is half round, and the lower part is like a flint, the upper part is round, having a small depth at the middle, and is very hard, and is much used in the country. The flowers are small, and are produced by small roundish seeds. In the center is situated a round green, supported by a small stalk, surrounded by a light orange.

JUGNM. Tbcgn ... M & is' ab Jtm Ji

This genus of plants is ranged in the front; of Irtencii Tidi, titled Dulyanma Angiofermu, the flower having long and two lobed petals, and the seeds being induced in a capsule.

The SPECIES are,

- 1. Doc-HTi (OriemaUi, foliis linearibus integerrimis glabris. L. n. Sp. Plant. 523. Dtdarlia ... row, fineoth, (Mire lisuts. Podaria Orientalis, 1 flo ru puq)uraccn(e. Tourn. Cor. 47. £ f e Dd ... ii p: < i pl: ji: Jclmr.
- 2. Doc-MXTM (Jjmaia) foliis ndicaiibus oblongo-ovatis serratis, caulibus lineariibus iritgerrim f ... (pin ... fatoid lai-ts at tix lltom, ibofi mi ttvjafro nw < Ka end txirt, and fi&aers grswiss; 11: Jpka at the end of the jldlu. Linaria belms folio. C. b. i. 111. Toad Flax-with a Dail) Uaf

The first was discovered by Dr. Tournefort near Mount Ararat in Armenia, from whence he sent the seeds to the royal garden at Paris, where they succeeded, and from thence most of the curious gardens in Europe have been supplied with this plant. This plant having characters which are different from all those of Tournefort's *Illicium*, he constituted this genus, and gave it the title of *Monfieur Dodart*, member of the Royal Academy of Sciences at Paris, and phyEeua u> lstr ROYJJ Hthgnefi the Princefi of Conn.

It hath a perennial root which creeps far under the surface, and sends out many little branches from the parent plant; these have a little compound leaf, and grow a foot and a half high, sending out several side branches, garnished with long, narrow leaves placed opposite to each other, of a deep green colour, the lower part of the leaf is rather flat and broader than that above, but those on the upper part are more entire; and at these joints the flowers come out singly on each side of the stalk, being close to it; these are near an inch high, the bottom is divided into two lips above, the upper lip is hollow like a spoon, the convex side bending upward, and is divided into two parts; the lower lip is divided into three parts, the middle being the narrowest. The flower is of a deep purple colour, and appears in July, and is rarely succeeded by seeds in England. It propagates very fast by its creeping roots, so that when it is once established in a garden, it will multiply fast enough; it loves a light dry soil, and may be transplanted in autumn when the leaves decay, or in the spring before the new shoots arise.

The second sort is a biennial, or at most a triennial plant, which frequently perishes soon after the seeds are ripe. This sends out from the root several oblong leaves, which are near four inches long, narrow at the base, but increase in width upwards, where they are about an inch broad, rounded at the end, and deeply lined on the edges; between these arise the stalks, which are a foot long, and are garnished with leaves of the same form as the lower leaves, but much smaller; the upper leaves are very narrow and entire. The flowers grow in a cluster on the top of the stalks; these are very small and white, but are beset like those of the former sort. This is propagated by seeds, which should be sown in autumn soon after they are ripe, upon a border of light earth, where they are destined to remain. When the plants appear in the following spring, they must be thinned, and kept clear from weeds, which will

D O L

culture they require : the second year they will flower and feed, after which the plants usually decay, when the feeds are down in the spring, the plants never come up the same year.

D O D E C A T H E O N . See MEADIA.

D O G ' S T O O T H . See ERYTHRONIUM.

D O G - W O O D . See CORPUS.

D O L I C H O S , Kidney Bean.

The CHARACTERS are,

The ewpalement is of one leaf, Jbort, and cut into four equal segments. The flower is of the butterfly kind, having a large round vexillutn which is reflexed. The wings are oval, obtufe, and the length of the keel The keel is moon-floaped, comprejfed, and the top ascends; it hath nine stamina joined below, and a Jingle one standing separate, terminated by Jingle fummits, with a linear com prejfed germen, fupporting an afcending flyle, crowned by a bearded fligma. The germen afterward becomes a large oblong pod with two valves, containing comprejfed elliptical feeds.

This genus is diftinguifhed from Phafeolus, by the keel of the flower not being fpiral

This genus of plants is ranged in the third fe&ion of Linnaeus's feventeenth clafs, intituled Diadelphia Decandria, the flower having ten ftamina in two bodies.

The SPECIES are,

1. **D O L I C H O S** (*Lablab*) volubilis, leguminibus ovato-acinaciformibus, feminibus ovatis hilo arcuato versus alteram extremitatem. Prod. Leyd. 368. *Dolichos with a winding flalk, oval bill-Jhaped pods, and oval feeds. Phafeolus iEgyptiacus nigro femine. C. B. P. 341.*
2. **D O L I C H O S** (*Uncinatus*) volubilis, pedunculis multifloris leguminibus cylindricis hirtutis apice unguiculo fubulato hamato, caule hirtuto. Lin. Sp. 1019. *Dolichos with a winding fialk, many flowers on each foot-ftalk, cylindrical hairy pods, wbofe points are crooked and awl-jhaped.*
3. **D O L I C H O S** (*Pruriens*) volubilis, leguminibus racemosis hirtis, valvulis fubcarinatis, pedunculis ternis. Jacq. Amer. 27. *Dolichos with a winding ftalk, hairy pods growing in a racemus, ahnoft boat-Jhaped valves* and each foot-ftalk having three pods.*
4. **D O L I C H O S** (*Urens*) volubilis, leguminibus racemosis hirtis traniVerfim lamellatis, feminibus hilo cin&is. Jacq. Amer. 27. *Dolichos with a winding ftalk, hairy pods in a racemus, wbofe hairs arejtuated in tranfuerfe lamella, commonly called Cow-itch.*

There are many other fpecies of this genus, as there are alfo of Phafeolus \ but as there are few of them cultivated in the Englilh gardens, it would fwell this work to a great bulk, if they were all inferted which have come to our knowledge, as the author has cultivated more than fixty fpecies, befide many varieties. The two firft* forts here mentioned, are cultivated in warm countries for the table, but in England thefe feldom perfedt their feeds; and were they to thrive here as well as in the warm countries, they would be little efteemed, becaufe we have much better forts in our gardens already; for the fcarlet flowering Kidney Bean is preferable to all the other forts for eating, fo deferves our care to cultivate it more than any other.

The third and fourth forts are fometime preferred in botanic gardens, but especially the fourth, wbofe pods are clofely covered with flinging hairs, commonly known by the title of Cow-itch 5 but thefe are too tender to thrive in the open air in this country, fo that whoever is defirous to have the plants, fhould fow their feeds in a hot-bed in March; and when the plants are come up, they fhould be each planted in a feparate pot, and plunged into the hot-bed again, being careful to (hade them till they have taken root -, after which they muft have frefh air every day admitted to them, in proportion to the warmth of the feafon-, and when the plants are too tall to remain in the hot-bed, they fhould be removed into the bark-ftove, where, if they are allowed room to run, they will flower and perfedt their feeds.

D O K ' I A . See SOLIDAGO and OTHONWA.

D O ft.

DORONICUM. Lin. Gen. Plant. 862. Tourn. Lift. R. H. 487. tab. 477. Leopard's Bane.

The CHARACTERS are,

It hath a flower compofed of feveral hermaphrodite florets, which arejtuated in the center, and form the dij, ami of female florets which compofe the rays \ thefe are included in one common empakment, which hath a double ferief of leaves as long as 'the rays. The hermaphrodite florets are funneUjhaped, and cut into five parts at the top \ thefe have five floort hairy ftamina, terminated by cylindrical fummits. In the bottom isjtuated the germen, fupporting aftender flyle, crowned by an indented ftigma; the germen afterward becomes a fingle, oval, comprejfed feed, crowned with hairy down. The female florets are formed like a tongue, which are fspread out and compofe the border \ thefe have a germen, fupporting a flyle, crowned by two reflexed ftigmas, but have no ftamina; the germen becomes a fingle furrowed feed, covered with a hairy down.

This genus of plants is ranged in the fecond feftion of Linnseus's nineteenth clafs, intituled Syngenefia Polygamia fuperflua. The plants of this feftion hav<: female and hermaphrodite flowers, which are both fruitful.

The SPECIES are,

1. **DORONICUM** (*Pardalianches*) foliis cordatis obtufis, denticulatis radicalibus petiolatis, caulinis amplexicaulibus. Lin. Mat. Med. 394. *Leopard's Bane with cbtufe, beart-Jhaped, indented leaves, thofe from the root having foot-ftalks, and thefe above embracing theftalks. Doronicum maximum, foliis caulem amplexiantibus. C. B. P. 184. Greateft Leopard's Bane with leaves embracing theftalks.*
2. **DORONICUM** (*Plantagineum*) foliis ovatis acutis, fubdentatis, ramis alternis. Hort. Cliff. 411. *Leopard's Bane with oval-pointed leaves indented at bottom, and alternate branches. Doronicum plantaginis folio. C. B. P. 184. Leopard's Bane with a Plantain leaf.*
3. **DORONICUM** (*Helveticum*) foliis lanceolatis, denticulatis, fubtus tomentofis, caule unifloro. Prod. Leyd. 160. *Leopards Bane with fpear-jhaped* indented leaves, woolly on their under Jide, and one flower on a ftalk. Doronicum Helveticum incanum. C. B. P. 185. Hoary Helvetian Leopard's Bane.*
4. **DORONICUM** (*yBellidiastrum*) caule nudo fimplicifloro unifloro. Hort. Cliff. 500. *Leopard's Bane with a naked fingle ftalk having one flower. Bellis fylveftris media caule carens. C. B. P. 261. Middle wild Daify bavin* a tall ftalk.*

The firft fort grows naturally in Hungary, and upon the Helvetian mountains, but is frequently preferred in the Englilh gardens. It hath thick fleihy roots, which are divided into many knots or knees, fending out ftrongflefhly fibres, which penetrate deep into the ground; and from thefe>rife in the fpring a clutter of heart-fhaped leaves, which are hairy, and (land upon foot-ftalks; between thefe arife the flower-ftalks, which are channelled and hairy, growing near three feet high, putting out one or two fmaller ftalks from the fide, which grow eredt, and are garnifhed with one or two heart-fhaped leaves, clofely embracing the ftalks with their bafe 5 each ftalk is terminated by one large yellow flower, compofed of about twenty-four rays or female florets, which are about an inch long, plain, and indented in three parts at the top. In the center is jtuated a great number of hermaphrodite florets, which compofe the difk-, thefe are tubulofus, and (lightly cut at the top into five parts. The flowers appear in May, and are fucceeded by feeds which ripen in July; thefe are crowned by a hairy down, which ferves to convey them to a diftance.

This plant multiplies very faft by its fpreading roots, and if the feeds are permitted to fatter, they will produce plants wherever they happen to fall, fo that it becomes a weed where it is once eftablifhed i it lover, a moid foil and a fhady fituation.

The fecond fort hath oval leaves, ending in acute points; thefe are indented on their edges toward their bafe, but their upper parts are entire, the ftalks rife about two feet high \ each is terminated by a large

ycillov/

yellow Rower, like thofi; of the former fort; the stalks of • lis lbrl have two or chrc leaves, which are placed alternately, and [heir b:ii < / fits cluli; to the (b: thec are not (b hairy as the ... of the inner fort*, it ... is about the ianc timt with (har, and the feed: ripen, well in England! This ^ruws naturally in Portugal, Spain, and Italy, but u equally hardy with the firft, and multiplies lit us great plenty; the rjot is perennal.

The third fort hath longer leaves than either of the former, which are covered with a hoary down on their under fide, and ire iniemeil on their edges j the stalks are fingle, and have i lom more than one le-if vpan each; thefe grow a foot and a half hi^h, and arc terminated by a fingle flower on the top, like thiole of the former forts. This grows , naturally on the ! yrcnees and Helvetian mountains. I: delights in a moift fui) and a Dudy Ikuatiun, and propagate} in plenty, eitwh from il-eds or by parting th: roots; it il iwt* and feeds about the fame time -with [he for ncr.

The fourth fort grow:: naturally on the Alps and Pyrenean mountains', this huh a perennii, root, the il-aves nre like of the lefier Daify, but ! nger, and not fo broad. The lower g: i us upon a naked ioot-fhik, which is nt-ir a foot long; the rooti feldom fend out more thin one Ihlk; the rays of the Bower arc white, and \ ery like th: • of [he common Dailj; the difk of the flow*! i* ydlow, which w coi: pofed of hi. naparoline Bowers.

This plant is puct-iv i in botanic catiifns for the lake of variety, but the Bowers make little better appearance than thofe of the common Fiefd Daily, only they (laud upon ninth oiler foot-ftalks. It muft have a duddy tu: ition and a muift foil, otherwife it n-i-i nw thrive, in this country; it is propagated by yirring of the roots, for the ieedo do not ripen well in England. I recei-ed this from Verona, near which pmtic it grows nai.

The roots • the fort have been fomtimes ufed in medicine, fone having commended it, mnexpelier of diepol then reckon it w be a poi&n, and affirm liiai it will defroy wolves and t!^" .

The other forts which have been formerly ranged under v, k • a r.ucd, a n d may b: fou n d under the ... • ASSICA.

DOLi SIFERCJUS plants [of dorfum, the back, and fero, Let. to bear.] fiich plants as arc j f * 5 " - pillary kind, without t>lk, and that bear their feeds on the Iwckfide of their leav^.

DOBSTEN'f A. Plum. Nov. Gen. 59. tab. 8. Lin. Gen Plant. 147. [This plant was fo named by father Ptamier, from Dr. Dwftca. a Grni.m phyfician, •vfw publifhed 1 hiftery of planu in folio.] Con- tray crva,

The CHARACTERS are, It hMb at (MM rJiwUd •vertmlh* rtmixattd iftsuittd a tesadijh it gmun offtTui camenftfo •

This genus of plants is ranged in the firft ice Linnaeus's fourth cbft, bintkd Tcirar.dria Monogvnia, ilie Qi ftamina and one ftj

The SPECIES are, • DoRsnstA (Cw/rfljwro) acaulti, foh'ts pinnatifido-palmatis, ferratis, BoribHJ quadrangles. Lin. Sp.]?G. Xtorl Dcrjrlriia 'jHth . bsfxl.

found leaves, and fevers plant on n quadmm, . pLu... • Do... a arid d Csa Parjnep

Do* icaulif, foluswrdMisMgok- quadrangulu. U B . sp. J7" finer) art-Jhapti, pi"*/

U fencers. Dor- Renia demaria rubra, folio minia lacunato, plicata

que ;rjn5uUri& urul-lati. Houfl. MSS. Collected with a ... slirtpoort root, a leaf left out, and a quaking oak wood plant.

DORSTIKIA [Drainij) acail!: folia pinnatifido-palmatis iuite^errimis, florib Ovjarf Darjltiiti • it's more pinnat, than fimple, many leaves receptacle to the fevers, handled leaves r, wbefi angle art very acute, and an oblong four- (entered pLua

The firft of ilicii.- ptani was difcovered by my late ingenious friend Ur. •William Houltonet, near Old Vera C'nii in New Spain. I he fcond was found by the fame gentleman, O the rocky grounds about CI ... The third kt was found in great plenty in die ilancr or Tobngo, by M. Robert Miller, furgeon. But the roots of all thefe fpecies are indiffercinJy brought over, and ufed in medicine, and fir dyeing.

The firft (on fends out feveral leaves from the root, •which are about ibur inch- long, and as much in breadth; dele «c deeply laci ... obtuft parts, Handing upon fo: ftalks near four inches long; the / are fmooth, and The ... *hich luppotti the placenta fpring from the root, and growt, m-ir B ... inches high, upon which lite flefly j)iactnta is vertically p'jeed; this ii }f Jit pvil form about one inch li ... and three quarters broad. Ujion [he iippe ... of this, the final Bowers are uloiily lhuated, the Hefty part becoming an involutrum to them; t! ... are very fmall, and fearcc confpicyous at 3 diftance, bttnir of an htibaceus colour.

The • cond fort fends ou t frvrcal .uujl sr heart-(ha ped leaves from the root, which have foot-ftalks eight or nine inches in kngh and very llender (« die leaves arc *buut three inches and a half IUIT«, and almost four bnrud at their bale, the two can i ... two or tjirc angles which are acute, and the midtlli- of the leaves are ... ! anil rud in fcutc pois like a halbrt l thcle nfe fmooth and of a lucid green . the root fnlfe ivl idi filflains the recent* is nine : the long, ind iibouc half an inch lijuar . and the upper ll] mice c lofcly lit wi d l r ll c fi [ft.

The third lbrt fends out leaves of different fomts; fomfof the lower IMVCS arc heirt-Jbtped, iavii a few indentures on their edges, and entliri^ ll acute points, but the linger lenvt3 are deeply (as like the fingers on a hand, into fix or feren acute fignatus. Thiefe leaves arc five inches long, Anil fix bmad in the middle; they are of a decj gre-cn, and ; and upon long foot-ftalks. The , lacenta is very thick and flemy, an inch and a half In g, and three quarters broad, having four acute com ... their have a number of ftiiii flowers, placed on their lpper furface like the utliiT ficcics,

Thefe plants arc at prefont very rare in F.ur.ip; , n.or was it known "what the plant was, whoj l roots were imported, «nd had been lun^ ufod ill l medicine in England, until the kite U". Houltoun informed vis; for although father Plumier had difebvend one fpecies of this plant, and given the name of Dorftia to the genus, yet he terms not to have known, dt4t the Contrayva wa. the root of that plant.

It will be difficult :o obnin thie plants, becaufe the feeds are fddo:n to b= foun grow, if they are kept long • out of the ground, fo that Lhe only fure" method to obtain dtctn : - to have the rooti taken up m tlie time when their li ... begin to decay, and pi^cJ jirvcvy.. ... in boxes of earth, which may be brought very late in England, provided they are preserved from fait water, and are not en-cl-wjit-rett with fresh water in their paffage. When the plants arrive, they fhould be transplanted each into a icpararc pot jillcil » ... in frefh earth, and plunged into the bark-ftove, which fhould be kept at a moderate irr heat-, and the pbtoa mull be fr-in-jjt; refrelcd with wMt daring the fumm i ... it in winter, when the leavei arc decayed, it fhould be jgiven to them more lpd only. With this management thefe plauts msy not only be maim

... the bark-ftove, which fhould be kept at a moderate irr heat-, and the pbtoa mull be fr-in-jjt; refrelcd with wMt daring the fumm i ... it in winter, when the leavei arc decayed, it fhould be jgiven to them more lpd only. With this management thefe plauts msy not only be maim

may also be increased by putting their roots in the water, before the plants are set out.
DORYCNIUM. See LoTVi.
IJOUGI
URABA. Dillen.Gen. Lin. Gen. 1'kr,t,714, Alyflun. Tmirn. tntt R. H. i)6. r*b. 104.

The CHARACTERS are,
The flutter &tt o fmr-k&ved empnkmt, which falls off. It hath^fmr petals plait A in form of a craft. It f:x jimr.ina, four ef wHtb an at hug m the m-polmaii, tbt tlhtr tea; 8 vtrr and tncar-jed1



...and a tall green, supporting a peduncle by an oblong pedicel. The flowers afterward become a small globe, which is white, and ...
theft ere ti-
it 1;

...mmntH Jljlr,
fU, Tbc •
the lexer part of;
d c&juqve, addepi::
Feed.

The ^emis of plants is rung'til in the ...
Linouius's fifteenth clssi ...
Culci) :jingand [wo (hort ilamint.
The S:EC its ate,

1. DRABA (Alps) scapo nudo simplici, foliis lanceolatis integerrimis. Fl. Lapp. 256. Draba with a single naked stalk, and very narrow spear-shaped leaves. ...
bain

2. DRABJ (Perna) scapis nudis, folijs lanceolatis (iib indlis. Her: ...
cut leaves.

3. DHABA (Pernia) scapo nudo ^o, foliis cuneiformibus ...
This is the Alyiurt Pjmcuucum, perenne, minium, foliis tri fid is. Tourn. tatt-ijj. Lsafl pirtmml Nhd-

4. DRABA (Alps) caule ramoso, foliis cdrditis dentatis amplicaulibus. Prod. Lapp. 256. Drabs wilb a branching stalk, and spear-shaped leaves. ...
brear the seeds.

5. Da... (Pernia) caule ramoso, foliis ovatis ftf-fibus dentatis. j.in. Sp. Plant. 64\$. Drabs with a brevch^K^ JH, slid oval indented leaves growing ebfte to tit (i.itKBii. AlyOon Alpinum, polygoui iolio incano. Tourn. tatt R. H. 217, Alpire Madvitri with cbmtry AV;'

6. DRABA (Pernia) folijs caulinis numerosis incanis, fliculis oblongis. Fl. Lapp. 256. Draba with many hairy stems on the stalks, flj sbjiqgt peds. Lunarii >nl Tourn. Int 2 ip, Msmiwert edped.

The first sort grows naturally on the Alps, and other mountainous parts of Europe; it is a very low plant, which arises from small heads, and from thence it sends out many short, narrow, and very hairy; from each of these heads come out a naked flower, which is an inch and a half high, terminated by some stalks of yellow flowers, having four oblong petals placed in form of a cross; when they fade they are succeeded by four roundish pods, which are compressed, and include three or four roundish seeds. In March, and the seeds ripen the beginning of June. This plant is easily propagated by parting of the heads; the best time for doing of this is in autumn, because it throws up its stems very early in the spring. It should have a moist soil and a shady situation, where it will thrive and flower annually. It requires no other culture but to keep it clear from weeds. The second sort is an annual plant, which grows usually upon walls and dry banks in many parts of England, it is never cultivated in gardens. This grows in April, and the seeds ripen in May.

Tiii third t>t groMs namrilly on the Alps, an rri'untainou parts of Eurj;:-. This is a low pent- .mt, wficiti fclJom riw niwi than two. ICJCS it J-ai n lhrubby ftalk, which divkjes into many small heads like the first sort. The leaves; iv feme of them are winged, reiving dve (hrt narrow lobes, placed on a stubb, iithers have but three. The flowers come out in eufsters, Cttn? cleic to this Ic^ve;. They are of a bright purple colour, and appr early m tits Ipring. Tins is a perennial plant, which may be propagated by parting of the heads in the fall; ltc ntajuor as the fifth, anJ requires the fame cmtoknt.

The bori li fort grows naturally in ftajy woods in many pans of Europe, and h but li-klom kept in gardens, unlch for the take of varu. It is an innui! plant, riling with an uprigiit branching ftalk about ten inches high, g3mi[hed with hi-: shaped in-tailed leaves, which embrace t! e stalks with their r infc Tiic ftalks arc tennatcd by looc Ipikcs of wliite I. wliiit appear the beginning of May, in June the feeds rip'it, anJ the plants tcin alter tli^ay. If the feeds are permitted to fower, the plant will come up w hiiut trooi.jf. It rault liave a furry ftuitor., 3III) tk'liQbu in a. inoift foil.

The iith fort is in annusJ plant, wbkh grows in ihatly wiykli in the northern parts of Etrroj; J. This is the former fort, but the leaves are larger, rounder, and do not embrace thr (talks; they are alls hatr^i and rlie (lowers are yellow. li 1 the seeds of this are I raiitEdcea loner, the llaup will n. lintain thenil'elvc; if ihq' have alhady TUN stem.

The lixth (on rites with an upright ftalk aluut 3 IVHll hi^h, the lower pun bein; VLV clotly !:imilried by oblong liojry leaves, which art* indcncctd on their edges. The upper jiarr of rht Itij' parts out iwo or clirce (hurt I heds; hfc arc alinoll naked ofTeavc;, as if alfo the upper part of the ftalk. Ttie flowers come out loofdy on [he top of the Ihk, they ate compofed of four inail white petals placed in form of a crofs, which arc fuccceded by<)blong poJs, vjucfa arc twirled, containing three or (our roundUb comprcd feeds. It flows; and the feet! ripen in July. This grows naturally in the north of Englnui and in Wales.

This plant felenn continues more than two years, but if the feeds arc fawn in autumn in a Jh-idy border, the plants will come up in die faring; or where the frdrk arc permitted to fcauer, the pLanu will rife without any trouble.

DRACO ARBOR. SCCPALIM.
DRACO HERBA. [t. e. Dragon's-won.] Tarra- gon, vulgo. See AE»OTAM;M.

DRACOCEPHALUM. Lin. Gen. Plant. 6+8. Dracocrphalon. Tourn. Inf. R. H. 1B1. tab. Sj. [of fjisi'k, a dnigtin, and mfoAs, a head.] i. c. Dragon's-

The CHARACTERS are,
TkefaziT hct!> ajbort jvrmaxrt eatp&lmcnt of mltatf, wbil Is iubukui. It t'ith «M ringex.' petal, zcib a ttibr fix Ui?Elb ef ldt rTpaU;, ... trgt cbhxg inflated tbps. The upper lip ii cblitfe and arched, the uxdt lip is trifa; tbttrine fide ffgmenis are erMI, the middle tvrvs <for... ndntei. Is bathftr Jiamins finmt mr the upper lip • ftw leitvjberter than the ether, and ere > ... -immils. It ... with a four- parted ftalk, supporting a femur pte, fluted with the flanks, and crowned by a tall reflexed ftalk. The grmen afterward bctmet feur s, netefid in tbt.

The gams of plants is ran; and in the first section of Lin... us's fouricent 11 ... iridi Gym- ... the flower • ivingtwolt)iigandiwothoner ... ii 3. and the feeds are v;kcd.

The • ICJCS are,
1. DRACOCEPHALUM (Pterocoma) scobis spicatis folijs lanceolatis serratis. Lin. Sp. 821. American Dragon's- Head with single stems and spiked flowers. Dracocrphalon Americanum. Beryn. Prod. 2. 34. American Dragon's Head.

- i. DRACOCEPHALUM (*Canariense*) floribus spicatis, foliis compoſitis. Lin. Hort. Cliff. 308. *Dragon's-Head* with ſpiked flowers and compound leaves. Moldavia Americana trifolia odore gravi. Tourn. Inſt. 184. *Three-leaved American Balm*, having a ſtrong ſmell, commonly called *Balm of Gilead*.
3. DRACOCEPHALUM (*Moldavica*) floribus verticillatis, bracteis lanceolatis ferraturis capillaceis. Lin. Hort. Cliff. 308. *Dragon's-Head* with flowers growing in whorls, and ſpear-Jhaped bractes. Moldavia betonicense folio, flore cseruleo. Tourn. Inſt. R. H. 184. *Moldavian Balm* with a *Betony leaf* and *blue flower*.
4. DRACOCEPHALUM (*Ocymifolia*) floribus verticillatis, foliis floralibus orbiculatis. Lin. Hort. Cliff. 308. *Dragon's-Head* with flowers growing in whorls, and the upper leaves round. Moldavia orientalis minima ocymifolio, flore purpurafcente. Tourn. Cor. 11. *Leffer Eaſtern Moldavian Balm* with a *Willow leaf* and a *bluiſh flower*.
- j. DRACOCEPHALUM (*Canescens*) floribus verticillatis, bracteis oblongis, ferraturis ſpinofis, foliis tomentofis. Hort. Upfal. 166. *Dragon's-Head* with flowers growing in whorls, and the little leaves under the flowers ſawed, ending in ſpines, and woolly haves. Moldavia orientalis betonica? folio, flore magno violaceo. Tourn. Cor. 11. *Eaſtern Moldavian Balm* with a *Betony leaf*, and a *large blue flower*.
6. DRACOCEPHALUM (*Nutans*) floribus verticillatis, bracteis oblongis ovatis integerrimis, corollis majufculis nutantibus. Hort. Upfal. 167. *Dragon's-Head* with flowers growing in whorls, the ſmall leaves under the flowers are oblong entire*, and hanging flowers much larger than the empalement. Moldavia betonicense folio, floribus minoribus caeruleis pendulis. Amman. Ruth. 44. *Moldavian Balm* with a *Betony leaf*, and ſmaller blue pendulous flowers.
7. DRACOCEPHALUM (*Thymiflorum*) floribus verticillatis, bracteis oblongis integerrimis, corollis vix calyce majoribus. Hort. Upfal. 167. *Dragon's-Head* with flowers growing in whorls, the ſmall leaves are oblong, entire, and the flowers equal with the empalement.* Moldavia betonice folio, floribus minimis pallide cseruleis. Amman. Ruth. 46. *Moldavian Balm* with a *Betony leaf*, and very ſmall blue flowers.
8. DRACOCEPHALUM (*P citatum*) floribus verticillatis, bracteis orbiculatis ferratociliatis. Hort. Upfal. 166. *Dragon's-Head* with flowers growing in whorls, oval entire* and very narrow ſpear-Jhaped leaves. Moldavia orientalis, falicis folio, flore parvo cseruleo. Tourn. Cor. 11. *Eaſtern Moldavian Balm* with a *Willow leaf*, and a *ſmall blue flower*.
9. DRACOCEPHALUM (*Grandiflorum*) floribus verticillatis foliis ovatis incifo-crenatis, bracteis lanceolatis integerrimis. Lin. Sp. Plant. 595. *Dragon's-Head* with flowers growing in whorls, oval leaves which are cut and crenated, and ſpear-Jhaped bractes* which are entire.

The firſt fort is a native of North America, where it grows in the woods, and by the ſides of rivers. This riſes with an upright ſtalk, which is four-cornered, near three feet high, garniſhed with ſpear-Jhaped leaves about three inches long, and half an inch broad, fitting cloſe to the ſtalk *, they are ſawed on their edges, and are placed oppoſite at each joint, ſometimes there are three leaves {landing round at the ſame place. The flowers are purple and grow in ſpikes on the top of the ſtalks, ſo make a pretty variety among other hardy plants, eſpecially in the plants are ſtrong and vigorous. This is a perennial plant, which will live in the open air, but requires a moiſt foil, or (hould be duly watered in dry weather, otherwiſe the leaves will ſhrink, and the flowers will make little appearance. This may be allowed a place in the hady borders of a garden, ſince it will not ramble, or take up much room. It flowers in July, and continues until the middle or end of Auguſt, and may be propagated by parting of the roots in autumn.

The ſecond fort is a native of the Canary Iſlands, and hath been long an inhabitant in the gardens \ it is uſually called by the gardeners *Balm of Gilead*, from

the ſtrong refinous ſcent which the leaves emit a* being rubbed This is a perennial plant, which, riſes with ſeveral ſquare ſtalks to the height of three feet or more, becoming ligneous at their lower parts, and are garniſhed with compound leaves at each joint, which are placed oppoſite *, theſe have three or five lobes, which are oblong, pointed, and ſawed on their edges. The flowers come out in ſhort thick ſpikes* on the top of the ſtalks *, they are of a pale blue colour, and are ſucceeded by feeds, which ripen very well in England. This plant continues producing flowers moſt part of ſummer; it is uſually kept in green-houſes *, but in mild winters the plants will live abroad, if they are planted in warm borders *, and thoſe plants which are kept in pots, will thrive much better when they are sheltered under a frame, than if placed in a green-houſe, where the plants are apt to draw up weak, for they ſhould have as much free air as poſſible in mild weather, and only require to be ſheltered from ſevere froſt. This may be propagated by feeds, which, if ſown in autumn, will more certainly grow, than thoſe which are ſown in the ſpring; but if theſe are ſown in pots, they muſt be ſheltered under a frame in the winter, and if the plants do not come up the ſame autumn, they will ariſe in the ſpring; but if the feeds are ſown in the full ground, it (hould be in a warm border; and in hard froſt they (hould be ſheltered, otherwiſe the young plants will be deſtroyed. The plants may alſo be propagated by cuttings; which, if planted in a ſtady border any time in ſummer, will very ſoon take root, and furniſh plenty of rooted plants.

The third fort is a native of Moldavia; this has been long preſerved in curious gardens. It is an annual plant, which riſes with branching ſtalks a foot and a half high, garniſhed with oblong leaves, which are placed oppoſite, and are deeply ſawed on their edges. The flowers come out in whorls round the ſtalks at every joint; theſe are blue, and appear in July, continuing to the middle of Auguſt, and the feeds ripen in September. The plants have a ſtrong balſamic odour, which is to ſome perſons very agreeable: the feeds ſhould be ſown in ſmall patches in the ſpring; upon the borders where they are to remain, and when the plants come up, they ſhould be thinned where they grow too near together, and kept clear fr m weeds, which is the only culture they require. Of this there is a variety with white flowers, which is pretty common in the gardens; this only differs from the other in the colour of the flowers, but yet theſe conſtantly retain their difference from feeds.

The fourth fort was diſcovered by Dr. Tournefort in the Archipelago, who ſent the feeds to the royal garden at Paris, which have ſince been communicated to many curious gardens in Europe; this riſes with upright ſtalks about a foot high, which ſeldom put out branches *, theſe are garniſhed with long narrow leaves, which are entire, placed oppoſite at each joint, where the flowers come out in whorls, almoſt the whole length of the ſtalks, theſe are of a pale blue, and appear about the ſame time as the former; this fort has very ſmall flowers, which make no great appearance, therefore is ſeldom cultivated, except in botanic gardens for the ſake of variety.

The fifth fort was diſcovered by Dr. Tournefort in the Levant, this hath hoary ſquare ſtalks, which riſe a foot and a half high, putting out two or three ſide branches, garniſhed with hoary leaves near two inches long, and half an inch broad, a little indented on their edges; they are placed oppoſite at the joints, juſt under the whorls of flowers, which fit cloſe to the ſtalk; theſe are larger than thoſe of the other ſpecies, and are of a fine blue colour, which between the hoary leaves of the plant, make a pretty appearance. It flowers and feeds about the ſame time as the former forts; this is generally treated as an annual plant, like the former forts, but the roots of this will live two years if they are in a dry foil. There is a variety of this with white flowers, the feeds of which generally produce the ſame coloured flowers.

The first fort grows, naturally in Sil... the birds... the imperial g... Jen it icterl- burgh, anil the Uw Dr. Amman, who was pi of bu'inv, lent F= d... roots coic out many fqiii- ihilks, which grow about nine inches lon... e bottgni eanulhed with oval lpear-fiuyl«J lea?» nbom two inches long, and one inch and n quarter bxo>... flanking opposit up...:1 pretty long foot- and an crtr wed on their edges. The upper part of the [talks hiiec GnaUer leaves, which fc clofe at the joints; from whence coaie out rlic flowers in whack; they jrc of a deep blue L)juir, ;md lung downward -, these appear at...:4 fitme time with the former, and the seeds ripen in aururan.

The feventh fort grows alia in Siberia, the feeds of dtu were !• •: ine with the former. It hath Square ftjks, whidi llii- a toot and .t hull bight the lower lores are very like thole of Betony, and fond, upon very long foot-iblki. The upper leaves arc foul], and I-...-ir IUlks. The flowers come out in whorh a: e--ery joint •, thefe are very innall, ami of a pate purple or blue colotr, To make little appearance, but it is preferved in tome gardens for the Cike of variety.

The eighth lbrt grows naturally in the Levant, from whence Dr. Toumefert fen: the feeds to the royl garden at Paris. This is an annual plane, which riles with a figure (talk about a foot high, fending out two /mall (kte blanches tram the lower part. The leaves arc fpcfif-fliaped, and creoaed on their filgcs -, they arc placed opjwlke, and ttand on foot-lbdks. The flowers are finall, of a purplifti colour, audcome out in whorls round th... living two munJih fmiU leaves (called bractea:; invncdiaily under them, which arc fiwtd on their edges, each lirrature ending with a long hair. This fort flowers and feeds at the fame time as the former.

All thife forts are propagated by feeds, which may be Sown either in the ipring or autumn, in the places where die plants ire to remain, and will require no other treat-...ndt than the third fan.

DRACONTIUM. Lin. Gen. Plant. 916. Dracun- lorum. Tourn. lnt. K. H. 160. tab. 70. Dngiin i in French* SaftHmrt.

The C... * are, •Jix (crjttilk) eu the upptr pits of fraSificetiTg art difpefid in 11 tbt r mmsir. Tie jlttoars have xe tnpalmtat, but bat/fvt aval esxtzvepetals, whicJi art tqual; thiy bam fntn Jjirttoj Jcprtfid jlamixa tkt Ingib ef tie petals, ttruatsted ty tMssg, ftur-nmtrtd, fctetw fummiü, vbüb Jieni trcl-...tly ivrjt at oval germai, juppvrllng a taper fylt, aetesti by a tbr<-<ariteri ftigma. The girmtu afirtmatu tvitHtl a remuHJb btrrj, sutUfiagfrstrei fiedi; .heft art all icxbfJ in a Utrgt fufy fptiba (srjkeib) tippling with-tut 'valve.

The genusot'planes a ranged in the fcventh faSion of Linn^us* twentieth cbft, intitled Gynandria Poljami... The lafs and ledion contains the plinn which have male and female flowers joined in the fame fjiiike, and the male flowers have feveral ftamina.

- The SPECIES arc, 1. DaACuimrM [Ptrmfwa] foliis pertufis, caukfew- dente. Lin. Sp. Plant. 968. Dragm with bava having bifa, sad a dimbtii flalk. Arum liederaceum, am. iblits perfor.itij. Plum. Amer. 40. tab. 56. Climbing Amm an... • <xud leasts. 1. DKACOKI... • brevifiimo, petiolo radit... iio,lacero, ...irtinsL.Ucbiispinnatifidis. Hart. Cliff. 43+. Dragm with a vay Jsbrl finik, the fiat-jla& au, dnihf fumlSesvis JM&d a, vibüb-trmiwte in mry ptiui. Arum • polyphlum, cnule fcabra puicaotc Pu. Ba; ... May leasf A i b 3. DRACONTIUM... pedunculis peridipae acutum. Flac. Zool. 516. Dragm and cruce pambillam, whicj fat fulli hax from... Arum Zeylanicum hupum, lignum folia. F. tr. B.-r. 75. Frdiy leas of Ceylon walk are... ,v-trir.-<d kastt.

DRACONTIUM (Camphorosma) DRACONTIUM. LINN. ACUM. Aci... 160. Dragm with four-floped leaves. The fHI lbrt grows natural!, in most of the islands in the VVdt-Indics. This hat It (lender join Ltd I... which nut out roots at every joint, that ratten w the crntntkiof trees, wallr, or any luppott which is nor tlic^, anil thereby rile to the lieighr. of twenty- five or thirty feet. The leaves are placed nitern.itiety, (landing upon langtoot-ltalks-, they are four or ilve inches loig, and two and a half bro.ii!. Living fev- vcral ublon^ holes in each, which on the iirtt view appears as it eaten by iiiiVcis, but they are natural to the bares. The flowers are produced ar the top oi the ta&k, which always Swells IQ a larger fi-ze in that pan than in any other; tiirfc are covered with an oblong lpaiba (or hood) of a whitifb green colour, which opens longitudinally on one iwic, ;i:ci! flies the piilil, which is dofirly covered with (lowers, uf i pole yellow, inclining to white. When this plant begins to flower, it luldom advances urthcr in hciohr, l< that thefc feldom are more than feven ur eight feet high, but the leaves are much forger on thele, than thole of the plants which ramble much farther.

This plant is cafily propagated by cuttings, -which, if planted in pots filled with poor fandy earth, and plunged into a hat-bed, will loot] put out roots, if they lkid none before ; but there arc few of tin... which have not roots: the piatus arc tender, ... will not live in the open air in England, therefore the potsftoukl be placed near the null of du b >! lioule, againft which the planes will climb, and ratio their roots into the wall, and thereby luppott tie Aalks. They lliould bive but ILJie water given them in die winter, but in v.jrm weather ir muü be given chem threoor fo-... times a week, and in the... llimmr the free lir mould be admicici! to theno in plenty. The plants have no jiaritilLdjr fealun of floivcring, for they ibmciimtrs flower in aummn, and at other times in the ipring, but they do not ripen their feeds in England.

The fecond lbrt grows naturally in feveral « • the islands of America. I received roocof this from Barbu- da. TiisliDth a lai^e knobbed irrefrogal root, covered with a rugged brown (kin. The (talk i... about a foot high, is naked to the top, where it is gamiihed with a tut of leaves, which are diviJed into many parts. The llalk is fmuoth, of a purple colour, but is full of (harp protuberances oi different colour:, which llline like die body of a ferpent. The fpadii: (or ficdk) of the flower rifes HnmedLucly from the root, and is felJom more than three inches hiah, having in oblong fwelling hood at the top, v... opens lengthways, lhcwing the Shan, thick, pointed pnllil within, upon which the flowers ore clofely ranged.

This fort 's tender, So requires a warm Hove to pre- ferve it in England. The root* muft be planted in poti filled with light kitclwn-gwrcki? earth, and plunged into the tan-bed in the ftovt, where they fhould contttntly remain j in i!i- winter iliey muft IK watered vta •... but in warm weather, when the plants are in vigour, they muft be often'refreshed, but it lhiuH not be pvtm them i... great quantities i with this management the planu will flower, but their roots do not incicle here.

The third for :... naturally in the... indofCey- h>n, and i: feveral parts of India; this hath jit ob- long ihii-k root, full oi... from which arife feveral leaves, ihaped lite tholi ot i... the common Arum, but their foot-itajfes are covered with rough protubiran- ces. Tiee (talk which fupports t... is fhort, >nd in witi the like pi... and at the top a hood, or fpatha, U... four inches long, as thick as a man's linger, which opens longitudinally, and e) :pofe> thi- [?ftul, which is fa with /lowers. This it a...;der pi-iiu, and requires die fame treat:-... as the former furt.

The fourth fort hath roots like the common MIQII Arum, from which come out feveral ipost-shaped leaves, flanding each upon a feparate foot-ftalk, arting im- mediately

iteiy from die root, as ihofir of liic common A, ruoi. This liaih not yet iiowerrd in England, Ib [c.in give no further account of it. This growl naturally in Siberia, Ib requires • (bady Btuotca, and will bear the greateit cold of thh couniry.

Thhfc plants arc preserved in the gawdciu of the curious in England and Hollor-rt, mure for tlw like of variety than far beauty; for except the filli ibrt, there is not any of theni which niske mueh appearance; that indeed may be liifleted to have a place ^gaiull ilie wall of [he Hove, ovr which it will Spread, and cover die nakcdr.cl of (he Will; and the leaves reuiniina all (he fen, which arc fi) remarkably perforate J, m.'ke a fins ranee.

AQ the other fors of Dragon are sender plants, fa will not live in this country, ualcfj they are preferred in the warmft ftovs; At lever., merigM lores grow naturally in the woaA", in Jamiics, and other hot parts of America; dc climbing forts twift thieni-feives round tir trunks of trecci, iot which they fiillen their roots, whicli are limi u> with I on their joi-i-, ant! rife to the height of thirty or forty feet. Thtle climbing forts ..T c^fily promulgated by cuttings, wliith, being viry fucculnr, may bt biought over to England in a box oi dry earth, if they are packed up tepanm.-, Ib ai not u ugurc i which is used by the itioilture, which is nut to flow aut.tt ilic part where they are cut off which may occasion a fermentation, and thereby rat the cuttings. When the cuttings arrive, itthey ihouU U- y-Led in small pots till they have light fresh earth, IUU plurtged into a hot-bed of tanniers bark, being vary careful noi IO let them have loomuch moilhire until they liave taken root, left i< rot theni: when they have taken root, they muft be frequently rcfrethed with water; ;. and when they are grown pretty large, thty ftiould k piaced in the birk-bed in tlie tlouc, whetc they mi., near feme Itrong ulanu, to which they may fctkn. themfclve*: othenvile they will not thiuvc i for though they will il-nd forth NMB W theu

fallen to the mortar of the (love, v. LARinf the, wail, yet they will not thrive near ib well as agwnft a llrong phur, which wiU tSbrd dwin nottrifbmenE.

The otiiir fors are propagaced by offseii from their roots; thefe may be procured from the countries of ditir growth, and fhould be planted in lub* of earth, about a month before they are put on board the Ihip to tranfport them; theft tubs (hould be placed in a Jhady liuiauon until they have taken root. In their paflage greiii cote fhould be had to keep them from lair water, is alfo not to Ice them have too mucl water given them; fur If they have a little water tin ce or twice a wvdc at moll, while they are in a hot climate, and when they are conw into a cooler climate, once in a tbrinighi.tlus will be furrkicnr for them; and it fhould be done fparingly, left it rot them i for if the tops of tl_ plants fhould decay for want of water in their psflage, if the roots are not rutietl, they will fain ret over with oovx care.

When the ptams arrive, they (liould bi trmfphnred into pots filled with light fresh canh, aid plunged i<to a hot-bed of tanners bafk, and gcwly watered until diey (laws oken good rwit, ; after which time tlwy will require to be fvequently rrrrciheti with water [but as thier IU-ni art very luccoknr, in*, muft not have too much moillure. Tiirfe plants fhould be confintlv kq i io the Itouc, where, in liet wia-ther, they Oiould liave Irellt air admitted to them; but in winter they muft be kept very w>m, otherwife they cannot be prierictl in this country.

Th'cfe plants will rife to the height or' three, four, or five feet, and will * &

amongst other tender exotic plants in the >tc. RACUNCULUS PRATENSIS. See ACHILLEA.

DRAGON. See DHACOBTL.

DROSEB I. See Sals, i Sun-dew.

W* h'ave iwo (three fpec-.-s oi this plant, vrtiich grow naturally upon hogs in many parts of England,

and there are three or four other fens, which are natives of warmer countries; but as these cannot be cultivated in gardens, unless where there are hogs, it would be needless to describe them.

The common round-leaved fen is used in medicine; it is gathered by the herb-dalls who supply the markets.

DRYAS, Cinquefoil Ascent.

There are two species of this genus, which grow naturally in Scotland and Ireland, upon mountainous rocks, where the soil is wet; one of them hath five petals to the flower, and woigt leaves, the other hath eight petals to the flower, and simple leaves, but as nci/-r of the plants make much appearance, they are rarely preserved except in some botanic gardens for variety.

DULCAMA. A. See SOLENUM.

DUNG S i re & pair die d

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arc fat and uooi, • • L that of uorn, cover, bogg, &c.

And as the renr' - - - - - pair die d

trstry to t< - - - - - pair die d

of oxen, cows, and t - - - - - pair die d

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land; - - - - - pair die d

There arc t^o peculiar properties in dungs, the one is to produce a i certain (infible heat, capable of producing lorae ijml

deceit which, which properties are li'dom found but in tise dung at : - - - - - pair die d

while it is - - - - - pair die d

newly nuuli-, and a little moil-, the other property of dung ij, to finen the earth and mi

litute fru:- - - - - pair die d

The dung nf hor - - - - - pair die d

gin'.. - - - - - pair die d

pSici the ofike which is jjerfonrici!

ties of the fprirc, at Alperagus, Cucumbers, RadDies, falla: - - - - - pair die d

Hot dung is the best improvement for cold jeJune i^: - - - - - pair die d

an? quantity; but yet horff ihinf being used alone, or when it k too m< - - - - - pair die d

is frequently prejudicial to some pkBQi and if ii be spread thin over • • Js in the (Ujimer time, itUofvcr] hink frrvcr, be caufe the < - - - - - pair die d

showing out ii die virtue ami goodnef3 of it, makes it hie b; - - - - - pair die d

icr than thiiich or dry ltrsw; and though too inudi - - - - - pair die d

it can fovently be ufijl in n kitchen-garden for Cabbagr, Cauliflowers, and all other pjtna iliat gtov there, and require abundance of nourifliment; yet tny it U - - - - - pair die d

a fault to lay too much of it on corn-lands, bee auk- it products abumJance of fraw.

In very cold moift Und, I have frequen!; - - - - - pair die d

fung burk-i - - - - - pair die d

[JIC, and always abci • - - - - - pair die d

and that the crops have fucceeded better than v,here the pi - - - - - pair die d

and dung being of a very hot r - - - - - pair die d

In Flanders and other places, they houfe their flieep at nights in places fpreac'd with clean fand, laid about 6ve or fix inches thick, which, being laid on frelh every night, is cleared out once a week j this mixture of fand and dung makes an excellent dreffing for ftrong land, for the dung and urine of the flieep is a very rich manure, bears a confiderable price, and is an excellent manure for all ftiff cold land : and Mr. Quinteney is of opinion, that it is the greateft promoter of fruitfulness in all forts of ground.

Others recommend hogs dung as the fatteft and moft beneficial of all forts of dungs; and fay, that one load of it will go as far as two loads of other dung, fnd that it is the bed of all dungs for fruit-trees, efpecially for Pear and Apple-trees in alight foil, and a very rich dung for grafs. I have often ufed this dung to fruit-trees when it was well rotted, and have found it the moft beneficial to them of any manure. The dung of pigeons, hens, and geefe, are great improvers of meadow or corn land, the firft of thefe being the beft fuperficial improvement that can be laid on meadow or corn land: but before it is ufed, it ought to have lain abroad out of the dove-houle ibme time, that the air may have a little fweetened it, and mollified the fiery heat that is in thofe dungs.

Efpecially it is good for cold, wet, clayey lands; but it ought to be dried before it be ftrewed, becaufe it is naturally apt to clod in wet-, and it fhould be mixed with earth or fand to keep it from clinging together, that it may be itrewed thin, being naturally very hot and ftrong.

Some recommend the dung of pigeons, and alfo of other fowls, as the beft manure for Afpargus, Strawberries, or any forts of flowers; but this fhould be rotted and well mixed with the earth, before it is ufed to flowers.

Monfieur Gentil approves of pigeons dung, as being good for fuch trees whofe leaves are apt to turn yellow, if they grow in free foils that are rather cold than hot, provided the heat of it has been abated by lying two or three years in the dunghill •, but this fhould be applied in autumn, and in fmall quantities.

This being fprecd about an inch thick at the foot of a tree, whofe leaves are yellow, and being left there till March, he recommends as very ufeful in cold and moift foils.

The dung of poultry being hot and full of falts, tends much to facilitate vegetation, and is abundantly quicker in its operation than the dung of animals which feed on herbs.

Sir Hugh Flat fays, one load of grain will enrich ground more than ten loads of common dung •, which if it be true, it is rational to fuppofe, that if fimple grain, by only infufion in the mixture of compofts, has a very good effect, it will be more powerful when it has paffed through the bodies of animals.

Human dung is a great improver of all cold four lands, and efpecially if it be mixed with other earths or dungs to give it a fermentation.

But there is not any fort of manure equal to the cleaning of London ftreets, for all ftubborn clayey foils; the parts of which will be better feparated, and in a much lefs time, with this manure, than with any other compoft whatever •, and where it can be obtained, is extremely well worth procuring, either for corn, grafs, or garden land.

D U R A N T I A. Lin. Gen. Plant. 704. Caftorea. Plum. Nov. Gen. 30. tab. 17.

The CHARACTERS are,

<The flower bath a permanent ctnpalement of one leaf, which is ereB, and cut intc five acute fegments at the tcp, and fits upon the germen-, the flower is of the ringent hind, with one petal, hewing a long tube, which opens at the top in two lifts; the upper lip is oval, ereB, and concave; the under is divided into four equal fegments, which are round. It hath four Jhort ftamina, ftiuuated in the bottom of the tube, the two middle being a little farther than the other, terminated by precfirate fummits 5 tbe germen which is fituated under the flower, fupports a long

flenderjiyle, crowned by a beaded fligma. The germen aj terward becomes a globular berry, terminated by three acut points, having one cell inclofmg four angular feeds.

This genus of plants is ranged in the fecond fection of Linnicus's fourteenth clafs, intituled Didynamia Angiofpermia, the flower having two long and two fhorter ftamina, and the feeds being included in a capfule.

The title which was firft given by father Plumier to this genus, was Caftorea, in memory of Caftor Durant, a phyfician of Rome, who publifhed a hiftory of plants in Italian, which was printed at Rome in 1585. Dr. Linnaeus has now altered the title of the genus, and inftead of the chriftian name, he has given it the furname of the fame perfon.

The SPECIES are,

1. **DURANTIA** (*Plumeiri*) fpinofa. Lin. Sp. Plant. 637. *Prickly Durantia.* Caftorea repens fpinofa. Plum. Nov. Gen. 30. *Creeping prickly Caftorea.*
2. **DURANTIA** (*Racemofa*) inermis. Lin. Sp. Plant. 6gy. *Duraitia without thorns.* Caftorea racemofa flore caeruleo, fru&u croceo. Plum. Nov. Gen. 30. *Branching Caftorea with a blue flower and Saffron-coloured fruit.*
3. **DURANTIA** (*Erecta*) caule erecto fpinofa, foliis ovatis integerrimis, floribus racemofis. *Durantia with an upright prickly ftalk, oval entire leaves, and flowers growing in long bunches.* Jafminum folio integro, obtufo, floie caeruleo racemofa, fructu flavo. Sloan. Cat. Jam. 169. *Jasmine with entire obtufe leaves, blue flowers growing in bunches, and a yellow fruit.*

The firft fort hath many trailing branches, which arc armed with hooked thorns at every joint, and arc garnifhed with oblong leaves, which are placed without order, and are (lightly fawed on their edges -, the flowers come out from the fide of the ftalks in pretty long bunches, like thofe of the common Currant •, they are of a pale bluiſh colour, and fucceeded by brown berries not unlike the fruit of the Hawthorn j thefe have one cell, and inclofe four angular feeds.

The fecond fort hath a branching woody ftalk, which rifes feven or eight feet high; the branches are garnifhed with oval fpear-flaped leaves three inches long, and one and a half broad in the middle; they are fawed on their edges, of a lucid green colour, and ftand oppofite. The flowers are produced in long bunches at the end of the branches •, thefe are bhie, and fucceeded by pretty large, round, yellow berries, which contain four angular feeds.

The third fort rifes with a ftrong woody ftem to the height of ten or twelve feet, covered with a white bark, dividing into many branches, which are armed with (harp thorns on their fide •, thefe are garnifhed with oval ftiff leaves one inch long, and three quarters broad. The flowers come out in long bunches from the end of the branches, which are blue, and are fucceeded by fmall, round, yellow berries, which contain four angular feeds. I received this from the late Dr. Houftoun, who found it growing in Jamaica.

The plants are natives of warm countries, fo they require a ftove to preferve them in England; they are propagated by feeds, which fhould be fown in fmall pots, and plunged into a hot-bed of tanners bark; and when the plants are fit to remove, they muft be planted each into a feparate fmall pot filled with light earth, and plunged into the hot-bed again, obferving to fhade them till they have taken new root, then they muft be treated in the fame manner as other plants from the fame country.

The fecond fort may be propagated by cuttings, which may be planted in any of the lummer months 5 but thefe fhould be plunged into a moderate hot-bed, and fhaded from the fun till they have taken root, then they may be treated in the lame manner as the feeding plant;: This fort is not fo tender as the other two, fo may be placed in the open air in lummer -, and if they are kept in a moderate temperature of warmth in the winter, they will thrive better than in great heat. I kept fome of the plants of this fort three winters, in a dry warm ghfs-cafe without fire;

ind they have succeeded pretty well; but the winter 1762 proving severe, caused their leaves to fall, but since they have put out again very well.

DWARF-TREES. These were formerly in much greater request than they are at present; for though they have many advantages to recommend them, yet the disadvantages attending them greatly over-balance; and since the introducing of espaliers into the English gardens, Dwarf-trees have been in little esteem for the following reasons:

1stly, The figure of a Dwarf-tree is very often so much studied, that, in order to render the foliage beautiful, little care is taken to procure fruit, which is the principal design in planting these trees.

2^dly, The branches being spread horizontally near the surface of the ground, render it very difficult to dig or clean the ground under them.

3^dly, Their taking up too much room in a garden (especially when they are grown to a considerable size) so that nothing can be sown or planted between them.

4thly, These trees spreading their branches near the ground, continually shade the surface of the earth; so that neither the sun nor air can pass freely round their roots and stems, to dissipate noxious vapours; whereby the circumambient air will be continually replete with crude rancid vapours, which, being drawn in by the fruit and leaves, will render its juices crude and unwholesome, as well as ill tasted.

It is also very difficult to get to the middle of these Dwarf-trees in the summer, when their leaves and fruit are on the branches, without beating off some of the fruit, and breaking the young shoots; whereas, the trees on an espalier can at all times be come at on each side, to tie up the new shoots, or to displace all vigorous ones, which, if left on, would rob the trees of their nourishment.

Add to this, the fruit-buds of all sorts of Peaches and Apples, and most sorts of Plumbs and Cherries, are first produced at the end of the former year's (shoot, which must be shortened in order to keep the Dwarfs to their proper figure, so that the fruit-buds are cut off, and a greater number of branches are obtained, than can be permitted to stand; so that all those sorts of fruit-trees, whose branches require to be trained at their full length, are very improper to train up as Dwarfs; and the Peaches and Nectarines which will bear amputation, are too tender to be trained so in this country.

These evils being entirely remedied by training the trees to an espalier, hath justly gained them the preference; however, if any one has a mind to have Dwarf-trees, notwithstanding what has been said, I shall lay down a few rules for their management.

If you design to have Dwarf Pear-trees, you should bud or graft them on Quince stocks; but as many sorts of Pears will not thrive if they are immediately budded or grafted on Quince stocks, so some of those sorts which will take freely, should be first budded on the Quince stocks; and when these have shot, the shoots intended to cultivate, should be budded into

chefs; for free stocks are apt to make them (shoot) vigorously, as not to be kept within bounds. These grafts or buds should be put in about four or six inches above the surface of the ground, that the heads of the trees may not be advanced too high; and when the bud or graft has put out four shoots, you should flop the end of the shoots, to force out lateral branches.

Two years after budding, these trees will be fit to transplant where they are to remain; for though many people chuse to plant trees of a greater age, yet they seldom succeed so well as young ones. The distance these trees should be planted is twenty-five or thirty feet asunder, for less will not do if the trees thrive well. The ground between them may be cultivated for kitchen-garden herbs while the trees are young, but you should not sow or plant too near their roots.

In order to train your trees regularly, you should drive stakes into the ground round the tree, to which the branches should be fattened down with liff in a horizontal position, for if they are suffered to grow perpendicularly while young, they cannot be afterwards reduced without great violence to any tolerable figure. The necessary directions to be afterwards followed are, not to suffer any branches to cross each other; and always in shortening any shoots be sure to leave the uppermost eye outwards, whereby the hollows in the middle of the tree will be better preferred; and be careful to rub off all perpendicular shoots in the middle of the trees, as soon as they are produced. The other necessary rules you will find under the article of PRUNING.

The sorts of Pears which do best in Dwarfs, are all summer and autumn fruits; for winter Pears are not worth planting in Dwarfs, they seldom bearing well, nor are ever well tasted, and commonly are very stony, because they are commonly grafted on Quince stocks.

Apples are also planted in Dwarfs, most of which are now budded or grafted on Paradise stocks; but as these are for the most part of a short duration, they are not profitable, and are fit only for small gardens as a matter of curiosity, producing fruit sooner, and in greater plenty, than when they are upon Crab or Apple stocks.

The distance these trees should be planted, if on Paradise stocks, should be six or eight feet, and upon Dutch stocks eighteen or twenty; but if on Crab stocks, twenty-five or thirty feet asunder each way. The management of these being the same with Pears, I need not repeat it.

Some persons also plant Apricots and Plumbs for Dwarfs, but these seldom succeed well, as being of a tender constitution; and those which will produce fruit on Dwarfs, are much more likely to do so when trained on an espalier, where they can be much better managed; and therefore I judge it much the better method, as being more certain, and the trees will make a better appearance.

E.

E A R

EARTH is the principal matter whereof our globe confists; the charaſter of which, according to Dr. Boerhaave, is, that it is a foſſil body, neither diſſoluble by fire, water, nor air; that it is infipid and tranſparent -, more fuſible than ſtone; ſtill friable, and containing uſually a {hare of fatneſs. There is no ſuch thing as a ſtrictly ſimple earth. Mr. Boyle ſays, that it doth not appear, that nature, any more than art, affords an elementary earth; at leaſt, ſome which appear of the ſimpleſt ſorts are found, upon examination, to have qualities not aſcribed to pure earth.

Of ſuch earths ſome are ſimple and immutable, as chalk, pumice, and rotten ſtone; others compound and fatty; of which kind are all boles, red, white, and brown; fullers earth, and divers kinds of medicinal earths, as the Cretica, Hungarica, Lemnian earth, and others.

Which earth are all reſolvable into oil, a little acid fait, &c. and a calx, which is the baſis, or the earth properly ſo called.

Sand is by naturaliſts generally ranked as a ſpecies of earth, though not very properly; in that ſand, ſtrictly ſpeaking, are a fort of cryſtals, or little tranſparent pebbles, and are calcinable *, and, by the addition of a fixed alkaline fait, fuſible and convertible into glaſs.

The fat earth is rendered fertile by the means of ſand, and becomes fit to feed and nourish vegetables, &c. for pure earth is liable to coaleſce into a hard coherent maſs, as in clay -, and earth thus embodied, and as it were glued together, would be very unfit for the nourishment of plants.

But if hard ſand, i. e. cryſtals, which are indiffoluble in water, and ſtill retain the ſame figure, be intermixed with ſuch earth, they will keep the pores of the earth open, and the earth itſelf looſe and incompaſt, and by that means give room for the juices to move, aſcend, &c. and for plants to be nourished thereby.

Thus a vegetable, being planted either in the ſand alone, or in the fat glebe and earth alone, receives no growth or increment, but is either ſtarved or ſufocated; but mix the two, and the maſs becomes fertile.

In effect, by means of ſand the earthy is rendered, in ſome meaſure, organical; pores and interfaces being hereby maintained or preſerved, ſomething analogous to veſſels is effected, by which the juices of the earth maybe conveyed, prepared, digeſted, circulated, and at length excerned and thrown off in the roots of plants.

The earth is made up of two parts; the firſt the containing part, i. e. the body, bed, or couch :^ the ſecond the part contained, and thoſe are the nitrous or fulphureous particles, or prolific falts. The firſt is a lifeleſs inanimate maſs, and is only the receptacle of the other; for the earth, conſidered ſimply, and abſtracted from the before-mentioned nitrous and prolific falts, is a lifeleſs, dead, and inanimate maſs; but by the co-operation of water, fun, and air, is put into motion, and promotes the work of vegetation: but if it were ſtript of thoſe prolific falts and ſpirituous particles, would produce no manner of plant, herb, &c. that ſhould be planted or ſown in it-

E A R

Theſe nitrous particles, or prolific ſalts, are of various and different qualities; and according as the earth is more or leſs ſtored with all or ſome of them, it is more or leſs productive; and according as it abounds with ſome of them more than others, differing from one another in contexture, it conſtitutes the different ſpecies or kinds of ſoils adapted to the propagation of different plants, the pores of whoſe roots are formed to receive, and whoſe nature is to attraſt, thoſe ſalts that are congenial to them.

Some diſtinguiſh earths into three claſſes, ſand, loam, and clay, as thoſe upon one or other of which all others do in ſome reſpects depend.

Gravel, and all the open ſoils, till the loam is come at, are of the ſandy kind.

Theſe binding earths from the loam downwards, till the ſtiffneſs of chalk may be come at, may be reckoned of the clay kind.

All theſe ſorts of earth have a little tendency to vegetation, and have their ſalts proper for it, but in a different proportion -, as a peck of clay may probably have double the quantity of ſalts in it that a peck of loam has, and a peck of loam may have fix times the quantity of ſalts that a peck of land has.

Loam. Some call the ſuperficial earth that we meet with in England by this name, without having regard to what proportion of ſand and clay it contains: others again call that earth loam, that inclines more to clay than ſand. Some by loam mean that fort of earth that equally partakes of ſand and clay, being a medium between ſand and clay, which they call mother earth; but the true definition of loam is, that fort of earth which is fat and flippery, not of ſo cloſe a texture as clay, nor too looſe and ſandy, but of a middle nature between them, and is eaſily diſſolved by froſt, and gentle or eaſy to be wrought. This is one of the beſt ſoils for moſt eſculent^o plants and roots.

This mother earth, they ſay, may be in colour either black or yellow, and of which of theſe colours ſoever it be, plants of moſt ſorts will grow in it.

Sand and clay likewiſe produce certain plants, which are natural to each of them, and conſequently will thrive better in them than in any other ſoil.

But ſand is apt to precipitate thoſe plants that are ſet in it, earlier than clay, and will cauſe them to germinate near a month ſooner than thoſe that grow in clay, and that for this reaſon, becauſe the ſalts which are in ſand, are liable to be put in motion by the leaſt approach of the warmth of the fun; but as ſand is quick in the operation, the ſalts are ſoon exhaled and ſpent.

Clay. The pores of clay are more cloſely compared together, and do not ſo eaſily give out thoſe ſalts that are contained in it; nor can the fibres of every tender plant make their way through it in queſt of their proper nutriment.

But if the parts of the clay be opened, by digging and breaking it into finall particles, and thoſe parts be kept open by a mixture of ſome ſharp ſand, or ſome other body of the like quality, the effects of its vigour will plainly appear.

Some diſtinguiſh the ſeveral temperaments of the earth either into a light, ſandy, or looſe contexture,, or into thoſe of a ſtiff clayey, or cloſe one, either *oi* which

which have their reproductive good **qualific**, and all of them, when they are in their extremes, require art to render them useful and beneficial in the production and growth of plants.

A light, sandy, or loose earth, requires a particular ligature, and should have a compote of a heavier nature, and those that are heavy, clayey, and cloudy, should have a compote of 3 more fiery sprightly nature, that will infuse into them a more heavy, lumpy, indigested clod, which would otherwise very much obstruct the production of vegetation.

A gaode should be of 1 Hickith cole, fat, pliant, oreafy to be digged-, it should be neither cold nor light it ought to have no ill smell or taste, and it should be of the Unit quality three or four feet deep for trees, which, if they have not that depth, will languish and decay after they have been planted fix years. But this depth is not required for fruit-trees, which will thrive very well if they have two feet and a half of good earth, and generally produce the most fruitful crops.

In order to know whether the earth has any quality or talk-, they direct to by a handful of it: 10 fook in water for seven or eight hours, and afterwards to strain it, and taste and smell it, by which the taste or smell will be perceived.

EARWIG

These are very troublesome (bmc vermin in a garden, especially where Cnematia are preferred; for to prevent them, they will entirely destroy them, by eating off the sweet part at the bottom of the leaves. To prevent which, small peopls have been erected, which have a basin of earth in each suppofter, which is contained kept filled with water. Set the article CAHNA-NOX.

Others holding the hollow claws of crabs and toblter upon (licks in divers parts of the garden, into which these vermin get, and by which they will destroy them; which will be of great service to you in your wall fruit, for these are great destroyers of ill loft fruits.

ESL-1. NUS. Lin. Gen. N. B. rbi Jovis. Tourn. Lilt. R. H. Ub. 419. Ebony.

The CHAACHTEHS are, The impdmtRt of the fewer is of mtt kaf, whitt h <E- ended into five main segments at the tip of the butterfly kind, the venation is oblong, and reflexed, the wings are equal in length with the venation, they are broad and pointed at the tip, the hind is shorter than the fore, it hath ten flau-, iw > W, ftauixg t<Z<fe MUC, urwi>MtAhMUfu<>wl:- ham hfiMtd an eihxg g*ma>, fm^H; rtkCied ly tfinfkfiW"- r& gem* nfu ^wgod.

This a w^ch

initiated between the flowers on the (pike. <ow<f duu v- raorol^ *^ \$ & SK? DeouKlrk, the flo<n* 1* <ng <" ft: r nita in 1- bodies.

We know but one Sirens of this geni>*.J L b. S j> Plant. 764. Ebony. "wo* oides, drcrica, frutel" • • • npb. Breyn. Prod. 2. Si

This plant grows naturally in Crete, and in some of the islands of the Archipelago; it rises with a stalk three or four feet high, which puts out its little bran

joint, which is composed of five narrow & £ * > & lobe, which join at their Utks to the fist- The fingers of * hand, briocheTa™ trmV.nwrf by thick fpkw of large purple flowers, which are of the butterfly or Pea-woon kind; the flowers are from two to three inches long, * a fl wnnaxie, cftpdally when the

are strong, and have many spikes of flowers on them. It flowers in June and July, and in very warm seasons will flourish perfect these seeds in England.

This is propagated by seeds, which should be sown in the autumn, for those which are sown in the spring often fail; they must be sown in rows, and placed under a frame in the winter, where they may be protected from frost. In the spring the plants will rotte up, which should be kept clear from weeds, and refreshed now and then with water. When these have acquired strength enough to be removed, they should be each planted in a separate small pot filled with light earth, and plunged into a moderate hot bed just to promote their taking new root; then they should be gradually turned to bear the open air, until they should be removed the latter end of May, placing them in a sheltered situation, until they may remain till autumn, when they may be removed into the open air. If the plants will not come up through the winter, nor should they be too liberally watered; if they draw up weak, they have found them self dead when placed in airy filafs-tali: « fire in winter, when they will have more fun and are than in a green-house. During the winter they must be sparingly watered, but the Aimmer tnt-v will require to be often refreshed. The other main Yemeni is the fame as for other of the hardier exotic plants, among which it will make a fine variety.

lot live in the open air through the winter, nor should they be too liberally watered; if they draw up weak, they have found them self dead when placed in airy filafs-tali: « fire in winter, when they will have more fun and are than in a green-house. During the winter they must be sparingly watered, but the Aimmer tnt-v will require to be often refreshed. The other main Yemeni is the fame as for other of the hardier exotic plants, among which it will make a fine variety.

EBULUS. Set SAMBUCCUM. ECHINATE SF:EDS [of echinus, 1. a leaf-hog.] such h leeds of pimi xi are prickly and rough.

ECHINOMELOCACTUS, SecC*cr ECHINOPHORA I R A. Lin. Gen. Plant. 1. i. Tourn. Lilt. ii. II. 6j6. [lb. ii. of 22. 5. a hedge-hog, and 66. 6. in 66. Prickly Parsonage.]

The CHARACTERS are, It hath an umbellated flower, the general umbel is composed of many smaller, the intermediate being the primary, the secundaries of the general umbel ends in acute thorns, stalks of the rays are bechinated, of one leaf, cut into six equal parts, with acute points, the perianthium is divided into five parts, anAfts M liegcrmitt] the general umbel is firm; ibi fitpsxri h; - for unequal petals U'-bich spread apin; itef havt cut into five flamma, utraque Sil ij reu/idijh fummi U-UXdtr let Dili an eilung gtrmen wtbin 1 rffjimid kt/atgU ftigmai. Two fadi, wi^ are included in the hard capsule.

This genus of plants is ranged in the second division of JNnei's 15th class, intitled Pentundria Digynia, the flower having five ihuntna ami

The SPECIES are, j. ECHINOPHORA (Spiaafi) Moiiis fubuhro-fplnofis inrimis. Lin. Sp. Plant. V4. Pririly-bloftJ Porf ay, with anal-floped prickly leaves which are entire. Echinospora maritima Linnol. Tourn. Inr. 666. Prickly maritime Parfey.

2. ECHINOPHORA (Trenfala) foliella incifu incrimibu; Liu. Sp. Plant. 344. Prickly-headed Parsonage, with foaii Utivts art tut, if; p. iiiiaca: folio- l'ourn. I j-p u-ll n Cixe: i

These plants grow naturally on the borders of the Meiiitrafii-3ji fcj; they are preferred in the gardens of botany for the sake of variety; they have both perennial roots, which creep in the ground, the first with branches ins talks, Rowmgfiw: or fa incoa high, which are ramified with most thick leaves, the terminal in two Jor thrtclh Jrpr; • • • they are placed by pairs urjo&ti: the flowers grow in an umbel, fitting upon a naked foot-stalk, which arises from the side of the stalk; they are white, and under the umbrella (ituatwi in iiiivoluctum, composed of several leaves, which resemble in many respects the flower of the Pea-woon. It Bowen in JL The second sort rises near a foot and a half high; from the primary (talk arc fern out two fide branches

at tvtry join:, which are placed opcode; the lower partbgarniied with leave:, which arc finely dividttl like thofc of the Carrot;: the flowers grow in fmall umbels at the extremity or (lie branches, having a fhort prickly mvotucrum. This flowers in July, but doth not ripen Iceds in England.

Thefe plants arc propagated by their creeping roots in England, a; they do not produce feeds here : the beft time lo trjuilplaat them is the beginning of March, a little before they (hoot, 'lift- roots fhould be planted in a gravelly or (andy fuil, and in a warm fituation, or othtrwife they fhould be covered in the winter to prevent the frull from deftroiyitg them.

LCHINOPS. Lin. Gen. Plant. 829. Echinopus. Tourn. Int. R. H. tab. 463. Globe Thiftle.

The CHARACTERS are, *Is biijb a pcernanott prittntbiim, tahieb is olhitg, angular, and imbricated\ibe fivwtr batb wit fuuntl-jbapel petal, whieb it divided at tbt tap ime fist parii, *sabkb jpxt&d epen aniarafiacd. It both fije jbvrt buiry flamina, terminated by cylindricalfwntls. In tht lctiasnf tbt tik it fixtxsmm elileng gemtn, fitppming afiodsr fiylt tht lengtb sf tbt tube, craumtd iy tu> til/hug deprijjfd fligniu tcbieb turn back l tbt *mtr.in eftctasjJ biccmts aa alien* aval /etinartmxA st the befr, but cl* tuft and hairy at tbt tap.*

This genus of plants is ranged in the. (irft fe&ioa of Linnaius's feventcenth ctafs, inritldt Syngc-nefiu Poly gamin TEquati. This fection incluiii.: chok* plants which have only hermaphrodite fruitful florets.

The SPECIES are,

1. EcitiKors (*SpbtrtKtpbalts*) opituiii globofis puhefcentibu!. Lin. Sp. i'hr *itJrtk-hukr bemli end baity leirvn. !-chinosus wiper. J. B. 3. p. 69. GrrtttrGtvforbiftU.*

1. ECHIXOPS (*Kiln*) capitulo globofo, foliis supra glabra. Lin. Sp. Plant 1314. *GhkTbijiU vaibegbbiti'dr beao& and tit xpptrfidt af tbt Uavti fmetb, Echinopus minor. J. B. 3. 72. Smaltr Clebr Tbijiile.*

2. ECHISOPS (*StrwefKs*) cil)!uli> laj'cicubris calydmis, ljtteralibus fteritibus, foliis l *... m. Sp. Planr. 1315. Qkhe Tbifite n-ib imdiid heeds, wbufjidd empakmtnt art barrn, and -... Echinosui minor annua, migno tip'ir. Tourn. lull. 463. Smsiltr amudul Gi with a large brad.*

4. *... imors (Gc/frta) r. : ... i.o, foliis fpinofli, omnibus pntiatifidis villufis, radice reptant. Glsbe TbifiUtiiib snr hied m cacbft>li, prickfy kirvet, which art ail *ccinr-panttd and 'jmilly, mid a irttfittg roet, Echinopus Grscus, ti-iiuiliimi- divifus & Luiupnuius, capite minori ca;ruleo, Toom. Cor. j+. Greek Qhbe "tbifiU tts&c/e tuna art divided iitta sarrvw fegnehU and art vxoUy, "v:tb a/maier blue bind.*

The firft is the common Globe Thi (lie, which has !)tn long cultivated in fome gardens for the fake of *BY* l this grows naturally in leak and Spain; it hath a perennial root, from which arile many ftalks that row m tie height of four or five feet; titefp are garniied with long jagged leaves, which arc divided into many fegmenrs almctt to the midrib, th.

ending in ftones, they are of a rkr green on their upper fide, but oooly on their under •, the flflowers arc riwl m RjbnUr licads, firicral of thdi: grow upo: l the common hath blue Bowers, but tltre is a variety of a with white. It Sowers in July, and the feeds ripen i in Auguft.

This plant is ooly propagated by feeds, which, if jermijted lo leaner, the plants will come up in plenty, a few of them may be tramplamed to the -laces where they arc defigned to rvmmn to flower l they require no other culture but to keep them clean from wefrj: the fecofsd year itic> will Jioww and jiraduec feeds, und the rooo will continue two or three years after; but if the feeds leaner, the l ann will jcomt trou blefome weed (; to present which, the heads' should be cut off as foon as the ftedi ire ripe.

The fecond lbrt grows in the touth of France and in Italy i this huh a perennial creeping root, which froni up fverai (bong IValkj that rile rwy feet high,

gamiUjed with leaves, which are cue into many flu icgmeits to the iniJrtb, which arc lit will) pi *chica*, and arc white on their under fide : the l talks brani: our toward tlor tujj; each of thelc !:.. *chica* is terminated by a globular llead of lflower^, *vihWii* arc final: er than thofc of tltc firrt, and of a deeper blue . there is itllb ll vmiifry of this with whi *chica*. Thi Bowca abottt the *tkrr.c imL* its ili: *chica*, and l is j parted in the lime woy. Tide will L *chica* grow in almoff any *chica* or *chica*-ion.

The third fort grows naturally in Sjain and *l'ot*. *chica*: iliisii an annual plant, which rices with a thif white ftalk two feet high, jjiroiflicd with diw *chica* leaves, ending in nimy points which have fi *chica*, their upper iide is green, and cover-j wirfi brown hairs, th--ir *chica* undi • *chica* white and woolly, the ftalk is terminated by one ^ppic head of piilc hluc Hou- *chica*. These appear in July, and if the fciiba prova a *chica* and dry, the feeds will ripen m autumn, but in wet cold year they rarely ripen.

Theft focis lboiii *chica* upon a border of light ait] *chica* the plants ere HI i-cmaiii; and thry require no othti *chica* agcn*enr, but : *chica* them where tley arc [00 dofe.

The fourth fun grows naturally in Greece, from whence Dr. Toimcfort leir. the feeds 10 tltir royiil l'ard'n at Paris: this hath a perennial creeping ro <;, by which it multiplies fall enough; the ital: *chica* rife about a foot high, an *chica* are clofely garniied with leaves which are morter and much finer divided than either of the former *chica* : i thefe fun- hairy, and armed on every tide with fharp thorns; the ftalks are terminatedcubv one r *chica* l'ale-l'ed globular head of flowers, whkh ID lofnc ais blue, »nri *chica* others white. They appear tht latter *chica* and in June, id in wirtn ! *chica* m e i *chica* well in Eng. irtd. This ii *chica* easily propajm^eJ by L? creeping roos, or i'rotn feeds •, it im-es a dr- foil and a warm (iruntion.

ECHINI 3. *Let.* is ihepriefciyheaUorcovrr. f the lced t,r top of any plant, fo called from its l-kticles to a licdchog.

ECHINUM L. l. Gen. Plant. 157. Tourn. Int. R. 11. i *chica*. Gr. a viper, becaufe the rtrp *chica* of this plant resembles the head of a viper. It is called Herba Viperaea; becaufe the ancients believed that this j:i *chica* killed vipers.] Viper's Buglioli -, in French, *t r i*.

The CHARACTERS are, *The j wrbalbapi fipititils. It bulb cue petei 'j- itb a Jba-i ; e* mil bread in a fize parts, ... lbt rtofo upper kin* knga tbsn ibe btix, which are matt and rtiextd. It buds for ane btx, which are mhtatttd fa eblmj, ... fivwtt ... chica with one fender flyt, crowned by an cbtoft bifidfiigmai tbcgratr. ... chica become fo many ... chica in the rough impolument.*

This genus of plants K ran; and in the firft fection of Linnieus's fifth difi, intitiled PolCan *chica* Monogynia, the flower having rive ftaminn and one fj *chica*.

The Srsetts are,

1. Fen. *chica* (implici l'edn, foliis lanceolatis, floribus fpiricatis lateralibus, ftaminibus: corroib • *chica*. Viper's Buglioli with a large white part, having rough four-finged leaves, and flowers in fpikuprou. *chica* from the fide, with the ftamina reading tbt pttit. Lthium vulgsrc C. B. P. 1 *chica* *chica* Buxiofi.

1. LCHII'H (*Vulgart*) caule [implici crcco, foil, caulinis biicobbtis hifpidis, turlLbui fpiricatis lateralibus *chica* iunbut coral V *chica*. Viper's Buglioli with a *chica* •rtiJJtalk, b *JliKETri* trowing in jhevi *chica* on the fide, and ftamina lutgtv l%M Ibepaat. Lycopfu Anglica. Lcb. *chica* *chica*.

3. Echinos (*UsSam*) carol li* v i x cily com rxcedi • *chica*, margine villnlis. Hon *chica*. Viper's Buglioli, nb*fi ptlals jt&rtt extetj fbf empn! *chica*, having hairy berdr: . Echtnum majus fie alpcruj, *chica* C. B. P. 455. Grtai r«(fi Viptr's Bught wilb t ml *chica* flowers.

E C H

4.*Ecmu>i {Luftiaicsim} coroilii ihinin longionbus
 Lin. Sj>. 200. Vipri>i i
 linger then ski Ji timing. Ecbinnt aciipHOimo folio,
 i-uQtanicum.Toum. Bm*EdXipa>i Btgb/s-wiia a

5. EcHiupit (Gfftiom) calycibus iruftefcentibus
 tibus, cauk procumbent. Lin. Hon. Uplil. 3:.
 if, ami a trailing JLH, hxlhum Creticum lati-
 foium rubrum. C. K. P. 254. Bruid-lavet ! iper'i
 Suglo/s of C«4«, laving a red JU

6. Ecu
 •aliulo-vmicolii, ftaminibis corolli tongioribus.
 ttasa, andfiaama longer tbu: in Cre-
 :i angu Hi folium mbruin. C. H
 ..! Fipn's Hit ndfimer.

7. Ecu
 Airkanom Jruu nil. 2.
 p. 107. Sbruly r'l Bsghtj beting hairy

The first fort grow* naturally in Germany ami Auf-
 iria, from whence I received the seeds. In his find our
 i-ummon Viper's Buglofs, * second, have
 been confounded by molt of the writers on bonny,
 who have tuppofed thiry were the fame plaut wherns
 they are very di.
 and much browier than th ^onJ;
 die pfetes of flowers arc much longer, I
 mina at the flowers are in (his cqulj in If n'ili with
 ihc p'tal] whereas thcfc of tk fecond IU
 (tuicii beyond the petal, which h aft eflinia! dif-
 fbwice.

grow? nowi-ally Uxin chalky l'nds
 : ut paru of England: this iu
 l-yeopii* Anelicu, and lias bun generally tali
 ttic cunaw i diium.

The rfrud Gwt Wows natural l
 in Italy, and thc ilk of Jtri ith an
 lit; thc Bowen in n Qior
 fpikes on ttic liiie of tl ihull,
 eppearbowc the enipakmems; luim.
 palemena of the (towers are M ioio

The fourth ton erewj naturally in Portugal and
 lower leaves of d
 luiigt and iwo inches brwl in the middle, gradually
 leflening u> butli ends; thec 3re covered with lct
 h»in- The iUl. »ft« high j Ae flowers
 are in fiort l[iik« coming from the fidt ot ihc ftitks ;
 !«ls of theib arc longer ; dins.

The fifth Can grows natuta ; this hath
 trailing hai •hid) grow about a foot long,
 and l «ra] fide br d with
 liairj* fpear-flisped leave! abol
 three qomtrsor' an in
 ftalte en come uut O:l llender
 long foot-ftalles, which come from the wmg's of the
 leaves; they arc large,
 which turm 10 a 6nc blue when they arc
 ftmni l e from rich other on the ipikc. It
 it an itinuil plant, which flowers i» July ar.d -
 in autumn.

The sixth (an haiti branching Iblks which
 foot and a half l
 thty a« covered with Hinging h
 bng, aad nut mere th m halt" an inth
 broad; thefc arc]>reuv much wined, ami arc lwtj
 Tlic flowers grow in laafe l'plkci from the
 the j
 are ot" a rediiiiii purple col- ;:rge a*

These are moft of them biennial plants, except the fifth
 and fixth forts, which are annual, and are the moft
 beautiful of all the kinds: the feeds of thefe
 are de

E E G

figrted to rrvviint and t'ic pknts require no other
 eultute but to kip them ch in iroin weeds, and
 thc icctii where tl
 •• dofc. I« Julj
 flower, and then ; and ripen in five or fix wtek* after.
 The s
 ••ill the fecond (iunmei a
 feed, a!kr •; each they
 ilciigiit in a rul and will grow iifion
 the top,i of old buildings, where, when once
 (hey l have established themfelves, they will thro |fa.lj
 feeds, and thereb maintain a fuccellion of plants
 without any tare, and on thcfc plaoim tiwy appear
 very b

The venth fort grows naturally at [he Cape a* •
 I from wicnLc u-
 the plants are rui
 nj>. gardens. This r
 or three feet high, tl and will grow iifion
 branch, garnifhed with oval leaves placed
 flu dofc Mtl liatry, and
 of a light green colour. The flowers are produced
 fingly betwcc. lie kaveiat ihc end of the bran
 they are of .l purple colour, and in lhape much like
 thole of the fifth fort. In y and
 June, but the feeds Jo not riptn in England.

It is propaacped by feeds, when they cm lx ubrained,
 whiiti. should be low in year filled with lct
 card) ijuii after they ire received. I hele may be
 expolcil to the open iiriilLthe beginning of Ocubtj
 when thc pots ihould be ^liccd under .l li-ime^
 to guard them from iro\\ bvit in mill "WMthc-
 flould bt: opeiwil to have the free air, to prevent the
 feeds from vegetating .ll the wnerii jji^it i tut it
 the }f
 itrius will be
 weak and full of juice, I very Uabk to HM
 damps; therefor u is much better if the p me da
 me come Up till iOW
 time of their apw
 by TMi. When the phaa are tit to I
 fiGiid be each planted into a final) pot
 light earth, ind placed •

putting out new roots; then they Ihould b: gm-
 inured to brur the open air, and [he Utter end of
 M>y be placed abroad in a uieiltred Gruation, wlitc
 tiicy may remain [ill the beginning of Odoberi
 at which time they mull be removed into an airy glsfe-
 cale, where they nay enjoy tli- fun and have free
 air in mild wratner. During the v
 thefe
 plants mull be Iparingly watred ;
 !:i:rulcnt, ft> mucli moifttue • ll caufe them to
 rot. In the funtner they (houkl be let abt .^i in a
 [hcltwfii ntuation, and the feme man
 other plans from the fame coimry.

E A Q_UINQU EFOLIA. Sec T m i

EDGINGS. The beftand moft durable y: ••
 : i a garden is Boiti whiti, if well planted,
 3 lightly managed, will continue in beam.

yeau: thc belt frafun I
 the autumn, or very ;
 plant it law,
 it will be very fubjcdt to mil
 be taken ttuppl;
 this ptirpolc jll tht iwari Dm
 Threfc edgings are on!
 borders next walks, and l i
 (go) to pluiit the
 K* of fruit-bordi.

• earth trf the borders from walfing d
 into i

It was alfo the practice formerly to plant
 Hyti, 1 Lavender, Rue, ix. But as Uielc wry foon
 grow woody, fo that they cannot be kept
 paid l, whereby the edgings are rendered ino
 they are now feldom ufed for this purpofe.
 Some pcopli make edgings of Daibes, Threit, Cath-
 fly, and other flowering plan

E H R

quite to be transplanted... out off CMF... (a that there, is not any plant which so completely answers the tkfign... Læ preferred LO iU

EFFLORESCENCE, [JU. the blowing out of a flower.

To E U I. IIMIN A X E, Lttr. to bud or fpring out. EH RETJA. I'rew. ub. 14.

The CHARACTERS arc, Tin I... whict ii qiuJrifid, ... lilt & hured... art tifertid in t<H d'ffiatu cf ibt anpaimoi, and ore lmtiiuutii by tilling pejbate fwmitt. At ibt hum ii ji:t<aud urmwiij)gzrmii ftipf&:ixg 1: ly * finals fūgnā\ the ftnunt affii. OK cli-titfc cvalfriol, with a-punSorc at the top, inttofi% tost ollufi mt.

This genus of plants is ranged in the firll lection of Linnseus's tounh clafi, intituled Tctnnilria Munogyma, in the Bower having Four ftamina and one style.

- The SPEC::: are, i. E.HBETIA {finifilia} rolia ablongo-ovitU integcrrimis ulita. AITUEH. Acid. 5.]. 395. fi<... v, iitsirt, f&otk UavfitandJKD-trsgn... I. f.:... ovaris iniegcntriii Uevibis, lincibus fulcoribndis, uiycibu; giabils. Lin. Sp. ... t&tvtyfbwtrjgrrm&Kg ifnuetb empoi&KKts. Bourreria frnittiibus SUCLIII<... iiner.

The firft fort were frnt me from lainiii; i;4, wliicli lucccnlnl in die Chclitj its have grown to the height 10" ci... iirong woody flems, arid *ju<d their flowers, b-it have land. Tliiir. nt pUnt men- the l A Cemfo •ola, iioic iilto ptntiik- r-rmi ciluli Juke. Hilt, Jan;- re fmootJif r. longer, and nioi • tfba* of IIJWCIS U much



This... Several... oval, limo... at the top into five, legme... and. These appear toward the ev- fall away without being succeeded by 6... loitper ihan in Sir Ham's plant, luth a rough woody (talk, which divides inio •mikr branches, gsmifflietl with oblong, [fi It J vet, (line inches luii™, tbrcc broad in (lie niiUdlt, ending in oatte points; the fiowcrj are white, atid produced in an oblong cotymbui wwanl ri.r end of die branch^; they have one petal in each, which is t... nt? which arc rrfle. ... red of" July, but... eds. ... from Surinam, Thii hsth... id wih a brown bark, indi... regularly toward the top, gsr... placeU allicrure, Jlav i • • i 1 di c leaves ire Cx inches long, tpic phi... three about... htm. This... bt die fan?c widi a plant... the at... in Uey can

E L i

be obtairifJ, whkh flould be lbwn in (mall... pg... into a Itot-bed; they may allb be propagntud by laying down dirir brunches, but titiit are long before liiey put out roots.

T I. £ A G N U S . Lin. Gen. J... loom. Cor. 53. tab.+S9. [trcan'E««», anOie»-e, anij becauie thU plant hath leaves like itaife of the Chabre-tree, and a truii like m Olive.] Ok-aik:, or wild Olive.

Tiic CHARACTERS arc. Tin I... whict ii qiuJrifid, ... lilt & hured... art tifertid in t<H d'ffiatu cf ibt anpaimoi, and ore lmtiiuutii by tilling pejbate fwmitt. At ibt hum ii ji:t<aud urmwiij)gzrmii ftipf&:ixg 1: ly * finals fūgnā\ the ftnunt affii. OK cli-titfc cvalfriol, with a-punSorc at the top, inttofi% tost ollufi mt.

This genus of plants is ranged in the firll lection of Linnseus's tounh clafi, intituled Tctnnilria Munogyma, in the Bower having Four ftamina and one style.

- Tiic Smelts are, 1. ELVBACSH (Spergula) aculeata, 1-lla ltr iceoldris. Pricky wild Olive with four sharp leaves. tgrilij Oneotolt! I... 2. EL.V... Wild Olive without thorns, and narrow four sharp i... 3. EL... Wild Olive with oval leaves, Ellagnus foliis rotundis maculatis. Barrn. Pl. Zeyl. 95. Wild C Uvmtb reuihijpet:

The firft and fceond fett Dr. Toumelet found growing naturally in die Levant, and the first I take 10 be the common tint, which grows naturally a Bolicmtu, of wlueli ! few tame trees growing in the curions pardei of the late Dr. Bocharave, near Leyden, in llullimi. Tltc l<v n <ll this fee me not more than two inclie long, and about two 3/4 of an inch broad in th< middle ; they are white, a nil hava a lifji cononny down on ihrir ltr&et ^t \ \ • foot-ftaik Ot every leaf, there tomes CH a pretty long fharp li;urn ; as tlw leaves arc placed alternate on die branches, Jo die Ipittes come out on each fide the branches; juft below the loot-Halks of die • leaves, they are alternately longer: tlw Bowers are final!, the inQcle of die empalement is yellov., and they lave A ftrong fcent when fully open.

The iccond fort hadi no thorns on lite bn • bcs, the leaves • i arc more than four inches long, and oot half an inch broad -, they are v<ry soft, and have a shining appearance like fiiuin. The flowers come out at the iixic-Italks of die leave*, tmetimci fin... rimes two, and fccqurntly dree at the fame place, cheoutfitieof the anualeniemi is iilvery and fuddled, die itifidc of.a pile yellow, hiving a very ftrong fcent. This flovfers in July, and fometimes the flowers are fucceeded by fruit. This is the fort which is moft common in the Eaft's gardens. These plants may be propagated by laying down the young fhoots in autumn, which will take root in one year, wltcn dicy ms, anU ci.litr tranij planted into a nursery for two or three years w be trained \ij, or into the places where they are to remiLu The I... end of February, or the beginning of Man h, though they may be removed at Michaelmas, provided the roots are matted, to pro-trft them from fcevere froft in winter. These plants should be placed where they may be fceared from ftrong winds, for they grow very lirtly, and are very fubject to be fplit down by the wind, if they are too much expofed.

E L E

• • tree) commonly grow ta twelve or fourteen feet hi gh, and when they are intermixed with other trees of the same growth, make a pretty diversity; for their leaves bong of' a silver colour, are easily distinguished at a di (lance).

This third sort grows naturally at Ceylon, and in fmw parts of India. This is pretty rare at present in il: English gardens, but some years past there v*tt- several pretty large plants of it growing in the r;irdert at j lampion Court.

This rises with a woody stem to the height of eight or nine feet, dividing into many branches, furnished with oval silvery leaves, whi have several irregular spots of a dark colour on their surface; they are placed alternately on the branches, and continue all the year. The flowers I JHVI not seen, though some of the trees at Hampton Court produced flowers, but I was not so lucky as to see them.

This is in this v.m. for it is too tender to live in the open air, but it requires a warm stove to receive it excepting far a (Viot lime in the tt-urrticll | fu miner, nvo li-fr, forks arc extreme!

injuci in three or four : : tihc trees are no diction, Acirfor* yu ihouk! be thekmds.

ELECAMPAE. See INULA. ELEPHANT. See INULA.

ELEPHANT. See INULA. ELEPHANT. See INULA.

elephant. l. bwMnnfiru

The CHARACTERS are, There are many flowers collected together in one common large umbel, permanent, and each individual contains four or five parts, the petals are tubular, aid hermaphrodite, they have the point which is mgttt- fl, only the stem is narrow, and without any free round parts they have five very short bony filaments, terminated by cylindrical summits. In the bottom is placed a round germ, supporting a slender style, crowned by two slender stigmas; the germ after ward becomes a fleshy compressed seed covered with bristles, sitting on a placenta imbedded in the capsule.

This genus of plants is ranged in the first of Lanof Linnæus's seventeenth class, which includes the plants with tubular flowers, whose stamens are all hermaphrodite.

[C and fri] • • • • •

• • • • •

The first sort grows naturally in both the Indies, I have received it from several parts of America; this sends out many sliding rough leaves, which spread near the ground; between these in the spring arises a branching stalk, which rises more than a li gh. The side branches are short, and are generally terminated by two heads of flowers, each standing upon a short stem. The heads contain several hermaphrodite flowers, each with a corolla involurrate, composed of five oval leaves, ending in acute points. The flowers are of a pale purple colour. They appear in July, but are rarely succeeded by seeds in England; the second sort grows naturally in South Carolina; the plants of this have frequently come up in the garden, which has been sent over from thence with other plants as weeds; this hath several oval woody leaves, four inches long, and three inches broad, growing from the root, having many small, curved, running from the middle to the sides; they

E L L

spread flat on the ground, and between these arise a stiff stalk, about a foot high, which divides into several branches, each being terminated by two flowers, which are composed of five leaves; included in a four-leaved involucre; the flowers are alternately larger in size than the other. The involucrum is longer than the Boret, for they do not just appear within the involucre; the flowers make no appearance.

They ripen in July, but the seeds never ripen in this country.

The first sort bears a perennial root, but an annual stalk. If this is (planted in pots, and sheltered in the winter from frost, it may be preserved several years, and the plants will annually flower; but the second sort seldom continues longer than two years.

The second sort is propagated by seeds, which should be sown on a hot-bed in the faring; and when the plants are raised, they should be transplanted into pots filled with fresh light earth, and plunged into a hot-bed of tanners bark, observing to water and shade them until they have taken root; then they should be transplanted into a large box of fresh air in warm weather, and they will require to be frequently refreshed with water.

RLE; HAS. See RHIZAN. iius. ELLIC • lity. SUM. See GNAPHALUM. 1-LM. See UL.

ELLISIA. The CHARACTERS are, The flowers permanent, composed of five petals, erect, spreading leaves; it is of the palm, found upon the length of the cap, and has five slender filaments at top; it hath five filaments the length of the tube, terminated by small summits, and a round germ supporting a short slender style, crowned by an oblong bifid stigma; the germ after ward becomes a fleshy compressed seed with two cells, enclosing two rough seeds.

This genus of plants is ranged in the first of Linnæus's fifth class, included Pentandria Monogyma, (the flowers having five stamens and one pistil.) We know but one Species of this genus, viz. ELLISIA (Nylind.) Lin. Sp. 1561. Tree-leaved Ellisia.

This plant grows naturally in Jamaica, where it forms a bushy shrub about six or seven feet high. I have raised many of the plants from seeds, some of which are now four or five feet high, but have not as yet produced flowers. It has a thick bud at the base of the stem, from which the branches are generally enveered; the bark is thick, the leaves are exposed in the sun, and are of the same colour, but after they have been some time removed into the shade, they recover their verdure again. The leaves are placed opposite on the branches, which are about an inch and a half long, and are indented on their edges, and have a small hole in the middle of the larger leaf. The branches are generally placed opposite to the upper part of the branches, but upward they are alternated, and the ends of the branches are without thorns. As the plants have not as yet produced flowers in England, I can give no further account of them.

This plant may be propagated by cuttings, which if planted in small pots filled with light earth, and plunged into a moderate hot-bed, covering them close with a hand-glass any time in July, will put out roots in about two months. It may then be separated and put into small pots, plunging them again into the hot-bed to promote their taking new root, after which they should be gradually removed to the open air; but the beginning of October they should be removed into the dry stove, where, during the winter, they should have a moderate warm air, in which they will thrive better than in the open air.

When seeds of this plant can be procured from abroad, if they are sown in a hot-bed in the faring, and may be afterwards treated in the same way as it is directed for those raised by cutting!

EME

EMERUS: Tourn. Inf. 2, H. 650. Coronilla. Lin. Gen. Plant. 275. [this name was given it by Theophrastus, and testified by CijiiiUi;nu&.] Scorpium

The CHARACTERS are, The flower hath a very fast empolment of the leaf, & continues for parts which is permanent. 'tht jtowr is of its nature hard. The leaf of the plant is much longer than the empolment. The standard is not larger than the wings, nor which it is united. The tivirfs are three and constant. The leaf is low - JiIjpei and rjttextd. That an- un Jsain'ma in tech, site .ymkiitb fanns sparit, the most used are found. There are finished tM the fixxiard. in lit impjürxHt is Jilusti an a long fan. . . grows, preparing a 'lender fyitl, oWf . . . by a taper stigma. The colour of 'ervxri IIUCHKS a taptr ty- fubtil pul, fustity in their parts .vLrt liv fetJi en lages, which are also cylindrical.

This genus of plants is ranged in the third felJioti of T>.i before's twenty .jond dtli, which include* the tree* and shrubs with l butterfly (lower, wlofc leavw are placed by pairs along the midrib. Dr. Linnæus hai joined thu genus, and also the Sc uridacca of To:- sicut to I^c Coronilla; but hereby the number of lpt;cies aru tocreated, and there/ore it is much betvtr to keep diem fpatate, as there arc much cficotil] difivi ones between them, thin in (bmc (if the other genera of this class which h; has separated.

The SPECIES are,

1. EMERUS (Major), caule frut. •cofo, pedunculis longioribus caule angulatis. Scorpius. ita -joitb a •brubly falk, longer fast stalks to the flowers, and 1 xKgHliarJMii. Emerns. Cefaly. Scorpius Jena, vmla.
2. EMERUS (Minor) foliis obscur. itw, pedunculis brevioribus, caule truncato. ••pkii Sena -jilb hag ktart- fages haves, fortur ; ;i-ja!ts in the Jbwtrt, and a meroi minor. Tourn. Jaf. S, H. 650. Lefor Scorpius . . . m.
3. EMERUS (Hardacre) caule erecto, herbacco, foliis mu- ingentibus, fingubribus aliribuj, filiquis longioribus erectis. Scorpius Sfm •srib an end herba- cious falk, the leaves upright. ;J tmxy pair cfiaUl, jnglt fagers growing from the base of the falk, and very long stiff pods. Emerns Gistjui longifolia it ar' /oil" (Hf) merr . . .

The tit (I of tlid (hrubs is very common ID all the nut'erin near London; this riles with weak il rubby stalks to the l gft of eight or nine feet, dividing into many fider btinch«, gimilbcii wtlr winged Icaict, a mtted or thtte piir of lobes (or fmafi luvcsl tCTunica-d by an odi! one. Tlic flowers come OU(W*¹¹ "onS rout-tilks iroitl the Cite of" ihr branches, two or : hrec of l hele foot -flalks arifing fro l" the same point, each rt ihfc fittjirH two, three, or four yellow bractes, or flowerj thd'c appcar in May, and arc Ee usually succeeded by v . Bender pods, which are taper, swelling ll thole paru where tie frifa ire lodged, and hang downward •, thec firubs continue long in flower, especially Ln'coolfcifw , and fffq •, again in auoultft, which renders 'hi'm »lu«

The second fast riles with ;my Qitutbj stalks like the first, but not more than l Jf die height-, duituoh Ijrgi- leaves, which are of an ohkms h*Ut'-flbnpe. The flowers are rather larger than l thole or the fir}, and stand upon flower foy-falks; these differences hold in the plants which are raised from seeds, therefore I think they may be allowed to stand as distinct fpcies, though thrc ii ± great hken'ts at first fight in them.

The leaves of these shrubs, when fermented in a vat, in i: the same manner as is practised with the Indigo plant, will afford a dye, very near to that of Indigo; but whether it will answer the same purposes is not yet certain, or whether it may be worth cultivating for that purpose, either here or abroad, is not hat m r cannot yet determine; but there is no great diffm- between these plants, and those of the Indigo in the- geometrical characters, that Dr. Tournefort, and I

EMP

vera I jiber botsnifls, lwv« mnged ilmm in the (*me genus.

These (hmhs tre tifty yinijiageteil by i wng their feeds (which they commonly produce in treat]'city) in Min'h, upon a bed •. light sandy earth, observing to •• tie bed 1 ear from weeds; and in very dry itcaihcr tin; bed niuil often be retrcHiid with (water, wiikh (hould be given •. carefully, lest the leav' :!wull W wlllicut out of the ground by !:aily watering. ^ hed the piinu arc l ome UJJ, they •. must be kept clear from weeds, and in very dry weather, if the) are watered, J] wUl promote their growth; tlc Nichtelms following (if the plants h>v< thl i ven well; you may draw out the Lrgef, which may he (rat) pi in tod into a nurlery, at three tect dill ance row from row, a id one foot aiunder in (he rD> . This will give room ft [hole jilantj which are b fit to grow in the (ecd-bed, in which place they may ran, in another fear, when they will also be fit Eomnrplaat sup .l nurfay, where they fihould be two fears, when they will be fi; to slant out, where they are to rtm.in for good -, in

Sing of which, you fijould t> careful in picking then up, not to break or wound ; the roots, norfhoua they remain too lung in the riurfa before tie; j are un- plantetl, for they are lubj?A to llioot downgrin l ows, which, when en: od, attendes :!owns the death of the tic,-. In al! other respects it must be treated like other (lowering (limbs, among «• which this is commonly lbid at the nvrft ries. I may also be propagated by Lying down tlic teod or branches, which will take wot in about a •. ear's time, and may t- be tran- planted into a nurfery, and ma- . . . in the same manner as the (Ladling plant. Tlic ihinl fort gruw riuurallly in the West Indies, where Plumier tirtl difcovrs] it in the French ter- rL-menu -, but it wis found! •. growing in plenty at La Veri! - . . . in New Spain, by ihc !: Dr. Horsbom, who sent me the ' . . . which succeeded in the Chel- Jea garden, when the plants flowered, but did not perKd their feed!, and : : ; plants being annual, rhe (pecies *as I had been. This riles with a round her- baceous stalk three feet high, which is garnished at t-ath jM with one long winged leaf, composed of about twenty v.r.v' of li' bet, terminated by an •i' lone; ticle have ubtule points, and are of a deep green. The flowers p m c 01t singly from the side of the stalk, immediately above the foot-stalk of the leaves, ftandii; upon fender foot folks arches iong; they are larger than thole of ; titiit-r of liic former forts. a . . . of a pale yellow colour; these are succeeded by thick compressed pods, which are more than l x inches long, having a l border on each fide-, nml a swelling short, cackfc*d ialod and.

This is an annual plant, whose seeds itiuft b' sown upon a li]-brd in the spring, and when the plants are fit to remove, they should be each planted into a separate small pocilled with light kitchen-gurd- : cinlr, and plunged into a moderate bus-bed of tanners' bark, shading them from the sun until thq¹ luvc taken new root, then they : must be transpl; the time ni<incir as other exoric plants from those wirm countries. If theft plants are brought forward in the tpring, and kept under a deep frame in a t,r-bed, or plunged into the bark-bed in the stove, when they are grown tuo tJi to remain under common frames, they will ripen seeds m Kngland; for thole seeds which I received did not arrive here till May, and v-l ijifoc plants iluvt-nil well in Av^ufti but the nitum conn:ng on soon after, prevented their perfecting; fecd^, and that j- . . . of the feed which I received :!l the next v-ar did not grow.

EM I' i T R U M. Lin. Gen. Plant. 977. Tourn. Inf. R. H. sjy. tab. +ii. ; fpecies, of 6, in 1 HIT(, Cr, ;i' . . . or flous, because this tree grows .l fony [itact.J Black-berried I k\uh.

The CHARACTERS are, It hath male and female flowers on different plants; the male flowers have a three-pointed empolment, which is permanent; they have three stony points, which are nec- essary at their base, and three long hanging flamma which

ere hairy, terminated by Jhort two-pointed fummits, which Jlandereft. The female flowers have the fame empalement and petals as the male, but no ftamina. In the center isftuated a depreffed germen, fupporting nine reflexed fpreading ftigma. The germen afterward becomes a depreffed round berry of one cell, inclafing nine feeds placed circularly.

This genus of plants is ranged in the third fe&ion of Linnaeus's twenty-fecond clafs, which includes thofe plants whose male and female flowers grow on feparate plants, and the male flowers have three ilamina.

We have but one SPECIES of this genus in England, viz.

EMPETRUM (*Nigrum*) procumbens. Hort. Cliff. 470. *Trailing Berry-bearing Heath.* Empetrum montanum, fruftu nigro. Tourn. Inft. 5J9. *Black-berried Heath, Crow berries. Crake berries.*

This little fhrub grows wild upon the mountains of Staffbrdshire, Derbyshire, and Yorkfhire, and is feldom propagated in gardens unlefs for variety sake -, but it may be cultivated in fhady places, and will thrive very well in gardens, where the foil is (tiff. The plants fhould be procured from the places where they grow naturally, for the feeds remain a year in the ground before they vegetate, and afterward are very flow in their growth, fo they are not worth the trouble of cultivating from feeds. If the plants are planted on a moid boggy foil in autumn, they will get roots in the winter, and will require no farther care than to clear them from weeds, provided they have a moift foil, otherwife they will require to be frequently watered; for thefe low fhrubs commonly grow upon the tops of wild mountains, where the foil is generally peaty, and full of bogs. The heath cocks feed much upon the berries of this plant; fo that wherever there is plenty of thefe low fhrubs, their *re commonly many of thefe fowls to be found.

EMUSCATION, die clearing a tree of mofs, *Lat.* ENUCLEATION, a taking out the nut or kernel of any fruit, *Lat.*

ENULA CAMPANA. See INULA.

EPHEDRA. Lin. Gen. Plant. 1007. Town. Inft. 663. tab. 477. *Shrubby Horfe-Tail, vulgo.*

The CHARACTERS are,

It hath male and female flowers in different plants -, the male flowers are collected in katkins, which arefcay -, under each feale is a Jingle flower-, thefe have no petals, but feven ftamina, which are joined inform of a column, and are terminated by roundjh fummits. The female flowers have an ovalperiantbium, compofedof five ferief of leaves, which alternately tie over the divifions of the lower range; thefe have no petals, but have two oval germen fitting upon the periantbium, fupporting Jhort ftyles, crowned by Jingle ftigma. The germen afterward turn to oval berries, each having two feeds.

This genus of plants is ranged in the twelfth fection of Linnaeus's twenty-fecond clafs, intitled Diccacia Monadelphia, the plants of this clafs and fection having male flowers on different plants from the female, and their ftamina join in form of a column. *

We have but one SPECIES of this genus in England, viz.

EPHEDRA (*Distachia*) pedunculis oppofitis, amentis geminis. Hort. Cliff. 465. *Shrubby Horfe-Tail with oppofe foot-ftalks, and twin katkins.* Ephedra maritima minor. Tourn. *Lejfer Sea Horfe-Tail.*

This is a low fhrubby plant, which grows naturally upon the rocks by the fea in the fouth of France, in Spain, and Italy -; it is alfo preferved in feveral gardens for the fake of variety, but has little beauty. This hath a low (hrubby ftalk, which puts out a few ftort branches, riling about two feet high, which have many protuberant joints, at which come out feveral narrow ruffly leaves, like thofe of the Horfe-Tail, which continue green all the year, but the plants rarely flower in this country.

It may be propagated by offsets, which the plants fend forth in great plenty; for the roots creep under ground, and fend forth fuckers, which may be taken

off to transplant in the fpring. They love a pretty floift: ftrorig foil, and will endure the cold of our ordinary winters very well in the open air. Some of thefe plants were formerly preierved in pots, and were houfed in winter, but by later experience they are found to thrive better in the full ground.

E P H E M E R U M. See TRADESCANTIA.

E P I D E N D R U M: Lin. Gen. 1016. *Vanilla.*

There are near thirty fpecies of this genus, which grow naturally upon trees in Africa and both Indies; but as the plants cannot, by any art yet known, be cultivated in the ground, it would be to little purpofe the enumerating of them here; though could the plants be brought to thrive by culture, many of them produce very fine flowers of uncommon forms. I had three fpecies of them fent me from America, which were ftripped from the trees on which they grew; thefe I planted with care in pots, which were placed in a ftove, where they came fo far as to (hew their flowers, but the plants foon after periffed;

E P I G ^ A. Lin. Gert. Plant. 486. *Memecylum, Mitch.* 13. *Trailing Arbutus.*

The CHARACTERS are,

The flower hath a double empalement, which is permanent; the outer is compofed of three, and the inner of one leaf, divided at the top into five parts. The flower is of the falver Jhape, with one petal, having a cylindrical tube, which is longer than the empalement, and hairy within. The brim is cut into five parts, which fpread open. It hath ten flender ftamina the length of the tube, which are fixed to the bafe of the petal, and are terminated by oblong fummits. In the center isftuated a globular hairy germen, crowned by an obtufe quinquefid ftigma. The germen afterward becomes a depreffed, half globular, five-cornered fruit, having five cells, opening with five valves, containing feveral feeds.

This genus of plants is ranged in the firft fe&tion of Linnaeus's tenth clafs, intitled Decandria Monogynia; the flowers having ten ftamina and one ftyle.

We know but one SPECIES of this genus, viz. *

EpiGiEA. Lin. Gen. Plant. 486. *Trailing Arbutus.*

This plant grows naturally in North America, from whence it has been introduced to the Englifh gardens. It is a low plant, with a trailing (hrubby ftalk, which puts out roots at the joints, and when in a proper foil and fituation, multiplies very faft. The (talks are garnifhed with oblong rough leaves which are waved on their edges. The flowers are produced at the end of thefe branches in loofe bunches; thefe are white, and divided at the top into five acute fegments, which fpread open in form of a ftar. It flowers in July, but doth not produce fruit in England.

The plants are eafily propagated by their trailing (talks, which put out roots at the joints, fo may be cut off from the old plant, and placed in a fhady fituation and a moift foil: the beft time for this is in autumn, that the plants may be well rooted before the fpring. If the winter (hould prove very fevere, it will be proper to lay a few dried leaves, or fome fuck light covering over them, which will prevent their being injured by froft; and after they are well rooted, they will require no farther care but to keep them clean from weeds.

E P I L O B I U M. Lin. Gen. Plant. 426. *Chamaenerion.* Tourn. R. H. 302. tab. 157. *Willow Herb, or French Willow.*

The CHARACTERS are,

The empalement of the flower is compofed of four oblong pointed leaves, which are coloured. The flower hath four bordered petals which fpread open, and eight ftamina which are alternately Jhorter, terminated by oval compreffed fummits. Below the flower isftuated a long cylindrical gennen, fupporting a flender ftyle, crowned by art obtufe quadridftigma. The germen afterward becomes a long, cylindrical, furrowed capfule with five cells, filled with oblong feeds, crownedwith down.

This genus of plants is ranged in the firft fe&ion of Linnaeus's eighth clafs, intitled OAandria Monogynia; the flower having eight ftamina and one ftyle;

The SPECIES are.

1. FfiLosiuii (AagHj)l'fform] foliis fpjrfis Uneari-Unce-oliiris, floribus inl'equalibus. Lin. Sp. 493. Efikbiam wiib linear fptar-Jhoptd tuna which art pkxdtbinj, apJ unequal Jk&rs. Chsm*nerion latifoliujn vulgaru, Tourn. Inlt. R. H. 30.: Camnen ... d I & ...

2. Ento ... [lhrfatam'i foliis oppofit'is lanceoUti fer-raris deciiirenu-?n:nPU:>sicaulibiJs. Lin. Hoit. Cliff. 145. EfiMiiim with eppcfittpiar-jhapei larva, -a'ticb an [awed m it- ... Cltammncp'nn villoiUm, roagno lore purpua-ij. Tuum. In It. R. H. 303. Hear/WMamtieth vi:ib a'argtJSover, caitmoify cattd Cxttin: end Crtcati.

There arc fever&l Other fpectci of tins genus, fame of which grow naturally in ttudy woods and muift plucL-i in man pans of lingland, where they are often very iroublecfone wccdJ, "therefore are feldom admitted in to gardens, fb I iball i>ot trouble the reader with their dill) nations.

The iirfc fort here mentioned was formerly planted in gardens for the beauty of its flowers i but aj it ufually iproods far by Ac creruig roots, whereby '.* over-runs all the neighbouring plants, it has been generally caft out of molt gardens : however, in Ionic low moid place*, <v in great fliade, if there wai a place affgnal for thi plant, it will make a good appearance when it is in Rower, tod theft Bowers arc wry proper to cut for b;lfons to sdorn cimmies in thefumim-r ibiun. This ufually'grows about thin feet hip '*, v iili ikndcr Ititf branches, whicli are befet wuh] ... nbVing thue' of ihe WiSluw, from WJICII ... name of Willow Herb, or French ...#. On ihe upper jart of ilic tWki die le m n .ir pfocecd in a lung Ipikc or thyrie, which arc of a fine Pear'li cohiur, and, if (lie fcafon is not very hot, they will continue near a month in beauty. This fort is round growing wild in divers 'ports of Ei! land, but feveral botanifts hive fuppoied it was onlyibutKi in fuch places whert /he plants had been «ft out of gardens; however, I think it mult be allowed to be a native of t!is country, fince it is found in great pknty in woods at 3 grtai diftance from »ny habit*-tion, p,rticularly in Cturlton tbcir, and feveral other woods in SutTex. It is a great erreper at ihe rooi, fo may becafilly propngard

There is a variety of this with lvhte flowert, which is planted in gart!«Mj but differs from it only in the colour of the Boweri however, ionic ()'to(i« arc fonJ of propagating thec vsrieties, for which reafon I mentioned it here.

The ii-cond fort ii found wild by the fide of ditches »nd riven in manj" parts of England. This plant grows about three tcet high, tad produce* its flowers on the top of the [talks; but tfidi: an: much kk beautiful than tnofe of the firft, and the plant being a great rambler ac the root, is feldom admitted into gardeni. The leavci of this plant b'atig rubbe<i, emir > fcent like fcaWctI Appk-s. front whence fame have given ihe nutie of Codlins and Cream to this plant.

EPIM EDI I'M. Lin. Sp. Plant. r;S. Tourn. inft. R. [I. ??2. tab. n7. Rait Meih. Plant. (19. Barren wort.

The CiuftAcTM* arc,

Tbtj'cr tatb a ttrre-ItaviJ cnpakmait whkb fe[h tJ. U bebfour sbttk cvai fi*it, rafa'ti set tti ... ami fptad op™* *'»* fair xiaarium which art ctp-fiepra, clufe at t ... J/J; as :k ... Ji bathfxfriauzna, termimud by ce'ey, ... im- l'... The ... is planted at the ... a fort ... by a ... Jt ... Tbt gtrm*:

tUorfadt,

The genus of plants is cruped in the fir \ fedion of Linnæus's fourth clafs, intitled Tetradnia M ... nogy. ma, - the flower having four thinnia and one flyk.

We know.

1. Epimedium (Agnus) Hoit. Cliff. 37. Agnus l. •irrv

This plant bub a creeping root, from which a-ifc many (talk* about nine inches high, divided at the top into three, each of whicri is again divide* into three iinalkrt upon eai ... of these stands a stiff heart-shaped leaf, ending in a point, of .1 pak fcntsa on ihe upper fiijt, but gray on the under. A little below the firft division of the Italk comes out the foot-tllall: or [lie Bowers, which is near fi\ inches long, dividing into fnialler, each of tlicfe iu ft lining three flowers i thefe arc compofed of fou> leaves, l'bed in form of a crofs-, thty are of ;i rfddim colour, with yellow irnpes on the border. In the center ut the flower ariics tbe fyle, lituated upon the germen, which afterward turns to a (ender pod, containing many oblong feeds. It [towers in May, and the leaves decay in autumn. The i-oots, if planted in 3 mady border, (hould be every year reduced, fo as 10 keep them within bounds, otherwife it will fpread its routs and interfere with the neighbouring plants. It grows naturally on the Alps, but I received Jbme plant's of it which were found growing naturally in a wood in the

North of England. Ef IPUYLTOSPERMOUS r J.ANTS [of ;:, upon, **Mm, a leaf, and S*ifpa, Gr. fed.] lucli plants as bear dieir leeds on the bjck of cheir leaves, the fame as capill =

E Q J I N O C T I A L, M Q J J I N O I I I A L. [of enuus, cquil, and nox. Lgt. nig!,-] A great and immovcable tirdc of die fpherc, under wiicli the equator moves in its diurnal motion.

The equinoctial, or equinoctial line, is ordinarily con- Minded ivith the equator; Imi there is a dill. rente, the equator bring movcable, and the equinoctial unmovcable; ami tiie rquiuur drawn about the CONw* fuffiite of the fplierc, but the equinoctia' cave furracc of the Magnui Orui.

The equinoctial is conceived, by Cuppo. diameter of die tphere, produced throu the equator, and thirc dfferiBing 3 circJ moveable furracc of die I'rimitit Mobil., -, ^«. ro. tity II of the Ipiicre about its axis.

Whenever the An corner to this circle, in hit progrefs through the ecliptic, it mukts equal day and night all round the globe; ja then ariCnu due eaft,

Setting due weft, which be never «»es at any other times of the year.

The pocpk who live under thii circle, have their days ami nights conftamly ctjual, and the iun is : thrir zenith at noon, and cadi no (hadow.

EQUINOXES are the rime! wh-n the fun caue- into the equinoctial points, which 're the two poin when the equator and ecliptic interfecl each athe the one being in the iirft point of Aries, called t' vertul equinuxi and the other in the firft point* of Libra, called the autumnal equinox.

So the equinoxes happi when the iiii is in the equinoctial circle, when, of confequence, the days IK equal to the night! throughout (he world, which is the ill- twice a j ... about the 21II of Much, and the 211] of September; the firft of which ii the vernal, and the Ce ... the autumnal equinox.

li QJLJSETUM [of cquius, a bode, and feta, a brille, becaufe the leaves and brotchea rcprc/i-nt the bristles or hair of a horie's m ... or tail. It b by the Grei' called *'t<i* of "(wr^, a Ixorfc, and ti<-?i, i taii l antl liippotta, of ^ ^ ^ and km,] I ... Tail.

There arc lcvcral fpecia of this plant, which arc found in foigland, ondjcfuS ... or in lliady woodi; but as ihuy arc plant which ar: never cultivated -i-in yirdt!)*, I lhall p>fc them over in this place.

ERANTHEMUM. See A...

ERICA. J. in Gen. Plant. 475, Toum. Inft. R. ; I. 603. tab. 373. [Eruca, or Erucas, or Erucas. Cr. to break, becaufe this plant is said to have the virt lie of areaking the ftone in the LtadtlerJ lleathi in 1-rnch, Br;-

The CHARACTERS are, Tbtjlcwcr bosh . . . fie&tsl 1 n petonott tffimr

svat ertS kerats. h bait cue J... trrff and <firiJr/fiJ, and tight hi fixed to tbt recceptact, and AMM In tbt bottom isftwttd the reat* AtcUxing Pyle, urbirb ii fangtr tbt: byafoar-cerxerdtjiigBM. Tbttrt ,A reuid tapmie, havmi four ctiit fIMtfitil.

"This genus of plants is rang"! in the firft feffion of LinnKus'a eighthL-bli.intiik.; C. U. .) . ^ . Common JIHMJ TJ-rall:

The Smctu art, i. Eiici (I'tlfrtris) antheris bicornibts wdur«, corolts itirqiililjiii, campanula'is rocltkrihtis folii oppoiitis fagittatis. Lin. Sp. i'ant. 352. Death atb fpiiberni meludag tbfumiuit, btl-ftupeii nufun, imd middling inrtwpunifd lames placed oppafite. Erica vulyaris ^P'sbra. C. U. .) . ^ . Common JIHMJ TJ-rall:

EHICA (Ijeribacea) antheris bicornibts ms indsiiii panulati i mediocribus l'cundis, I'olis ternis pentalis. I. iii. Sp. Plant. 500. Head with a :bmt ml, a bell-shaped pelM, tiid Ji' narrow spreading coroll. Erica o'foliu . :l'itlora, J. ii. vul. t. p. Pint-it Head with a mflvaieri.

EKICA (Ciatra) nnteris bicornibuii inclufi^, ovatis racemofb, foliis ternis glnhrii lincaribu*. 1 in. Sp. Plant. 359. lleaii. with one buna mdn£ the fummits, ffv'ni brandy petals, and thnt intg, > j'movib liffUM. Erir 1 humilis, cortk« cinneo, arbuui flore. C. B hark, and Slrenterry-tree Jfostr.

ERICIA (Ciatra) subterit fup i HIS indufis, corx)l- lii avzru irregularibui, iluribus ternoracemofii, foliis tcmi . :ill. 2, p. 9. Lin. Sp. Plam.

Kctn, mdh antheris bicornibus locatis, corollis indoribus. (blirs uuawrnis paicntiH; .-jintntofi. Lin. ! . £ amber* art indadtd in itae itria, a

1 tal-Jkiipdt Jtwrr, «W fi?w Jprt. iMitg Utrjes at

The four firft Ions grow wild upon barren uncultivated pUces in (UVCTS parts of England j but notwithstanding their cummunnei's, yzt diey ileicervt a pUct in final qu. interri of humblt floweing ihrubs, where, by the beaw and long continuance of iht'lr flowers, together with the diverliiy of chdr leave), ihry make n agreeable variety.

'hde UK icldoui propagated in gardens, and fo not be hid fmi the mirirrics, but m*y be nkc n up, .ith * bill of earth to their rtoes, from Che mur.ii pbee of their growth in autumn, and may be L*nl- planed into the garden. The foil whrrc they ort planted flould not be dunded, nor fhould you befto* any other culture on them than clearing them from weeds -, for the left the ground is dug, the better tbcfe will ti . . they ironmwnly fboo: their roots near the furface, which, in digging, are fubject to be hurt, whereby the plant is oi;cn Jeftrayed; thec may alio be propagated by feedi, but ihis being a tedious method, the dther is much preferable to it.

The . . th fort grows naturally at the Cape of Good Hoje, and alio in great plenty in Pomgii. where it rtes with a ftrong lignocis Acm to ilic height of eight or nn fret, lending out many bBDofc the whole len: th, garnifhed with M m* leave-, four coming out from the lame point -, ihc flaw en 1! produced between the leaves on (ie upper part at iic branches; they are white, with a blum or" red un thcir ouiiide; thec appear in May, but an- not (bcooded by lieds in Biiglaud.

i.Unt will live in the open ail . . 1, provided II ii planted :u 1 dry foil and ^ warm lituaikin, but is generally lttit in puts sn*i houicd in wi however, the pbw lb l hrive or » flower ib well as thol- in the full ground, therefore it is much better to b as the trouble of fhedding fic pltaa in tlic croudd in winter, than to lieep them in pou.

It is with difficulty propagated here, which ig done by Uftngdenrndu young Ihoon, though thec arc often two feare before they put out . Kg plant the young flips or cutting', into pav\ BUed with light earth, covering them el . with a bell-glafe, and fhading them from the fun 1 v . here this is faithfully practifed, the cuttings will put out rjots, in! makes better . ilana th.11: [] bayer.

KKICA BACCIFERA. Sec E<peTnvM. EKIGE8 ON. Lin. Gen. Plant. S . Sp. Sencce 1 b. Sp. DiJ). Cunyzdh. D01 GtOomlfcl

The CHAHAcrrns are, // belt (t emptoid njuuti ifotw, ctmsfU ef mtty btrmitpbradile fcreii which firm tbt tiitl, and fenft half . . <mud in mt ebUng fi'ib tsipukefiiit. Tie itrmipi . . . tat fuaomts; tin . . .

dr.JhU . . . ttf- malt half fit- . . . thir putib firrtixd em lite a ttsgte\ tbtjt bavi MjftaanM, tw J jma& dans\ gtrmtt, fuppwtixg a JindrjMe* which is iwry, cravuKii by . . . Tbt rcmat fi-

Viard btanut a fid tiki Ike birtxepbrotiit Jbrel;. Thii genus of plants is ranged in ii) lecond of Linnsms's nineteenth daCi, which incljht the plants with a compound (OKT, compofed ofhernu- plruduicand female flowers, which are bosh fruitful. 'TD thigemii Dr. Linrmn his added feveral iptius oi Lony^a and Alter of fornir botanifts.

The a . . .

1. Eaioi . . . fuliit laoci . . . ffjtr «» a/nu^a/i, prtradixg fnoa tf* fuit *f tbt Jlali, fprar-jkiffd Itava, and a rough tmp.ilantpit. Con- nya nJls "1 . . . major Diojiuriltk, C. W. 1': 265. . . i'btprtijlus, end greater l'lea- baist cf JXifimdu.

2. Eitoitoa (ACT, peduncul . . . lakernii unifloris. Hort. Cliff.-407. Greundfcl ititb alitnmu fat-flulk bavixg eiujbiatr. Conyza exrulea acris, C. B. P. afi;. Blue arid Flenbait,

3. EIUGEBOW (Beaarinf) foliis baft revolutis. Lin. Sp. Piaair. KG3. Groundfil vibeft Irayii art curved ill titir baft. Senccejo Boniricnfis potpunfcns, foliit uiis coronopi.JJort-Elih. 34^ . tib. i « . Pttiplijh Gnuud- fii of Bnaus styres, • with tadtr holts life Harlfimm Pki:

4. Ea . . . taos (Ctmedenf) caule floribufque panir . . . Cliff. 407. GrntxAfel mit .1 twindattdjialk OHJ fiirtotrs. Viraa aini;a VirRtniani; annul. Zan. Hift. io\$. AmmEfTZW* GiUtn Rtsd.

5. Ea . . . ROS (Alfixxm) cault fu I L) tfl ora, c alyct fu I: h i r - fum. Lin. Sp. Hunt. B64. Grcuidff' teili tsj,s jhinir) an afiaik, end bdr? tmpdntem, Cunyia cumilca AI- t'. I). P. 105. Hbt Alpiiu Hr

6. Ea . . . reox fjjmrtau\ ramis Uicribibus multiflorK foliis lanceoladi bttgertimis, cal . . . rrafi. Amoen. Acad. 4 P. *9Q. Cratnifcl mti «M«fitters en tfajMr el tbtfinih^ nti, . . . rwrh tmptutmts. Vltga aurca minor, foliis glut- nofi) & gmveokntibus.

7. Ea . . . (Pardim) foliu liiicolatu-lineari¹¹ . . . !;ijbu; eorymbofi . . . Lin. Sp. 11 ij- Ground/el with linear . . . Lyvit in e «ujw- ^ . . . Senecio Africanus . . . i. rciul'i. Herm. 661,

The firft lort p; . . . "I the iouih of France* and in Italy, Th'u haih a perennial rodt, from which . . . ilk* jar three fet high, garnifhed with ubloi>e w³¹ ^ v ^ whidi *K hairy, and fit dole 10 the H Jk ; they are pineal alternate, and inr four inches lojifi, an' two wood in the middle ; thec in warm weather fwcat out a clammy juice. The flowers arc produced Tingle upon pretty long ftiot- 8alk-, ibme arifing from die fide of ilie (lalk, *nd other)

thers terminate it; they are yellow, and have an agreeable odour. They flower in July, and the seeds ripen in autumn.

This plant is propagated by seeds, which, if sown in autumn, will more certainly succeed than those which are sown in the spring. When the plants come up, they should be thinned if they are too close, and kept clear from weeds till autumn, when they should be transplanted where they are to remain. They delight in a dry soil and a sunny exposure. The second year the plants will flower and perfect their seeds, but the roots will continue several years, and annually produce their seeds and feeds.

This is one of the plants preserved in the botanical garden, for the sake of variety, but are seldom admitted into gardens for pleasure. The fifth sort is a perennial plant, which grows naturally on the Alps, and may be propagated by seeds in the same manner as the first, but should have a shady situation and a moist soil.

The others are annual plants, which, if once admitted into a garden, and suffered to scatter their seeds, will become very troublesome weeds there.

The fifth sort *nk** with five stalks three feet high, garnished with narrow spear-shaped leaves, the flowers are yellow, and are produced in loose bundles from the side of the stalk toward the top; these appear in July, and in warm seasons are succeeded by seeds in August.

It may be propagated by cutting the stalk in proper lengths, which, if planted in a shady border, and duly watered, will put out roots; and the following autumn, they may be taken up and planted in the borders of the flower-garden.

The common sort grows naturally in Africa: the roots of this are five or six upright stalks near four feet high, closely garnished with linear spear-shaped leaves which are hairy; the stalks are terminated by pretty large bunches of yellow flowers, formed in a corymbus. These appear in October, and frequently continue more than two months, which renders the plant more valuable.

This is too tender to thrive in the open air in this country, it is therefore to be kept in pots; and in winter they are placed in a common frame, where they may have a large share of fresh air in mild weather, and protected from hard frosts, they will thrive better than in any other situation. It is usually propagated by cuttings, which, if planted in May, will readily put out roots, and the young plants will flower the second year following.

H. N. U. S. Lin. Gen. Hist. 689. Ageratum. Tournefort. R. H. 6. i. t. b. + 2j.

*The character is, The juice bath a peraxent impairment, nipped of fine knots, which are (qual-, it bulb one petal vibic is tubulates, end of the ringent kind, rit) into five five feg-f*enti, which spread to me, three fixing Stptnard from the upper Ap, end W< tare dminxsard. It both four fiamnut JinteA within the tsk, tw ef vjbiib art a little linger I ban tbt oiler, terminated by mail j'wmniti. In the bil-lons of the tabe isituaid tbt ovalgermtis, fuppertin, s fobrs JtyU, craned by a keadfimped Jligiuo, The gtr-men afterword becoma an mat capfule, cowed hy tbt empdema-s, having tise c/Ujfilkd jntb jmat feed).*

This genus of plants is ranged in the second division of Linnaeus's fourteenth class, which includes those plants whose flowers have two long and two short stamens, and whose seeds are inguinarapful. Tournefort inserts it in his appendix, but it should be placed in his third class, and the first section, which contains the plant; with the name Ananotouatubus fletzerus.

1. *lie SfEtms ire,*
 1. *ERATUM (Linn.)* var. racemif. Lin. Sp. Plant 630. Erect with branched flowers. Ageratum in ii fructu. Alpium. glabrum, flore purpurascens. Tournefort. R. H. 6. i. *Smooth forest Ageratum, having a purple flower.*
 2. *ERATUM (Tournefort; -*)* tuinentufus, crystallibus primum

bentibua, floribus fchilibus txiliaribth. *IVstih Sritxs with trailing jlah, and flowers Jitting d-fe t* *Ageratum Americanum procumbens, gnnphalii ricie, floribus id ioliorum nodos. Hoult. MSS. TraMi% American Agetaium with the appearance of Cudweed, and footers gnrvig at the knots if tie leaves.*

j. *KBINUS (American) caule erecto, foliis lanceatis oppositis, H'ribus INL Imcadl terminalibus, Eritius with an upright fiat, sprar-f/apid leaves p'ss;(d eppofite, and flowers groaning in leeffpiki, terminating li/cfaikl. Ageratum Americcanum erectum fpicatum*, (lore Jiur-pureo. ?louL MSS. Upright American Agrioliaa with fpika ef purple flowers.*

+ *ERINUS (Frvtvfiaw) caule crefto fruticolb, foliis ovali-lanceolatis serratis, ulcromis, floribus axillariibus. Eftbaa with a Jbrua&Ay ereS ftalk, oval, fpear-fkaped, fatveA leaves phued alternate., and flirjKrs en the fida uf tbt ftalk. Ageratum frutdcens, foliis dentatis latioribus, villifum, Houft. MSS. Sbrxbby bear] Amtiican Agerctum mitb broad indented lanes.*

5. *ERIKVS (tWici/litt/s) caule ramofopfiuebente, foliis ovatis (emai gbbrii oppofiti, floribus verticillatis. Linn. Linniteitb a branching (railing ftalk, oval, finxtb, famed leaves placed eppofite, and flowers growing in v/hsrts rsund tbeftiis. Ageratum Amtricum procumbens, foliis fubrotundis ferrati* glibrl'. Hoult. MSS. I'roiling American Ageratum -with r6xndijb, fm<xttk, fawed leaves.*

6. *ERINTIS (Procumbens) caulibus procumbentibus, foliis ovatis glibris, floribus (ingulis ilaribus, puniculis longibribus. Erintis -u/ib trailing Jlahs* c'al foKob leovii, and Jingle jitters SK thefidt ef the ftalks, having longer foot-fiaHi. AgfcMtUin. Americanum, procumbens, glabrum, floribus luteis, ionpis pediculis infidenribus. Houft. MSS. Smooth trailing Amrican (BnAgratum, vitbycllw/eners fitting upon U>g fialhi.*

The first sort grows naturally upon the Alps... : upon mountains: this is a very low plant, whose leaves lie close to the ground, growing in close tufts; they are about half an inch long, and one eighth of an inch broad, tawed on their edges, and of a dark green, between these arises the flower-stalk, which is about two inches high, supporting a loose bunch of purple flowers, which stand erect. These appear in May, and sometimes are succeeded by ripe seeds in July.

It is propagated by parting the roots; the best time for this is in autumn, they must have a shady situation and a loamy soil without dung, for the rich earth these plants like very much.

The second sort was first discovered by the late Dr. Houfton from Linnæus, where he found it growing naturally. This sends out several trailing stems about six inches high, which are covered with small oval leaves, which are on every side; they are very white and woolly, and at the joint; just above the leaves come the flowers, fitting very close to the stalks, these are in pairs, and are enclosed by round capsules, having two stalks, inserted with final feeds: this plant has great resemblance to the distance to the Sea Cudweed.

The third sort was discovered by Dr. Houfton, in the same country with the former: this has an upright stalk, which is about two feet high, garnished with spear-shaped leaves, which are placed opposite, and toward the top of the stalk is produced two or three smaller branches, which are also opposite, which stand erect. These are also the roots, which are terminated by loose spikes of purple flowers, which are succeeded by oval stalks, filled with small seeds.

The fourth sort rises with a shaggy stalk about four feet high, dividing into several small branches, which are garnished with oval spear-shaped leaves, which are placed on their edges, they are placed alternate, and have pretty long foot-stalks. The flowers come out from the side of the stalks, five or six together, at other times two or three at a joint, which are white, and are succeeded by round seeds, which are enclosed by round seeds, which are filled with small seeds.

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The fifth fort sends out many trailing smooth stalks, which branch out very much on every side; they grow about seven or eight inches long, and are garnished with small oval leaves placed opposite. The flowers come out in whorls, fitting very close to the stalks; they are white, and make but little appearance; these are succeeded by round capsules filled with small seeds.

The sixth fort sends out several trailing stalks about six inches long, which divide into many smaller branches; these are garnished with small oval leaves, standing opposite. The flowers come out singly from the side of the stalk; they are of a bright yellow, and stand on long slender foot-stalks; these are succeeded by oval seed-vessels, filled with small seeds.

The fourth fort is a perennial shrubby plant, which will continue several years, if kept in a warm stove; but the second, third, fifth, and sixth forts are annual, decaying soon after they have perfected their seeds.

These are propagated by seeds, which should be sown in pots filled with light earth, and plunged into a moderate hot-bed, where sometimes the plants will come up in five or six weeks, and at other times the seeds do not vegetate till the following spring; this happens frequently when the seeds have been kept long after they were gathered. When the plants are fit to remove, they should be each planted in a separate small pot filled with light earth, not too rich with dung, and then plunged into a hot-bed of tanners bark. When they have taken new root, they should be treated in the same way as other plants from those countries, by admitting proper air to them at all times when the weather is warm, and frequently refreshing them with water: with this management the annual forts will flower in July and August, and frequently ripen their seeds in autumn, if the plants are brought forward early in the spring, otherwise the winter will be too late before their seeds ripen.

The shrubby kind must be placed in the bark-stove in autumn, and during the winter the plants should be frequently refreshed with water, but it must not be given them in large quantities, nor too often repeated in cold weather, for moisture will then destroy them; the second year the plants will flower and perfect their seeds.

ERIOCEPHALUS. Dill. Hort. Elth. n. o. Lin. Gen. Plant. 890.

The CHARACTERS are,

It hath a radiated flower composed of female half florets which form the rays and hermaphrodite florets, which form the disk; these are included in one common scaly empalement. The hermaphrodite florets are funnel-shaped. It is cut into five parts at the brim, which spread open; these have five short hairy stamens, terminated by cylindrical funnels; they have a small naked germen, supporting a single style, crowned by a pointed stigma; these are barren. The female florets have their petals stretched out on one side like a tongue, which is divided at the end into three small lobes; these have no stamens, but an oval naked germen, with a single style, crowned by an inflexed stigma; these have one naked seed fitting on the naked plain receptacle.*

This genus of plants is ranged in the fourth section of Linnaeus's nineteenth class, which includes those plants with compound flowers, whose hermaphrodite florets are barren, and the female half florets are fruitful.

We know but one SPECIES of this genus, viz. **ERIOCEPHALUS (Africanus.)** Lin. Sp. Plant. 926. We have no proper title for this in English. *Eriocephalus sempervirens, foliis fasciculatis & digitatis.* Hort. Elth. 132. *Evergreen Eriocephalus with fingered leaves growing in bunches.*

This plant hath a shrubby stalk, which rises from four to six feet high, putting out many side branches the whole length, closely garnished with woolly leaves, which come out in clusters; some of these are taper and entire, others are divided into three or five parts, which spread open like a hand; they have a strong smell when bruised, approaching to that of

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Lavender Cotton, but not quite so rank. The flowers are produced in small clusters at the extremity of the branches, standing erect; they are tubulous. The female florets which compose the rays, form a hollow, in the middle of which the hermaphrodite flowers are situated which form the disk. The border is white, with a little reddish cast on the inside, and the disk is of a purplish colour. The flowers appear in autumn, but are not succeeded by seeds in this country.

This plant is propagated by cuttings, which may be planted any time from May to the middle of August, for if they are planted later in the season, there will not be time for them to get good root before the winter; these cuttings should be planted in small pots filled with light earth, and plunged into a very moderate hot-bed, where they should be shaded from the sun till they have taken root; these must be refreshed with water two or three times a week, but they should not have too much at each time, for much moisture is very hurtful to these plants. When the cuttings have taken root, they should be gradually inured to the open air, to prevent their shoots from being drawn up weak; afterward they should be removed into the open air, and placed in a sheltered situation, where they may remain till October, when they must be removed into an airy glass-case, that they may have as much sun as possible, and enjoy the free air in mild weather, but secured from frost and damp air, either of which will soon destroy them. During the winter they must be sparingly watered, for the reason before given; but, in the summer, when the plants are placed in the open air, they will require to be frequently refreshed with water in hot weather.

These plants retain their leaves all the year, so they add to the variety of exotics in the winter season.

ERUCA. Tonrn. Lift. R. H. 226. tab. i. n. Brastica. Lin. Gen. 734. Rocket j in French, *Roquette.*

The CHARACTERS are,

The empalement of the flower is composed of four oblong leaves, which stand erect, forming a tube. The flower hath four oblong petals, placed in form of a cross which are rounded at their ends, where they are broad, but narrow at their base, and are much longer than the empalement. It hath six stamens, four of which are a little longer than the empalement, the other two are shorter, terminated by acute segments. It hath an oblong taper germen, supporting a short style, crowned by an obtuse bifid stigma. The germen afterward becomes a taper-cornered pod with two cells, filled with roundish seeds.

This genus of plants is ranged in the second section of Linnaeus's fifteenth class, which includes the plants whose flowers have four long and two short stamens, and their seeds are contained in long pods. Dr. Linnaeus has joined the common Rocket to his genus of *Brastica*, and some of the other species he has distributed under his other genera; but as the common Rocket has been long established as an officinal plant, I chuse to continue this genus by its old title.

The SPECIES are,

1. **ERUCA (Sativa)** foliis pinnato-lacinatis, laciniis exterioribus majoribus. *Rocket with wing-shaped jagged leaves, whose outer segments are the largest.* *Eruca fativa major annua, flore albo striato.* J. B. 2. 859. *Greater Garden annual Rocket with a white striped flower.*
2. **ERUCA (Belms folia)** foliis lanceolatis, pinnato-dentatis, caule nudo simpliciter. *Rocket with spear-shaped leaves which are indented, and a naked single stalk.* *Eruca bellidis folio.* Mor. Hist. 2. 231. *Rocket with a Daily leaf*
3. **ERUCA (Perennis)** foliis pinnatis glabris, caule ramoso, floribus terminalibus. *Rocket with winged smooth leaves, and a branching stalk terminated by flowers.* *Eruca tenuifolia perennis, flore luteo.* J. B. 2. 861. *Narrow-leaved perennial Rocket with a yellow flower.*

jf. £nt:ra (*fiffrto*) loliis dentatopinnatifidis liirfutis, caulc hiipido, illiquid lievibus. *Racket witb indnted, jjiing-pciitrrf, iitry lftsws, A rtwA flalk, and fmetti jnds.* Eruca lyiveliris, major, hitcn, caule splero. C. B. P. 98. *Greater teild Sajfren-thured Roikt mitt * rvgb flalk.*

S- FRUCA (*Tmactifitia*) foliis pinnatis, foliolis lanceo- Jatis pinnatifidis. Prod. Lcyd. 342. *Racket witbwigwed lames, v/bs/e leies art jpear-Jkaped and -xing-fiiin.* 'td Eruca Tenacenfglia. H R. Pat. *Rixkei -jiitb aTanfry Itaf.*

6. EaucA (*yiania*) folh finuato-pinnatis, ft-Hili, c>ulc rimolb. /i <to wMi wixg-Jbaptid Jinnatd leaves fitting (tufo 10 the jtslki) which are brantbing. Eruca Simula urfa: paforis folio. C. B. P. 98. *Sicilian Rixki; •aitb a Shepherd's Purfe leaf.*

The Brit lort is an annual plant, which was. former!) much cultivated in the gardens is a lallad herb, bui at jircleoc is little known here, for it has beca low rejected on account of its Itrong ungrateful fuicll. Ic ihnds in the lift of medicinal plant*, but at prt- lent is ieldom ufed, though it is reckoned a provoca- tive and a good diuretic. If it is propagated for lj]- lids, the ictds iliould be fown in drills, in the fame manner as is ufually pra&iied for other iinaJl iatlad herbs •, for it mui be eaten young, othcrwile it will beiooilrongformoft palates. The winter and ipring fiaibns are the tim« when diis herb is ufed; for when it is iown in the liimimcr, the plants Toon run up to feed, ami arc then too rank. Where it is culti- ueJ Cr th« I-Ad, which is fometimes ufed in medi- 1 VK, they lhtml d be fown in Marcli, on an open foot of ground; and when the plants have put out four Ica'ses, the ground (houkl be lioted to icfcti.jy il- weeds, and me plants muft be thinned, fo as ro leave them thrl- or four inches afiinder-, and in alxiut fivi: or (IK weeks after, the ground (Kould be a fecond time hoetl to tleftrojir tlic -weds, which, if well performd, Will prevent them from growing to injure the plants, liU the t-cis are ripcj when the plants lhould be drawn up, and fpriad upon a cloth in the fun for two or three days to dry, then the feeds m»y be beaten out of the pods, and put up for Me.

The fucoid fort grow* naturally in the (both of •France and liily, «!>erc it is ofien eaten H a lallad herb •, •his liiuii nmny N«r-Jhaped leaves arilng from the root, which are four or five inches long, and one inch broad in the middle, regularly indented on their tdcg, and fpread nn the ground; the (talks arc fingle, am! rile alxiut a foot high; they are naked, fcl dum l:iving more tlian one leaf, which is Situated at the bottom; the Bowers grow in loole bunches- on the top of the (talks, which arc fucceeded by pods two inobei 'uug, having two cells filled with imall round ietdi. This h an annual plant, which may be prop- agated by feeds in the lime manner as the former. The third fort grows nitundiy about Paris, and in many other parts of Europe; (he leaves of this are narrow, sad regularly divided like a winged leaf, the shall branch out upward, and are tentitiaied by loole tpikes ut yUfw flowers. This hath a perennial root, and an annual ftalk.

The fourth fort grows naturally upon old wails and Mjddings ia many pans of England, where it contin- uous flowering all the (ttnnser, but is rarely admircci into ;:

P

which e hetf mentioned it. Tlic filth fort growa naturally about Turin, fionwlrnce l received the feed*. Tins liath fine divided leaves, what lilte thofe ot' Tunfey, but are of a hoar) green colour; the ilalks rife a foot and 3, half high, which are fully garnilhed with leaves of the fame form, but gradually diniini/h Ill their lize upward; ilic jioivere arc produced in clulicrs at d " >Ilo, (hey gre Im all, and of A pale yellow colour; cfe arc liirtredcd by (lender taper pods two inches ng, which contain two raws of final!, round Ic The fixth (bit grows naturally in Italy and Spiin; is an annual pljnt, with many oblong k i are finouch «id tegulnrly fin ua ted on titeir Edes,

in form of a winged leaf; they arc five or fix ifjtjic' long, and one inch and a half broad, of a light green having a hot biting talc t the JULks rife about a toot high, they are flrong, and divide into lveral branches; thelc ar^ garnilhed with a lingk' leaf at c.wii jotnf lhaped like thofe below, but finaUcr. Tlic BowerJ arc produced in loojc clutters at thr end of the breaches) thefc arc white, and nearas large as thole o!' (he Garden Rocket, ami am lw 1 eedaj By taper pods three inches long, containing two rows of round feeds. Thefe plants nre preferred in loirn gardens for the iakeof variety, therefore they arc here mentioned) and thofc who are inclined to cultivate them, may do it by Towing [heir ll-cjs on a bed of light earth in an open fituation \ and whtn the plants come up, they will require no other culrurr but to thin them, and ktt-p tlitm tlc ar from weeds. They flower in June and July, and their icedj ripen in Auguft.

ERUCAGO, Sec Btriflit.

ERVUM. Lin. Gen. Pltnt. 784. Tourn. Inf. R. H. 39S. tab. 221. *Bister Vttcb.*

The CHARACTERS ARE,

The empalement of the flower il divided into fivi fptd parts, which end in amtt pants; the fltwer is of the butterfly kind, having a large, refti & fb, pliiis flanderj, fata thtufi wings half the length of thofe of a fhortir ktl which is painted. It bath mftatmins, nine pined, and ontftanding feparttt, itrminettd h fjitrle funtmts. Si both an ebhasg grnten, fuptrliHg 4 rtfing fytt-, crvWMed by aa ekHft jligwa. Thtgernex aftruwd betVMi em obkng taper pad' jntnttd b(lvncn each feed. This genus of plants is ranged in the third fiction of Linneus's fevntcenth clali, whidi include, plants with a butterfly Bower, with ten flamina kpi- noed in two bodies. To thij genus Dr. Linnaeus hasjoitnd the Lens of Tournefort. *an& Cvr*

Q(Via a. The difference «J Viciii and Ervum is only in ti Vicia having an obtufe itigmi, fide, and that of ihe Krvum is finootli.

The SPECIES ARE,

1. ERVUM (*Emilia*) gerrainibus undato-pticatij foliis impari pinnatis. Hort. UpDtl. 224- *Ervum wbfefgr- mens are waved and folded, and unequal -j.ii%eed teitvei. i rvurii veruin. Canier. Horr. Tht trsr Sitter 'fid>.*

2. ERVUM (*LIHS*) pedunculis fibbitorii teininibus cum- [u]Lts convexas. Lin. Sp. Plant. 73S. *Enitm jttt havbg ftwJfMwn, and cemprejfti are convex. Lens vulgaris. C. B. I'. 346. Cerns Laiih.*

3. ERVUM (*Mmaatbas*) pedunculis uniflori-. Tin. r Flaot. -j3. *Eruwn viitb ant ffewer en each f, Letii monstioo*. H. L. 360. Ontflim.*

4. ERVUM (*penr.HHi*) pedunculis Jiikbi; nibus globofis quaternis. I-lor. Succ. t te» fietwrt t» eath Jm-fiaik, endfeurfli- ttubpod. Vi. [u]Lts (litjuis glabris. C. B. P. J45.C Tgbjmitbf

5. Eimni [l&fitam] pedoncdis multiflori, fen globulii binis. Lin. Sp. Pl.iiir. ;: *many flowers en a feot-ftalk, end tvx> ghfalar feeds ia* Vicia fegetum, cum filiqtns plurinii hir- furis. C. B. P. 345. *Cern-Fctrb having mem hsin tod.*

The first fort grows naturally in it is an annual plant, which r n^ak ftalkj a foot and a half high, garnilhed at e h joint wich one winged leaf, c>mp •nd of fourteen • r fit- ten i> very like thole of iln- Verth, but rwrrov >tie out from d;r Me of the* on toor-lhlc- an inch long, c;>:ji fliflaining two p*le-to!- than podj it little com; l thefc, each having three or four round ! the pods twell at the place where each feed is lodged, fo that it is called a jointed pod by many. The feeds of this plant • Lind to

is (bmr. d in mtdtcir -reen ,... is used for feeding in some co-ties, but IL is not worth cultivating for th' piirpofe in Kngl.ini The feeds are the common Lentil, ikh h ml' tivttiri'. many parts of England, either u fodder

for cattle, or for the feeds, which are frequently used. The plant is an annual, and 11 cm. tall. The leaf is ovate, and is cultivated: it rises with weak stalks a foot and a half high, the leaves are at each joint, terminated by a pair of lobes, terminated by a pair of lobes, which are neighbouring plant, and 11 thereby supported; the flowers are upon stalks of a pale purple colour, three or four (landing upon a foot-stalk) these are succeeded by (hort) lint pods, containing two or three seeds, which are flat, round, a little convex in the middle. The flowers appear in May, and the seed ripens in July. The feed; of this plant are commonly sown in March, where the land is dry, but in moist ground the best time is in April. The usual quantity of seed allowed to an acre of land, is from one bull and a half to two bushels. If these are sown in drills in the same manner as Peas, they will succeed better than when they are sown in broad cast: the drills should be a foot and a half asunder, to allow room for the Dutch hoe to clean the ground between them if the weeds are permitted to grow among them, they will get above the lentils and starve them. The seeds of this will ripen in July, when the seed should be dried, and afterwards the seeds should be threshed out for use. The seeds of lentils are frequently the common food of the poorer sort of people in (some of the islands of the Archipelago, and other warm countries, when they can meet with no better fare; for these they loathe, when they have better food, from the proverb, *Diva faxj im difii gaidere ictitt*; which is applied to those who turn at those things in which they were used.

The fourth and fifth sorts are small annual Vetches, which grow naturally among the Wheat and Rye in many parts of England, but are not admitted into gardens; they are only mentioned here as weeds, which may be easily rooted out of the fields, if they are cut up when they begin to tower, and not permitted to ripen their seeds, for as they have annual roots, if they do not fatten the feeds, they may be destroyed.

RRVUM ORIENTALS; Set SDPHOTA.
 ERYNGIUM. Lin. Gen. Plant. 187. Tourn. Inf. R. H. 347. tab. 173. Sea Holly, or Eryngo.
Il hash mawt fmaifittum fitting wptx one rmmfl «w»?; rciptaelt, mbyfi HviAvn-uw il csmfefd tf feveril fltnn le&vt: v the fixxeri. bate 6 faie-ltr-id trcS OKp!n»int, ... cr. th *pf<rfiit-, ... ibfgtrmin; form a remdijb jrtrfdi mtl, stick it laifour.*
*«i tup and byism, and fat trtii bain jtamituf, jia'dirg • ibffitrtBen, tmrutsitfd if obtmg firm npdmnd is 6sm*ai •<»• ftjptrixgtw •Wjtyfi j.fu Thgtrmm ef-*

This genus of plants is named in the honour of Libanus's first class, which includes those plants which have five stamens and two styles.

The Sea Holly, *ERYNGIUM*, is a genus of plants which are frequently used for medicinal purposes. The plant is an annual, and 11 cm. tall. The leaf is ovate, and is cultivated: it rises with weak stalks a foot and a half high, the leaves are at each joint, terminated by a pair of lobes, terminated by a pair of lobes, which are neighbouring plant, and 11 thereby supported; the flowers are upon stalks of a pale purple colour, three or four (landing upon a foot-stalk) these are succeeded by (hort) lint pods, containing two or three seeds, which are flat, round, a little convex in the middle. The flowers appear in May, and the seed ripens in July. The feed; of this plant are commonly sown in March, where the land is dry, but in moist ground the best time is in April. The usual quantity of seed allowed to an acre of land, is from one bull and a half to two bushels. If these are sown in drills in the same manner as Peas, they will succeed better than when they are sown in broad cast: the drills should be a foot and a half asunder, to allow room for the Dutch hoe to clean the ground between them if the weeds are permitted to grow among them, they will get above the lentils and starve them. The seeds of this will ripen in July, when the seed should be dried, and afterwards the seeds should be threshed out for use. The seeds of lentils are frequently the common food of the poorer sort of people in (some of the islands of the Archipelago, and other warm countries, when they can meet with no better fare; for these they loathe, when they have better food, from the proverb, *Diva faxj im difii gaidere ictitt*; which is applied to those who turn at those things in which they were used.

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*«i tup and byism, and fat trtii bain jtamituf, jia'dirg • ibffitrtBen, tmrutsitfd if obtmg firm npdmnd is 6sm*ai •<»• ftjptrixgtw •Wjtyfi j.fu Thgtrmm ef-*

This genus of plants is named in the honour of Libanus's first class, which includes those plants which have five stamens and two styles.

decay; the young roots ate rm:di belter ia remove thin the old, becaule they ar= furujibed with fibres, lbwill readily rake root: wten thec art fixed ill the ground, they (ilivild remain unrcinovytd; and if they arc kept ckaa from wenU, it is all titc culture they will require.

The fcoml fort grows naturally in fceveral pans of England, whrre it a very troublelome i*ev. for the roots run deep into the grtjund, b arc not cniily delhoyed by the plough; and they Ijntd and multiply greatly in <he ground, to the ptejudke of whnever is lbwn or pUnted oit the hutd, then. I are it is not Admitted into gardens.

The third fort makes a very pretty appearance when it is in flower, efpecially that with the blue Italks vind flowwers, for there is a variety of thijj with white flowwers and fhks | but as this (loth nut fpreid at die root, but kcrps within bounds. It. a few of die piano fhoulk be allowed a place in the pleafure-garden. This is propagated by feeds, which, if town in die autumn, will more certainly faceted than when ix is low in the fpring, for die latter commonly remains in the ground a year before they vegetate; and if the lireda are fown where the plants are to remain, diey will flower ftrongiT than thole which are trauplanted j fix as they have long downright roots, lo thieie arc commonly broken in taking out of the ground, which greatly weaken the plants. The culture they require u to thin them where they are toil near, keep them clean from weeds, and dig the ground about them every fpring before they ihoot.

The [talk* of this fort will rife from two to three feet high, the tower leaves are oval and plain *, thoft i- white fort arc of a lighter green than thoic of the blue; the upper pin of the italks of die white i ihst colour, [hole of th« blue arc of die colour i [lie flalks divide upward, win, d with leaves divided into many paints j ividi fpines; the flowers are produced in oval » at the top of the (talk, Handing upon feparak Stalk*. I ic ilovcrs come out in July, and die; Jccds ripen in September.

The fourth fort grows naturally upon the mountains of Syria, Mid allb upon die Ajjenninrj. The lower itavei of this fort are divided like the fingers of a hand, into five or fix legmtnts, which are very much cut at their extremities into many ptra, and have linall fpines \ the ftalk rifea abouL two feet high, Dm- jiih'i'l »illi fmailer and more divided leaves; die upper part of the ftalk, and allb the head; of flowers, are of [he fined amethyft colour, fo that they make a very fine appearance. This fort Bowers in July, and when the autumn proves dry, their feeds will ripen in September, but in wet fealbn the feeds never ripen, in England. This is propagated by feedi in the e nunnr as the former fen.

The fifdi fart has been fuppoied by many, to be only i variety of the fourth; but I have propagated it by cecli moie than thirty years, without iindint? I

that) nuke no doubt of its Wing a diftinct fpecies. The lower leaves of this are very much divided, and the extre- ity of the fegments form an oval or circle; the upper part is a plain leaf, which is in the middle, and

green mi rive borders. The It two feet high, garnished It i' - joints with fmaller leaves -Siieh are finely cut

the flowers terminate in: iLilk, they are of a lighr blue colour, and grow in largjr heads than either of the lbntier fort. It flower, in June and July, a«i tlic ireds ripen in autumn. This rowi iijaturally on the Alpi i it is a perennial plant, etc.; may be ptpagated by feeds in the fame manner as the rbrmer,

The fifth fort was difcovered by Sir. Tountdbn in the Levant, from whence he tent the Jccds to tlic royal garden OI Paris. This hath a perennial root, the lower leaves are regularly divided into fcvCB or nine parts to the middle, as the »r winged L. each part is a leaf, which end in deep thorns. The stalks rise to i leet lit,

findu"3 on I fide br.indicj, garni (hed with fffff) which we divided into narrowrr fcgawnts than th lower, and are texnuated by three points. The How. era te rm i ll. •, I i ti ing dole among ti ll leaves, ami ate of a fine blue, as are alii* the kava on tl: upper part of the flalks, fo they make a pretty i; pcaranee. 'I his Dowers in July, but fldom ripen feeds m Eagltnd. It is propagated in the fame manne EU the three former lores, and the plants requite die lame treatlent.

Tin: (breath fort grows naturalW i i Vir^i.nii and Carolina, where it is tilled Ratrlcfnaltc Weed, from its virtues of curing the bite of that venomoiK reptile. This bath a perennial root, from which arife fevtnl long leaves, which ure-fawed on thdr eilgrs, ending in fpines; thiclit ietma sit ciipofcd roun! die root, after the fame form of the Alue or Yucca; they are of a gray colour, » foor long or nwre, and v.e inch and 3 half broad, (tilf, and end in fiuBe*. TJIL- IUII: ib frtang, grows two feet high, dividing upward into fceveral tooi-lblks, each being terminated by an oval head of flowers, ihaped like thole of the former foirs; they arc while, wkh i Ihde csft at pale blue. This (bn Qamn in July, but unclci the ktSaa is very warm, the lit Jt will nut ripen in England.

This fort i: propagated by feeds, which, il" fown in pan and plunged into a moderate hot-bed, the plants will come up mxich luoner than thofe which ar= Sown in the full ground, whereby they will be much ftrong« before the winter. When the planes arc fie to rem lovi-, il:cy fhould be each planted in a Icpirate (mall pot, tilled with light cartii-, and if they are plunged into a moderate hot-bed, it will forward itieir taking root i then they mud be gradually inured to bear the open air, into which they may be removed toward the lir.er end of May, anil plied among odit-r hardy exotic plants. When vie plant have rilled thile pots wirh their roots, i may be fhaken out, and planted in a warm bo the oihers mny be put into larger pots, and in the autumn placed under a common frame, where diry may be expofcd to the free air in mild weather, hut Oiekered from fevert trail: the following fpring thefe may be turned out of the pots, and planted in a warm fituntion, where they will endure the colr of our ordinary winters very well; and if in levere froft they arc covered with Straw, Peas-hau'm, or any fuch light covering, it will leure them from injury.

The eighth fort grows nwundly in Spain and Intly. This puti uut ublong pluin km* frum die rod, which arc cut on their edges-, the (hks rife about foot high, and branch out into many forked dii which ire rfgiilar, and at each of thele divinions h iituataed a fmill head of flowers, litting very clole be iween the branches. Thefe have no great beauty, the plants Krc Ieldom cultivated in gardem, ex for the &kc of variety.

The ninth fort grows naturally on the mountains of Helvetia and Itly. The root is pneesjal, the lower leaves are oblong, heart-ftaped, and plain *, thr- flalks rife from two to ihrec fret high, branching out on dicir fides upward; diefe »rc garniW with ft'i'fi' i leaves, which art deeply divided, ending in many points with /harp fpines i the flowers terminate the (talks, (hey are colfc&cd into conical heads, and arc of a light blue colour, as are alfo the upper part of the (alk:.

This [owen in July, and the fcedt arc ripe in September i it ii propagated by feeds in the fame manner as d*« other loni.

The tenth fort growi naturally in th« Weft-Indies, where it u much UVLI in medicine, being accounted of great ferncc in the cure of fevers, from wki hath the appellation of Feverweed in thofe countries. The roots of this plant arc competed of many lm:ll (ibri, which Ipnradnetr the furfaee, ihr "••• leaves are fix or frven inches long : they are raw at their bafe, and enlarge upward to an inch in bread ! near the top, whiTL- they are rounded off on one fid« like a liymiur; they arc finely awed on their eight *, and are of a light green colour *, die (talk rific about a

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foot high, and fotcdl out into many branches, garniflitv with fine . . . leaves, which end in many points; the flowrs arv produced in iinsll leorls whidi ficclofc to ti: . . . ining out at every divifion oi' die (talks, an ' . . . of tilt branches; thtfe are of a dull white colour, ID nuke little appearance. They appear in June and July, sndthe feeds ripen in autumn. As the p . . . int is a native of hot countries, Id it will not thrive in lingtand, but in a warm ftoVe It it propagated by feeds, which muft be fown on * hot-bed i and when the plants art fit to remove, they fhoule be each planted into a final poi, and plunged into the burk-bed, and afterward m-ct-d lif tender phmts from the lime country •, tic fecohd year they will produce flowers and feeds, foon after which thry commonly .decay.

ERYSIMUM. Lin. Gen. Plant. 719. Tourn. Thft. II 11. IIS, tab. 111. I E^trflj?, of beu, Gr. to dnw out, becaolt; this plant, by means 6t' its hot quality, ha* the quality of drawing any thing out of the body in which it to hid.] Hedgc-Miitbud; in Flench, Velar, or fertlU,

The CHARACTERS are, Tba impattHMU of ibi / h&rtr is eetspyfid t) evaJt lolourid Ittvei; tbtfirmtr habftr infirm of a crap; theft art oiloag, plain, ax: it bath two nctftruxs gk>td.' fiii!ald betu U bath fix lamina, four of . . . t sj tit empelmtnt, tbt other tie* art a Unit fhartr. tirminated ifJhi'U fumwits. It beth d wry aartw fix-trnurtd gtrmtin at b*g as lUfiwnim, aati a /hnrjtlyit, tronntd by afmali-permm: j'iEmd sbtgenani afterword btemts a bug, Hiirnw, fmr-foTiterd ptAvitb tsst telU, filed

This genus of plants is wnged in the fcond reAkv of t . . . : : ^cnth cbfs, w . . . ka ihoie plants whi . . . flowers have four long, and t . . . o (liort

Cliff. 337, ifalgt Mujlord wbcfe pods ryfijnuo vulgart. C. B. P.

i. Kdvii HUM [St. . . lyotia wtimo fubrotundn. Fkw. Suce. 557. Jh.!gc Mujlard %tb barp-ftxtpid leaves, li: cultr figmtBt bring rswtdjib. Sifynbriucn . . . kl glabro fiore. Toiim. Inf. 116. WiwUr Crefskitha Ktiktt leaf and ytUcrj) flmstr.

pitiniito-liniuuis, floribui U1 . . . •I:dge ASuJtard tttft teaser . . . i barf, tbsft on the ftalis fin&itcd and wited, end fewer! { rttm j in t&fi Stfyntribium cruac folio glabro minus & jirinvocius, Tourn. Inf. 120. Sawl'tr tarty tlxtcr-Creji torfi a fmwtl) Rocirt kef.

i. tlavsiMUM (OrwitoU) foliis radicalibus ovatis integerris<J5, jictiolis decurrenubus, caulinis oholigis . . . i Wam. Htdgc Mufiard wilb teen- le- i: • and, . . . i-Jtali, and tbc Icavei <sjvn lit

folio. Tourn. Cor. Ai afp<ara*it ef

aato-finuati!.,

5. ERYTHRUM (Africa) folis intermedium . . . oribus folitariis ala- . . . fomalij, tbt upper eiluig "ml indnfd, axdjafi-

pUfi . . . li. Ind. vtb a i'mceibf dark, . . .

6. ERYTHRUM (Gallia) folis cordatis. H. n. Cliff- jj S. . . Htdgc Mufiard with leari- fupal lervu. . . Htdgc Mufiard with leari- fupal lervu. . . Htdgc Mufiard with leari- fupal lervu. . .

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Th; fiift fort is itfd in medicine j tiis grows na;uully on toe fide of fon: . . . upon old walls in most parts of England, ib i

of England, ib i . . . rarely cultivated in gardens, where, if it is once admitted, will soon become a troublefomt . . .

The fcamd and diird forti ilfogru w naturally on the bi:nks in roof p.trti of England l [lv . . . L-iten in winter tall ad?, bot'yr the . . . were funtjhd widi better plinis; lince when they have be*n . . . for they have a rank ficed, and arc difagrc. ibic 'n tlic palate.

The fourth and I th forts are not natives of a t'1" couir:'), but fine* the) have been i . . . i n(C) . . . them- klucs by their icL . . . rincr,

ai to becom . . . troublefome weeds. Thie have a femuUnce of the common Winter Cris, but [he lower leaves of the fourth fort arc entire, ind I . . . oblong form; the uutv' leases arc- oblong ajui indentni, in which this d,

The fifth iuci hath thicker l<ves, vvhieh are of a dark h'cid green colour, and the- flowers com . . . Jingle from the wings of the ftlk the <., . . DJSerectB arc lading, mid do not t

The fixth fort grows naturally oi l . . . in many pans of England, ib is not . . . a place in jratiens. This was to: . . . fallatJ herb by the poorer (-.-; . . . it the title nf Sauce <lon . . .

and taftc of Garfck, e . . . the pile;e- . . . i i fi . . . frequently prefcrib'd as a medicine.

The fevcmlt fort is fbmeii . . . rally upon oil walk in [. . . ctdarlyit Cumbri

I have nbfcem-cl it. This liat!-

ihetr u . . . white I . . . long I . . . Bowrf

but the roots will whole feveral years, if they have a dry lean foil, or grow upon a wall, for in rich . . . him! ti

The odier fons arc fometimij kt; . . . in botanic gardens for the fike ofvar. . . they are beautiful plants, which perifh after they have perfected their feeds.

They may be propagated by fowing their feeds in the autuiiii, in ;lie pucw whert 1 . . . they are to remain, and require no other culture but to dig them, and keep

them dear from weed? . . . ERYIHRINA. Lin. Grn. Phut. •6t. Corallidendroti. Tourn. Intl. R. li. 6th> t^b.

lieC CHARACTERS 'arr, . . . tbcftvscr . . . faltrjh . . . 1 arc fiaf

fautidt tbt top •• . . . helms, (aid, . . . IJ art tinfqun! nt tht It

•w i . . .

•renus of plant; is ringed in the thinj . . . Linir . . . feventeentb chli. wncb include I . . . wicia a . . . two- bodies.

The . . . ERYTHRUM (Hibernia) folis ternatis, caule fi . . . citfinio ternem . . . ffucte l . . . humile, . . . radice crassifirm.

Carth. Carol. 49. tab. 49. Linn Car . . . rUtree ctj; i: . . .

long spik of flowers and ibkt ram, cemmovly tailed the L'arelina Ceral-tret.

- i. EH.VTHRJNA (*Cerckitiron*) incrmis, foliis tematii, caule arborco. Smsoth *Erythrine zuihb trifoliolate leaves, end a trtc-like Jlati*. Coral arbor Americana. Hort. Amft. i. p. ? n. *Smooth jtmeriaa Coral-tret.*
3. LUVTHHINA (*Spiitofa*) fbltij ternatis, caule arboreo aculeato. Hort. Cliff. 35+. *lirybriita with trifliate leaves, and a rtt'licprckh fla:k. Corallodendron triphylUun Americanum, rpinofvim, florc rubccrimo. Toun. Intt. R. H. 661. Prickly tbrti-ltmii American Coral-tret, isith Aviryridftr.Lfr.*
4. ERV'1-HMSA (*Pitta*) foliis ternaiis aculeatis caule arborco aculeatJ. Lin. S[>. 993. *Er-tbrimt with trifoliolate prickly Ueves, and aprictlj trte-ltki fiolk. Corallwien-dron triphyllon Amncanum, tblus mucronatis, fecminibui coccineis. Houft. MSS. l'brce-lcavtd Amerittm Carel-tfe; with actiitt-pixtttdLave) and fcorlet feeds,*
5. ERVTHR:N* (*Jmrricana*) foliis ternatis acutis, caule arboreo aeulea[o, floribus fpicaiis longiflimis. *By-tbriisa mib trifoliolate <uuit-pswt<d /swsw, aprtkh tret-like folk, and very tmg Jpihi of fbwtrs. Coralloden-dron triphyllon Amncanum, tblus mucronatis, fecminibui coccineis. Houft. MSS. l'brce-lcavtd Amerittm Carel-tfe; with actiitt-pixtttdLave) and fcorlet feeds,*
6. EBVTHRINA (*hermit*) foliis ternatis scutis, caule t'miicolu inermi, corollb longioribus clauGs. *Ety-thrtKi with mute trifoliolate leaves, a Jbruiy unarmed jlati, Md isiigr fievxrs which are (efed. Coral arbor nan fpinolk, flore bngbrc it magis ebuib. Sloan. Cat. Janv 142. Caraktrec wubtiu fpinci, having a*

The first fort grows naturally in South Carolina, from whence Mr. Catchy sent the seeds in the year 1714, and many of the plants were then raised in ivi-ral curious gardens. This hath a very large woody root, which seldom rises more than a foot and 2 half high, from which come out rVfli shoots every spring; these grow about two feet high, their lower part being garnished with trifoliaEr leaves, of a deep green colour, which are (haped like the point of an arrow; the upper pin of the stalks are terminated by a longi'pikcof karlet flowers, composed of five petals, the upper petal being much longer than the uhr, so that at a small distance the flowers appear to have but one petal. **L** the flower turns to a taper ... I fix inKisL lonti^ iweHMg v every part where the seeds are lodged, opening in one cell, containing five or six kidney-shaped seeds. These plants flower in England, but they never produce seeds here.

The second fort hath a thick woody stem, which rises about ten or twelve feet high in this country, but in its native country grows to twice that height, sending out many frons irregular branches, which are covered with a brown bark, garnished with trifoliolate leaves? [landing upon long foot-stalks, the middle lobe which is the largest, being much larger than the other two-, they are all heart-shaped, smooth, and of a (deep green colour-, the flowers come out at the end of the stem, in short, thick, clove spikes; they are of a deep scarlet colour, and make a fine appearance. These commonly are in beauty in May and June in this country, but are not succeeded by seeds here; but in America, where these trees grow naturally, they bear crooked pods, which contain large kidney-shaped seeds, of a reddish purple colour. The leaves of this tree decay in the spring and fall off, so that in summer they appear to have no life-, but in the autumn it puts out new leaves, which continue green all the winter. The flowers do not appear till the leaves drop, so that the branches are often naked at the time when the flowers are out.

The third fort chiefly differs from the second, in having its trunk, bark, and the twigs, of the Wave like spines, the leaves are armed with short crooked spines, and flowers being very like those of the second fort. The fourth fort has shrubby stalks, which divide into betels-; the wood is above tight at nine

feet High; these are armed in every part with crooked, black spines, the leaves are rather like those of the two last, and have a nearer resemblance of the first; the foot-stalks of the leaves are armed with the same sort of (spine, and the middle of the leaves have also spines which are much narrower than the Bowers are of a paler scarlet, and grow in looser spikes. The seeds are as large as those of the second fort, but are of a dark purple colour. This tree is generally planted in the East-Indies for a support to the Pepper plants, which twine round the stem and branches, whereby they are prevented trailing on the ground; and as the branches of this tree will put out roots and grow, they are preferable to any dead props, which in those hot countries, where there is much rain, would rot. The seeds of the fifth fort were sent me from J. S. Viera Cruz, where the plants grow naturally; and since I have received seeds of the same sort from the Cape of Good Hope, so that it is a native of both countries. The seeds of this are not half so large as those of the second or third fort, and are of a bright fender colour; the leaves are all much smaller, and have long acute points; the branches are very cloistly armed with crooked spines, as are also the stems and foot-stalks of the leaves. The flowers in very long doles (spikes, and are of a beautiful leaflet colour.

I have also raised a variety of this with paler flowers and seeds, and the plums were less than, but as I was doubtful of its being a distinct species, so I only mention it here.

The sixth fort grows in Jamaica, and some of the other islands in America, from whence I have received the seeds. The pods of this are longer, and not more than half so thick as those of the second fort; the seeds are of a bright (scarlet colour, they are longer and slenderer than those of the other two, the leaves are final and acute-pointed, and the twigs are without spines: these do not grow very large, but shoot out into branches at a little distance from the ground, which grow erect, so form a bushy shrub. The flowers come out at the end of the branches in short spikes; the stem of the flower is long, and the lites turn down over the wing; which are also longer than those of the other species, and the whole flower is more closed.

I have also received specimens of a variety of the third fort from the island of Barbuda, with very few flowers and pods; they came by the title of Beal, which is the common appellation given to it in America; but the flowers were (separated from the stalks, so that I ran in vain to see in what manner they grow, whether in long or short spikes, but the stamina of these are much longer than the petals, in which it differs from all the other, the pods are very large and eitherside, the leaves are thicker than those of the third fort; the leaves have the same appearance, and are armed with spines, as are also the stems and branches, but the plants have not as yet produced any flowers here.

A few years ago I received a few very small seeds of a Coral-tree from the Cape of Good Hope, which were of a bright scarlet colour like the plums have no spines on them, the leaves are much larger than the other forts, their stems are fringed, and have the appearance of growing to hrg: trees, but at 17 are young, so there is no determining how they may differ from the other forts.

There are two oilier (bra of Coril-tree mentioned) by Sir Hans Slawe, in his History of Jamaica: one of which is by its characters a Sphora, under which genus we shall place it; and the other will be put under Robini*, to which genus it properly belongs. These plants when they produce their flowers, are some of the greatest ornaments to the lites we yet know; for their flowers are of a fine purple colour, and are of a beautiful scarlet, so that they are a fine appearance; but it is seldom they are seen here, or in any of the other parts of Europe; yet in the

ERV

countries where they naturally grow, they produce flowers in great plenty every year. To that it is very common to see...

The first fort may be kept through the winter in a warm green-house, but the finu fo kept rarely flow...

The plants are best propagated by seeds, when they can be procured from the countries where they naturally grow...

lie joint in the pUnts (should be removed it) to the five - and for the two or three first winter, while the plants are young...

there will be a greater cl... The third fort a rjceqnll planted in the gardens near Lilbon...

These plants may nlib iw... which, if planted in pots during the summer months...

ERYTHRON ! I! ML Lin. Gen. Plant. 375. Dens tanis, Toum. Inf. R. H. 37B. tab. zoa. Dog's To

Th CHACTEAS etc, wtr la w tmp&aatt; it« kli-haptd, axi m-fjat dim f (tab, viitb ffrtod ipe* te rbrir

by cutting, or, quadrangular joints. In the .ottr is mm, fuppsrt- lb<

ESP

afterward htcom; aw ahfoiig situfi eapju'e cells, Jil'id viitb fi... This genus of plants is ranged in the Er(fction of Linrecus'i 6ttth \ ch he p laces thofc p laji ti

The SPICES irr, i, EHVTHSONIUU (Dem Caw'sj foliis ovatis. Eijtkrzi' ton vritb wel Uttva. (Jens canu Littiore rotundiore- qiiL- folio. Bore ex purporil rubentr. C. B. P. 87. Dog's TOOI& Vkkj -ji'ub 11 brwiitr nnd rounder leaf, mill a pxrfl: rtd jiooer.

z- Em LITTONIUM Loitgifolium) fajiii linfeolatts, fry- ibnmim u-th fptar-Jbaptid lesvtl. Dens canis anguftiore longioreque folio, Sure ex albo purpuralocente: C. B. P. iy. Doi's Tumi Valt, -with a l>jx&er end m- rextretitf, end fuprHjh whitejfovr.

Thre arc the only diftinct fpecies which I have Teen, but there lire fome varieties of ihtm, which are preferred in curious gartlem, O) the first fiirt there U a whke Bower, which is pretty common in the gardens-, another v-i'h 3 pale purple, mid -A tlunl ivjth. yellow Bowers, which are rap in; ant! of I he

Second fort there is one with a wbke, ami aoother with a loft red flower, both which are now very rare in tin* gardens.

The first fort fends out two oval leave?, which arc joined at their bafe : they ate three inches tang and one and a twlf broad in the middle, [dually le(Tell- ing toward the end] thefe it lirlt < orange red; other incoCng the flowtr, but a: toward they fpeid flat upon the ground, they are fpottd with purple and v. tiif Ipots all over thicir furface; between thiee rixes a fingle naked flilk about four inches high, w Bich ij fniwcli, of a purple colour, the fuffian one Hower, compolvd of fix fptar-lhftpd pecu!;, which in this arc purple, but in fome they are white l the lower ban:: downward i, and die pctali reflex and fprtid open to their baf. In the Omer is flau it cd the oblong ;im*-comimcd germen, fuppomng a tingle (lyle whjci ii longer than rhe ftamini, crown<3 by 1 triple ftigma; tfr puq'le (lamina ibnd ctofc about the flk, and the ftigma ftands Anher out. This pbnt (lowers eartj in April, but feldom produces feeds in England unj. The root of this pliiit is white, oblong, and ilelhy, an! fhaped likt a tooth; froffl whence it had the title of Dog's Tooth.

The fccmcd ibrt differs from theiirt in theftapeof its le*ves, WKJLI ii lurger and nairowci-, and thefiowem are a little larger but not (b weil coloured. They grow naturally in Hungary, and in fome parts of Italy. They are propagated by offets from their rootSj which they do aai fend out very plentifully, fo they arc not in commonly fce in the gardens, as moft other (lowers of the lamL- fraibn i they love II lhady ftuation and a gentle leav v bil, but fould not be too often removed. They may be minplaned any time after rhf bc'nniing of June. When their leaves will be quite decayed, til ihc middle of September; but [he roots fould not be kept very bng ut of the i: i ground, tor if they (brink, it will otit-n cuule them to KM. The ronr • i thic for ••ers (Viould not be planted kutrir.g • in the borders nJ the flower garden, but in patches near e.uh od.ir, where Ehey wiU make a good appearance.

ESCHYNOMKNO L S, £SC II YN'OM EHOI'S PLA" T5 [Aegopogon of Bi'imfiat, Cr. to be almi- ed.] the inclusive p tnu; which, when one touches them, will th ink in, or let their leaves fall down.

ESCHYNOMKNO L S, £SC II YN'OM EHOI'S PLA" T5 [Aegopogon of Bi'imfiat, Cr. to be almi- ed.] the inclusive p tnu; which, when one touches them, will th ink in, or let their leaves fall down.

ALIERS, are either rows of trees planted aboi. i a whole garden or plantation, or in hedges, fo as to include quarters or feveral parts of a garden, whicli are treated up flat in a cloif hedge, for th- t deft! ve of trader p. on againft the violence and in- JOIT Of wind and weather.

The most commonly received notion of pppilicra are hedges of fruit-trees, &c. &c. ue iLined up regularly to a lattice of w...

Equal; ir; cif fruit-trees ir: commonly planted to surround the quarters of 3 kitchen-gartW, for which purpoV they are of admirable u(e and beauty j for by being out Jtc w.ilks of thif garikn regularly, which arc bounded on each fid* by theft iL-d^s, when they are managed, they have a wonderful effect in Hicltering the kitchen-plants in the quarters, and allifereening them from the fight of perfons in the walks; lo chat a kitchen-garden well bid out in this nianhr, and properly managed* wilj be equal tu the i...

The trees chiefly planted foe Espaliers are Apples, Pears, atid (ban Plom; boi the two former arc mostly used: these plant Espaliers of Apples grafted tijxm bari... being of humble growth, and A thort duration, art not lb proper for this purpose, unless for very fimll gardens j therefore I thoud; rather advife the having them upon Creb-(tocks, or (if in fmaller g^rdtai, where the trees cannot be allowed to grow ib high) upon whar the cartners call the Dutch.ftock; which will caufe them to bear fooner, and prevent their growing too IUXLI-riantly, and theic will continue many year, in vigour. In chuling the rees for an ilpalirr, endeavour as near as-poffible, to plant the taverl forts <l:-> nearly of the Ume growth in one line, that tin... be die more irregular, anil of an equal height, wtich greatly adds to their beauty; for it' you punt trees which thort very unequally in the fame line, it will be imixriTilile 10 "mike the Efptlier regulm... Cdots. (its itilfancr of die trt-s muft be i^ proportion to theU gruwdt; for iotne trees, viz. riiofc of a larger growth, fhould be pl^ntfd thirty or thirty-five teet slander; whereas thole of fm.-lltr growth, need not be ab... ivc twenty-fivtf... <fatr:

The width of the walks and lx^rdtrs U-twren tlnle Espaliers fhould (in a large garden) be fourtee nor fixteen feet at leaft; and if the trees arc dinned to be carried up twenty high, the diftance fhould be greater, that... the advsntage of... 6in and a... if you would h^vc the fruit well tailed. And if your ground is lb... J, that you are at full liberty which v... way to make die Espaliers, f would ad vile the placing the lines from the east l little inclining to (he lbwh, and toward the weft a little inclining to the north, that the fun may fhine between die rows in the morning and evening when it is low; for in the middle of the day, when 3... fun is d^voned far above die horizon, it will fhiiK... ver the tops of the Espaliers, s^d reach the furio^of diccirih ab^ut their wroic, which u a matUT of more conlequence than many ptople arc aware of. The lord of Ai... for Elpialiers, are rhr Golden Pippin, Mortard, Rennets G ifc, Aroma-tick Pippin, Holland Pippin. ITenchiIppin, \Vheeler's Ruffet, Pike's Ruffet, with feve odars. The... ngind training these trees, you... fee under the articles of Arles and Paysanne.

The sort of Pears proper for an Espalier, nrechitBy the Juminer and autumn Golden, for thort I the winter Pears U: lum succeed well in an Espalier. Thre... ei, if deligned for a fence, small foil, the "Id tw... Quince-flocks; but if for a dry foil up in frcc-flock... Theird... alfbecegu... lated by the gov... th of the trees, which are... re unequal in fens tva... Apples, and fhould therefore be morrc.nrdi... examined before they are planted. As for th... Pears upon free-ftocks, the distance fhould never Iv... that thirty feet for moderate growing trees; but for vigorous fhooters, the space of forty feet is little enough; especially if the foil be strong, in which case they fhould be planted at a greater distance. The particular forts of Pears I would recommend for an Espalier, are the Jaqueotte, Blaujette, Poire-fan

Peau, Summer Roncretien, I Lm,!'s Bergamot, Autumn Burg-mmit, L'ambrecte, Gro:, Houffier, Chiuirnontdle, Bctirre du Roy, t-i Marqui'. with tome others of Us note; always rcn... that hofc Pears which arc of the me I it^M kioid, will do better in Elpllier than the breaking P... feldom ripen well on an EJpalier i an ailo that many forts of Pears will ripen well on an IZpalier in a warm foil and fitufitbn, which require a wall in 6therplaces; you iriould sdfo be caretul of the llocks ritic arc gritted on; for if the breaking Pears arc grafted upon Quince-flocks, the fruit will be ftony, but the melting Pears will be improved by them. As t... the method of planting., fee the article VLAR *, an... for pruning and managing, fee PRUNING.

I dial] now give directions for making the lilpslier, to which the trees me to be trained; but this (hould not be done unril tie third year: iiiiir the trees arc planted \ for while they are VOUDg, it will IK: fittictenc to drirc -i few iVort flakes into ihe ground on eath fide of the trees, in a frait line, to which liit brandies thould Lv fattened in.an horizontal pofition, as they are produced, in order to train them properly for the Espalierj which Hakes may be placed nearer, or at a... ber ditlance, according as the (hoots pro'uced may require -, and thctc will be turRcinc for [he i... firft years; tor lhovild you frame the Espalier tht tirlt year the trees are pLi.itml, aunj ol'Ue fljcks would rot before the Efcalicr i^ covered. The chcapeit metliixl to make ricfc lifpalien is with Alii-poks, of wluth you Qiouill b^V« two furu; <i;.,, t LIC largd... which contains thirteen poles in > bundle, and thi... iize thjfc of half a hundred. The firft or largel'... poles, thould be cut about fev^nfect and a lialf long-, thcii'areititcndcilforuprightllilw, and mutt U O...

be driven into the gron... and if iicir bottODi... are burred, or rubbed ovir mth... that compefion... tionfd in the article of Covinines, they may be pre-ferved & long time found; thirfe Jbould bv... placed at a foot diftance from oac h other in a direct line, ar;;... of an equal height, about lix feet above fround -, dicn you Jhould nail a row of ilrait Oendcf pou... along up... n tic tops of the uptight iVakr... ! keep die m exartl y cvciv, and connui... to crabs the... LCJ with the l'nul^r polei, and alto with tht... tops which were cut uT front the largertakes, si about nine inches ifill... row from row, from the top to the bottom of the (Lakn. Thefe rows of poles fhould be fallened with iVire to the Itakes, which ir made of Jir, ami piinted over, willaft a longtime *, and the largellend of the poles thould be cur. flat, and nailed to the upright ibdics, which will fecurt: the tlpalier a!mod as long as (he poles will endure j whereaf, if y... (hong, the poles will be continually tL: placed with every llrong wind.

When your Espaber is thus fraued, ybu mull i... then the brandies of I... trees thant to come with small Ofier-twigs. ... or fome fuch binding... ibferving to train them in a horizontal pofition, and i equal rJitbncej being careful not to Cro6 any ot' [be branches, u f to lay them in too thick. The diftance which fhould be allowed for the branches of Pears and Apples, mud be pi...

Apples, mud be pi... portained according to the size of their fruin fa* of them wbofc fruit is targe, as the Summer Boncretien, Moolieur John, Jiid beurre du Roy l'ean, ami the Rennet Crife, i kill and Pippin, French Pippin, and other lari'c Apples, Jhuuld have their branches (>... or eight inches... ! j lance ai... and ro thole of letter... growth, four or five inches will be liificiirit, iiot for farther direction-. I IIMII refer; i the wrick... of the feveral fruits: as alio that ot PnuNttio, win... these parton... rs will be... cillj- expbinetl.

But' beidw thiJ fort of I... le w... with AOi... -pdes, there is another fort that is by many... jieaple preferred; which is framed i... with fquare timbers cut to a proper line, according to the strength thereof, or the expense the owners willing to go to. These, though they appear more ii;... tly, when well... and painted, are not of longer duration than... . * tiit former, provided

»««» is v-A/ niaJc, and the pate are flfong which arc fel upright; not will they uilwer the ;

plants which j;ruw in the quarters -, and, lecorvdly, the fruit upon thec are better rafted than thole which grow upon dwarfs, the fun and sir having freer icceft to every part of the trte; whereby rhe dampicfs ariing from the ground u fconerdiflipaicd, which U tjf fingulaf advantage to fruit-trees (is bath been already [hewn.) Aiwfsa the trees againft «n Efpalier ire kept low, and the branches being fattened to the Efpahcr, the fruit will nor be blown down (o ibon by the wind ; fa chat upon the whole, Elpalim muft be allowed to be of great ufc and beauty.

F. EVER-GREEN THORN. See PVIAMNTHA.
VER-LASTING PEA. See LATHMMII.
EUGENIA. Michel. IOS.

/Lmiau whith art fytrtd in fa anpoteimii, termnutJ %/mitt funnmits, W o torlanatti gtmuu ftuold MEJK rtxft-Jir, fuppsrlxig a fanpit jlk the It^b if lit fm/uv, irtwnii h a fi%U fiip**.

of pUau • f<g< Acwelnh d d . m.it. flo>erh.vk>*«w i, and one ftyk.

The Species are,
1. EUGENIA (Mif) foliis integerrimis, pedunculatis...
2. Eugenia (Jambae) foliis integerrimis, pedunculatis...

There are fome species of this genus which grow naturally in India, but thofe here mentioned are the only forts which I have feen in the Englifh gardens. Some plants of the feft fort I received from Iran Or. Hebrides with fome other plants, which I cultivated for the table; fo that the plants of this kind are common in moft parts of the East-Indies.

If o rife to the fame heightw the firfl...
Cruit II this is fofter, rounder, and not fo much efteemed as thofe of the firft.

riouj for the fake of variety, though there, is little hopes of their producing fruit in England. Tli 11137™ propaffiKed by thrir 0... obtxincii frefb from the countrm 1... growth. T... filled with light... and plunued tutu... about fix weeks the plants will ip pear... grown four IMJIL-S hiyh, dn-y fiouM be carefully I-pantnl, pfencing each into : : fmall pot, plun... them into the hoc-bed again, being careful to l... diem till they have taken tor w root;... they (hould be treated in the fame way at other lender plants troin die lame country, ihrt) plun... ing them into thi:-an-bed in illicielove; anil'in winter be fparing in water 10 them, for mudi wet will Liil thenu

U N Y M U S . Lin. Gen. VUtl,240. Tourn.Inft. R. Ii. tij. tib. 3.Ji. [1S±; & of i, ^wni- and Iwjui, a name ; lu tailed by way of aii'tiphr^... it iihurtful to animals.] The Spirit!!... wood > in French, l-ufaut.

Thr CuALACTist are,
/* 1/ath a fart tnpaUmttt it tbt pvxr af on- kaf.
1; £-jided into feur cr fiot femtti. Thefiifwt balbfourorfceveaipetah, -xbichffrtai opas- It hath fivt fimrt jOutima, vibitb ert j'dn/d at tbtit haft it tbt girwitn, taminaStd hy iivin fMBtmu. In the center ii fitiaiuadal%og fppZ4fi>Brt jiyk,tmn ei' iy en ftlufe jH\$ma. Tbt xtrwi aftervrxrtt btt&mu a fiumUii four-cornered cektrU tapfxk-, baaing m maty ciltlei wglu, Mtb tintmidng mte svitftiti.

This genus of plants is tanged in the Brit fclion of Linnxui's fifth d<6, -which includes thtfc pknti whole (lowers lave five tumina and one (lye.

The Species are,
1 tLuoKnaa (fuigarii) foliis Unceolatis, fioribui M-tranilriis, fructu terrigono. Spindie-trtt trixi Jhuped fctfin, faanTi Having fevr jlaai*«, *«J iput-Jr<ot*iiului fruit. liuonymu) vulgiii, granii rubec-tibus. C. B. F. 41S. fAt «n™ Spirdie-iri- luvinu (Letfsiim) foliis ovato-hnceolati*, floribus pentandris, fructu pentagono, peduntulis longiBimis. Spiaak-tr* wwl ««< jpur-fiapt ifM, a* fivt JlamiMB, a fise-triKtId fruit, it>d itry long fwt-jtslks. Euonymus Uifbiioi. C. B. P. frsed-baeti Spindlt-irir.

EuowTMUi (Pimwtu) foiiii ptnnius, fructu racemofo Uigono. Spitulk-tra v;it/ tow... Euonynvs caudice non ramofo, folio aUto. fru^u n Sloan. Cat. Jam. 1 SM, flw^Jfe-if. ***" "«••' frut having three foeds.

Thehetrtl fortgrows naimuv ui England, it 11 very common in hedges, and is (ometimes found growing in wtjods. TW*, when growing in hedgt... a (hruh; but if planted Sngle, am] trained up like other trees, will have a frong Wo... more than rwctny teet high, dividing into many branches, garniflied with fpear... three inches l<»ig, and... and a quaner broad in the BUddl... hendi; iheyareenr... 3UI in II... ing upon (lender foot-rwhidlh pe tills, ivtiith... U divided in» S ftjuniM, and ch... into four r... OtVober. at which time the... and

E U O

ind expofc the fecdi, which ave of a bwuittul red colour ; to that when the branches are well ltoed with them, the trtes make a good appearance, ac that tealon, whin growing among other fora. The wood of this tree n ufedy the mulical lullrument-makers for toothing of organs and virginal keys; the branches are tut into tooth -pickeri, an Jibr making of fkwers-, and foindla are made of the wood, from whence the tree wis tiileJ Spindle-tree •, but in tome coontic) it is called Dogwood.

Thelecond lort grows mturally in Aultria and Hungary ; this was very leidom feen in England till of late years, finrc I procured a from France, andl'r. on the feeds of iliijft plants great numbers have bven lince railed, to it 15 now pretty common in fveral or" the nur[erics near London -, this rifei with a frenger fcio than the fill', and grows to a larger fize. The leaves are oval jndlpcar-flhapud, about four indies li'njr, md two inches broad in ilrc middle, of a light green colour, inti entire; they are placed oppofite on the branches, with lhon foor-flalks. The flowers come out from the iide nf the branches, upon very flendet foot-rhik*, which are two inches and a half long-, theft branch out into a loofe bunch, fodiat the flowers ftand upon feparare foot-liaiti. The flowers have five petals, which al lirt are white, but afterward than^L- to a purple colour •, the cmpalctuent of the flower is divided, into five twts. It hath five (batnina, ami the frail a fce fi fce-c imcred; the fruit is much iirger thai, than of the con non lort, and the fpot-ftalks being weik, tnc fruit «lways hang down. Or. Linmcai has fupposed thefe to be Mil and fpecies, and has taken ilie cnaroAeri ut' this genus from the fecund lort, whole ilowers liarc five Itamina and five petals, and i tlrc triiit tive corners, but all thofe of the common fort whkfi I! have examined hive but four, ami thefe dtrR-rencs are permanent in thofi plants which rile from fertlij fas I haw nifcd many of both foris from fceUfj but hive never found eithc of them altei.

The third fort ; grows naturally in Virginia, Carolina, and Oler parts of North America; this rifei wrth I JhrLi! by htofo eight or ten feet, dividing into many branches, which come out oppo lire from the join' of the firft ,tn:arcgarniuSedw:tlfpear-flihPi:c leaves, which are two inches lung, and about three quarters of an iiii.li broad in the middle, emlinu in acure points ; they Me placed opjioftr, and continue greeri ill the year. The Bowers jire produced at the end of the branches, and alfo front the fides, in fmal' duller?, which are fuccceded by round capfulcs, wliich ar^ chafely armed •, rough protuberances. This Shw-n in July, • but feldom products ripe fruit in I-ngland,

As^ is an evergreen thurbj lo it mtrits a plate in every curi in the garden, and puficly lirlly in all plinta- (ions of evergreen trees and Qinj* I thercisavari ery ofthiwith vaiirgated leave*, which ij preferved in the nuricry-gardens.

The fourth lort grows naturally in Jamaica, (it) fome of the nther iflants in the Weft-Indies j this rifei with an upright woody (hilk, to the height of ten or twelve feet ; at the lop it divides into two or three fhort branches, WIUL-II art garniflied by winged leavei rriiijiofni of fix orleven pair of final I leaves ;ur I lobes, abovit two inthes lung, and one inch broatl, theft lores come oui without order, itandinz upon long foot-ftalks. The fiowcis come out in clutters from llie fide of the branches, towjrJ tl' ends; thefe are rorcededfay roundfii capfiii, having a thick brown cover, which open in th/ce cells, each containing I (ngle hard feed.

The two firft fort^ may be jro[,]int«l either by feeds, or Layers; if bj kei!^, they fhould bt (own in autumn, loon after they are ripe ; then the plants wiil cmnc ui the fpring following; but if die feed* art not down till fpring, the plants will not appear till the folknvini (pring, whereby a whole year is lo. The feeds (houki be fown upon a Biady b^ir-icr, where they will ••ceed bettrr Euo when they are marc expofed to die fun

E U P

When the plants come up, they will require no other care but to keep them clean rroin WLcdi til) the ftb- lollowing autumn, when, as loon jis thtir leave* decay, the pUnts (K in Id ue taken up and r.:;litPU*^J into * nuifery, in rows two feet diftant, and at plants one foot alundrr in the rows •, in this pbee they may remain two ycufl, and then iiii-L-y truy be removed 10 tht places where truy ai-c to remjin.

When ihtfe are propagated' by ktyen, the fOOUg fnoots Oatfuld be bid down in autumn ; and if tit which is laiii deepefl in die ground u fli, as is pteac- i jtrdrnatii)ivi-; I1 will cat.li- ilicm P3 put OUI roox much toonertan they otherwifr would do ; rhesel.iv- ca w!! /K fuScienily rooted in one year to bear rranf planting, when I they fhould be taken from ili-old plants, ind 0 re ufthc lrt Uingy. Thecuttiir rated in a . in I flmly border, will rake ro-nt, but they fhould be plnted in autumn, as foon as their leaves' begin to fall; they (hould be the ftioots of the 61M year, with a knot of the fer- mcr year at bo: cam.

The third fort, which grows naturally in North America, is ib handy u rarely to fuffer by cold in England, pnmded it is nut pi.in Led in places very much expofed. This may be propagated by laying down the youn^ branches in HK ainimn, ohfen- ing to tongue them in the fame manner u is piaAifed in layin; of Carnati jr:-; tnefc will invuaiaie good foots in one year, when the/ may be cut from the old plants, and planted in a nurfery K^r wo years to get ftrengtii; alter whil, they fhould be planted where they are dtign'd to remain.

The fourth fort ••• warmer countries; tries, in cantit beprt-i (and, untefs v. is planted in a lioveinM.iii), this is generally ftorage. Vd by icjiimft be town in pots, nud plunged into a hot-bed ; ind when the phins arc fit to remove, they fhould be each planted in a li-parate UPHH jmt, ixA plunged into the hot-bed again, being careful to liiadi: them until they have tken III . roots, after which the] muh be r-Jted in the lame way z- other tentier plant of the : at coDntric. This fct may alfo be jriropngjcd by cuttings during any of the fummer moi.

i' U' ATOROIPHALACRON'. See Vai i i UPA i (JR I U M. Lin. Gen. l'lant. B+L. ToUm. [nft. R.H. «5. nib. 159. jr.-.;.;. Df kinif Eupitor, who firft brought rhh planunto ufe.] Hernp Agrimony ; in French, Eitpetoirt.

Thft CH "': ACTtB. I are, It bulb a aiiHpiimJ fii freereibtrmx- pbrediK florets, tebieb . . . into . . . ibe I: . . . ctn lire

Jlarrtxv, rrell, a«{ undji the faltem a fituaiti a /mall { die. 1 brig jltiuder jly!t, xebit- TTUVS jlignm. The gmtx li/trwcrd At«rj an II wll iktc •• lie uuw/oi, . . .

Thii fcenusoi plants u rjnged in the fuit . . . n of L>inn:L-iss nineretnth clai-, which includes thole pUd. with compound flowers, which have ;• her- nia phr>d tic fruital flowers.

The Spceis are, 1. EoPAW>»roM (Cannshimim) folii Jif . . . Hort. Ch'f. 396, EitpalerixK . . . am, C H 1'. 3:0. t . . . fori . . .

2. EUPATORIUM (Mead Hum) tl-li'. . . ;V3ds, ferr-i- . . . Hort. Chif. 396. Expo, . . .

3. EUPATORIUM (Poppy) folio lobovticulata, lile- ceolatii terrari! ; . . . Lin. Sp. Plant. 396. iL . . . ti in wbrsh . . .

Span-Isapud, fowad, r'igb, ai-J bavi foetjaki. Euri-
 umn tolio abion^tj r'jgoio, caule purpuMitre.
 TeHM. Inf. 456. :dr, lianp dgrjittitrf with a lasg
 raugblxif, and furptiti fiak.
 LuFATOiiiiM (Scaxjai) caule volubili, foliis conU-
 ris **denata** acmis. Hurt. Cliff j\$6. *EupaUnum* wrib
 a wimgfiadi and biart.Jhapcd!*vri,whicb art Jhitrpty
 juidi-. sed. *Eupatorium American* iij feandus, hattato
 magis acuminato **lie**. Vail). Mem. 1719. *COuMiti*
American limp jigr'away, with « jptor-likl /harp-
psiMtd leaf.
 5. **EUPATORIPM** (*RetunAijtiUtni*) foliij redilibus dif-
 finctis fol: :ot undo-cord :t is. Lin. Sp. Plane. S37. £<-
 f9Untm mith ftoitiJij!' *ka-jet filling (left*
 ;« (bjlaltt, and srt dijmi!, **Jiupnorium An**
 tiuin, foliis rotundiorib^j abluqe [jniculLs. Viill.
 Mem. 1719. *jfmritm Hmp Agrimny mit nwt*
ttpta, having r.i fiei-Jtalii.
 6. **EUPATO:** *alam*) foliis oblongo-cordittis,
 floribus paniculacis, ciuk fnticofe Icaiidente. *F.u-*
pOtrium n-ill/ eUeHr btrr; ; *tkalatti*
Jtewrj, tmd a riiatinx jbruby jiatk. **Eupsb**
 'candii', folis lob: • nji-, tocidSt, doribus picatii
 albi. Mouft MSS. Cj'wiv^ fiemp j^rmtat) wii'
 ijb jbinig UITVCI, axd •whin jfasxri grtwing in fpikts.
 '7. **EoeToiijuM** (*Qdorartim*), till its fivatis, omuie icrratis
 [ittiolitis [rinerviis, calycitau (implicibus. Lin. Sp.
 J'.int. Rjp- *Eupatetium with oval, ebtxtf,*

U tbt Jtetwj. i'-ujaciuriuii Ameriannm-
 itucii iililo, ikre nK'co. Vaill. Mem. At.id. Scit-n,
 /f»o *can Hmp Agrimny iff 'Jntb a *Tr< Gtrmrndtr Itaj,*
and & itibit fiea.tr.

8. **EUPATORiUM** (*Profidatus*) foliis cordatis. KH [otnentofe.
 Hort. Cliff 396. *Enftertha* rath weettf kaves
 jemtl at tbtirbafce. I-upnorium Virginiitium, Uvix
 foliis longiflimii acumiuaat is, **perfedckwm**
Virginea profidate Hmp Agrimny. .j/iii> kag **Sqrt-b&e**
Itr. **fiafi.**

9. **EUPATORiUM** (*latifolium*) foliis ovatis, r) foiiis oblongh, obiuri*,
 CTnadh, gtabris, calyribos limjilibrin. *Eupaerio/e*
 •a-iib tihig, el'uft, fmnfb, erauitJ kntei, ar.d fartf
 jtpalcewti) is tbtfevtri. *Eupatorium betonkJE folio*
gbbro&camofo, Sore ccerufco. Houft. MS5. Hmp
jimmtywitLi 11 fitpyfmo9tbBtemkof, aniiu vtuJliwq-
 10. **Eui-ATOMuw** (*Merfiliwn*) foliis cortlaus rfratis
 caule treclo arboreo. *Eapaorium 'citb hawi-Jhsptd*
fwtd ham, aad ait upright trte-tike fieii. **Eufato-**
rium American arbortfrtn!, mori fi

MSS. Trit-Lh Amtim* fttmp
ffgrimtKj, v-tilb it Mutxny Iru/ **tow**
 integi*, **CHiic** fmrcoib rantofo, calycibus implicid-
 bus, *Evpoieri*TM* *can vud nure lere* **baviat feet'**
 four •:f fliraby ft-Ut, and fitjtj err.p' *mentu*
to theftswirt, Eupotoriuu Amrcifcinuni Irutcfems,
 bafianum late folia, n
 MSS. *American fowly* : , *tup AgriitDit*, wiib jetimu

12. **EUPATORiUM** (*Hippocistis*) foliis lanceolaloline-
 aribus trinerviis sub serratis. Lin. Sp. Plant.836.
Eupatorium with narrow, spear-shaped, entire ia
leaves three nerves. Eupatorium Virg-
ianutii, tolo angufto floribus albis. Hort. Elch. 14
1, vih. 115.

13. **EUPATORiUM** (*Ramosa*) foliis lanceolatis-lanceolatis
 acutis, bipinnatis serratis caule ramoso. *Hmp Agrimny*
with narrow, spear-shaped, pointed leaves,
upper part, and a branching stalk.

14. **EUPATORiUM** (*Corymbosa*) foliis ovatis, r) r)rtati> icutiif
 dentatis, trinerviis, caule triaxicota (imS). *Etpa-*
torium with pointed, heart-shaped, fowad leaves
three nerves, and a branching fevilly stalk. **Corymb**
fructuosa, folio latifato, Hort. Pallid. p. **rjjurco.** Sloan.
Cat. Linn. 124. Norky ffoctan **toilh a fptr-Jbaped**

15. **EUPATORiUM** (*Paniculatum*) foliis cordatis, >btii rugoru
 cordatis, caule paniculato. ***apatnism** wilb rw%h
heart-shaped, rounded leaves, **tad <t jMicabft pt*.**

CQAVXS Salvia: fr: it conjugatis, floribus foicatis ed
 beam. MSS. *Hebare* with large leaves
 placed opposite, and red flowers growing in spikes.

16. **EUPATORiUM** (*Strepens*) foliis cordatis acuminatis,
 caule volubili, baculis flexuosis variegatis. *Eupatorium*
with heart-shaped pointed leaves, a running stalk, and
branching spiral leaves. Eupatorium Americanum,
scandens, folio latifato glabro, dentato imbricatis. Houft-
MSS. Canopy American Hmp Agrimny with a fowad
spear-shaped leaf, and spiral flowers.

17. **EUPATORiUM** (*Tropaeum*) folis ovatis. Flor. Virg.
 119. Lin. Sp. Plant 128. *Hmp Agrimny with oval-*
leaf.

18. **EUPATORiUM** (*diffusum*) folis lanceolatis serratis,
 inferioribus cuneis lob serratis, caule fruticoso. Hort.
 Uptal. 125. *Eupatorium with narrow spear-shaped leaves,*
lower leaves are found on short stems, and found
around the stalk. *Eupatorium* folio oblongo,
 rotundo, ampulati, caule vixiforme. Tourm. Inf. R. H.
 456. *Hmp Agrimny with a large, oblong, rough leaf,*
and a green stalk.

19. **EUPATORiUM** (*Cockburn*) folis cordatis ovatis,
 obrol serratis petiolatis, calycibus multilobis. Lin.
 Sp. Plant. 138. *Eupatorium with heart-shaped oval*
leaves slightly fowad, hairy feet, and **müif**
fitfstri to lh< civ; lauztu. *Eupatorium fowad;* onii
 folio, **flore octuleo**, Hurt. E.lji. 140, tab. 114.
Hmp stgrimarp toitt a Jveed &igt kef, &J .. Jhet
Jmurr.

The Inf grams nanirallj- In Carol:na, from choice
 the lace Dr. DJIC itni me the feeds; ihele :ants
 tlow^ifj very IIIILU' the year after they wen raised, but
 never have flowered fince, for the rood cr<[> greatly
 in the •. ground, but never **fend up** »ny tta
 The rirlt fort yrtjwi iiatuilly by the fide of I veta
Liiddl[che in most parts of England, and is du
 only species of this genus, which . Knumi to gr.w itatu-
 rally in Europe, this is esteemed as a very good sal-
 nerary herb, ft 1:ands in the list of medicinal plants.

It is **feldora adm 1** and into gardens, because, where-
 ever it is fuS'cred tu I'rd, the ground will be well
 ffircil
 with the plants to a great distance.

The fccomd lore r'rowi nururally in tvrraJ parta of
 North America, from whence ithm [XLCV. introduced
 to die gardens in Europe; this hath a perenn • rou:,
 but an annual stalk, which rises .liou; two feet
 ani • half high . it is purpl and has many dark
 fpcu ulia: . The leaves are rough, oval and serrate-
 Inaped, having fbo

Found th? ! sink toward the bottom, but upward by
 pairs opposite at each joint. The stalks are termi-
 pandrl by ilufbrnt of purjile (lowers, grow ing in a sort
 of corymbus; these come out in July and August,
 and in wirm leafons will ripen its feed* b autumn,
 The .liird fore grons naturally in North America;
 this rises vifit in upright stalks, near four feet high,
 gnriilted with hny, narrow, fyesa-Bapt •; leaves at
 each joint; these are deeply lobed on their edges, and
 the midrib is obliet¹ Eo the toot-Ibkl ; thtv arc
 placed by four* r round the fl Ik in whorls, and are
 of a dark green »)our. The (Ulks are tanr. and
 hj' bunches of i>"tp^{ic} flp<en tike die lift, •. which
 appear at the base of the stalk. This hath a perennal root
 and an annual stalk.

The fourth sort grows naturally in Virginia and Ca-
 rolina; this hath a perennil roor, which sends out
 many twining stalks in their swift about
 any neighbouring support, and rise to the height of
 five 0 six feet, garnished at each joint with two heart-
 fliapi I leaves, which are indented on their edges, and
 terminate in RCU' points; at each joint there are two
 jjnall side branche 1 conw out, which are icrmii
 by dullers of white So ers, to th: thr (Ulti I veta
 covered with them most part of their length, but
 as the f- come pretty liie in the feafon, Ib unless the
 fommets prove w-iin, the plants do not (lower well m
 and.

There is another (these plant:s with pur, I flowers,
 ftiinit; upon longer foot fl:is, which was led me
 from Campchacy; but Lhc ii
 stalks and leaves are very
 like

like thofc of this fort, fo that I doubt whether it be a diftindt fpecies.

The fifth lbrt grows naturally in New England and Virginia, from both of the fcountia I have received die feeds i this hath a perennial root and an annual)Ulk ; il riltt with upright ftalks about a foot high ; thefe have their joints pretty near each other, where they are gimithed with roilndifh heart-fhaped leaves, fitting dole to the ftalks; they are fawed on their edg s, and arc of a light green colour. The flowers arc produced in fmafl loole panicles at the top of the (talki; they are white, and have two frudl green leaves immediately under the flowers. Thd'c (lowers appear the latter end of June, but the feeds leidom ripen in England.

TTic fuch fort grows naturally at La Vera Cruz in America, from whence the kit Dr. Houffon Cent me the feeds *, this hath a lhrubby climbing Itaik, which riles to the heighr of En ur twelve tret, rattening itfclw w any neighbouring prop for fupport, and is «wr-nifticd with heart in..; il leaves, placed oppofitc; they are abuc thrve inches long, and one nnd a hair broad, of a lucid green ; the flowers conic out in long branching panicle], wuch procecd from the ide of the Ihlks, and are terminated by a branching [muc of white flowers. This fort is tender, To will rot live in this country without artind.il heat.

The feventh fort riles with upright, ftalks three feet high, garnifhed with oval leaves at each joint, which tre placed oppofitc -, ilicy have very ftioi; fuch ftalks, and arc fawed on tScr edges; from the fides oj die ftalkj, at every joint, is produced two (ender branches, which lland erect; thefe, and the principal ftalks a(lb, we terminated by tlufters of wlite flower;; they appear in Auguft and September, and the ftalks decay in winter, but the root is jierennial. This grows naturally in Pcnfyvania, and other parts of Amctica.

The dgTith lbrt grows n.itunlry in Virginia and Philadelphia; this hath a perennial root and an annual ftalk. The ftalks rife from two tu three feet high; they are hlir. and garnifhed with rough leaves .it each joint, which are from three to five inches long, and about an inch broad at their tmlc, gradually lellining to a very ac'itc point; the • are aned at their bale, l the ftalk Item to grow through th^m ; they are of a dark green, and me covered ivitli lhort hairs. The upp.'rp.irt of the ftalk many (ender foot-fbJk , each fufaining a d'ok c.;:terof while flowers. Thcfc come eutu- July, and in warm fealons the (alk will be ^times ripen in England.

The ninth lbn crow* MEumly at La Vera Cruz, from whence the latcY*r. Houftoun frnt mcilhc feeds i this riles with an upright lblk ntar two toet high, garnilrt toward the bottom with oblong obtule leaves, •which are of a thick fublance, and crnated on their edgw i the upper j-jti of the ilalk is naked to die top, where ihe flowers come out in a thick panicle; the) arc blue, and have Tingle cmpalenients. This floweri 1st; in autumn, but never ripens feed.; here^ thr root i> biennial, and [wriiht.^ Coon after it has flowered. The tenth fort was lent n< by the late Dr. Houftoun from La V-za Cruz, Vlcrc he ibund it growing naturally • lbs hath a thick woody (ulck, which riles twelve or fourteen few high, lend ing out many branches,

wh h arc channelled, and covered with a brown bark, garnifhed with regular hestrt-maped leaves u b; n- z- ilwfc of the Millborj'-tree; they ie i ljwnl on their edges, upon foot Italic, nrrar two inches

by ?our or lwe pair of foot-ftalk... me out oppofue fiomthi" and the top is terminated by an odd one ; the fufain branching panicles of white flowers, which together form a long loole pyramidal iliyV, and make a fine HUU ; for there are no leaves intermixed with the flowers, but fo far as the ftalk reaches the ftalks are naked. This bit hai ""W" in the Charles garden, but did IOI produce fcr*.

The eleventh fon grows naturally at La Vcr.i I , from whence the late Dr. Houftoun fent it me . this rites with nuny ihrubby ftalks war five feet high, which divide into many (ender branches, whole juinu arc three or four inches afundcr; at each of thdicome out two oval leaves about three quarters of an inch long, and half an inch broad, lluniimr Dpofl long (ender foot-ftalc. , they fcvtral black ljiuts on their furfece. The hntnchj comeout horrionti), and arc icrmm.ucd by lnull bunches of white flowers, whofe empalcmnt^ ire Qngte, and compofed of feven nirror fp'ar-ihapcd teen , which re divided to the bottom.

The twelfth fort rife? with an upright round ftalk to the height of thtce feet, leading out feveral brandies toward the top, which come out regularly by pairs; they are gamithed with U. . . (placed b) piirr'i; theie are two inches and a half long, nntl about onr third of an inch brn'd, having thtce li-ij)Etrudinaj veins i they arc of a light green colour, and entire. The flowers (land upon lons foot-ft lks at the end of the branches, fomc furhmiing one, fame two, and others three or four Cower,; they are white, and appear late in nutumil. This grows naturally inCartiiiu.

The flirteentli KM . . . naturally in Maryland; this bath a perennial row and an anno.. ftalk, which riles three feet high. i' . . . along upward into many be . . . which arc clofely garnifhed with narrow fpear-i shaped leaves, wunch are rotn two to thr,e inches long, nid a quarter of an inch broad, . . . a deep green, fitting clofe to the branches; l . . . have three longitudinal veins, and their upper part ji:

ending in acute j . . . the branches arc termi-nate: by roundilh ttulUrs u; wiiite lowns, which appear in Ainruft, tad . . . ill CWtobrt and in v.:ruil tetSxa they arc fuccceded by feed*, wliich ripen here.

The fourteenth fort grows naturally in Jamaica, ami in mtit of the other illMdi in tlie We-fi-lwWi this riles with fhrubby ftalks about fix or frven feet lugh, dividing into many brinclu , which ire gamithrd with heart-ihaped leaves, ending in acute pom-dntedoniheiredgn, havingth roe lon^itudi nal veins; the upper part of the branches arc terminated by ber foot (talks, each fuffaining a iin.ill L ttltler of i flowm, included in oblong ibtly emjalcmenc of a filvery colour.

The fifteenth fort was fent rnr from J.a Vtn Crui by the late Ur. Houllonin; this riles with an T^'11 branching (talk three feet lit; . . . fending our two fide branches from every joint, aimoi; the whole length, •which are Kratintted by loole fpikt-s of red H as is alib the principal lblk. The leaves are heart-ftiancd, roitgh, indarcrcrcniteUon thnredgc:, fitting clofe to the iblkt; they are t . . . a light green, and a little hoary.

Tbe (imcenth . . . was frfon . . . Jamaica by the UteDr, J-Iouftmir . . . this lark fender rerring ftalks, which faften thcn.. . . riles eight or l . . . foot high, leading out fmall branches upward, at moft of the upper joints. The leaves on the lower part of the ftalk are heart-fhaped, ending in acute points; the upper leaves are almost triangular, they are fmooth, and of a lucid green; the upper part of the ftalks have long branching ftalks of white flowers, which are fmall, and fit clofe to the foot-italka.

The icventcenth ! . . . grows naturally in Penfvvania; this hath a per- upright H!

eight fort i: . . . or where they are fupplied with water in d: . . . weather, and are garnifhed with orti, rough, fpt.; f shaped leaves, which are a little &wed on their ed> they are placed in whelns round the ftalk 1, tomrtimr; feven, at wher pb: . . . a pair of five of thofe . . . itand si each joint •, they arc about t inches lung, and t*o inches brotd. The ft . . . are terminairtl by a Jkife Liirrmbu! 01' purple flowers, which appear in Aupylt and cottLn^c nil C . . . but are not fuccedu by leedi to . . . England. The

The eighteenth fort rises with a single, upright, green (stalk, about four feet high, garnished at each joint by four spear-shaped leaves, placed in whorls round the stalks; they are six inches long, and two inches broad in the middle, tapering to both ends, terminating in acute points; they are rough, fawned on their edges, and hand on foot-stalks, the stalk is terminated by a close corymbus of purple flowers, which appear in July, and continue till September. The root is perennial, but the stalks decay every winter; it grows naturally in North America.

The nineteenth fort grows naturally in Carolina; this hath a creeping root, which spreads and multiplies very fast. The stalks rise about two feet high; they are garnished with oval heart-shaped leaves, which have foot-stalks, and are fawned on their edges. The flowers are produced at the top of the stalks in a sort of corymbus, they are of a fine blue colour, but the roots spread so much as to cause barrenness of flowers after the first year.

All these forts may be propagated by seeds; several of them ripen their seeds in England, these should be sown in autumn as soon as they are ripe, for then the plants will come up the following spring; but if they are kept out of the ground till spring, the plants will not come up till the year after; and those seeds which are procured from America should be sown as soon as they arrive, for though they may not grow the first year, yet there will be a greater certainty of their succeeding, than when they are kept longer out of the ground.

The second, third, fifth, seventh, eighth, twelfth, thirteenth, seventeenth, eighteenth, and nineteenth forts are hardy plants, so the seeds of these may be sown in the full ground, but there must be care taken in the sowing to keep the forts separate; for as the seeds of these plants have a light down adhering to them, they are easily displaced by the least wind, so that the best way will be to sow them in drills, but these should be but shallow, for if the seeds are buried too deep they will not grow. The bed in which these are sown should not be too much exposed to the sun, but rather have an east aspect, where the morning sun only reaches it; but where it is more exposed, it should be shaded with mats in the heat of the day, and the ground should be kept pretty moist, for as these plants generally grow in moist shady situations in their native countries, they will succeed better when they have a foil and situation somewhat like that; though as we want their heat in summer, the plants will thrive here when exposed to the sun, provided they have a moist foil, or are supplied with water in dry weather.

When the young plants come up, they must be kept clean from weeds; and where they are too close, some of them should be drawn out, to give room for the others to grow; and if these are wanted, they may be planted in another bed, where, if they are shaded and watered, they will soon take root, after which they will require no farther care but to keep them clean from weeds till the following autumn, when they may be transplanted to the places where they are to remain. As the roots of these plants spread out to a considerable distance, they should not be allowed less than three feet from any other plants, and some of the largest growing should be allowed four feet. If the foil in which they are planted is a soft gentle loam, they will thrive much better, and flower stronger than in light dry ground, in which, if they are not duly watered in dry summers, their leaves will shrivel, and their stalks will not grow to half their usual height.

All these forts have perennial roots, by which they may be propagated; for as some of them do not perfect their seeds in England, so that the only way of increasing the plants here; some of the forts have creeping roots, sending out offsets in great plenty, so these are easily propagated; and the others may be taken up, or the heads taken off from them every other year, in doing of which there should be care

taken not to cut or injure the old plants too much, which would cause them to flower weak the following year. The best time to remove these plants is in autumn, as soon as they have done growing, that they may get fresh roots before the frost comes on; but if that should happen soon after their removal, if the surface of the ground is covered with tan, or dried leaves, to keep out the frost, it will effectually secure them; and if this is done to the old plants in very severe winters, it will always preserve them; but the nineteenth fort is the only one which I have known killed by frost: however, it may not be amiss to practise this on the young seedling plants, which have not so good roots, nor are so well established in the ground; the future culture will be only to dig the ground about them every spring, and keep them clean. The fourth fort sends out many weak twining stalks, which require support; so there should be some stakes fixed down by their roots in the spring when they begin to shoot, to which the young stalks should be led and fattened, and afterward they will naturally twine round them and rise four or five feet high if they are supplied with water, and in warm seasons they will produce plenty of white flowers in August. This fort is sometimes killed in very severe winters, if they are not covered; but if, when the stalks decay in the autumn, the ground about them is covered with some old tanners bark, it will effectually secure the roots. This fort multiplies very fast by its creeping roots, which may be parted every other year.

The sixth and sixteenth forts have twining slender stalks, which require to be supported in the like manner; but these are natives of warm countries, so they will not thrive in England, unless they are placed in a warm stove; therefore they should be planted in pots and plunged into the tan-bed in the stove, where, if they are supplied with wet in hot weather, they will thrive and produce flowers. The sixth fort hath shrubby stalks, and does not propagate by the root, so there should be layers made of the young branches, which will put out roots if they are properly supplied with water; but the sixteenth fort may be propagated by parting the roots, in the same manner as the fourth fort.

The ninth and fifteenth forts have perennial roots, but their stalks decay every winter. These are tender plants, so should be planted in pots, and kept constantly plunged in the tan-bed in the stove, where they will thrive and flower. These may be propagated by cutting off some of their young shoots about the middle of June, when they have strength, and planted into pots filled with light earth, and plunged into a moderate hot-bed, where, if they are shaded from the sun, and gently watered as they may require it, they will put out roots in six weeks, and may then be transplanted into separate pots, and treated as the old plants.

The tenth, eleventh, and fourteenth forts have shrubby stalks, which are perennial. These are natives of warm countries, so will not thrive in England out of a stove; therefore they should be planted in pots and kept plunged in the tan-bed of the stove, and treated as the former forts. These will sometimes take root from cuttings, but not very freely, so that the best way is from seeds when they can be procured. When the seeds of these tender forts can be had from their native countries, the plants raised that way are much preferable to those which are obtained by any other method, and will flower much stronger, therefore should be preferred; but as these seeds seldom grow the first year, few persons have patience enough to wait for the plants coming up. When any of these seeds are brought over, they should be sown as soon as they arrive in pots; that they may be removed at any time; the pots should be plunged into a moderate hot-bed, and the earth kept tolerably moist; the glasses should also be shaded in the heat of the day, to prevent the earth from drying; in this hot-bed the pots may remain till autumn, when, if the plants are not up, they should be plunged between

the plants in the bark-trove, and in the spring removed to a gentle hot-bed, which will bring up the plants soon after. When these are fit to remove they should be planted in separate small pots, and plunged into the hot-bed again, (having them from the sun till they have taken new root; then they should have a large share of free air admitted to them in warm weather, and frequently refreshed with water.

In the winter these plants should be more sparingly watered, especially those sorts whose stalks decay; and in the summer they should have a large share of free air admitted to them, with which management they will thrive and flower.

EUPHORBIA. Lin. Gen. Plant. 536. Euphorbium. Boerh. Ind. alt. 1. 258. Tithymalus. Tourn. Inft. R.H. 85. tab. 18. The Burning Thorny Plant.

This plant was named Euphorbia by King Juba, the father of Ptolemy, who governed both the Mauritania; whose physician was named Euphorbus, and his brother Antonius Musa is said to have healed Augustus with this plant.

The CHARACTERS are,
The flower hath a permanent empalement of one leaf, which is swelling, rough* and divided into five parts at the brim. The flower hath four or five thick truncated petals* and twelve or more stamens which are inserted in the receptacle* they are longer than the petals, and are terminated by globular summits. In the center is situated a three-cornered germen* supporting three bifid styles* crowned by obtuse stigmas. The germen afterward becomes a roundish capsule with three cells* each containing one roundish seed.

This genus of plants is ranged in the third section of Linnæus's eleventh class, which includes the plants whose flowers have twelve (lamina and three styles). To this genus he has added the Tithymalus and Tithymaloides of Tournefort and others. The difference between the Euphorbium and Tithymalus, consists more in their outward form, than in the characters of either flower or fruit, so may be properly enough joined together; but the flower of Tithymaloides being very different in its form, should be separated from them, therefore I shall place them under the title of Tithymalus; and as the number of Tithymali is very great, many of which are common weeds, I shall select only the more rare or useful kinds to enumerate here.

The SPECIES are,

1. EUPHORBIA (*Antiquorum*) aculeata triangularis fubnuda articulata, ramis patentibus. Lin. Hort. Cliff. 196. *Euphorbia with triangular jointed stalks which are naked* and have spines and spreading branches.* Euphorbium verum antiquorum. Hort. Amft. 1. p. 23. *Prickly triangular-pointed Euphorbia* with spreading branches* commonly called the true Euphorbium of the ancients.*
2. EUPHORBIA (*Canariensis*) aculeata nuda fubquadangularis, aculeis geminatis. Hort. Cliff. 196. *Euphorbia with naked stalks* which have four angles and double spines.* Euphorbium tetragonum & pentagonum spinosum Canarium. Boerh. Ind. alt. 1. 258. *Canary Euphorbium with four or five angles which have spines.*
3. EUPHORBIA (*Trigonum*) aculeata nuda triangularis articulata, ramis erectis. *Thorny-jointed triangular Euphorbia with upright naked branches.* Euphorbium trigonum & tetragonum spinosum, ramis compressis. D'Inard. Art. Par. 1720. *Prickly Euphorbium having three and four angles with compressed branches.*
4. EUPHORBIA (*Officinarum*) aculeata nuda multangularis, aculeis geminatis. Lin. Hort. Cliff. 196. *Thorny Euphorbia having many angles and spines growing by pairs.* Euphorbium cerei effigie caulibus crassioribus, spinis validioribus armatum. Hort. Amft. 1. p. 21. *Torch-shaped Euphorbium* with thick stalks armed with strong spines.*
5. EUPHORBIA (*Neriifolia*) aculeata feminuda, angulis oblique tuberculatis. Lin. Hort. Cliff. 196. *Thorny half-naked Euphorbia with oblique tubercular angles* commonly called the Oleander-leaved Euphorbium.* Euphorbium angulosum, foliis nerii latioribus. Boerh. Ind.

alt. 1. 258. *Angular Euphorbium* with brood Oleander leaves.*

6. EUPHORBIA (*Heptagona*) aculeata nuda, feptem-angularis, spinis foliariis fubulatis floriferis. Lin. Hort. Cliff. 196. *Naked feptangular thorny Euphorbia* with Jingle awl-shaped spines* producing flowers at their extremities.* Euphorbium heptagonum, spinis longifimis in apice fructiferis. Boerh. Ind. alt. 1. 258. *Euphorbium with seven angles and very long spines* bearing fruit at their tops.*
7. EUPHORBIA (*Caput Meduse*) inermis tuberculis imbricatis, foliolo lineari infructis. Lin. Hort. Cliff. 197. *Euphorbia without thorns* closely covered with tubercles lying over each other like tiles* and narrow leaves* commonly called Medusa's Head.* Euphorbium Afrum, < caule crasso squamoso, ramis in capitis Medusæ speciem cin&co. Boerh. Ind. alt. 258. *African Euphorbium with a thick scaly stalk* and branches disposed like Medusa's head.*
8. EUPHORBIA (*Mdmillaris*) aculeata nuda, angulis tuberosis, spinis interstitiis. Lin. Sp. Plant. 451. *Naked prickly Euphorbia* with tuberosus angles having spines growing between them.* Euphorbium polygonum aculeis longioribus ex tuberculorum internodiis prodeuntibus. D'Inard. Art. Par. 1720. *Euphorbium with many angles* and long spines growing out from between the knots.*
9. EUPHORBIA (*Cereiformis*) aculeata nuda, mukangularis, spinis foliariis fubulatis. Prod. Leyd. 195. *Naked thorny Euphorbia with many angles* and Jingle awl-shaped spines.* Euphorbium cerei effigie, caulibus gracilioribus. Boerh. Ind. alt. 1. 258. *Euphorbium with the appearance of Torch Thistle* and a slender stalk.*
10. EUPHORBIA (*Frustrus Pinii*) inermis imbricata tuberculis foliolo lineari infructis. Hort. Cliff. 197. *Imbricated Euphorbia without spines* having tubercles furnished with very narrow leaves.* Euphorbium Afrum, facie fructus pini. Boerh. Ind. alt. 1. 258. *African Euphorbia with the appearance of Pine fruit* commonly called Little Medusa's Head.*
11. EUPHORBIA (*Patula*) inermis, ramis patulis simplicibus teretibus, foliolis linearibus infructis. *Euphorbia without spines* having jingle spreading branches which are taper* terminated with very narrow leaves.*
12. EUPHORBIA (*Procumbens*) inermis ramis teretibus procumbentibus tuberculis quadrangis. *Euphorbia without spines* having trailing branches with quadrangular tubercles.*
13. EUPHORBIA (*Inermis*) inermis, ramis plurimis procumbentibus, squamosis, foliolis deciduis. *Euphorbia without spines* having many trailing branches which are scaly* and deciduous leaves.*
14. EUPHORBIA (*Tiruaculii*) inermis fruticosa fubnuda filiformis erecta, ramis patulis determinate confertis. Lin. Hort. Cliff. 197. *Shrubby erect Euphorbia without spines* and slender spreading branches terminating in clusters* commonly called Indian-tree Spurge.* Tithymalus Indicus frutescens. Hort. Amft. 1. p. 27. *Indian Shrubby Spurge.*
15. EUPHORBIA (*Viminalis*) inermis fruticosa nuda filiformis volubilis, cicatricibus oppositis. Hort. Cliff. 197. *Shrubby naked Euphorbia without spines* and slender twining branches* commonly called Indian Climbing Spurge.* Tithymalus Indicus vimineus penitus aphyllus. *Indian Spurge with Under branches* entirely without leaves.*
16. EUPHORBIA (*Mauritania*) inermis fruticosa feminuda filiformis flaccida, foliis alternis. Lin. Hort. Cliff. 197. *Naked Shrubby Euphorbia without spines* taper flaccid branches* and leaves placed alternately.* Tithymalus aphyllus Mauritania. Horr. Elth. 384. *Mauritanian Spurge without leaves.*
17. EUPHORBIA (*Cotinifolia*) foliis oppositis fubcordatis petiolatis emarginatis integerrimis, caule fruticoso. Lin. Sp. Plant. 453. *Euphorbia with heart-shaped leaves placed opposite upon foot-stalks* which are indented at the top* entire* and a Shrubby stalk.* Tithymalus arboreus Americanus cotini folio. Hort. Amft. 1. p. 29. *Tree American Spurge with a Venice Sumach leaf*
18. EUPHORBIA (*Latyris*) umbella quadrifida, dichotoma, foliis oppositis integerrimis. Lin. Sp. Plant.

- .457. *Euphorbia* with a quadrifid umbel, a forked stalk, and entire leaves placed opposite. *Tithymalus latifolius* Cataputia didlus. H. L. Broad-leaved, Spurge, called Cataputia.
19. EUPHORBIA (*Myrsinites*) umbella fuboftifida, bifida, involucellis fubovatis, foliis fpathulatio patentibus carnofis mucronatis margine fcabris. Lin. Sp. Plant. 461. *Euphorbia* with an umbel divided into eight points, whose fmall involucrum are oval, and fpreading flejhy-pointed leaves (hapedlike a spatula, having rough borders. *Tithymalus myrsinites latifolius*. C. B. P. 296. Broad-leaved Myrtle Spurge.
20. EUPHORBIA (*Dendroides*) umbella multifida, dichotoma, involucellis fubcordatis, primariis triphyllis, caule arboreo. Lin. Sp. Plant. 462. *Euphorbia* with a multifid forked umbel, heart-shaped fmall involucrums, the firft three-leaved, and a tree-like ftalk. *Tithymalus myrtifolius arboreus*. C. B. P. 290. Myrtle-Uaved Tree Spurge.
21. EUPHORBIA (*ifmygdaloides*) umbella multifida, dichotoma, involucellis perfoliatis emarginatis, orbiculatis foliis obtufis. Lin. Sp. Plant. 662. *Euphorbia* with a multifid umbel divided by pairs, orbicular perfoliate involucrums, and obtufe leaves. *Tithymalus characias amygdaloides*. C. B. P. 290. Wood Spurge.
22. EUPHORBIA (*Palustris*) umbella multifida, fubtrifida, bifida, involucellis ovatis, foliis lanceolatis, ramis fterilibus. Lin. Sp. Plant. 462. *Euphorbia* with a multifid umbel, which is fubtrifid and bifid, the fmall involucrums oval, fpear-shaped haves, and fterile branches. *Tithymalus palustris fruticosus*. C. B. P. 292. Shrubby Marjb Spurge.
23. EUPHORBIA (*Orientalis*) umbella quinquefida, quadrifida, dichotoma, involucellis fubrotundis acutis, foliis lanceolatis. Lin. Sp. Plant. 460. *Euphorbia* with a quinquefid and quadrifid forked umbel, a pointed round involucrum, and fpear-shaped leaves. *Tithymalus Orientalis*, falicis folio, caule purpureo, flore magno. Tourn. Cor. 2. Eastern Spurge with a Willow leaf, a purple ftalk, find large flower.
24. EUPHORBIA (*Characias*) umbella quinquefida, infida dichotomi, involucellis ovatis, foliis lanceolatis, capfulis lanatis. Lin. Sp. Plant. 460. *Euphorbia* with a quinquefid trifid umbel, dividing by pairs, an oval involucrum, fpear-Jhaped leaves and woolly capfules. *Tithymalus arboreus*, caule corallino, folio Hypenci, pericarpio barbato. Boerh. Ind. alt. 1. p. i | 6. "w Spurge with a red ftalk, a St. John's Wort leaf, and bearded capfule.
25. EUPHORBIA (*Hiberna*) umbella fextifida, dichotoma, involucellis ovalibus, foliis integerrimis, ramisnullis capfulis verrucosis. Lin. Sp. Plant. 462. *Euphorbia* with a fix-pointed forked umbel, oval involucrum, entire leaves, no branches, and warted capfules. *Tithymalus Hibernicus Machingboy diftus*. Mer. Pm. Info Spurge, *capfulis*
- involucellis obcordatis. Liri. Sp. Plant. 457. *Euphorbia* with a quinquefid bifid umbel, and b... involucrums. *Tithymalus tuberosa pyriformi radice*. C. B. P. 292. Spurge with a tuberous Pear-Jhaped root.
27. EUPHORBIA (*Aleppica*) umbella quinquefida, dichotoma, involucellis ovato-lanceolatis mucronatis, foliis inferioribus fetaceis. Lin. Sp. Plant. 458. *Euphorbia* with a quinquefid forked umbel, oval fpear-Jhaped involucrums which are pointed, and the lower leaves trifly. *Tithymalus Cypariffius*. Alp. Exot. 65. Cyprus Spurge.
- *8. EUPHORBIA (*Cretica*) umbella multifida, bifida, involucellis orbiculatis, foliis lineari-lanceolatis villofis. *Euphorbia* with a multifid bifid umbel, orbicular involucrums, and narrow, fpear-Jhaped, hairy leaves. *Tithymalus Creticus characias*, anguftifolius, villofus & meanus. Tourn. Cor. 1. Cretan Wood Spurge, with narrow, hairy, and hoary leaves.
29. EUPHORBIA (*Sylvatica*) umbella multifida, dichotoma, involucellis perfoliatis, fubcordatis, foliis lanceolatis integerrimis. Lin. Sp. Plant. 463. *Euphorbia* With a multifid forked umbel, heart-Jhapedperfoliate involucrums, and entire fpear-Jhaped leaves. *Tithymalus*

- fylyvaticus lunato flore. C. B. P. 290. Wood-Spurge with a moon-Jhaped flower.
30. EUPHORBIA (*Heterophylla*) inermis foliis ferratis petiolatis difformibus ovatis lanceolatis panduriformibus. Lin. Sp. Plant. 453. *Euphorbia* without fpines, bating fawed leaves with foot-ftalks which are deformed^ oval* fpear-Jhaped, and like a fiddle. *Tithymalus Curaffavicus*, falicis & atriplicis foliis variis, caulibus viridantibus. Pluk. Aim. 396. Spurge from Curaffao, with variable leaves like Willow and Orach, and a green ftalk.
31. EUPHORBIA (*Hyperidfolia*) dichotoma, foliis ferratis ovali-oblongis glabris, corymbis terminalibus, ramis divaricatis. Lin. Sp. Plant. 454. Forked *Euphorbia* with oblong* oval, fsmooth, fawed leaves, and divaricated branches terminated by umbels. *Tithymalus eredtus acris*, parietariae foliis glabris, floribus ad caulim nodos conglomeratis. Sloan. Cat. Jam. 82. Upright acrid Spurge, with fsmooth Pellitory leaves, and flowers growing in clufters from the joints of the ftalk.
32. EUPHORBIA (*Ocymoides*) inermis, herbacea, ramofa, foliis, fubcordatis integerrimis petiolatis floribus folitariis. Lin. Sp. Plant. 453. Branching herbaceous *Euphorbia* without fpines, having entire heart-Jhaped leaves with foot-ftalks, and fingle flowers. *Tithymalus Americanus*, eredtus, annuus, ramoffimus ocymi caryophyllati foliis. Houft. MSS. Upright, annual, branching Spurge of America, with leaves like fmall Bafil
- The firft fort has been generally taken for the true Euphorbium of the ancients, and as fuch hath been dire&ed for medicinal ufe, but it is from the fecond fort, that the drug now imported under that title in England is taken. Dr. Linnaeus fuppofes the fourth to be the fort which fhould be ufed, though as they are all nearly of the fame quality, it may be indifferent which of them that drug is taken from, which is the Jhpiffated juice of the plant.
- The firft fort hath a triangular, compreffed, fucculent ftalk, which is jointed, and rifes to the height of eight or ten feet, fending out many irregular twilling branches, which are for the mod part three-cornered, but have fometime only two, and at others four angles; they are compreffed, fucculent, and fspread out on every fide the ftalk, thefe have at the extremity of the branches a few fhort roundifh leaves, which foon fall off; and near thefe come out now and then a few flowers, which, have five thick whitifh petals, with a large three-cornered germen in the center thefe foon drop off without having any feeds. It grows naturally in India, from whence the plants were brought to the gardens in Holland, and have fince been communicated to moft of the curious gardens in Europe.
- The fecond fort grows naturally in the Canary Iflands, from whence I have been credibly informed, the Euphorbium which is imported in England, is now brought, and is the infpiffated juice of this plant. In its native country this grows to the height of twenty feet or more, but in England it is rarely feen more than fix or feven; nor is it of any advantage to have them fo tall here, becaufe they fend out many branches which are large and fucculent, fo render the plants too heavy to be eafily removed. This hath a very thick, green, fucculent ftalk, which has four or five large angles or corners, clofely armed with black crooked fpines, which come out by pairs at every indenture: the ftalks fend out from every fide large fucculent branches of the fame form, which extend to the diftance of two or three feet, then turn their ends upwards, fo that when the plants are well grown, they have fome refemblance to a branched chandelier thefe have no leaves, but are clofely armed with black fpines like the ftalks 5 at the end of the branches come out the flowers, which are fhaped like thofe of the firft fort.
- The third fort hath a naked three-cornered ftalk which is compreffed, fending out a great number of branches which grow ereft, and join up to the main ftalk; thefe are generally three-cornered, but fome vary to four; they are jointed and armed with fhore crooked fpines, but have no leaves, nor do the

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plants produce Bowers here. TUi; grows natural!) in India.

The fourth fort puts out many stalks just above the surface of the ground, which are thick, succulent, and roundish, having tight white they are young, but as they grow old they lift their angles and become round; the branches grow distorted and irregular, first horizontal, and afterward turn upward; they are arched with small crooked spines on their angles, and on the upper part of [lit branches come out the (lowers, which are small, and of a greenish white, (bapedlike those of the fecund (bit TflugmM naturally in India.

The fifth fort grows naturally in India; this rises with a strong upright stalk five or six feet high, which hath irregular angles, and protuberances which are oblique to the angles; the lower part of the stalk is naked, the upper part is branching, and the branches are armed with crooked spines, at every protuberance, and at the top, they are garnished with small leaves of a lucid green, which are very smooth, entire, and rounded at their ends; then fall off, and the plants remain naked for some months; and then the flowers come out, which (it dole, to the branch us* and are of a greenish white colour; the leaves come out in the autumn, and fall off in the spring.

The sixth fort rises with 3 roundish, upright, succulent stalk about three feet high, putting out several branches on the side of the same form which have seven angles; or furrows, which are armed with long (single, flake (horns) which come out first flowers, of the same form with those of the other forts, and are furnished with succulent (small) fruit.

The seventh fort hath thick, roundish, succulent stalks, which are fleshy; these send out many branches* from their sides of the same form, which are interwoven and run one over another, so as to appear like a parcel of ferns coming out from the stalks, BOD whence it had the appellation of Medusa's Scap. The ends of the branches are garnished with narrow, thick, succulent leaves, which drop off, and round the upper part of the branched down. The flowers which come out these are white, and of the same form with those of the other species, but larger, and are frequently succeeded by round smooth fleshy petals with three cells, each including a (single roundish seed.

The eighth fort hath roundish stalks, which swell out like a belly in the middle, and have knobbed angles, between which come out long (pines which are frayed, these (stalks rise two feet high and put out a few branches on their side of the same form; the flowers are produced at the end of the branches, tending dole upon the angle?; they are of a greenish yellow colour, and shaped like those of the other species.

The ninth fort hath (stalks and branches very like those of the fourth, but much thicker and the spines of the stalks are finned, and those of the other double; and the ends of the branches are chiefly garnished with flowers on every angle, by which it differs from the fourth fort.

The tenth fort hath a thick (stalk, which seldom rises more than eight or ten inches high, from which come out a great number of trailing branched stalks which are slender, and grow about a foot in length; these intermix with each other like those of the fourth fort, but they are much (smaller, and do not grow near so long, but have the same appearance, from whence it is called Little Medusa's Head: the ends of these branches are beset with narrow leaves, between which the flowers come out, which are white, and shaped like those of the other species.

The eleventh fort rises with a stalk taller than the tenth, sending out from the top a few tapering stalks, which spread out in every direction; these do not easily, like those of the tenth, but taper, and are garnished at their ends with narrow linear stalks, which drop off. This (on hath not yet been observed here, having been but a (long time in England.

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The twelfth fort hath a (Wt thick stalk, which rises three inches high, so that the branches spread out on the surface of the ground, these seldom grow more than six inches long; and their leaves fall into a ton of protuberance! which are furnished with a few leaves, and very rarely produce flowers in England, but has been long known in the gardens.

The (fourth fort is very like the twelfth, but the (stalks rise more than a foot high, 16 that the branches spread out near the ground, these resemble much the twelfth, but have the same appearance, and are furnished with narrow leaves at their ends, which fall off; the branches are extended in length; this produces a great number of linear white flowers at the end of the branches, which are shaped like those of the other species, and are distinguished by round smooth capsules with three cells, including one or two room till feeds which ripen in the autumn.

These forts have been by most of the modern botanists ranged under the title (if Etmortm, and have been distinguished from the twelfth, more from the linear stalk and appearance of the plant, than from any real difference in their characters, as hath been observed; but the number of species of the twelfth, which Spurge was very desirous to many, is not less than a hundred. Iterate the Euphorbia num that genus, to lessen the number of species.

The twelfth fort is preserved in many curious gardens, more for the oddness of their structure, than any real beauty; but being so extremely different in their form, from almost any plants of European origin, many curious persons have been induced to preserve the several forts in their gardens.

They are all of them full of a milky acid juice, which flows out on their being wounded in any part; this juice will blisters the flesh, if it happen to lie upon any tender part for a short time, and till burn linen. The juice of the aqua iorris, which is prepared from the roots of the twelfth fort, is very caustic; and for the cure of the same, it frequently occasions a swelling of the part to the joint, and sometimes will destroy the whole plant, if those injured branches are not cut off in time; but that whenever the branches appear to have been injured, the twelfth fort they are cut from the plants, the less danger there will be of their suffering from the humors of the twelfth fort between the joints, for the same reason.

Most of these plants were first brought to Europe by the Dutch, who have been very desirous to introduce great numbers of plants from India, and also from the Cape of Good Hope: from the latter there hath been a very great variety of curious plants of late years brought to Europe, many of which produce very elegant flowers.

The twelfth fort is the most common of the conservatory in the winter and spring seasons. These have been brought over in feeds, but the different kinds of Euphorbia came over most of them in pits or cuttings; for the twelfth fort may be transported to any distance, if either of them are put up in boxes, with any luteous package, to prevent the being bruised, or their spines from wounding each other, and kept from moisture and decay; with this care they will be kept six months out of the ground, and if carefully planted will take root, and thrive as well as if they had been newly taken from the old plants, or out of the ground but a short time; which is a much more expedient method of obtaining plants than from feeds, when they can be procured.

The greater part of these succulent plants grow naturally upon barren rocky places, nor in (open fields) (oils, where few other plants will thrive; they therefore mould never be planted in rich or fertile earth, nor be exposed to receive much wet, which would caule them to rot. The best mixture of earth and rubbish is about a fourth part of ferrous rubbish, a fourth part of sea-sand, and half of fresh earth from a common; these should be

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<*ell together, and frequently turned over before it is used, that the parts may be incorporated, and the compost sweetened by being exposed to the air. If this mixture is prepared a year before it is wanted, it will be the better, that it may have the benefit of the winter's frost and the summer's heat to mellow it; and the oftener it is turned over, and the smaller the heaps are in which it is laid, the air will penetrate it better, and render it more fit for use.

These sorts are easily propagated by cuttings, which should be taken from the old plants in June; these must be cut at a joint, otherwise they will rot. When these cuttings are taken off, the milky juice of the old plants will flow out in plenty; therefore there should be some dry earth or sand applied upon the wounded part, which will harden and stop the sap; and the wounded part of the cuttings should also be rubbed in sand, or dry earth, for the same purpose; then the cuttings should be laid in a dry part of the stove, for ten days or a fortnight; and some of those whose branches are large and very succulent, may lie three weeks or more before they are planted, that their wounds may be healed and hardened, otherwise they will rot. When the cuttings are planted, they should be each put into a small halfpenny pot, laying stones or rubbish in the bottom, and filling the pots with the mixture before directed; then plunge the pots into a moderate hot-bed, and if the weather is very hot, the glasses of the hot-bed should be shaded in the middle of the day, and the cuttings should be gently watered once or twice a week, according as the earth may dry: in about six weeks or two months the cuttings will have put out roots, so if the bed is not very warm, the plants may continue there, provided they have free air admitted to them every day, otherwise it will be better to remove them into the stove, where they may be hardened before the winter; for if they are too much drawn in summer, they are very apt to decay in winter, unless they are very carefully managed. During the summer season, these plants should be gently watered two or three times a week, according

to the season. ~~They should be watered in the winter, but in winter they must not be watered oftener than once a week, and it should be given more sparingly at that season,~~ especially if the stove is not warm: the first sort will require more warmth in the winter than any of the other, as also less water at that season. This, if well managed, will grow seven or eight feet high; but the plants must constantly remain in the stove, giving them a large share of air in warm weather, and in winter the stove should be kept in a temperate degree of warmth.

The sixth sort is at present the most rare in England: the plants of this sort, which have been procured from Holland, have been most of them destroyed by placing them in stoves, where, by the heat, they have in one day turned black, and rotted immediately after. This sort will thrive well if placed in a dry airy glass-case with Ficoides, and other succulent plants in the winter, where they may have free air in mild weather, and be protected from frost; in summer the plants of this sort may be exposed in the open air, in a warm situation, but should be screened from much wet: with this treatment, the plants will thrive much better than when they are more tenderly nursed.

The seventh, eighth, tenth, eleventh, twelfth, and thirteenth sorts, are also pretty hardy, (o will live in a good glass-case in winter without fire, provided the frost is kept entirely out, and in summer they may be placed abroad in a warm situation: as these are very succulent plants, they should not have too much wet; therefore, if the summer should prove very moist, it will be very proper to place these plants under some shelter, where they may enjoy the free air, and be screened from the rain, otherwise by receiving too much wet in summer they will rot in winter. The seventh sort will require to be supported, otherwise the weight of the branches will draw them upon the pots; and, by training of the stems up to stakes,

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they will grow four or five feet high, and a great number of side branches will be produced; these being very succulent and heavy, are very apt to draw down the stem if it hath not support.

The following sorts have been by all the writers on botany, placed under the title of Tithymalus; but the fourteenth and fifteenth sorts should, according to their own distinction, have been placed in the genus of Euphorbium, because they are as destitute of leaves as most of the species which they have there placed.

The fourteenth sort rises with a taper succulent stalk to the height of eighteen or twenty feet, sending out many branches of the same form, which subdivide into many smaller; these are jointed but at a great distance: they are smooth, and of a deep green colour, having a few small leaves at their extremities, which soon fall off. As the plants grow older, their stalks become stronger and less succulent, especially toward the bottom, where they turn to a brown colour, and become a little woody. The branches grow diffused and intermix with each other, so form a sort of bush toward the top, but this doth not produce flowers here.

The fifteenth sort sends out a great number of slender taper stalks of a dark green colour, which are smooth, and twist about each other, or any neighbouring support, whereby they will rise to the height of ten or twelve feet, putting out smaller branches upward, which also twine and intermix with the other stalks; they are naked, having no leaves, nor do the plants flower in England. These grow in India.

The sixteenth sort sends out many taper succulent stalks from the root, which rise about four feet high; they are slender and weak, so require support to prevent their falling to the ground; these have a light green bark, and their lower parts are naked, but their upper parts are garnished with oblong leaves, which are smooth, entire, and placed alternate on every side the stalks: the flowers are produced in small clusters at the end of the branches, they are of a yellowish green colour, and are sometimes succeeded by smooth round fruit, but the seeds rarely ripen in England. This sort grows naturally on the African shore in the Mediterranean.

The seventeenth sort grows naturally in some of the islands of the West-Indies, and also upon the continent there. I received specimens of this sort from the island of Tobago, and also from Carthage, where the plants were growing in plenty; the Dutch gardens were furnished with it from Curacao, where it also grows naturally. This hath an upright stalk, which rises to the height of six or seven feet, covered with a light brown bark, and divides upward into many branches; these are garnished with roundish leaves, which are indented at their ends, and have foot-stalks: they are smooth and of a beautiful green, but fall away in winter, so that in the spring they are almost naked; the flowers come out from the end of the branches, they are yellow and small, soon falling away without having any fruit succeed them here.

These sorts are propagated by cuttings, in the same manner as the Euphorbiums, and the plants must be treated in the same way, as hath been directed for them.

The fourteenth, fifteenth, and seventeenth sorts, are tender, so require a stove; these must have the same treatment as the tender kinds of Euphorbiums, but the sixteenth sort will live in a common green-house in winter, and may be exposed abroad in the summer. The eighteenth sort stands in the list of medicinal plants, but is rarely used in England at present; this is a biennial plant, which germinates after the seeds are ripe. It grows naturally in Italy and the south of France, and where it is allowed to scatter its seeds in a garden, becomes a weed here. This rises with an upright succulent stalk from three to four feet high, garnished with oblong smooth leaves which are placed opposite, and fit close to the stalks; the upper part of the stalk divides by pairs into smaller forked

branches, and from the fork between these divisions come out the umbels of flowers, each fork having one *, that which is situated in the first division being the largest, and those in the upper the smallest; The flowers are of a greenish yellow colour; they appear in June and July, and the fruit follows soon after, which is divided into three lobes, and has three cells, each containing one roundish seed, which is call out at a distance by the elasticity of the pods. This* fort will propagate itself fast enough when it is once introduced into gardens, so requires no care but to keep it clean from weeds.

The nineteenth fort grows naturally in the south of France, in Spain, and Italy. This sends out many trailing branches from the root, which grow about a foot long, lying upon the ground, which are closely garnished with thick succulent leaves; these are flat, short, and pointed; they spread open on every side the branches, and are placed alternate, fitting close to the (stalks: the flowers are produced in large umbels at the end of the branches; the involucre of the principal umbel is composed of several oval-pointed leaves, but those of the small umbels have only two heart-shaped concave leaves, whose borders are rough, the flowers are yellow, and are succeeded by three seeds, inclosed in a roundish capsule with three cells. This plant will continue two or three years upon a dry warm soil, and will ripen seeds annually; which, if permitted to scatter, the plants will come up, and require no other care but to keep them clean from weeds.

The twentieth fort grows naturally in Crete, and in several islands of the Archipelago *, this rises with an upright branching stem to the height of four feet; the leaves of this are oblong and pointed, and are placed alternate on the branches; the flowers come out in umbels from the fork between the branches; they are small and yellow, and are rarely succeeded by seeds in England. It is easily propagated by cuttings during any of the summer months, and requires a little protection from the frost in winter.

The twenty-first fort grows naturally in the woods in many parts of England; it rises with a shrubby stalk three feet high *, the flowers are produced in umbels fitting close to the (stalks, so form a long spike *, the empalements are of a greenish yellow, and the petals black, so they make an odd appearance. It flowers in May, and the seeds ripen in July. If the seeds of this are sown under trees in the autumn, the plants will rise the following spring, and require no culture.

The twenty-second fort stands in the list of medicinal plants by the title of Efula major, but at present is seldom used: this grows naturally in France and Germany upon marshy places, where it rises three or four feet high. It hath a perennial root, by which it may be propagated better than by seeds, which seldom grow, unless they are sown soon after they are ripe.

The twenty-third fort was discovered in the Levant, by Dr. Tournefort, who sent the seeds to the royal garden at Paris -, this hath a perennial root, from which arise many succulent (stalks three feet high, covered with a purple bark, and garnished with oblong smooth leaves, shaped like those of Willow, of a dark green colour. The upper part of the (stalks divide, and in the fork is situated an umbel of flowers of a greenish yellow colour, which are succeeded by round capsules with three cells, each containing a single seed. It flowers in June, and the seeds are ripe in August; this may be propagated by parting the roots, or by sowing the seeds in autumn. The plant is hardy, so will endure the greatest cold of this country, if it is planted in a dry soil.

The twenty-fourth fort grows naturally in Sicily, and on the borders of the Mediterranean Sea; this rises with several shrubby (stalks to the height of five or six feet, having a red bark, and are garnished with oblong, smooth, blunt leaves, which are placed alternate. The flowers grow in small umbels from the

division of their branches; they are yellow, and are succeeded by roundish capsules, which are rough; having three cells like the other species. This is easily propagated by cuttings during any of the summer months, and requires protection from the frost in winter.

The twenty-fifth fort grows naturally in Ireland, from whence the roots have been brought to England; this hath thick fibrous roots, which send up several single unbranched (stalks about a foot high, garnished with oblong leaves, placed alternate on every side. The flowers are produced in small umbels at the top of the (stalks; they are yellow, and are succeeded by rough warty capsules with three cells; it flowers in June, and the seeds ripen in August. This" may be propagated by the roots, which should be planted in a (shady situation and a moist soil*.

This plant was almost the only physic used by the native inhabitants of Ireland formerly; but since the use of mercury has been known to them, the other has been generally neglected.

The twenty-sixth fort grows naturally in the Levant; this hath a knobbed Pear-shaped root, from which arise two or three (stalks about a foot and a half high, garnished with oblong leaves, which are hairy, placed alternate on every side the stalk. The flowers are produced in small umbels from the divisions of the stalk; they are small, of a greenish yellow colour, and are seldom succeeded by seeds here; it may be propagated by offsets, sent out from the main root; these may be taken off in autumn, and planted in a (shady situation, where they will thrive better than in the full sun.

The twenty-seventh fort grows naturally at Aleppo, and in other parts of the Levant *, this hath a perennial creeping root, by which it multiplies very fast where it is once established. The (stalks of this rise a foot and a half high -, the lower leaves are narrow, (stiff, and brittle; but those on the upper part of the stalk are (shaped like the narrow-leaved Myrtle. The flowers are produced in large umbels from the divisions of the stalk; they are yellow, and appear in June, but are rarely succeeded by seeds in this country. The roots of this (should be confined in pots; for when they are planted in the full ground, they creep about to a great distance.

The twenty-eighth fort grows naturally in many parts of the Levant, and also in Spain and Portugal. The seeds of this were brought me from Scanderon, by the late Mr. Robert Millar, who found the plants growing plentifully there; and he assured me, that he saw the inhabitants wounding of these plants, and collecting their milky juice, which they mixed up with the Scammony to send abroad.

The seeds of this plant were sent me from Portugal, by Robert More, Esq; who found the plants growing there naturally, but this plant had been many years before an inhabitant in the English gardens; this rises with a purple (shrubby stalk near three feet high, which is garnished with narrow, spear-shaped, hairy leaves, set closely on the stalk alternately on every side *, the upper part of the stalk is terminated by umbels of flowers, which form a sort of spike. The greater umbels are multifid, but the small ones are bifid. The involucres of the flowers are yellow, and the petals of the flowers black; these appear in May, and are succeeded by seeds which ripen in July: the young plants which have been lately raised from seeds, are generally very fruitful, but the old ones, and those raised by cuttings are barren -, this may be propagated by seeds, or from cuttings, and will live abroad if planted in a dry rubbishy soil and a warm situation, otherwise they are frequently killed by severe frost.

The twenty-ninth fort grows naturally in the south of France, in Spain, and Italy; this is a biennial plant, from whose root arise two or three stalks, which grow two or three feet high, garnished with spear-shaped leaves, which are entire. The umbels of flowers arise from the division of the branches -, the involucres are

pots and placed under a frame in the winter, and the following spring shaken out of the pots, and planted in a warm border, they will come early to flower, and thereby ripe seeds may be more certainly obtained.

The other two sorts may be treated in the same way; for as these seldom flower the first year from seeds, the plants should be either kept in pots, and sheltered under a frame in winter, or placed in a warm border, where they may be sheltered with mats, or some other covering, to preserve them from the frost; and the following summer the second sort will flower and produce ripe seeds, but the third has not perfected any seeds as yet in England.

FAGOPYRUM. See HELIXINE.

FAGUS. Tourn. Inft. R. H. 584. tab. 351. Lin. Gen. Plant. 951. [so called from π^αγ^{ος}, Gr. because supposed to be the food of the first race of mankind.] The Beech-tree; in French, *Hêtre*.

The CHARACTERS are,

It hath male and female flowers on the same tree; the male flowers are collected into globular beads, these have no petals, but have several stamens included in an envelopment of one leaf, which are terminated by oblong stamens. The female flowers have a one-leaved envelope cut into four parts, but have no petals, the germen is fixed to the envelope, supporting three styles, crowned by reflexed stigmas. The germen afterward becomes a roundish capsule, armed with soft spines, opening in three cells, each containing a triangular nut.

This genus of plants is ranged in the eighth section of Linnaeus's twenty-first class, which includes those plants that have male and female flowers on the same plant, and the male flowers have many stamens. To this genus he has joined the Chestnut; but as the male flowers of the Chestnut are collected in long catkins, and those of the Beech are globular, and the fruit of the latter being triangular, there is sufficient reason for keeping them separate.

We know but one SPECIES of this genus, viz.

FAGUS" (*Sylvatica*) foliis ovatis obsoletis ferratis. Hort. Cliff. 447. Fagus. Dod. Pempt. 832. *The Beech-tree; with oval-shaped leaves.*

There are some planters, who suppose there are two distinct species of this tree, one they call the Mountain Beech, which they say is a whiter wood than the other, which they distinguish by the title of Wild Beech; but it is certain, that this difference in the colour of the wood arises from the difference of the soils in which they grew, for I have not seen any specific difference in the trees. There have been seeds of a Beech-tree brought from North-America, by the title of Broad-leaved Beech, but the plants which were raised from them proved to be the common sort; so that we know of no other variety, excepting those with striped leaves, which is accidental, and when the trees are in vigour, the leaves become plain again.

This tree is propagated by sowing the mast, the season for which is any time from October to February, only observing to secure the seeds from vermin when early sown, which, if carefully done, the sooner they are sown the better, after they are full ripe: a small spot of ground will be sufficient for raising a great number of these trees from seed, but you must be very careful to keep them clear from weeds, and if the plants come up very thick, you should not fail to draw out the strongest of them the autumn following, that those left may have room to grow, so that if you husband a seed-bed carefully, it will afford a three years draught of young plants, which should be planted in a nursery; and, if designed for timber trees, at three feet distance row from row, and eighteen inches asunder in the rows.

But if they are designed for hedges (to which the tree is very well adapted) the distance need not be so great; two feet row from row, and one foot in the rows will be sufficient. In this nursery they may remain two or three years, observing to clear them from

weeds, as also to dig up the ground between the rows, at least once a year, that their tender roots may the better extend themselves each way: but be careful not to cut or bruise their roots, which is injurious to all young trees, and never dig the ground in summer, when the earth is hot and dry; which, by letting in the rays of the sun to the roots, is often the destruction of young trees.

This tree will grow to a considerable stature, though the soil be stony and barren, as also upon the declivities of hills, and chalky mountains, where they will resist the winds better than most other trees, but then the nurseries for the young plants ought to be upon the same soil; for if they are raised in good soil and a warm exposure, and afterwards transplanted into a bleak barren situation, they seldom thrive, which holds true in most other trees; therefore I would advise the nursery to be made upon the same soil where the plantation is intended, but of this I shall say more under the article of NURSERY.

The tree is very proper to form large hedges to surround plantations, or large wilderness quarters; and may be kept in a regular figure, if sheared twice a year, especially if they shoot strong; in which case, if they are neglected but a season or two, it will be difficult to reduce them again. The shade of this tree is very injurious to most sorts of plants which grow near it, but is generally believed to be very salubrious to human bodies.

The timber is of great use to turners for making trenchers, dishes, trays, buckets; and likewise to the joiner for stools, bedsteads, coffins, &c. The mast is very good to fat swine and deer; it also affords a sweet oil, and the nuts have in scarce times supported some families with bread.

This tree delights in a chalky or stony ground, where it generally grows very fast; and the bark of the trees in such land is clear and smooth; and although the timber is not so valuable as that of many other trees, yet as it will thrive on such soils and in such situations where few better trees will scarce grow, the planting of them should be encouraged; especially as the trees afford an agreeable shade, and the leaves make a fine appearance in summer, and continue green as long in autumn as any of the deciduous trees: therefore in parks, and other plantations for pleasure, this tree deserves to be cultivated among those of the first class, especially where the soil is adapted to it.

The two sorts with variegated leaves may be propagated by budding or grafting them upon the common Beech, observing not to plant them in a good earth; which will cause the buds or cyons to shoot vigorously, whereby the leaves will become plain, which often happens to most variegated plants.

FARINA FEGUNDANS is the impregnating meal or dust on the apices or summits of flowers, which, being conveyed into the uterus or vulva of female plants, fecundates the rudiments of the seeds in the ovary, which otherwise would decay and come to nothing. See GENERATION OF PLANTS.

FATHERFEW, or FEATHERFEW. See MATRICARIA.

FENCES. In hotter climates than England, where they have not occasion for walls to ripen their fruit, their gardens lie open, where they can have water fence and prospect, or else they bound their gardens with groves, in which are fountains, walks, &c. which are much more pleasing to the sight than a dead wall: but in colder countries, and in England, we are obliged to have walls to shelter and ripen our fruit, although they take away much from the pleasant prospect of the garden.

Since therefore we are under a necessity to have walls to secure our gardens from the injury of winds, as well as for the convenience of partitions or inclosures, and also to ripen our fruit, brick walls are accounted the warmest and best for this purpose: and the walls being built panel-ways, with pillars at equal distances, will save a great deal of charge, in that

the walls may be built thinner, than if they were built plain without these pannels, for then it would be necessary to build them thicker every where: and besides, these theft pannels make the walls look the more formidable.

Stone walls are by some preferred to those of brick especially those of square hewn stones; but where they are used for fruit, they fluek! be faced with brick. Those of rubble made of rough stones, though they are very dry and warm, yet, by reason of their uneven surfaces, are inconvenient to nail up trees on, except where or timber be laid in them here and there for to fallen on trellis to them.

But in large gardens it is better to have the plot open to the pleasure-garden, which is limited by a fence with 3 feet, that from the garden the view of the country may be viewed, but this is the desire of the nation of the place; for if the prospect from the garden is not good, it had better be shut out from the light by a wall, or any other fence, than to be open. As also, where it is a populous town,

and the adjoining grounds are open to the inhabitants, if the garden is open, there will be no walking there in good weather, without being exposed to the view of all the town, which is very disagreeable.

Where these fences are made round a garden which is situated in a park, they are extremely proper; because hereby the prospect of the park will be obtained in the garden, which renders these gardens much more agreeable than those which are common.

In the making of these fences there have been many inventions; but, upon the whole, I have not met any which are in all respects preferable to those which have an upright wall next the garden; which wall should be four feet high, so as to be above the reach of boys; and from the foot of this wall, the ground on the outside should rise with a gradual easy slope to the distance of eighteen or twenty feet; and where it can be allowed, if it slopes much farther, it will be easier and less perceptible as a ditch to the eye, when viewed at a distance. But if the ground is naturally wet, it is as not to admit of a deep fosse, then, in order to make a fence against cattle, if the wall be four feet high, and flight posts of three feet and a half high are placed just behind the wall, with a small chain carried on from post to post, no cattle or deer will ever attempt to jump against it, therefore it will be a fence (fence against them; and if these are painted of a dark lead colour, they will not be discerned at a distance; and at the same time the chain will secure persons walking in the garden from tumbling over: and if another chain is carried through the posts at one foot from the ground, it will more effectually prevent cattle from creeping under.

In such places where there are no good prospects to be obtained from a garden, it is common to make the inclosure of park-paling; which, if well performed, will last many years, and has a much better appearance than a wall: and this paling may be hid from the light within, by plantation of Inrabs and Evergreens; or there may be a quick hedge planted within the pale, which may be trained up, so as to be an excellent fence by the time the pales begin to decay. There are some persons who make these fences round their gardens to keep out cattle, &c. which, when well made, will answer the purpose of a fence, but this being very expensive in the making, and not of very long duration, has occasioned their not being commonly in use.

As to fences round parks, they are generally of paling; which, if well made of winter-fallen Oak, will last many years; but a principal thing to be observed in making these pales, is not to make them too heavy; for when they are so, their own weight will cause them to decay; therefore the pale should be cleft thin, and the rails should be cut triangular, so as to prevent the wet lodging upon them, and the posts should be good, and not placed too far asunder, burning that part of them as good into the ground, if these things are observed,

one of these pales will last upward of forty years very well. The manner of making these fences is, to have every line nine or ten inches above the intermediate one; so that the fence may be six feet and a half high, which is enough for a low deer; but where there are red Jills, the fence should be one foot higher, otherwise they will leap over.

Some incline to park with brick walls; and in countries where stone is cheap, the walls are built with this material; but others will have them of stone.

A kitchen-garden, if rightly contrived, will contain walling enough to afford a plentiful supply of such fruits as require the assistance of a wall for any family; and this garden being situated on one side, and quartered by the height of the ivy; may be surrounded with walls, which will shut out the garden from the light of the sun in the winter season; and being low up, the fruit will be much better preserved than it can be in the public garden; and the occasion of a (a number of) willing is often the occasion that many valuable trees are frequently to be seen in large gardens, where there is no due care observed in their management.

And besides, the borders of pleasure-gardens are generally narrow for the roots of fruit-trees, as well as the view in its proper place, therefore it is in vain to plant them there.

The height of garden-walls should be from ten to twelve feet, which is a moderate proportion; and if the soil be good, it may in time be well with hearing wood in every part, especially those plants planted with Pears, notwithstanding the branches be trained horizontally to the bottom of the wall.

I would recommend the White Thorn, the Holly, the Black Thorn and Crab, for outward fences to a good ground, but I do not approve of their intermixing them.

The White Thorn is the best quick to plant, and it is the most common, and may be clipped so as to render it the closest and hardest fence of any other tree, and being very durable, it is preferred to all others for outward fences, or for the division of fields, where they are exposed to cattle, &c.

The Black Thorn and Crab are very good fences, and are to be valued at the White Thorn; but the kernels of Apples or Crabs be taken, it is better to low the fumace with them, and they will come up the sooner, i. e. the first year, if (own in the autumn) after the frost is ripe.

If Crab-trees be planted while young, in the same manner as quick, they make excellent hedges; and will form forts of Plumbs, I need not say as have thorns.

The Black Thorn is not accounted so good for fences as the White Thorn, because it is apt to run more into the ground, and is not certain as to the growing, especially if the plants are not set very young; but then on the other hand, the bushes are by much the better, and are well known to the White Thorn, or any other, for dead hedges, or to fill a gap; nor are they so apt to be cut off, etc. as the others are. The richer the mould is, the better they will prosper, but yet they will grow on thin soil of soil that the White Thorn does.

The Molly will make an excellent fence, and is preferable to all the rest, but is a slow grower; but when once it does grow, it makes amends by its height, length, and thickness.

It is raised by young seedling plants of berries, as the White Thorn, and the bushes will last as long in the ground before they come up, as the Molly. It delights most in Urong grounds, but will grow upon the drift gravel, amongst trees and houses.

The berries should be all the second spring before they come up, therefore they should be prepared before they are sown (see the article Agricul.) It will be better to sow them in the place where you design they

they should grow, but they should be well weeded both before they come up and afterwards. French Furz will also do well upon dry sandy banks, where few other plants will grow; but they must be kept very clean at the bottom, and cut thin, and never suffered to grow too high: nor should they be cut in dry weather, or late in autumn, nor early in the spring; the doing either of which is subject to make it die in patches, which is irrecoverable; not will it ever break out again from old wood, if cut down in, after it has been suffered long to grow out. Fences may likewise be made of Elder: if the foil be any thing good, you may put sticks of Elder, or truncheons ten or twelve feet long, fopeways in your banks, so as to make a chequer-work, and they will make a fence for a garden the quickest of any thing, and be a good shelter. But these fences are improper for a fine garden, because they shoot very irregular, and are ungovernable; as likewise the roots of these trees spread very far, and draw away all the heart of the ground, so as to starve whatever plants grow near them: and add to this the scattering of the berries, which will fill the ground near them with young plants; which, if not timely weeded out, will get the better of whatever grows near them, therefore this sort of fence is seldom planted, where a hedge of White Thorn can be had.

Elder planted on a bank, the side of which is washed with a river or stream, will make an extraordinary fence, and will preserve the bank from being undermined by the water, because it is continually sending suckers from the roots and lower branches, which is of great advantage where the stream washes away the bank. For middle fences in a garden, the Yew is the most tonfick, governable, and durable plant.

For surrounding wilderness quarters, Elm, Lime, Hornbeam and Beech, are very proper,

FENNEL. See FOENICULUM.

FENNEL-FLOWER. SCCNIOELLA.

FERRUM EQUINUM. See HIPPOCRIPIS.

FERULA. Lin. Gen. Plant. 305. Tourn. Inf. R. H. 321. tab. 170. [takes its name of Ferendo, Lat. because the stalks of this plant are made use of in supporting the branches of trees; or of Feriendo, because in old time sticks were made of them, with which school-masters used to correct their scholars.] Fennel Giant, in French, *Ferule*.

The CHARACTERS are,

// bath an umbellated flower \ the principal umbel is globular, and is composed of several called rays, of the same form; the involucre is composed of several narrow leaves which fall off \ the principal umbel is uniform. The flowers have five oblong erect petals which are equal, and five filaments of the same length* terminated by single summits \ under the flower is situated a turbinated germ, supporting two reflexed styles, crowned by obtuse stigmas. the germ after ward becomes an elliptical, compressed, plain fruit* dividing in two parts, each having a large elliptical plain seed* marked with three lines on each side*

This genus of plants is ranged in the second section of Linnaeus's fifth class, intitled Pentandria Digynia, which contains those plants whose flowers have five stamens and two styles.

The SPECIES are,

- * FERULA (*Communis*) foliis linearibus longissimis simplicibus. Hort. Cliff. 95. *Ferula with the smaller leaves, very narrow, long* and single.* *Ferula major, seu femina Plinii.* M. Umb. *PUnfs Female Fennel Giant.*
- * FERULA (*Galbanifera*) foliis multipartitis, laciniis linearibus planis. Hort. Cliff. 95. *Ferula whose smaller leaves are divided into many narrow parts which are plain.* *Ferula galbanifera.* Lob. Obs. *Galbanum-bearing Fennel Giant.*

3- FERULA (*Tingitana*) foliis laciniatis, laciniis tridentatis inaequalibus. Hort. Cliff. 95. *Ferula whose smaller leaves are cut, and segments ending in three unequal parts.* *Ferula Tingitana** folio latissimo lucido.

Edin. *Broad-leaved shining Fennel Giant from Tangier.*

4. FERULA (*Ferulago*) foliis pinnatifidis, pinnis linearibus planis trifidis. Hort. Cliff. 95. *Ferula with wing-pointed leaves, whose pinnae are narrow, plain, and trifid.* *Ferula latiore folio.* Mor. Hist. 3. p. 309. *Fennel Giant with a broader leaf.*

5. FERULA (*Orientalis*) foliorum pinnis basi nudis, foliolis fetaceis. Hort. Cliff. 95. *Ferula with the wings of the leaves naked at the base, and the smaller leaves bristly.* *Ferula Orientalis, Cachyros folio & facie.* Tourn. Cor. 22. *Eastern Fennel Giant with the leaf and appearance of Cachyros.*

6. FERULA (*Meoides*) foliorum pinnis utrinque basi acutis, foliolis fetaceis. Hort. Cliff. 95. *Ferula with the wings of the leaves pointed at their base on every side.* *Laierpitium Orientate mei folio, flore luteo.* Tourn. Cor. 23. *Eastern Laferwort with a Spiguel leaf and yellow flower.*

7. FERULA (*Nodiflora*) foliolis appendiculatis, umbellae subsessilibus. Lin. Sp. Plant. 247. *Ferula with appendages to the smaller leaves, and umbels fitting close to the stalks.* *Libanotis ferulae folio & femine.* C. B. P. 158. *Libanotis with a Fennel Giant leaf and seed.*

8. FERULA (*Glauca*) foliis supradecompositis, foliolis lanceolato-linearibus planis. Hort. Cliff. 95. *Fennel Giant with linear, spear-shaped, decomposed leaves** *Ferula folio glauco, femine lato oblongo.* J. B. 3. p. 45.

The first of these plants is pretty common in the English gardens; this, if planted in a good soil, will grow to a great height, and divide into many branches: the lower leaves of this sort spread more than two feet every way, and branch but into many divisions, which are again subdivided into many smaller, garnished with very long, narrow, small leaves that are fine, they are of a lucid green, and spread near the ground. From the center of the plant comes out the flower-stalk, which, when the plants are strong, will be near as large as a common broomstick, and will rise ten or twelve feet high, having many joints* if the stalks are cut, there issues from the joints* a foetid yellowish liquor, which will concrete on the surface of the wound. The stalks are terminated by large umbels of yellow flowers, which come out the latter end of June, or in the beginning of July; these are succeeded by oval compressed seeds, which have three lines running longitudinally on each side. These ripen in September, and the stalks decay soon after. When the stalks are dry, they are full of a light dry pith, which will soon take fire.

Mr. Ray says, that the people of Sicily use the pith of this plant for tinder to light their fires. And if this was practiced by the ancients, we may easily guess why the poets feigned, that Prometheus stole fire from heaven, and carried it to the earth in a hollow

Fertile.

The leaves of these plants decay soon after the seeds are formed, so that before they are ripe, there are seldom any leaves remaining, and the stalks afterward dry and become very tough; so it is not unlikely these may have been used for correction in the schools, as they are very light, and cannot do much injury. The roots of this sort will continue several years, especially on a dry soil, and will annually produce flowers and seeds.

The second sort doth not grow quite so large as the first; but the stalks of this will rise seven or eight feet high: the lower leaves are large, and greatly divided; the smaller leaves are flat, and not so long as those of the former, and are of a lucid green colour; the upper flowers are smaller, and the seeds are less. This flower and ripens its seeds about the same time as the former sort.

The third sort hath large spreading leaves near the top which are divided and subdivided into many small parts; the small leaves of this are much broader than those of the other sorts, and these are divided at the end into three unequal segments; the leaves are of a very lucid green. The stalks are strong, and rise to the height of eight or ten feet, and are terminated by large umbels of yellow flowers, which are

Ibecwded by Inrgc, rual, comprfecil feeds, li...
 of thefirt fort. Tills liowers and ripent Us feeds
 alwvit the lime time as the former Tun; it grows nat-
 urally in Spain ami Barhary.
 The fourth fun grows to much the fame height as the
 fecofcd; the leaves ut' this branch out on evry fide
 prttv wide, and the fodter lava on the divifions
 of ilic leaves, are broader than thofe of the others
 (excepting die third) but they art lunger chaH thole,
 ami are of a darker green colour, ending in three
 points. The umbels or flowers arc large, (he (lowers
 arr vellow, and are (urccaled by oval comprctid
 feeds, lite ihofe of the other fpecies. This grows
 naturally in Sicily.

The fifth fort if of much humbler growth than either
 of the former-, the Italics of this feldom rHcmuch
 more than three feet, hiyh; the lower kavev branch
 into many divi (ions which arc dofely pmiied with
 very fine i... I the umbel of flowers is but
 final), when compared, witti rlie others, and the feeds
 are fmaller. It grows naturally in the L.evanc
 The fixili Ion hath very branching leaves, the foot-
 talks are angular and channelled-, this fend) out M
 every joint two liue branches oppofire; thole rowan!
 the bottom are nine or ten indies long, anil [heothers
 arc diminihccii gradually to the top -, thefe fide
 branches fend out finaltr at each joint in the fame
 manner, which arc garniflicd with very fine. IIMVCS
 likeihnfcof Spigitit-l, which fland quite round tlic
 (talks in fhspc of whorls; the flower-ftalks grow (hire
 feet high, having a prruv Urge Umbel of ydlow
 Rowers at the topv thefe are fuccceded by ova) flat
 freds, which ripen in the autumn. It grows naturally
 in the Lw ant.

The teventh iort rifcs about three feet high*, die
 leaves of this Ion arr mutli divided, and the fniall
 leaves on the dwii-uin are very narrow and entire;
 • the umbels of flowers artlmaH, and ate fituatedclolc
 to the fhks between the leaves at the joints; thefe
 * are like thofe of tlic other forts. It grows naturally
 in Iftria and Carnioia.

The eighth fort grows naturally in Italy and Sicily.
 The leaves of this are compofed of many narrow flat
 fegments, of a gray colour, &nd we divided into
 many parts: the I talk riics &om djrec 10 four feet
 high, and is terminated by an umbel of yellow flow-
 ers in July, which me ibccceded by oval tmprclled
 feeds which ripen in ju:umn.

All thefe forts have perennial roots, which will con-
 tinue fevnl years j thefe have thick (trong fibres,
 which run deep in the ground, nnc) divide into many
 finaller, fp re ad ing to a confide rable difluice every
 wj; the italks are annual, and decay won star
 they have pm'rited tkir feeds. Asteieplansfspread
 very wide, To they (liuud hive etch four or five feet
 room j nor mould they ffgd near to other plants, for
 their roots will rob whatever plants grow near them of
 the :r nourimicni.

They arc all propagated by ((.tJi, which (hould be
 (own in ihe autumn ; fur if they are kept out of the
 ground til! the fpring, tiny trtquently fail, and thofe
 whichi tucceed remain > ye<r in the ground, fu rJmt
 mu' i time is lol^ The feeds may be fawn in drills,
 by which method the ground niny be cefier kept
 cfean ; they inuft not be ni-arer than 1 foot row from
 70w, and the feei-; miv be Icjtterrd two 01 three
 inclics afi" l'er in the drills, i viicn the plants come up,
 they mil ft heki; it clean fr-, weeds; and where they
 are too close tog- iier, they (hould be thinned, tn allow
 them room to grow, i - theywitl not be frong' I ough
 co remove till they ha- had two years gro- i, tlim
 in the autumn & soon as they v leivci decay, the roots
 BHOW be taker up with tjreit eaie, to as not to cut or
 injure the tap or downright root, as • I then planted in
 the places where they are deligned • i remain, for after
 this transplanting they fhould n- nc removed. Iaey
 delight in a moit, peatle, loamy foil. aoi tiijj wet, and
 are very rarely injured by the hardelt froft.

FERRARIA. E.,rlilin. Lin. Grn. 1018.

The CHARACTER OF,
 // bath r'JJS ir,•' flaped flalks (or flanks) which are
 Keith bckft tly... which have in colour p...
 p... ctrUd&l 11, ...
 naid) larger; andihrie flautixit/:•
 minald ty twin rcundijh funrinits ei...
 csnrtrd giTrnt tmdtr tit fmcfr, Jiiipfi-iisg .• fimpU
 trfji ftigit...
 XUi iht gtrmt tfttrr.rd ticicmts an nikng ibrtt-ter-
 uttrd ttpjak, bd-jiitg tLrce dSi, jiltiJ itilli remidijh
 fiedi.

This •renis of plant! is ranged in the frcond li...
 of Linnaiia's twentieth clais, inith'd Gynsnt!
 andria, the Bower having tlitte flamma v licft lie
 upon ihc ftyle.

TheSeiciMare,
 i. FEREKAMA [UnditJet.i) foliis lanceolatis. Bonn. Icon.
 J-errariawilb fyiar-jbaped Uavnt. Iris flitlit^, Cycla-
 minis radice, pullo flore. Band Icon. 1210. Many
 his viitb a root Hit (in Xsa'irrcad.

1. FERRARIA flin/fanni) foliis enlilbrmbiis. Burin. Icon.
 Ftrraria viitb jftwrdr-Jhsptd liavts.

These plants glow naturally at the Cape of Good
 Hiiip-, die roo) of the frii fort were lenr me by
 I Jr. Joh iiiti-r, of Z irk zee, who received them from
 the Cope. The root of this is flapsd like that of
 the Bizamine Cornfhg; it has a bright brown fkin
 or cover •, on the upper fide is a hollow like a navel,
 from whence the ilcjuer-lalt. IR&S. The {talk fifes
 a root and a half high, and it alxiut tin- lie of
 a man's middle finger, gttmtflicd with liaves tin • hole
 length; tliclc arc licci-ihayrtt, (-nibracini; the ftalks
 with their bile. Thvirpper • art of the ftalk divides
 into 1 wo or itire branches, v titch ate gsj flicd
 with the lin:<-il;il" d kawes, but they are finaltr ^
 each ut the branches are terminated by- a brae Jfi-
 rh:t or (heath of tlic fame • low with the leaves,
 but this afterward withers and decays i dide (heathi
 arc double, and fptii at tht top, wlvre the flower
 peeps out its petals; thefe fix pct^U art three alter-
 nately target than die otlu-r, ami are ainouSy fringed
 on their bonieni they are of a pale grcmfh colour
 on their outfidc, but of a ti.ney purple within, and
 are of a lhnrt dbnuon ; in the centre of il:c flower
 is Gtumd the ilylf, having 1w three flans in (ixed
 on the fide, and is terminated by twin itirinas ; the
 germ en is fituaid unde! the Sower, which after-
 ward become* u oblong fmooth capite with tiirec
 eclh, filled with ruundilh (beds.

The fecond! fort is rare in England ; this differ . from
 the former in having fmallerVoots, and longer fwood-
 (liapcl) leaves, which have deeper veins ; the ftalk
 allb docs nut divide fo mucli, and tlic flower arc
 lmalicr, and Ms fiinged on their borden.

They aie: both progagated by tiffets lent out from
 tlic rooa, ir; the fmmt way as du; Ixia, and friduld
 be cultivated in the fame manner as is din:fttd for
 tlmcl and the Africin Gladiolus, btin^ 100 tender
 to luive in the open air in England, nor do ti,ey fuc-
 ceed well in a green-K... therefore the belt me-
 thod U, to make 1 buidrr tour (<t widr. 'i-ihcr in
 the firmt of the peei-ihouft 'Jl^ B>va, covering it
 with • proper frame and gaffirs, ib that die plants
 may enjoy die free air in mild weather, but by pro-
 tected from froft. In Inch a frame, moft of the Afri-
 can bulbous and ruberous rooted plants may be
 brought to great perfe: hon.

There a a great (ir:ulariry in the root of ti- firt
 fpecies, which is in i: vegetating only evry other
 year, and ihe intrme! the year it remains at reft.

FICOIDES. See MELIMBYANTHUM.
 FICUS, Lin. G». Plant. 1032. Tourm. Inf. R. H.
 662. tab. 420. The Fig-tree ; in French, l'iguier.

The CHARACTER OF,
 // hath :... and female flowers, which are included
 within the covering, at' juft of the fruit, 'b do
 not appear untill the covering is opened, the male flowers are but few
 and are fituated in the upper part of the fruit ;
 they are numerous, and fituated in the lower
 part.

part, the malt jowtrs fit each upon a fepzrji? fistjalk, and ha tie alt emptUir.tr.:
• they have m petals, but three
the mpufreieat, terminated by I
fewer; Jit tpat dijlinfl fot-fielks\ tUir tmpat
ere divided into fine parts; they lwt m fetch, but o
gerwm as the eiKpalixieix, fuffertitg mnfiexfdyftt,
erewxta lf two njkxta fsflitid jixmat. 'the germm
afterward hmet a large faJ, fining in the empste-
ittia.

This genus M' planes a ranged in the third ftflion
oi Linn.f
La Polyoccii*, the male and hermaphrodite fowtrsbeing
fityatcl in the fame common covering, but
wild Fig they arc in diitinct plants.

The S^CKS arc,
1. FiWi t.Cari.a) foliis palmik Hort. Cliff. 471. Fig.
tree^tib I'jjitd-Jbapcdeaves. Ficus commiunb. C. 11.
1. 457. Tbeammon I^l-lce.

Ficus IS[wj»r«i) foliis cordatis Juhrotundis inte-
gerri n l i v. H1 a t. Cliff 47: . Fig-tree t teart-
tamit, ttf0Vi art inlh% Ficus folio inori, trit-
rum in caudicc ferens. C. B.P. 459. Fig-4rtl
Mulberry leaf, bearing fruit 011 lit bidj cr jitm, torn-
notify called Sycamore.

Ficus (Rtkgiofa) foliis cordatis oblongis integei
acuminatis, Hort. Cliff. 471. Fig-tret tawl
hetiri-jbtiptd teams, ending is mule peixis. FICUjMi-
Ubaricnds, folio culpidato, frufu rorunclo par
mino. Huk. Aim. 144. X&Uiar FSg with a lung
pointed leaf, twAfmall dmiMe rmmifruit,

Fici'S (Een^halenf) foliis ovatis integerrimis tibufis,
tauk- infemc radicuio. Hort. Cliff. 471. Fig-tritwitb
ccaL. tbtuft, entire leaves, and the kw:er part of the
Itali putting cut rods. Ficus Ben^lulcnlis, foli
rorunclo, JULUI urbicuiato. Hurt" Amil 1. p. 119,
Bengal Fig with a reiadifi leaf, and v t
cular fruit.

Fi eu s (fodica) fpllis lanceoluu petiolads, tedunculis
aggregarJi, raniis ladicantibus. Iain.Sp. 1^tint. 10&0.
i-^jl-tree -with fptar-jhaj-.
rtig pftals, tbefov-
julkas if the fruit grtKcitiji in chflrt, "nd branches fend-
ing out roots. Titus Indira Tliropfiralti. Tabtm.
1^o, Indian Fig of TbfGphrnjius.

F»ws (A&www) f^liis tanceolatis iptegerrimis.
Hurt. CltF. 471. Fig-tree •with entire fptar-jboped
I mica minima, folio obiun^o, funi-
culis e luitimis ramis dimiUis radices agntibm le
propag.ins inichi mntori fphzrico foiguinco. Slomn,
Cat, Jam. iSg. Tbe largtjl India;) Fig with an ebltMg
lijf, lots from tbt tcp cf the braiifhff, and
:red fruit.

Ficus (Aman) : foliis ovsnis itenti-; tntcgerritms,
arLujrco, frufu racemofl. Lin. Sp. Phnt.
1069. An-rc. Acad 1. p. 30. Fig-trie wtlb ewl,
entire, and bary,
, rre-liteJlaUc, andIrouchiitg fruit.
Abj-iJu. Hort. Mat. 1. 1

Ficus (Pania)
ilif. ovatis atous inte^errimis caule
rper
kaUL t. p.
30. Fiy-tr
««/*, eilire leana, an/I a
creeping /Sulk. Fiu* lylvtitris procumbctus folio lim-
,iocu. 803.?

<gklemxt.
9. Ficu
foliis ovatis cordatis integerrimis glabris. Fig tree with oval, heart-shaped, entire,
joints leaves, vulgarly called
Ficus njjuplwv folio.

Fix- rUfyleaf.
1. F. (Citrifolia) foliis oblongo-cordatis acuminatis,
petiolis longis. Fig-tree with oblong, heart-shaped,
pointed leaves, and very long juce stalks. Ficus citri-
folia, fructu parvo purpureo. Carth. Hill. Carol 3.
with a Citrus-leaf, and small purple

Jrntl,
1. FicusCC
im :
fi
h.
line nilces 1»K

MSS. Fig-tree with broad
line nilces 1»K
jits cfanitt,
The fruit fort, wis:!

lualle, is cultivated in most parts of Europe; of this
there are great varieties in the warm countries, which
have been -l
crafcad annually, it^the inhabit a: its were dr...
propagating the trees from the feeds of their bell-forts.
In England we... A not moretlun four or Sve (a
within a few years past; for as the generality of the
En; i h were... it lovers of L... ruit, (0 tl
were few who troubled... dicnifelvc!
the culture of it.
But four years past I had a large collection of these
trees sent me from Venice, by my botanical friend
the Chei alier Radegh, which I planted and pre-
ferred to taste of their fruits, several of which proved
cxcelk-nti tStfe I have pri
ferred and propagated,
and thtjlc 1
these fruit were inferior have been ne-
glected. And as the variety of them u very j...
lo I Elnll here mention oni... ir:m as are t
the bell wyrdi tul... placing... licm iti the
order of their rip... i(i)g.

1. The brown or Chefnut coloured Ilchia Fig. This
is th« lar... fruit of any I have >t ken. it 1
short,
globular, with a pretty lJ> 1 eye, pushed in tear th-
toot-ft a lk, of 3 brown or Chetnnt colour on ••
outside, am! purple within; the grains ate large, and th<
pulp sweet and lig: : Eavouredj th
lost berry often
bun- open when it
tpeta. it ripitiis the latter end
of July, ur tht beginning of Auguft; .I hare ha
this fruii riprtt well on Ibdards, l: a warm soil. If
this lost i... againtt hut wall... two plentiful
crops of fruit may be annually rip • ncd.

.. The black (icitoa Fig. Thi% Is alongfrus'. which
fwctls pretty large at the mp what it tsol... but
the lower part is very (ender tow'rd the itii
the fkinkofa Jark purple colour, alnioftbhck, and hath
ipurplefariniovct 11 like ttail on... one Plum* ; the
iniidv is of a bright red, and the flesh is very hia
Savoured. Itripou l arly in Auguft.

3. Tire linal! wriite early Fig. This hatii 1
roundish
fruit a lk tie flat toil at the crown, with 1 l'try
short
fixM-talk ; tht (kin, when fully ri:
is of a pale yel-
lowish,
lowthf -white cuLur-, thir fkiti is [hin, ihein/ide
and tht (Vlh Iwtit, but fiot liigli-Jlavoured. This
ripens in Auguft.

4. The large while Genoa Fig. This is a large gl-
bular
fruit, a little lengthened toward ilie (blk; t
(kin is thin, fit a yeliowUh colour when fully rip-
and red within-" i h b is a gtxxl fruit, but the l'recs
are not yuod beart-n.

5. The blick Ifchin Fig. Tha is a short fruit, of
a middling liar, a little ll-ituil ai the crown ; l'
thin
it ilmofl black when ripe, and the inGdc iaofade
red; l he flJb is very ht^ri fivouand, and the trees
[luxiitce a ^aod crop of fruii, bur the birds arc ^eat
ourers of diem if they are hot preceded i'ron
thenv This ripen> ii' Augoft.

6. Tht Malta tig. This h a fnial brown fruit,
much toinprllu'il at the top, and gready pint!
toward the foot-ttalk s the ikin is of a pal-
brown col-
our, as is also the inside; the Belfi is very lwee, and
well flavoun • If this •!! is permitted to hang up on
the in... till the !* is (hrivelled, it becomes j !
sweetmeit.

7. The Murry, or brown Naples Fig. This U 1
pretty large globular
fruit, of a light brown colour
on the outside, with finit faint marks »i' t din
white, ill' inside is rwwly °f the fume colour; th
grains are pretty large, and the flesh is well flavoured.
It ripens... lactr end of A;.

S. The fr«n 1 this Fig. This is an
iblong fruii
almolt glabular at the crown, tli kin is t->, of
green colour, but wht
is a fully ripe, it is flamed
through by the pulp... 1 u brownifn cult; the hntdc i
purplt
and will stain linen, or paper... firipV
high l' avoured, especially in warm seasons.
toward the l... of Auguft.

The Madonia Fig, commonly cilled her* the
irunfricll; • or Hanover Fig, is a long, pyriform fruit
of a large size; the skin is brown; the flesh is of a
lighter brown colour, coarse, and hath little fl-
avour.
This ripens rhe ci... of Auguft and the beginning of
September;

September-, the leaves of this fort are tnilchmorcdi-
victed than of moft other.

10. The common blue, or purple Fig is fo well
known, as to need no ddfcription.

11. The long brown Naples Fig. The leaves of
this tree are deeply divididL The fruit is long, some-
what comprtled at the crown. The foor-llalks arc
pretty long ; the (kin is of a dark brown when fully
ripe, the **Hem** inclining ro red ; the grains are large,
and [lit fieth veil flavoured. It ripens in September,
iz. The yellow Ifchia Fig. This is a large fmir,
of a pyramidal form ; the (kin is yellow when ripe,
and the tkh is puqilc and well flavoured, but die
trees do not produce much fruit here; they grow
very luxuriant in branches, the leaves are very large,
and not much divided. This ripens in September.

13. The (mall Brown Ifchia Fig. This is a fmall
pyramidal fruit with a very fbot foot-llalk i the (kin
is of a light brown, the fich indining io purple, of
3 very high flavour ; it ripens late in September -, die
leaves of this tree arc Ids divided than any of the
other forts. This is not a gtxxl bearer.

14. The Gentile Fig. This is 2 middle fized globu-
lar fruit; the fkin, when ripe, ii yellow; the flefh
alfo inclines to the lame colour; the grains arc large,
and the tlich is well flavoured, but it ripens very late,
and the trees are bad bearers, fo that it is not propa-
gated much in England.

There arc feveral other fora which have been lately
introduced from Italy, but all thofe which I have yet
tafted, are inferior to thofe above-mentioned; form:
of them rarely ripen their fruit, and others art very ill
bearers, **not** worth propagating, therefore I have
omitted the mentioning of them here; for as thole
which are enumerated, continue in fuceffion during
the feafon for dicfe fruits, and being preferable to the
other, few perfbns will tare to fill their gardens with
a greater variety of thefe trees than arc of real ufe,
efpecially 35 they require good wails, and a very large
(hare of room.

The firft, fecond, third, ninth, and tenth forts will
ripen their fruits on ftsndards, where they are in a
warm fituation ; but the others require the affiftance
of wails expofed to good afpefts, othcrwife their fruit
will not ripen in **England**.

Fig-trees generally thrive in allfoils, and in every
fituation ; but they produce a greater quantity of fruit
upon a ftrong loamy fult, than on dry ground, for if
the feafbn proves dry in May and June, thofe trees
which **grtw upon very** warm dry ground, are very fub-
jeft to call **their fruit** ; therefore, whenever this hap-
pens, fuch trees fhould tw well watered and mulched,
which will prevent thefruit from dropping offi and the
fruit upon thefe trees are better flavoured, than any of
ihofe » hich grow upon cold moift land. I have al-
ways obferved thofe Fig-trees tobcar the grateft quan-
tity of well-flavoured fruit, which were growing upon
chalky land, where there has been a foot or more of
a gentle loamy foil on the top. They ilfb love :i **free**
Open air ; for although they will (hoot and thrive very
lvill in clofe places, yet they feldom produce any
fruit in fuch rtuationi; and all dioie which are planted
in fmall gardens in London, will be well furnifhed
with leaves, but I have never fetn any fruit upon
them which hive grown to maturity.

Thefe trees **arc** always planted as ftandards in all
warm countries, but in England they are generally
planted ayainit wails, there wine bvit few ftandard
Fig-trees it prefcem in the F.ngliOi **gardens**; however,
fince Ionic or the forts are found to ripen their fruit
well upon **the (tawdirds**, and the crop of Figs is often
greater upon them, than upon thofe trees againft wails,
it h worthy of our care, **to plane** them either in ftan-
dards or cfpidiers; the latter, I think, will fucceed bell
in England, if I he y were managed as in G enn in y, ivl ic re

litter, which prevents their fhoots being injured by
the froft ; and this covering is taken away gradually
in the fpring, and nut wholly removed **until** all the

danger of froft is OVCT, by whiili management they
generally have a very great crop of Figs I whei
England, **where the** trees grow againft warm wails, in
the fpring proves warm, the young Figs are pufhe
out early, and rhe cold, which frequently return* i
April and May, caul« the grateft part at tilt fruit to
drop off; fo that our crop of Figs is generally more
uncertain than mod other forts of fruit; audit in-
quandy happens, that trees which arc planted againft
north and eail-alpeited wails, produce a greater
quantity of fruit in England, than thole **which** ate
planted againit fouth and faurji-c>ft afpeeli ; which
n-ift happen from die latter putting out their **fruit fo**
much earlier inthe fpring than the former; and if there
happen cold trolly nights after die Figs are come osit
(which ii frequently the cafe in this country) the fir-
wardelt of the Figs are generally fo injured as to drop
olf from die trees Toon after. In Italy, and the other
warm countries, diisfirt crop of Figs is little regarded,
being few in number ; for it is die fecond crop of
Figs which are produced from the (boots of the fame
year, which k their principal crop, but theic rarrly
ripen in England ; nor arc there above [hrec or four
(**aro whichever ripen** their fecund crop, lei the fummer
prove ever to good, therefore it is the firft crop which
we muil attend to in England; (b that when **thefe** trees
are growing againft the belt aiptcted wails, it will be
a gxxd method to loofen them from the wall in au-
tumn •, and **after** having diverted the branches of **all**
the latter fruit, to by die branches down from the
wall, (aliening them together in fmill **bundles**, So that
they may be tied to rtakes, to keep them from lying
upon the ground i the damp whereof, when covered
in fruity weather, might CHft them to grow mouldy,
and hereby [fity will be fecurd from being broken by
the wind. When they arc thus managed in autumn,
if the winter fhould prove very levcre, die branches
may be eafily covered witi Pcas-haulm, ftraw, or any
other light covering, which will guard the tender fruit-
bearing branches from the injury of froft; and when
the weather is mild, die covering mult be removed,
otherwife the Figs will come out too early; for the
intention of this management is, to keep them as back-
ward as poffible : then in the fpring, when the Figi
are beginning to pufh out, the trees may be fattened
up co the wall again. By this management I have
fetn very great crops ol Figs produced!!] two or three
places.

I have alfo fcen great crops of Figs in fome particu-
lar gardens, after very [harp winters, when they havr,
in general, failed in other places, by covering up
the trees with Heeds made into pannds, and fixed up
againft the wails.

In the pruning of Fig-trees, the branches mult never
be fhortened, becaule the fruic arc all produced at
the upper part of the (hoots of the former ycr; if
dicfe arc cue off, there can be no fruit expected, betide
the branches arc very apt to die after **the Knife**; fu that
whet the branches are **too** dole together, tin-heft way
is to cut out all the **naked** branches ejuit to the bot-
tom, leaving thofe whichare bell fuinifhed with lateral
branches at » proper diltance from each other, **which**
fliuukl not be nearer dian a foot; and when they **are**
well furnifhed with lateral branches, if they are laid
four or five inches farther aiunder, it will be better.

The belt lealon for pruning of Fig-trees is in autumn,
[ircailit: at that time the branches are not ly full
of Jap, and will not bleed fo much, as when they
are fprung in the fpring -, ant) at this lea ion, the
br.indies (hould be diverted of all the autumnal Figs,
and the fooner diis is done, when the leaves begin to
i'A off, the better will the young fhoots refill the cold
of the winter. There are lbme fcaloni fo cold and
iiHjilt, that the youag (hoots of the Fig-trees will nut
harden, but arc (oft, arJ full of juice; when this hap-
pen-, there is little hope of a crop of Fias the lucced-
ingyear, for the firft froft in autumn will kill the upper
part of thefe [hoots, for a confiderable length down-
ward j whicnever diii happen..., it is the bed way to
cut off all the decayed part 0!! the fhoots, which **will**

prevent

...the lower part
 nitr brandies; and, byth. method. Mmve ften a
 put ovit from Ac lower part of
 the lioiiv •, where, ii ihc llooces had not been ii
 theti • could be •: been no fruit produced, becaufe it
 in chittiy from the four or fire uppicimoltjoiik of the
 (hocN that the fruit com'ts <ut, and r is in this
 rait. I hit as • any of the lliorf lareral b.:
 ihould be preferved as poffible, thole bring the
 productive of fruit; thr where the
 •ur l-iAcoci up, there will be no fruit, but at their ex-
 tremities, fa chut ail thil' lower part of the trcM will
 be naked, if there is not a particular regard had to
 Luppy young ljitwts in cvci-y part of the trees.
 Tinjic trees vvhich are laid down fi on the epalier,
 fhould not be fattened up again til the end of March,
 for rlie rcafoiie before given, and thofc agsuntt walls
 nay cenwin force time longeri and when the lurge
 (hoots of t tefer art nailed u i •: i • «nchci
 arc thruft behind thcle, i» kc
 ii w i II feeu re the young Fig* i rom I i by tl ic
 morning frofts-, and when thi
 r, they
 m ay be trough t forward to th •: tgain:
 during the funimer feafon tin
 other pruninc, but to ilop the (hoots in the Ipring,
 where utr.il branchB are naming-, andas thebranches
 are often blown down by wind, therefore, whenever
 thb hapiwts they iVinuld be imtticidinyfatr;;
 again, otherwiiu they will be in thngcr of breaking ;
 for the leaves of thec trues being very large ai •
 the wind has great power on them •. Ib thnt where
 the branches are not well fccurt'd, they are frequently
 >rnw.

Those trees which art planted againft epaliew may
 heprottae'd from the injury of froft in ihefps: by
 plating Rev!?' on each fide the efpalier, whidi may \K
 taken down every day, and put up again at night but
 this need not be Prattifed in warm weather. In only
 at fuch times as there ore cold mods ind
 morningi •, and although there ii feme traubtc and
 expence ftanding this management, yet the plentiful
 crop of ligit vruch may this way be obtuined, will
 fufnci^ntly rcompc-nfe for both: the belt way of
 making this covering is, to laflen the Reeds with
 ropf yarn in fudi a manner as that it may be
 rolled up like a mat, that the white may with
 great facility:— is_ m -ralten down i anil if thec
 Reeds are carefully rolled up, after the feafon for using
 them is over, and put up in a dry thcd, they will laft
 feveral years.

There are feveral perfons who of late have planted
 Fig-trees in fland JS which h, observing f
 this practice was revived, observing f
 ftandard Fig-trees in fome garbns, which had been
 growing many years, and generally produced a much
 greater plenty of fruit: iluTi any of thole tree^
 were growing againft warm walls; indeed, thec ftand-
 ard Fig-trees are in much greater danger of having
 their branches killed by fevere ftqft, but in
 ters they generally do better than thofe againft walls,
 fo that where thofe trees can be covered in very hard
 winters, there will always be plenty
 thefc may be covered by fattening as
 the branches together as can be convenient lybrougl
 a bundle, and winding fome Hay-bands, Straw, Pea-
 hauler, or any fuch light covering as can be readily
 rd, which in the fpring may be g
 as not to expofe the fhoots all
 is, and if there is fome fuch light covering laid
 round the ftems, and upon the furface of the ground
 about their roots, it will more effectually fecure them
 from the danger of froft; but when this is carried,
 great care fhould be taken that no mix. ^P «. h,r-
 bou, :: the covering, .-II h . a • I have often
 from their fhoots, and have
 obferved thofe trees which were againft walls, have
 fuffered gre«ly! by thofe vermins, by having many
 of their ligit branches difburked near the ground,
 which has abfolutely killed the trees. It is in
 the winter the

Or"ittirf
 • thrlc vrri l l milCniel

them, therefore they (hould be carefully watched
 at hai ffafon.
 The common blue and white Figs, which are the
 forts which have been the moft generally cultivated in
 England, jvr not ib proper I o plant for ftandards, as
 fome other forts which have been lately introduced;
 forihy ^rt mudi tenderer, and art often killed almoft
 to the r'ut, when Ibirc • the other forts, which have
 twer, growing in the fame iituation, have received very
 bttle injury from the fruit i ind> • the white fore i
 generally a great bearer, and the I out is very fweet;
 but to thofe ptkqeiwhj h are accuftomed to Figs, that
 liirt it not much in eftcm, from its want of favour:
 thofe which have fucceeded belt with me, ire I
 and third forts. The fir brandies are rarely I
 froft: w Mer, and their fruit will : \\
 form favourable k::ttns, m?.nyntf
 were growing againft walls, have ripened the fecond
 crop of fruit tolerably well. I have alfo planted many
 of thofe forts of Fig-trees againft north-eaft and
 north-weft atpefls, ftme of I
 planted, have produced a good quantity of well ta(k
 fruit, but were ripe much iwer, which has tl
 me to plant many more of thofe trees in the fame al-
 pefti and all ufo inc. reafciuy number of ilandard trees.
 I am aware, that what I have here advanced, inttla
 tion to the •.iiiiig »:d drefTi
 of Fig-trees, will be
 condemned by great numbers • of people, who will not
 give if' mtefces time to coniiicicrandi
 kJW upon which I have founded thi3pmfti
 make one (ngle experiment to try the truth of it,
 being vafly di Re rent from the general
 gardener, i, who always imagine, that tig-tttet flou
 never have much pruning-, or, it Scalt, that Elmvilioi
 fltways be luffered to grow very rude from the wal
 to fume tl i": ince. That by ihts management i liave <
 am fe n grtat quantities of fruit I cannot deny, b
 rlim tins has been only after mild ts
 ruin, that in tiurp froffa rew of it.
 ihoots cfc.ije being gre;i:
 injured where they are not
 covered; wh
 which are cli-
 down and covered, fuffer the •• damage and tl;
 fruits are always produtcl a fotnighi loimer up
 theft brtnche
 than they are upon thofe which grow
 from the wall: but although :
 h »re lu
 feed 10 grow rude from the walti may produce a got
 quantity of fruit for a year or two, yet affci
 trees will only befir at the ends of trie ft:
 ••
 ll it; nor can the ••
 be reduced again
 to any crop. LirUy, without cutting away the grea
 their branches, b] which a year or two
 will be 1A before they will Lome to licar again.
 The frafan alfo for pruning, which I have laid down,
 brim- vafly diffe rent from the common practice and
 opinion of moft gardeners, will alib bt objecl'd aHaint-
 but I am fure, if any one will but make trial of it,
 I dwibr not his experience will confirm what I have he
 advanced, i
 for a out great injury to this tree proceeds
 from the too great effufion of fap at the wounded parts,
 by this extreme pruning this is prevented; for, at
 that feafon, all the parts of Kurjpean ii:
 which call thcir lea-
 are adts replete with modure than at
 any other ti:
 V: ior by I
 the long continu-
 of the fuininer's heat, the juices of plants having
 been exhaufed, and the fap not and augmentation
 [ted in the nourifhm
 of wood, leave*, fi
 being evaporated by perfpiration, ill
 this great con-
 equivalcnl
 tion, the branches muft contain a much lefs quan-
 tity of fap than in the fpring, when it has had feveral
 weeks fupply from the roots, though but
 fmall in proportion to what is in the ••
 heat
 is greater, yet there being little or no fap, either by
 perfpiration or augmentation, there muft be a greater
 quantity contained in the branches, which alfo is eafily
 to be obferved, by brt-
 ing or cutting off a vigorous
 branch of a Fig-tree at both joints (the fap, being
 milky, may be readily d
 (cemed; when tint cut in i
 5 O

lumn fliall be found to (lop its bleeding in one day's time, or less ; whereas that cut in the spring will often flow a week or more, and the wound will be proportionably longer before it heals.

Of late years there has been some of these trees planted against fire-walls, which have succeeded very well where they have been properly managed; but where they have been kept too close, and drawn by glasses, they have not produced much fruit; therefore whenever this is practised, the heat should not be too great, nor the glasses, or other covering, kept too close, but at all times, when the weather is favourable, a good (hare of free air (ould be admitted ; and if the trees are young, that their roots are not extended beyond the reach of the covering, they must be frequently watered when they begin to shew fruit, otherwise it will drop off; but old trees, whose roots are extended to a great distance, will only require to have their branches now and then sprinkled over with water. If these trees are properly managed, the first crop of fruit will be greater than upon those which are exposed to the open air, and will ripen six weeks or two months earlier, and a plentiful second crop may also be obtained, which will ripen early in September, and sometimes in August, which is about the season of their ripening in the warmer parts of Europe; but the fires should not be used to these trees till the beginning of February -, because when they are forced too early, the weather is frequently too cold to admit a sufficient quantity of fresh air to set the fruit; but the covers should be put over the trees a month before, to prevent the shoots from being injured by the frost.

It may not be improper in this place to mention the great pains which the inhabitants of the Levant are at in the culture of their Figs ; and without which (it is generally said by all the travellers who have written on this subject, as also by Pliny, and other old naturalists) their fruit will fall off, and be good for nothing. I shall here set it down, as I find it in the travels of Monf. Tournefort, chief botanist to the late king of France.

" Pliny, says he, observed, That in Zia they used to dress the Fig-trees with much care *, they still continue to do so. To understand aright this husbandry of Figs (called in Latin, Caprificatio) we are to observe, that in most of the islands of the Archipelago, they have two sorts of Fig-trees to manage; the first is called Ornos, from the old Greek, Erinos, a wild Fig-tree; or Caprificus, in Latin; the second is the domestic, or garden Fig-tree -, the wild sort bears three kinds of fruit, Fornites, Cratitires, and Orni, of absolute necessity towards ripening those of the garden Fig.

The Fornites appear in August, and continue to November, without ripening *, in these breed small worms, which turn to a sort of gnats, no where to be seen but about these trees. In October and November these gnats of themselves make a puncture into the second fruit, which is called Cratitires, and do not shew themselves till towards the end of September; and the Fornites gradually fall away after the gnats are gone; the Cratitires, on the contrary, remain on the tree till May, and inclose the eggs, deposited by the Fornites, when they pricked them. In May the third sort of fruit begins to put forth from the same wild Fig-trees which produced the other two; this is much bigger, and is called Orni; when it grows to a certain size, and its bud begins to open, it is pricked in that part by the gnats of the Cratitires, which are strong enough to go from one fruit to the other, to discharge their eggs.

It sometimes happens, that the gnats of the Cratitires are (low to come forth in certain parts, while the Orni in those very parts are disposed to receive them; in which case the husbandman is obliged to look for the Cratitires in another part, and fix them at the end of the branches of those Fig-trees, whose Orni are in fit disposition to be pricked by the gnats

" if they miss the opportunity the Orni fall, and the gnats of the Cratitires fly away. None but those that are well acquainted with this sort of culture know the critical minutes of doing this; and in order to it, their eye is perpetually fixed on the bud of the Fig ; for that part not only indicates the time that the prickers are to issue forth, but also when the Fig is to be successfully pricked ; if the bud be too hard, and too compact, the gnat cannot lay its eggs, and the Fig drops when this bud is too open.

These three sorts of fruit are not good to eat; their office is to help to ripen the fruit of the garden Fig-trees, in manner following: during the months of June and July, the peasants take the Orni at a time that their gnats are ready to break out, and carry them to the garden Fig-trees; if they do not nick the moment, the Orni fall, and the fruit of the domestic or garden Fig-tree not ripening, will, in a very little time, fall in like manner. The peasants are so well acquainted with these precious moments, that every morning, in making their inspection, they only transfer to their garden Fig-trees such Orni as are well conditioned, otherwise they lose their crop. It is true, they have one remedy, though an indifferent one, which is, to sweep over the garden Fig-trees the Acolimbros, a very common plant there, and in whose fruit there is a sort of gnats proper for pricking; perhaps they are the gnats of the Orni, which are used to hover about and plunder the flowers of this plant.

To sum up all in one word, The peasants so well order the Orni, that their gnats cause the fruit of the garden Fig-tree to ripen in the compass of forty days. These Figs are very good green *, when they would dry them, they lay them in the sun for some time, then put them in an oven to keep them the rest of the year. Barley bread and dried figs are the principal subsistence of the boors and monks of the Archipelago; but these Figs are very far from being so good as those dried in Provence, Italy, and Spain ; the heat of the oven destroys all their delicacy and good taste, but then, on the other hand, this heat kills the eggs which the prickers of the Orni discharged therein, which eggs would infallibly produce small worms that would prejudice these fruits.

What an expence of time and pains is here for a Fig, and that but an indifferent one at last! I could not sufficiently admire the patience of the Greeks, buffed above two months in carrying these prickers from one tree to another. I was told the reason, one of their Fig-trees usually produces between two and three hundred pounds of Figs, and ours in Provence seldom above twenty-five/ The prickers contribute, perhaps, to the maturity of the fruit of the garden Fig-tree, by causing them to extravasate the nutritious juice, whose vessels they tear asunder in depositing their eggs *, perhaps too, besides their eggs, they leave behind them some sort of liquor proper to ferment gently with the milk of the Fig, and to make their flesh tender. Our Figs in Provence*, and even at Paris, ripen much sooner for having their buds pricked with a Straw dipped in olive oil. Plumbs and Pears, pricked by some insects likewise ripen much the faster for it; and the flesh round such puncture is better tasted than the rest. It is not to be disputed but that considerable change happens to the texture of fruits so pricked, just the same as to parts of animals pierced with any sharp instrument.

It is scarce possible well to understand the ancient authors who have treated of caprification (or husbanding and dressing the wild Fig-tree) if one is not well apprised of the circumstances, the particulars whereof were confirmed to us not only at Zia, Tinos, Mycone, and Scio, but in most of the other islands.^M

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Fig-trees are propagated in England, either by the flickers, which are sent out from their roots, and by layers made, by laying down of their branches, which in one year will put out roots sufficient to be removed, or by planting of cuttings, which, if properly managed, will take root* the first of these is a bad method, because all those trees which are raised from suckers, are very subject to send out great quantities of suckers again from their roots; and the branches of the suckers are not so compact, as those of the layers, but are fuller of sap, so in greater danger of being injured by the frost, those plants which are propagated by layers, are the best, provided the layers are made from the branches of fruitful trees; for those which are made from the suckers, or shoots, produced from old stools, are very soft, and full of sap, so are in danger of suffering by the frost, and these will shoot greatly into wood, but will not be very fruitful; for, when trees * have acquired a vicious habit while young, it is seldom they are ever brought to be fruitful afterward, therefore the shoots which are laid down, should be such as are woody, compact, and well ripened, not young shoots, full of sap, whose veins are large and open. The best time for laying down of the branches is in autumn; and if the winter should prove very severe, if they are covered with some old tan, or any other mulch, to keep the frost from penetrating the ground, it will be of great service to them; by the autumn following, these will be sufficiently rooted for removing, when they should be cut off from the old plants, because at that season the branches are not so full of sap as in the spring, so will not bleed so much as when cut off in the spring. If the place is ready to receive them, the layers should be transplanted in autumn, where they are to remain, but if it is not, then the layers may remain till the spring, provided they are separated from the old plants in autumn. As these plants do not bear transplanting well when they are large, it is the better way to plant them at first in places where they are to remain* and after they are planted, the surface of the ground about their roots should be covered with mulch to keep out the frost; and if the winter should prove very severe, it will be proper to cover the branches with Reeds, Sea-haulm, Straw, or some other light covering, which will prevent their tender ends being killed by the frost, which frequently happens where this care is wanting.

The other method of propagating these trees, is by cuttings, which should be taken from the trees in autumn, for the reason before given: these must be chosen from such branches as are compact, whose joints are near each other; and they should have a part of the former year's wood at their bottom, and the top of each should be left entire, not shortened as is usually practised with other cuttings; then they should be planted eight or nine inches deep, in a bed of loamy earth, in a warm situation, covering the surface of the ground, three or four inches thick, with old tanner's bark, to keep out the frost; and in severe frost their tops should be covered with Straw, Peas-haulm, Fern, or other light covering, to protect them from frost, which should be removed in the spring; but the tan may remain, for that will prevent the drying winds of the spring, and the sun in summer, from penetrating the ground, and will be of great use to secure the cuttings from injury; these cuttings will be rooted sufficiently by the following autumn, when they should be transplanted, and treated in the same manner as the layers.

If fruitful branches of these trees are cut off, and planted in pots, or tubs, filled with good earth, and these are plunged into a good hot-bed of tanners bark in the stove, they will put out fruit early in the spring, which will ripen in the middle of May.

We shall now return to the other sorts of Figs, which grow naturally in warm countries, but are preserved in the gardens of those who are curious in collecting rare exotic plants, for these do not bear eatable fruit in their native soil, but their leaves being large and

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beautiful, the plants make a pleasing Variety in the stove.

The second sort grows naturally in the Levant, where it becomes a large tree, dividing into many branches, which are garnished with leaves (shaped like those of the Mulberry, and affords a friendly shade in those hot countries. The fruit is produced from the trunk and larger branches of the tree, and not on the smaller (shoots, as in most other trees; the shape is like the common Fig, but is little esteemed. This is called the Sycamore, or Pharaoh's Fig-tree.

The third sort grows naturally in India, where it is sacred, so that none dare destroy them; it is called by some the Indian God-tree, this rises with a woody stem to a great height, sending out many tender branches, which are furnished with smooth heart-shaped leaves, ending in a long tail, or point; they are entire, smooth, and of a light green, having pretty long foot-stalks; they are between six and seven inches long, and three inches and a half broad toward their base, diminishing gradually to the top, where they run out in a narrow point, an inch and a half long. The fruit comes out on the branches, which are small, round, and of no value.

The fourth sort rises with many stalks, which grow to the height of thirty or forty feet, dividing into a great number of branches, which send out roots from their under branches, many of which reach to the ground; so that in such places where the trees grow naturally, their roots and branches are so interwoven with each other, as to render the places impassable. In India, the Banyans trail the branches of these trees into regular archades, and set up their pagods under them, these being the places of their devotion. In America, where these trees are equally plenty, they form such thickets, as neither man nor beast can pass through. The leaves of this sort are of a thick substance, smooth, and oval; they are six inches long, and four inches broad, with obtuse ends. The fruit is the size of a marble, and round, but of no use.

The fifth sort grows naturally in both Indies; this rises with a woody stem to the height of thirty feet, sending out many branches, which are garnished with oblong leaves hanging upon pretty long foot-stalks; they are about six or eight inches long, and two inches and a half broad, ending in an obtuse point, of a dark green, and smooth on their upper side, but of a light green, and veined on their under side. The fruit is small, and of no value. The branches of these trees send out roots from their lower side, which sometimes reach the ground.

The sixth sort grows naturally in the West-Indies, where it rises to the height of thirty or forty feet, sending out many tender branches, which put out roots in the same manner as the former. The leaves of this are eight or nine inches long, and two inches broad, ending in points. The fruit is small, round, and of a blood colour when ripe, but is not eatable.

The seventh sort grows naturally in India, where it rises to the height of twenty-five feet, and divides into many branches, which are garnished with oval-pointed leaves, which are smooth, and of a lucid green. The fruit is small, and grows in clusters from the side of the branches, these are not eatable.

The eighth sort grows naturally in India; this is a low trailing shrub, whose stems put out roots at their joints, which strike into the ground, so is propagated plentifully where it naturally grows. The leaves are two inches and a half long, and near two inches broad, ending in points; they are of a lucid green, and are placed without order on the branches; the fruit is small, and not eatable.

The ninth sort rises with a strong, upright, woody stem twenty feet high, sending out several side branches, which are furnished with large, oval, stiff leaves, about fourteen inches long, and near a foot broad, and are rounded at the ends; they have several transverse veins, which run from the midrib to the sides. The foot-stalks are long, and frequently turned next to the branches; the upper side of the leaves

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kaves are of a lucid green,¹ and the under fide is of a gray, or sea-green colour, they are of a thick substance, and very smooth; this grows naturally in India, from whence it was brought to the gardens in Holland.

The tenth fort grows naturally in the West-Indies, where it rises twenty feet high, lending out many fide branches, which are covered with a white bark, and garnished with oblong heart-shaped leaves, ending in acute points, they are about three inches long, and one inch and a half broad, near the base of a lucid green on their upper fide, but of a pale green on their under, standing upon very long foot-stalks. The fruit comes out from the fide of the branches, toward their ends; they are about the size of large gray Peas, and of a deep purple colour, fitting close to the branches; these are not eatable.

The eleventh fort grows naturally at La Vera Cruz, from whence it was sent me by the late Dr. Houftoun; this rises with many shrubby stalks to the height of twelve or fourteen feet, and divides into many smaller branches, which are garnished with oval stiff leaves, which are obtuse; they are four inches long, and three broad, of a light green, and stand upon very short foot-stalks, which are joined to a cup, in which the fruit sits, this is globular, and the size of a middling nutmeg, of a deep yellow, when ripe, but is not eatable.

The second fort, I believe, is not in England at present, I raised two or three of these plants from seeds in the year 1736, which were destroyed by the severe frost in 1740, since which time I have not been able to procure any of the seeds. The other forts are preserved in several curious gardens; they are easily propagated by cuttings during the summer season. When the cuttings are taken from the plants, they should be laid in a dry shady place for two or three days, that the wounds may be healed over, otherwise they are apt to rot; for all these plants abound with a milky juice, which flows out whenever they are wounded; for which reason, the cuttings should have their wounded part healed over and hardened before they are planted, after which they should be planted in pots filled with sandy light earth, and plunged into a moderate hot-bed, where they should be shaded from the sun, and two or three times a week gently refreshed with water, if the season is warm; but they must not have too much moisture, for that will infallibly destroy them. When the cuttings have taken root sufficient to transplant, they should be each planted into a separate small pot filled with light undunged earth, and plunged into the hot-bed again, being careful to shade them until they have taken fresh root; then they should have a large share of free air admitted to them at all times when the weather is favourable, to prevent their drawing up weak, and to give them strength before the cold comes on. In autumn the pots should be removed into the stove, and plunged into the tan-bed, where they should constantly remain, and must be treated in the same manner as other tender plants from the same countries; for although two or three of the forts may be treated in a harder manner, yet they will not make much progress.

FICUSINDICA. See *Oiwria*.

FILAGO. There are several species of this genus, some of which grow naturally upon barren land in most parts of England. They are called by some Cottonweed, by others Cudweed, their leaves being white, and, when broken, have cottony threads. These have been ranged under the genus of Gnaphalium by most botanists, and one of the species which is used in medicine, stands in the list of simples by that appellation. As these plants are not cultivated in gardens, I shall not trouble the reader with a farther account of them.

FILBERT. See *CoRYLUS*.

FILIPENDULA. See *SPIR^A*.

FILIUS ANTEPATREM [i. e. the son before the father] an expression which botanists apply to plants, whose flower comes out before their leaves;

F I R

or those plants which fend forth fide brandies of flowers, which advance above the middle.

FILIX, Fern. There are great varieties of this plant in the different parts of the world, but particularly in America, as may be seen in the Natural History of Jamaica, published by Sir Hans Sloane, Bart, and in Plumier's American Ferns; but as they are plants which are seldom propagated in gardens, I shall pass them over in this place. *

FILM, that woody skin which separates the seeds in the pods of plants.

FIMBRATED [of *Fimbria*, *lat.* a fringe] a term relating to the leaves of plants when they are jagged on the edges, having, as it were, a fringe about them, these are often called furbelowed leaves.

FIRE. However foreign, at the first view, this article may seem to our present purpose, yet I am of opinion, that a tolerable acquaintance with its nature, as *fyp* as it can be attained, and its effects, will contribute no small assistance in forwarding the work of vegetation. And though the theory of fire is indeed philosophical, yet the consideration of its effects, and how it operates on vegetables, will be of no small use in the culture of them.

That which best defines and distinguishes fire from every thing else, is its heating; and so it may be defined, Whatsoever warms or heats bodies.

Heat is something, the presence of which is best perceived by the dilatation of the air or spirit in the thermometer. So then, fire is a body, and a body in motion too. The motion of it is proved by its expanding the air, and that it is a body by experiment. Pure mercury, being inclosed in a phial with a long neck, and kept in a gentle heat for the space of a year, will be reduced into a solid, and the weight also will be increased considerably; which increase cannot proceed from any thing else but the accession of fire.

The nature of fire is so obscure and wonderful, that it was held by many of the ancients as a deity, and several authors of prime note have taken great pains to discover the mystery of it, without having been able to explain many of the principal effects thereof. The learned Herman Boerhaave has used no less industry in making a new set of experiments, in order to come to a clearer knowledge of them, and having laid down a new doctrine of fire, in a course of public lectures, I shall briefly take notice of such of them as I apprehend may be of use.

" Fire (says he) in effect, appears to be the general instrument of all the motion in the universe. The constant tenor of a great number of experiments leaves no room to doubt, but that, if there were no fire, all things would instantly become fixed and immoveable. Of this there are instances every winter; for while frost prevails, the water, which before was fluid, by a mere privation of heat, becomes solid, i. e. hardens into ice, and so remains till dissolved again by fire. Thus, were a man entirely destitute of heat, he would immediately freeze into a statue; and thus the air itself, which is found in continual motion, being always either expanding or condensing, would, upon the absence of fire, contradict itself, and cohere into a firm rigid mass; for also animals and vegetables, all oils, salts, &c. would, upon the like occasion, immediately congeal."

Although this doctrine of fire, here laid down by Boerhaave, seems new and extraordinary, at least to those who have been used to consider fire in the light that it has been set in by the Lord Bacon, Mr. Boyle, and Sir Isaac Newton, and though we ought to pay great veneration to those illustrious authors, yet, in the judgment of themselves, we should be inexcusable, if we should absolutely acquiesce in what they have done, and shut the door against farther and better information.

It may reasonably be supposed, that Dr. Boerhaave has had an opportunity of going beyond them, in that, besides all the experiments and observations that they

have

haveJwd to buiU upon, he ha* bad the advantage of a new jet, which they ...re unacq'uincil with.

.As tc the nattire of Gre, thr great and fundamentsl difference is, whel ; ii be originally fuch, former [tins by the great I ...er hantle, at the beginning of tilings ? or, whether ic be uechanintly producibl from 1 other bodies, by inducing li:nc alteration i the particles of it i

Among tin: modim wriiew, Homberg, Borrluavc the 1 .uinger Lrmrry, and Dr. Gi vetaude, u uintai [tic ibrmer, int. the Engli • authors chiefly maintain the. l. tre.

Mom. l. "wherg Uohc. That the rhymienl principle or element, iblplur, which is suppos ! one of die limple, pjinary, pre-exilient ingredients of all micu rit toodif; and, of fire unice. i coeval with ill boilli Effai de yuuiirt i'rinpc Mer.i de l'Acad mil. anno 1 705.

Dr.Gravi: ande proceeds much on the same principle: according to him, fire enters the composition of ill bodies, is contained in all bodies; and may be fopamtd or procured j'rem all boiies, by rubhji; then ag lift rAL7 other, and thus pitting their fire in motion: ind he adils, That firici; by no means generated by iron m.,-joi. Elem. l'fyi". "l'fii. II. cap. 1.

Mr. Lemery thi younger, asserts the absolute tnd ingenerable nanir.1 of fire, and also extends it farther: not contented 10 confine ic, at MI dement, to bodiet, he endeavours to

ffturw • Ex iibly ditriial " through all fj: is present in all places" in 'he » v>:J [utic between 'odies, as w etluthe infrnible " inil:ours but ureco thwir pjiis." Mom. de l'Acad. anno 1713.

This last sentiment falli in ^h that of Boer] l. 170.

Of the coiUFiry opiniw is the Lord Bacon, who, in his trwtit de Firra Calid, deduces from 1 great noil. l. j, jt in bodir* h no other than motion, an

a motion to and to circumstantiatth to di to produce heat in a body, nothing is required hn to excite fuch motion in the parts of it.

His opinion is founded by Mr. Boyle, in his treatise of the Mechanical Origin of Heat and Cold; where lie m. tains the fame doctrine, with new oblfvr. 1

ions and experiments, of which vo are ajfb] 170.

He fays, " In the productiv. 1 of heat ther appeiTs

" nothing on the part < ither of the a^cncr or patient

" but motion, and its natural effects. (Vhenafinith

" briskly hammers a fmall piece of iron, the metal thereby becomes exceedingly hot; yet there is nothing to make it fo, except a fmall motion of the hammer, impreffing

" vehement and mi

" determined agitation on the fmall parts of the iron ;

" which, being a cold body before, becomes by that fuperinduced commotion of its fmall parts hot;

" fir is a more loofe conception of the wood, with regard to fome other bodies, compared with which it was cold before ; then fuddenly hot, t;e-tuft this

" agitation fuddenly fupplants that of the parti of OUR fingers. And in this inftance eliminates the liam-

" i u and continue cold tci ttit open ion ;

" which fhews, that the heat acquired by ic iron was not communicated by either of thefe iimple-

" ments, as heat, but produced in ... by 2 motion great enough ftroingly to agitate the parts of fo

" much greater

" maffes of metal at the hammer and ftriky dough if the percuffions were often and briskly renewed, and the hammer were fmall, this alfo might be heated, whence it is not neceffary, that a body itfelf fhould be hot to give heat.

" J] a 1 • the nail be driven by a hammer into a planL of

" wood, it will receive feveral ftrokes on its head, ere it grows hot; but when it is at trivtn [O till head, a few ftrokes fuffice to give it a COU-

" flerable heat; for while as every blow thwiti the hainn; The nail enters farther into the wood, the

" inciting produced is chiefly progreflive, and is of the whole nail rending one way; but, when the motion u fice, the impulfe given by the ftroke being

" unable to drive th. i>ail farther i n or break it, rem¹

" be fpt-ni in making 3 va-ji ...al, vehement, and to ** telrFic commotion oi rje

" whereas the motion of juft comitit."

" This fire is the real caufe . f all the changes in nature, will appear from the following confideration.

All bodies are either folid or fluid; the folid of themfelves are either commonly fuppos'd to be inactive or immovable; the fluid both move and are moved.

And all fluids are found to be fo much the more firm and contracted, as they have the lefs fire in them.

This is evident in iron, which, when heated, expands itfelf into a much greater fpace than when it was cold; fo that any folid and hard body, by being freed from all fire, would fink into a much lefs bulk, and its parts would cohere more nearly, and with greater force than before.

As no fluids, they all harden, fo as to be vifible to the eye upon the abfence of fire; as water, by the cold of a fevere winter, will form itfelf into a folid glob¹, and yet even then contains a great deal of fire,

as appears evidently upon applying a thermometer to it, which is capable of falling twenty divifions lower before it arrive at the point of the moft intense cold; and hence it is, that the fpirit of wine is kept from freezing in the thermometer, which would undergo the common fate of other things, were there not abundantly more fire in it.

" be as much expanded by a greater quantity of fire, and ...erified by a lefs; but it ftill contains a large quantity of fire, where it is mod of all . contracted; this is evident from the ftriking of a flint againft a steel, which is followed by fprk; t-i fire

" ikewil if this fire could be taken from the air, it would b'co! . folid and perfectly atrel, and, by confequenc¹, incapable of change.

" fays Dr. Grazeiande, in Element. Phyf. naturally unites itfelf with bodies, and hence it is, that a body brought near to the fire grows hot,

" in each case it alfo expands or fwells; which expansion is not only obferved in very folid bodies, but in thofe whole parts do not cohere; in which case they likewife acquire a great degree of cold-

" nity, as is obferved in air and vapours."

Fire being thus acknowledged the instrumental caufe of all motion, it remains that itfelf be moved, nay, to move, muft be roorc natural and immediate to fire, than to any other body; and hence force have ventured to make motion efferential to fire; but as this is incon-

" fiftent with the notion of matter, which is defined to be inert and paffive, and as fire is capable of being proved material, we ought rather to agree, that the motion of fire itfelf is derived from fome high¹ inJ metaphyfical caufe. A property of perpetual mobility may indeed be fuperadded to the other properties of fire, but it has no natural neceffary connection with them; nor can it be maintained with them otherwife than by fime extrinfic efficacy of a fuperior caufe.-

Howen r, 1 hat it is by motion that fire produces its effects, is evident; and hence the action of fire cannot make any alteration in the elementary fubftance of bodies; for it is neceffary, that what acts upon an object, be without that object, i. e. the fire muft not penetrate the elementary parts, but only enter the pores and interfaces of bodies; fo that it does not form capable of making thofe tranfmiffions, which Sir Ifaac Newton writes to it.

in effect, as to all our purpofes, it may perhaps be faid, that fire is always in motion. KM tnfunc,

take fix feveral forts of thermometers, and two ve-icb cii water with fal arms . . . rived therrn, and apply the thermometer to it, and the confequence will be, that the air being condensed in them, the 1 pint will drcend in . . . of them; renove the veffel of water, and the air growing warmer, and rarefying, the fpirit will afcend again; fo that the active force in air, which produces fo many effects, does really all arife from the fire contained in it.

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Again: As all bodies placed in a very solid air, do, by degrees, grow cold, motionless, rigid, &c. i. e. though there be still some remains of fire, and in proportion as that is diminished, the effect is accelerated; it follows, that cold, a less degree of heat, is the effect of a lesser action of fire: and all action rises apparently from the same source.

Then, as fire can render the most solid bodies, as stone, metals, &c. (as appears very evident in large burning-glasses, in which gold itself immediately calcines, and emits fumes, i. e. becomes fluid) for the want of fire would convert the most fluid bodies, as spirits of wine, &c. into solids.

Fire is distinguished into two kinds, called elementary or pure fire, which is such as exists in itself, and alone is properly called fire ϕ , or common or culinary fire, which is raised and kindled from the former, and is that which agitates and affects ignited, combustible, and moveable bodies, the particles of which, joining with those of the pure fire, constitute pure flame.

This latter is improperly called fire, in that not only a small part of it is real or pure fire; and in ignited bodies, that which flames, smokes, &c. is not simply fire; whereas pure fire, such as is collected in a burning-glass, yields no flame, smoke, ashes, or the like.

Fire may be present in the greatest abundance, yet without any heat: this is evident in the tops of the highest mountains, illuminated by the sun, where the cold is always extremely pinching, and this even under the equator, there being mountains there which are perpetually covered with snow, though there can be no want of fire.

So a large burning-glass has no effect: the smallest warmth cannot be felt in its focus in a place where the sun does not shine, or when the sun is covered with a cloud, but a piece of metal may be seen to melt the very moment the sun emerges.

Fire may be in exceeding small quantity, and yet burn with great violence: thus spirit of wine when set on fire, does not burn the hands; and though poured on a piece of red-hot iron, does not take fire; so that the fire that is in, should not appear very great: yet if it meet with some harder body while it is burning, the particles of which body it is capable to agitate by the attrition of its own, it will yield a fierce flame, capable of burning a harder body than the hand.

From this it appears, that the relation of heterogeneous particles, agitated by the fire, has more effect in respect to heat than the action of the fire itself: nor need we be far to seek for the mechanical reason of this, for the particles of fire, being all equal and spherical, mud of themselves be harmless; but if they carry certain spicula, or any other bodies along with them, then they become capable of doing much harm.

Hence, though the flame of a piece of wood may give a sense of heat, and burn such things as are applied to it, it does not therefore necessarily follow, that there is any pure fire in it, so that the distinction of pure and common fire is absolutely necessary: though this distinction has been overlooked by most or all the authors before Dr. Boerhaave, who have written on fire ϕ , which has led them into egregious mistakes, inasmuch that most of them have held, that the flame of a piece of wood is all fire, which appears to be false from what has been already said, and also what follows.

Elementary or pure fire is of itself imperceptible, and only discovers itself by certain effects that it produces in bodies, and these effects are only to be learnt by the changes which arise in bodies. These effects are three-, first, heat; 2dly, dilatation in all solid bodies, and rarefaction in all fluids; 3dly, motion.

The first effect of elementary fire on bodies is heat: heat arises wholly from fire, and in such a manner, that the measure of heat is always the measure of fire ϕ , and that of fire, of heat ϕ , for the heat is inseparable from the fire.

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The second effect of elementary fire is dilatation, in all solid bodies, and rarefaction in all fluids.

Numerous experiments make it evident, that both these are inseparable from heat. If you heat an iron rod, it will increase in all its dimensions; and the more it is heated, the farther it will be increased; and being again exposed to the cold, it will contract, and successively return through all degrees of its dilatation, till it arrive at its first bulk, being never two minutes successively of the same magnitude.

The like may be observed in gold, the heaviest of all bodies, which takes up more space when it is fused than it did before; nay, even mercury, the heaviest of all fluids, has been known to ascend above thirty times its height, being placed over the fire in a tube.

The laws of this expansion are; 1st, That the same degree of fire rarefies fluids sooner, and in a greater degree than it does solids. Without this* the thermometer would be of no use; since, if it were otherwise, the cavity of the tube would be dilated in the same proportion as the fluid is rarefied.

2dly, By how much the liquor is lighter, by so much the more it is dilated by fire: thus air, which is the lightest of all fluids, expands the most, and spirit of wine the next after air.

The third effect of fire on bodies is motion ϕ , for fire, in warming and dilating bodies, must necessarily move their parts. And in effect, all the motion of nature arises from fire alone; and if this were taken away, all things would become immovable. All oils, fats, waters, wines, ales, spirits of wine, vegetables, animals, &c. become hard, rigid, and inert, upon the absence of only a certain degree of fire; and this induration will be both the sooner, and the more violent, the less the degree of fire is.

Hence, if the fire was absolutely taken away, and there were the greatest degree of cold, all nature would grow into one concrete body, solid as gold, and hard as a diamond; but, upon the application of fire, it would recover its former mobility.

And, of consequence, every diminution of fire is attended with a proportionable diminution of motion. Pure fire is found in two different manners; either as it exists everywhere, and is diffused equally in all places; or as it exists in certain bodies, in which it makes no great alteration.

That fire should exist in the same quantity in all places, will seem a strange paradox ϕ , and yet that it does so, is demonstrable from innumerable experiments.

This elementary fire is present every where, in all bodies, all space, and at all times, and that in equal quantities ϕ , for let a person go where he will, to the top of the highest mountains, or descend into the lowest cavern, whether the sun shine or not; either in the most scorching summer, or the sharpest winter; fire may be collected by several methods, as attrition or otherwise. In a word, there is no physical point assignable without fire, no place in nature where the attrition of two flicks will not render it sensible.

The Cartesians, as Marriotte, Perrault, &c. hold, that there is a large flock of fire in a perfect vacuum, i. e. a space out of which all the air has been exhausted, as supposing an absolute vacuum impossible: now, the most perfect vacuum that we can arrive at, is that of Mr. Huygens's contrivance, which is as follows: heat a quantity of the purest mercury to the heat of boiling water; and pour it into a hot tube of about forty inches long ϕ , and when the tube is filled, apply a finger upon the orifice of it, and thus invert it into a basin full of mercury: the mercury will now be suspended in the tube to the whole height; but then, if you give it but a little shake, it will sink down to the height of about twenty-nine inches, and thus leave a vacancy of eleven inches.

Yet here the philosophers above-mentioned deny there is any vacuum, and urge, that now so much the more fire is entered into the space as there was of other

matter;

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matter; but this is contrary to experience \ at least, the fire contained there is no hotter than the mercury itself for if a drop or two of water be in a frothy season sprinkled both upon the upper part of the tube, lapped to be full of fire, and on the lower that is full of mercury, they will in each place freeze alike; so that there is no more pure fire in a perfect vacuum, than in any other place.

But whereas it has been said, that fire is found in all bodies, to prove this, set gold against the vacuum before-mentioned, and this gold, though the most ponderous of all bodies, will not contain more fire than Huygens's vacuum, as appears from the thermometer.

But the fire in gold, when ready to fuse, is pure fire for a mass of this being once heated red hot, will retain this fire perfectly for three days; nay, the prince of Mirandola and others, have kept gold ignited for two months, without any diminution of weight.

Mr. Gravesande, Phys. Element, says, That bodies of any kind, being violently moved against one another, will grow hot by such friction, and this to a considerable degree, which shews that all bodies have fire in them for fire may be put in motion, and separated from a body by such rubbing, but can never be generated that way.

Mr. Boyle, Mech. Prod, of Heat, says, That although quicksilver is allowed to be the coldest of all fluids, inasmuch that many deny, that it will produce any heat by its immediate action on any other body, and particularly on gold; yet several trials have assured him, that a particular mercury may by preparation be enabled suddenly to insinuate itself into the body of gold, whether calcined or crude, and become manifestly hot with it in less than two or three minutes.

Mr. Gravesande says, That quicksilver contains fire, is evident hence, that if you make it about in an exhausted glass, it will appear all, luminous.

Elemental fire of itself always lies concealed; nay, it may be perfectly undiscoverable, where it is in the greatest quantity; as is evident in the torrid zone, where the snow never melts, notwithstanding the great abundance of fire.

This fire, in itself thus perfectly latent, may cover itself to be present by five effects, first, by rarefying bodies, and particularly air, secondly, by colour; idly by colour, thirdly, by heat, and fourthly, by light.

That there is a good quantity of fire even in the coldest places, and in the coldest bodies, is confirmed by the following experiment: if you take two large iron plates, and when they are brought together in the north pole, which is only twelve degrees short of the north pole, 2 Z most frosty season, and at midnight, they will grow warm, shine, and heat to such a pitch as will melt the snow.

That the spirit in the thermometer, but

it was there before, but nobody will assert it; and accordingly, unless it be furnished with proper fuel, it will soon dissipate again, and of consequence it pre-exists, and it

appears to be true fire by its rarefying the spirit in the thermometer.

From this, and many other experiments, it is evident, that fire is always found in all parts of space, and in all bodies equally spread in the highest mountain, as in the deepest cavern under ground, and in every

fire in proved, it would thence follow, that the same degree thereof every where; which would really be so, were it not that fire happens by one means or other to be more collected in one place than another, but, notwithstanding the equable difference, fire through all the mundane space does not hinder, but that, for four senses, it appears very unequal in different places, and hence we have two vulgarly

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puted sources or funds of fire, viz; in the sun, at the center of the earth.

As for the first, we have the concurrent opinions of the philosophers of all ages, but one excepted, who held the sun to be cold.

As to the second, the central fire, it is manifest that there is an ample proportion of fire under ground; and even, that fire appears much more abundant there than on the surface; so that at least, a subterraneous fire must be granted.

Thus they who dig mines, wells, &c. constantly observe, that while they are but a little below the surface, they find it a little cool; and as they proceed lower, it proves much colder, as being beyond the reach of the sun's heat, inasmuch that water will freeze almost instantaneously, and hence is the use of houses.

But a little lower, about forty or fifty feet deep, it begins to grow warmer, so that no ice can bear it; and then the deeper they go, still the greater heat, till at length it endangers the stoppage of respiration, and puts out their candles. If they venture yet farther with a lighted candle, the place shall be immediately found full of flame, as once happened in the coal-pits in Scotland, where a hardy digger, descending to an unusual depth, with a light in his hand, the fumes, which were there found very copious, caught fire thereby, and burnt the whole mountain down.

Therefore it seems as if nature had lodged another sun in the center of the earth, to contribute on its part to the giving motion to bodies, and for the promoting of generation, nutrition, vegetation, germination, &c. of animals, vegetables, and fossils.

As to the origin of this subterraneous sun, some doubt whether it were formed there in the beginning, like the sun in the firmament, or gradually produced by a secondary collection of vague fire into this place.

What makes in favour of the former opinion, are volcanos or burning mountains, which seem to have existed from the first ages; for the flames of mount Etna are mentioned as of great antiquity, and there are likewise such mountains found in the coldest regions, viz. Nova Zembla and Iceland, as well as the hottest, as Borneo, &c.

It cannot be reasonably pretended, says Mr. Boyle, that the subterraneous heat proceeds from the rays of the sun, since they heat not the earth above six or seven feet deep, even in the southern countries; and if the lower part of the earth were of its own nature cold, and received the heat it affords only from the sun and stars, the deeper men descend therein, the less degree of heat and flames they would meet with.

The sun contributes much in bringing fire to light, by reason of his rapid motion round his axis, whereby the fiery particles, every where diffused, are directed and determined in parallel lines toward certain places where its effects become apparent.

And from thence it is, that the fire is perceived by us when the sun is above, but that when he disappears, his impulse or pressure being then taken away, the fire continues dispersed at large through the ethereal space.

There is not, in effect, less fire in our hemisphere in the night time, than there is in the day time; only it wants the proper determination to cause it to be perceived.

The effects of elemental fire may be increased ways, viz. first, by attrition, or a swift rubbing or agitating one body against another. This is very manifest in solids. The attrition of a flint against a steel produces sparks of fire, and likewise in fluids, the violent agitation of cream, by churning, will produce a sensible warmth, and separate it into butter; and this effect is rendered still more discernible by a thermometer.

And the heat of animal bodies is owing to the agitation and attrition of the parts of these juices against each other, and the fides of the vessels.

The second manner of increasing the effect of elementary fire is, by throwing a quantity of moist or green

green vegetables, cut down while full of sap, into a large heap, and pressing them close down, by which they grow warm, hot, smoke, and break out into flame,

A third way is by mixing certain cold bodies: thus water, and spirit of wine, being first warmed, grow much hotter by being mixed; also oil of cloves, cinnamon, &c. being mixed with spirit of wine, become exceeding hot, and burst forth like volcanos.

The like effects may be had from several hard and dry bodies, as sulphur and steel filings.

To conclude: on fire and the effects thereof, depend all fluidity of humours, juices, &c. all vegetation, putrefaction, fermentation, animal heat, &c.

As all the four elements, water, air, earth, and fire, are very conducive to the work of vegetation, and no one of them more than this of fire; I conclude, that these few hints, which I have collected from the most approved authors, concerning the nature and properties of it, as they may be useful, would not be unacceptable to the ingenious and studious practitioners of horticulture, which induced me to infer them here.

FIR-TREE. See **ABIES.**

FISTULAR FLOWERS [Flores Fistulares, of *Fistula*, *Lat.* a pipe] such as are compounded of many long, hollow, small flowers, like pipes.

FLAMMULA JOVIS. See **CLEMATIS.**

FLESH, among botanists, is all the substance of any fruit that is between the outer rind and the stone, or that part of any root that is fit to be eaten.

FLORIFEROUS [florifer, *Lat.*] bearing flowers.

FLORIST, one who is conversant with, or {killed in flowers.

FLORENT, FLORULOUS [florentulus, florulus, *Lat.*] Flowery, full of flowers; also blooming:

FLOS AFRICANUS. See **TAGETES.**

FLOS PASIONIS. See **PASSIFLORA.**

FLOS SOLIS. See **HELIANTHUS.**

FLOS TRINITATIS. See **VIOLA.**

FLOWER: a flower is a natural production which precedes the fruit, which includes the grain or seed. Though a flower is a thing so well known, yet the definition of this part of a plant is as various almost as the authors who define it. *Jungius* defines it to be the more tender part of a plant, remarkable for its colour, or form, or both, cohering with the fruit. Yet this author himself confesses, that this definition is too narrow; for some of those bodies which he allows to be flowers are remote from the fruit.

Mr. Ray says, it coheres, for the most part, with the rudiments of the fruit. Thus the words, for the most part are hardly to be admitted into definitions.

Tournefort defines it to be a part of a plant very often remarkable for its peculiar colours, for the most part adhering to the young fruit, to which it seems to afford the first nourishment, in order to explicate its most tender parts. Which definition is still more deficient than the former, by this uncertain mode of expression.

Pontedera, the professor of botany at Padua, defines it to be a part of a plant unlike the rest in form and nature, if the flower has a tube, if always adheres to the embryo, or is very, near it, for whose use it is subservient; but if it wants a tube, there is no embryo adhering.

This definition is far from being clear, for it is scarce intelligible, and is liable to this objection, that it may include some parts of a plant which no person ever called by that name, for a root, a stalk, or a leaf, are parts of a plant unlike the rest in form and nature, having no tube, and so do not adhere to any embryo, and thus by *Pontedera's* definition are flowers.

Monf. Jussieu, the Paris professor, seems not to have succeeded much better in this affair: he says, That is properly called a flower, which is composed of chives, and a pistillum, and is of use in generation. But this is too defective; for there are many plants in which the pistillum or style is found a considerable distance from the chives* there are many flowers

that have no pistillum, whether that word be taken to signify the embryo of the fruit, or its appendix, and many which have no chives.

But the late *Monfieur Vaillant* seems to be happier, in forming a clearer idea of this part of a plant. We find in the lecture he read in the Royal Garden at Paris, that the flowers, strictly speaking, ought to be reckoned the organs which constitute the different sexes in plants; seeing they are sometimes found without any covering, and that the coats or petals, which immediately encompass them, are designed only to cover and defend them: but (says he) as these coats are the most conspicuous and most beautiful part of the composition, which is called by the name of flower, of whatsoever structure or colour they be; whether they encompass the organs of both sexes together, or contain only one of them, or only some parts depending on one of them, provided always that they be not of the same figure of the leaves of the plant.

But, in my opinion, *Dr. Martyn* has been happier, in his definition of a flower, than all those above-mentioned: he defines a flower to be the organs of generation of both sexes adhering to a common placenta, together with their common coverings; or of either sex separately, with its proper coverings, if it have any.

The parts of a flower are, i. The germen or ovary; which is the rudiment of the fruit, and so is properly the female organ of generation.

2. The style, which is a body accompanying the ovary, either arising from the top of it, or (landing as an axis in the middle, with the embryos of the seeds round it.

3. The stamens, or apices, which are those bodies that contain the prolific powder, analogous to the male sperm in animals; and generally hang upon slender threads, which are called the chives or lamina.

The petals are those tender fine coloured leaves, which are generally the most conspicuous parts of a flower.

The empalement, or calyx, is those tender leaves which cover the other parts of a flower.

Flowers, according to the number of their petals, are called monopetalous, dipetalous, tripetalous, tetrapetalous, &c.

The structure of flowers is indeed very various; but, according to *Dr. Grew*, the generality have these three parts in common, viz. the empalement, the foliation, and the attire.

Mr. Ray reckons, that every perfect flower has the petals, stamens, apices, and style or pistil; and such as want any of these parts, he accounts imperfect flowers.

In most plants there is a perianthum, calyx, or flower-cup; which is of a stronger confidence than the flower itself, and designed to strengthen or preserve it.

Flowers are distinguished into male, female, or hermaphrodite.

The male flowers are those in which are the stamens, but have no germen or style, the same which botanists call staminate flowers & these have no fruit.

The female flowers are such as contain the germen and style, or pistil, which is succeeded with fruit, and are called fruitful, or knitting flowers.

The hermaphrodite flowers are such in which the two sexes are contained, i. e. the male and female parts are found in the same flower, which are the most general kind; such are the Daffodil, Lily, Tulip, Althaea, Geranium, Rosemary, Sage, Thyme.

The structure of parts is much the same in those where the sexes are divided & the difference between them confiding in this, that the stamens and stamens or apices, i. e. the male parts in these are separate from the styles or pistils; being sometimes on the same plants, and sometimes on different ones.

Among the plants which bear both male and female parts, but at a distance from each other are reckoned

the C: umber, Melon, Gouni, Turkey-Wheat, Walnut, Oak, Bewh, &c.

1. U 1 1) | TV. |Huidius, of Rucre, Lat. to flow.] Having UL-cation to mention fluids and fluidity, in speaking of the propencie* of the elemenu air, water, OK) Sst. I thought || [tcctQty, in this place, I give the following account of tui property, which I have extracted trpm ilir uiiiiil approved authors.

A (laid, ur ltuiii lujdy, ii l' l'ome defined to be a body, whole prudes ire but weakly cowje&ed, their mu COa cohefion lwinj?., in 3 great irmiin., prevented from fome exir-nal caufe: in which tenfe, a fluid (lands opjxjffd to a (olid j and is, by the excellent Sir Ifaac Newton, defined to be mewhofp pam wiiuy gWC place, or iiiuue out of the way, on any force in; dled liijon them, ami by thai rm'siIN do fc calily move one over mother. Which definition is muchbratr than that of •• Cartes . That a fluid isa body whole p,im are in continual motion, becaufe it is neither apparent that tin- parts of all fluids are fo, nor that [lie parts of fume •olid b:«Jic5 are not Jo.

Fluidity is the flatc or affection of bodies, which denominates or renders them fluid, and Hands in direct oppofinan to liiiiiil-ft and folidity.

It ii diilinguiffied from liquidity and humidity, in [hat the idea of fluidity h ablbtiie, and the projitny contained within the tiling itfcfj whereas rhutof hunudity is relative, and implies wetting, or adV' rmp, i. e. fuuiching that °ives ui the fentation of w' rmen or tnoJlluic, and would have no exilUncr, butfot our

Thus melted metals, air, actlirr, ard even fmoke, rind ikme itfcfj, arc Huil bodits, and not liquid ones ; the parti of tLL-m being actually dry, and not leaving any lcnfe of noiiuL-

Fluidity leenib to confit in this, that the pans of ojijr body, being fine and fin all, are fo difpofed by motion and figure, as that they can ealily Hide over one another's furlaces all manner of ways. Mr. Uoylc atib obferves, ThM it is requifite they iliould be variouly and feparatdy ^itated to and fro, anil thvit tiicy rtiould touch one another but in fome parts only ot their furfaws. And the fame gentleman fays, in his H'llfory of fluidity, That the conditions requilite to conflwte a fluid body, ore chiefly the three following.

1ft. The lnuuicnft or fmallnck of us parts: thi u we fee the fire, iij dividing m«ak into part5 very line find fmall, will mck them, and nuke them link * , and after the fune manner tlo acid mL'nfruum diffolvi' lliem, fufciid their liijuor, and render them fluid; and that &re turns die hard body of common fait almost i-holly into» liquor by diftjliation: though it is not improbable, but that the lhape am

thele linal parti may condiice inudi towards producing tiis quality of fluidity: for it U found in the dilhllarian of Olive oil (whidi is a fluid made only by pTeflure) that moft of the oil will, by the action W the parts of the fife (if ir he done in a retort) be <wned intoa kind of confident liManec like butter. Likwife mercury, whole parti arc, wid mnch Krolter than thole of oil uvd water, b vet more fluid than either of them.

sdly, It ieems requifitc w fluidity, that there be ftore of vacuities, or vacant fpict-s, intTijxrled betvet-n the corpufcles of thr fluid body; for die there will BOI be room for cadi panicle to continue its motion and agitation on the furfacej of the neighbouring ones. For,

3dy. The chief condition KtHttfil e to confit: ite a fluid body is, that its partides be agitated rarioudy "d apart, either by their own proper motion, or by foniething of fuUbfice, t'hat tumbles them up and down by its portage through them.

That this qualification is chiefly requifitc to fluidity, you may gather from thai common experiment of putting a little dry powder of abbauVr, or plafter of "arii, finely fiftid, in a flat-bull[timed ver] over the fire-, far In a Irak tirnc ir will boil like water, and imitate all the motions of = boiling-liquor; it will

tumble vsrioiijViwrr : a great wave like that, it will bear iUrrina with i ii; it will do when cold, nay, if it be flured throughly on the i ide of the velle, its waves will appear to dash up againll the foil

out, and laid oti. p'aced paper, you will fee nothing but a dry powder. So that it : evident from hence, that there is a real difference ii tween a folid body and a wating body; for nor only thi. boili

inn for air and refire, and even flure itself, are properl, fluid bodies, though not w'at liquors. This ingenious gentleman found alfo, that by blowing the in: l' of H'ofemary into a thin pipe, and then hohlin; the pipe when filled up'right, the furface of the linote would :rommulate alid in a level f'ur-tion -, and • l'uch way f'ave the tube was inclined, the f'urfaces of the liuea would be parallel to the horiron-, and i: on the glafs was much inclined, would run along it like water.

From whence he inier:.. th.it. jn order to tlic r-ndering a budy Quid, it'ur is no need that it ;<»rul would be clofely condensed, . S thole of wa:r art. And Dr l louk, in hi» Micrograph, p. i -• p'effens us with it very pn; • experiment or two, to prove this account of fluidity . wa. That a diih of fand being lit on a drum head, heftily beaten by the flicks, or on i jn- upper ilune of a mill, turning twifly r'Und on the (empty) lower- one, it in 11 r'ep'ofits, emulate i e properties of a fluid body -, far > heavy body wii immediately fink in it to the bottom, and a light one emerge to the top; each grain of land hath a conflant vibrating, dancing motionj and if a hole l'c made in the fide of tl« difh, the fond will l'pin out like water.

The corpufuliir pliiolophy, before it was wond'fully improve! by Sir Ifaac Newton, d: not go io the bottom of this miner; for« giue no account' of the caufe of die dticf condition reijjuulc io contitute a fluid body, vin. ihe vjriuii motions and f'gti tations nf in particle but thi may, in i great mealure, l' account' I for, it it be fiippuLi! to be one of the)rimary towi of nature, That at all particlrs of nianer v' r'ack out 'lother when du:, come within a certain dirtafice, fo likewife they fly away from, and avoid one anoit'hr, at all great r'iftances from one another.

For then, though their common gravity m iy j rep them together in a maff (it may fometimes be) together wjff the preflure of other bodies upon l'ann; yet their continual endeavour to .OLL one > . other iingly, and die adventitiou impulfes of light, hear, or other external Cftuies, may make the panicles of fluids continually move round about one another, and to produce t' fti quality.

It is indeed a difficultly Dot*afij) got over, to account for ihe particles of fluids il ways keeping at fuch a diflance from one ano! er, as not to co:ue witliin the f'phere of one another's attraiaion. The fabrC and con; itution of that liukl body, water, is amazing; thai a lndy ib very rare, and which has a vnt on r' proportion of pores, or uir f'peifml vauity, to fohd matter, l'huuld yrt be p'offibly incompatible by the g'reateft force; and yet this rli; is eafily reducible into that firm, tranfparent, triable body which we call ice, by being only expofed to a certain degree of cold.

One would think, thai though tht pwricle • water canrii pome neai enough to attract each other, yet th intervening frigiditc matter duth, by being f'nfifi ed per-minuta, f'trongly attr lit them, and it ic f'ic likewise f'trongly attracted by them, and wedges or fixes all the maff into a firm Udy i winch !,.... [X]dy lofes its foldirry amioi wlien by heat the • dil-him i' toh- thole of the water, w art" forced to •,t- out f'ix quackilver. 5' ine fum« of leu' a firm liid body, f'ic When d into a fluid, duth r'ox !; »a meral, n by heat rrdU1 = Q :c di-juin ami (c-

parate its constituent particles, which mutual attraction caused to cohere before, and keep them at such a distance from each other, as that they are without the sphere of one another's attraction as long as that violent motion lasts? And do not they, when that is over, and the heat is flown out, come nearer to, attract one another, and coalesce again?

As therefore the cause of cohesion of the parts of solid bodies appears to be their mutual attraction, so the chief cause of fluidity seems to be a contrary motion impressed on the particles of fluids* by which they avoid and fly one another, as soon as they come at, and as long as they keep at, such a distance from each other.

It is observed also in fluids, that the direction of their pressure against the vessels which contain them, is in lines perpendicular to the sides of such vessels*, which property being the necessary result of the particles of any fluid's being spherical, it shews that the parts of all fluids are so, or of a figure nearly approaching thereto.

Dr. Clarke says, That if the parts of a body do not touch each other, or easily slide over one another, and are of such a magnitude as that they may be easily agitated by heat, and the heat be sufficiently great to agitate them; though perhaps it may be less than suffices to prevent water from freezing*, or even though the parts be not actually moved, yet if they be small, smooth, slippery, and of such a figure and magnitude as disposed them to move and give way, that body is fluid.

And yet the particles of such fluid bodies do, in some measure, cohere; as is evident hence, that mercury, when well purged of air, will be sustained in the barometer to the height of sixty or seventy inches; that water will ascend in capillary tubes, even in vacuum and that the drops of liquors in vacuum run into a spherical form, as adhering by some mutual cohesion, like that between polished marble planes.

To this may be added, that these said bodies, if they consist of particles which are easily entangled with each other, as oil-, or if they be capable of being stiffened by cold, and joined by the interposition of certain cunei or wedges, as water, they are easily rendered hard; but if their particles are such as can neither be entangled as air, nor stiffened by cold, as quicksilver, then they never grow hard and fixed.

In short, the Cartesians define a fluid to be a body, the parts of which are in continual incessant motion; and Dr. Hook, Mr. Boyle, and Dr. Boerhaave, though they differ in opinion widely from Cartesianism, subscribe to the definition, and alledge arguments to prove, that the parts of fluids are in continual motion, and even that it is this motion which constitutes fluidity; and the latter of them ascribes this, and all motion, to fire; See FIRE.

Fluids then are either natural, as water and mercury; or animal, as blood, milk, bile, lymph, urine, &c. or fatitious, as wines, spirits, oils* &c.

FOENICULUM. Tourn. Inft. R. H. 311. tab. 164. Anethum. Lin. Gen. Plant. 326. *Fennel* in French, *Fenouil*.

The CHARACTERS are,

// bath an umbellated flower -, the great umbel is composed of many smaller, which have no involucre; the umbel is uniform-, the flowers have five incurved petals, and five stamina, terminated by roundish summits: the germen situated under the flower, supporting two small styles, crowned by roundish stigmas. The germen afterwards turns to an oblong fruit, deeply channelled, dividing into two parts, each containing a single seed, flat on one side but convex and channelled on the other.*

This genus of plants is ranged in the second section of Tournefort's seventh class, which includes the herbs with umbellated flowers disposed circularly, whose empalement turns to two narrow, oblong, thick feeds. Dr. Linneus has joined this genus to Anethum, which is placed in the second section of his fifth class, with those plants whose flowers have five stamina and two styles. But as the feeds of Fennel are oblong,

thick, and channelled, and those of Dill flat and bordered, it is much better to keep them separate, than to join them in the same genus.

The SPECIES are,

1. FOENICULUM (*Fulgare*) foliis decompositis, foliolis brevioribus multifidis, femine brevior. *Fennel with decomposed leaves, whose small leaves are shorter and end in many points, and a shorter feed.* Faeniculum vulgare Germanicum. C. B. P. 147. *Common Fennel.*
2. FOENICULUM (*Duke*) foliis decompositis, foliolis longioribus, femine longiori. *Fennel with decomposed leaves, whose small leaves are very long, and a longer feed.* Feniculum dulce, majore & albo femine. J. B. 3. p. 2,4. *Sweet Fennel having a larger white feed.*

3. FOENICULUM (*Azoricum*) humiliter nuda caulescente carnofo, feminibus recurvis radice annua. *Dwarf Fennel with a fleshy stalk, recurved feeds, and an annual root.* Foeniculum duke Azoricum. Pluk. Aim. *Sweet Azorian Fennel, called Finocchio.*

The first sort is the common Fennel, which is cultivated in the gardens, and has found itself in many places, where it has been introduced in such plenty, as to appear as if it were a native in England*, but it is nowhere found at a great distance from gardens, so has been undoubtedly brought into England. There are two varieties of this, one with light green leaves, and the other with very dark leaves^ but these I believe are only varieties which arise from, the same feeds*, but this is very difficult to ascertain*, for unless the feeds were sown separately in some place where neither of these plants have been growing before, it cannot be done; for the feeds of these plants which have scattered, will remain in the ground some years, and when exposed near the surface will grow; so that the plants become troublesome weeds, wherever their feeds have been scattered*, and they frequently come up where other feeds are sown, and thereby the two sorts may accidentally mix.

The common Fennel is so well known, as to need no description. This hath a strong fleshy root, which penetrates deep into the ground, and will continue several years. It flowers in July, and the feeds ripen in autumn. The best time to sow the feeds, is soon after they are ripe; the plants will come up in the autumn or the following spring, and require no other care but to keep them clean from weeds, and thin the plants where they are too close-, it will grow in any soil or situation. The leaves, feeds, and roots of this, are used in medicine*, the root is one of the five opening roots, and the feed one of the greater carminative feeds. There is a simple water made from the leaves, and a distilled oil from the feed.

The sweet Fennel has been by many supposed only a variety of the common sort, but I have cultivated it in the same ground with that, where it has always retained its differences. The leaves of this are very long and slender, growing more sparingly, and do not end in so many points as those of the common sort; the stalks do not rise so high, and the feeds are longer, narrower, and of a lighter colour. These feeds are generally imported from Germany or Italy, and are by some preferred to those of the common sort for use, being much sweeter.

This may be propagated in the same manner as the former sort, being very hardy, but the roots are not so long duration.

The third sort is supposed to have been originally brought from the Azorian Islands^ it has been long^ cultivated in Italy as a fallad herb, under the title of Finocchio; and there are some few gardens in England, where it is now cultivated, but in small quantities, for there are not many English palates which relish it, nor is it easy to be furnished with good feeds; those which are annually brought from Italy seldom prove good; and it is difficult to have it in England, because the winter frequently kills those plants which are left for feeds^ and when any good plants of the early sowing are left for feeds, they do not ripen, unless the winter proves very favourable.

This fort hath very fhort ftalks, which fwel juft above the furface of the ground, to four or five inches in breadth, and almoft two thick, being fleftiy and tender: this is the part which is eaten when blanched, with oil, vinegar, and pepper, as a cold fallad. When thefe plants are permitted to run for feeds, the ftalks do not rife more than a foot and a half high, having a large fpreading umbel {landing on the top. The feeds of this for^are narrow, crooked, and of a bright yellow colour \ they have a very ftrong fmell like Anifeed, and are very fweet to the taft.

The manner of cultivating this plant is as follows : Your firft care muft be to procure good feeds from fome perfon who has been careful in the choice of the plants, otherwife there will be little hope of having it good -, for the plants will run up to feeds before they fwel to any fize, fo will not be fit for ufe : then make choice of a good fpot of light rich earth, not dry nor very wet, for in either extreme this plant will not thrive. The firft crop may be fown about a fortnight in March, which, if it fucceeds, will be fit for ufe in July ; and by fowing at feveral times, there may be a fupply for the table till the froft puts a ftop to it. After having well dug and levelled the ground fmoother, you muft make a fhallow drill by a line, into which you muft fcatter your feeds pretty thin ; for if your plants are fix inches afunder in the rows, it will be full near enough; but however, you muft exped fome of your feeds to fail, and therefore you fhould fcatter them about two inches diftance; then cover the feeds about half an inch thick with earth, laying it fmoother: thefe drills fhould be made eighteen inches afunder, or more, that there may be room to clean the ground, as alfo to earth up the plants when they are full grown. When the plants come up, which will be in about three weeks or a month after fowing, you muft with a fmall hoe cut up all the weeds between them, and where the plants are too clofe, they fhould be thinned to about three inches diftance; and as they advance, and the weeds fpring again, they fhould, from time to time, be hoed; and at the laft time of thinning them, they fhould be left feven or eight inches afunder at leaft. If your kind be good, the ftems of the plants will increafe to a confiderable bulk juft above the furface of the ground; which part fhould be earthed up in the manner of Celery, to blanch, about a fortnight or three weeks before it is ufed, and this will caufe it to be very tender and

crifp.

Your fecond crop fhould be fown about three weeks after the firft, and fo continue fowing every three weeks or a month till the end of July, after which time it will be too late for the plants to come to any perfe&ion. But you fhould obferve to fow in April, May, and June, on a moifter foil than that which you fowed the firft on ; as alfo what you fow in the latter part of July, fhould be fown on a drier foil, and in a warmer fituation -, becaufe this crop will not be fit for ufe till late in autumn, and therefore will be fubjeft to injuries from too much wet or cold weather, if on a moift foil. But as the ground is often extreme dry in June and July, and the feeds more apt to mifcarry and not come up, you fhould therefore obferve to water and fhade the beds where this feed is fown at that feafon, until the plants come up. And if the feafon fhould prove dry, the plants muft be duly watered, otherwife they will run up to feed before they are of any fize-, therefore there fhould be a channel made where every row of plants grow, to detain the water which is poured on them, to prevent its running off. In the autumn, if there fhould happen fharp frofts, it will be very proper to cover the plants with fome Peas-haulm, or other light covering, to prevent their being pinched; by which method they may be continued for ufe till the middle of winter.

A fmall bed of this plant will be fufficient at each fowing for a middling family -, and for a large family, a bed of about twenty feet long, and four feet broad, will be fu] enough at a time.

FCENUM BURGUNDIACUM. Ste Mi-

DICA SATIVA. . . ;

FGENUM GRJECUM. See TIUGONELLA.

FOOT-STALKS, are thofe fmall ftalks which immediately fuftain the leaves, flowers, or fruit.

FOUNTAINS are, fources or fprings of living water, arifing out of the ground. As to the original of them, fee under the article SPRINGS.

Of artificial fountains there are great variety, the mechanism of which not being to my purpofe, I will not dwell upon it ; though I may affert, that they are not only great ornaments to a fine garden, but alfo of great ufe. But they ought not to be placed too near the houfe by reafon of the vapours that arife from the water, which may be apt to ftrike a damp to the wall, and fpoil the paintings, &c. and the fummer vapours may caufe a malignity in the air, and fo be prejudicial to the health of the family ; and likewife the noife may be incommodious in the night.

Fountains in a garden fhould be fo diftributed, that they may be feen almoft all at one time, and that the water-fpouts may range all in a line one with another, which is the beauty of them ; for this occafions an agreeable confufion to the eye, making them appear to be more in number than they really are. See JET D'EAU, SPRINGS, VAPOURS, WATER, &c.

FRAGARIA. Lin. Gen. Plant. 558. Tourn. Inft. R. H. 295. tab. 152. [is fo called for its fragrant aromatic fcent.] Strawberries ; in French, *Frajflert*,

The CHARACTERS are,

The empalement of the flower is of one leaf, which is cut into ten parts at the top. The flower hath five roundijh petals, which are inferted in the empalement, and fspread open. It hath twenty ftamina, which are inferted in the empalement \ terminated by moon-Jhaped fummits. It hath a great number of germes collected into a beady each having a Jingle Jiyle, inferted in the Jide of the germen, crowned by Jingle ftigmas ; this bead after ward becomes a large, foft, pulpy fruit \ which if left, falls away, leaving many fmall angular feeds in the empalement.*

This genus of plants is ranged in the 'fifth fe&ion of Linnseus's twelfth clafs, which includes thofe plants whofe flowers have at leaft twenty ftamina and many ftyles, which are inferted to the empalement.

The SPECIES are,

1. FRAGARIA (*Vefca*) foliis ovatis ferratis, calycibus brevibus, fructu parvo. *Strawberry with oval fawed leaves, fhort empakments, and a fmall fruit.* Fragaria vulgaris. C. B. P. 226. *The common or Wood Strawberry.*
2. FRAGARIA (*Virginiana*) foliis oblongo-ovatis ferratis, infernè incanis, calycibus longioribus, fructu fubrotundo. *Strawberry with oblong, oval, fawed leaves, hoary on their under Jide* longer empakments, and a roundijh fruit.* Fragaria Virginiana fructu Coccineo. Hift. Ox. 2. 186. *Virginia Strawberry with a fear let fruit, commonly called the Scarlet Strawberry.*
3. FRAGARIA (*Muricata*) foliis ovato-lanceolatis rugofis, fru&u ovato. *Strawberry with oval, fpear-Jhaped, rough leaves, and an oval fruit.* Fragaria fru&u parvi pruni magnitudine. C. B. P. 327. *Strawberry with fruit as large as a fmall Plumb, commonly called Hautboy Strawberry.*
4. FRAGARIA (*Chiloenfts*) foliis ovatis carnofis hirtutis fructu maximo. *Strawberry with oval, Jiefby, hairy leaves, and a large fruit.* Fragaria Chiloenfts, fructu maximo foliis carncfis hirtutis. Hort. Elth. 145. tab. 120. *Strawberry of Chili with a large fruit, and hairy Jiefhy leaves, called Frutilla, in America.*

There are fome other varieties of this fruit, which are now cultivated in England -, but I have not feen any other which can be called a diftinct fpecies, tho' I are here enumerated, and thefe, I think, may be allowed to be fo, for they never aker from one to the other, by any cultivation, though the fruit is frequently improved, fo as to be of a larger fize thereby j therefore thofe who have fuppofed them but one fpecies, have greatly erred in fo doing -, I (hall therefore mention the feveral varieties of Strawberry, which arc;

at

at present to be found in the gardens under the species to which they naturally belong.

The first fort is the common Wood Strawberry, which grows naturally in the woods in many parts of England, and is so well known as to need no description of this there are three varieties, i. The common fort with red fruit. 2. The white Wood Strawberry, which ripens a little later in the season, and is by many persons preferred to it for its quick flavour, but as it seldom produces so large crops of fruit as the red fort, it is not very generally cultivated. 3. The green Strawberry, by some called the Pine Apple Strawberry, from its rich flavour. The fruit of this is greenish when ripe; it is very firm, and hath a very high flavour; this is a late ripe fruit, but unless it is planted in a moist loamy soil, it is a very bad bearer, but in such land where it does succeed, it merits cultivation as much as any of the forts.

The Scarlet Strawberry is the fort which is first ripe, for which reason it merits esteem, had it nothing else to recommend it; but the fruit is so good, as by many persons of good taste to be preferred to most other forts. This was brought from Virginia, where it grows naturally in the woods, and is so different from the Wood Strawberry in leaf, flower, and fruit, that there need be no doubt of their being distinct species.

There is a variety of this which hath been of late years introduced from the northern parts of America, which has the appearance of a distinct species. The leaves of this are rounder, and, not so deeply veined; the crenatures on their edges are broader and more obtuse. The leaves which compose the empalement are much longer, and are hairy, and the fruit is larger but as in other respects it approaches near to the Scarlet Strawberry, I have chosen to join it to that, rather than make a distinct species of it, this I have been informed grows naturally in Louisiana.

There has also been another variety of this (if not a distinct species) lately introduced to our gardens, which is commonly known by the title of Alpine Strawberry, the plants of this greatly resemble those of the Scarlet Strawberry, but the fruit is more pointed, it is a well flavoured fruit, and continues bearing from the common season of Strawberries, until the frost in autumn puts a stop to it, which renders the fort very valuable: I have frequently gathered the fruit in the beginning of November; this has occasioned the Dutch gardeners titling it Everlasting Strawberry.

The Hautboy Strawberry, which the French call Capitons, came originally from America, but it has been long cultivated in the English gardens, and is very different from the other forts in leaf, flower, and fruit, as that no one can doubt of their being different species there is an improvement of this fort, which is commonly called the Globe Hautboy. The fruit of this is larger, and of a globular form, but this difference has certainly arisen from culture; for where these have been neglected a year or two, they have degenerated to the common Hautboy again; where the ground is proper for this plant, and their culture is well managed, the plants will produce great plenty of fruit, which will be large, and well flavoured, and by some persons are preferred to all the other forts.

The Chili Strawberry was brought to Europe by Monsr. Frazier, an engineer, who was sent to America by the late king of France, and was first planted in the Royal Garden at Paris, from whence it was communicated to several curious persons in Holland, and in the year 1727, I brought a parcel of the plants to England, which were communicated to me by Mr. George Clifford, of Amsterdam, who had terge beds of this fort growing in his curious gardens at Hartcamp. The leaves of this fort are hairy, oval, and of a much thicker substance than any fort yet known, and stand upon very strong hairy foot-stalks; the runners from the plants are very large, hairy, and

extend to a great length, putting out plants at several distances. The foot-stalks which sustain the flowers are very strong, the leaves of the empalement are long and hairy. The flowers are large, and are often deformed; and so is the fruit, which is very large, and when cultivated in very strong land, the plants produce plenty of fruit, which is firm, and very well flavoured; but as it is a bad bearer in moist places where it has been cultivated, it has generally been neglected.

The Strawberries in general love a gentle hazely loam, in which they will thrive and bear greater plenty of fruit than in a light rich soil. The ground should also be moist, for if it is very dry, all the watering which is given to the plants in warm dry seasons, will not be sufficient to procure plenty of fruit; nor should the ground be much dunged, for that will cause the plants to run into suckers, and grow luxuriant, and render them less fruitful.

The best time to remove these plants is in October, that they may get new roots before the hard frosts set in, which loosens the ground, so that if the roots of the plants are not pretty well established in the ground, the plants are frequently turned out of the ground by the first thaw, therefore the sooner they are planted when the autumnal rains begin, the better will their roots be established, so there will be less danger of their miscarrying, and sometimes those which are well rooted, will produce a few fruit the first year; there are some who transplant their plants in the spring; but where that is done, they must be duly supplied with water in the dry weather/ otherwise they will not succeed.

The ground in which these are planted should be thoroughly cleaned from the roots of Couch, and all other bad weeds -> for as the Strawberry plants are to remain three years before they are taken up, so if any of the roots of those bad weeds are left in the ground, they will have time to multiply so greatly as to fill the ground, and overbear the Strawberry plants. The ground should also be well trenched and made level; then the usual method is to lay it out into beds of four feet broad, with paths two feet or two feet and a half broad between each of these paths are necessary for the convenience of gathering the fruit, and for weeding and dressing of the beds, and also for watering the plants, after the beds are marked out, there should be four lines drawn in each, at a foot distance, which will leave six inches space on each side, between the outside rows and the paths, then the plants should be planted at about a foot distance from each other in the rows, in a quincunx order, being careful to close the ground to the roots of the plants when they are planted, and if there should not happen rain soon after, the plants should be well watered to settle the earth to their roots.

The distance here mentioned for the plants to be placed must be understood for the Wood Strawberries only, for as the other forts grow much larger, their distances must be proportioned to their several growths; therefore the Scarlets and Hautboys should have but three rows of plants in each bed, which should be at fifteen inches distance, and the plants in the rows should be allowed the same space from each other, and the Chili Strawberry must have but two rows of plants in each bed, which should also be two feet apart in the rows, for as these grow very strong, if they have not room to spread, they will not be very fruitful.

In choosing proper plants of any of the forts, depends the whole success; for if they are promiscuously taken from beds without care, great part of the plants will become barren these are generally called blind, which is when there are plenty of flowers, but no fruit produced; if these flowers are well examined, they will be found to want the female organs of generation, most of them abounding with lamina, but there are few, if any styles, so that it frequently happens among these barren plants, that some of them will have a part of an imperfect fruit formed, which

will

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 quantity of roots, which interfere, and are fo clofly
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 The next thing to be obferved, is in autumn to air-
 yeil i the plants of any kind, or rancers, which may
 have been : produced, and alio of all the decayed leaves,
 and the beds cleared from weeds; then the paths
 flould be dug up, and the weeds buried which were
 taken from the beds, and loafe earth laid over the fur-
 face of the beds between the plants, this will ftrengthen
 the plants, and prepare them for the following fpring;
 and if after this, there is fome old canners bark laid
 over the furface of the ground between the plants, it
 will be of great fervice to them. in the fl... after
 the danger of hard froft is over, the ground between
 the plants in the beds flould be raked with a narrow
 three-pronged fork, to loofe 'it, and 'erak the
 Oods ^ and in this operation, the tan which was laid
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 ced bcit, is a very fronE Lick earth, approaching
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 (am which ate the moft proper for forcing catlj'
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 epcial care taken to have them from the moft fruitful
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 old plants; they flould be taken off in... mtutnn, and
 each planted in a feparate fmall pot filled with loamy
 foil, and placed in a shady fituation till they have taken
 root; after which they may be removed to an open
 Dtuition, where b' miv remain till the middle or
 end

end of Nov. -rmbcr, when the pis should be plunged into the ground w their rino, to prevent the frost from perictr-iting ih rough the **vide** ot" die pets -, it dtefe are ptacetl near a wall, Dale, or hedge, <- pole -, to an tnft apea, or ju...:i e>it, they will fuceed. Ut-tier titan in a warm lit nation, becaufe they will not be forced coo forward -, **the'daty** care dicy re- . is ro ii-curc th'm tVoni bcin^ turned out of the rfrer fraft The Ipring fo I lo v/ • • . t' s w ill t>efo far advanced as to **have filled ths pots with their roots by the end of April, when they Ihould be turned out en wJ their root* pared i then phmed** into penny jx>i filled with the like loamy foil, and phai cd into the jronnti in a lhaily foliation, where they (hould remain the tblov. inf; **foramen during which time (hey mult be duly kept clean from weeds, and all the runners mult be taken off as faft as they are produced i likcmle if there Qiould bt any flowers come out, tlicy Hould alfobs pinched off, and not Juffered to bear fruit, wiidi would weaken lhc plants, for there cannot b: too much care taken to lue the plants as frong a* poffible, that they may produce plcn, of fruit, without vili b they ire not-worth the trouble of lore**

Aboi the m...le of Oftober, or earlier, if the autumn proves cold, the pots floukl be rmovci.; into a **wanner** fituation, to prepare them tor forcing j for they ihould not be l u i'dciily removal from a very cold fituation immediately into the Itove or hot-bed, but be gradually prepared for It; but where they arc dellgnud for die borders near a hut wall, they may **then** be turned out of the pots, and planted into the borliera, thit they may have time to **got** rrcrlh rooting, before the fire3 **arc** mads to **heat the wills**, when **theft at* JA** ... may be **placed** very clal'c ro each **othct** ... dtCgped to remain there no **r than** till th ... **pened** their fruit, they will not <quire **tnudi** worm, as their roots will **find** liJBcinr nourihmc.r.t below, and alfo from the earrii which is foiled **ioioebe** (spaces between the balia ot earth, about **their** roots-, and it is of **confeqttfncc** to get as mucli **fhA** ss **poffible** in u j'mall (**pace**, where **thit** is an expence to force them early. **tftjle** fires are lighted about Christmas, the Strawberries in **Ae&** **the** Tealoo will be ripe the end of March, or a **the** Tealoo ihould **proW** ... it may be (lie middle of April

eni of the plants theie mud be care **raken** to lupply them **ttith** water when they begin to (hew their flowers, ocherwife they will full offv **producing** uuy fruit -, **3d** **weather**, there (hou! ... **ur** adnii(tt(l to **than** every day •, but a* ftuic-trtes againil (he wall mult be U> trt-ated, the jUmC managenjtnt will ... ll awlwrries.

If the btrawixrnt are inti-ntied to be forced in a ftovr, •where there arc **Pioe-ttptes**, and **M raoin** to [ilunge them in the tan-bed, **tto** **thr** **plani** ... tranl-plann-J into larger pots in September, **that** they may ... J rooted before thiry art removed into the itovc, which Ibuukl nut be ti ... December, Oetober are placed under a frame I ... beginning of November, where they may be forced from the fruit, it will ... re the plants btrier for forci; ... who lrfroiM to have them •.

Ucd under frames, upon wlich t'lity **place** the:: plants ille lar^r end (, ... October, whi i will trng ihcm ud to liuw. ... and then they remove the plants ;v.io the ll ... when thie plants are rriev • J into the flvcs, they fhould be placed as near to the plants as p ... i:ible, thit tl ... they may enjoy the full fun and w r ... for ... jien they a: ... placed ... backward, the plants will d ... the flowers will drop without produ- tiucir^firti: ... As the earth in the pots will dry parity lull wTim ... they ftand dry upon the pavement of the h^:li ... or on flacks, fo the plants mult b-duly watered s but it mult be d ... with discretion, and Not too> jiji: ... given to them, which will be equally hurtful to them, if thie plants are prop ... ly m.i-faged, they will produce ripe fruit in February, •which is as early as most people will chufe to eat ... iherti.

When the fruit is all gathered from the plants, they

Jl:oyH be mined oat of the flow \$ for as they will bft of no farther krvice, **they Qintild** not remain to ake up the room \ nor (houd thofc plsuuu which are planted in the bortiers near die hot walls be Jet- these after their fruit is gatlereii, but **immediately** tai:rn up, that they may rob die fruit-trtes of their nourifiiment as little as poffiWc.

Where tlitre is no conveniency of ftoves, or hot-wails fur this, [jurpofe, the fruit may be ripened upon **common Ewt-bedii** and rhough tln^ miy not bt quite lo early as with the Other advantages, 'm I iiaive ieei; great crops of the fruit ripe in April, which wt.v upon **common** to-lreils **under** frames, and executed at a small c.ipence in riie **following** manner.

The plants were prepared in pots after the manner before dircted, which were **placed in a mnn** Utiation in the beginning of OflobVr, and about Chrirtnm tiu- hot-bed was made in **the GdW** manner as tor Cucumbers, but not (a frong-, and as loon a* the l'rt violent ileam of the dung WOJ over, lbme old rotten dung laid over rlic licit-bed to keep down the heat, or where it can be cafly procured, ncats dung is preferable for thii purpoic ; tKen the pbnts fhould be turned out of **the** [Mts, anil placed upon the bed us clofe together as poffible, filling up **the interftkt** between the plants with earth; afterward the plants mult have air admitted to lifem every diy •, and if th- heat of the bed is too • ... at, the j ... **Btn** Ihould be raifrd up,

TO prevent their roots being feorchcd ; and if the bed is too coWl the fides of it Ihould be lined with fome iiot duns: this firft bed will bring the • plants to flower by the latter end of February, or the bt •

n iing oi **March**, by which time the hear, of t!i- will bt (**pent**, **lf** **faefore**, another hot-bed (hould be nrepartil lo receive the plants, which neel nor be **Ut** llrong **us** the firft ; but upon the l>t dung riouLI be fiiii Ionic neatnng about two inches thick, wiicli mould be equally l'ircod and **DnoW** hed ; this will **prevent die heat of ra*** bed from injuring the roots of the plants, upon thia Ihould be laid two inches ot" a luimiy loil j when this has laid CW • days to warm, **die** plants flioitk! be Dken out Di **the** firft **hot-bed**, and turned carefully out of the pots, **preferviag** all **the earth to rhir** roots, and placed clofe together upon this new -hot-bed, filling up **the vacuities** between the balls with loamy earth: the roots of the plants will foon ftrike out into this fresh carrh, which will strengthen their Rowers, and raule thier fruit to fri inpliiity •, and it proper care is taken to admit frefti air to the **plants, and lopply** ihtcn properly with water, they **will** have plenty of ripe fruit m April, which will be full two months before their **natanl (baton**.

The mctli-; ... practice I to retard this fruit, is firft by planting them in the coldclt part of tht garden, when **they** may be as muh in (hide as. poffible, and **the** foil Ihould be ltrongantcold; when there arc filch places in a garden, tht fruit will be ttotra month later than in a warm fituation t the ncxr is to cut off all the (lowers when they firft ajjpear, and if thefeafon; ... dry, to watts' tii^m plentyrully, wlich will caufe them to'put our a fresh crop of dowers ; and if they are fupplied with water, there will be a btc crop of fruit, but thefe are not lb well flavoured as thole which ripen in their natural (etl ...

13ut fncc the Alpine Strawberry has been introduced in the Englilh gardens, there is little occafion for pne-tifirijj this method of retarding the fruit -, becaufcthis fort will fuj-ply the table the **irhote** funimer, especially if care is tnkeo to pull oR'lie runners; and in dry feafons to water the plants, without which the blol-foms will faiejfT, wiithou; **prodAdng** fruit. **There** arc fomc pel ... **U5astora** iictheplant^ from Iceifo, by wlich the' have greatly improved fomc of the ufes **tand** if this was more prac fj'd, I an often it would be found of fmgularWce.- here the furti! of the fruit of each kind arechofen. The teeds flipuld be immediately fown when the fruit is ripe; the bed was to low the feeds in pots, placing

(Kern i ... the fhade.

In the spring of the year 1724, there was scarce any rain from February till about the middle of July, so that most of the Strawberries and Raspberries in the gardens near London, were burnt up, and came to no perfection; but upon plenty of rain falling in July, they recovered and put out plenty of flowers, which were succeeded by fruit, which ripened in September, when the markets of London were supplied with a great plenty of both those fruits at that season of the year.

FRANGULA. Tourn. Inf. R. H. 612. tab. 383. Rhamnus. Lin. Gen. Plant. 235. [is so called of frangendo, breaking, because of the brittleness of its wood.] Berry-bearing Alder,

The CHARACTERS are,

The *makment of the flower is of one leaf cut at the top into five segments, which are ereSt. The flower hath one petal, which is cut into five acute segments; these are placed between the segments of the empalement, into which they are inferted, but are shorter, and stand ereSt. It hath five stamina, which are the length of the petal, terminated by obtuse summits; in the center is situated a globular germen, supporting a slender Jyik crowned by an obtuse stigma. The germen afterward becomes a round berry, inclojing two plain roundish feeds.* This genus of plants is ranged in the second section of Tournefort's twenty-first class, which includes the trees and shrubs with a Rose flower, whose pointal turns to a berry. Dr. Linnaeus has joined this genus with the Palurus, Alaternus, and Ziziphus, to the Rhamnus, making them only species of one genus; but according to his own system, they should be separated to a great distance from Rhamnus, and be placed in his twenty-second class, because it hath male and female flowers on different plants; whereas it is placed in the first section of his fifth class, from the flower having five (lamina and but one style.

The SPECIES are,

1. FRANGULA (*Alnus*) foliis ovato-lanceolatis glabris. *Frangula with oval, spear-shaped smooth leaves.* Frangula, five alnus, nigra baccifera. Park. Theat. Black Berry-bearing Alder.
2. FRANGULA (*Latifolia*) foliis lanceolatis rugosis. *Frangula with rough spear-shaped leaves.* Frangula rugiflore & ampliore folio. Tourn. Berry-bearing Alder with a larger and rougher leaf.
3. FRANGULA (*Rotundifolia*) foliis ovatis nervosis. *Frangula with oval veined leaves.* Frangula montana pumila faxatilis, folio subrotundo. Tourn. Low mountain, rocky, berry-bearing Alder, with a round leaf.
4. FRANGULA (*Americana*) foliis oblongo-ovatis nervosis, glabris. *Frangula with oblong, oval, smooth veined leaves.* Frangula Americana foliis glabris. Dale. *American Berry-bearing Alder with smooth leaves.*

The first fort grows naturally in the woods in many parts of England, so is seldom planted in gardens; this rises with a woody stem to the height of ten or twelve feet, sending out many irregular branches, which are covered with a dark bark, and garnished with oval spear-shaped leaves, about two inches long, and one inch broad, having several transverse veins from the midrib to the sides, and stand upon short stalks. The flowers are produced in clusters at the end of the former year's shoots, and also upon the first and second joints of the same year's shoot, each standing upon a short separate stalk, on every side the branches; these are very small, of an herbaceous colour, and do not expand; they are succeeded by small round berries, which turn first red, but afterward black when ripe. The flowers appear in June, and the berries ripen in September > this stands in the Dispensary as a medicinal plant, but is seldom used.

The second fort hath larger rough leaves than the first. It grows naturally on the Alps and other mountainous parts of Europe, and is preserved in some gardens for the sake of variety.

The third fort is of humble growth, seldom rising above two feet high & this grows on the Pyrenean Mountains/ and is seldom preserved unless in botanic

gardens for variety & it may be increased by laying down the branches, but must have a strong foil.

The fourth fort grows naturally in North America* from whence I received the seeds; this is pretty like the first fort, but the leaves are longer and broader, they are smooth, of a lucid green, and have many veins. The flowers are very like those of the first fort.

These shrubs are easily propagated by seeds, which should be sown as soon as they are ripe, and then the plants will come up the spring following, but if they are kept out of the ground till spring, the plants will not come up till the year after. When the plants come up, they must be kept clean from weeds till autumn, then they may be taken up and planted in a nursery in rows, two feet asunder, and at one foot distance in the rows, in this nursery they may remain two years, and may then be planted where they are to remain; they may also be propagated by layers and cuttings, but the seedling plants are best.

The fruit of the first fort is often brought into the markets of London, and sold for Buckthorn berries; of which cheat, all such as make use of Buckthorn should be particularly careful; they may be easily distinguished by breaking the berries, and observing how many seeds are contained in each, the berries of this tree having but two, and those of Buckthorn generally four seeds in each berry, and the juice of the latter dies paper of a green colour.

FRAXINELLA. See DICTAMNUS.

FRAXINUS. Lin. Gen. Plant. 1026. Tourn. Inf. R. H. 577. tab. 343. The Ash-tree in French, *Frêne*.

The CHARACTERS are,

It hath hermaphrodite and female flowers on the same tree, and sometimes on different trees. The hermaphrodite flowers have no petals, but a small four-pointed empalement, including two erect stamina, which are terminated by oblong summits, having four furrows. In the center is situated an oval compressed germen, supporting a cylindrical style, crowned by a bifid stigma. The germen afterward becomes a compressed bordered fruit, shaped like a bird's tongue, having one cell, inclojing a seed of the same form. The female flowers are the same, but have no stamens.

This genus of plants is ranged in the second section of Linnaeus's twenty-third class, which includes the plants which have flowers of different sexes on the same or different plants, which are fruitful.

The SPECIES are,

1. FRAXINUS (*Excelsior*) foliolis ferratis, floribus apertis. Lin. Sp. Plant. 1057. *AJh-tree whose smaller leaves are ferrated, and flowers having no petals.* Fraxinus excelsior. C. B. P. 416. *The common AJh.*
2. FRAXINUS (*Rotundifolia*) foliolis ovata-lanceolatis ferratis, floribus coloratis. *AJh-tree whose smaller leaves are oval, spear-shaped, and sawed, and the flowers coloured.* Fraxinus rotundiore folio. C. B. P. 416, *AJh-tree with a rounder leaf, commonly called Manna AJh.*
3. FRAXINUS (*Ornus*) foliolis ferratis, floribus coloratis. Lin. Sp. Plant. 1057. *AJh-tree whose smaller leaves are sawed, and flowers having petals.* Fraxinus humilior five altera Theophrasti, minore & tenuiore folio. C. B. P. 416. *Dwarf AJh of Theophrastus with smaller and narrower leaves.*
4. FRAXINUS (*Paniculata*) foliolis lanceolatis glabris, floribus paniculatis terminatricibus. *AJh-tree with smooth spear-shaped leaves, and flowers growing in panicles at the ends of the branches.* Fraxinus florifera botryoides. Mor. Pral. 265. *The flowering AJh.*
5. FRAXINUS (*Nova Anglia*) foliolis integerrimis, petiolis teretibus. Flor. Virg. 122. *AJh-tree with the small leaves entire, and taper foot-stalks.* Fraxinus ex Nova Anglia, pinnis foliorum in mucronem productioribus. Rand. Cat. Hort. Chelf. *New England AJh with long acute points to the wings of the leaves.*
6. FRAXINUS (*Caroliniana*) integerrimis petiolis teretibus frudu latiore. Prod. Leyd. 533. *AJh-tree with entire leaves and taper foot-stalks.* Fraxinus Caroliniana, latiore fructu. Rand. Cat. H. Chelf. *Carolina AJh with a broad f.*

The first fort is the common Ash-tree, which grows naturally in most parts of England, and is so well known as to need no description. The leaves of this sort have generally five pair of lobes, and are terminated by an odd one, they are of a very dark green, and their edges are slightly sawed. The flowers are produced in loose spikes from the side of the branches, which are succeeded by flat seeds, which ripen in autumn; there is a variety of this with variegated leaves, which is preferred in some gardens.

The second fort grows naturally in Calabria, and is generally supposed to be the tree from whence the manna is collected, which is an exudation from the leaves of the tree. The shoots of this tree are much shorter, and the joints closer together than those of the first fort; the small leaves are shorter, and deeper sawed on their edges, and are of a lighter green. The flowers come out from the side of the branches, which are of a purple colour, and appear in the spring before the leaves come out. This tree is of humble growth, seldom rising more than fifteen or sixteen feet high in England.

The third fort is a low tree, which rises about the same height as the second; the leaves of this fort are much smaller and narrower than those of the first, but are sawed on their edges, and are of the same dark colour. The flowers of this fort have petals, which are wanting in the common Ash.

The fourth fort was raised by the late Dr. Uvedale at Enfield, from seeds which were brought from Italy by Dr. William Sherard, where the trees grow naturally; but it was supposed to be a different fort from that mentioned by Dr. Morrifon, in his *Præsentia Botanica*, but by comparing them together they appear to be the same.

The leaves of this fort have but three or four pair of lobes (or small leaves) which are short, broad, and smooth, of a lucid green, and irregularly sawed on the edges; the midrib of the great leaf is jointed, and swelling where the leaves come out. The flowers grow in loose panicles at the end of the branches; these are most of them male, having two stamens in each, but no germen or style; they are of a white herbaceous colour, and appear in May. As this fort very rarely produces seeds in England, it is propagated by grafting or budding it upon the common Ash.

The fifth fort was raised from seeds, which were sent from New England in the year 1724, by Mr. Moore. The leaves of this tree have but three, or at most but four pair of lobes (or small leaves) which are placed far distant from each other, and are terminated by an odd lobe, which runs out into a very long point; they are of a light green and entire, having no serratures on their edges: this tree shoots into strong irregular branches, but doth not grow to a large size in the trunk. It is propagated by grafting it upon the common Ash.

The sixth fort was raised from seeds which were sent from Carolina in the year 1724, by Mr. Cateby. The leaves of this fort have but three or four pair of lobes, the lower being the least, and the upper the largest; these are about five inches long and two broad, of a light green colour, and (slightly sawed on their edges; the foot-stalk, or rather the midrib, of the leaves is taper, and has short downy hairs; the seeds are broader than those of the common Ash, and are of a very light colour. As this fort hath not yet produced seeds in England, it is propagated by grafting it upon the common Ash.

These trees are now propagated in plenty in the nurseries for sale, as there has been of late years a great demand for all the hardy sorts of trees and shrubs, which will live in the open air; but all those trees which are grafted upon the common Ash, are not so valuable as those which are raised from seeds, because the stock grows much fatter than the grafts; so that the lower part of the trunk, so far as the stock rises, will often be twice the size of the upper; and if the trees stand much exposed to the wind, the grafts are frequently broken off to the stock, after they are

grown to a large size, which is a great disappointment to a person after having waited several years, to see their trees suddenly destroyed. Besides, if the wood of either of the sorts is valuable, it can be of little use when the trees are so raised.

The fourth fort is generally planted for ornament, the flowers making a fine appearance when they are in beauty, for almost every branch is terminated by a large loose panicle; so that when the trees are large, and covered with flowers, they are distinguished at a great distance.

All the other sorts serve to make a variety in plantations, but have little beauty to recommend them; and as their wood seems to be greatly inferior to that of the common Ash, so there should be few of these planted, because they will only fill up the space where better trees might grow.

The common Ash propagates itself in plenty by the seeds which scatter in the autumn, so that where the seeds happen to fall in places where cattle do not come, there will be plenty of the plants come up in the spring; but where any person is desirous to raise a quantity of the trees, the seeds should be sown as soon as they are ripe, and then the plants will come up the following spring; but if the seeds are kept out of the ground till the spring, the plants will not come up till the year after, which is the same with all the sorts of Ash; that when any of their seeds are brought from abroad, as they seldom arrive here before the spring, the plants must not be expected to appear till the next year; therefore the ground should be kept clean all the summer where they are sown, and not disturbed, lest the seeds should be turned out of the ground, or buried too deep to grow; for many persons are too impatient to wait a year for the growth of seeds, so that if they do not come up the first year, they dig up the ground, and thereby destroy the seeds.

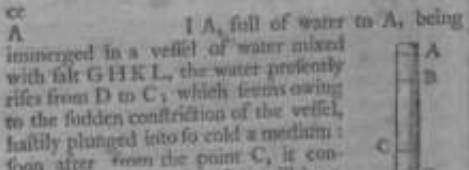
When the plants come up, they must be kept clean from weeds during the summer; and if they make good progress in the seed-bed, they will be fit to transplant by the autumn; therefore there should be some ground prepared to receive them, and as soon as their leaves begin to fall, they may be transplanted. In taking them up, there should be care taken not to break or tear off their roots; to prevent which, they should be taken up with a spade, and not drawn tip, as is frequently practiced; for as many of the plants which rise from seeds will outstrip the others in their growth, so it is frequently practiced, to draw up the largest plants, and leave the smaller to grow a year longer before they are transplanted; and to avoid hurting those which are left, the others are drawn out by hand, and thereby many of their roots are torn off or broken; therefore it is much the better way to take all up, little or big together, and transplant them out, placing the larger ones together in rows, and the smaller by themselves. The rows should be three feet asunder, and the plants a foot and a half distance in the rows; in this nursery they may remain two years, by which time they will be strong enough to plant where they are to remain; for the younger they are planted out, the larger they will grow; so that where they are designed to grow large, they should be planted very young; and the ground where the plants are raised, should not be better than that where they are designed to grow; for when the plants are raised in good land, and afterward transplanted into worse, they very rarely thrive; so that it is much the best method to make the nursery upon a part of the same land, where the trees are designed to be planted, and then a sufficient number of trees may be left standing upon the ground, and these will outstrip those which are removed, and will grow to a larger size.

Where people live in the neighbourhood of Ash-trees, they may supply themselves with plenty of self-sown plants, provided cattle are not suffered to graze on the land, for they will eat off the young plants, and not suffer them to grow; but where the seeds fall in hedges, or where they are protected by bushes, the

plant* will come up and thrive, and in the hedge
the rtroicqirtly-arc permitted mgrowl
rfdboyed the hedge, ibr there is karcc uuyi nee fo
hurtful i- all kinds of vegetables « *c All> whjcl
rots ever, plant of i- naurifhflrm within UK reach
of in rooti, there tore lliould nciw be iutFm-d to grow
in hedge rows for they nor only kill the hedge, but
impovcrifh Com, or wharf icverbfowi KW them. Nor
fliould Alh-trees be permitted to grow near p>fture
grounds, for if any of the trovi wr of the lcuw« or
Swots ofhlc Afli, ill the butter wh, always made of their
milk will be rank and of no value i which is
inequality (if the butter whkha iune about (mi kl-
forct Gtdalmin, Bid fane other parts or Surry, where
there sre AJh-trees growing about all their pal
ib that it is vtry rue to meet with any butter i
places which is fit to esc; but in ill tile good dairy
countries, they never (ulier an Afh-cree to pom
If a wood of thefc trees is riglnl managed, n "ill
turn greatly to the advantage of its owner: for by
the under-wood, Whid: will be Ss 10 em*** ftwn
or eight years, for poks or hoop, there will tie a
continual income more than foffidenco I'f/F.^^^
of the ground, and all other charge-, and It ill there
• will be a ftoek prefcrvwl for timber, which m a few
year will be worth forty or fifty Mling* permc.
"This timber is of excellent ufe to the whedwn-h
and cartwright, for ploughs, axlc-m«, whsd
harrows, bulls, oars, blocks for pull** and many

TheTft^fon for felling of t&efc tr<fa from
November w February -, & if it be done either too
early in autumn, or too lite in the rpnnng, the nmbcr
will Lie Cujcft to be mfectd whh worms, and other
infests; but for (optRft polknb, the ipring is pre-
ferable for all foft woods.

FREEZINGS the fixing of a fluid, or the de-
priving it of its natural mobility by the aflionof cold ;
or itUthe *£ of converting 9 fluid fubftonce into a
firm, cohernt, rigid one, wlrfr i<
The principal phenomena of freezing are,
•ft That Water being dD<Rd or r*rrhd, and all
fluids oil except, i. L. in frying take w more
fp.ee, Hid are f*rifical!y lifter than theywere
that the bulk and dimenfwnsol water arc inc
bv freezing, is found by many openmcrai, tai «
S.yTot bf improper h« to nkc note.ee of the pro-



S2S^fr5
me * faX w remain
S
& foon>fter, by « tkto
mounts rthi&tw and here tht «W to I p
ITSi^ei; fear, A/ thick ud cloudy, | ^
and, in the ven- infant of this K. !
con'rted into ice. Add, th<wtefe the
ice bgrowing harder, and f,m>.h ^
rer b continued abncv B towans A, and B top"
rum v of Cheque, but
silly not on
allo of Lf absolute gravity, by
when they are thousand again, they are w
ably lighter than before.
gdy, That frozen water is not quise fo transparent
as when it was liquid, and that bubbles do not perfure
fo freely through it.
thly, That water, when frozen, evaporates almost
as much
gdy, does not freeze in vacuo, but re-
quires the prefeno: a>d contiguity of air.

only, That water which lists been boil<l, does not
freeze fo readily as that which has n<in.
?thly, That water, being covered over with a fjr-
face i i oil of Olives, does not freeze fo readily as it
does vithout it, and that not oil absolutely pref;rvcs
ii under » !*• of foft, when Olive oil w<ll not.
tkhlj, That h<ure a w.nc, nut oil, and oil of tuipen-

ylily, That the turfite of the water, in freezing,
appears all wrink lud ; the wrinkles being form' zies
in pan ille lines, and tujetmes like rays proceed
from a center rath static m e t
The theories of f< czinsr, or the mctliod of account-
ing for thefc ptucnomena, are very many.
The chief principles thai different authors have gone
upon, an-, either that some foreign mirier is intro-
duced within ih' jores of the fluid, by means of
which it is fixed, its bulk increased, &c.

Or that fiime mflter which nas nature Uy contained
in the fluid is now expelled, b y reason of the abfence
of Which, the body bet ones fixed.
Or a rin e is some alteration produced in thecn-
[Ort or form, either of the parade] of the fluid iri-if,
or of romething (hat is contained within it.
To some one of thefe principles all die fyftems of
freen •:<Tnr reducible
The (SraBans explicate ("reining by the rcefs or
going out of the i<terial mot' cerfirwm the pore* of*he
water, or other liquor-, which being onc'done, the
liner parts arc too imJl and flexible to keep the long,
(ender, and eel-like part&la of water UCB^ or in
tLk-iormafaliquor.

But the Corpufcularians, or Gafendiib, afenbe the
fttBDn of W;UCT, wrth more probability, to the in-
gers ofmultituede of cold or frignonfc p;rticla, as
they call them j which, entering the licjvior in fwaTms,
and difperfhg themfelves evtry wiy through it, croud
into the parti of the water, and hinder die wonted
agiadon of iti parts, mnd wedse « "Pi ai ic were,
into the hard or confitent body of iccj tad from
hence proceeds its increale of dimenfion, coldneft,

That ice is fpecific ally lighter than tSe water out of
which it is by freezing made, is terrain by its fwim-
ming in it, and ihit this li'itnefi of ice proceeds
from thofe iLumerous bubbles which are produced in
it by its congelation, is equally pljin ; but ho! these
bobbles rtime to be generated in treeing, and what
fubftance they confit in them, if they are not quite
empty, is an inquiry of great importance! and, per-
haps, if til'covered, may comribu tuuch to the un-
derftan jing the nature nf cold.

Mr. Hobbt5 will have it common air, which, in-
truding into the w.ter in congelation, entangles their
vriti the particle* of the fluid, prevent", their mown,
Bnd p, reduces thofe numerous i•nbblet, thu expanding
its btdk, and rendering it fpecifically lighter.
But, in anlwr » this, TM jach jogen of « tr into
water app^n in irs copulation ; and thit it does not
"et into frozen oil in p<ll: because that body is con-
denied by being frozen.
And Mr. Boyle has affi> fhewn, by imdoubted ci-
nerimeWH that water will freeze i. vellels hermeti-
cally foiled j »>d in bi
tfoppcl, a "fince willin the ail can have no ingrafs,
h;iii yet been tamed into ice, abounding with thofe
bubbles as numerous as thofe frozen in the open
air.
He idfc h.< pn>vi by exper mntnt t'l> water kept
ft while in the exhmfied receiwr, till all it* bubbles
were emerged and gone, being afcei i into
the ^ a freezing m> wre> [w; ice hail lcarce any
bubbi" in it, whence it it plain, t! «at»
are li)"l with fome nutterwhmJ) t< within
if they are lllkti with any thing. But he proves al K<.
by p. tin experiments, that they have none, or ex-
cwlim-ly little, emc ctatic «r amtaned in them.
Others; and thrfe of the greatr number, are of
opinion, that the freezing mamr l1 a fait; and they
arcue that an e*cefc of cold « ill render water harder,
but never congeal i: without lilt: they fay that tfofc
panicle*
5 S

particles that it are the chief caulcof freezinp are finlinc, mase: in a doc proportion, congelation bearing a near relation ; • i ryflattiaftwn.

This lilli is liij'pofrd 10 be of the nitrous kind, and to be funilicid by the air, which is generally found to abound in nitre.

It is indeed no diijicult matter, to account fur the particles of nitre preventing the fluidity of water. Theft panicle arc luppold to be fo many rigid pointed fpiculn, which arc cafily impelled or driven into the fiamina or globules of water; which, by this means, becoming varioufy mingled and entangled wiih it, do, by degrees, weaken and deftroj the motion of it.

The Fedbfl that this effect arifh only in l'evere winter weather, is, that it is then only that the retracing action oi' the nitrous rpicula is more than equal to the power or principle by which the fluid is otherwile kept in motion, or dilpold for motion.

Several experiments of artificial freezing fupport tiii* opinion.

For if you mix a quantity of common faltpetre with f'now, or ice pulverized, and difflve the mixture in the fire, and then immergc a tube full of water in tin-fetation; the water, that part of it next the mixture, will freeze pfcntly, even in a warm air.

Whence they argue, that die l'picuh of the fait are driven through the pores of tlieglafs, and mixed with the •rater, by the gravity of the mixture, and of the inLiinbent air; for fhac it is evident, that the fait has this effect, in at much as it is certainly known, that the particles of water cannot find their way through xhe pores of the glafs.

In ihclb artificial freezings, in whatever part the mixture is applied, there is pfcntly a (Un or lamina of ice produced, whether at the top, bottom, or fides, by rrafon that there is always a Rock of lalinc corpufcles, fufficient to overpower the particles of fire; but natural congelations are confined to the top of the water, where the lair, moft abounds.

But this fyltem is oppofcd by the author of the Nouvelle Conjecture pour expliquer la Nature de la Glace, who objects, that it docs not appear, that the nitre m enters the compofition of ice -, but if it did, it would tjll flort of accounting for fome of the principal effects -, as,

1 In*- fhmiJ tie particles of nitre, by entering the pores of the water, and fixing t!- parts, caufe the water • ro dilate, and render it fprurioilly fighter? They flouid naturally augment its wcis

This and fome other difficulties, (heir the a occafity of a new theory ; and therefore the ingenious author advances this which follows, which jhttnomena in a manner that ismoreciiy and fimple, as not depending ujjon the aJ million <>y t\ u lion of any heterogeneous matter.

lhi- water freezes in the winger only, becaufr its parts, then being more dolL-y jomed tothmer, mutually embarrais one another, and that tlic air, or rather an alteration in the fpring and force of the air, h the caufe of this clufer union of water.

It is evident from experiment, that there arc an infinite number of particJcs of giols air inteif-jrkd araoi! the gales of water; and it is allowed, that each particle of air has the virtue of a font.

licnce this author argues, that the fmall fprngs of grofs air, mixed witi water, have more force in cold winter weather, and do then unbend themselves more, than at other times. Hence thofe i'prir unbending thcinklves on or.efidr, and thcexti continuing

Surface of the water on the other, the particles of tlie water, being ill con-ftrnged and lod kod up together, mull KHC their motion ind (uiddy, ami form a hard, confident body, till a relaxation (the fpring of the air, from an increafs of heat, reduce the pai ticles to their old ctimenlioni, ir.d leave room for the gale to flow again;

But this fyltem leems to be built upon a fulc prin-

ciple, for the tying or tlafticity of the air is ; crtaicd by cold, but dimini(hi:di ur ctwuient cold, and exjtands ltfelf by hrat; and it ii di ftrable in pneumatics, tliu the elailk forte oi i , ptnoed air is to that of LIC finne air condenfed, ri the bulk when rarefied is to its bulk when oodei Indeed, fome authors, in order to account . increafcof the bulk and dimenfton of the l'pciiSc gravity of frozen water, have advanced as follows, ris. That the aqueous particles, in their natural itaw, were nearly cubes, and fo filled their fpace without i, terpofition of many pores ; but that they are c! from cubes to l'phtres, by congelation, from v it will necclUtrily follow, that there mult be a gtrjt deai of empty fpace between them.

But, in oppoliuon to this hypothees, the nattirt: of fluidiry and Bratnefi cally fuggcltt, thit fpherical partieei are much pnpvrcr to conftitute a fluid than cubical ones, and lets dilpold to form a iiaal than cubic one.

But after .til, in order to come to a confident theory of freezing, we mufl either have recourfe to the fr-"oric mawer of the Corjmfcularians, confidered uider tlic new light and advantages of the Newtonian philofbphy, Or to the ethereal matter of the CaneA-ans, under the improvtments of Monf! Gsuteron.

The true caul"; of treeeing, or the congelation I water into ice, lay the former, fecms plainly to be the introduction oi the frigorific particles into the pores or interfaces between the particles of rhe water, and by that means getting fo near them, u to be juft within the ipheres of one anotlier's at! rifting force, and then they mult cohere into one folid or firm body •, but heat afterwards fpirating tlien, and putting them into various motions, breaks this union, and feparaKi the i particles & . far from one another,

that they get out of the diftance ofthe attracting force, and into the verge of the rcjjielling force, and wen the water re-affliimes its fluid form.

Now, that cold and freezing proceed from fbmc fub-lbncc of a filinc nature floating in the air, feems probable from hence:

That nil fait?, and more eminently fame particular ones, do prodgtiouly increale the force and eff< of cold, when mixed with (how or ice, it is ailb evident, that all fjline bodiet | produce a fl llhcsand r: gidity in the paru of tin. • bodies into which they enue.

It appears, by nikrofcopical ubfervations upon falo, dial the figure of foim licks, before they be K in, o niaffeE,arc thin, duubl< • wenged, like parliUrs which have abundance a furface, in tclpeli to their lolidity ; and is the reafun why tlity fwim in water, when once r.iifed in it, thotij • fpeculically heavier.

Their fmall i points, gen tug inco lie porei of tlie water, whereby they an able, in fome meafure, fuf-pended in the winter time, when tJ heat of • be fun as no: (jr'i:mrly ftrroc • wough to diOWve ihr fairs into a fluid, to break tlic points, and to keep them in perpetual motion, being Ic6 diturbed, arc at more Liberty to approach one inDtber i and, by ihooring into crydais of the form aboi/t-mentioned, d •, by both their extremities, infinuai themselves into the purw of die water, and by tliat means freeze it into % folid form. And it ii apprcnt, that the dim en (ion* of WIKT are increaicd by freezing, the partitles of it being kept at lbme diAance from one another, by the intervention of the frigorik matter.

But belicta this, tie« *fe many little volumes, or finall particles of air, included at leveral difta b;ith in the pore* of the wait ry panicles, and

ces foniH-d by their fpl. Now, Tj the infinuation of the cryftan. the vulmci of air an: driven otit of the watery pfniclet, and many of them uniting, form tar er volumes, ••• h thereby b a greater force tq]fipand thcmlelvw than when they arc difperiedi a ra both enlarge the dinicnfotis, and il'en the fjieicfic gravity of watef thus congealed into ice.

And h • (fays Dr. C. r-ynr, from whom AM lafl account is taken) we may guef at J)K rranner boa wa-

ter, impregnated wiili fats, fulphurs, or earths, which are 100l wfiu diffiilvabl, may form itfelf into mixals, minerals, gums, and other (bflik; the parts of thef mixture* becoming a cement 10 the pa of water, or getting into their pores, diangc them inio tliije dffiereni lubllances.

tor ihe- fecund- as an ethereal matter or medium is generally allowed to be the caule of die motion of fluids, and as the air itfelf fiat all its morion fwn thi- fame principle, it follows, thur: all linkla nuill reni.iin in a fiate of refc or fixity, when that maner lo ici necefiiry fonct. And co nfcqciucly, the a< ; lefs vanned in the "inter tune, by real'on of the ob- liquity of the fin rays, is more denfc and fixed in winter than any tidier fealou of the year.

But farther: I is evident, from divers experiments, that the air doc-, contain a fait which u fuppoted to be of the nature «i" nitre. If this be grameii, and the denfity of the air allowwi, it will follow, tint the pinkies L' this nitre mull likewik; I brought nearer together, and illitkened by the condert- tion of the air; as on the contrary, a ratrficcion o' the air, and an augmentation of its fluidity, moil divide and (e- pame them.

And if the ferae happens to all liquors that liaw im- bided or illululvci any the li- quid keep the fill <w< and if the cool- nefs of a cellar, or of ice, auk die particles of the diflblvd ffl to approach, tun into taih other, and fnuot into • which is al- lowed to tic a luid, L« onm : gtiwral law cffitfr.

It is true, that the nitre of the air, being gn cold weather than in hot, muil have a left velocity, but dill the product at' i« augmented rmb into the velocity that remains, will give it a greater momen- tum-, ur quantity of tnot ion. Nor is here any thing farther required to mate this hit art with greater force againil the parts of fluids, and this may proba- bly bo die caule of the great cvajKiracfoii in Imly tpeather.

TiLs aercal nitre inuft ivceflarily promote tilt con- cretion of Equidsi for it is not the ait, nor yet the nitre that it contain OH to Htiids^

it is the ethereal medium, therefore a diminu- :hc motion of retl atULs from the diminution of ilm force-

Now the ethereal matter, which in the winter time is weak enough, niull tULL I >« by itsaCi; an agual air condensed, and luid: 1 with large pardd of fal. It must therelc ircltrfe ut' its force in cold weather, and betnmc Iciu difpofcJ to maintain the motion of the fluids.

In line, the air, during trail, jm> >1 like the ice imi with felt wherewith titan their i i luramet lime, ft a very probable th«

liquors fro U by reaKn of B diminution of the. moion of the ethereal iii-diu'i, by its acting againft the ict- and Ult together, and d:e air is not able to prevent its concretion by all its forchrng hear.

water, and impregnated wkii fairs oi difirent kinus, it is n thai wtuu happen* in water im- litrgnatfd with fij wj tl&lumpen in the air. folvd in lun water, they iWated uodif •••

it, and retained a capacity to act in conjunction upon it, and yet when the liq uee become •••••

the i fine particles of one kind being • no longer agii: iieat, Ihot i: : parat-

ted tin iinued fluid i

England in December 1672. The air in the west of in, as fuon as as a bough,

mu

immediately froze into ice, whlioui IJitkii^; into the fhtxr at all

It made an incredible destruction of trees tryered any tiling in si i iury. A certain gentleman weighed a lpoie of an Ash tree of juft three quarters of a pound, rhc ii i

till tl; understood that it was the cluster of ay voughs dashed against each other.

Dr. Beale remarks, that there was no confiderrable froft observed on the ground during the whole time; whf.iu- ht concludes, that a froft may be very fierce and dangerous on the tops of filtrc filli and plains, while in other places it keeps at 1000, the'e, of four fett dilance above (IK ground, rivers, lakes, &c. and in y wader jtwut very inious in k;mr; paces, and reiiiils in otlieri not tar off. The fir was fol- lowed by g! of Ho!!.

PR] PILL • R 1 •• Lin. Gen. Plant, 372. ruLiru, Intl. K. H 376. tab. 201. Corona Imperialis. Tnim. Inlb R. il •• • 197, 198. Frutillary, i Che- quera d Tulip BDeCrowi Imperial.

"IVL'si-M- .FJ.BS are, The war bath w tnpalms; U tie is,ictl-Jlaj"il, andjprtmAmz at tit ••• at the bitfe fimstr hub J..

is jüitatt an eikitx tbr&wntrd ^rncit, fappvrtng a fnyk vbiib is lengtr ibsn tbt JltiiiiHt, trevixtJ iy a sprta&n* obluftfirma. Tbigumtn afstirmird h- cmis as ubhni otpfst with ••• fewnjf lint lOtt ubict ore jiljrti mHh fat fffd, rangtd ia o douile

The capfule of FritUhrta is oblong and fmooth, but tiat of ConiM Imperialis hath acuce borders, Or membranaccuu-iv.

This genus of plants is ranged in ilic fuff fiction of Lbm<B*1 I: which hwludel the plam »••• have lix Ilniina in their flower*, and boi two genera of Fiutillary and Crowi Imperial, have been always feperated, till Dr. Linn has joined them together; bdeed by their flow they may be properly enough placed in the fame genus; but, if their fruit may be all : ved as a characteristic note, they fhould be feperat; however, as this new illem ij gti raly received, I fhall, in cjinpliancc with the ptefcnt tafte, join them tygcti.

The fevenc are, 1. FRUTILLARIA (Alyce) folis lanceolatis alternis; flor- rtbus terminalih

2. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

3. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

4. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

5. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

6. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

7. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

8. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

9. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

10. FRUTILLARIA (Alyce) folis lanceolatis alternis; floribus terminalibus. Frutillaria picea, purpurea, variegata C. P. 64. Tany, &c. variegata, dispersa Tany.

8. FRITILLARIA (*Imperialis*) racemo comofo infernè nudo, foliis integerrimis. Lin. Hort. Upfal. 82. *Fritillary with a tufted bunch of leaves over the flowers which is naked below* and entire leaves.* Corona Imperialis. Dod. Pempt. 202. *Crown Imperial.*

9. FRITILLARIA (*Regia*) racemo comofo infernè nudo, foliis crenatis. Lin. Sp. Plant. 303. *Fritillary with a tufted bunch of leaves over the flowers* which is naked below* and crenated leaves.* Corona regalis lilii folio crenato. Hort. Elth. n. o. *Royal Crown with a crenated Lily leaf.*

10. FRITILLARIA (*Autumnalis*) racemo infernè nudo, foliis oblongis mucronatis. *Fritillary with a naked stalk, and oblong pointed leaves.*

The first fort grows naturally in Italy, and other warm parts of Europe; and from the seeds of this there have been great varieties raised in the gardens of the florists, which differ in the size and colour of their flowers; and as there are frequently new varieties produced, so it would be to little purpose to enumerate those which are at present in the English and Dutch gardens, which amount to a great number in the catalogues of the Dutch florists, who are very fond of any little distinction, either in the colour or shape, to enlarge their lists.

The forts which are here enumerated, I think may be allowed as distinct species, notwithstanding Dr. Linnaeus has reduced them to five; for I have raised many of all the forts from seed, which have constantly produced the same as the seeds were taken from, and have only differed in the colour or size of the flowers; for the fort with broad leaves produced the same fort again, and the umbellated and spiked forts produced the same, though there are several varieties in the colours of their flowers.

The first hath a round compressed root, in shape like that of Cornflag, but is of a yellowish white colour; the stalk rises about fifteen inches high, having three or four narrow long leaves placed alternately, and the top is divided into two slender foot-stalks which turn downward, each sustaining one bell-shaped inverted flower, composed of six petals, which are chequered with purple and white like a chess-board; and in the center is situated a germin supporting one style, crowned by a trifid stigma, the six stamens stand about the style, but are shorter. At the bottom of each petal there is a cavity, in which is situated a hedtarium, filled with a sweet liquor; after the flower is fallen, the germin swells to a pretty large three-cornered blunt capsule, and then the foot-stalk is turned and stands erect; when the seeds are ripe, the capsule opens in three parts and lets out the flat seeds, which were ranged in a double order. The flowers of this appear the latter end of March or beginning of April, and the seeds are ripe in July. There is a variety of this with a double flower.

The second fort grows naturally in France, the leaves of this are broader, and of a deeper green than the former; the lower leaves are placed opposite, but those above are alternate, the stalk rises a foot and a half high, and is terminated by two flowers of an obscure yellow colour, which spread more at the brim than those of the first fort, but are turned downward in the same manner. This flowers three weeks after the first. There is a variety of this with greenish flowers, which grows naturally in some parts of England.

The third fort seldom rises more than a foot high, the leaves are narrow like those of the first fort, but are shorter, each stalk is terminated by three or four flowers, which arise above each other; they are of a very dark purple, chequered with yellowish spots. This flowers in April, about the same time with the second.

The fourth fort rises about a foot high, the stalk is garnished with spear-shaped leaves four inches long and one broad, of a grass-green colour; these are sometimes placed opposite, but are generally alternate the stalk is terminated by one large bell-shaped flower of a yellowish colour, chequered with light

purple. This fort flowers about the same time as the first. There are two or three varieties of this, which differ in the size and colour of their flowers and the breadth of their leaves, but retain their specific difference, so as to be easily distinguished from the other forts.

The fifth fort rises a foot and a half high; the stalk is garnished with shorter and broader leaves than the first fort, which are of a grayish colour; the flowers are produced round the stalks like those of the Crown Imperial; they are of a dark purple colour, chequered with a yellowish green. This flowers about the same time with the second fort.

The sixth fort is commonly called the Persian Lily, and is supposed to grow naturally in Persia, but has been long cultivated in the English gardens, the root of this fort is round and large, the stalk rises three feet high, the lower part of it is closely garnished with leaves which are three inches long, and half an inch broad, of a gray colour, standing on every side of the stalks, but are twisted obliquely; the flowers grow in a loose spike at the top of the stalk, forming a pyramid, they are shaped like those of the other species, but are much shorter, and spread wider at their brims, and are not bent downward like those. They are of a dark purple colour, and appear in May, but are seldom succeeded by seeds in England, so are only propagated by offsets.

The seventh fort hath a much shorter stalk than the last, but is garnished with leaves like those, only they are smaller, the stalks branch out at the top into several small foot-stalks, each sustaining one dark coloured flower. This is commonly called the small Persian Lily, from its resemblance to the former fort. These plants are propagated either by seeds, or offsets from the old roots; by the first of which methods new varieties will be obtained, as also a larger flock of roots in three years, than can be obtained in twenty or thirty years in the latter method; I shall therefore first treat of their propagation by seeds.

Having provided yourself with some good seeds, saved from the fairest flowers, you must procure some shallow pans or boxes, which must have some holes in their bottoms to let out the moisture; these you should fill with light fresh earth, laying a few pot-sheards over the holes, to prevent the earth from flopping them; then, having laid the earth very level in the boxes, &c. you must sow the seeds thereon pretty thick, covering it with fine sifted earth a quarter of an inch thick. The time for sowing the seed is about the beginning of August, for if it be kept much longer out of the ground it will not grow; then place the boxes or pans where they may have the morning sun until eleven o'clock, observing, if the season proves dry, to water them gently, as also to pull up all weeds as soon as they appear; for if they are suffered to remain until they have taken deep root into the earth, they would draw the seeds out of the ground whenever they are pulled up. Toward the latter end of September you should remove the boxes, &c. into a warmer situation, placing them close to a hedge or wall exposed to the south, if they are sown in pots, these should be plunged into the ground, but they are best in tubs, these should be covered in severe frost. In this situation they may remain until the middle of March, by which time the plants will be come up an inch high; you must therefore remove the boxes, as the weather increases hot, into a more shady situation; for while the plants are young, they are liable to suffer by being too much exposed to the sun: and in this shady situation they may remain during the heat of the summer, observing to keep them clear from weeds, and to refresh them now and then with a little moisture; but be careful not to give them much water after their leaves are decayed, which would rot their roots. About the beginning of August, if the roots are very thick in the boxes, you should prepare a bed of good light fresh earth, which must be levelled very even, upon which you should spread the earth in the boxes in

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Which the small roots are contained, equally covering it about one fourth of an inch thick with the same freit earth: this bed should be situated in a warm position, but not too close to hedges, walls, or pales, which would cause their leaves to be long and slender, and make the roots weaker than if placed in a more open exposure.

In this bed they may remain until they flower, which is generally the third year from sowing; at which time you should put down a mark to the roots of all such as produce fair flowers, that at the time of taking them out of the ground (which ought to be done after their green leaves are decayed) they may be selected into a bed amongst your old roots of this flower, which, for their beauty, are preserved in the best gardens; but the other less valuable flowers may be planted in the borders of the parterre-garden for their variety, where, being intermixed with other flowers of different seasons, they will make a good appearance,

The fine sorts of this flower should remain undisturbed three years, by which time they will have produced many offsets; and should be taken up when their leaves are decayed, and planted into a fresh bed, taking such of their offsets as are large enough to produce flowers to plant in the flower-garden; but the smaller roots may be planted into a nursery-bed, until they have obtained strength enough to flower, but you must never suffer these roots to lie out of the ground when you remove them, but plant them again immediately, otherwise they will perish.

During these three years which I have advised the roots to remain in the beds, the surface of the earth should be stirred every autumn with a trowel, observing not to go so deep as to bruise the root, and at the same time lay a thin cover of very rotten dung or tanners bark upon the surface of the beds, which, being washed into the ground, will cause the flowers to be larger, as also the roots to make a greater increase: you must also observe to keep them constantly clear from weeds, and those roots which you would preserve with care, should not be suffered to feed.

When a stock of good flowers are obtained, they may be preserved and increased in the same manner as other bulbous rooted flowers, which is by offsets sent out from their roots, which should be taken off every other year from the finest sorts; but the ordinary flowers may remain three years undisturbed, in which time they will have multiplied so much, as that each root will have formed a cluster; so that if they are left longer together, the roots will be small, and the flowers very weak, therefore, if these are taken up every other year, the roots will be the stronger. These roots may be treated in the same manner as Tulips, and other bulbous rooted flowers, with this difference only, that the roots will not bear to be kept out of the ground so long; therefore, if there should be a necessity for keeping them out of the ground any time, it will be best to put the roots into sand to prevent their shrinking.

As these flowers come out early in the spring, they make a pretty appearance in the borders of the pleasure-garden, where they are planted in small clumps; for when they stand single in the borders, they make but a poor figure.

The eighth sort is the Crown Imperial, which is now very common in the English gardens. This grows naturally in Persia, from whence it was first brought to Constantinople, and about the year 1570, was introduced to these parts of Europe, of this flower there are a great variety now preserved in the gardens of florists, but as they have been produced accidentally from seeds, they are but one species; however, for the satisfaction of the curious, I shall here mention all the varieties which have come to my knowledge.

1. The common Crown Imperial; this is of a dirty red colour.
2. The yellow Crown Imperial; this is of a bright yellow.
3. The bright red Crown Imperial, called Fufai.

4. The pale yellow Crown Imperial.
5. The yellow striped Crown Imperial.
6. The large flowering Crown Imperial.
7. The broad leaved late red Crown Imperial.
8. The double and triple crowned Imperial Crown.
9. The double red Crown Imperial.
10. The double yellow Crown Imperial.
11. The silver striped leaved Crown Imperial.
12. The yellow striped leaved Crown Imperial.

There are some few other varieties which are mentioned in the catalogues of the Dutch florists, but their dimensions are so minute, that they are not distinguishable, so I shall pass them by, as those here inserted are all that I have seen growing either in England or Holland, which deserved any distinction.

The Crown Imperial hath a large round scaly root of a yellow colour, and a strong odour of a fox; the stalk rises to the height of four feet or upward; it is strong, succulent, and garnished two-thirds of the length on every side, with long narrow leaves ending in points, which are smooth and entire; the upper part of the stalk is naked, a foot in length, then the flowers come out all round the stalk upon short footstalks, which turn downward, each supporting one large, spreading, bell-shaped flower, composed of six spear-shaped petals; at the base of each petal is a pretty large cavity, in which is situated a large white nectarium, filled with a mellous liquor. In the center of the flower is fixed a three-cornered oblong germen, upon which sits the single style, which is the length of the petals, and is crowned by a spreading obtuse stigma; round the style there are six awl-shaped stamina which are shorter than the style, and are terminated by oblong four-cornered summits. These flowers hang downward, and above them rises a spreading tuft of green leaves, which are erect, and from between these come out the footstalks of the flowers: when the flowers decay, the germen swells to a large hexagonal capsule, shaped like a water-mill, having six cells, which are filled with flat seeds. This plant flowers the beginning of April, and the seeds are ripe in July.

The sort with yellow flowers, that with large flowers, and those with double flowers, are the most valuable; but that which hath two or three whorls of flowers above each other, makes the finest appearance; though this seldom produces its flowers after this manner the first year after removing, but the second and third year after planting, the stalks will be taller, and frequently have three tier of flowers, one above another, which is called the Triple Crown. The stalks of this sort frequently run flat and broad, when they produce a greater number of flowers than usual, but this is only a luxuriance of nature, not constant, though many of the writers have mentioned it as a particular Variety;

As this is one of the earliest tall flowers of the spring, it makes a fine appearance in the middle of large borders, at a season when such flowers are much wanted to decorate the pleasure-arden: but the rank fox-like odour which they emit, is too strong for most people, so hath rendered the flowers less valuable than they would have been if there is something very pleasing in the sight of them at a distance, so that were it not for the offensive smell of the leaves and flowers, it would be more frequently seen in all gardens for pleasure.

This may be propagated by seeds, or offsets from the root; the first is too tedious for most of the English florists, because the plants so raised, are six or seven years before they flower, but the Dutch and Flemish gardeners, who have more patience, frequently raise them from seeds, so get some new varieties, which rewards their labour. The method of propagating these flowers from seeds, being nearly the same as for the Tulip, the reader is desired to turn to that article, where there are full directions for performing it.

The common method of propagating them here, is by offsets sent out from the old roots, which will

flower from the second year after they are taken from the roots, but in order to have plenty of these, the roots should not be transplanted oftener than every third year, by which time each root will have put but several offsets, some of which will be large enough to flower the following year, so may be planted in the borders of the flower-garden, where they are to remain; and the smaller roots may be planted in a nursery-bed, to grow a year or two according to their size, therefore they should be fortified and the smallest roots planted in a bed together, which should remain there two years, and the larger by themselves to stand one year, by which time they will have acquired strength enough to flower, so may then be removed into the pleasure-garden.

The time for taking up these roots is in the beginning of July, when their stalks will be decayed; and they may be kept out of the ground two months, but they should be laid single in a dry shady room, but not in heaps, or in a moist place, which will cause them to grow mouldy and rot. The offsets should be first planted, for as these are small, they will be apt to shrink if they are kept long out of the ground.

As the roots are large, they must not be planted too near other flowers; and when they are planted in beds by themselves, they should not be nearer than a foot and a half in the rows, and two feet row from row; they should be planted six inches deep at lead, especially the strong roots: they delight in a light soil, not too wet, nor very full of dung, therefore, if any dung is laid upon the borders where they are planted, it should be buried pretty deep, so as to be two or three inches below the roots.

The ninth and tenth sorts grow naturally at the Cape of Good Hope, from whence they were brought into the European gardens. The ninth has been many years an inhabitant, where it has been usually titled *Corona Regalis*. This has a tuberose root, from which arise in the autumn six or eight obtuse leaves, near five inches long and two broad toward the top, growing narrower at their base, and are crested on their borders, lying flat on the ground; these continue all the winter: in the spring arises the flower-stalk in the center of the leaves, about six inches high, naked at the bottom; but the upper part is surrounded by bell-shaped flowers, composed of six greenish petals, with an oval germin situated at the bottom, surrounded by six stamina, supporting a triangular style, crowned by a trifid stigma; the germin afterwards becomes a roundish capsule, but rarely perfects seeds in England. This flowers in April, and the leaves decay in June.

The second sort I raised from seeds, which were sent me from the Cape of Good Hope: the root of this is like that of the ninth sort, but the leaves are more than a foot long, broad at their base, but are narrowed to the top, where they end in acute points; the flower-stalk rises rather higher than that of the ninth, but the flowers are of the same shape and colour: this seldom flowers till August. The roots of this sort were stolen out of the Chelsea garden the following spring after it had flowered, and were sold to some persons whose love for rare plants exceeded their honesty.

FRITILLARIA CRASSA. See ASCLEPIAS.

FRONDOSA [frondosus, *Lat.*] full of leaves, or shoots.

FROST may be defined to be an excessive cold state of the weather, whereby the motion and fluidity of the liquors are suspended, or, it is that state of the air, &c. whereby fluids are converted into ice.

By frost metals contract, or are shortened. Monf. Auzout found in an experiment, that an iron tube twelve feet long, upon being exposed to the air in a frosty night, lost two lines of its length; but this may be supposed to be wholly the effect of cold.

On the contrary, frost does not contract fluids, but, on the other hand, swells or dilates them near one tenth of their bulk.

Mr. Boyle gives us several experiments of vessels made of metals exceeding thick and strong, which being

filled with water, close flopped, and exposed to the cold, the water, being expanded by freezing, and not finding either room or vent, burst the vessels.

A strong barrel of a gun, with water in it, being flopped close, and frozen, was rent the whole length and a small brass vessel, five inches deep, and two in diameter, filled with water, &c. and frozen, lifted up its lid, which was pressed with a weight of fifty-six pounds.

There are also related many remarkable effects of frost on vegetables. Morery, Hist. de France, says. That trees are frequently scorched and burnt up with frost, as with the most excessive heat, and that even in so warm a climate as Provence;

Mr. Bobart relates, That in the great frost anno 1683, Oaks, Alhes, Walnut-trees, &c. were miserably split and cleft, so as they might be (ten through, and this too with terrible noises like the explosion of fire arms; that the cliffs were not only in the bodies, but continued to the larger boughs, roots, &c. Philof. Tranfact. N^o 105.

Dr. Derham says, That the frost in 1708, was remarkable through the greatest part of Europe; and the greatest in degree, if not the most universal, in the memory of man, that it extended throughout England, France, Germany, Denmark, Italy, &c. but was scarce felt in Scotland and Ireland. All the Orange-trees and Olives in Italy, Provence, &c. and all the Walnut-trees throughout France, with an infinity of other trees, perished by the frost.

Monf. Goueron says, They had a gangrene on them, which he takes to be the effect of a corrosive fait, which corrupted and destroyed their texture. He adds, That there is so much resemblance between the gangrene befalling plants through frost, and that which the parts of animals are liable to, that they must have some analogous cause. Corrosive humours burn the parts of animals, and the aerial nitre, condensed, has the same effects on the parts of plants. Memoires de P Academie Royale de Sciences, an. 1709.

Dr. Derham says, That the greatest sufferers in the animal kingdom were birds and insects, but vegetables were much the greatest sufferers, that few of the tender sorts of vegetables escaped the severity of the frost, Bays, Laurels, Rosemary, Cyprif, Alaternufes, Phillyreas, Arbutufes, Laurustinufes, and even Furz, with most sort of the frutescent herbs, as Lavenders, Abrotanums, Rue, Thyme, &c. were generally destroyed. He adds, that the sap of the finer wall-fruit was so congealed and destroyed, that it stagnated in the limbs and branches, and produced disorders like to chilblains in human bodies, which would turn to mortifications in many parts of the trees; that the very buds of the finer trees, both in the leaf, buds, and blossom buds, were quite killed, and dried into a farinacious matter.

Dr. Derham relates it as a common observation, That vegetables suffered more from the sun than from the frost, in that the sun-shine, melting the snow, and opening the ground, left it more exposed to the rigour of the ensuing night. It was likewise observed, at a meeting of the Royal Society, That the calamities which befall trees, arose not purely from their being frozen, but principally from the winds shaking and rocking them when they are frozen, which rent and parted their fibres. Philof. Tranfact. N^o 324.

Hoar frost, or white frost, is the dew frozen, or congealed early in cold mornings, chiefly in autumn. This (as Mr. Regis observes) is an assembly of little parcels of ice or crystals, which are of various figures, according to the disposition of the vapours which meet and are condensed by cold.

Dew is, to all appearance, the matter of hoar frost, though many of the Cartesians suppose it to be formed of a cloud, and either congealed in the cloud, and so let fall, or ready to be congealed as soon as it arrives at the earth.

In the year 1728-9, there was a remarkable frost, which continued for some months, and destroyed a great number of trees and plants in several parts of Europe,

a' brief account of which may not be improper to Be h're inferted.

The autumn began with cold north and east winds; and early in November the nights were generally frofty, though the froft did not enter the ground deeper than the fun thawed the following day; but toward the end of November the winds blew extremely cold from the north, which was fucceeded by a great fnow, which fell in fuch quantities in one night, as to break off large arms* is alfo the tops of many Evergreen-trees, on which it lodged. After the fnow had fallen, it began to freeze again, the wind continuing to blow from the north -, the days were dark and cloudy for some time, but afterwards it cleared up, and the fun appeared almoft every day, which melted the fnow where expofed to it, whereby the froft penetrated deeper into the ground. It was obfervable, that, during thefe clear days, a great mift or vapour, appeared in the evenings, floating near the furface of the ground until the cold of the night came on, when it was fuddenly condenfed, and difappeared. About the 8 th of December, the nights were extremely cold; the fpirits in the thermomoter fell 18 degrees below the freezing point, and on the 10th of the fame month the froft was as fevere as had been known in the memory of man 5 the fpirits of the thermomoter fell to 20 degrees below the freezing point. At this time vaft numbers of Lauruftinufcs, Phillyreas, Alaternufcs, Rofemary, Arbutus, and other Evergreen-trees and drubs began to fuffer; epecially fuch as had been trimmed up to heads with naked ftems, or had been clipped late in autumn. At this time alfo there were great numbers of large deciduous trees di(barked by the froft, as Pear-trees, Plane-trees, Walnut-trees, with many other forts, and it was chiefly on the weft and fouth-weft fide of the trees, that the bark came off.

About the middle of December the froft abated of its intenfenefs, and feemed to be at a ftand till the 23d of the fame month, when the wind blew extremely fharp and cold from the east, and the froft increafed again, continuing very fharp till the 28th day, when it began to abate again, and feemed to be going off, the wind changing to the fouth; but it did not continue long in this point, before it changed to the east again, and the froft returned, though it was not fo violent as before.

"Thus the weather continued for the moft part frofty, till the middle of March, with a few intervals of mild weather, which brought forward fome of the early flowers; but the cold returning, foon deftroyed them : fo that thofe plants which dually flower in January and February, did not this year appear till March, and before they were fully blown, were cut off by the froft, of this number were all the Spring Crocufes, Hepaticas, Perflan Irifes, Black Hellebores, Meze-reons, with fome others.

The Cauliflower plants, which were planted out of the beds in the open ground, during the intervals between the froft, were moft of them, deftroyed, or fo much cut, that they loft moft of their leaves; the early Beans and Peas were moft of them killed, and many fruit and foreft trees, which had been lately removed, were quite deftroyed. The lofs was very great to fome curious perfons, who had been many years endeavouring to naturalize great numbers of exotic trees and fhubs, abundance of which were either totally killed, or deftroyed to the furface of the ground; amongft this number there were many forts deftroyed, which had endured the open air many years, without receiving the leaft injury from the cold, fuch as Paffion Flowers; Cork-trees, Ciftufes, Rofemary, Stoechas, Sage, Maftich, and fome others. In fome places the young Afh and Walnut-trees were killed; but when the froft went off, there appeared to have been much more damage done in the gardens, than there really was, which occafioned many people to dig up and deftroy large quantities of trees and fhubs, which they fuppofed were killed; whereas thofe who had more patience, and fuffered them to remain, fared better;

for great numbers of them (hot out again, fome firft their ftems and branches, and others from their roots; the following fumrher.

Nor was the froft more fevere in England, than in other parts of Europe, but, on the contrary, in comparifon, favourable; for in the fouthern parts of France, the Olives, Myrtles, Ciftufes, Alaternufes; and feveral other trees and fhubs, which grow there almoft fpontaneoufly, were either deftroyed, or at leaft were killed to their roots; and about Paris, and the northern parts of France, the buds of their fruit-trees were deftroyed, although they remained clofed, fo that there were very few bloffoms which opened that fpring. The Fig-trees were in feveral parts of France quite killed, and in England their tender branches were deftroyed, fo that there was very little fruit on thofe trees the following fumrher, except where they were protefted from the froft.

In Holland the Pines and Firs; With feveral other trees, which are natives of cold countries, were greatly injured by the cold; and moft of the trees and fhubs, which were brought from Italy, Spain, or the fouth parts of France, which had been planted in the full ground, in that country, were entirely killed, though many other forts, which had been brought from Virginia and Carolina, efaped very well in the fame gardens; but the perfon who fuffered moft in that country, was the learned Dr. Boerhaave, who had been feveral years endeavouring to naturalize as many exotic trees and fhubs as he could poffibly obtain from the feveral parts of the world, great numbers of which were entirely deftroyed by the froft this winter.

In fome parts of Scotland they not only loft many of their curious flowers, plants, and trees, but great numbers of fheep, and other cattle, were buried under the fnow, where they perifhed; and many poor people, who went to look after their cattle, were equal fullerers with them, being buried in the fnow, which in fome places fell eight or nine feet deep in one night.

It has been obferved by thermometers* when that kind of hovering lambent fog arifes (either mornings or evenings) which frequently betokens fair weather* that the air, which in the preceding day was much warmer, has, upon the abience of the fun become many degrees cooler than the furface of the earth, which being near 1500 times denfer than the air, cannot be fo foon affected with the alteration of heat and cold; whence it is probable, that thofe vapours which are raifed by the warmth of the earth, are by the cooler air foon condenfed into a vifible form. The fame difference has been obferved between the coolnefs of the air, and the warmth of water in a pond, by putting a thermometer, which hung all night in the open air in fummer time, into the water, juft before the rifing of the fun, when the like reek* or fog, was rifing on the furface of the water.

In the year 1739-40 we had another fevere winter, which did great mifchief to the gardens, fields, and woods, the effects of which are yet, and will be many years, felt in Europe. Some particulars of thefe depredations, may not, perhaps, be unacceptable to the reader, if they are here mentioned.

The wind fet in blowing from the north and north-east, about the autumnal equinox, and continued to blow from the fame quarter, with little variation, upward of fix months. Early in November, there was a continued fharp froft for nine days, in which time the ice upon large ponds, and other ftanding waters, was frozen fo hard as to bear perfons who fskated thereon; but toward the end of November the froft abated, and there was little more than flight morning frofts until Chriftmas day, when it froze pretty hard that morning, and continued every morning fo to do; but on the 28th day of December, the wind blew with great ftrength from the north-east, and brought on fevere cold; that night the froft penetrated very deep into the ground, and the next day, viz. the 29th, the wind changed to the fouthward of the east, and blew with great fury; the thermometer fell this day to

Twenty-five degrees below frost; in the morning (some) the violence of the wind carrier) it off; but cold dill in creating, the waters were all frozen over, and that day it was so intense, as to freeze the water of the river, which melted by the force of the wind into ice, before it fell down again. The wind continued to blow with the same force, and from the same quarter, all the following day, the cold increasing, so that at this time the frost penetrated into the heart of the green-houses in England, but especially into all those whose fronts had the least inclination to the east; the furrows of them is fronted the fourth-week escaped belt, where the back walls were of a sufficient thickness to keep out the frost, the spirits in the thermometer fell in the night of the 30th day 10 thirty-two degrees below the freezing point, which was lower than it had been known in England before; the violence of the wind made it very troublesome for persons of the most robust constitutions to be abroad, and this also caused the frost to penetrate through chick walls, and in the space of two days, the Evergreen-tree* and firrubs appeared as if they had been scorched by fire, so that they seemed to have no life; the only trees of all the sorts of Evergreens which retained their verdure at this time, were the Portugal Laurel, Savin, and the tubby Hurtwood which in the midst of this severe frost remained unhurt, when all the others were as brown as if they had been dead a year; and it was very late in the spring, before any of them returned their usual verdure: during these severe days there laid but little snow fallen, so that the frost penetrated deep in the ground, and decayed the roots of great part of the Vegetables, where they were not well secured, the Artichoke roots were most of them killed in all the kitchen-gardens, some few only escaped, these were such as were not intended to be preserved. A single row of licit roots, which were growing in a place where a great quantity of dung had been wheeled over them, whereby the ground was rendered as hard as that of a common foot-way, though there was no covering upon these roots, yet they survived the frost and did well; another parcel which were growing near a tan-yard, where, by accident, some tan had been thrown, were preserved, so that from some of the Town accidents we were so lucky as to retrieve the good kind of Artichoke, which the English gardens were so famous for being stocked with.

By the sharp piercing winds the Grapes were almost totally burned up, so that there was not the least verdure to be seen in the fields, and in many places the sweetest and best kinds of the herbage were entirely killed, so that there remained only the strong rough kinds of grass, whereby the pastures were in general much damaged; but on the next day in the evening, the wind being much abated, the severity of the frost was not so great, and there seemed an appearance of 3 thaw on the first and second of January, but on the third in the evening the frost let in again with great violence; and on the fourth of January in the morning, the thermometer was fallen one degree lower than it had been before. The same morning there was the greatest hoary frost which had been seen, the woods, trees, and hedge*, appeared as if they had been covered with snow, and although there was no wind stirring, yet the air was so sharp and penetrating, as to render it difficult to endure the cold even without exercise.

All timber-trees suffered grievously that morning, especially the Oak*, which were split with great violence, and the noise in the woods that morning, resembled that of great branches breaking down in every part of the woods, and when heard at a distance, like the firing of guns. This was likewise attended to at the time, but the timber which was once fallen, sufficiently proved the great violence which the woods then sustained; nor was it here the vicinity (lopped, for the Oaks in general had received so much injury from the frost, as 10 occasions the weakness and distemper among them, that all

following (bring they were infilled with ice) to fulfil a degree, as that their ledges were entirely destroyed by their ice, so that at Midluramer the trees were as naked as if it had been the beginning of April; the frost continued for two years after, almost as bad as at first, and has increased by degrees, so the tree* has recovered their strength and where the trees were old and weak, they have not yet gotten the better of this distemper.

The herbage was all so much weakened by the severity of the frost, as not to be able to refill the tracks made upon it by insects, but that innumerable quantities of them were discovered in various parts of Europe, beginning first in the northern countries, and afterward spreading to the south; and the insects in many places were so numerous, as to destroy the fruit of the Grape, and it is to be observed the distemper which (so long raged among the cattle) have been owing to this cause; for wherever the distemper spread, it has been observed, that numbers of these insects have harboured about the ribs of the Grapes: and as a farther proof of this, it has constantly been remarked, that when the grub has changed into a sort of beetle, and take their flight (which is commonly about the beginning of May, the distemper ceases to annoy; the beetles have deposited their eggs in autumn, the distemper has raged again. Another remark has been made, that these beetles always cluie to deposit their eggs at a great distance from rivers, and large pieces of water, and in such places the cattle have been most attacked. There might be many more circumstances mentioned in favour of this opinion.

Several experiments which have been made by the members of the Academy of Science* at Paris, which are sufficient to prove, that the distemper is not infectious, nor can be communicated by the cattle, notwithstanding it has been treated as such in many countries, where has been an immense loss to the public of such numbers of cattle and their hides; but this may require a particular treatise, therefore I shall not enlarge farther on this head at present.

The frost still continued very hard till toward the end of January, but not so violent as at the beginning; for had the wind continued to blow with the same force as it had done the three first days of the frost, for any considerable time longer, there would have been few vegetables able to have survived the cold, nor would the animal kingdom have been so much better; for the cold was so intense during the few days, as to kill several of the weaker sort of cattle, where they were much exposed to the wind.

The Walnut-trees, Ash, and several other trees, most of their roots of the former were destroyed, which caused them to be very late before they produced their new shoots the following spring, and their shoots were produced from the two and three year branches. The Fig-trees in many places were killed almost to the ground, especially those which were growing again in the open field, for the old standard Fig-trees were better, but all their roots and barks of the trees, which were growing in the nursery-gardens, were so much injured by the frost, as not to be recovered under three years, during which time there were scarce any of these plants to be sold. The trees of the Vine, as also of the Oriental Plane-tree, in the nurseries, were likewise killed to the ground, and the old fruit was so much injured, that they had better have been dug up and thrown away, than to have continued them, for their shoots in the summer, that their wood had not time to harden, and the first frost in autumn frequently killed them half to the ground.

Many other deciduous trees were equal successively by this severe frost, and the Evergreens were more generally injured, and abundance of them killed. The Pine and Fir were so much hurt, as to lose all their verdure, and in the young plants of the

the former fort were entirely killed. The Rosemary, Lavender, Stoechas, Sage, and many other aromatic plants, were in many places quite destroyed, so that it was two or three years before the markets could be supplied with these; and in general the esculent plants in the kitchen-gardens were killed, so that for some months the markets were not supplied with any quantity of garden stuff. The flower-gardens also were great sufferers by this winter for as the seasons for some years before had been very temperate, few persons had made any provision for a hard winter; and the cold setting in so very intense at the beginning, the mischief was done before people could be provided with covering.

The Wheat in many parts of England, but especially in the open common fields, was very much hurt, particularly on the top of the ridges, where, in several places there were broad naked spaces on the middle of the ridges, which in the spring appeared like so many foot-paths. And as the spring following was very dry, and the wind continuing to blow from the north and east; these piercing winds entered the ground, which had been loosened by the frost, and dried up the tender roots of the Corn, to the great prejudice of it; but some of the more expert farmers, who rolled their Wheat after the frost was over, were well repaid by the great crops which their land produced them.

Were I to enter into all the particulars of the damages sustained by this severe frost in the gardens and fields, it would swell this work beyond the limits intended, so I hope, on the other hand, I shall not be condemned for having inserted thus much, since, by the mention of these things, persons may be instructed how to save many of their valuable plants in future winters, as also what sorts are more liable to danger from frosts than others.

FRUCTIFEROUS [*frudifcr, Lat.*] fruit-bearing, fruitful.

FRUCTUS. See **FRUIT.**

FRUIT is the production of a tree or plant, for the propagation or multiplication of its kind; in which sense fruit includes all kinds of seeds, with their furniture, &c. botanists use it to signify properly, that part of a plant wherein the seed is contained, which the Latins call *Fru&us*, and the Greeks *Kap-or*.

The fruit of some plants are produced singly, as are their flowers, and sometimes they are produced in clusters, as in most fruit-trees, which are also fleshy, but in many plants they are dry.

The word fruit is also used to signify an assemblage of seeds in a plant; as in a Pea, Bean, Ranunculus, &c. and in its general signification, for all kinds of grain, whether naked, or inclosed in cover, capsule, or pod, whether bony, fleshy, skinny, membranous, or the like.

Fruit is the product or result of the flower, or that for whose production, nutrition, &c. the flower is intended.

The truest and parts of different fruits are different in some things, but in all the species the essential parts of the fruit appear to be only continuations or expansions of those which are seen in the other parts of the tree.

Dr. Beale suggests some very good reasons for a direct communication between the remotest parts of the tree and the fruit; so that the lame fibres which constitute the root, trunk, and boughs, are extended into the very fruit.

Thus, if you cut open an Apple transversely, you will find it to consist chiefly of four parts, viz. first, a skin, or cortex, which is only a production of the skin or outer bark of the tree, and, secondly, a parenchyma or pulp, which is an expansion and intumescence of the inner bark of the tree. The fibres, or ramifications of the woody part of the tree, which is the produce of the pith, or medulla of the plant, indurated or enlarged by rings of the wood and fibres inoculated therewith. These fibres to furnish a cell, or lodge, for the kernels, filtrates

the juice of the parenchyma, and conveys it thus prepared to the kernel.

Of the fibres, authors generally reckon fifteen branches, of which ten penetrate the parenchyma, and incline to the basis of the flower, the other five ascend more particularly from the pedicle or stalk, and meet with the former at the base of the flower, to which branches the capsule, or coats of the kernels are fattened.

These branches being first extended through the parenchyma to the flower, furnish the necessary matter for the vegetation of it; but as the fruit increases, it intercepts the aliment, and thus the flower is starved, and falls off.

In a Pear there are five parts to be distinguished, viz. the skin, parenchyma, ramification, kernel, and acetarium.

The three first parts are common to the Apple. The kernel, observed chiefly in Choke Pears, or Breaking Pears, is a congeries of strong corpuscles, that are dispersed throughout the whole parenchyma, but in the greatest plenty, and clost together about the center, or acetarium; it is formed of the stony or calculeous part of the nutritious juice.

The acetarium is a substance of a tart acid taste, of a globular figure, inclosed in an assemblage of several of the stony parts before-mentioned.

In a Plumb, Cherry, &c. there are four parts, viz. a coat, parenchyma, ramification, and nucleus, or stone. The stone consists of two very different parts; the external or harder part, called the stone, or (hell, is a concretion of the stony, or calculeous parts of the nutritious juice, like the kernel in Pears, within it. The inner, called the kernel, is soft, tender, and light, being derived from the pith, or medulla of the tree by feminal branches, which penetrate the base of the kernel.

The nut, or acorn, consists of a (hell, cortex, and medulla. The shell consists of a coat and parenchyma, derived from the bark and wood of a tree.

The cortex consists of an inner and outer part, the first is a duplicature of the inner tunic of the shell; the second is a mossy substance, derived from the same source as the parenchyma of the shell. But authors are not agreed, whether the medulla, or pulp of the kernel does arise from the pith of the tree, or the cortical part thereof.

Berries, as the Grape, &c. contain (besides three general parts, viz. coat, parenchyma, and ramification) grains of a stony nature, to do the offices of feeds. Fruits in general are serviceable in guarding, preserving, and feeding the inclosed seed, in filtrating the coarser more earthy, and strong parts of the nutritious juice of the plant, and retaining it to themselves, Vending none but the most pure, elaborated, and spirituous parts to the seed, for the support and growth of the tender delicate embryo or plantule, which is therein contained.

FRUMENTACEOUS [*Frumentaceous, Lat.*] a term applied by botanists to all such plants as have a conformity with Wheat (called in Latin *Frumentum*.) in respect either of their fruits, leaves, ears, or the like.

FRUMENTUM INDICUM. See **ZEA.**

FRUTEX, a shrub; a vegetable of a genus between a tree and an herb, but of a woody substance. It is pretty difficult to determine wherein most of the writers on gardening and agriculture have made the distinction between trees and shrubs, or where to fix the difference or boundary, between the trees and shrubs, to say where one ends, and the other begins, for that cannot be determined by their growth; therefore the best definition which can be made of a shrub, to distinguish it from a tree, is its sending forth many stems from the roots, whereas the trees have a single trunk or body.

FRUTEX PAVONIUS. See **POINCIANA.**

FRUTICOSE [*Fruticofus, Lat.* shrubby,] are those plants which are of a hard woody substance, and do not rise to the height of trees.

>) HtSI A. Plum. Nov. Gen. (4. Lin. Gen. Plant. 1097. This plant was fo named by Father Plumier, who difcovered it in America, in honour of the memory of Leonard Fuchfius, 3 learned botanift.

The CHARACTERS are,
The ftwiar bash «o anpalemcnl -, ft bath one petal, with a efefed tube, wbkb is flightly cut into eight parts ; t the brim-, aiding in arute points; it bath four flamina the length of the tube, which are terminated by obtufe fummit's. The oval gertnen isfitusttd under tbt flower, fupprtlng a fmgle flyle, crowned by an obtufe fligma. The germen afterward becomes a fucadftit berry with four furrows, having four cells, containing feveral final! oval fieds.

This genus of plants is ranged in the firft fection of Linmus's fourth dais, intified Tetrandria Monogynil, the flower having four ftamina and one ftylr.

We know but one SPECIES of this genus at precent, viz.

FUCHSIA [Triphylla.] Lin. Sp. Plant. 1191. Three-leaved Fuchfitti. Fuchfia triphylla, flore coccineo. Plum. Nov. Gen. Tbtret-ltoved Fuchfia with a fcarlct fewer.

This plant is a native in the warmed parts of America; it was difcovered by Father Plumier, in fome of the French Iflands in America, and was fince found by the late Dr. William Houltoun, at Carthagtna in New Spain, from whence he fent the feeds into England.

This is propagate, by fords, which muft be lbwn in pots filled with rich 11 "lit earth, and plunged into a hot-bed of tanners bark, and treated in the fame way as other feeds from warm countries. In about a month or fix weeks alter the feeds are fawn, the planes will begin to appear, when (tin-) fhould be carefully cleared from weeds, and frequently refreihed with water to jromore their growth; and n'hen they arc about two inches high, they (hould be lbakenout of the pot, and feparaid carefully; then plant each into a (mall pot filled with light rich earth, and plunge them again into a hot-bed of tanners bark, being careful to Screen them from the fun until they have taken new root; after which time they muft have frth air admitted to them every day in proportion to the warmth of the feifon, and mould be frequently watered. As the fea- (m advances and becomes warm, the glides of the hot-bed fhould be raifed higher, to admit a greater (hare of air to the plants, ro prevent their drawing up weak; and when the plants arc grown fo tall as to reach the glaffes, they mould be removed intothe bark-ftove, and plunged into the tan-bed. In winter thefe plants requite to be kept very warm, and at that feafon they muft not have much water, but in lummer it muft be often repeated.

Thefe plants arc too tender to thrive in the open air in this country, even in the hottelt part of the year; therefore they fhould constantly remain in the Sove, obferving to lft in a large fhare of frelh air in fumnw, but in winter they muft lie kept warm l with this management the plants will product- their flowers, and make a beautiful appearance in the ftavCj amongft other tender exotic plants,

• U M A R I A . Lin. Gen. Plant. 760. Tourn. Inft. R. H. +21. tab. 137, Fumatory; in French, Fumuertr.

The CHARACTERS arc,
Tbt tnxpal mem if the floiotr is compofei tj tarn equal leaves pkiei ifpf/r.e. Tbt jlmver is of tbt ringvt kind, apftVi tbt bktirjly fbrjiers. The upper lip is plain, fbiufe, indented at the top, and reflexed; the KtBariam at the baft of this h sbtufe, and a littl prominent. Tbt under lip is lite the upper in all its parts, but the baft it tcel-ftiipejl, the neeJarium at the baft is Ufs p-oniinnatt. The chaps of tbejtirjier is four-inrncd, obtmft, mid perfifsfy bifid •, thtrf unfix ejnaJ breadflair. in it in taja&tr, Jividtd in twa bodies, included in tin ttiilolip; reth bti«g trrmittittd by three farrtmiti. Inthe enter is fittttued an obton» [trots, fupperting afkortfyle, crimmi by on orbicular cotnprejfea fligmj. The germen af-tmiard beromrs J fieri pedivilbone ceil, indvding rouxdifb

This grm's of plants is ranged in the firft fection

of Linn^us's fevcntcctntli clafs, infilled DiadeljAia Hexandria, which includes the plants wholi; Bo'vcrs have their UNiiiiia in two bodies, and have Lx Umina. To this genus Dr. Linn^its has jointd the Capnoides of Tournefon, the Cyliirapiiut ai Botrhaavc, the CorydalU of Dillenius, and the Cuculiri* of JufTieu, making them only fpeciea of the faTW genus.

The SPECIES are,

1. FUMARIA (*Offeinalis*) pericarpit monofpermis racemofw, caule diffufo. Lin. Sp. Plant. 700, FumitUiy with fied-vtffeis griiving in a r&cemits, with afingltfied and a dijfttdjialli. Fumaria officinarum & Biofcoridis, flore purpureo. C. B. 143. Tbetommon Fumatory with a purple flower.
1. FuMAfia (*Spicata*) pericarpit monofpermis Ipicatis, caule ereEto, folioliis filiformibus. Sauv. Montp. 263. Fumat&ry with fied-veffels grvmmg is a fpikt, wish cut feed, an upright' ftalk, and thrtad-Uke teutu. Fumaria minor tenuitolia, C. B. J43. Lcijfr itxmxB-kaved Fumatory.
3. FUMARIA (*JIM*) filiquis linearibus tetragonis, caulibus diffufis acutangulis. Lin. Sp. Plant. 700. Fumatory v'itb narrow fmr-cortred pods, and diffitfd fialki, having <KUU angla, Fumaria fempervirens &c floreai, flore albo, Flor. Bat. Evergreen FunMtery with a white flower.
4. PUMAKIA (*iCepnciiti*) filiquis teretibus, caulibus diffufis, angulis obtufis. Fumatory j:itb tapir pods and diffnfed fialks, having ebtufi angles. Fumaria Jutta. C. B. 1+3. Tlttev; Fumatory.
5. FUMAHIA (*Clai'iatlata*) filicjuis linearibus, foliis cirrhiferis. Lin. Sp. J'lant. 701. Fumatory wilb narrew pods, and IWJCS bailing dofferi. Futnana claviculis donata. C. B. P. 143. Fttmatry with tendrils.
6. FUMA&IA [*Capvtatid*] pericarpit monofpermis racemofis, foliis feadentibus JUbirtroffis. Lin. Sp. Plnnt. 701. Fwnatoiy with feed-%-effe!s grmehig in a racanus, xitb ant feed, and climbing leaves baring jbvrt tendrils. Fumaria major Icandens, flore pallidiore, Raii Hilt. 405. Grtater climbing Fttmatery j'itb a paler fiaaer,
7. FUMARIA (*Ceva*) caule funplici, brafcis longitudine riorum. Lin. Sp. Plant. C95. FumaSory mfb a fwgU fiolk, and hraSus at longas tbt fishers. Fumari* butbofa, radicc cav-3, major. C. E. P. 143. Greater btllksui Fumatory with a boUex rout.
5. FUMAKIA (*Bulbofa*) caule fimplici, brafteii brevioribus muhifidis, radicc folida. Fumatsry with afingk fialk, jbarlir many pointed braBtie, and a folid root, Fumaria bulbofa, rsdke non cava, major" C. B. P. 144. Greater bulious Fumatory -x;itb a fhld rest.
9. FUMARIA (*Cuettlaria*) fcapo nudo. Hon. Cliff. 351. Fumaten with a naked fialk. Caunorchis Americana, Buo-ri. Ind. nit. 1. 309. and the Fumaria tubemfi inllpida. Cornut. 119. Tuberos infipiA Fametvrf,
10. FI-MAKIA [*Vtfcend*] filiquis globofis inBatis, Hort, Upfal. 207. Fumatory ivitb globular inflated psdi. Cyftic.ipnos Africana fcandejjs. IWTH. Ind. alt 1.310. Climbing Afrkan O-flicapnsj.
11. FuMAHiA (*Exeaphylia*) foliis triternatis, folioliis cordatit. Lin, Sp. Plant. 700. Fumatsiy -diitb leavis cmpefed of three trifoliote fmall leaves, which art beartfbaptd, Fumaria enncaphylos Hifoaoaka faxatilh. Bocc. Muf. i. p. 83. Five-It,rjedRsihFumatoryef-fpaiis.
- tz. FuMAaiA [*Sanptrvirens*] filiquis linearibus paniculitis, caule erefto. Hort. Upfai. 207. Fumatory •with iMit&ui pods growing in panicles, and an aprigl/l fialk. Capnoides. Toum. Init. R. H. 413. Baftard Fumatory.

The firft fort is the common Fumatory which is ufcd in medicine. This grows naturally on arable llnul in mod parts of Engiand \ it is a low annul phut, and flowers in April, May, and June-, and very often from plants which rife late in the fummer, there will be a fecond crop in autumn. The juice of riii* plant b greatly commended for bilious eitejk*. h is never cultivated In gardens.

The fecond fort grows naturally in the foiiih Of France, Spain, and Portugal, but is preferred in botanic fi article ibr the fake of variety. U is an annual plant.

plant, which rises from the scattered feeds better than when it is sown with care; the stalks of this grow more erect, the leaves are very finely divided, and the flowers grow in a clove spike; they are of a deep red colour, and flower about the same time as the common fort.

The third fort grows naturally on the borders of the Mediterranean Sea; it was first brought to England from Tangier. This is a perennial plant, which sends out from the root many branching stalks, which rise about six or eight inches high, growing in tufts or bunches; the leaves are very much divided, the stalks are angular, and the flowers grow in loose panicles upon naked foot-stalks, which come out from the divisions of the branches; they are of a whitish yellow colour, and there is a succession of them most part of the year.

The fourth fort hath an appearance very like the third, and by some it is supposed to be only a variety of that, but is undoubtedly a distinct species; for I have cultivated both more than forty years, and never yet found either of them to vary. The stalks of this fort have blunt angles, whereas those of the third are acute; they are of a purplish colour, and the flowers grow in looser panicles, each having a longer foot-stalk than those of the other -, they are of a bright yellow colour, and there is a succession of them great part of the year.

These two forts continue green all the year, and except in very severe frosts, are always in flower, which make a pretty appearance; they grow best on walls or rocks, and are very proper for the joints of grottos, or any rock-work; where, if a few plants are planted, or the feeds scattered, they will multiply fast enough from their scattering feeds, which are cast out of the pods by the elastic spring of the valves when ripe, to a considerable distance; and as the plants will require no care to cultivate them, they should not be wanting in gardens.

The fifth fort grows in stony and sandy places in some parts of England; it is an annual plant with trailing stalks, sending out clasps from the leaves, which fatten to any of the neighbouring plants. It flowers in May and June, but is never cultivated in gardens.

The sixth fort is an annual plant with many trailing stalks, which grow about a foot long, sending out a few short tendrils, whereby they fatten to any neighbouring support; the flowers come out from the side of the stalks in loose bunches; they are of a whitish herbaceous colour, with a purple spot on the upper lip. This flowers in May and June. It grows in France and Italy, on stony places in the shade.

The seventh fort grows naturally in the south of France and Italy, and was some years past preserved in the English gardens by way of ornament, but is now rarely to be found here; it was titled *Radix cava*, or hollow root, from its having a pretty large tuberosus root hollowed in the middle. The stalk of this fort rises about six inches high, and does not divide, but is garnished toward the bottom with one ramous leaf, somewhat like the common Fumatory, but the lobes are broader; the flowers grow in a spike at the top of the stalk; they are of a pale herbaceous colour and appear in April. This plant delights in the shade, and is multiplied by offsets, for it rarely ripens feeds in England.

The eighth fort is pretty common in many of the old gardens in England; it grows naturally in the south of France, in Germany and Italy. This hath a pretty large round solid root of a yellowish colour, from which come out branching leaves like those of the last fort, but the lobes are longer; the flowers grow in spikes on the top of the stalks; they are of a purple colour, and come out early in April. The stalks of this fort are lingle, and rise about four or five inches high.

There is a variety of this with green flowers, which is mentioned in most of the books; but all the plants of this fort which I have yet seen, are only abortive,

having no real flower, only a green bractea, which has been generally taken for the flowers: there is also mentioned a larger fort; but if there is one which is really different from the common fort, I have not seen it in the English gardens, nor the yellow and white flowering forts, which are also mentioned in many of the books.

The ninth fort grows naturally in North America; this hath a fealy root about the size of a large Hazel Nut, from which come out three or four leaves upon slender foot-stalks; these are divided into three parts, each of these parts is composed of many smaller divisions, which have narrow lobes, divided into three parts almost to the bottom; the flower-stalk is naked, and eight or nine inches long; this is terminated by four or five flowers, growing in a loose spike; these have two petals, which are reflexed backward, and form a sort of fork toward the foot-stalk, and at their base are two horned anthers, which stand horizontal. The flowers are of a dirty white colour and appear in May, but rarely produce feeds here.

This is propagated by offsets from the root; it loves a shady situation and a light soil; the best time to transplant the roots is in autumn, when the leaves are decayed, for it shoots pretty early in the spring, therefore it would not be safe to remove them at that season.

The tenth fort grows naturally at the Cape of Good Hope; this is an annual plant, with trailing stalks which are two or three feet long, dividing into many smaller, which are garnished with small branching leaves shaped like those of the common Fumatory, but end with tendrils, which clasp to any neighbouring plants, and thereby the stalks are supported -, the flowers are produced in loose panicles, which proceed from the side of the stalks; they are of a whitish yellow colour, and are succeeded by globular swollen pods, in which are contained a row of small shining feeds.

This is propagated by feeds, which should be sown upon a moderate hot-bed in the spring; and when the plants are fit to remove, they must be each planted in a small pot filled with light earth, and plunged again into the hot-bed, where they must be shaded from the sun till they have taken new root; after which they should have a large share of air admitted to them at all times in mild weather, to prevent their drawing up weak; and as soon as the season is favourable, they should be inured to bear the open air, to which they may be removed the beginning of June, when they may be shaken out of the pots, preferring all the earth to their roots, and planted in a warm border, where their stalks should be supported with flicks to prevent their trailing on the ground; and in July the plants will flower, and continue a succession of flowers till the frost destroys the plants; the feeds ripen in autumn.

The eleventh fort grows naturally upon old walls or rocks in Spain and Italy; this hath weak trailing stalks which are much divided, and are garnished with small leaves divided into three parts, each of which hath three heart-shaped lobes. The flowers are produced in small loose panicles from the side of the stalks, they are of a greenish white, and appear most of the summer months. It is an abiding plant, which propagates itself by the feeds that scatter, and thrives best in a shady situation, and on old walls or buildings.

The twelfth fort is an annual plant with an upright stalk, which grows a foot and a half high, round and very smooth, sending out several branches upward; these are garnished with smooth branching leaves of a pale colour, which are divided like the common fort, but the small leaves are larger and more obtuse; the flowers are produced in loose panicles from the sides of the stalks, and at the extremity of the branches; they are of a pale purple colour, with yellow chaos (or lips); these are succeeded by taper narrow pods an inch and a half long which contain many small shining black feeds. This flowers during most of the summer months, and the feeds ripen in July, Au-

F U M

guft, and September. If the feeds of this plant are permitted to fcatter, the plants will come up without any trouble, and require no other care but to thin them where they are too clofe, and keep them clean from weeds.

Thefe plants may be fuffered to grow on walls, and in fome abjeft part of the garden *, for if they are admitted into the borders of the pleafure-garden, they will fcatter their feeds, and become troublefome weeds j but they are very proper plants to grow on ruins, or on the fides of grottos or rock-work, where, by their long continuance in flower, they will have a good effect.

The fifth, fixth, feventh, and eighth forts are propa-

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gated by offsets, as other bulbous-rooted flowers * thefe produce their flowers in the beginning of April, and are very pretty ornaments to borders in a fmall flower-garden. They are extreme hardy, but do not increafe very fall, feldom producing feeds with us; and their bulbs do not multiply very much, efpecially if they are often tranfplanted. They love a light fandy foil, and fhould be fuffered to remain three years undifturbed, in which time they will produce feveral offsets. The beft feafn for tranfplanting them is from May to Auguft, when the leaves begin to die off; for if they are taken up when their leaves are freffi, it will greatly weaken their roots.

FURZ. See GENISTA.

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GALANTHUS. Lin. Gen. Plant. 362. Narcifflb-leucoium. Tourn. Inft. R. H. 387. tab. 208. The Snow-drop 5 in French, *Perce-neige*.

The CHARACTERS are, *the fpatha or Jheath of the flower is oblong, blunt, and compreffed. Tins opens fideways, and becomes a drykin; the flower bos three oblong concave petals, which Jpread open, and are equal \ in the bottom is ftuated the three-leaved neffarium, which is cylindrical, obtufe, and indented at the top -, under the flower is ftuated the oval germen, fupporting a flender fyle, which is longer than the ftamina, crowned by fingle ftigma; this is attended by fixjhort hairy ftamina, terminated by oblong pointed fummits, which are gathered together. The germen afterward becomes an oval capfule which is obtufe and three-cornered, opening in three cells, which are filled with roundijh feeds.*

This genus of plants is ranged in the firft fettion of Linnaeus's fixth clafs, intitlei Hexandria Monogynia, which includes the plants whofe flowers have fix ftamina and one fyle.

This plant, as alfo the great Snow-drop, was by Dr. Tournefort ranged together under the title of Narcifflb-leucoium; which being a compound name, Dr. Linnaeus has altered it to this of Galanthus *, and has feparated the great Snow-drop from this, and given the fimple name of Leucoium to that genus.

We know but one SPECIES of this genus, viz.

GALANTHUS (*Nivalis*.) Lin. Hort. Cliff. 134- The common Snow-drop. *Leucoium bulbofum trifolium minus*. C. B. P. The lead bulbous Snow-drop with three leaves.

There is a variety of this with double flowers.

Thefe flowers are valued for their early appearance in the fpring, for they ufually flower in February when the ground is often covered with fnow. The fingle fort comes out the firft, and though the flowers are but fmall, yet when they are in bunches, they make a very pretty appearance; therefore thefe roots fhould not be planted fingle, as is fometimes pra&ified by way of edging to borders; for when they are fo difpofed, they make very little appearance. But when there are twenty or more roots growing in a clofe bunch, the flowers have a very good effect; and as thefe flowers thrive well under trees or hedges, they are very proper to plant on the fides of the wood-walks, and in widernefs-quarters \ where, if they are

G A L

fuffered to remain undifturbed, the roots will multiply exceedingly. The roots may be taken up the latter end of June, when their leaves decay, and may be kept out of the ground till the end of Auguft, but they muft not be removed oftener than every third year.

GALE. See MYRICA.

GALEGA. Lin. Gen. Plant. 770. Tourn. Inft. R. H. 308. tab. 222. Goat's-rue.

The CHARACTERS are,

The empalement of the flower is Jhort, tubulous, and of one leaf, indented in five parts. The flower is of the butterfly kind; the ftandard is oval, large, andreflexed-, the wings are near the length of the ftandard \ the heel is erect, oblong, and compreffed; the under fide toward the point is rounded, but the upper is acute; there are ten ftamina, which join above their middle, and are terminated by fmall fummits. In the center is ftuated a narrow, cylindrical, oblong germen, fupporting a flender flyk, crowned by aftigma terminated by a punOure. The germen afterward becomes a long pointed pod, incloftng feveral oblong kidney-ftaped feeds.

This genus of plants is ranged in the third fe&ion of Linnaeus's feventeenth clafs, intitlei Diadelphia Decandria, which includes thofe plants whofe flowers have ten ftamina joined in two bodies.

The SPECIES are,

1. GALEGA (*Officinalis*) leguminibus ftriftis eredtis, foliis lanceolatis ftriftis nudis. Lin. Sp. Plant. 1062. *Goafs-rue with ereil clofe pods, and fpear-ftaped naked leaves.* Galega vulgaris, floribus caeruleis. C. B. P. 352. *Common Goats-rue with blue flowers.*
2. GALEGA (*Africana*) foliis lanceolatis obtufis, floribus fpicatis longioribus, filiquis craffioribus. *Goafs-rue with obtufe fpear-ftaped leaves, flowers growing in longer fpiques, and thicker pods.* Galega Africana, floribus majoribus filiquis craffioribus. Tourn. Inft. R. H. 399. *African Goafs-rue, with larger flowers and thicker pods.*
3. GALEGA (*Frutefcens*) foliis ovatis, floribus paniculatis alaribus, caule fruticofo. *Goafs-rue with oval leaves, and flowers growing in panicles from the fides of the ftalks, which arefhrubby.* Galega Americana, foliis fubrotundis, floribus coccineis. Houft. MSS. *American Goats-rue with roundijb leaves and fcarlet flowers.*
4. GALEGA (*Firginiana*) leguminibus retrofalcatis cahipreffis villofis fpicatis, calycibus lanatis, foliolis ovali-oblongis acuminatis. Amoen. Acad. 3. p. 18. *Goafs-rue with hairy, compreffed, fickleJbaped pods, oblong oval**

ovnl-pmmlt/i *Leuca*, and usually *repulment*. *Crotus* Virgini.ith^r. *foliis folva lanugine locania*, foliis in nervo ictu

5. GAL.U.A [Purp] *leguminibus frictis admodum* tubis glabris succosulis terminalibus, Bipulis subulatis, foliis oblongis glabris. Flax. Zeyl. 101. *Gustura* with *chilo*, *foam*, *stomach* pods, *terminating the* *foliis in arboribus*, *and shaped* *foliis*, and *they* *foam* *leaves*. *Coccolia* *Zeluzia* *herbacea*, *flax* *purpurascens*. *Rorn*. Zeyl. 77.

The first sort grows naturally in Italy and Spain, but is propagated in the English gardens for medicinal use. This hath a perennial root, composed of many strong fibres, which are frequently jointed, from which arise many channelled hollow stalks, from two to three feet high, which are garnished with winged leaves, composed of six or seven pair of narrow spear-shaped lobes, terminated by an odd one, which are smooth and entire; the flowers terminate the stalks growing in spikes, they are of the Pea-blossom shape, **ami 01** a pale blue i . . . and are disposed in loose spikes. They appear in June, and are succeeded by racemes about one inch and a half in length, having one row of kidney-shaped seeds, which ripen towards the end of A i . . .

There is a variety of this > iti white Rowers, and anoilii with variegated flowers, . . . which have accidentally hem; . . . arc ngrconflam, therefore are only mentioned here.

The second sort grows naturally in Africa. tills differs from the former, in having larger leaves, which are . . . compollii of eight or ten pair of lobes, I reader and . . . iuurr at their cuds than those of; . . . he common fort i the (lowers ate In . . . and the spikes are longer, the fee . . . pods are also much thicker than those of the common fort, but in *iiy*

ThsSe [ihr.ts arc propagated by seeds, which may be sown in the spring or autumn, upon a bed of ground in an open situation, and when the plants are illroig enough to remove; the; should be *repasv*

n. die roots of all noxious weeds . . . when the plants are fully taken up, and the *ja'in*

rows at a foot *ni i a lulf dii'* . . . in the row; one foat afunder, observing to water thrm *ilS* **havt taken** . . . *sfte** which they *wiU n* . . . p [hem clean fram < which may be by loicing of the ground *ftc-* . . . *iy* bewreo the plants, and in ill . . . *id* between *rlic wnn* should be dug, which will encourage their roots, and cuhr thrill to froot out vigurtiis Itulks; *ami ir* thcir Ihilks are cur down before *tlie* (bed) are rbrmtd iwary year, the teal ojtfflmie *tlie bnger*, *efprcialUv* if they grov. light dry foil. I . . . **Fmefcwifl**

ever *they* are permitted to fcarcter, fo that **pli** . . . *out* any care, *anil* *tlie* *c* *niay* . . . *lame* manner as . . . *ated*

The Brit lort is tiled in medicine i t B <COI . . . *Eal*, fudorific, an.: . . . lit. (1 very

¹igh *lle* ports of the flcin, and i. . . kinds of fevers. Mr. Boyle, in his treatise of the Wholness and Unwholness of the Air, be- fides three or four pages, in celebrating the virtues of Goat-sue in pestilential and malignant distempers, from his own observation and experience.

The third sort was discovered by the late curious botanist Dr. William Hanfman, at Coneyhead, from whence he sent the seeds into Europe. This, pUntis propagated by seeds, which must be sown in a bed early in the spring; and when the plants come up, and are fit to transplant, they must be transplanted each into a separate small pot, and plunged into a hot bed of tanner bark, shading them from the sun till they have taken new roots; then they must be treated as hath been directed for other

sooty plants, which are kept in the hot-bed. With this management they will flower in July, and in September they will perfect their seeds, but the plants may be preserved through the winter in the hot-bed.

The fourth sort grows naturally in Virginia and Carolina; this hath a perennial root, and an aerial stalk which rises three feet high; the lobes of the leaves are oblong and oval, generally seven or nine to each leaf; the whole plant is covered with a silvery down. The flowers are of a red colour, and are produced in spikes at the end of the branches; these are succeeded by kidney-shaped compressed pods of a fleshy colour, containing one row of kidney-shaped seeds.

This plant, although it is tolerably hardy, yet it is with difficulty preserved in England; for the seeds rarely ripen in England, and the plants are often destroyed by frost in winter. The only method in which I have been able to keep the plant, has been by getting them, and placing them in a common frame in winter, where they enjoyed the free air in mild weather, but were protected from frost; in this way I have kept the plant three years, but it has not ripen- i fecci here.

The fifth sort grows naturally in Ceylon, and in many parts of India, from whence I have received (i the seeds. This sort was annual here, and decay; J bl- fore the seeds were ripe. It hath an herbaceous stalk, which rises two feet high, pinn- . . . with winged leaves, which are either of eight or nine pair of oval lobes, terminated by an odd one; the first stalks of the flowers come out opposite to the leaves; these contain a long loose spike or stipe of small purple flowers, which are succeeded by slender erect pods.

This may be cultivated in the same way as the third sort; and if the plants are brought forward early in the spring, if the summer proves warm, the feeds mi-^r ripen.

GALLENIA. Lin. Gen. Plant. 422. Siccandia. Pomet. Epil. 14.

The title of this genus was given to it by Dr. Linnaeus, from the famous physician Galien.

The CHARACTER is, *The flower hath a small upright expansion of one leaf; it hath no petals, but four right very firmish the length of the expansion, terminated by double points. In the centre is situated a roundish cavity, possessing two vertical styles, crowned by large flowers. The expansion afterwards becomes a straight capule with two ribs, containing two oblong angular seeds.*

This genus of plants is ranged in the second section of Linnaeus's eighth class, marked Octandria Digyna; which includes those plants whose flowers have eight stamens and two styles.

We know but one Species of this genus, viz.

GALLENIA (Siccandia) Hort. Cliff. 120. Siccandia Galien. Siccandia. Pomet. Epil. 14. and Dr. Anderson. African. Ignis fraxinea, vulvarum talis. Hort. Pl. 20. Straly. Africae rursu straly, and Remyoy *leuca*.

This ftirub p grows naturally at the Cape of Good Hope, and in other parts of Africa; it rises with a slender stalk about four or five feet high, sending out many weak branches, garnished with very narrow leaves, which are placed irregularly on every side the branches; they are of a light green, with a furrow running lengthwise through the middle; the flowers are produced in loose panicles from the side and at the end of the branches; they are very small and have no petals, in make little appearance. The flowers come out in July and August, but are not succeeded by seeds in England.

This plant will not live through the winter in the open air in England, it must be placed in the greenhouse, or under a glass, with other hardy exotic plants, where it may have a large flow of air in mild weather, but is only exposed to be protected from frost. In the summer it may be exposed in the open air, with other plants of the same country, and in dry weather it must be frequently watered. This may be propagated

propagated by cutting; wliidi, if [>Um] during iny of the llimmer montls, ami watered frequently, will tike root in about five or li weeks, and n:af then be treated !. is directed for tlicold ph

CALEOPSIS. Lin. Gen. Plant. 637. T-)uro.Inft. R. H. 1 8<; tab. Kb. Slinking Dead Nettle.

The (IABACTE*5 are, The impairment aftbejta&er ft vltlilous, efeht leaf, cut into five parts, which end in aout paints. Thejrtser rt tabi; the chaps art a air, but the I meat; from the n the HaJtr jip, it is tm bolb fides jhnrsh ixdtnttd; * is aaeat, rtaidijb, and failed at the Dp; fid, ibt middli figment king the largjrl, :b si trtmtd. It bath fotir fiamins iuehfed in the :i being jbeftr than the other, trrtm iifid fimmti. In ibt tmler is fituated a Mgtri.. lig e flctdr fytle, ernentdha * ucutt fii'nsa, Thegermen aftrivard become feur iedfiedSt filling in tht rigid empaieimtn.

This genus of plants is ranged in the first feftton of linnus's fourteenth clafs, inritled Didynainii Gym-ailaim whofi.tlowers have two l->ng and two lhoit (lamina, and die feeds are: naked.

The SPECIES are, 1. Galeopsis (Ladanwit) internodiis csutims xqualibus verticillij omnibus re mot is. Lin. Sp. I. 779. Stinking IcJgt Ktllt, viilb equal Sfci.: eints, and 'xbarli growing at a dijanct. S npiitifolia rubra. C. B. P. . 7 irvwtem.

2. Galeopsis (Tetrabii) internodiis [upeme incrillii fumnlji fuh. T/S at li I inn folio vulgBre, Rail Syn. ^mms Bead Nettle viib a Hemp Itaf. CiAt-EOPsj (Specie/a) corolli Havi, lab macuijto. Flor Lapp. 193. Stinking Hedge Nutk-Mb a yiti*m fh-xr, wbsfe under Up is spotted. LA nium qannabinum acukatam flore luteo fpeciofo, labi; ~ 5. Fluk. Aim. i': Hemp Dead Nettle, AL< flower ax.

3. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

4. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

5. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

6. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

7. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

8. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

9. Galeopsis (Stinking or Dead Nellie Kith) corolli biflori, folia oblongo-ovata. Stinking Hedge Nettle with two flowers in each whorl, and oblong heart-shaped leaves. Galeopsis Orientalis (Orientale) vert

GALEOPSIS FRUTESCENS. See Pa. AXIVt.

G ALIU M. Lin. Gen. Plant. 117. Toiim. In! R. H. 114. tab. 39. Ladies Bedfontw, or Ghccle-rti (in I tench) Ciiitk; .

The CMAHACTEHS arc, The *!««• bttlb a fmsli empahmm itjtittit' in four parts, filtiri ujwit the%trmt. It bvtb infttiet, fmr figments almirlfl te tht bitlom; anA fear msl-ibapri r.a ivb;'ct> ere jhorter than tit petal, term jingk fitmmts. It hittb & twin verme* Jilused ttmlr til Jletcrr, fuppertiutg ajleitiier ba'fbifiAjy!t, CTFBIIH & by* ular flijrma. Tbtgemat afterward btemt ttno dry ierriti, awnt art pintA together, ta:b inciting a Isrg* • •shapedfad.

Tlii(genus of plants is rsnged in the first feftion of Linn*us's fourth clafs, iniirkii Tetrandria Monogynia, which ttlnld« ilioie plajits whose fiowi• have four ftamini and one fyte.

The SPECIES are, 1. Galium (Verum) foliis oppositis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium fajihrtno <xitb tight xanto furr brenzbu, Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

2. Galium (Malaga) foliis oppositis ovatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

3. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

4. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

5. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

6. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

7. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

8. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

9. Galium (Purpurascens) foliis verticillatis linearibus subulatis, ramis teretibus brevibus. Hort. Cliff. 34. Galium hneitn: C. B. P. 339. Galium caribm fulliferr.ii"; Galium hneitn: C. B. P. 339. Galium p.Efiliibu*. I

The first of these plants (which is the last commonly used in medicine) is very common in moist meadows, and in pasture grounds, in several parts of England. The other varieties are preserved in curious botanic gardens, but as they are plants of very little beauty, and are not so common, they are seldom cultivated in other gardens. These facts may any of them be propagated by parting their roots, which spread and increase very fast, either

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in the tiring or autumn, and will grow almost in any foil or situation, especially the firil ibrt -, the other foro require a drier foil, but will all grow in any It-taiaion.

GALLERIES, VC ornaments made with trees of various kinds, which are very common in all the gardens, but are seldom introduced into the English gardens, especially since the taste for clipper trees is now so much altered, that as there may be some who j fancy these obsolete ornaments, I liuti ult on the way of constructing them.

In order to make a gallery in a garden with porticoes and arches, a line must first be drawn of the length and breadth of the gallery; to be done, it is to be measured with a line, and the ground under the article HORNUEAMI should then be cleared, and it is to be the foil: of the gallery.

The management or tlim isnoi very difficult; they require only to be digged about, and fitted when there is occasion.

The chief curiosity required is in the uttering the fort-part of it; for gaiety, and in for the article.

Kashmiri of the fruit is; south of the; to 1 feet diameter of the fruit; other; dir galh-g) I for two or three pcfbts to vn]

When the height of the pillars well regulated, and the ground-work of the gallery finished, the next thing to be done is to form the porticoes.

W jitr ifrui whkii you must stop the [ornbeaai between two pillars; it is the bright, md run np a trellk made for ih>t pafafe, which forms the roof.

Ai itgrwi up you must w; your floor: even those boughs that outlitto; in the other: B time, W will grow strong, and may be kept in Form by the shears.

Portico galUericamay be covered with vine-trees.

G A R C I N I A. Lin. < a. Plant. n6. The ; large-fruit.

The CHAKICTEJH arc, Tbt jkBtr 1 is a varietal impement, which is permanent: I' iw-b far • X. end a.

kal- is pirmtKii: The ground upward toward a thick growth of grass, which is cut, including eight or ten feds.

[his gfnu: Linnarui's • leucanth calis, smilod. • v. rana ia Monogynia, which includes those plants whose flowers have twelve stamens and one style.

We have but one Species of this genus, viz.

GARCINIA (M. 5 Hort. Cliff. 154. The Mas- g /, cr Mt>- Arbor pcrgrina aurantia il-

Mi the Otatgt.

This tree grows naturally in the Molacca Islands, and also in the inland parts of New Spain, from whence I received perfect specimens, which were sent: roe by Mr. Robert Miller, who gathered them near Lima, but did not know the tree. It rises with an upright stem n *r twentj feet high, sending out many branches on every side, which are placed opposite, and stand oblique to each other, and not at right angles; the back of the branches is smooth, or a grey colour, but on the tender parts it is green, and that of the trunk is of a darker colour and full of cracks: the leaves are of the heart-shape, and entire, they are seven or eight inches long, and about half so much in breadth in the middle, gradually diminishing to the ends, of a lead green on their upper side, and of an Olive colour on their under, having a prominent midrib through the middle, with several small veins running from that to both sides of the leaf. The flowers are like that of a single Rose, composed of four roseate petals, which are thick at their base, but are thinner toward their ends; they are of a dark

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red colour. The fruit which succeeds the flower is round, the size of a middling Orange; the top is covered by a cap, which was the stigma on the top of the style, and remains in the top of the fruit, and is indented in rays to the number of six or seven, which are obtuse. The flesh of the fruit is like that of the Pomegranate, but softer, thicker, and fuller of juice; it is green at first, but changes to a dark brown with some yellowish spots; the inside of the fruit is of a Rose colour, and divided into several parts by thin partitions, as in Oranges, in which the seeds are lodged, surrounded by a soft juicy pulp of a delicious flavour, resembling of the Strawberry and the Grape, and is esteemed one of the richest fruits in the world; the trees naturally growing in the form of Pyramids, whose branches are well garnished with large shining green leaves; they have an elegant appearance, and afford a kindly shade in hot countries, therefore are worthy of cultivation, in all those countries where there is warmth enough to ripen the fruit. As there are but few of the kinds in these fruit which come to perfection (for the greatest part of them are abortive) so most of those which have been brought to Europe have failed; therefore the surest way to obtain the plants, is to sow their seeds in tubs of earth in the country, and when the plants have obtained strength, they may be brought to Europe; but there should be great care taken in their passage, to keep them from air water and the heat of the sun, as this not to give them much water, especially when they are in a cool or temperate climate, so that plants are very impatient of wet. When the plants arrive in Europe, they should be carefully inspected, each into a separate pot, filled with light kitchen-garden earth, and plunged into the tub, observing to shade them from the sun till they have taken new root; then they must be treated in the same manner as other tender plants from hot countries.

GARDENS are distinguished into flower-gardens, fruit-gardens, and kitchen-gardens: the first, being designed for pleasure and amusement, are to be placed in the most conspicuous parts, i. e. near to, or just against the back front of the house; the two latter being principally intended for use and service, are placed less in sight.

Though the fruit and kitchen-gardens are here mentioned as two distinct gardens, and have by the French gardeners, as also by some of our own countrymen been considered as such, yet they are now usually in one; and with good reason, since they both require a good soil and exposure, and will equally require to be placed out of the view of the house. And as it will be proper to inclose the kitchen-garden with walls, and to secure the gates, that no persons may have access to it, who have no business in it, for the sake of preserving the produce, so these walls will answer the purposes of both. Moreover, in the disposition of the kitchen-garden, when it is properly divided into quarters, the planting of espaliers of fruit-trees round each of the quarters, will be of use in screening from the view the kitchen-herbs growing in the quarters; and, by that means, give an elegance to both parts, and save besides a great expense. The only objection which has been made to this of any consequence is, that the gardeners are too apt to crowd the borders near the walls with kitchen-herbs, whereby the trees are deprived of their nourishment; but this is in every gentleman's power to remedy, by not suffering the borders to be thus crowded. But I shall treat more fully of this under the article of Kitchen-Gardens.

In the choice of a place to plant a garden in, the situation and exposure of the ground are the most essential points to be regarded; hence, if a valley be made in that point, all the care and expense will in a manner be lost.

In a garden for pleasure, the principal things to be considered, are, first, the situation; secondly, the soil, aspect, or exposure; thirdly, water; fourthly, prospect.

ift, Siwaticy>: tins ought to be fuch an one an is
wishome, in a plain: that is no: high nor
too low; tor if a garden be ruo bigli, ii will be ex-
posed to the winds, whic art very [opposid to
trees, if it be too law, the dampness of the ground,
•ermin, and venomous creati
• ponds and morphy pkc«, add much Co th
• ritf.

A fitiuori on a rifin^ "rmtntl, Or on the fide of a
• hill is molt hn: • especially if the Bund &e not
too steep; if the slope be easy, and in I manner im-
perceptible, if a good deal of level ma be had near
the house; and if it abound i, with fprings of water,
• for, being sheltered from the fury or the winds, and
the violent heat of the sun, a temper lie air will be
there enjoyed; and the water that defends from the
i of the hills, either t from fpringior rain, will not
only lupply fountains, canals, and cascades, for orna-
ment, but when it has perfrmed ii office, will
wjcti the adjacent valleys ami render them fertile
ami whiuliume, if it be not fuferred to itagme in
tbero.

• if the declivity of the hill be too steep, and
if tin water be abundant, a gar
ay often fuller, by having the trees turn up hv
the torrents and floods i and ilic earth above tumbling
the walls may be demolished, a]

it cannot however be denied, that the frustion on a
plain is not; Hoods and rains make no
• is a continued profpeft of diamj
covered with buildings or woods; and the level lur-
face is less exposed to the winds, and let rfiar]
• fiat on the fide of a hill: thic terricc>w.
steps an; not neclary; bgt the greatfl dilidvantage
of flat ground; ff is the want of an exteii:
• riling grounds afford.

It is scarce possible to make a line garden in a bad
foil, there are indeed ways 10 mclionte ground, but
they are very expenfive, and frn times, when the
• ce ha. tjeen befowed of laying gn
fast deep over the whole furfaec, which for a large
garden is in expence too great for most perlbna-, and
after this a wate garden has been run
ing thc expo lure has been fouterlj and health-
ful, when the roots of the treci have come i i
the natural boitom.

To make a quilitj- of ihe foil, obftTve wheljier
there be Heath, Thistles, or LICE like weeds,
mowing fjontancouly in it, for they are crum n iigns
Out the ground is poor. Ljkewif if there be large
moss growing thereabouts, obietve whether they grow
coolled, ill shaped, of a fKjed green, and full of
• viti vermin-, or is to
be neglected; but on the contrary, if it be covered
with good Grass fit for pasture, then you may betn-
• ilur depth, of the ftril.

To know the depth of the soil, dig a trench
and four feet deep, if you find three iict of good
earth it will do well, but icJs than two will be
• ient.

The tU*ity of good ground is neither to I, stony,
nor too hard to work, neither too dry, Jiortuomoit i
nor too sandy and light, nor too frong and e
• rdens.

• dly. The third requisite is water. The want of Jsk
is one of the greatest inconveniencies that can befall
a garden, Mil • ill bring a certain mortality upon
whatever is planted in it, especially in the greater
• droughs that often happen in a hot and dry situation
in summer, besides the usefulness of it in fine gar-
• for making jets d'eau, canals, cascades, &c. which
are the greatest ornaments of a garden.

• ible. The fourth thing required in a good situation
is, the view and prospect of a fine country, and
though this is not so absolutely necessary as water, yet

it ia orcr of the tnoft agreeable bcatties of a fir-
den: beides, if a garden be planted in a place
that is buried, a I may say, and has no kind of pro-
spect, it will be not on! disagreeable but unselctive,
by ban; t much shaded and obscured; as that most
will rather retain insalubrious damps, than i come
care the rrfrelhv air, than ts fa punt; to a wog-
cable nature.

In fiioit, a garden necessarily require s [besides the
care of the gardener] the fun, tt good ibil, a ! all, or
at least an open profpeft, and » air, the i i i
all; and it would be egregious folly K> j' !. and a garden
where any of these are wanting.

Of the Deligning or Manner of Laying out a Plea-
sure Garden,

The area of a lundfome garden nwy tike up thirty
or forty acrei, a more.
And as for the disposition and distribution at thia
gardon, the foUowing distributions may be observed.

1st, There ought always to be a delicti fr i a the
house to the garden not less than titim thRr steps, but if
there are six or seven it will be better. This elevation
of the building will make it more dry and wholsome,
also from the head of these steps there will be a fir-
tjer profpeft or view of the garden.

In a jitte garden, the first thing that should present
itself to the sight, should be an open lawn of Grass,
which, in size, should be proportionable to the grs-
den; in a large garden it should not be less than six
or eight acres; but in middling or small gardens, the
width of it should be considerably more than the
front of the house; and if the depth be one half
more than the width, it will have a better effect. The
figure of this lawn need not be regular, and if in die
sides there are trees planted irregularly, by way of
open grove, fonic of which may be planted forward
upon the hiwn than the others, whereby the regularity
of die lawn will be lessened, it will render it more
like nature, th< tenatives of which should always be
studied. In the laying out and planting of gardens;
for the most part, these gardens approach to nature, the
longer they niU plejlc; tar I hat is a garden, bui a
natural spot of ground: dredicd and properly orna-
ment'd; there are those who have erred in coming
of what they call nature, as much as those who have
drawn a whole garden into straight lines, grave alleys,
fairs, &c. by bringing the most artificial and most
fi.rtof niirure into the composition of gardens; &
for inflance, where the gixiund has been naturally
level, they have at great expence, made hollows and
raised mole-hills; so that the turf has been rti:
not only more unpleasant to walk upon, but much
work to keep; and after all the pains that have been
taken to ape nature, the whole is as easily discovered
to be the work of art, as the finest flo; es MKI the
most finished pictures.

The best art in laying out of gardens, is to adapt
the artificial parts to the natural position of the ground,
so as to have as little earth to remove as possible; for
this is often one of the greatest expences in making
of gardens; and it may with truth be affirmed, that
whenever this has been practis'd, one time in ten
it has proved for the worse; so that if instead of lev-
elling hills to form large terraces, Cliff slopes, and
even pastures, as have been too often practis'd, or
the sinking of hollows, and raising of hills, as hath
by others been done; if the nature of the ground
had only been smoothed and well cur'd, it would
have had a much better effect, and been more ge-
OCTAL: approved than the present number of these
gartl; , which have been made with an infinite ex-
pence both of time and money.

Thic ncit thitf to be i- served is, to omrive a drf
walk, which should lead quite round the whole gar-
den-, for gardens are delign'd to promote the ex-
ercise of walking, the greater the extent of this dry
walk, the better it will defend the person from
b*d weilh. or in dewy marshes and evening

when the fields are unpleasur'd or unfa'r to walk over these dry walks in gardens become usef'ul and pk-aftn'r; and fucl' walks, it laid either with gravel or fend, may lead through the different plantations, gently winding about in an easy natural way, which will be more agreeable than those long thrait walks, which are too frequently us'd in gardens.

But as the ta'ct of designing gardens has of late altered from the former method, there are many persons; who have gone into the opposite extreme; and in the forming of what they term serpentine walks, have twist'd them about in so many illort turns, as to render it very disagreeable to walk on them; and in the same time they strike the fight with as much difficulty and appearance of art, as any of the methods formerly practis'd. In short, the fewer turns there are in these walks, and the more they are conceal'd, the better they will appear; and yet the turns being easy, and at great distances, will take off all the appearance of contrivance. And here let me observe, that there can be no better, or more easy or natural method of laying out these walks, than by tracing the easy runs made on a road, where if bend'd by the track of the coach wheels.

These walks should lie so contriv'd, as to lead into shade as soon as possible; as also into the recesses of shrubs, where they may be pleas'd to walk in private, and to be shelter'd from the wind; for no garden can be pleas'd where there is want of shade and flicker. Another thing absolutely necessary is, where the boundaries of the garden are fenced with walk or rail, they should be hid by plantings of flowering shrubs, intermix'd with Laurels, and some other Evergreen; which will have a good effect, and at the same time conceal the tenets, which are disagreeable, when left naked and expos'd to the sight.

In situation where there is a good supply of water, the designer has room for adding one or two great beauties to the garden, especially if it will admit of a constant stream; for in such places, if the water is properly conducted through the garden, it will afford infinite pleasure; for although these streams may not be so frequent, yet if they supply a large surface, yet if they narrow rivulets are judiciously led about the garden, they will have a better effect than numerous of the large stagnating ponds or canals, so frequently made in large gardens; for where these pieces of water are large, if all the boundaries can be seen from every point of view, they cannot be pleas'd by judgment; and frequently the landing waters are brought so near the house, as to render the air damp and unhealthy; and many times they are so situated, as to occasion this inconvenience, and at the same time are not seen to any advantage from the house.

Where wildernesses are intended, these should not be cut into straits, and other ridiculous figures, nor formed into mazes or labyrinths, which in a great design is not proper, but the walks should be noble, and lined by tall trees, and the spaces of the quarr' plantings with flowering shrubs and Evergreens, whereby they will be rendered pleasant at all seasons; and the year will be rendered pleasant by flow'rs which will and X there are hardy sorts of flow'rs (which will thrive with little care) scattered about near the sides of the walks, they will be a great ornament, making a variety of natural beauties almost through the year.

The situation of these wildernesses should not be too near the house, lest they should occasion dampness; therefore it is much better to contrive some open groves, through which there may be a communication under shade from the house to these wildernesses; which are much the best when they are planted at the finest part of the garden, provided they do not obstruct the view of fine objects.

But things which are also very proper ornaments in a garden, if they are well design'd and properly placed, but the modern taste of crowding the garden with these buildings, I perswade myself to think is a very bad way, with regard to the propriety of the expense. Situations and places are all very beautiful objects, but

the fountain by no means be placed too near the house; other; for when several of them appear at once, they fill and confound the eye, and in the beautiful effect which they would have, if now and then one properly engag'd the eye.

What an expense might be spared, and applied to nobler purposes, if nature only were to be untuned, if simplicity were studied in this design'd art, rather than ostentation! for any thing may be said to be more of nature, than what we misse the grandeur.

Fountains are also very ornamental to a garden, if they are magnificently built, and where a constant supply of water can be obtained; but if they are meanly erected, they have not water to keep them constantly running, they should be introduced into gardens, for nothing can be more ridiculous than to see a dry fountain, which, perhaps, at a great expense, may have been raised up, to supply it for an hour or two, and no more; and that perhaps not in dry seasons, when there is a scarcity of water. The lame may be observ'd of cascades, and other falls of water, which ought never to be contriv'd in gardens, where there cannot be a constant run of water; but where the situation of a garden is so happy, as to be naturally supplied with water, these falls and jets of water, may be rendered very great beauties, especially if they are well design'd, and not made in the low mean taste, in which so many of them! now in being appear, and where the water is made to foil over a parcel of regular trees; of Hone; but they should be in one sheet from top to bottom, when they should be placed in large rough stones to break and dilate the water, and to increase the noise of the fall.

Where the ground is naturally uneven, and but a few trees and falls, these may be admirably humoured in the laying out of the ground, as can be rendered very great beauties; but the inequalities of the ground must by no means be cut into regular straight lines, or amplified, as has been too much the practice; but if the knolls are properly planted with groups of trees or shrubs, and the lying sides finish'd and left in their natural situation, they will have a much better effect, than can be given them by all the regular logics, lines, and other illogicals, which have been till of late, introduced by the delvers of gardens.

The taste in laying out of gardens has greatly altered, and is now generally introduc'd in England, in the company of a few years; for, with the revolution, the Dutch taste of laying out of gardens was introduc'd, which consist'd of a wide inure than flower-border laid out in several rows of Box-work, clipped ivy greens, and such low exjunctive things; as also the walling round, and dividing the several parts of gardens by croft walk; in that garden consist'd of eight or ten acres, was generally divid'd by brick walk, into three or four separate gardens, and these were reduced to a small level, having many grass walks and the borders on each side crowded with clipped trees and Evergreen hedges, dividing these small inclosures again; so that the little making and planting of these small gardens was attended with a great expense, as was the keeping of them afterward. Dim gardens of six times the extent, when design'd after nature.

Whether this taste universally prevail'd in England, I near cannot determine; but late Mr. J. Kiiip William, or wisomman to the low grovelling taste of those persons, who had the designing of most of the English gardens, is difficult to determine; but it is very certain, that the gentlemen, at that time, were serv'd little the less, to the dissipation of their gardens, but were contented to leave the whole direction of them to persons of the meanest sort; that tried the art, to the utmost in the year, when another taste prevail'd, the quarters were almost entirely demolish'd, and it would have been a good deal better, if a natural wild hint succeed'd to the other, but this was not the case; for though a more open and extensive way of laying out gardens was introduc'd, yet the same lies

tie more than copying after the French, whose taste was in making long avenues, straight walks, stiff regular dopes, cabinets, fret-work tall hedges cut into various shapes, jets d'eau, fountains, &c. so that there was little of nature studied; but, on the contrary, all the geometrical figures introduced in wicker-work, as also in the parterres, and other compartments of the garden: nor is it so much to be wondered at, that this taste prevailed in France, when the designs of all the principal gardens were there formed by architects, who were as studious to have the symmetry of the opposite, or corresponding part of the garden, as exact as the apartments of a habitation, nor has length of time, nor the improvements already made in other countries, amended their taste, or convinced them of its absurdity.

As the gardens of Versailles, Marli, and others, were extolled for their magnificence, so the plans of them were almost universally copied; the designers, or imitators rather, only varying the parts according to the situation or figure of the ground, and this was practiced for several years, at a time, when great sums of money were expended in gardens, which might have rendered this country the most beautiful of any in Europe, had a natural taste then prevailed in the designing of gardens; which is the more to be lamented, as the plantations then made, have been many of them rooted out, to make way for the alterations and improvements which have been since introduced. Many persons, I am sensible, will have it, that, in the designs of gardens, the taste should alter from time to time, as much as the fashion of apparel, but these cannot be persons of judgment, for wherever there are natural beauties in a country, they will always please persons of real knowledge, and frequently it is observed, that persons of but little skill in the art of gardening, are struck with these beauties without knowing the cause; therefore where the beautiful parts of nature are justly imitated in gardens, they will always be approved by judicious persons, let the taste of gardening alter as it will.

When trees have been long growing in a garden, nothing can be more disagreeable than to have them destroyed, to alter the garden according to the fashion of the time, because it requires much time to bring up trees to such a height as to afford shade and shelter; and, as time is precious, so, where the disposition of the garden is altered, there should be great attention given to the preservation of all the good trees, wherever they can be either useful or ornamental.

There is another essential part of gardening, which cannot be too much considered by persons who design gardens, which is that of adapting the several sorts of trees and shrubs, to the situation and soil of the garden, as also to allow the trees a proper share of room; but, however necessary this will appear, yet very few persons have made this their study, inasmuch that when one views many modern gardens, and sees the great number of trees and shrubs, which are crowded into them, one would be induced to believe, that private interest has had a greater influence than any other motive, with the designers. Indeed this fault may often be ascribed to the master, who, perhaps, is too much in haste for shade and shelter, so will have three or four times the number of trees and shrubs planted as should have been, or that can remain long without injury, where the plantations succeed, and to this over-haste are owing the miserable plantations of large trees, so often seen in gardens and parks, where trees of all sorts, and of any age are taken out of woods, hedge-rows, &c. and removed at a great expence to stand and decay annually, till they become so many dead sticks, than which nothing can be a more disagreeable sight to the owner; who, after an expectation for several years, attended with an expence of watering, digging, and cleaning, finds himself under a necessity either of replanting, or giving up the thoughts of having any. Numbers of persons have indeed amused themselves with the hopes of success, by seeing these

new planted trees put out branches for a year or two, which they generally do; but in three or four years after, instead of making a progress, they begin to decay at the top, and continue to do so gradually, until they quite perish, which, perhaps, may not happen in eight or ten years, especially if no severe winter, or very dry summer, intervenes, either of which generally proves fatal to these plantations, so that persons may be led on with hopes, for so many years, in the best part of their lives, when there is a certainty of their failing, or at least of their never increasing in size; but of this I shall treat more fully in the article of PLANTING, and shall proceed.

In the business of designs, a mean and pitiful manner should be studiously avoided, and the aim should be always at that which is noble and great, not to bring too many little things into a garden, nor to make small pieces of water, narrow walks, &c. especially in large gardens; for it is much better to have a few great things, than four times the number of small ones, which are trifling. In small gardens there is more excuse for this, nor indeed would it be right, to have either large lawns, broad walks, or large pieces of water in such; but yet even in these there ought to be a medium, and persons should never attempt to crowd too many things in these, whereby the whole will appear only as a mean and trifling model of a large garden. Before the design of a garden is entered upon, it ought to be considered, what it will be in twenty or thirty years time, when the trees and shrubs are grown up, and spread; for it often happens, that a design, which looks handsome when it is first planted, and in good proportion, in process of time becomes so small and ridiculous, that there is a necessity either of altering or totally destroying it.

The general distribution of a garden, and of its parts, ought to be accommodated to the different situations of the ground, for a design may be very proper for a garden on a perfect level, which will by no means do for one where there are great inequalities in the ground; so that, as I have before intimated, the great art of designing is, in properly adapting the design to the situation, and contriving to save the expence of removing earth, to humour the inequalities of the ground, to proportion the number and sorts of trees and shrubs to each part of the garden, and to shut out, from the view of the garden, no objects that may become ornamental.

There are, besides these, many other rules relating to the proportions, conformity, and disposition, of the different parts and ornaments of gardens, of which more may be seen under their several articles.

GARDENIA. See JASMINUM.

GARIDELLA. Tourn. Inf. R. H. 655. tab. 430. Lin. Gen. Plant. 507. [This plant was so named by Dr. Tournefort, in honour of Dr. Garidel, who was professor of physics at Aix, in Provence.]

The CHARACTERS are,

"The flower bath a finally oblong serene empalement of five leaves, // bath no petals* but five oblong equal nestariums occupy their place & these are bilabiate. The outer part of the under lip is bifid and plain & the interior part of the upper lip is short and Jingle. "The flower bath eight or ten awl-shaped stamina, which are shorter than the empalement and are terminated by obtuse erect funtits. In the center is situated a bree germina, which are oblong & rompreffed and sharp-potted having no styles, but crowned by simple stigmas; these Tiecome three oblong compressed capules with two valves inching several small feeds.

This genus of plants is ranged in the third section of Linnseus's tenth class, which includes those plants whose flowers have ten stamina and three germen.

We know but one SPECIES of this genus, viz..

GARIDELLA (*Nigellastrum*.) Hort. Cliff. 170. Garidella foliis tenuissime divisis. Tourn. *Garidél!* with very narrow divided leaves, and the *Nigella Cretica* fejo Foeniculi. C. B. P. 146. *Fennel flower of Crete with a Fennel leaf*

This plant is very near akin to the *Nigella*, or *Fennel-flower*, to which genus it was placed by the writers on botany before Dr. Tournefort, and was by him

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him separated from it, as differing in the form of the flower.

It grows wild in Candb, and on mount Baldu., Italy, as also in Provence, where it was discovered by Dr. Garidel, who sent the seeds to Dr. Tournelbrr, for the Royal Garden H Pel is.

This is an annual plant, which rises with an upright stalk a foot high, dividing into several slender branches, garnished at their joints with very slender

leaves like those of Fenm-i. The flowers are ternate of one final flower, of a pale herbaceous colour.

Each is succeeded by three capsules, each containing two or three linear seeds. It flowers in June and July, and ripens in September. It is propagated by seeds, which should be sown in autumn, on a bed or bonier of light friable earth, where the plants

when they first appear should be thinned (for they will not thrive if sown too thickly) when the plants are come up, they must be carefully cleared from weeds, and when they are too tall, they must be thinned, leaving them about four or five inches apart; in autumn it is recommended to lean the plants, and if the seeds are sown in a lean soil, the plants will come up without any farther care.

GAULTHERIA.

The CH. K. icrii5 are,

(lath e dcublt frmmittiti mpalesimt; tht n /tm ^al, / havtt tit tm bat tut MS-fbapd itzftut in/ejk-rfcgmeatii the fewer hm (pitai neHts.-wbiti> a

Im l arii, tubhh are fieri* lurr>jr:diu: ^ tfa . - and ten xwl-jbtpd incurved jlii- ihtrictptmk, terminated fy ifiil bcrxed jittsim: , end a rmtn&jb deprifjed germen, fupperting a

.. ftyb, mv.ed :- pirsard hferma an * . . . * jki a, iurn; to a kryy vpen a! tbt top, l rfteds.

genus of plani • the first feffion of Linnius's tenth class, intitl-J Jjecjuidrin Monog)iii.i,

flower having ten stamina and one style.

It is native of the mountains of the Andes, in the province of Quito, in the kingdom of Peru, and is cultivated in the gardens of the University of Cambridge, and in the gardens of the University of Edinburgh.

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QEN

Welino* bronc; SPECIES of [hit «a'ti ;

(jSteratr.) Aniw. Acad fimschia diatn.: punftia capliilt] carin:itu in ramulorinn , Irii 1 jo. tab. 43.S. f. 1.

Ti.jj is a perennial plant, which grows naturally in Virginia and Pennsylvania: it is a very high, spreading, herbaceous plant, which is covered with oblong leaves, which are very pretty dofe.

The anther is produced in clusters at the end of the stem: the flowers are of a white colour, and are very fragrant.

The flowers appear in September, and when the autumn grows favourable, the seeds will ripen towards the end of October.

If it is sown in a garden, it will grow very well, and is very useful for the purpose of medicine.

It is a very useful plant, and is very common in the mountains of the Andes.

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Wher ever there is a new arrangement, or composition of the elements, there is, in reality, a new generation, and thus generation is reduced to motion. Generation is more immediately understood of animal and vegetable bodies from seed, or the coition of others of different sexes, but of the same genus or kind.

Monf. Perrault, and some of the modern naturalists after him, maintained, That there is not properly any new generation, that God created all things at first, and that what is by us called generation, is no more than an augmentation and expansion of the minute parts of the body of the seed, so that the whole species, which are afterwards produced, were, in reality, all formed at the first, and inclosed therein, to be brought forth and exposed to view in time, and according to a certain order and oeconomy.

And accordingly Dr. Garden says, It is most probable, that the stamina of all the plants and animals that have been formed, ab origine mundi, by the Almighty Creator, within the first of each respective kind; and he who considers the nature of vision, that it does not give us the true magnitude, but only the proportion of things; and that which seems to our naked eye but a point, may truly be made up by as many parts as seem to be in the whole universe, will not think this an absurd or impossible thing.

Dr. Blair, treating of the generation of plants, says, That when Almighty God created the world, he so ordered and disposed of the materies mundi, that every thing produced, from it should continue so long as the world should stand. Not that the same individual species should always remain; for they were, in process of time, to perish, decay, and return to the earth, from whence they came; but that every like should produce its like, every species should produce its own kind, to prevent a final destruction of the species, or the necessity of a new creation, in order to continue the same species upon earth, or in the world.

For which end he laid down certain regulations, by which each species was to be propagated, preserved, and supported, till, in order, or course of time, they were to be removed hence; for, without that, those very beings, which were created at first, must have continued till the final dissolution of all things, which Almighty God of his infinite wisdom did not think fit.

But, that he might still the more manifest his omnipotence, he set all the engines of his providence to work, by which one effect was to produce another by the means of certain laws, or rules laid down for the propagation, maintenance, and support of all created beings; this his divine providence is called nature, and these regulations are called the laws, or rules of nature, by which it ever operates in its ordinary course, and whatever exceeds from that is said to be preternatural, miraculous, or monstrous.

Moses, in his account of the creation, tells us, that plants have their seeds in themselves, in these words: And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit, after his kind, whose seed is in itself upon the earth. The ancients, indeed, distinguished the generation of animals into two kinds, i. e. into regular, called univocal*, and anomalous, called also equivocal, or ipontaneous.

The first was effected by parent animals of the same kind, as that of men, birds, beasts, &c. The second they supposed to be effected by corruption, the sun, &c. as that of insects, frogs, &c. but this latter is now generally exploded.

Many, indeed, have essayed to treat of the generation of animals, but few have been able to give that satisfactory account of it that were to be wished for, and far fewer yet have been able to treat of the generation of plants as it ought to be; for that which still kept them in the dark, was,

First, That though there were two different sexes in animals, by whose mutual assistance the species was

propagated, yet there was no such thing then known in plants.

Secondly, That though it can now be made appear, that every animal is produced by univocal generation, i. e. from an egg, and not by corruption, &c. as most of the ancients imagined the insects were; yet there are still those who maintain, that those which they call imperfect plants, are the product of a certain rottenness in the earth.

The generation of plants bears a close analogy to that of some animals, especially such as want local motion, as muscles, and other immoveable shell-fish, which are hermaphrodite, and contain both the male and female organs of generation.

The Power of a plant is found to be the pudendum, or principal organ of generation; but the use of so much mechanism, and so many parts, has been but little known till of late years.

The flower of a Lily consists of six petals, or flower-leaves, from the bottom of which, in the middle, arises a kind of tube, called by Tournefort, the pistillum, and by Dr. Linnaeus the style; this rests upon the germen, which is the female organ of generation; round this are placed pretty fine threads, called the stamina, or filaments; these stamina arise likewise from the bottom of the flower, and terminate at the top in little summits, called by some apices, which are replete with a fine dust, called farina; these are the male organs of plants.

This is the general structure of the flowers of plants, although they are infinite ways diversified, and to such a degree, that some have no sensible pistil, and others want the stamina; others again have the stamina, but want the apices, and some plants exceed all others in this, that they have no visible flowers; but if it be allowed, that this before-mentioned is the most common structure of flowers, it will follow, that these parts that seem wanting are usually only less apparent, or are situated in different plants, or in different parts of the same plant.

The fruit is usually at the base of the pistillum, so that when the pistillum falls with the rest of the flower, the fruit appears in the stead of it; but oftentimes the pistillum is the fruit itself, but still they have both the same situation in the center of the flower, and the petals, or flower-leaves, which are disposed around the little embryo, seem to be designed only to prepare a fine juice in the little vessels, for the support of it during the little time that they last, and it requires; but some suppose the chief use of them to be to defend the pistillum, &c.

The apices of the stamina are small capsules, or bags, full of a farina, or dust, which falls out when the capsule grows ripe, and bursts.

Monf. Tournefort supposed this dust to be only an excrement of the food of the fruit, and the stamina to be nothing but excretory ducts, which filtrated this useless matter, and thus discharged the embryo; but Mr. Morland, Mr. Geoffroy, and others, find nobler uses for this dust; on their principle the stamina, with the apices and farina, make the male part of the plant, and the pistil, the female.

Mr. Morland says, It hath been long ago observed, that there is in every particular feed a femal plant conveniently lodged between the two lobes, which constitute the bulk of the seed, and are designed for the first nourishment of the tender plant.

But the admirable Dr. Grew to whose generous industry, and happy sagacity, we are indebted for the best improvements of this part of knowledge, is the only author I can find, who hath observed that the farina, or fine powder, which is, in its proper season, shed out of those thecae, or apices' Ceminiformes [i. e. seed-forming cases] which grow at the top of the stamina, doth some way perform the office of male sperm. But herein, I think, he falls (hot; in that he supposes them only to drop upon the outside the uterus, or vasculum feminale, and to impregnate the included seed by some spirituous emanations, or energetic impres.

That which is now subject . . . to the disquisition ant
cenfure of Jucli whofe exquiffi
themjudgesof fuch performances. :
nut be more proper to (up).
are lodged in the proper mvolucra, ar
impregnated ova (ei eggs) as of animals; that this
i'arnu is acotigeiics of terminal plants, one of which
m'9 be conveyed into everj ovum before it can be
tomv pi-flikj . . . the Blyu, in Mr. Ray's language,
ur the uj per jur: oM be pultulum. in Mr. 1
fort's, is .i r be designed to convey thefe terminal plain
into thtir nctfai- the ova; that there is a vaft apro
vifion madf, becdufe o the obfe thefe are, whether
one, or fo many, I ill ever finj its way into, am
thru: gh fu narrow a conveyance.

To make this fuppofition the Hfore credible, I lia I
Liyduwii . . . observations I have made upon the fixa-
tion of theft; famin.i, and thelylu . . . in fome few
of planes.

I'rLt, In tlic Corona Impcrialt!, whcfe t
vacuum terminal of the plant ftands upon the center
of thl flower; and from the top of this arife the
Hjtus, uil- vileii!iini (eminale anii tytylu togL:
representing a put Hum,

Rou! . . . this are plain 1 (ix llamini; npi in the eadh
of each of thefe are aj . . . , that they
turn uvcr; . . . with the leaf wind, bring in bright
almo't equal to the flym about which they pafy,
and which in <- . . . plant is manifestly open at the
top, as it is hollow all the way; to which we muft
add, that upon the tap or I . . . there is a fort
of raft, amnfting of pinguid . . . villi, which I imagined
to be placed there to cn'li ind detain the fil: . . .
it flies out of thir . . . n hence, I fuppol
the wind takes il .hvn the tube, till it reach the . . .
lum feminale.

In (lie CaprLfotium, or I . . . fockle, there rife a fly-
lus from [In rudiments of a berry, into which a
ferred to the top of the monopetalous flower, from
the middle l . . . which flower are first feeh several
ia-
iiiill). that thefe their ferna out of the cafs upon
the orifice of the ftylus, wbicli, m this j I
viDuS or tutted, upon tin . . .
former.

In Allium, or common Garlic, there arifei a tncoc
cous uierus, or fted-v'tl, in the crnter of wh . . .
infertii a' . . . , not flym, not to high as the apices, which
thus over- . . .
dng Uirir globules into an . . .
which Itafen, I can discern no raft upon this (as in
the furni l . . . to insure their entrance, the: being pro-
vided . . . by its fituation juft under them.

The reader, I hope, will ex.cuS; m . . . I prefer him
now wUh fame fid™ reafoninp or reflections a tlic
foregning account do! . . .
and I CWDM but hope K> perfwade t:
ointJid, tiat I ha . . .
Jkwers I have mentiuneil, their true anil real a
L'r nothing CM bem . . .
natural than to conclude,
that where a fine powder is curiously prepared, care-
fully reposed, and then abroad at a peculiar feafon,
where there is a tube fo placed as to be fit to receive

[r,a::: . . . each cafe as difpofes this tube, where it doth
not lie directly under the cafs that shed the powder,
it hath a particular apparatus at the end, to insure its
tnna . . .

Not . . . ing can be nioro^ . . . deduced from any
premises, than it may from this, that this powder,
or fome of it, was designed to enter this tube. If thefe
Bamina had been fo by extemporary chance, as has been
thems supposed, and enter the greater parts, and leave
the juft diameter for the accommodation of the seed
itself, what need was there to have thicker
Ciments in fuch various repositories? They would
have been discovered any where, rather than where
there was fo much danger of their dropping into the
feed-veffels, as there is here.

Again: the tube, out of the mouth of which they are
shed, and into which they enter, leads always directly
into the feed-veffels.

To which we muft add, that the tubes always hegets
to the when thefe chaces are emptied of their contents,
if they last any longer, it is only while the globules,
which enter at these orifices, may be fuppofed to have
finished their passage. Now, can we well expect a more
conceding proof of their intention, designed to con-
vey their globules, than that they wither when there
are not more globules to convey.

If I could now fhew, that the ova, or unimpregna-
ted seeds, are ever to be observed without this terminal
plant, the proof would arife as a demonstration; but
having not been fo happy as to observe this, I fhall
not be obliged at present with fuppofing, that hence

Concent
unc wou
rather designed to fever fuperfluous juices from what
was left to stored in the Bamina, than the ftamina to
perform this office, either for them, or the unimpreg-
nated femina, and observe the analogie between ani-
mal and vegetable generation, as far as was necessary
there fhould be an agreement between them: I fhall
recommencd the enquiry to thofe gentlemen who are
matters: >r rhe hi
microscopes, and address in ufing
them; though, in the mean time, I have made fome
fteps to
root of this fort, and have mixt with
Ibine m
I hint, as make me out details of being able,
in about time, to give the world even this fatisfaction.

Fur, . . . to build upon this, that the feminal plant
always lies in that part of the feed which is always
nearest to the inferior of this ftyle, or fome propaga-
tion of it into the feed-veffels, I have difcovered in
Beans, Peas, and Kidney-beans, juft under one end of
that we call the eye, a manifold perforation, (incomparable
by 1
greater fort of magnifying glaffes) which leads
directly to the feminal plant, and at which I fuppofe
the femi J pbnt did . . . enter, and I am apt to think,
the Beans . . . or feis tha: via no: thrive well, r . . .
may be
found definite of it.

But I muft now proceed to describe fome other
plants, whereby it will appear, that there is a parti-
cular care always exercifed to convey this powder, fo
often mentioned, into a tube, which may convey it
to the ova.
Now, in Leguminous plants, if we carefully take off
the petals of the flower, we fhall difcover the pod, or
filiqua, clofely covered with an involucring membrane,
which, about the top, feparates from upon ftamina,
each charged with its quantity of farina; and thefe
ftamina clofely adhere to the ftyle, which is confide-
rable at the end of that tube, which were alfo lead di-
rectly to the pod; it ftands not upright, loofely, but
fo bem . . . as to make out a right angle with it.
In Roies there ftands a chamber, confiding of many
tubes clofely close together, though eafily feparable,
each leading to their partner cell, the Bamina is a
great number placed all round about.

In Tit] . . . , there rife a tubulous
veffel, that, while it is fmall, is not eafily difcernible,
lies ai
the incum nil it is increafed, but af-
terwards grows up, and ftands upright upon a tall
pedicle of an oval, as would tempt one to think, that
there was to be no communication betwixt this and
the apice.
In the Strawberries and Raspberries, the hairs which
grow upon the eye (root) which, I fuppofe, may be
forfeiting to fuch, as fo many tubes leading each to
their particular feed; and therefore we may observe,
that in the leaf opening of the flower there ftands a
ring of ftamina, within the pedicel, and the whole in-
ward part appears like a little wood of three hairs or
poles, which, when they have matured and conveyed
their globules, do break forth, and rife as a carnosus
milk. Thus for Mr. Mufland.

We may observe a veffel at the bottom of the pillil
of the Lady, which veffel we may call the uterus, or
womb, in which are many ovaries filled with
little
eggs, or rudiments of feed found in the ovaria,
which ftays decay, and come to nothing, unless im-
pregnated with the farina of the fern plant, or fome
other of the fame kind; the ftamina alfo ferve for the
conveyance of the male feed of the plant to be
per-
ffittd

fitted in the apices, which, when ripe, burfl forth in little particles liko dull; fomc of them fall into the orifice of the piftil, and arc either conveyed thence into the utriclc, to fecundify the female ova, or lodged in the pillH, where, by their magnetic virtue, they draw the nourifhmelit from the other parts of the plant into the nnLuryos of die fruit, making then: fwell, grow, &c.

tn Doivers that turn down, as the Cvdamen, and the Imperial Crown, the piftil is muclt longer than the ...;:ri, dial tlicir duft may fal! from their apices in fulchicnt quantities on the piltU, fur the buUnclit of impregnation.

Mr. Geoffrey aflures us, That in all the obfervations he had made, the cutting off the piftil before it could be impregnated by the farina, actu^:y rrrdrnd the plant barren for the feafbn, and the fruit abortivi.

In many kinds of plants, as the Oak, Pine, Willow, &c. the flowers, Mr. Gcoffroy obferves, have their (lamina and apices, whofe farina may cafily impregnate the rudiments of the fruit, which arc not far off!

Indeed there is fome difficulty in reconcile this frilem widi a certain fpties of plants, which bear flowers -without fruit ; and another IpecieS of the fame kind and denomination, which bear fruit without flowers; fudi arc the Palm, Hemp, Hop, Poplar, &c. which are hence diftkguifhed into male and female •, for how fhould die farina of the rmk here, come to impregnate the ova of the female ?

This difficulty Mr. Gtoffroy fal ITS, by fuppofins the wind to be the vehicle thiat'convcys the mole dull to the female uterus, which it confirmed by winftance of Jovianus Potanus, of a [ingle female Paltn-trec

Cwng in a forcft, which never boic fhiii, till, ing rifen above the other trees of the forftl, and being then in a condition to receive the farina of the male by the wind, it began to bear fruit in abundance.

As to the manner wherein the farina fecundities, Mr. Gcoffroy advances two opinions ;

I'irit, That the farina being always found of a fulphureous compofition, and full oi libed an i penetrating pccca (as appears from its (prightly odourj vvhich fill ling on the pillils of die flowers, th are mliives, and the fubtllell parts of it, penetrating the Jubltance of the piftil, excite a fermentation, which putting the latent juictrj of the young; iruit : in motion, occafions the parts to unfold the young plant that Uinclofed in the embryo of the feet

En this hypothefis, the plant in miniature is fuppofed to bt contained in the f<d, mt (to -want only a proper juice to unfold its parts, and 10 make them

ffrow.

The fecond opinion ii, That the firina of the male jiljrit ii thie firft germ or femcn of the new plant, ajid iians in need of nothing to enable it w grow or unfold, but a fuitable nidui with the juice i: fin pared in the cmbri i :l or ovary.

h may be obferved, that thiefe two theories of vegetable generation bear a ttrir of animal generation, viz. either that the young animal is in the icir.cn maltulinum, anil in need of the juice of the matrix to dirrifh and bring it forth; or that the female ovum conuim the animal, and requires only the male feed to ew lermenutation.

Mr. Gcuffroy rfther makes the proper feed to be in the Lrina, inafmuch as th. fcopea Oo noc

I When they are examined, their duft, which betwixt ed with the manufop, ack late, are to become grains, or fill the

If you continue to obferve the flowers as ti. vance for (cvL-ra! days fucwffively, you v...; and then i to (well, ar.U, bj dojreWj to become rq ... with a limp. I litjtor; in which, when the fas i ... comes to be flu ... and the leaves of the flower to fall, there may be obferved a liulc green I Hi i'peck, or gi ... flou- ing about .it large.

There v not at firft any appearance of in i ... a tion in this little body; but in time, as it grows, you may begin todilli:i ... with two little leaves like two inial horns-, as tt ... little body grows, the liquor di- mittilhes infenDbly, till at length the gr;n tea ... quite opal: • ... and upon opening it, the cavity will be fourid tilled with it vow ... plant in miniature, confif- ing of n little ufw, or plancula, a little rot: ... and the lobes of the B?in, or Sca.

The manner wherein this grnni of •' ... upon opening the vciicula of the jr&m, ii not very difficult to deter- mine ; foil bcldies that the ca • ... of the piftil reaches from the top to the embryti, • i ... vclkuL-c, (ave a little aperture corresponding to the excren ... of the cavity of the piftil; fo that the final duft, • ... farina, may eafily fall, or find an eafy paf- fage in the aperture in the mouth of the vclku, which is the embryo of the grain.

The apctci: ... of coarctula, is much the fame in bodi ... and it is eafily obferved in Piaz, Jerrji, &c. without »i: ...

Dr. Patric! • ... of the generat: -n of plants, fays, That a vegetative life is common to them, as well as animals; -d that tht ur pro. ... the fptlts ii the e{5ft«r thr ... not the fenfive life il ... as all it in plants i av ... that it there be J rircrfitty of thal ... cur tenet oi

... ie tie- celfity muft hr in plums too; fr. OJ a i-otv, i ,Tjre, a hen, a flic-reptile, an ink.

... the concurrence of the male parlit, or the nwte para or' the plant.

Mr. Kay fays, That he will i ... h trees and lierj may prod in • fruit, and even come to ma- ture; without : • male feed being fprinkled upon them. For though moil birds do : • lay eggs with- out o ... of the male, yet the hen often does it without copulating « ... h ... h ... eggs ... are btrren si ... wind eggs; juft fo, though a fe- male plant may produ ... and fo thid, yet that feed is never ... For,

firiV, As the work ofgenor; i ... in animals does not proceed from thei ... animal or fenfive life but from their vegii-i ... which being the fame as in plants, tint operation rr; I ... be performed alio the fame manner in Lintl, ttefi ... as there is a neceffity of two diilerent frxci i: ... animals, it muft be fo too in plants.

Secondly, As pa ... animal matter in female ani- mala cajmt be pi ... matter of feed, without being impt.

... animal, or its particles, in its motion and dilated by the active principles of the male animal matter; neither can the female feed in plant; be rondei ... and fertile, until it be impregnated by the farina fecundata from the male part of the plants.

As to the 'owers of ; ... if they were not abili- inp to, nr if thci were no, fome extraordinary aid from them in the perfection d' the feed, they would i:oc b ... often obferved upon plants as they are. But lince there i. ... of fruit or feed without a previous flower, and fince what the one is without the other is incon- fiftent; ... stud fince on

... is flower v, be obferved with the naked eye, neither is the other (yftm impo's a relation between them, that the one of them is not to be expected without the other.

It is true, there may be flowers upon a plant, where the fruit a fildes form, especially in thie ... L'limter, (lich a^ the Peruvia, the Nymphalis ... rautim, and .il ... othcii, where the plant exifts

nrthe knit appearance of any bud in die little embryos of the grains, f, be- fort- the apitci have the.

In leguminos pknts, li" the pcala and tbmini be removed, and tfe pillil, ur thajfw

... the killing ...

the nutritious juice, in piifhtng /brth tendrils o
 creeping roots, which to we !;m-the plants, as nut b
 be able to bring the fruit to Jiercection; but s here L
 110 fruit or i<-k] to be f<n, i unless a Be /er has been
 lent as a jTi-Tenirc betare it, to give notice
) roach ; though it is not always upon :.
 TMJrt, Jct it is (till upon feme other plant of the ftu
 Jpecici; for the Slower; are ro be feen upon diftin
 plants, dlflVrctii branches, or different parts of the
 branch from the fiiiit, in the Abies, Coryli:
 lans, &t. the Merrt radis, Spinachis, See,
 But the :: it never rpears, ur mvi-r U-gins to irj-
 ereafe upon iheft piano, rill tht: flower i
 gone j therefore they mult ferve tor
 to be merely omam(Tit:tl; for if rhat were thcii
 cipal ufe, they would be always eon'picious, which
 are not for the mift part in apuilloui f;
 and they would -always be i be feen, and never be
 hid-, which is aol to in theA&rorn, [-Tydr
 &c. where, though rhc flower is large enough in fiop
 ion to the fruit, yet it is not to be feen, unles
 the leaf be turned tip, and both flower and ti-iii be
 nstrrvly featched rbr.

The Frumeta :ind Gramim have tTeir fiam
 flowers-, y. *' therrl'dit <:'. hJom to
 be fan, unlesi the fpikc be lhaken; a: I
 apices will appear.

The l'olypodiuni) and other capillary plants, lbvri
 regular flowers, which preocje the mini: :
 ficd-veils, but ncirher of them are conf-
 out a BaaoS

Froai thefe initanew it appea • flowers arc
 not confantly a guard to prefrve the tender emb-
 ryos from the injuries of iht air, for then the flowers
 muft always Itavt been upon the finie pedicle with
 the fruit.

Therefore, fince 'lir appjicivance of the flower is the
 firft ftep towards th« production of che f«d, whether
 both be upon tht (ami :ioc, it r<->
 follom's, that the one muft contribute towards the
 bringing of the other to perfection.

The antients taking notice, that ftveral plan-
 pduce flowers and had no iwds, xml that oilier
 plants of the fame fpecies, and fown from the fame
 terd, did prod tic- t previous flower,
 ihcy were ready to trail die one male, ami the oilier
 female, withoat any n • • • ;iffting
 to the otlitrv for ill therrforr thron Rich Rww
 be only barren ; a called thofe whicli
 had Bowers female, and thofe that produced the
 fruits, male pL^tts. Thus Mercuridis Is culled SJji-
 cara Iecmina, and Tefticulara M:is. That which
 produces the rhit muft nrUs be die fctnilt, w the
 tl-malc anirnil brings forth chr facttli; therfi •
 tefliculara muft needs be the female, and die fpicata
 rhe mile.

^herever the plants arc annual, tht:'
 flavrtrt and fudi as hive the feed, are al-vays near to
 each other - but where the ro, •

the plant is ftwrc fctquenrty proi>jgated by the root
 than the feed, cite Call- alters •, far there being no n<d
 of the iced w propane the plant, there is ttefcfe
 need of the flower 10 be nca'cr to the plant which
 So the Spkschia and the Lupolu5 arc firquuly

to grow, mprotknc tWTetd, and the othe the qua-
 mous fmiit i when tit- I i produce the nuli;
 flowers of the one or* me diftano:.
 And l is fo far from being an objection
 neceflirj- of two (i in plants as well as in animals,
 that it is an argument to confirm it; lorirtfu¹¹
 wonderful conri I

when the ArJin.uy mars of prapnaini it by
 the feed cannot be to government; being
 Thie, and more that rll: :c be prothtml,
 evident p'obis of ;wofexesiii plants, as well as in an-
 give fome e

.HjJK w^hall in the i)«tt pwc<., *PTM
 menu to confirm this in a negative way, ai M<t bten
 already dfi. in a positive way, mate Sowtn,
 V/Lm plants larc been deprived of tl

or male parts in the flower, they either produced
 no feed at all, or if they did, they became abortive,
 dried up, or deformed every, or though the feeds did
 com', to perfection, they were barren, or did not
 produce

luce,
 Experiment 1. Mr. Geoffroy having cut off all the
 flammcoat rufis of male flowers from the • top of the
 ftalk, in the Maiz or Turkey-wheat, as foon as the T ap-
 peared, and before the fpikc loaded with the um-
 brvcs of the fcemc had put forth from the ala: of the
 leave'. Several of thefe embryos, in a mi Bid ilncj
 up aii' they were pretty big; but fome grain upon
 tlicir: follicles all along the ftalk fwellcd confiderably,
 and itemed DO be full of the bud, and were confe-
 quently fertile, while all the others mit; rrricd, and
 there was not one fpikc where the whole : i-Js did not
 npei! m'Ac lull.

This experiment is a fufficient p'roof of the ufc of
 the male flowers of this plant: for whatsoever that is
 which flows from the raceme of thefe flowers, it feems
 it muft be eflential not only for the impregnation of
 the feed; but alfo for the growth and im'pregdⁿation of
 tiit fruit.

As to (lent we lhall lien-, tin: what nourifhment it
 ufoally furnifhed by the pedicle 10 the embrj'o*, do a
 not appear to be capable to dilate or expand itfelf, or
 contribute to the continual fupply of nutrition: par-
 li tries, unles the tmb'roj were animated or enlivened
 by the fpirit which flows th' ha'c fluwtd from the male
 flow:-y to that they were iti debilitated, v i weak-
 ned, in ncfcnding from the body of the plain 6Jwards
 the emliryos, before tipy could arrive at them, that
 they -inch other-. The might hew frived for the aug-
 mentation and increafe of all! the embryos upon the
 fpikc, cook not now de any thing more than i con-
 tribute to the r'p'ring of a few. And though Mr.
 G'uffroy might have imagined, that thefe few feeds
 which came to perfection • were fertile alfo, becaufe
 they were full of g'rrmn, yet it could not be fure of
 that, fince he had fown the fame feeds next feafon,
 and they did not chit or put

I'd whether chey We
 Gardn'ws wlio !• • • • • ili-lifd brought
 ifrom * rath'rb' commonly try the following experi-
 rinifiii: they pile a few of tl feeds into a pot of wa-
 ter mixed with earth, • • • • • all if they find they begin to
 fpring, oi- lend forth the liminal leai th fibre of the
 ruat, af:cr a few days, they plunge it into the pot of wa-
 it; and nui< • • • • • fupporting all the feeds with n this
 trial m • • • • • to be productive, being equally liTh,
 hiird, and foft, perhaps not more than one (in) of
 ihem will prove fertile.

And this barrenicU may proatd, either I- • • • • • they
 lut m • • • • • been impregnated by the male parts of the
 flowc; or that they I • • • • • been too -dich expo-
 to the air; being fome rime or other too much tn
 d'encd, and not afterwards been carefully d'ri- il, or h've
 been kept thv Inng, by which negli • • • • • they foie their
 fplrit or life.

Now, • • • • • the fubtil, folidity and firmnefs of a feed is
 not i Sure Sign • • • • • Its fertility, then Mr. Cltdifroy
 luve been mifliten in his o' • • • • • mion of the ferti-
 lity • • • • • the plant, fince he did not make
 • • • • • by committing it to the ground.

WjifM
 In like r02f • • • • • fofecidit, where he raised • • • • • : the
 Mwctrafte C • • • • • lbme plants
 which produced fruit, and others which produced no fruit - (la-
 mifious flowers, and removed the barrennefs p- (la-
 before the flowers were blown, every one of the feeds
 upon the fructiferous plant, except five or fix, and
 carried; which feeds were to fall, that he was per-
 fuded they were capable of producing new plants,
 and the like was found by Caeftarius in the Chanada.
 Yet inasmuch as feveral of them tried the experi-
 ment, by fowing the fame feed the fecond year, they
 could not be fure but that they might have e tailed in
 their c'p'eciation.

Mr. B'art, overfeer of the phyfic-garden at Oxford,
 many years fince, which was before the doctrine of
 the eflentialnefs of plants was well under flood, being
 herbacizing, found a plant of the L'china fyftem

implex, no apices i and taking nniice that this w,w not only in one, but in ill the flowers upon [lie fiunc plant, he imagined it might be a new fpedes -, and therefore marked" the piant, and took care to have it pn lerved till the feeds were ripe; and then, tlicy bcifc full, harJ, Mid Icm, and " i outward appearance . full of germ, hi: (owed tlunt in a p: • per place in the garden the next Itaion, but not a plant fprun]* up from them. Tlicfc and oilier iniliitices, fet the opinion of tlic Jit-fenmt Jews of planrs m»n another tooling than has been receiv'ed by 11 Kill oi'our modern authors j for it imports, it it is not the nouribment of the groft UBljtutt of the Iced iilclf which U hereby meant, nor the increafe of ihc feed-veffel, which is thereby de-lignd; for (as is already obkrved) a lien enn by an <gp, without having before hul congrct with a cock; and ihis, when newly bill, (hall be of the fan: big-nCi, colour, tafte, and imell, with anotbn which has been cocked las ihcy wd it \) i <•, which lias been fecundated by the nialculinc. feminal materiel: but the difference will appear, when both are put under tlic hen, in ortcr to be Hitched •, tor the one Ou pul-lulate or cliit, and tlic Other (kill become 111 and tot.

The cafe ii juft the fame with the feed of a plant, it may be augmented and increafed in its bulk; it may become firm, hard, and lolid, and have ail the tokens cfaperffitt ripen: ; the feed-veff: may be enlarged, aril cbc pulp of parenchyma of the trait may be aur-gment; d i and yet ilic particles of tlic Ice J may remain crude, iruligrlicd, and incapable to be cpticaird and dilated, or let in a (Suitable motion, whereby to pro-tude the fibrilla of the root at one end, and tilt fit-mma i leaves ac the c:; •, except fore be re-ceived foniexir: reous matter, or fome active •nicies from the male parts of the flower, or from the male Ib-ver id'eIE

In order to confirm the neceffiry of cwo fates of planes, as • il as in animals, this fmiiJiar confitiation may be added: that the fertility or barrennefs. < if .my trie, in the more or lels fruiful feafons - may be known to ignorant or left control perjbna, by the ijuantity of the Howen wltidi appear in the fpring tittu- . ••••• that rot only in uws alone, where die Aqvtr -nd fruit art upon one and the e foot fivB but alio in fuel trees, where the Etemen are upon diftinf trees, or fe-parate- places upon the fame tree; for ir is only to determine by the catkins or iuli tijion the V. ••••• Filis'i, or Hasle-trees, whether (iidi or fiieh trees ••••• be fertile or birren for die enliing Icafon, before any of the embryos begin to break, be j: ••••• forth, or spew,

Havin 5 already treated of the mile and fanile parts of Howen, wt lhal) next confide* thdr ufe.

Flowers, in this refpefi, may apdy be divided into that of mile flowers, which (as has been, before ah-ferved; were formerly refuted barren) anil the plants which produce them were alfo called firmak ; plants, becaafc chofe perfws not liaviug any nutium I: dif-ferent leaze in plants, I iry wetc a diled female, upon account of their weaknefs, or if they had any thought of ••••• xea in them, it was only illulive.

The ancients were iKnarant (f chofe which are BBW-n-diys tilled hermapliroditr flowers; as J they, not having a true notion of feces of plants, could not ima-pine that the parts of both leaze fhould be in otie flower, upon one ••••• ad the tame fooi-ftalk.

Anil although hermaplirodite artitals bear the leaf proporibn in tlic animal kingdom, yet henr ••••• idices havt the gr ••••• tress than to the vegetable. iough ilTy arc no; &> nvimcTous as they have been liiyipoicd to be I fur upon a ilnci exar; ••••• it will be found, that a great man) more plants have diftinc ••••• a n d femal ••••• wers, than n is formerly believed.

The neceffity of diircti ••••• leaze in plants having been demonftraied, tod that the lemale feed, tho' though it fhould ripen to the full, ex ••••• Ot he fcniii ••••• except it be impregnated by what it receives from the male parts of flowers, we fhall not ••••• cx)bin tut organs of generation ii, both sexes,

In the animai ceconomy, there are, bsftdi> thofe vt-flels t'lat arc dvHinatJ for nutrition, and die lccv*-i ion of the fe veral juices in tin; bod\, ••••• did ••••• s, which tunftif of prxpjiramr.' ••••• determinat, and cun-ncotin femcn. i ••••• nan in :n, ••••• are the blood-vcITUj and die I ••••• the air convey; i the biuod, and the other fepanuts the femcu from blowl, and elaborates it.

So liki ••••• in plants there are veflels that receive the nutritious particles from i'bc ••••• and convey ic to the extremity of the plant j fonur of which tend di-rectly to th ••••• and exerts to the flowers.

Thole which go r ••••• the foot-ftalk of the flawa; rmy nut improperly be called fpenna' ••••• veflels. ••••• r ii from them that tin; Jenimal] pstrudei in naok, fejtofc, and heomipl ••••• flowers ••••• IL- feparated; therefore the foot-ftalks of the herniapiirodin: fiowtxa lire pro-portionuobly larger than thole either of the mat ••••• or fe-male; they have a double ••••• oice, aod coDtribut ••••• fac-cessivly to I •••••

In thofe where the caiyx becomes the fruit, the greateft ••••• fupply i'; ••••• to it fied, and diftribut ••••• in its coru ••••• parts, as it vifible in the Rose, in which the (boi ftalk a (b far ciiarged at lirlt, as to L. of an equal bignr& with the bud.

After the calyx is thus formed, the next dift ••••• UEion is to tlic inner or centriul p.ict of the flower, ••••• likii Dr. Grew calls acicitt, and where the pitillum becomes the tri lit; the pitillum and ityluj arc furmtd al the fame I ••••• with the flamina and apices.

The ftylus ••••• the very ••••• firilraiv; in its dur-; ••••• nffiii and ••••• i'nefs; for tlic til ••••• tributes particles according to the centre nevt. Hop till the ••••• is ftretched out to its full length; and in fuch ••••• as are furnished with a peculiar apex, that is formed by the neck oi the ftylus, oi iluit ••••• art new to ••••• thenti ••••• is gradually decoreat in its growth, till it comw w dr^ pitillum. Thi is callly perceived by thole who will take the pain; to 'open the ••••• α" a Lily, Tulip, &c. ••••• before they are half bl ••••• own.

The ••••• when is furnished neat with an extraordinary fupply of cbc nutritious particles before tlwflowwu blown; ihcfr, whctlicr fewer or more, aft ••••• lift brought to their propaniooal Itrgeoea, bridg round and j ••••• acy.

The ••••• ix is the th ••••• which receives this ••••• extra-ordinary fupply of the nouriliii ••••• ont, for after that the ftylus is formed, that it may lean to it after the ••••• of the flamina and flumina are extended to their full length, anil (o formed, that they can convey fuch a quantity of ••••• Jiiimry quantij t particles as may fill up the capacity of the apex; it is then more enlarged than ever afterj for if the fii ••••• of a Lily be opened before it be blown, the HJ ••••• will be found to be as long as the flamina; but as the ope half of the apex covers the Jhuncn, fixed to il ••••• center, in the other half <J. it is fo far exceeded above tlic flamina, as the llamen rriainrJ uncovered below it, tow Ith the pe-dick or foot-ftaik.

The fourti part of a (lower is ch ••••• petals, which re-ceive this cictraordinary fupply of ••••• nourishment be-fore tlic biuv. ••••• ing; thefe upon the petiole, are firft en-larged towards the pedick, and aft afterwards, cal-ended wsd firclied fui ••••• in proportion to the en-tringement of the acric ••••• at firft they are all equal, ar.tl mod- focculi ••••• it grows to the origin, and gradually bceonu' iiiiinL-tr and broaJi' ••••• The flamina of mono-petalous flowers do, for th ••••• part, arifc partly from the [jclalo; ••••• itself, and partly from the calyx; eljjecitly it" the i ••••• flamina corre- ••••• to number to the psula, as in the ••••• of Polyperale; of Tournefort ••••• here every 11 flamina arifc oppofite to the middle of the j ••••• ctalon.

This (bfm'riort how and when ••••• the flowe than or-dinary fupply of nourishment is carry'd to the flowers) callly demonftrates wherein the main ••••• of the organs of generation in plants and animals confifts.

In animals, the feminal matter is received by the ••••• veflels from the fame blood from whence the other ••••• parts ••••• animal organ

nomy proceed-, fe that the l'-x>d in anunals being the Sime with the 6p in pl.-mts, and be g conveyed after the same Banner dLrouyhout die : bodies, it neccflarily tut laws, thm • the one as well as (he other, mult have proper veffels far fecit:!

Let it then be conCdered, i! at the lap M nutrition(. juice nImids in common ID the pedicle of ihc flower, as the blood flows by the ooi I - detentment, and the at tile calyx or bottom

to one part of it, and lomc to tmu.! lends one branch to thi spermatie vefels, and the remainderot' it goes to perform th> other nam iionsi and as a part of the fap is financed by the pedicle of the flower, whTM the remainc! . iteq through-

out the remaining parti of die plant, lo die . . . prarpsram g . ftothetcfie . s, and ovarium in [lie female: and in flowers lomc vefiels tend directly to' the calyx (if i becomes the Eruit) or tct ihc perianthium (if there be an; tbepe-

t-da, Ionic to tht (lamina, fame to ciic piftiUuin or uterus, M it is calk-! . . . moudly reflected on; we m

Thcfe things bein] . . . Lift of neccflity conclude,

1. Thiac the kmc Juc csre is taken to elaborate and t-the more fubtle and impenetrable piirticles of the numtiouj juice in pknis, M of the blood in i. Tiiis fubftwite fo prepared, as it mud be ttefigned far fuuic aeffaordhury we, fu ihU ufe ca. b

than ihac of being the means of fcuxidadang the female feed in piano, as thc Other is of die fen

oval in animals. If any one Hull take a flower Full blown, and pull one eff the Itemina from the pedicle, Ec will , and a rough vifcid liquor, liliu to the fperma, which remains iwre till it; molt fubtle parts have ascended the flamen, or p<

remained there, after i!lc molt fubi before the Rower was blown •. itis Is ns jluin i. monfrable is tan be in the Lilies, particular!) i Omnge Lily, md mult of the Maroigon Lilies, there is a nrvivorce more obvious.

Thi» vifcid liquor nfcending by pai to the apex, there this lubule matter 13 retained till it h farther elaborated by the evaporations of the IIUTC humid and aqueous particles, by the heat of t.' and then it becomes a molt fubak, Enc, impalpable duft, which is iten fnd to be ripe, and is en!; farina.

Dr. Blair, afur having given the femimeats of feven dificent authors own tl« fubjeft, preceeds to his own, without fubfcrljing IQ the fendmnt (if either the one or ibe odw t and enueJavours by a frifrl t-x- uninationoaf the : . . . rfulves, to find out which of ihcfe two opinions, fo diametrically mipotite to cadi other, are molt agreeable to fact.

But before he begin*, ht: lays down this general maxim, which he takes for panted, dun lumtn: is uniform in all her operations, and never recedes from thofe rules laid d. . . . iwn by the wife Dipoler of all things at the creation, by performing the fame thing after two different and contrary methods; and thence con-

t, SU if the ftmna be a congeries of lemal phinti in one fpecies, it mult be fo m all. If there be an open . . . / direct piflagc, ur though It be not fo direct, yet it, by which i(can bctfcomfnttfe that one fingle e^in - farina can enter every individual feed in one . . . vants . . . mult be (b . . . in all . . . but if neither of thefe . . . 110, ^ Bpo&t and if it «•• be pceded by o . . . cubr infpction, without 1 he affifbnee of a micmcape, in chofe verj exemplified by/Mr. Morland, Mr. . . . id Mr. Bradley, that *e farini in lubiarK . . . of the fen- . . . or it it do, . . . direct r it ha; iititujsi dwn he hopes,

fa!! ample given Ai for the Corona Imperwlii, the firft «a

by Mr. Morland, the fowers of which hang down- ward, though he does not deny but as Hylas may be hollow all the way, and that it may be open at the extremity, yet by its ftructure, and several other circumftances, it does not feem to him to favour this opinion.

For ill, as there is a continual conflict of particles through the fan in animal bodies, it is allo to be irregular; this appears by the immediate fading of Itwrcs, or after it has been ; which proceeds from the transpa- rion ai the particles in the ; le tube;, without anjr more fucceeding in their place.

He if' . . . it is reasonable to fuppofe, that thofe par- tides How . . . by the hollow Hylas, as by any other part, and alfo more freely there than elsewhere, be- cauli-1f their being concentrated within fuch narrow hauuids; and thi- if thofe particles defcend by the Hylas lunginc; downwards, tti: particles, or rather grainioF thi farina, can never afcend the fame way.

idly, That if it I! could be granted, that thofe grains did afcend by the Hylas, doty got into the lemin;ii 1 cife!, that being clofely fhut up, as will ap- pear to any one who fhall obferve it.

3.dly, Whertij Mr. Morland fuppofes, that the rain either down the tube, till it 1 reaches the feminal vefel; Dr. Blair obferves, that the extremity which is the upper part of the Hylas in all i flower, mult be the lower in a dependent one i that if either the rain or wind have access to it, it mull li- either wash or drive it away from the leu.inal vefel, which is no- die Ityim.

B'jt hi . . . the Ductus takes notice of atwtiier cantri- vance, for afcending that purpofe, i. e. a . . . of a pelvis or rilern, called by Linnæus uterulus, fi- tutedattli. tofeach | Iwitli

a vifcid liquor which contains . . . there, and never ex- ceeds its bounds fo long as the petal . . . in health:

for fince the apices are not fo aftually fixed, that they turn eifry wfy with the le.ill wind, as Mr. M' ftand

exactly obferves, when they burst, and the farina is Jnven to and rrcs though i; 1 cannot fo eafily raze the tube, yet ii

may conveniently be blown up towards the orifice of the petala furrounding the Hylas, where it is opped or llad b; this vifcosity, till it has per- formed . . . i iu office.

To con jinn this, he infantcet Mr. Fairchild, who, he fays, being perfuaded that this vifcid liquor did fome way or oihcrcontnt ure towards the fructifying of this plant, but not understanding how it did fo, he tried the experiment, by wiping this liquor off as foon as it was depofited in the pelvis, and the flower which helbfa did not bear any fruit.

And ll. . . way the doctoe accounts for this is, that the humkiii. being retained, the farina is no longer blown upwards, than it immediately falls down, without producing an; and that which he takes to be a confirmation of this is, that both Tulipa and Psi- Ollariaa have 1 in the pelvis or bafe, yet it is for the molt part dry and empty; becaufe the flowers of the former bou they have no fuch need of this liquor

to rctir; the duft, for that the rain, having immediate access to them, may wash the duft towards the origin of the petala, where it can remain till it has performed its office: whereas the rain having no access to the inner face of the flower of the Corona Imperialis, it is (ia- tually radiated with this humidity, deposited

there bj li in order to render it Btfor notice 0' this fungus; y in flower, though he at- tribes no ufe to it. The 1' example propofed by Mr. Morland, is the l'ellow

Lily, which, according to his fpecie, is repre- fented as having the apices equally high with the top of the Hylas, and the petal, over-topping each other; whereas he fays, that by the narrowft infpection he ever could make, the top of the apices (they being thro; particularly fixated) reaches no higher than the neck of the bottom upon the top of the Hylas, and [ha! thi is before the apices begin to burst and

mod the duft i but as soon as the flower begins to open, they depart from the stylus, and force the petals outwards, by a certain elasticity, and expand themselves; this being done, they immediately change their posture from a perpendicular to an oblique or horizontal one; nor do they ever pour out their duft or farina, till they can conveniently drop it upon the bottom of the flower, and towards the root of the pistillini.

But taking it for granted that it was so, [the style of the stylus (which the Doctor calls the button, in opposition to the apices of the stamens); in (the style) is locomotive, and of so firm a substance, that it is next to impossible, that the farina in substance, or in integral parts, could pass through it.

• If the integral part, the complete grain, or minute globuli, in which the whole lemma is contained, cannot then enter, the whole compound must be diffused, and the minute seminal particles to this small grain of duft must be diffused; and if so, how shall these again come to cement, so as to make up one continued body? or how (shall this little body, so united, penetrate a second time the partition-wall betwixt the stylus and pistillum? and again, how shall it find one its way to its nest, in the proper embryo of the seed?

The Doctor takes notice of the White Lily, the Orange Lily, the M. magnum Lily, &c. as objections to the opinions of Mr. Morland, Bradley, &c. and also mentions the Iris, as a moll pregnant instance, that the farina cannot so much as come at the pistillum; for having six petals, the three stamina with apices lie mid between the three petals which hang downwards, and three large expansions of the bristly stylus, and the upper part of the down-hanging petal: the farina can never reach the center of the stylus, though it were hollow, which it is not, but must defend along its outside, to the top and outside of the rudiment of the fruit, there to emit its effluvia. These and other instances he concludes, are sufficient proof, that the farina cannot enter the stylus, pin into the pistillum, or inner part of the h-minimum, nor have the leaf access to the embryo of the seed.

As to the objection, that there is not passage sufficient to admit the male seed into the uterus, or even into the ovaries, it is thus answered:

If it be considered how every flower, when it is prepared for the act of receiving the male seed, is so much under the influence of the sun, that the petals open at its approach, and shut up again at its departure, it very well explains how the pistillum, or fertilizers of generation, are relaxed at one time more than another, i. e. that the female parts are more relaxed at the opening of the flower, than when the flower is fruit up for the flower leaves adhering to the bottom of the pistillum, must consequently, when they bend back, put every part of the pistillum into a different posture to that in which it was when the petals were thus.

And it is certain, that it is the presence of the sun that ripens the male duft in the apices, and opens the little odes in which it is contained, giving them a springiness that flings forth that duft as soon as it is ripe, so as to scatter it to a considerable distance. The female parts are at this time dilated by the opening of the flower-leaves, and the apices and chives, concurring at the same time in flinging forth their male duft, answer the same end in the generation of plants, that the act of copulation does among animals.

Having thus given (even) reasons and arguments tiled by various authors, who have made it their duty to investigate the mode of generation of vegetables, whether the impregnation of them proceeds from the farina focundans, or male duft, entering the uterus of pi Lima in ubi Unccs, or by effluvia, I shall not take upon me to determine the dispute, especially (incc Mr. Boyle has proved, that all effluvia are subtle particles of matter; so that it matters not how (in minute) the particles are, incc a body is its firmness; may be so minute as to be scarcely perceptible.

I shall therefore conclude with mentioning a few ex-

periments of my craft, which I communicated to Dr. Patrick Blair, which he improved; and a proof of his opinion of effluvia; and Mr. Bradley's, as a proof of the farina entering the uterus in libitudo, and leave the curious enquirer to determine on era of the question, to which reason and experiment shall influence him.

I castrated the male plants of i bed of S. each from the female; and die con-; Juice was, mat fac Ituil did swell to the usual bigness, but when sown it did not grow after.

and having g into the Thai, I found it wanted the punctum vitæ, or what Geofroy calls thegermen.

I set twelve Tulips by themselves, about six or seven yards from any other, and as soon as they blew, I took out the stamina with their stamens, ia very carefully, that [scattered none of the male duft] and about two days afterwards I few bees working on a bed of Tulips, where I did not take out the stamina; and when they came out, they were loaded with the farina or male d... on their bodies and legs, and I saw them fly into the Tulips, where I had taken out the stamina, and when they came out, I found they had left behind them sufficient to impregnate: little flowers, for they bore good ripe seeds which afterward grew.

In a parcel of Savoys, which were planted for seed near white and red Cabbages, when blown, produced half red, and some white Cabbages, and some Savoys with red ribs, and some neither on the one nor the other, but a mixture of all sorts Loggia in one plant, which I suppose might happen by the effluvia of the different sorts impregnating the uterus of each other.

In the letter communicated by Paul Dudley, Esq; to the Royal Society, written from New England, he mentions the interchanging of the colour of the Indian Wheat, in the various colours at planted in rows near each other, but if they are separately, they constantly keep to their own colour; and the interchanging of colours has been observed, when the difference between the rows of Cam has been several yards, though he says, if there happens to be a high board fence between the different coloured Corns, the alteration of colours is entirely prevented.

It is from this circumstance of impregnating each other, that the several varieties have been produced; and this gives new light to the fact, that raifin a much greater variety of flowers, for by planting; the different coloured flowers near each other, so that the flowers when fully blown may be intermixed, their Burin will impregnate each other, so that the seed will produce variegated flowers partaking of both colours. But it must be observed, that flowers of different genera will not impregnate each other, therefore the plants must be of the same genus which are placed together.

Cucumbers and Melons always produce male and female flowers upon different parts of the same plant; the male flower (which appears upon a slender stalk, and has a pistillum in the middle, covered with an Orange-coloured farina) is by the gardeners commonly called false flowers, and some (by a malicious and unkindful persons) pulled off soon after they appear, supposing that they weaken the plant, if they remain, which is a mistake; for, in order to try this:

I set many Cucumbers in a place pretty far distant from any other; and when the flowers began to appear, I instantly pulled off all the male flowers from time to time before they opened; the conference was, that at all the young fruit dropt off soon after they appeared, and no one young Cucumber remained to grow. I set some Cucumbers in another place, where I cut off all the male flowers to remain upon them, from which I had a great quantity of fruit. But this doctrine is now so well established among the gardeners, being confirmed by experience,

that Cucumbers now carry the male flowers of the Cucumbers and Melons to the female, it is true; and

fituated very near them, and gently ftrike the farina o the male, into the bofom of the female flowers, and thereby fet the young fruit, which would otherwife drop off.

There are feme perfons, who fill obje6t to this theory of the generation of plants, from having obferved fome plants, which were termed female, growing fingly, and at a very great diftance from any male plants of the fame kind, which had for fome years produced feeds which were perfected, and grew when ibwn; and indeed I was myfelf a little ftaggered in my opinion, op having obferved a female plant of the white Briony, which grew fingly in a garden, where there were no other plants of the fame kind; which for feveral years produced berries, which grew and flourifhed perfectly well. This put me upon examining the plant more carefully than I had before done, when I found there were great numbers of male flowers intermixed with the female, on the fame plant; and fince then I have frequently found the fame in many other plants, which are fometimes male and female in different plants, yet have fometimes both fexes on the fame plant; fo that the objections which have been made to this dodtrine, may not have proper evidence for their fupport.

It is certain, that the female plants may produce fruit, without the impregnation of the male -, but it is not certain, that this fruit or feed will, if fown, produce another plant. What has been fo often related by travellers and hiftorians, of the neceffity of the male Palm-tree being near the female, in order to render it fruitful, hath been fully confirmed by Father Labat, in his account of Africa, where he has treated of the feveral forts of Palms: he fays, that he obferved in Martinico a large Palm-tree, which grew by the fide of a convent, which produced plenty of fruit, though there was no other Palm-tree growing within two leagues of this; but he alfo obferved, that none of thefe fruit would grow, though they had made many trials of them; fo that they were obliged to procure fome frfuit from Barbary, in order to propagate thefe trees. He likewife adds, that the fruit which grew on this female tree, never ripened fo perfectly, nor was fo well tafted, as thofe which came from trees which had ftood near fome of the male: therefore we may conclude, that the fruit or feed may be produced by the female plants of moll kinds, without the affiftance of the male fperm, which may appear to fight perfected, and fit to produce others; but if we examine the feeds, we (hall find that mod of them have not the germ or little plant inclofed, nor will grow if they are fown.

From thefe and many other experiments, it is very plain, that there is a neceffity that the embryo of the female flower (hould be impregnated by the farina or male duft, in order to render the fruit perfect; but how, or in what manner it is performed, is what we can only guefs at, fince in the generation of animals, our greateft naturalifts differ very much in their opinion?; nor can any of them afcertain any particular method how it is performed. I fhall therefore conclude with quoting the words of the Rev. Dr. Hales, which are a moft ingenious fummary of the whole dodtrine of the generation of plants.

< If I (fays he) may be allowed to indulge conjecture u in a cafe in which^m moft diligent enquirers are, w as yet, after a\ thejr laudable reſearches, advanced b but little farther, j man ipere conjecture, I would p propofe it to &c; c; confideration, whether from the m manifelt proof, f have, that fulphur ftrongly a tradts air, a h<t may not be taken, to confider c whether this may not be the primary ufe of the f- rina fcecutis, to atradt or unite with elastic^ or other reſaaja active particles. That this farina a abounds ffr i fulphur, and that a very refined fort, u is projofc from the fubtile oil which chymifts ob- j p i i & n the chives of Saffron; and if this be the u ue of it, was it poffible that it could be more aptly u placed for the purpofe on very moveable apices

" fixed on the (lender points of the ftamina, whereby
" it might eafily, with the leaf breath of wind, \\
" difperfed in the air, thereby furrounding the plant,
" as it were, with an atmofphere of fublimed fulphii-
" reous pounce? for many trees and plants abound
" with it, which uniting with the air particles, may,
" perhaps, be infpired at feveral parts of the plant,^
" and efpecially at the piftillum, and be thence con-
" veyed to the capfula feminalis, efpecially towards
" evening, and in the night, when the beautiful pe-
" tala of the flowers are clofed up, and they; with all
" the other parts of the vegetable, are it a ftrongly
" imbibing itate. And if to thefe united, fulphureous
" and areal particles, we fuppofe fome particles of
" light to be joined (for Sir Ilaac Newton has found,
" that fulphur attracts light ftrongly;) then the re-
" fult of thefe three by far the moft adtive principles
" in nature, will be a pundtum falienſ to invigorate
" the feminal plant; and thus we are at laft con-
" ductedj by the regular analyfis of vegetable nature,
" to the firft enlivening principle of their minuteft
" origin."

GENISTA . Lin. Gen. Plant. 766. Tourn. Inft. R. H. 643. tab. 412. Broom; in French, *Genit*.

The CHARACTERS are,

The empalement of the flower is of one leaf tubuhus and divided into two lips; the upper lip is deeply cut into two* and the under into three equal parts. The flower is of the butterfly kind, the ftandard is oval* acute* and remote from the keel, being wholly reflexed* the wings are a little ſhorter than theftandard, and are loofe: the keel is ereft, and longer than theftandard* and is indented at the top. It bath ten ftamina joined in two bodies* which areftuated in the keel, terminated by Jingle fummifs. In the center is an oblong germen* fupporting an afcending ftyk* crowned by an acute twiftedftigma. *the germen afterward becomes a roundjib turgid pod with one cell, opening with two valves, inclojing kidney-ftaficid feeds.*

This genus of plants is ranged in the third fedtion of Linnaeus's feventeenths clafs, which includes the plants with flowers having ten ftamina, joined in two bodies; and to this he adds fome of Tournefort's fpecies of Spartium, and the Geniftella of Tournefort.

The SPECIES are,

1. GENISTA (*Sagittalis*) ramis ancipitibus artictilatis, foliis ovato-lanceolatis. Hort. Cliff. 355. *Jointed Broom, with two-edged branches* and jointed, oval, fpear-jhaped leaves.* Chamse Genifta fa^li*. C. B. P. 395. *Dwarf errow-ftaped Broom.*
2. GENISTA (*Florida*) foliis lanceolatis, ramis ftriatis teretibus racemis fecundis. Hort. Cliff. 2 55* *Brcomwith fpear-jhaped leaves, and ereft taper branches abounding with flowers.* Genifta tindtoria Hifpanica. C. B. P. 395. *Spanijh Dyers Broom.*
3. GENISTA (*Tinfforia*) foliis lanceolatis glabris ramis ftriatis teretibus ereftis. Hort. Cliff. 355. *Broom with fpear-fbaped leaves which are acute, and taper channelled branches proceeding from the fide of theftalk.* Genifta tindtoria Germanica. C. B. P. 395. *Common Dyers Broom* or Wood-waxen.*
4. GENISTA (*Purgans*) fpinis terminalibus, ramis teretibus ftriatis, foliis lanceolatis fimplicibus pubefcentibus. Lin. Sp. 999. *Broom with taper-ftreaked branches terminated by faines, and fimple ^fpear^Jbaped hairy leaves.* Genifta five fpartium purgans. J. B. 1. p. 404;
5. GENISTA (*Candicans*) 1 foliis ternatis fubtus villofis, pedunculii lateralibus fubquinquefloris foliatis, leguminibus hirtutis. Amcen. Acad. 4. P. 28 4- *Trifoliate Broom with hairy leaves* foot-ftalks from the fide of the branches having five flowers* and hairy pods.* Cytiius Monfpelfulanus, medicse folio, filiquis denſe congettis & villoſis. Tourn Inft. 648.
6. GENISTA (*Tridentata*) ramis triquetris fubarticulatis, foliis tricufpidatis. Lin. Sp. Plant. 710. *Broom with three-cornered jointed branches* and leaves ending in three points.* Geniftella fruticofa Lufitanica. Tourn. Inft. 646. *Shrubby Portugal Dyers Broom.*
7. GENISTA (*Pilofa*) foliis lanceolatis obtufis, caule tuberculato dQumbente. Hort. Cliff. 355. *Broom with*
Qbtufe

... L. the Grnii: ... C. B. P. 395, Bnnel ...

GENISTA (Gentia) spinis simplicibus; imia aorificrii ... R. H. 645. SH

GENISTA (Gentia) spinis decomjioftitil, ramis flo ... C. B. P. 395. Mftbi

This first sort grows ... Germany. This plant: lemis out lcvfal stalks from ... The plants flower in June, and the feus ripen in September.

ThU furt is propagated by feeds, which, if fawn in the autumn, the plants will com. up the following ... try hnrth, anf will live Jeveml years.

The second fort grows with ligneous fitilks about two or three feet high, fending out many taper channelled branches which grow ereft, gamiHied with (mail (pear-shaped leaves placed alternate, and are terminated by several fpikes of yellow Rowers, which are of the Pea-bloom kind; theie are futceeded by thort pods, which ... block when ripe, und contain four or five kidney-Qmpoi feeds. Ir Bowdri in June and July, ami feeds ripca in aunimn.

The third fort grows naturally in England. This hash shrubby (hlks, which rift about three f<t hwb, garnifed with fpear-shaped leave?, which are Breadcr, did in flur[HT points :Ean thoft of the former; the branches come out from the 6de of the OIL!

The fourth fort grows naturally about Montpjelier. This rifes with shrubby, branm, taper stalks four feet high, fending out several branches which are terminated by fpikes, the leaves are fpear-shaped, finale, and hairy; produced in in spikes at the end of the branches, the are Itrger rian thole of the other forts, and are of a paler yellow colotir. They appear in June and July, and are futceeded by pods like the former forts.

This fort is tender, and in fevere frofts often killed in England, where the plants are not protected.

The fifth fort grows naturally about Mont: prficr. This rifes with a woody stalk to the height of feven or eight feet, feeding out many slender branches, furnished with trifoliate leaves, hairy on their under fide; the upper part of their branches, for more than a foot in length, fend out small flowers in branches on their fide, appearing five yellow flowers. These

appear in June ami July, and the feeds ript. in autumn.

The fifth Tan had a low flrubby talk. The ninth fort is more than a foot high, fending out fevr^i weak branches which are jointed, gai ... ending in three acute purrs. Tile Howe is arc pr; inloofe fpikesat the top (if the branches, (liuy are of a pale yellow colour, and appiear the latter c of June and in July, and the feeds ripen in September. This plane grows naturally in Portugal.

The ftventh Ion hath a flirubby flalk which declines toward the ground, and is fr ova with tuben it divides into a few final! branches, which are garnifhed with fmall obtufe leaves. The flowers are difpofed in fmall loofe fpikes at the end of the branchsi they are fmall, of a pale yellow colour, and are fceceeded by (hurt p ... hid the feeds ripen in uitumn. This grow naturally n Germany and France.

The eighth fort wont naturally upon open lwsths id many parts of England. It hath a fiirubby ftalk which rifes about two tVet hi^, fending out many (ender branhc.;, which arc arm-d with long fingle fpincs, ami garnifhed with very fmall fpear-shaped icavc: the branches are every five the branches; the fecond fort has five fpices; theie are ihjr^ and five or fix yellow flowers growing in 1 cjufter at thr end They come out in April and May, and are fceceeded by thort cu ... ripen in Jiily.

The ninth fort grows naturally in Spain. This hath a low shrubby ilalk, v ... branches, armed with branching thorns, COJ ... other, bur TL ... hary leaves of diffi ... as narrow as hairx, and others are l ... the branches are termir^ctii by clusters of ictlow Rowers, which are liicedeed by (lion., compressed, hairy pods, Jilled with kidney-(/.. The whole plant has much tie ap] ... Kurz or Gorft, but a wry hairy, r,n^ tific flower-branches being without thorns, are the moll obvioui diftinctions.

All theft ions of Brooms, -ir propagated IIV Cecds, which, if i^ in the auromn, will fuecced much better thn if Ihwn in tin; Ipring, and a year will be thereby Caved; as thefe piano ind out ionf, I ... tough roots, which run deep into t! ... they do not bear tranfp)L-AM: ... noi rtmovcti young; n ... a few leedi in thie places where the parts are d- signed i to remain, ma B ... except the moft promiGr;< plants D ionn as they are paff danger-, alter ... Other culture, VOt Co keep them clean from O ... this c.innoc be praclili-U, the fi ... fown thin upon a bed of light tanh, and when the plants come up, ihey mutt be kept clenn frore weed till the following a- tumn, when the plants fliotild be carefully taken up and tmnfpUnted where they an- defigned to rctniin. They are all lery <.:pnhe ... h, fifth, and nil th forts, which mutt have a wagn dickered ftration and dry foil, ot|>-rwlic they will not live through tli? winter, but the plectra mil grow in almoit any ioil or (imatton.

GENISTA SPINOSA, l;e Furz. Whins, or Gorft. Sr- i ... GENSTIA: A. Lin. Gen. PWSt 285. Tourn. Inf. R. 11. fo. tab. 40. [takes its nar'e from Gentitu, 3 king Ol" Illyrium, who fird difiovt.-cd thr virtues of this plant.] Gentian, 9) Fellwort, in French, Gm- tiem.

The CHARACTER are, ft hath ti prj-triffter;> atitt fe^rntn • The fourth sort has five or six yellow flowers growing in 1 cluster at the end. They come out in April and May, and are succeeded by short curved clusters of five small kidney-shaped terms. These ripen in July.

balb Jfct aml-jliaptJitimme, whcb an fbsrltr than the terminated by Jingle fummits. Is lit center u ted BK dbiig tjUndrical rtrmtit, bewng M but ii trimmed kt twio trial fjtgmni. The girmtn af- ma an tUuig taper-penned (tipfiut, v,iib cite ail, rcKtammg may fat htt of tbt capfule.

Tbis genus of plants is ranged in the fecond fection of Linnams's fifth rials, inettled Penomdria Di ;, induttes the plants whole ik/.

injna and two f tigmias.

TheSprcia arc,

1. GENTI AM A (Lv'ea) corollis quinquefidii roucis ver-tidllaiii, calyribu Gfi- iwxybiect/iftaiiifklj: and twed-lik impaUmals B. P. 187. I

2. GENTI ANA (Pncti>,' I i i s t] ui nquefidis eti m panulatis oppofitis jtitunuinris, foliis linearibu- Lin. Sp.Plant. 22%. Gaititu •with kil-ppsp-- petals plead eppr Gemiana aue

J. li. 1¹. 188. GveaunHtrrrJi-uastdmitur.

3. GENTIAN A (Jjibfirffs) corollis quinquefidif cam panulati oppoliti.) feffilibus toliis ampiaut Lin. Sp. Plant. ^27. C pedf push Jrttixt ckft is the jialk eppfti bracing tbtftalk, B.P

•o- Gamut with a HwUme-vxrt iuif.

4. CEMNATM jicnillii nqueEdS , tmlcm eiundence. Lin. Sp. Pbnt. (*Sir. Genti.rv.i ;iinu flore. C. ii. 1¹. •it Geitisan with a ttrj.

MO*)¹ ioitlia, corollis quinquefidis i

liformihus, ramis miHoris aitetnis. Lm. Sp. l'iant lib fuMkt-JiuprJ qaittittMptuh, on, ntti lifambfi having smfswr. Gindana annua foliis Centaurii minoris. Tmir.i. Inil St. Ami- lion TR,'4 tffer Centaurj laya.

0. Gr<T!ANA [Crxiat crbibui I bnt. 231. f tali tcfical/ feitz •'Mberit Gentiana crudaca. C. ft P.

7. GEKTUSA (Qltiahi) corollii cjuadriMi; margine d- liuii. Lin. Sp.Plant ;;i, G < fwpvitut/J petit, abrje birde it bairt, Ctntianclij ca^rulea oris }i)ofis. C. B. P. J8S. J hdury brims.

H. GENTIANA (Utriaibft) eorollia guinqi .ibus plicatis atari Lin. Sp. Plant, lit). Gmi (petal), wingzd plated empelcmctiti. Geittiana utriculis VtOlrcoSs. C. i). if. [SB. Gentian with a vntritefe iuit.

9. GIHTUS* (CatUunam) corolla fjuinquefidis infun- dibuKf«mibr»ciuledkhfj«wio. Lin. Sp. Plant 213. C/iuian wib e fmAjbqti, fi-.t-pn&J ptmU and a forkedflaik. Cenarioiuraminui. V.B. 1⁸. 27S. Ltjfa-

•o. GEHTUNA (Pa-filitUum)cocollis oftidifi, foliis per- foliatis. Lin. Sp. Plant. 132. Gt;-- Centaurium lu- rcum ptr'oliatum, C. B. P. 278. Tilewixrfol'Mt &a-

n. GEKTI ai tern is fe/Ulibm, Plant 23a (Gentian with fittmei-flia- ltd pei [rnoBJ alter- O tbeftalh. Cpntaurium minus Ii. P. i? a. LeJir CtHtamy with a whitejpi: T.

S. GENTIANA (xattato) toroltis quinquefidis cot- ptduntulo [crminat] ongill'mo ti-

Choromo. Lin. Sp. 231. Gentian with a t-panStd brmcka, L2;ru1<>. ,Kaiim(Gauntry with 0 largt bhejexotr.

Thefirft fort bthe common Gentian of the

which rooc b one of the principal in binrrs.

This plant • fIM a large thick root of a yell colour and a very birret tafvot the

ct the end, blif, of a yellowish green, and have five large veins OH ill back of each, and are pitted. itu;

It riles to the height of three or four feet, which agamjibed with ICJVCV, growing bj joint, aliimfl embneing the ftall them liift-

theft arc of the fame form with ihe Inner, but iii* miniih gratially in the The flowers come out in whorli at the m-ar;! the upper part o; rtfindino or

theft are brought to n eKimrt made of them. The root o' cbc Gentian i principal ingreilv , i, and U frequently uied in uaiiij- dilorders.

But a few years ago, there jvas a mixture of Henbane roots brought over with Gentian* which was unhap- pily ufed, and occafiond trcat diforden in the pcrilus to -whom it w, aMiraBxvedt up^{011 w:iii:l} g^{11** c11}.

qutry was then made to find out wh be, fomt 1. i w be the ruot of Deatly •rjhacd, andodiers believing it to be iimv

poiftmooa umbdliftroos roots, but on comp' with ibme dried I lenbane. I found they wen; the fame. V have -wife jm ^ 0 ^ ^ of

Surpmm Mibe-rmeanim, which nucomi; in the author by IV. rhomai Molyneujt, phyfieUn to the ite, it wis as followi:

Th* Dran of Clo ,aking fome alterarion, m Lil, garden, and, looking over his workmen, L ob- fayed them to dig up m-ny roots, which he too, for bkirrets, anl therefore ordemi fame of them to be earned in and dreffid for dinner, wlieli wa^ accord- ingly dune s but all tholr «ho eat of them were in a ftiore tiin Itict-d wkii dier.incs in their :

fticli at the itomach, atn-nd-ti with an unual heat and dnnds in thir throats, and two, who JwJ eatn a larger ihare than rht- ref, UAi the uferfftheir rra- fon, ndbecame ddiriom, which condnued ftirfome days -, and as it appeared evident the I dieridiers were occafioned by the roots, the Dean caufed (brae of them to be planted, that he might be ruTured wht the Ulant via wholi; roots i. ad the bid (jtiality^ and In the fpring, when they pni out thir leaves, Vvy proved to be die Hcnbant-, which has been noticed by old writers to be poffeffed of thefe qn.ilitic; And as [he diforders which were occaConed by dwfc fupposed Gentian rooti, were nea by the fame , as, j, s ^ ^ , ,

lated, I diought it mi^lit be of nle to inferc ii here, to caution others agairifl eating of roots which they are unacquainted with.

This pfcnt delights in a light loamy foil and a A dly Cnumn, where it will thrive much better dian in a light try foil, or in an open atpofbi . It is pja- gated jly feeds, wl, ch thould be frown i. poo),,,,,, alter it is ripe, for if it is kept til! [lie fpring, it will not filtered ; theft [Kit? ftould be placed in a Qiidy fituauon, and kept clean from weeds. In the Iprini; the plant! will appear, when they mud be duty

ii dry weather, and kejn clean from «tti is till the following itomn; then they Ihoild be care- fully ftiackn out of the pots, in (is not to break or injure their roots j and a fhuk Uirdcr of loainy cant) ftitnuld be w ll dug and prepared to re; ;ve rlicin, into which dieplann flmuid be planted at about fix inch:5 dittance each way, obferving to let ,[.u top of die routs be a little below the (urfacc of the

ground,

ground, then prefs the earthdole to **the root** i af-
itr [his they »ill r-quirc no farther care, but to keep
them confanily clean from weeds; and if the fol-
lowing fpring fhould prove dry, they fhould be
il:ite waicred, which will greatly forward their
growth. In this border the plants mjiy Hand two
yeas, by which time they will be fit to rranfplant
where they arc dcligned to remain i therefore in au-
tumn, fo loon as their leaves decay, they may be re-
moved i but as the roots of theft plants run deep into
the ground, like Carrots, there muft be great care
taken in digging item up, not to cut or break their
roots, for thai* will greoajr weaken, if it docs not kill
ihcm. After the planes are well fixed in their places,
they require no other culture, but to dig the ground
about them early in the fpring before they begin to
fhooi, And in the fummr to keep them clean from
weeds. The roots of thefe plants will continue
many years, but the flkfc decay every autumn; the
fame roots do nut nWcr two years together, nor fel-
dom cfienec thin every third year^lm when they
flower frong, they make a fine appearance j and as
thelc delight in Qwly moift ground, where but few
ornamental plants will thrive, fo they fhould *tax.* be
wanting in good gardeu.

The itcond fort grows naturally in moift pafures in
many parti of England, but particularly in the north;
this rites with on upright italk about a foot high,
garaiihed with 1 mouth leaves an inch and a half
king, and lefs than a quirt.r of an inch broad; ihcy
arc placed oppofue, and *have* no foot-ftalks. The
flowers ire produced on the top of the ftalk, three or
low in number, Handing upon foot-IUlks alternately
above each (ithcr; they arc large, txll-lhaped, and
divided into five points « their brim, and arc of a
deep blue colour, fu make a fine appearance ; thefc
came out the latter end of July in the warm parti
of England, but in the no.th they arc full a month
later.

It may IK propagated by feeds in the feme manner as
(he firft fort, and (he plants may be treated in the
lame way ; but as this fort does nut (hoot its roots
(Jeep into the ground, it may be tnwfgUnttd with left
hazard -, however, if thefc arc removed with a ball of
earth to their roots, they wili not feel their removal
fo much as when the earth is all tiken from them.
This fort fhould be planted in a iirong, moilr, loamy
foil, in which the plants will thrive and flower annu-
ally, but in a warm dry foil they will not thrive or
flower.

The thin! fort grows naturally upon the Helvetian
mountains; tba nib with an upright ftalk near a
foot high, garnifhed with ftnooih leaves about two
inches long, *tod* ibr-e quarters of an inch broad at
their bale, where they embrace the !Vilk, but they end
in acute points; they arc placed oppofitf, and arc of
a fine green, and diminun in their fize as they arc
nearer the topi they have five longitudinal veins,
which join at both end*, but diverge from each other
in the middle. The flowers come out by pairs op-
pofite, rrom the bottoms of the leaves, Handing on
fljort foot-ftalks (they art pretty targe, bell-lhaped,
and of* fine blue colour, fo make a fine appearance
when they arc open. This fort flowers in June and
July.

It may be propagated by feeds in the fame manner
as the firft Jon, and the plants may be [reared in die
lame way, bur thej muft have a moift loamy foil,
otherwife they wit^{nol} thrive. Ir. tmy alfo be propa-
gated b> *affets*, whi-U may be-divided from the
roots •, thde fhould b; taken off in autumn, which
is the bed fcafon for removing aJ thefc *font* of
plants; but thefc fhould not be removed, or parted
offene than every third year, where they *are expofed*
to produce irrm^ flowers.

The fourth fort grows naturally on the Alp* and
l-iclvMan mountains, but has been long culo
in molt of the curious pirdens in Europe; this k com
only known by the title of Gentabella. It is a low
plant, the tUlki Idilom growing more than three or

four inches high j they arc garnifhed ft; smooth
leaves pliced Ojipolice, whit It arc v«o (ndic^, lunc,
aiid hid'an inch broad, fitting-dole to tin *talk*. The
ilowers grow creel on the top of the [talk, fo (Und
quite above them ; theft arc often iinglc, but fume-
times, when the plants arc frong, there will *be* four
or five it the end of each ftalk ; they ate lar^c, lxil-
fhapctf, and of a deep azure blue, to is the i in eft of
that colour of any Bower yet known, [t ufuaily
flo-Hers in May, but foiatimes tht plants B *lower*
again in autumn.

This is commonly propagated by parting of the root*,
in the fume manner as *h* before directed for the third
fort, but thefe muft not be offer. [ranfplanted, or
parted, if they arc wanted to i:^^: r lirrong-, this fort
fhould have 'a loft loamy foil and a fluidv ikua-
tion, where the plants will thrive and Uower well
eveiy year.

It may alfo be propagated by feeds, which, in a
good loil, the plants will jri *plantys* trefc
JhtHilci be fown in aununn, in the faint manner a? is
before tincted for rhe firftloif, and i: *the plants*
•re planted in i good *tb'd*, tin: will be frong enough
to flower the fecond ye after they come \ and
thele feeding plants will flow *friget* than
thole which arc propagated by prui'».

The fifth and eighth ibrts art low annul planu,
•which grow natimlly upon the Alps and other moun-
tainous places inEunrpc, and arc very rarely cultivated
in gardens. The firft leldom rirnnioreihatitwoinchet
hinh, branching out from the root into fevcfal (ender
luik; , garnifhed with very fmall i *by*
pairs, and each fUlks is termnatcd byonulniallerblue
flower (landing erect. The i *grows* ibouc
four inches high, with a Gngl- *talk* of i pur-
ple colour. The leaves at tl *are oval*, but
thofe upon the ftalk ire narcw, und Hand oppoGte.
i hi; ftalk a tenninawd by o *blue flowers*, wjth i
large bellied empalsmcnt, which is *plated*, and the
petal of the flower tifes but a Little *above the caly-*
merit, *io* docs not make much ap>efranc.\ After the
top flower decays, there arc frequently two 1 mailer
flowers which come out from the fide of rite itdk. at
the mo upper joints ; thefr flower akcr each other,
the upper one coming Grit, fo that there in lueccffion
ot flowera till autumn.

As ihell- plants ufually grow upon nio;lt fpongy
ground, it is ver difficult to cultivjtc ihem in gar-
dens ; tor unitrs they hive a foil approaching near to
thst in which they nairally grow, they will not
thrive; the only method to obtain them is, ci:her to
fow their feeds inpo«*,orupoi* a moift boggy ground
in autumn, but it muft be in the llwdej and when
the plants come tip, they may be thinned, and the
furi'ace of the ground about them covered with
mol's, which mould be conllanriy kept moift; with
this management I have l'ten the planes thrive and
flower very well.

The fixth fort is a perennial plant, which grows na-
turally upon the Appeninei and the Helvetian i *in-*
tains i tins rife with an upright (talk about ffr in
high, garnifhed with fsmooth Ipear-thaped lea'
about two imhet long, and one broad in the middt,
fitting clofe to the llalk i they arc parcil oppofite,
and each pair of leave; cruh one another, from whence
it ii called Croflu-oriGiT' *flowers* are pro-
duced in whorls round the lijlks vit th^ upperjoitts,
fitting very dole to the ftalk and at the top there
is a large dutier growing IntJie *tin*v form; thefc
arc of a light blue colour, and i>psar in May. TiiU
may be propagated by feeds, or >fkts, in the fame
manner as thf thir.l and *fourth* foie, and i the plants
mult be treated in the fame way, •.

The feventh ibrt grows naturally upijn the Alps, and
other mountainous pans of liurope; f, is is a H *low* pe-
rennial plant, whose talks are *very ftead*, and rarely
[& more thin three or ; *the talks* are garnifhed
with fmall, narrow, acute-pointed leaves, placed in
pairs*, each !>ilk is ;, *mutated* by one large blue
dower, which in hiiry on the infute *us*. the brim. The
flowers

GER

flowers in July and August; and may be ...
ajid treated in the fame, m-uineras the third and fourth
fora.

The ninth fort is the Letter Centaury of the (hop?)
this grows naturally upon dry paitures in moll part
of England, where it rites in height projjortiotisble ti
the good ne Is of the foil; for land it is fre
fjuently a foot high, but in poor foil) nut more tSin
three or four inches. It is at annual plane, with upright
branching (talks, garnified with Jmall Lives placed
by pairs. The flowers grow in form of an umbel at
the top, and ire of a bright: purple colour; they
come out in July, ami the feeds ripen in drame.
Tills plant cannot be cultivated in the gardens.

The tenth fort grows naturally op on diskly grounds
in many parts or England. It is an annuat pkmt, rnfing
with an upright ftalk *foot high, garnimed with ovaf
pointed leaves, whofc bafc lurroui. i they
grow by pairs, ant! arc of o gray colour-, the ftiiiks
and leaves are very smooth. The flowers grow
in form of an umbel on the top of the [talk ,
they are of a bright yellow colour, and are en; into eight
parts at the top. Thefe appear in July, and the feeds
ripen in autumn.

The eleventh fyct is an annual plant, which grows
naturally in the ibuth of France and in Italy s itmrfirs
with an upright ftalk about a foot hij'h, lending out
fevefal branches toward the top, which arc ga! nified
by fmill leaves placet! oppoiite. The flowers are
produced from the fide and at the lop of rji(
m formofjoofc irregular umbels-, diey arc white,
and about the fac of thole of the common Ceniaury.

The twelfth fort grows naturally in the Wei!>Indies,
where it was dftovcred by father Plmnicr, and the
Ince Dr. Houftoun found it growing in pltnry at La
Vera Cruz, in low moilt places where the water Stag-
nates, but at a remoter diftants from ttic tea. The
feeds uf this plane !w fent to England, which (be-
ceeded in tile Cltclfca garden , this rifes with an up-
right branding fULK near two feet Jijj>h, garnifhet
with oblong, Imooth, acute-pointed leaves, pbced
oppofite i the upper part of the flalk divide) into le-
veml forks, between which are la or feven long na-
ked foot-ftalks, each iurtaining one large blue flower,
divided imo five fegmrms at the brim. The flowers
arefucceded by oblong capfules with one cell, filled
with Im all feeds.

This is propagated by feeds, which muft be fown
on a hut-bed loon aft« they arc ripe, and the plants
afterward treated in the lime routiner as other tender
annual plants from warm countries, being too tender
to thrive in the open air in England. If the feeds of
thij plant are (own in autumn, in pots placed in the
tan-bed of the ftove, they will Juccced better than
when they arc fown in the fpring, and the plants will
flower early, fo good feeds may be obtained.

G & N T I A N E L L A . See G t S T A N J I .

GERANIUM. Lin. Gen. Phut. 346".Toum. Inf.
K H j66. lab. 14'. [takes Us name from r
a crane orftork, bebufe its fruit refrmbtMthe
fa Cranc.J Cra'^s-h'; in French, Jfar Jt ffi
he CHARACTERS are,

fientr bath a ptrxmeni empUnent, c&npyfidiif
fiat fmaii ml tuett. The Jttwer hslb fit ptilis,
*whitb art traai, er Lurt-jkmd, fprtdiig Ope*i Vxfe are
itffioit fptric.quii^ (mA&n vthri, tht upper im art
much larger than the thrl tinner. It balh unjltmtifa,
which en alternatt'fmer, hi an fierier lhav •
tats, sxd art lermintif h ebbing ftuunit. bt tbt Ht-
ie>, of tbtftetotr b JfMiei " fivf-tunscrd grmdh fi>p-
ax mcl-fiad jlvle lwgf &tm the ftiemma,
-4 by five rffltxd Ritma. fkt

h bvjk cftbt « * , vbich it extembd tit Ungih t/ sbt
eshaart tsipitg h i r u tbt fcmh fias

This genus of plants is ranged in the second section of
Townsend's System of Plants, which includes those plants
of the same nature, and the male and fe-
male organs are joined in ONE BODY.

G-E R

pbces it in the Hxth teftion of hh Gxth <.b't, in
he ranges the herbs with a Kofe LijjAer, whofe j.
becomci EI fruit with ivevral cipfuks,

The EMCIE3 aw.

t, GiiMh-iuM CiV*/fl^)_pedunculi) bifloris, foliis sub-
peltatij niulripirritii pinnaro lacinhris nigofis s-
p;tali Hort. CUE 3+4. Crow'i-itl toiti
fewrrs CT ecch fect-Jiali:, targd-fb.-/ -
maty awn ftgmoM, atd entire pttii.
ir3chiodes, Gr irialJeiGrmir,i
bill' !sitb a Crow-feat kaf, and i

GERANIUM (Loritejlrxfi) peduncuUs Ul
liis quinquepartiis belnibobmlt brevibus, aw
decumbentibus. Cramit-iHl with ent fltxcf tfr
fwl-jialk, leasts divided mm foe pans, tobefij/
art flicrt, Lhrnt, or, d declining flail:.. Geraimim
matodes Lancallrenfe, florc eleganter friato
Hid. Btdy Crane's-bill-Jr.tbt
GERANIUM (Nedsfum) pedunculi^
linis trilobis integrii iciTacu, lumms lubfticillibi!
Hort. Cliff. 343. Cranfs-biU with two fleu:-
foetjialk, tbt lee-jn upon tht jialks bavng
fctcd bits, tbt upper leaves jilting tyt its the
Geranium 5. nodulium. PlateJU. dull 1
Crant'i-litl.

3. GEHAKIUM (Sangafaetm) ptduncillis unifions,
quincuparticis trifidis orbiculatii. Lin. -Sp. I".
6B5. CranSt-itH mlb cite fewer on ta:b fuet-fSab'-
erbiaisar b&sa, vitibtb art trifid and divided at
Gerjnum fanguincum, maxim 0 flore. 11
Blusdy Craxfi-bill imlb a larger faxtr.

GERANIUM (Loritejlrxfi) peduncuUs Ul
liis quinquepartiis belnibobmlt brevibus, aw
decumbentibus. Cramit-iHl with ent fltxcf tfr
fwl-jialk, leasts divided mm foe pans, tobefij/
art flicrt, Lhrnt, or, d declining flail:.. Geraimim
matodes Lancallrenfe, florc eleganter friato
Hid. Btdy Crane's-bill-Jr.tbt

GERANIUM (Nedsfum) pedunculi^
linis trilobis integrii iciTacu, lumms lubfticillibi!
Hort. Cliff. 343. Cranfs-biU with two fleu:-
foetjialk, tbt lee-jn upon tht jialks bavng
fctcd bits, tbt upper leaves jilting tyt its the
Geranium 5. nodulium. PlateJU. dull 1
Crant'i-litl.

GZH-AXIUM (Pfxm) peduncuUs biflorii, f.
ternij, calycibus fuLorilitur., caule trrcrl.,
nt. Lin. Sp. Plant. 6J1. &
fiiKveri en eaeb fcol-ft.ili, etlernate le,
falmcnJ, on crfti fjit, and-:
Geranium phreum five fufcum,
non matulofo, H. L. SrewnCnme's-l/ii
petali-, and keva nit fpetted.

7. GERANIUM (Ftfti) peduncula bifloris, foliis
nuelobatis indfis,
flowers vtmt tab; •
'jshitb are rut, and tbt pitm'
Geranium ph:tum live fufcum, petlnh
nts, folio mauUto. f 1. L. Breteti LJ
-oils, and /potted:.

1. GERANIUM (i'trialum) pedu-
vior<foliis quinquclubis me-
bi!! venofo recivdaai-. Bi
fo'sm ttpm taeb foot-ft dk, our
kavis bavin^fhilt/tii andfinm
Geranium Romanum, vericolor five IS
Reman Cr/ml's-blll aithjiriptd j

1. GERAKII":
lubpeltatb quinquelol)!-
ptalis emarginatis. Flor. L> .
t<gs flerstrs "" tab foot-/itli,
fi-jt Inks dipty faad, an rrc.
to the flmeer. Gwiiium !.
noltae. Girt. Mountain Cram

tea/
O. GEB4X"IM (pfintale) pedu-
oppoC
trn Deve'i-faf
flowers ox each fet-ftalk, cud a Jbsrs tigpdtraiHt.
riniuti! Oncnale wlumbinum, (lore maximo, tl
ddi radice. T. Cor. Oriental limtt-fia Crass:'
-j.-ub <m rffpbtdl rent and targe .fc-wers.

j. GURAMVM (Perernt) ptdunculi,
rerioritws quinque-parrit.
oribus trilobis, coulce crefto. Hudf. Flor. Ann.
Crant's-iitl '•)* «^{1B} fl'rs on ta;h foil:f.a:
toxr ttrvts bevixg \$vt Bisrj-printed Inks, tie

... and an oval /fatt. Geranium. Columnbinumpe-
nunc Pycnautum maximum. Tourn. Inf. R. II.
aSK. Gr/etji perennial Dvuc's-f&t Crnte't-bili ef She
Bynnes.

12. Gsamnvu (Afpimm) peduncoffi longiflmta muln-
floru. cal^cibus ariftatit, l'uliis bijiinnatis. Crane's-
bill will/ vrry long fet-Itatlf fluliaixg tunny Jtomrs,
bearded eatpalemenu, end double -j, <ir%-pei)ited leaves.
Ger.inium Alpinum CortuKiri inliu, longius raJica-
tum, (lore majnn- purpureo. Michel. Afyau Crane's-
bill toith a Ceriatdtr Uaf, a lettg rtxit, and a largerp-
pljlywt

(3. GtnANIuiw (/fgrglaim) pcdunculis bifloris, foliis
publccatis fepEempartiris trifidis tomentolb :
is anarguvttii. Armm. Acad. 4. p. 324. Ctine'i-
bilt viith two flwvtri OH tach foot-Jtati, target-Jbaped
/root para* which ertjilvtrj^ and tin
ptiali tf }U flowtr ntJfntd. Geranium argnnic
AJpinuin. C. B. P. 318. Spm Crntfs-biU.

14. (V GERANIUM (M... larum) peduncuSs biBora, cm
dichotomo ettcto, foliis quintjeparthit indfis fum-
ma fecfilibus. Flor. Virg. 78. <-, b ttw
fi^rw^rs m (tub feet-fla^k, upright jtuks divi&d ly paJrj,
and tut leaves diviuid into fivi parti, tbt spptr jiltng
!afe to the jlah. Geranium hatrackioides Amrciana-
num mauctstum, floribus obfolet* citrulcis. Hurt.
! i^K. /merk<m fpuud Grant's-bill vrith
Mut fic-xen.

i'. (t, :*, -.; M ;tt-d-txtcuin) peduncMlis bifloris pccalis
emarginaris ariljiv Junis coryletionibus a
truncitii. Burm. Ger. ^ Croniiliis tw/A Hoe fetiitn
en tech fol-fisk, indented petals It the fitter, hairy
icards, andatrfid ldl. Geranium sumuim minus bS-
fuodes BohcJ5icum, purpuro-i'ioliceuni. Mor.
! i !. Leftr mnual Cronfi-billof RakmtB, n-iffb
afitrpU Yhltfim

P

16. GtaA* (im) ptdunculii dibunilloris, foli-
liii (jvinquepartirii acutia fol^Dlii pinnatiiliis. Lin.
Sp. Plant. 6Sj. Cranes-lull tvith one jfo&er ex a fast-
jia&, banes dk'idd into fist acute parti, md the /matt-
er It- mted.

17. Gsiuxitit (Msfihatmm) peduncilli multifi' 1
ribus pnuandni ii)liis pinnacis incifis corylccdotiibu.'i
pinnatitidis. Biiifn. Ger. 22. Cranfi-bill win many
Jtasrers en fatb feS-jlnUc, beving file Jiandna In ibt
fi&a:crs,AKd ml n Getsoium
!iifim. C. B. P. M/led CriMts-bil!, frtquinty
tolled Mafiovy.

18. GEKAKIVM (Gruimnx) pcJuncults Tub mulrifloris,
floribus pentarn.'i it, t'oliis cernatis fbbati;. Burm.
Ger. 3». Cranes-Mil with mairt fituias on a foot-flalit,
fv(Jiami«4 te tbt Jbwer, and lerimtt hbeii It<e?<s.
Geranium hitfnlium inrunm, exrulco flore, acu lon-
eimmi H, Ox. Hrexd-ltaued annual Crattt'i-bill with a
ifatfimvr, a/id a very foxg fajk.

19. Gsitnv: (m) rirduntuliii mnkifloris, calv-
cibus jitiitapijlijij, fluribxib pentandris, foliis pinna-
tis odin's punoi Lin. Sp. Plant. 6S0. Crane'j-ltft
*aath many jlvcxri en eatb fest-ji, i^ bavhi^ fivi-latvtd
aipUmnt3,fiuicjlamxa le/btftietmri, and ixntt,finuattd,
letmvd leaves. Geranium Cicuti folio, acu longifimS,
C. B. P. 315. CmnCs-foU'with a Htmhck leaf, and very
tang beaks is tbt/ftd.

20. GSHASIUU (Vi/wfum) poduncults multifloris, caly-
cibus pcciihyllu, floribus pentandris, foliis bipin-
natis munnidii •jjule creilo. Crane's-bill with maty
fowers en eatb . *al-jtalk, btr-rrtg five-It..
... itb five jl/iuina, and maity-ptinttd
•-Tiniuin citutat folio v;
Erelt Jfiuts Crane's-bill
with a Hti link: is tbtfted.

1. Gfa.s!LM (CKCB&M) calycibus monop... is, fo-
lis circulis dentatis il-iri. Clr ... :j-bill
tuithmie.tr. 'btoitdmei.
Geranium votun-
do, a 11. (...)' Hwiib
md Miu-jtv&aUirj leaf, end /ml! ef the Callnt
S7v

4s. G& AMI: « {Atsgd/kmJ calycibus} mor
liii CUoalfitii angujolis, iccutv ik-jilitis. C^HH

ml ...
•jbtir
ibiJei thli, > in-
Tr.i

23. GI ...
... Crat;c's-bill with a tm^bavei o*;
r; a ... I meat
vii>^
icranium AfriL-anum vl
ditmilk; liirJuto folio, Bsrbiui rub
VtxY Af&tin-trei Cm
Mantle leaf, and red fit:

nkjjirj KM foecufhu • miiijopln 11
Criuitulk, iraul i:
bill with a ojil-L,
jbtitpld leaves vibib arc
fiatii. Getai
with a plciit,
let /-

15. Gi
Uplu:
196. Grass's-bill with impalement of the leaf,
in a divided base like, which are spread and hairy, and
a fleshy stalk. Geranium Africanum frutescens,
maive folio odorno lacinate H. L. African Grassly
Crane's-bill with a jagged, joint hairy, Malva leaf,
with a fleshy stalk. Geranium Africanum frutescens,
maive folio odorno lacinate H. L. African Grassly
Crane's-bill with a jagged, joint hairy, Malva leaf,
with a fleshy stalk. Geranium Africanum frutescens,
maive folio odorno lacinate H. L. African Grassly
Crane's-bill with a jagged, joint hairy, Malva leaf,
with a fleshy stalk.

24. GERANIUM (P... calycibus monophyllis, fo-
lis ...
rofo. Hon. Uptal. 196. Grass's-bill with impalement of the leaf,
in a divided base like, which are spread and hairy, and
a fleshy stalk. Geranium Africanum frutescens,
maive folio odorno lacinate H. L. African Grassly
Crane's-bill with a jagged, joint hairy, Malva leaf,
with a fleshy stalk. Geranium Africanum frutescens,
maive folio odorno lacinate H. L. African Grassly
Crane's-bill with a jagged, joint hairy, Malva leaf,
with a fleshy stalk.

27. GERANIUM (Papikniacxm) calycibus :
corollis p3]llionacds, alls carinaque miauris, foliia
ngul;uis, caafc
i/ff uY/i t« (lpxalcment t-f une IK/, a lattofs fower,
... :J enj ir< / wa -;.
jffrti. Geranium Africaiium arirarflecris, ro.Tiva: IJ
Ho nruconato^ petalis Hon. .
fpicuis. I'liil, Tranf. dfrim . ur Crane' bill *viii> a
pcinteA Malbj) let/, aid the under feints ef the fimctr
[caret difiemiile:

28. GMAKWM (ftetofum) eslyobus monophyllis, foliis
plabris o.buvatis cirnolis crcnatis, tauc fru
Hort. Cliff. 345. Craftt-i-'
... axnli ef war
leaf, fmeeth, (W, / ^ f fejMf, wi<i M< i r.c /uted, and
a pirubby ftali. Geranium
folio crnff> & gl
^W«Kfvrxby Cranr's-biH ••j-
itb a thick gUttstu Unf,
and an 'acid txjle i

iKKWitfCani cibis monojhy 11 is, caule
frmiLOb, articulis camofo gibbosis, fclm pirinatidis
laciti;
-;ii lintaribus. Un. Sp. l'Unt, \$7-
Crav/s-bill vHtb an rmpalement ef c-ne hti/, a
fuzlk with fitiby knees, triig-prixled lor,
ytMreui feints u tie /
frurefcens, clu-lidonii folio, peialii Borum w.
albiib, cajTHiitaudicc. Phil
tan, ioltu «k» bo. Bocrh. liiul. alt. A/r't-
tan fimliy Crunii-HH .
if tbfecuitr -white ani narrow, :*::>i,jifimjnk.

(GV
iruticofu, gtnic
lin. Sp. Plant. 677. Grass's-bill with
a ...
end :
Geranium Africanum frutescens,
nottu olens, ml.
foliis. H. L. ?/..

21. GERANIUM (Papikniacxm) calycibus monop...
liii i i i i i i i
minis, ciuuk fruii

...all with one central stem, leaves the lower ...
 22. GERANIUM (Pilosum) calycibus monophyllis, foliis quinquefoliis imbricatis, plantis perianth. caule fruticosa. Hort. Cliff. 244. *Crane's-bill with compound leaves of one leaf, and leaves large-shaped leaves, having five lobes, which are entire.* Geranium Africanum foliis intertruncatis, supraelevatis, suboblongis, mucronatis, inferius trilobis, & acutis. Com. Park. Africa. *Crane's-bill with five-lobed leaves, the upper leaves are truncate, having five lobes, and the lower leaves are oblong, having three lobes, and being all entire.*
 23. GERANIUM (Pilosum) calycibus monophyllis, foliis obovatis palmatis mucronatis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with compound leaves of one leaf, rounded heart-shaped leaves, which are divided, hairy, and are herbaceous stalks.* Geranium Africanum, zickelmilche hirtige folia, floribus albis. H. L. Africa. *Crane's-bill with a hairy leaf, which is divided, and tubijh jlrjtr,*
 24. GERANIUM (Pilosum) calycibus monophyllis, cauli carnofo brevi Tort. am; . tort, am; . rtd' bjar:jbapi m, folio mulv', caulo mulli o lorailfimo, herbis pascopato albo. Boerh. Ind. »lt, jffri- t, /oft, fw(a,fmfli»g Mat- tupefid of fu
 25. GERANIUM (Pilosum) calycibus monophyllis, foliis ovatis bilobis monophyllis. Lin. Sp. 927. *Crane's-bill with ovate leaves, compound leaves of one leaf, a large leaf, and a rounded one.* Geranium Africanum, noctu olens, radice tuberosa, caule. Com. H. Ox. *African tuberos-rooted Crane's-bill, having five in the night.*
 26. GERANIUM (Pilosum) calycibus monophyllis, foliis bipinnatis, inferius cordatis lobatis, caule herbaceo, capitulo simplicis. Burm. Ger. 29. *Crane's-bill with compound leaves of one leaf, deeply wing-pinnate leaves, the lower heart-shaped with lobes, and are herbaceous stalk.* Geraniura Alviomim tuUrotum, anc monL-1 folia, incarnato flore. Ir. Bat. T. *Crane's-bill with a narrow leaf, and a hairy leaf, and a pale yellow flower.*
 27. GERANIUM (Pilosum) calycibus monophyllis, foliis decempartitis pinnatis, acuta pedunculis longissimis. *Crane's-bill with compound leaves of one leaf, decomposed leaves ending in acute winged points, and very long foot-stalks to the flower.* Geranium Africanum, noctu olens, radice tuberosa, foliis pinnatis incanis latiusculis, flore pallide flavo-olente. H. L. *Crane's-bill with a tuberos root, which is hairy, hairy, hairy, hairy, and a pale yellow flower.*
 28. GERANIUM (Pilosum) calycibus monophyllis, foliis pinnatis vixis, lobis linearibus. *Crane's-bill with compound leaves of one leaf, hairy wing-pinnate leaves, having very narrow segments.* Geranium Africanum, noctu olens, radice tuberosa, foliis pinnatis angustifolius. Burm. Ger. *Crane's-bill with a narrow leaf, and narrow leaf leaves.*
 29. GERANIUM (Pilosum) calycibus monophyllis, caule truncato, foliis lobatis, umbella composita. Lin. Sp. 927. *Crane's-bill with compound leaves of one leaf, a truncated stalk, five-lobed leaves, from the root, and a compound flower of leaves.* Geranium Africanum, noctu olens, foliis vixis lobatis, tuberosis. H. L. *Crane's-bill with a hairy leaf, and a tuberos root.*
 30. GERANIUM (Pilosum) calycibus monophyllis, foliis ovatis bilobis monophyllis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with ovate bilobed leaves, and a hairy leaf.* Geranium Africanum, folio

corlandri, flnriL inornato, muso, H. L. *Crane's-bill with a Crane's leaf, and a hairy leaf.*
 41. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis pinnatis incanis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with hairy leaves, each foot-stalk, and winged leaves, and five-lobed leaves, from the root.* Geranium Africanum, noctu olens, radice tuberosa, folio amplo flore purpureo. Burm. Ger. 29.
 42. GERANIUM (Pilosum) calycibus monophyllis, foliis cordatis imbricatis bilobis, caule herbaceo. > lavi. Biirm. Ger. 29. *Crane's-bill with compound leaves of one leaf, rounded heart-shaped leaves, which are entire, and herbaceous stalks.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. H. L. *Crane's-bill with a Crane's leaf, and five-lobed leaves.*
 43. GERANIUM (Pilosum) calycibus monophyllis, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with ovate bilobed leaves, and each leaf having compound leaves, and a hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 44. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 45. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 46. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 47. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 48. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 49. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*
 50. GERANIUM (Pilosum) pedunculis mobilibus, foliis pentagonalibus, foliis ovatis imbricatis bilobis, caule herbaceo. Lin. Sp. 927. *Crane's-bill with hairy leaves, each foot-stalk, hairy leaf, and hairy leaf.* Geranium Africanum, noctu olens, foliis ovatis bilobis, caule herbaceo. Burm. Ger. 29. *Crane's-bill with a Crane's leaf, and hairy leaf.*

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from which trifoliate (several branching stalks, which grow about one foot high, garnish the stem with leaves at each joint, which are divided into five lobes; and are directed at the top into many (about) ferments, which are seen on their edges; they are of a light green, and smooth. The flowers are produced at the end of the branches, many growing together in a bunch, but each stalk bears two flowers. The flowers have fourteen empalements, resembling inflated bladder-stalks. The joints are pretty large, equal, and of a fine bright purple colour, and the stem is much longer than the petals in the whole plant, when rubbed, emits an agreeable odour. This flower is propagated and treated in the same manner, the plant being equally hardy.

The third fort grows naturally in many parts of England, but is often admitted into garden; this hath a very thick, fleshy, fibrous roots, which grow to a large head, from which arise many stalks, garnished with leaves, divided into five lobes, which are finely divided almost to the midrib. The flowers stand upon long hairy foot-stalks, which come out from the side of the stem (talk, each sustaining one flower, composed of five broad regular petals, which are of a deep purple colour. This flower is in June and July there are two varieties mentioned of this fort as distinct species, one whose stalks grow more erect, and the other hath leaves more deeply divided, but the plants which I have raised from seeds of these do not come up the same as the parent plants, for they are only femal varieties.

This hath a perennial root, which may be parted in summer, and thereby propagated; or it may be propagated by seeds, and the plants treated in the same manner as the lily.

The fourth fort hath been supposed by some to be only a variety of the third, but it is undoubtedly a distinct species for I have frequently raised the plants from seeds, which have always proved to be the same. The stalks of this plant are shorter than those of the third, and the leaves are much less, and not so deeply divided, and the flowers much smaller and of a pale colour, marked with purple; it grows naturally in Lincolnshire and Westmoreland, where I saw it in plenty. This may be propagated and treated in the same manner as the others.

The fifth fort is a perennial plant, of smaller growth than either of the former. It rises with branching stalks about six inches high, garnished with leaves, having three pretty broad lobes, which are undivided, and continue on their edges; and on the lower part of the stem (talks are placed opposite, upon pretty long foot-stalks, but the upper leaves fit close to the stalks and are single. The flowers are produced at the end of the stem (talks, [standing together upon two short foot-stalks. They are of a dirty purple colour, and appear in June. It grows naturally in France. This may be propagated and treated in the same manner as the first.

The sixth fort grows naturally on the Alps and Helvetic mountains, and is found in low places in the North of England: it hath a perennial root, from which arise several stalks near a foot high, with leaves which are divided into five or six lobes, which are continued on their edges; those which grow near the root have long foot-stalks, but those on the upper part of the stem (talks fit close to the stem (talks branches out at the top into three or four divisions, each bearing a flower, of a dark purple colour, with erect petals. This flower is in June, and may be propagated by seeds or by parting of the root, in the same manner as the first.

The seventh fort is very like the sixth, but the leaves are broader, the lobes shorter, broader, and not so much cut; they are striped with black (the stalks rise higher, the flowers are larger, and the petals are reddish. These differences are prominent, but are

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sufficient to constitute a specific difference between them. It is propagated and treated in the same manner as the first fort. It grows naturally on the Alps.

The eighth fort hath a perennial root, which sends up many branching stalks a foot and a half high, garnished with light green leaves; the lower part of the stem (talk hath five lobes, and (standing upon long foot-stalks) jointed above [at the upper part] but three lobes, lit close to the stem, and arc (hardly indented) on the edges; [the flowers [stand upon long slender foot-stalks, each sustaining two flowers, composed of five obtuse petals, which are deeply indented at the top; they are of a dull white, with many purple stripes running longitudinally through them. These appear in June, and in cool seasons there will be a succession of flowers a great part of July. This fort is very hardy, for it may be propagated by dividing of the root, or from seeds, in the same manner as the first fort.

The ninth fort grows plentifully in the meadows in Lower Hampshire and Wiltshire; it hath a perennial root, which sends out three or four upright stalks about nine inches high, garnished with leaves, having five lobes, which are fringed on their edges; they are placed opposite on the stalks; those on the lower part have pretty long foot-stalks, but those on the upper part lit close. The flowers are situated on the top of the stalks, (standing upon short foot-stalks, each sustaining two pretty large blue flowers, with entire petals. This flower is in May and June, and may be propagated and treated in the same way as the first fort.

The tenth fort was discovered by Dr. Tournefort in the Levant, from whence he sent the seeds to the Royal Garden at Paris; this hath a perennial root, from which arise a few weak stalks about a foot high, garnished with leaves which are round, and divided into five lobes, which are indented at the top, and placed opposite on the stalks. The flowers stand upon pretty long foot-stalks, which come from the joints of the stem (talks, each sustaining two petals, which are entire petals, having very few empalements. It is in June, and may be propagated either from seeds, or by parting of the roots in the same manner as the first fort, but these plants require a drier soil and a warmer situation for although common winters it will live in the open air, yet several of these plants are sometimes killed, especially when they are planted in moist cold land.

The eleventh fort grows naturally on the Pyrenean mountains; this hath a perennial root, from which arise many branching stalks a foot and a half high, garnished with round leaves, divided into many obtuse segments at the top, placed opposite. The flowers are produced upon short foot-stalks, which cuttle out at the divisions of the stem (talks, and at the top of the stem (talks they are of a dark purple colour, and in others white. The petals or the stamens are broad, like those of the common Crane's-bill, to which the whole plant bears some resemblance; the stem is erect, the leaves and flowers much larger, and the root is perennial; this will propagate itself well enough by the root, where it has once got possession, and will thrive in any soil or situation.

The twelfth fort grows naturally upon the Alps. The seeds of this were lent me by Sig. Valerius, of Trente, this hath a perennial root, which runs very deep into the ground. The lower leaves are of a light green, and have very long foot-stalks; they are doubly winged and smooth. The upper leaves are of a dark purple colour, which are garnished with leaves of the stem (talks, which are smaller, and (standing upon very long foot-stalks, they are of a purple colour. This flower is in June, but has never ripened in England. The plant is hardy, and lives in the open air, but as the root puts out no offsets, nor periodically sends up new ones, we have not been able to propagate it.

The thirteenth fort grows naturally on the Alps; this liath a very thick perennial root, from which come out roundfil leaves, divided into many parts, Handing upon pretty long foot-ftalks; they are very filvery, and (hininglike filk. The flower-ftalks rife about four or five inches high, garnifhed with one or two fmall leaves like thofe below, which fit clofe to the ftalk. The ftalks are terminated by two pretty large pale flowers, whofe petals are entire, and ipread open flat. It flowers in June, but rarely ripens feeds here; it may be propagated by parting of the roots in the lame manner as the firft, and mull have a fhady fituation.

The fourteenth fort grows naturally in North America, from whence the feeds were fent to England •, this hath a perennial root, from which arife feveral ftalks about one foot high, which divide by pairs, and from the middle of the divifions come out the foot-ftalks of the flowers, which are pretty long and naked, each fufftaining two pale purple flowers with entire petals. The leaves are divided into five parts, which are cut on their edges, and are placed oppofite, the lower having pretty long foot-ftalks, but the upper fit clofe to the ftalks. It flowers in June, and frequently ripens feeds, from which the plant may be propagated; it thrives very well in the open air, and requires no other culture but to keep it clean from weeds.

The fifteenth fort grows naturally in Bohemia; this is an annual plant, which fends out many ftalks, dividing into feveral fmaller, which are garnifhed with leaves divided into five lobes, crenated on their edges; they ftand upon long foot-ftalks, and are for the moil part oppofite. The flowers ftand by pairs upon pretty long flender foot-ftalks, which come out from the fide of the ftalk; they are of a fine blue colour, and are fucceeded by feeds, whofe capfules and beaks are black. It flowers mod part of fummer, and the feeds ripen foon after, which, if permitted to fcatter, there will b? a fupply of plants, which want no other care but to keep them clean from weeds.

The fixteenth fort grows naturally in Siberia. The feeds of this plant were fent me by Sir Charles Linnaeus, profeffor of botany at Upfal; this fort hath a perennial root. The leaves are divided into five ac Jte lobes, which are cut into many Iharp wing-like fegments on their edges; they are placed oppofite, and have long flender foot-ftalks. The foot-ftalks of the flower come out from the wings of the ftalk; they are pretty long, flender, and each fufftain one pale purplilh flower. This fort flowers in June, and perfe&s its feeds very well, fo may be eafily propagated; it will grow on any foil, or in any fituation.

The feventeenth fort is an annual plant, which is fometimes found growing naturally in England, but is frequently preferved in gardens for the mufky odour of the leaves, which in dry weather is very ftrong. The leaves of this are irregularly winged, the lobes grow alternate, and are cut into many obtufe fegments on their edges. The ftalks branch into many dm-ions, and frequently decline to the ground. The dowers are produced in umbels upon lone foot-ftalks, which arife from the wings of the ftalks; they are fmall, blue, and have but five ftamina in each, their empalements are compo&d of five leaves. It flowers in May, June, and July, and the feeds ripen foon after; which, if permitted to fcatter, there will be a fupply of plants without care, which will require no other culture but to keep them clean from weeds, and thin them whe'e they are too clofe; it will thrive on any foil, or in/ny fituation.

The eighteenth,ortgrows naturally in Crete; this is an annual plan^with very broad leaves, which are cut on their ficte* regularly, in form of winged leaves, and are crenated^on their borders. The flowers are produced^ftferetty long foot-ftalks, which come out FHWWHC wings of the ftalk; they have five-leaved empalements, and are compofed of five entire blue petals; thefe are fucceeded by the largeft and longeft beaks of any fpecies of this genus yet knpwn. It

flowers in June and July; this ripens feeds very well, and if they are permitted to fcatter, the plants will come up without care; or they may be fown in the fpring where they are defigned to remain, and will require no other culture but to thin them where they are too clofe, and keep them clean from weeds.

The nineteenth fort grows naturally in Germany and Italy; this is an annual plant, which hath feveral proltrate ftalks near a foot long, garnifhed with winged leaves, cut into feveral acute parts, placed oppofite. The flowers come out from the wings of the ftalk, upon foot-ftalks about three inches long; fome of thefe fufftain many flowers, but others have no more than two; they are of a pale blue colour, and are fucceeded by very long beaks, but not fo long or large as thofe of the former fort; but the feeds of this are frequently ufed for hygrometers, to fhew the moifture of the air: if the feeds of this are permitted to fcatter, the plants will come up and thrive without any other care than to keep them clean from weeds, and the plants which come up in autumn will flower early in May, but thofe which are fown in the fpring feldom flower till July. Dr. Linnaeus fuppofes this and the former fort to be the fame, but whoever has feen the two plants, cannot doubt of their being diftinf fpecies.

The feeds of the twentieth fort were fent to the Chelsea garden by Dr. Juffieu, profeffor of botany at Paris; this is an annual plant, which hath upright ftalks near two feet high, which are garnifhed with double winged leaves, ending in many points; thefe are very vifcous, and ftand oppofite. The flowers are produced on long naked foot-ftalks, Handing many together* upon each; they are of a pale blue colour, and have but five ftamina; their empalements are compofed of five leaves, which end with awns. It flowers in May, June, and July, according to the times when the feeds are fown, and the feeds ripen a month after; this requires no other culture than the two former forts.

There are feveral other forts of annual Geraniums, fome of which grow naturally in England, and are troublefome weeds in a garden, others grow naturally in France, Spain, Italy, and Germany, and are preferved in botanic gardens for the fake of variety; but as they are plants of little beauty, they are rarely admitted into other gardens, therefore I (hall not trouble the reader with an enumeration of the fpecies, which would fwell this article too much; fo I {hall next treat of the African Crane's-bills, which are preferved in moft of the curious gardens, where there is conveniency to fcreen them from the froft in winter.

The twenty-firft fort grows naturally near the Cape of Good Hope; this rifes with a fhubby ftalk eight or ten feet high, fending out feveral irregular branches, garnifhed with roundilh leaves, whofe fides are ereft, fo form a fort of hood by the hollow cavity made in the leaf. The bafe of the leaves are cut in form of a heart-fhaped leaf, and from the foot-ftalk run many nerves arifing from a point, but diverge toward the fides; the borders of the leaves are Iharply indented, thofe on the lower part of the branches have long foot-ftalks, and are placed without order on every fide, but thofe on the upper part have fhorter foot-ftalks, and ftand oppofite. The flowers are produced in large panicles on the top of the branches; their empalements are of one leaf, deeply cut into five fegments, and clofely covered with foft hairs. The petals are large, entire, and of a purple blue colour. It flowers in June, July, Auguft, and September, and the flowers are*fucceeded by feeds, having ftfort hairy beaks.

The twenty-fecond fort has fome appearance of the twenty-firft, but the leaves are of a thicker fubftance, divided into many acute angles, having purple edges, which are acutely indented. The ftalks and leaves are very hairy. The branches are not fo irregular as thofe of the former, nor are the bunches of flowers near fo large; thefe differences are permanent in the plants which are raied from feeds, fo it is undoubtedly a diftina

a distinct species, though Dr. Linnæus supposes them to be the same.

The twenty-third fort comes from the Cape of Good Hope, but is one of the oldest, and the most common in the English gardens; this rises with a single stem to the height of four or five feet high, and divides into a great number of smaller branches, so as to form a large head, which will reach eight or ten feet high. The branches are furnished with roundish heart-shaped leaves, which are cut into three cilyvs in several oblique segments, which are cut into three or four sharp points, these have a pithy circle, a mark, like ahuife-Duic, through the middle, going from the upper side of the leaf; their leaves when they are fully tubed, have a faint blue tincture. The flowers are produced in small clusters about the end of the branches, and are of a pale blue colour, and are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort. The leaves are larger, and are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort.

The twenty-fourth fort grows naturally at the Cape of Good Hope; this rises to the height of six or ten feet, folding out several branches, which are generally erect, and are furnished with roundish kidney-shaped leaves, which are of a hick substance, and of a lucid green. Hanging on pretty long foot-stalks; they are covered with (bit hairs on their under side, and are placed without any order. The flowers grow in small clusters upon long foot-stalks, which come out from the wings of the fort; they are of a tirigir tartaric colour, to make a fine appearance, and there is a variety of these flowers during the summer months.

The twenty-fifth fort grows naturally at the Cape of Good Hope, but has been many years an inhabitant of the English gardens: this rises with a single stem to the height of four or five feet high, dividing into several weak irregular branches, which are hairy and wavyed on their edges, they are placed alternate on the branches, and are hairy upon their upper side. The flowers grow in dome-shaped heads on the top of the foot-stalks, forming a sort of corymbos; they are of a pitiful blue colour, and continue in succession great part of the year. The leaves of this fort, when rubbed, give an odour like dried roses, from whence many have given it the name of Rose Geranium.

The twenty-sixth fort is a native of the Cape of Good Hope; it rises to the height of five or eight feet, sending out many pretty (long branches, garnished with leaves (shaped like those of the Vine; those on the lower part of the stem upon long foot-stalks, but the upper have short ones, when the leaves (if this are rubbed, they have a scent of Balsam. The flowers grow in compact clusters on the top of the stem, which come out from the wings of the fort, but rise much higher than the branches, they are small, and of a pale blue colour, but make a great beauty, but there is a succession of them most part of the year.

The twenty-seventh fort rises to the height of five or six feet, with an upright shrubby stalk seven or eight feet high, sending out several branches, garnished with large, angular, rough leaves, hanging upon long foot-stalks. The flowers are produced in small clusters about the end of the branches, these are shaped somewhat like a butterfly, with two upper petals, which are pretty large, and stand upward like a standard in the leguminous flowers, these are finely variegated, but the three under petals are so small, as not to appear at a small distance, they are reflected downward, so are screened from light, unless the flowers are viewed near. This fort flowers in May, at which time the plants make a line of appearance, but they are not succeeded by any

man afterwards, as most of the other sorts are; this grows naturally at the Cape of Good Hope. The twenty-eighth fort is from the same country; this rises with a shrubby stalk six or seven feet high, sending out several branches, garnished with oblong, oval, lellily, smooth, of a gray colour, which are twisted on their edges, and have an acid taste like Sorrel. The flowers stand upon pretty long foot-stalks, which arise from the wings of the stalks, each stalk bearing three or four Boverj, which are narrow and unequal in size; these are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort. The leaves are larger, and are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort.

a distinct species, though Dr. Linnæus supposes them to be the same.

The twenty-ninth fort hath a thick, fleshy, knotted stalk, which rises to the height of two feet high, sending out a few slender lellily branches, garnished with double-winged leaves, which, on the lower part are of the (talk, (and upon foot-stalks, but the upper are of a different nature. The flowers are produced in small clusters at the end of the branches, and are of a pale blue colour, and are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort. The leaves are larger, and are of a pale bluish colour, with fine stripes of a light red, these are common in the summer; there is a variety of this with larger flowers, which is said to have been raised from the seed of this fort.

The thirtieth fort hath a round fleshy stalk with swelling knobby joints, which rise to the height of three feet high, and send out several irregular branches, which are finotid, they are thickly garnished with smooth, Eclhy, winged leaves, ending in obtuse points; they are of a gray colour, and (land upon (short foot-stalks. The flowers are four or five in each foot-stalk, which arise from the wings of the stalk, and are of a dark purple colour. The petals are broader than those of the former fort, and are of a very agreeable scent in the evening, after the sun is down, they are of a long time; these are the former sort, supposed to be one species by Or. Linnæus, but they are very different in particulars, which are permanent in the plants, and are of a very different nature.

The thirty-first fort hath a fleshy stalk, which rises to the height of two or three feet, and sends out several branches, which are hairy and wavyed on their edges, they are placed alternate on the branches, and are hairy upon their upper side. The flowers grow in dome-shaped heads on the top of the foot-stalks, forming a sort of corymbos; they are of a pitiful blue colour, and continue in succession great part of the year. The leaves of this fort, when rubbed, give an odour like dried roses, from whence many have given it the name of Rose Geranium.

The thirty-second fort hath a fleshy stalk, which rises to the height of two or three feet, and sends out several branches, which are hairy and wavyed on their edges, they are placed alternate on the branches, and are hairy upon their upper side. The flowers grow in dome-shaped heads on the top of the foot-stalks, forming a sort of corymbos; they are of a pitiful blue colour, and continue in succession great part of the year. The leaves of this fort, when rubbed, give an odour like dried roses, from whence many have given it the name of Rose Geranium.

The thirty-third fort hath a fleshy stalk, which rises to the height of two or three feet, and sends out several branches, which are hairy and wavyed on their edges, they are placed alternate on the branches, and are hairy upon their upper side. The flowers grow in dome-shaped heads on the top of the foot-stalks, forming a sort of corymbos; they are of a pitiful blue colour, and continue in succession great part of the year. The leaves of this fort, when rubbed, give an odour like dried roses, from whence many have given it the name of Rose Geranium.

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together upon very long foot-stalks there is a junction of chafe during all the summer months, and the flowers ripen arc singly about a month after the flowers are fallen: there is a variety of this sort which has a dark circle in the middle of the leaves, which is as a distinct species, but I find it is apt to vary in ram feeds.

The thirty-fourth sort for: hadi a very fort fc* stalk, which divides near the ground into several small, each having in any leaves, which arilr on separate foot-stalks from the heads, these are heart-shaped, soft, and very succulent like Anilised, and are very fine.

downy, anil have a skin from cojoe out feveral Hauler [talk? near a foot in length, which lie in and ifu garnilhed with rounder Itives than I

but arc of die fme texture, and in like odour. The flowers are produced in the side of the stalks, of five llac

white, fo makliulc iMjurance, but the phnt :3 pre- r'rcvcl in gardens itti the scent of its leaves.

The thiiity-Qfth fort hatha dliick, r- it, from which wife i'vtra! hain- Ir finely divided, about like those of the Garden Cereus, their foot-stalks are small, and between these come

JUI OK ft.ilka, which rife about a fo ^rc garnilhed with two or three leaves to the base fort .viti ihofc btlow, but are fmal!

terminated l>y a bunch of yellowish flowers, marked with dark purple is, which in: or the fun hatii left tlicm ••

ri>tn in autumn. This is the fort which has been long cultivated in the gardens, and is known by the title of Geranium noctu olens, or Night-footed Geranium.

The thirty-sixth fort hath a knobbed tuberous root like the lill, from which come out several pretty long leaves, composed of many lobes, its along the ribs in the form of a winged leaf, these are narrow at their base, and are rounded at their ends, which are rounded, and cut all along their side and top into many acute points, the stalks which sustain the flowers arise immediately from the root, and sometimes have one or two small leaves inward

die Li of cn divi. foot, stalks, each being terminated by J btinai rf pal* reddish flowers, which smell sweet and agreeable.

The thirty-seventh fort hath oblong tuberous roots, from which come out several decomposed winged leaves, ending in many acute points, the segments of these leaves are broader than those of the thirty-fifth fort, and the leaves are very hairy. The stalks rise a foot and a half high, which are garnished with a

Hn'l-, »v'a lower ml the fegmennaw jii" the kwtr leaves s it the mo low-r knots or •

Wife two long nal nattedbyabunchcfyellowwilh, he

has left thera. This grow - naturally at the Cape of Good Hope.

The thirty-eighth fort hath a tuberous root like the former, from which spring out many hairy leaves, which are finely divided like those of the Palladia, which are hairy appearance, and rise immediately from the root, spreading on every side near the ground.

Thr ! of stalk of the flower is naked, and rises from the root; this grows about nine inches high, and is terminated by a single bunch of flowers, which are of a very red; purple colour, and last long in the evening.

The thirty-ninth fort hath fleshy tuberous roots like those of the former sorts, from which come out three or four broad leaves, divided into their borders into many lobes, in form of a Vine leaf, their spread flat on the ground; they are hairy, and terminate on their edges, standing upon short foot-stalks. The foot-stalks of the flowers arise immediately from the root,

and grow about a foot high, they are naked, and are terminated by a bunch of dark purple flowers, with long tubes, lining close to the foot-stalks, which have a very agreeable odour in the evening.

The four first sorts of tuberous-rooted Geraniums are by Linnæus supposed to be but one species, but I have propagated them from seeds several times, and have never found either of them vary from their parent plants, so I make no doubt of their being distinct species, for their difference of leaves is as great as in any of the other species.

The fortieth sort is an annual plant, which grows naturally at the Cape of Good Hope; this rises with herbaceous branching stalks near a foot high, which are garnished with doubly-winged leaves at each joint; the lower leaves stand upon long foot-stalks, but those on the upper part sit close to the stalks. The flowers stand upon short foot-stalks, which proceed from the side of the stalks, on the opposite side to the leaves; they grow three or four together upon short separate foot-stalks; these are shaped somewhat like a pophyonaceous flower; the two upper petals, which are large, form a kind of standard, the other three petals are narrow, and reflexed downward; they are of a pale flesh colour, appearing in July, and the seeds ripen in September, soon after which the plants decay.

The forty-first sort hath a prickly thick tuberous root, from which is sent out several irregular stalks, which divide into branches, and grow diffusely; their lower joints, and are somewhat ligamentous; they are garnished with one double winged leaf at each of the joints, and the leaves come out the first-stalks of the flowers; these which are situated on the lower part of the stalks, are very long and naked, but those which terminate the branches are shorter, and have one or two small leaves fix at their base; thick foot-stalks are terminated by a small bunch of flowers, shaped like those of the former sort, but larger, and of a paler colour; these continue in blossom until the part of the summer; this and the former sort are supposed to be one species, but the former is an annual plant, and the latter is a perennial.

ro br, rheflint¹ by Dr. I onnirr jiinual pL, in every country, perishing soon after the leaves are perished, and I die latt-i is an abridg plain with liguir • in stalks.

The forty-second sort is a biennial plant, which naturally at the Cape of Good Hope; this sends out a grm nutntier a I very slender trailing stalks, which are prostraw on the ground, and extend a foot and a half in length, garnished with small, roundish, heart-shaped leaves, which are creased on their edges.

The flowers sit upon short slender foot-stalks, which come out at every joint from the side of the stalks; they are very small, and of a reddish colour; sometimes they are single, and at other times there are two or three flowers upon a foot-stalk. They continue in succession all the summer, in J the feeds i upon in about five weeks after the flowers decay.

The forty-third fort hath a double stalk, which rises to the height of four or five feet, sending out several branches, which are garnished with oblong leaves, indented, and unequally lacerated on their edges; the flowers stand upon long foot-stalks, which come out from the side of their branches; these are large, of a red colour, and the two upper petals are larger than the others; this sort flowers in June and July.

The forty-fourth sort grows naturally in the Isle of Cio in the Levant. This is an annual plant, which sends out several branches a foot long; the lower leaves are almost heart-shaped, but those on the branches are hearted in the shape of an ancient lyre. These are placed alternate on the branches; the first-stalks of flowers are produced on the side of the branches; these are six inches long, sustaining many bright purple flowers at the top, which are succeeded each by five seeds, having long slender beaks; these ripen in five or six weeks after the flowers fall away, and if they are permitted to scatter, the young plants will come up in the autumn; and if the winter is favourable, they will live in the open air, so will flower early the following

following spring; but if these should be killed in the Winter, some seeds should be sown in the spring, on a Si border of light ground, and when the plants come up they should be thinned, and kept clear from weeds; these will flower in July, and their seeds will ripen in August.

The forty-fifth fort grows naturally in Portugal and Spain; this is an annual plant, whose lower leaves are heart-shaped, and divided into three lobes; the footstalks of the flowers are placed on the side of the branches, which extend a foot and a half each way; these incline to the ground. The footstalks sustain many bright red flowers, which are succeeded each by five seeds, having pretty long beaks. This flowers and seeds about the same time as the former fort, and requires the same culture.

The forty-sixth fort grows naturally in Egypt. This is an annual plant, having oval fawed leaves of a gray colour; the branches extend a foot in length, adorned with small leaves placed alternate, and toward the end have three or four footstalks produced from their sides, sustaining several pale blue flowers, which are each succeeded by five seeds, having long feathery beaks.

This fort is much tenderer than the two former, therefore if the seeds are sown on a moderate hot-bed in the spring, and when the weather becomes warm, the plants are carefully transplanted on a sheltered border, there will be greater certainty of their perfecting seeds.

The forty-seventh fort grows naturally in Carolina, and is an annual plant, greatly resembling our common Dove's-foot Crane's-bill, but is smaller, and the branches are shorter, the flowers are very small, of a pale blue colour, these are succeeded by five seeds, having short tredd beaks, which are black. If the seeds of this fort are permitted to scatter, the plants will arise without farther care, and if thinned and kept clear from weeds, will produce flowers and seeds.

The forty-eighth fort has some resemblance of the forty-fifth, but the leaves are more of an oval heart-shape; the flowers are also of a bright red colour, this grows naturally at the Cape of Good Hope; the plant is tender, therefore will require the same treatment as the forty-seventh fort, with which they will produce flowers and seeds, after which the plants decay.

All the forts of African Crane's-bill may be propagated by seeds; these may be sown upon a bed of light earth toward the end of March, where the plants will appear in a month or five weeks after, and by the beginning of June the plants will be fit to remove; when they should be carefully taken up, and each planted into a separate pot, filled with light kitchen-garden earth, and placed in a shady situation till the plants have taken new root; then they may be removed into a sheltered situation, and placed among other of the hardier green-house plants, where they may remain till autumn, when they must be removed into the green-house, and treated in the same manner as other hardy kinds of green-house plants.

But those who are desirous to have their plants large, and flower soon, sow the seeds upon a moderate hot-bed in the spring, on which the plants will come up much sooner, and will be fit to remove long before those which are sown in the open air; but when these plants come up, there must be great care taken not to draw them up weak; and when these are transplanted, the pots should be plunged into another moderate hot-bed, observing to shade them from the sun till they have taken new root; then they must be gradually inured to bear the open air, into which they should be removed the beginning of June, and placed in a sheltered situation with other exotic plants. If these plants are brought forward in the spring, most of the forts will flower the same summer, and the plants will be very strong before the winter, so will make a better appearance in the green-house.

The shrubby African Geraniums, from the twenty-first to the thirty-second inclusive, and also the for-

ty-first and forty-third forts, are commonly propagated by cuttings, which, if planted in a shady border in June or July, will take good root in five or six weeks, and may then be taken up and planted into separate pots, placing them in the shade till they have taken new root; after which they may be removed into a sheltered situation, and treated in the same manner as the seedling plants. The twenty-ninth, thirtieth, thirty-first, and thirty-second forts, have more succulent stalks than either of the other, so the cuttings of these forts should be planted into pots filled with light kitchen-garden earth, and plunged into a very moderate hot-bed, where they should be shaded from the sun in the heat of the day, and should have but little water; for these are very apt to rot with much moisture, so they must only be gently refreshed now and then with water. When these are well rooted, they may be separated and planted in pots filled with the same sort of earth, and placed in the shade till they have taken new root, then they may be removed into a sheltered situation, where they may remain till autumn. These four forts should be sparingly watered at all times, but especially in the winter, for they are apt to take a mouldiness with moisture, or in a damp air: they will thrive much better in an airy glass-case than in a green-house, because in the former they will have more sun and air than in the latter, so will not be so liable to have a mouldiness or rot. But all the other shrubby forts are proper furniture for the green-house, where they will only require protection from frost, but should have a large share of free air when the weather is mild; they will require water every week, in mild weather once or twice, but it should not be given them in too great plenty, especially in frosty weather. These plants should be hardened in the spring gradually, and toward the middle or latter end of May, they may be taken out of the green-house, and at first placed under the shelter of trees, where they may remain a fortnight or three weeks to harden; then should be removed into a situation where they may be defended from strong winds, and enjoy the morning sun till eleven o'clock, where they will thrive better than in a warmer situation.

As these shrubby forts grow pretty fast, so they soon fill the pots with their roots; and if they stand long unremoved in summer, they frequently put out their roots through the holes at the bottom of the pots into the ground, and then the plants will grow vigorously but when they are suffered to grow long in this manner, it will be difficult to remove them, for if their roots are torn off, all the younger branches will decay, and many times the plants are killed. Therefore the pots should be moved once in a fortnight or three weeks, in the summer months, and the roots which may be then pushing through the holes in the pots cut off, to prevent their linking into the ground. These plants will also require to be new potted at least twice in the summer; the first time should be after they have been three weeks or a month out of the green-house; the second should be towards the end of August, or the beginning of September, that the plants may have time to establish their new roots before they are removed into the green-house.

When these are new potted, all the roots on the outside of the balls of earth should be carefully pared off, and as much of the old earth drawn away from the roots, as can be done with safety to the plants. Then if they require it, they should be put into pots a size larger than those out of which they were taken, putting a quantity of fresh earth into the bottom of the pot; then place the plants upon that, being careful the ball about the roots of the plant is not so high as the rim of the pot, that some room may be left to contain the water which may be given to the plants. Then the cavity all round the ball should be filled up with fresh earth, which should be gently pressed down, and the bottom of the pot beaten upon the ground, to settle down the earth; then the plant should be well watered, and the stem fastened to a rail, to prevent the

the wind from displacing of the root before they are fixed in the new earth.

The compost in which I have always found these plants thrive best (where there has not been a convenience of getting some good kitchen-garden earth) was fresh hazel loam from a pasture, mixed with a fourth or fifth part of rotten dung; if the earth is inclinable to bind, then a mixture of rotten tan is preferable to dung; but if it is light and warm, then a mixture of neat dung is best: this compost should be mixed three or four months before it is used, and should be turned over three or four times, that the parts may be well mixed and incorporated; but where a quantity of good kitchen-garden earth can be had, which has been well worked, and is clean from the roots of bad weeds, there will need no composition, for in that they will thrive full as well as in any mixture which can be made for them, especially if the earth has lain in a heap for some time, and has been two or three times turned over to break the clods, and make it fine: these plants should not be planted in very rich earth, for that will cause them to grow very luxuriant, but they will not flower so well as in a poorer soil.

The thirty-third sort hath herbaceous stalks, so is best propagated by feeds, which the plants produce in great plenty; but the cuttings of this will take root as freely as either of the other, but the seedling plants are preferable to those propagated by cuttings, and where the feeds of this and many other of the African sorts are permitted to scatter, there will be a supply of young plants come up the spring following, provided the feeds are not buried too deep in the ground. The thirty-fourth sort may be propagated by feeds, or from heads flipped off from the short fleshy stalk; these heads should have their lower leaves stripped off, that the stalk which is to be planted may be clear of leaves; then they may be planted single into a small pot, or if the heads are small, there may be two or three put into one small pot; then they may be plunged into a very moderate hot-bed, which will forward their putting out roots, and if they are shaded from the sun and gently refreshed with water, they will take root in a month or five weeks, when they must be hardened gradually, and removed into the open air, where they may remain till autumn, when they must be removed into shelter for the winter season.

The thirty-fifth, thirty-sixth, thirty-seventh, thirty-eighth and thirty-ninth sorts are generally propagated by parting of their roots; the best time for doing this is in August, that the young roots may be established before the cold comes on. Every tuber of these roots will grow, provided they have a bud or eye to them; they may be planted in the same sort of earth as was before directed, and if the pots are plunged into an old tan-bed, under a good frame in winter, the plants will thrive better than in a green-house; the glasses of the frame may be drawn off every day in mild weather, whereby the plants will enjoy the free air; and if in hard frost the glasses are well covered to prevent the cold penetrating to the plants, it is all the shelter they will require; but in this situation they should have but little wet in winter, therefore the glasses should be kept over them in heavy rains to keep them dry; but in mild weather the glasses may be raised on the upper side to admit the fresh air to the plants, which will give them greater scope to carry off the wet. With this management the roots will thrive and flower very strong every year. * These sorts may also be propagated by

feeds.

The fortieth sort is an annual plant, and is only propagated by feeds, which should be sown upon a gentle hot-bed in the spring, to bring the plants forward; otherwise if the season should not prove very warm, the plants will not perfect their feeds in this situation. When the plants are come up, and grown strong enough to remove, they should be each planted into a separate small pot, and plunged into a moderate hot-bed again, observing to shade them till they have

taken new root; then they must be gradually hardened to bear the open air, into which they should be removed in June; and when the plants have filled the small pots with their roots, they should be shaken out, and the ball of earth preserved to their roots, and put into pots a size larger, in which they will flower and ripen feeds, and soon after the plants will decay.

The forty-second sort is also propagated by feeds, which may be either sown upon a moderate hot-bed in the spring, or upon a bed of light earth in the open air, where the plants will come up very well, though they will not be so forward as those on the hot-bed. Those which are sown in the open air will require no other care but to keep them clean from weeds, and thin the plants where they are too close. These plants will flower in July and August, and if the autumn proves favourable, the feeds will ripen in September; but if these should fail, those which were raised on the hot-bed will come earlier to flower, so there will be no danger of their perfecting feeds, and these plants, if they are in pots, may be preserved through the winter, if they are plunged into an old tan-bed under a frame, and treated in the same manner as the tuberous-rooted sorts before mentioned.

The shrubby sorts must be looked over frequently during the winter, while they are in the green-house, to pick off all decayed leaves from them, which, if left on, will not only render the plants unflourishing, but by their falling off, they will occasion litter among the other plants; and if they are suffered to rot in the house, they will occasion a foul, nasty, damp air, which will be very prejudicial to all the plants; therefore to avoid this, they should be constantly picked off every week; and during the summer season, they will require to be picked every fortnight or three weeks to keep them clean from dead leaves, for as the branches advance, and new leaves are produced on their top, the under ones are constantly decayed; and if left on till they drop off, will render the plants very unflourishing.

GERMANDER. See TEUCRIUM,

GEROPOGON Goat's-beard.

The CHARACTERS are,

The empalement is single composed of notched keel-shaped leaves which are longer than the corolla; the flower is composed of several hermaphrodite florets, which are imbricated and shorter than the empalement, and are of one petal, divided into five segments at the top. They have each five short stamens, terminated by cylindrical summits, and an oblong germen with a slender style, supporting two thread-like stigmas which are recurved; the feeds are included in the empalement, and are crowned by five bearded spreading rays.

This genus of plants is ranged in the first edition of Linnaeus's nineteenth class, entitled Syngenesia Polygamia Inequalis, the florets having five connected stamens, and are fruitful.

The SPECIES are,

1. GEROPOGON (*Glabrum*) foliis glabris. Lin. Sp. 1109. Goat's-beard with smooth leaves. *Tragopogon gramineo folio glabrum, flore dilute incarnato.* Kaim Sup. 149.

2. GEROPOGON (*Hirsutum*) foliis pilosis. Lin. Sp. 1109. Goat's-beard with hairy leaves. *Tragopogon gramineo folio, fuaue rubente flore.* Col. Euphr. 1. p. 233.

The first sort grows naturally in Italy; this hath an erect stalk more than a foot high, garnished with smooth, grass-like, long leaves; the stalk branches upward into two or three divisions, each being terminated by one flesh-coloured flower, composed of several florets.

The second sort grows naturally in Italy and Sicily. This rises with an erect stalk a foot high, garnished with hairy narrow leaves, and seldom divides into branches, but is terminated by one flower composed of four or five hermaphrodite florets, which are succeeded by so many bearded feeds.

These plants require the same treatment as the TRAGOPOGON, to which article the reader is directed to turn for their culture.

3ESNER. Flumier Nov. Gen. 27. tab. 9. Lili. Son. Plant. 167. The pls< v. is JO named by 1 flumi-er, who discovered it in America, in honour of Conrad Gesner, :: very learned boianift, and natural tulturian.

The CHARACTERS are, Tbt i. palement of the flower is of one leaf, and into five SUU.; petals at the top, and is permanent, in which is fl- luattii the venes of the flower both are petal which is to be seen, and soft hair inward, and afterward are equal like a high-bird, the stem is divided into five equal joints which are equal; it hath four flowers which are flower than the petal, terminated by single stamens; the venes which fill under the petal supports a single crooked style, crowned by a beaded stigma. The germen afterward becomes a roundish capsule with five cells, filled with small seeds, which are found on each side the partition.

This genus of plants is ranged in the second section of Li: naxos's nineteenth class, entitled Didynama Angioiperma, which includes those plants whose flowers havt- <• long and two shorter stamens, and • lie fre^li are in< loaded in a capsule.

The SPECIES are,

1. GRASSIA (Yucca) folis tereto-lan- colius ciana- tis hirsuta, pedunculo lateralibus longioribus curvato- bite; Hort. Cliff. 318. Gesner with small hairy, (taw: h havi, and long fan-like spreading from the side of the stalk, supporting flowers in a corymbus. Gesner's ample distans folio truncato. Plum. Gen. 27.

2. GESNERIA (Hemelia) folis laccolatis serratis scilicet- bus ! educeulis nervosis multilobis. Lin. Sp. Plant. 612. Gesneria with four-flor'd lateral leaves having teeth to the stalk, and branching fan-like having many flowers. Gesneria humilis flore hirsutis. Plum. Nov. Gen. 27. Low Gesneria with a yellowish flower.

The first sort grows naturally in We(t-Intl: the seeds of this were sent me from Jamaica, which succeeded in the Chelsea garden; this is rifo wi rli aflimuby ro the height of fm or seven feet, which (£ into two or three irregular branches, covered with a lulii't wool, and garnished with hairy leaves which are from six eight inches long, and two and a half >ii) in the middle • iiviing a ruti- r woolly mulch, and [In edges are crowded, these are placed on every side the branches without order, and have their foot- stalks ; towards the end of the branches come out the foot-stalks of the flowers at every joint, arising from the wings of the stalk. they are fiakt, and nine inches in length, branching at the top into many I. smaller foot-IWks, <ch fuftjiniig a single fiowtr, ii^ving a ihort crooked tubt', intleniw! at the top in five .-bit-id' j.ij. im, and of an chiulete purple colour. These are cutwcd by raii: into clove in the empale in ent, tic divisions of which arise above the fBpfl: which Dr. Linnæus, from Plüster's figure, has taken for the empalement lying upon the capsule, whereas the capsule is distinct from the empalement u>d is indofet Ly it. The capiuu is divided into two cells which are fillet) with small seeds. It Bowers hrte in : ay and A Jijust, but hath not ripened [

The frond fur i^ a pl=lit of humbler gK*wtl; this feldo:: ties more than three Ged high •, die leaves are much fmalli , are from, oil their ei ges, and fit clear tu tic flak . the flowers stand upon branching foot- each fullaming many yellowish flowers, which mr deeper out at their brims than those of the first fort. This was found growing naturally by the late Ilr. H. Hudson at Carthagena in New Spain.

There is a third species of this genus mentioned by Flumier, which grows to be a tree, and hath spiced and fringed flowers; but that I have not seen in any of the Rio della gardens. These plants are propagated by seeds, which must be procured from the countries where they grow naturally; these should be brought over in their capsules, which is the best way to preserve the seeds good; for as they are very small and light, so when they are separated from the partition to which they adhere, they lose all their vegetative quality; for I have received the seeds fr-

vraI tinwi from America, which were rskep - os of 11 ic vtfTeSj, but not ont (it th-m grcv i- ul f- p- ti:red ibrc to be font in their vefiek, wlicli focc eded very well.

The ietds flwukl be fown in pots filled with light earth, and • plunged into a hot-bed) of tannen birk. as soon as • lit-y arrive, for they fometimj lie long in the ground; those which I have fown in autumn, ihc follomng fpring-, therefore when chev- happen • • rive here at thai season, the pots in which the seeds are llijvn (hould be plunged into the lan-berd in the flow-, and during the w-mtr the earth shoud be now a/d then gently watered to present its drying two much, but it niuft not be too muill. In the fpring the pors shoud be removed out of the Itove, and plunged • If a frofb hot-bed, wMch will bring up tic movr, they should be • h planted into a feparate pot, tnd ptm^ed into a good hw-bed of tan, obll-rvinj DO shade them till they have taken new root, then they • inR be treated in the same way as 1-her tender • jljnis from the :ame countries.

In autumn they must be plunged into the tan-bed in the flow-, where, during the winter, they should have but little watof given to them; tor if they receive much wet, it will deftroy them. In thii stage the plants must constantly remain, for they will not thrive if they are kept out of the tan. In the summer, they should have free ilir admitted to tfrim ar all times when the weatier is warm ; and they must be frequently re/fridied with waier during : ; it seasons, but it must not be given to (hem in tou > vi plenty. As the plants advance in growth they will require Larger pan, but [here mult be care taken not to tiver : for tley will not thrive in lar • jx>:s. With thii managedirnt tht plants will flower the freoid uar, antiiriii be continued three or four years, but they are not of long duration it their tu- fire country.

GEUM. LID. Gen. Plane 501. Caryophyllafa. Tourn. Inf. R. H. ;ri^ jib. 151. Avcns, or Herb Bennet-, in French, her:ete.

The CHARACTERS are,

The first I lielb a mt-kc-Etd «• • • ment, cut at the top into six equal •, which are alternately smaller than the other. The flower has four roundish petals, which ertii. traw at their base, where they are inserted in the empjtemau •, i: balb a grea' xumhr ef aw • • • • nniut, which are tit Ungib e/tiit mptknaht, uua wüch they reatjiftti, and <tre hrmiwkkii ty breed abut, jum- mils, h lbf ^; lir cj ibrbwer hffuatid a gnat uzml-r " • • • • flufft fligmas. The germen • vraari btiemt fo imnyfl.-: rough h seeds, which are hard, • iwi ha'it ibe style which is best fit a best adhering to them; (hijc U 1) let (inn/USB (HI- paupt.

This genus of plants is ranged in th: fifth feiffion of Linnæus's twelfth class, entitled Icomandria Polygynia, in which he places those plants whose flowers have more than twenty (lamina, • • • have many styles inserted into the enipakment,

The SPECIES are,

1. GEUM (Urtica) floribus l-rcis ftu • gbbofii, arista uncinata nuda, foliis lyratis. Hort. Cliff. 105. Geum with small flowers, a glivider fruit, noktd beated leaves, and hard-fogal leaves. Caryo- hylbta vulgaris. C. B. P. 321. Geum Arven, or Urrh Benet.

2. GEUM (Rivale) Lunb.is nutvndbu, fructu oblongo, arista plumbea. Hort. Cliff. 105. Geum with nodding flowers, and an oblong fruit with fleshy bands. Caryophyllata squarica, autumn flore. C. B. P. 321. Geum Herb Linnæi with a nodding flower.

3. GEUM (Pyrenaica) floribus numerosis, fructu glo- bulo, arista nulla, foliis lyratis, foliis nunciatibus. Geum with nodding flowers, a glovular fruit with naked bands, and hard-fogal leaves with vesicle like. Caryophyllata Pyrenaica, ampliflora & rotundiflora folio, autumn flore. Tourn. Inf. R. H. 105. Pyrenaica

Auati with a very large and rounder leaf. Hid a nodding

- 4. GBUM (*Mentatum*) flore ereftofolicrio frufu oblongo, aiiilta plumofis, Lin. Sp. Plant. 501. *Geum laib a Jingle upright Jipt.tr.* and an plimgfrm with fletbtry icardi. CaryophviUTI m on tana (lore luico inagno. J. B, t. p. 398. *MtxnJmii Avens will a large yllouii fever.*
- 5. Gtuji (*Alpimr*) Rorcfolitario erefio, frufu glubafo, arillis ictuauribus nudis. *Geum with a fmglt rrtii fa'jit.* and a globular fruit twitb nrmnar naked btard. Caryophyiian slpina miinr. C. R. V. jii. *Smaller Alpine /turns-*
- 6. GEI'M (*Virginianum*) floribus creelis, frufu [j]obofa, ariItifuncinatU:••• i- nut u, Hor(. CI iff. 19^.

ArWf W in>W: flaw. Caryophylata Virginiana, albo flore minore, radice inodori, H. L. 111. *rtr-gma Awn wiib I frailer utett fctetr, e>d a m*

The fitft fcn grows pkoti&Uy by the (ide of hedges, and in woods, in molt parts of fejighnJ. fc B farrfy admitted inn gtrde^ ThU W> m the I mediciml pbnBj ^ root Site only pan uicd, which is efcedmed cepbrfi: <w i akx^hjr.n.c, nrf B amfclty of a binding nature, fo is ufiful in all

The fconj fort frowj naturally it moift mci in the northern para of Engtand. ThU nor in honv Ur gmwth th.n the Brft, Ac tower km h<c c wo pair of ftwU l>••• * bo ^om_ ind three large trl <. at the top, that which ^ mirros being the iargeft. The leaves upon the (talks art coii>pofoed of three acute lobes which fit dote to the (talk ; the fowers are of a purpliflicolour, and nod on.onclidc j they appear in May, ami the feeds ripen iri July.

The tliirJ fort prows xipon the Alps, and alfo on the mountains in the north ; ilis hatli fome reCrm-blance 10 the fecund, b'i i <he 'f'ay>, a re 7^uctl larger MIrounder, and wtodemedon th,redg<-, the ft*en arc larger and of a gold colour. This flower ci* about the U time » (he feefoId.

The fourth fort grows naturally upon die Alp); this JS S nuck larger than eWoftta ofW fce-cies • the tower leaves are computed of three or few pair of fmdl irregular pinnr fa along the; m-lnb, which b terminy by one very t n ^ g k ^ <hkh b crenatcl on the edge. The flowers are ta of a brigiu ydlow colour, ftandmg fiogfc an

the June. fifth fort racwi iwtridjr on the Alps it is a low plU .he ftwer-fc^ << ^ut * << inches h< . they » ea.h ter- h, yellow flower, riM At lbe W Thi. flowers about the

The fixth fort grows naturally in North America; the ftalk of this fort rife a foot and a half or two feet high, and branch out at the top into fmall foot-ftalks, each being terminated by a fmall white flower; the leaves of this fort are trifoliare, and the root has no fcant. There are all very handy plants which require a fhady fituation, but will thrive in any foil; they may be eafily propagated by feeds, which fhould be fown in autumn; for when they are fown in the fpring, they do not grow the fame year.

GILLIFLOWER, or JULY-FLOWER. See Dian. ut. GU.LTFI.OWER, or STOCK-GILLIFLOW. See ANTHRUS. GILLIFLOWER, the Queen's or D^c^5 Vi- olrt. Sec Hesperis. GINGEK. See ANOMUM. GINGIDIUM. See ARTEZIA. GLADE is an open and light paffage made through a wood, by lopping off the branches of trees along that way. GLADIOLUS, Lin. Gen. Plant. 55. Tourne. Init. R.H. 365. tab. 190. [takes its name of Gladius, Lat.

[fwar-i , q. d. little fword*, becaufe the leaves 1 of this plant refemble afwort.] Cir.Jilj:.; in French, <

The CHARACTERs ire, fbt Jka-'trt are hifuAJ it Pieatbi, which fiend at a difteiKffrem inch thtr ; the p.'x.' af:l. - flower is at hits fix peril, three vftkt upprr art mar rgriter, the three underfpredopen, . . . and they all form a fhort incurved tale with tktir bxfi; thj bine lirce 0 wbiti art ;>. . . try o:kr ••(•• afcmd 10 the Upper feta'-. . . and are terminated by oblong fuamiti, Tht gervmi is . . . treated below the flower, pppurling it Jingle ji . . . for the length of the ftamens, rround by e conetv :- . . . the gervms ftoward beams <& thng, . . . ftamens, then-convoluted upwad, with three nils, opmu>£

Tills ;"Tll< Of pial . . . is ranged in the firft fection of Linn;uri's thirt 11 . . . included Trivandria Monogynia, WILLII includes 11 . . . plants whose flowers have three lUmina md om-'yle.

The Si'ttirrs are, 1. G LAIN or L (*Commis*) folis emittentibus, floribus diftantibiis, Lin, Sp. Plant. 36. Ge Jb^kavaiuidfmrnsfiandiMgatJtJfifaict. Gladiului floribus uno vcrfu (Sfpofo. C. fl. P- >>< Ctm-jleg with ; . . .

I, GLADIOLU (*Dianis*) folis emittentibus, flonbui incipijibv;i. . . j&wen . . . fag en bolt fides : . . . fad. • ladiolus utrimj-jc lluribus C. B. P. 41- Canting uitb jlvacers m nab . . . fad . . . fad.

3. GLAIOIOLUS (SysEik/;><) folm enftformibu?, I loneioribus. Cornjkg. Nil. fimri^mptd longer Jbcmbs is lit fevers. GlidiuUis inajor By: tinub. C.R 1^ 41- Gre.ua Cornfagcf Byzantium.

4. GLADIOLIS (*Indian*) Mm enlitrbmibus, floribus BUtnnk incarnatis. G/mjlag <<* fcwi-ftsjii md'-aj Jjrgt iitarat'u fixcrrt. Gladiolus in. CUB C.B.P-41; GnagL

j. GLADIOLUS (iiaE>ij>is) foti'ls wntibus, corollarum tubu iinibu longiort. Lin. Sp. Plant 37. Ccnftflug cw/i very itarn'ji Im'-ei, l < m fl,Hiding at a dijflume from tacb olber, iitJId? tuklmgtr thai: lbs margins ef tit petal. Gladioli fulio gfttrflinco, fiuribus cirneis, micuhm rhu dcain incriptis uno vcrfu pofitis, Bocth- tad. alt. t. Afrits* Cumfiag, vith e grajfc kaj, and p/h-m-knrti firmers, mrkedwilb tfurplrt rhMiboU fpet ranged all en niKJidt lbr ftulk.

6. GLAUIOLLS (2>1/1J) folis lineari cancellati; corollis cwnpanulatia. Ce,nJ^<ig 'Jinb vtry . tetvuj, 'id a JI--IA li.irjng bill-fit L-i-Bo-Gktdialiu btfolius v bSorus, full is quidv-wpiK Trtw. tab. 39. I . . . i' i toe lor.'s MJJlxzers, md fwr-miurtdUoW.

The firft fort grows naturally in arable land ui mott of the warm countries in Europe, ami wat fonnrcly cultivated in the Englifh Kartknj, where the root have multiplied fo greatly as to become a molt troublefome weed, jmd are very difficult to eradicate; ihis bath a round, compressed of a yelltwil'i cwouT, covered with a brow; • furrowed (tin, like thole of the large >clow vernal cus ; fru>> the root arife two flat (word- lthiprd ! hawks, which embrace each other a: their bife, and bi tiefc anfc . . . flawet-ll-^1 which . . . near the feet I.,p], liliving 01 v: ui two narrow leaves CO . . . leading it like a (heath i the Halts arc terminated by five or fx purple flowers, Hanging above cith other at lonie 'lilbnce, and ranged on one fide- ui the IUII; . . . each of tiefc has a fpatha [or (heath) which . . . GAVES the flower-bud before it expands, but fpto upen length- wiys when the flower blow, and llinvel up w a dry (kin, remaining about the feed- vdTel til the leads are ripfc The flower lwh one petal, which . . . in cut nlmolt: to the bottotn in fix parts, fa ns to aj>P, . . . like * flower of fix pelals, the thir' • UPP< Kgnwna Hand near tosetiirr, and rife like a bhattd flower; the under ont turns <low>ward, and the two lide legmcots form die ch<w of the Bower, and fprea . . . open at ch; top, b E but

but are curved downward at the bottom. They are ranged along one side of the stalk, and like of a purple red colour. This Bowers the latter end of May, and in June, and the feeds ripen the beginning of August > it requires no cart, for when it is once planted in a garden, it will multiply too fast, so as to become 3 trouble dome weed.

There is a variety of this with white flowers, and another with fleck-coloured flowers, which have accidentally risen from feeds, so we not different species.

The second fort differs from the first, in having the flowers ranged on both sides the stalk, but in other respects it is very like to that; and of this there is a variety with white (Was. but the; are not so common in the English garden: as the former.

The third fort hath longer roots than either of the former, but arc of the same form; the leaves are also much broader and longer, the veins or channels of the leaves are deeper, the Bower-fallu rii. light; the flowers are much larger, and of a deeper red colour than those of the former fort*, and the (heaths are longer. This plant makes a fine appearance in flower, so is worthy of a place in every garden; and the rather, because the roots do not increase so fast as to become troublesome. This is propagated by offsets, which are lent off from the roots in the same manner as Tulips. The roots may be taken out of the ground at the end of July, when they begin to decay, and may be kept out of the ground till the latter end of September, or the beginning of October; at which time they should be planted in the borders of the (lower-garden, where they will thrive in any situation, and being intermixed with other flowers of the same growth, they will add to the variety.

The fourth fort grows naturally at the Cape of Good Hope, from whence I have several times received the seeds. This has been many years cultivated in the English gardens, but very rarely in our gardens; for in near thirty years since I have cultivated this fort, I have never seen it but once in flower, though I have kept it in all situations, and planted it in various soils. The roots increase very fast, but will not live in the open air through the winter in this Country. The roots of this fort are broader and flatter than those of any of the other forts, and are covered with a netted skin; the leaves come out in the same manner, embracing each other like the former forts; they are longer, smoother, and of a brighter green, than any of the others; they begin to appear in September, and continue growing in five weeks after Christmas; they begin to decay in March, and the latter end of June are quite withered, when the roots may be taken up, and kept out of the ground till August; the time of planting is in January. The flowers of this fort are placed on the stalk, and fit close to it; like the flowers of the flat Barley; the heaths between the roots are not so long as those of the other forts,

and form a kind of fealy covering to them. The flowers are of a pile red colour without, but the three lower segments are yellow within toward their base. The flowers do not all open at the same time, but the lower ones decay before those above; the part of the spike are in beauty; they make a good appearance at a season when all flowers are withered.

This fort propagates by offsets-very fast, therefore should be planted in a warm border of kitchen-garden, and in winter they should be covered with glass or mats to preserve them from frost; for I have preserved those which were planted in pots under a common frame, and some which were planted in the full sun, which were not so well preserved; and I have always found that those plants which were kindly treated, grew much faster than those which were not.

placed in moderate degrees of cold in winter, if they are covered with glass in the winter, if

these roots are planted in the full ground, where they may be protected from die frail, the probability of their flowering, than the method of culture.

The fifth fort grows naturally at the Cape of Good Hope, from whence I received the seeds, which were first introduced in the Chelita garden, where the plants annually produce their beautiful flowers.

It hath a round, bulbous root, which is covered with a thin dark-coloured skin, from which come out in autumn two or three narrow grassy leaves, folded over each other in a fan-like manner; the root above, and rises near two feet high. In the spring of the year arises a single flower

about two feet long, which is a single flower; it is toward the upper part of this come out two or three flowers, ranged on one side of the stem, (landing upright, each having a narrow spatula, or hood, and long slender tubes, which issue upward, and are divided into six parts, which are nearly equal. The Sower is at the beginning of the year, each segment of the root has a rhomboidal mark of a dark red, or purple colour; afterward the tube of the flower opens, and the three divisions of the petals is seen, and the three stamens with their filaments appear, attended by the style with its trilobed stigma, arising from the germin. This plant flowers in May and the beginning of June; as it is a native of a warm country, it requires protection from the frost in winter; therefore should be placed in pots filled with light earth, and placed in the green-house in winter; or, where there is a convenient

place, they may be put under a hothouse, where they will thrive very well.

This is propagated by offsets from the roots, which are frequently perfected in the latter end of August, and placed in a shady frame till the middle of September; then the pots should be removed, and they may have the sun for part of the day, and in October they may be placed in a hot-bed frame, where they may be protected from the frost; but they enjoy the free air in mild weather. In the spring the young plants will appear, when they should be given them sparingly, for too much wet will rot the tender bulbs. In May, when the danger of frost is over, the pots should be removed to the open situation, where they may be watered till noon; and, if the season proves dry, they must be watered with waier. Toward the latter end of June, the leaves of these plants will decay; then the roots should be taken up, and kept in a dry room till the end of August, when they should be planted again; and is this time should be planted in each half-penny pot, filled with light earth.

placed where they may have only the sun till the middle of September, when they should have a warmer situation; and in October they may be placed under a hot-bed frame as before, and a hot-bed in the same way during the winter; and in the spring they may be placed in the open air till their young plants appear, when they may be taken out at the ground, and treated as before; but the roots will have grown to a larger size, so when they are taken up again, they should each have a separate half-penny pot, because when they will be large enough to flower, they should be treated as before.

The fifth fort is native of the Cape of Good Hope, from whence I have several times received the seeds of this fort is oval, not compressed at the ends, and narrow, having two deep furrows running the whole length, the

to have the appearance-of a four-cornered loaf. The leaves are simple, and wrapped dnie about theflow- ilalk at that bate to awnfidctahie length ; ±
 om one root;
 :ilk a(lender antl round,
 high -, and the »jp b garnifhd with two flowers,
 Yuuch are placed two inches and a halt' afunder on
 the fame fide 01 vhu fist;;, A thort fparha,
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 K it decays. This floors in joif, and fome-
 feeds ripen well in England. This may lie
 ;:gated by offsets from the root, ur by feeds in
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GLANDIFEROUS trees, are fuch trees as bear
 nvift, as Accrns, &c.

GLAKDLT1.OUK root*, are fuch roots ai grow
 kernel-wife.

• N 5 U tluit fort of fruit which is contained within
 a Imoml; but hard bark, having but one feed; its
 hinder parti covered with a kind of cup, the fore-
 ig bare, as Acorns; but it is proj¹

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jrMilkwort, and hlack

Sahwon, is a Itw trailing pen-m>ul)bnt, widi leaves
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 of tlic leucvsi they are white, and
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 ther accotini of it. This grows upon tlicfea-U: i

moil ports o

C fd O M A. Ground Ivy, Gill go by tlie Ground,
 Ale-hoof, or i'tirn-hoiif.

This plane grows naturally under hedges, and upon
 the fidcj of bunks in (noft ptirrs of England, fo is
 rarely" cultrivated in gardenj, for which refon I full
 pnfj over it, with barely mentioning it here.

DITSiA. Lin. Cljn. Plant. 1025. Acacia. Rnii
 Meth. t A i. Honey Locult, or thice-tliorned Acacia.

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The Sertus are
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 98. Glandifera (Vincetoxicum) spinis tripartitis acutis.
 99. Glandifera (Vincetoxicum) spinis tripartitis acutis.
 100. Glandifera (Vincetoxicum) spinis tripartitis acutis.

2. GLtoiTjIA (Ltermi: \ fjjinij patiorribiu, folis bipin-
 naiii, lilij ^{in ovalibus}, GUDI(/ia loib fuocr ffinri,
 fflSWS, and tr. 'tii pi;di. Aiacia Abrua; ioXia tri-
 aeandim, opfult turab imicutDlcfenclaudatEB, Ci-
 :db. Car. t. j. 43. I'hrct-ikvrnn! jicticia laiti tin jili-
 rusleaf, and sit cualpod contumKg wtjful.

The trees grow naturally in America; the firft
 fact is very com- mn in molt pans ai North America,
 wherc i; a known by the title of Honey Locult; this
 has been many yeantul ^{visited in the English gardens,}
 and b known atnom; 'the gardenen bj the title of
 three-tlvjn Acacia. Is rui- with jn atct trunk
 to the hdghe of thirty or tony t'ci-x, and i; ann;
 with
 lung fpines, which have two or thice frtulltr coming
 out from the fulc, and arc frequently ptut'uccel in
 clutters at the knot; on the Hems of the trio 1 they
 ire lumetines three or four inches long. The
 bran- Jics of this tree are alfo armed with the lame fan
 of fpines, and arc garnified with winged leave:,
 po&d of ten pair of fmall leaves which ih cloje to
 ritt midrib, iud arc of 1 lucid green. The (lower!
 come out from tht fioc cftbt young brjndies in
 kitkins: the; arc of an herbaccoui colour, Jo matt
 no figure, The hermaphrodite flowers are fuccedcii
 by pods orar 1 font and a hal' long, an i two inches
 broad, tiivided into many celk by tranfvcrfe parti-
 tions, cuch conceining OIK- fmooodt, hard, oblong ii-cJ,
 furrorindcl by a AViet i 1

The leaves of this tree ieldom came out till June
 in dii country, ud di<- Bowi ^{is appear the lame n-nd}
 of July, but they do not flow; till they arc of a large
 fue: therewusone tree in the Chieftin garden which
 produced flowers (evert) years, and there is ont
 growing in the BiASop of London's garden at I*ul-
 ham, which produced pods in the year 171B, and
 caufc 10 iil-ir full li/i', liut the feeds did jiot ripen.
 Tlic fecond fort hath much che apfirarans; of die
 firft, but it hath fewer (pimo. The I ^{QHifT,}
 and lit: pxls arc ovul, cunninging but one fbeil
 that was th; nvcrcd liv die htc Mr, Cntefby, in Ca-
 rolina, from whence he lent the feeds to ^{England,}
 by the title of Water j'x:tcia, by which it ii J. ^{known}
 in the garden s.

Thefe trees arc propagated by Iced¹, which muft he
 procted from America, whetc die tree* grow natu-
 nlyti thole of thu-firft fort arc annually fent to Eng-
 land in plcmj, by the title of Locult, or Honey Lo-
 culr, to di(tingui(h it from the fetlfe Acacia, wh
 is frequently culled Locuit-tree in America \ theje feeds
 may be ibwn upon a bed uf light earth in
 burying ihetn hilt an inch drcp; anti if die I
 lhould prove dry, they mtit be frtuctuljr watered,
 otherwjfr the plmiti will not coine up Ac
 for I dive fomrtimca lwd the fettis reinnin
 in the ground bei. ^{are they have c} come up; therefore
 thofe who are defirous to fave time, Hani
 fcrdi as fobn as diey arrive, and plungt the fu-
 a moderate hot-bed, obferving to Winer tht;
 frequntiy by dvbmethod plantswill-o

up the (hmc tsibn, but tlicfc fhould be gfiJmly
 inured to bear the open air, for if they are com,
 in dir hot-bed, they will draw up wctk; during the
 rummer feafo", thofe pknta in pots will requir
 quenc waterings, but thofe in the full ground" will
 not dry h fait, then-fore need no water, unld
 fcifon Jlioot! provr- very dry. In autumn, rh^
 the pots llioufd bo placed under a
 prone! (hem from nod
 generally kw BTMwing la^{le} in the fur
 per pott of their (hoots is tender, and the catli I
 ul th* autumn often kill the endi of them, if they
 are not protected, and thii frequc 1; ^{occidant} greir
 part of the ilioot; decaying in winter-, for whch nca-
 ffin thole plants in the hill ground fhould be co-
 vered witto matt in aonHODt on die firft appearance
 of froil; fora liraII fmft in tigtumm ivill do
 mifchirf to tJtefe young flwots which are full of
 (^{very froil} when the thorns arc lurinstd.

The following fpring the plants ma • be n-inplanted
 into nurfery-beds, at a fow diltanc- t'ow fhan row,
 and

and

and

and

and

and

and

and fix inches afunder in the rows; but this fhould not be performed till April, after the danger of hard froft is over; for as the plants do not put out their leaves till very late, fo there will be no hazard in removing them any time before May. If the feafon fhould prove dry, they mull be watered; and if the furface of the beds is covered with mofs, or mulch, to prevent the earth from drying, it will be of great fervice to the plants. In thefe beds the plants may remain two years, during which time they muft be confantly kept clean from weeds; and in the winter there fhould be fome rotten tan, or other mulch, fpread over the furface of the ground to keep out the froft. If the plants thrive well, they will be fit to tranfplant to the places where they are to remain after two years growth, for they do not bear removing when large. The beft feafon for tranfplanting of thefe trees, is late in the fpring; they thrive beft in a light deep foil, for in ftrong fhallow ground they become moffy, and never grow large; they fhould alfo have a fheltered fituation, for when they are much expofed to winds, their branches are frequently broken in the fummer feafon, when they are fully clothed with leaves.

GLOBULARIA. Lin. Gen. Plant. 106. Tourn. Inf. R. H. 466. tab. 265. *Blue Daify.*

The CHARACTERS are,

It hath a flower compofed of many floret s, which are included in one common fcaly empalement \ each floret has an empalement of one leaf which is tubulous, and cut into five figments at the top. The florets have one petal, wbofe bafi is tubulous, but the brim is cut into four parts; the upper figment, which is the leaf, is reflexed; they have four ftamina the length of the petal, terminated by diftintt funmits; in the bottom of the tube is fituated an oval germen fupporting a fingle fyle, crowned by an obtufifigma. The germen afterward becomes an oval feed, fitting in the common empalement.

This genus of plants is ranged in the firft fedtion of Linnaeus's fourth clafs, intitled Tetandria Monogynia, which includes thofe plants wjiole flowers have four ftamina and one fyle.

The SPECIES are,

1. **GLOBULARIA** (*Vulgaris*) caule herbaceo, foliis radicalibus tridentatis, caulinis lanceolatis. Flor. Suec. 109. *Globularia* with an herbaceous ftalk, the lower leaves divided into three points, and thofe on the ftalks fpear-fhaped. *Globularia vulgaris.* Tourn. 467. *Common Globularia.*
2. **GLOBULARIA** (*Nudicaulis*) caule nudo, foliis integerrimis lanceolatis, Lin. Sp. Plant. 97. *Globularia* with a naked ftalk, and fpear-fhaped entire leaves. *Globularia Pyrenaica,* folio oblongo, caule nudo. Tourn. 467. *Pyrenean Globularia,* with an oblong leaf and naked ftalk.
3. **GLOBULARIA** (*dlypum*) caule fruticofo, foliis lanceolatis tridentatis integrifque. Prod. Leyd. 190. *Globularia* with ajhrubbyftalk, fpear-fhaped leaves, fome ending in three points, and others are entire. *Globularia fruticofo,* myrti folio tridentato. Tourn. 467. *Shrubby Globularia* with a trifid Myrtle leaf
4. **GLOBULARIA** (*Spinofa*) foliis radicalibus crenato-aculeatis, caulinis integerrimis mucronatis. Lin. Sp. Plant. 96. *Globularia* with lower leaves crenated and prickly, thofe on the ftalks entire, ending in a point. *Globularia fpinofa.* Tourn. 467. *Prickly Globularia.*
5. **GLOBULARIA** (*Cordifolid*) caule fubnudo, folis cuneiformibus tricupfidatis, intermedio minimo. Lin. Sp. Plant. 96. *Globularia* with a naked ftalk, and wedge-fhaped leaves ending in three points, wbofe middle figment is the leaf. *Globularia Alpina minima,* origani folio. Tourn. 467. *Smalleft Alpine Globularia* with a wild Marjoram leaf.
6. **GLOBULARIA** (*Orientalis*) caule fubnudo, capitulis alternis feffilibus, foliis lanceolato-ovatis integris. Lin. Sp. Plant. 97. *Globularia* with a naked ftalk, alternate beads fitting clofi to the ftalks, and oval, fpear-fhaped, entire leaves. *Globularia Orientalis,* floribus per caulem fparfis. Tourn. Cor. 35. *Eaftern Globularia* with flowers flattered along the ftalks.

The firft of thefe plants grows plentifully about Montpellier, as alfo at the foot of the mountains Jura and Saleva, and in many other parts of Italy, and in Germany; this plant hath leaves very like thofe of the Daify, but are thicker and fmoother. The flower-ftalks rife about fix inches high, fupporting a globular head of flowers, compofed of feveral florets, which are included in one common fcaly empalement \ they are of a fine blue colour, and appear in June; thefe are fucceeded by feeds, which fit in the empalement, and ripen in autumn.

The fecond fort grows plentifully in the woods, near the convent of the Carthufians, and on the Pyrenean mountains; this is much larger than the former, and hath a fhubby ftalk a foot and a half high; the foot-ftalk is quite naked. The leaves are narrower, and much longer.

The firft fort may be propagated by parting of the roots after the manner of Daifies. The beft feafon for parting and tranfplanting of the plants is in September, that they may take new root before the frofty weather comes on. They fhould be planted in a fhady fituation, and require a moift loamy foil, in which they will thrive much better than in a light ground and an open fituation; but the plants fhould not be removed oftener than every other year, if they are required to flower ftrong.

The third fort grows about Montpellier in France, and in Valentia, and feveral other parts of Spain. This has a hard woody item, which rifes about two feet high, having many woody branches, befet with leaves like thofe of the Myrtle-tree. On the top of the branches the flowers are produced, which are of a blue colour, and globe-fhaped; this plant may be propagated by cuttings, which fhould be cut off in April, juft before they begin to make new fhoots; the cuttings fhould be planted into pots filled with light frefh earth, and then placed into a very moderate hot-bed, obferving to water and fhade them until they have taken root, when they may be taken out of the bed, and inured to bear the open air by degrees. In fummer thefe plants may be expofed with other hardy exotic plants, and in winter they fhould be placed under a hot-bed frame, where they may enjoy the free air in mild weather, but fhould be freed from hard froft, which will deftroy them, if they are expofed thereto, but in mild winters they will live in the open air. This plant never produces good feeds in this country.

The fourth fort was found in the mountains of Granada, by Dr. Albinus; this plant is of low growth, and may be propagated as the firft -, as may alfo the fifth fort, which is the leaf of all the forts, and the moft hardy -, therefore fhould have a fhady fituation, and a cool moift foil.

The fixth fort was found by Dr. Tournefort in the Levant; this is fomewhat tender, and fhould be fheltered from the froft in winter, under a frame, but in fummer it fhould be expofed with other hardy exotic plants, and will require to be frequently watered in dry weather. This may be propagated by feeds, or by parting of their roots, as was direcded for the firft fort.

GLORIOSA. Lin. Gen. Plant. 374. Methonica. Tourn. Acad. R. Scien. 1706. *The Superb Lily.*

The CHARACTERS are,

The flower hath no empalement; ^t bath fix long fpear-fhaped petals, which are waved, and reflexed to the foot-ftalk. It bath fix ftamina, which fpread open each way and are terminated by pioftrate funmits. In the center is fituated a globular germ & ^fupporting a flender inclining fyle, crowned by an obtufi irijxe jigma. The germen afterward becomes an oval thin capfite having three cellsj filled with globular feeds, difpofid in a double range**

This genus of plants is ranged in the firft fedtion of Linnaeus's fixth clafs, intitled Hexandria Monogynia which includes the plants w/hofe flowers have fix ftamina and one fyle.

1. **GLORIOSA** (*Superba*) foliis longioribus capreolis terminalibus. *Superb Uly* with longer leaves ending vntb clafpers.

...i-ia Malib;tromm. II.wr. ; and. 658,
Mltibmita of Malnar, and the I. ...ianicutn
rbum. Hort. Amit i, p. 69. Sajxfr l.

ifio5A {(UruUa) ftliU ordto-hftceolatis neutis
JifMj-i Uh reib aval, jpeor-jkapt, a<m L.
The lull; lun gronf, naturallv cm thecoiit ulMaliilMr,
and all> in Ceylon, from ivtanre it was tirtl br
to the gardens in I lollai'il, where it tto bten anmj
years (ultivat<li this hath a long tlefly too'
whitth colour, and a nufcous bitter tafie, finni l:
midfik- c) which ariies ;i rounJ wealc Iblk, which
its trailing on the-groum-
i fit (talk? grow tu the height of eight or ten fee.
j'j'milhed with leaver placci alternate on every lide,

e finordh, about eight inches long, and one
inch and a half broad = T*: bale, growing narrower
..iwoinches of the end, whicli runj
[mint, ending with a tendril, or ciafer,
I which IL laltcn to the nei^litiuurng ptanti for
;>port. At the uppr partul ihc ftaJk the flower
- produral from the fkle, IUndine upon a flmCtrr
L •, it >compo'tti of fix ubiong pea
••, iicente points, which, on ihrir firft opening,
in herbiiCtoui colour, .mil bread v.
c liuwer hanging downwurJ a rhr CRIWD Inj>LTitl
ml Fritilliin-, but afterward the petals turn quite
iick, and change to a beautiful red finw
colour,
ir acute points meeting at the top; the petals
linek waved on their edges, 'i'he fix fbmuia
irfiul on rvery w>ay alinofl lioriwml, and arc
rinnctci by prolbraie lummits. In ihc ccniii' of the
ower is liiualcJ A roundifh germen, luppartine an
itylc, crowned by a triple ftignu
tant flowers in June ami July, but fcililum pfrictis
iceja in this country. The (talks decay in tu.umn,
and the mots remain inactive all the winter, anl die
new IUks come out in March. The rooi
part of thtspliw >. very poUbuous, fo ihcnild not bi-
put in the way of children.

The feeds of the fecond fort were lent t it by Mom:
d, (r.iridener » the l'-rench king at 1

who diftovevd this phw growmis * =rc nmirall) 1
^ M ... blunder, but il <=>pl<.i. ••
are in the Chelica go... have not
bath a climbing ftalk, which is garnifhed w
leaves about three inches long, and two l
ending i
acute points, but have no tendril or cl
here, but b
other fort.

As thefe plants
try, they are p
thofe of the firft
but the fecond hath not as ye
but a
are young, we
reat when they
They
ay be taken out of the ground when
ayed, and perferved in fand during
ull be kept in the ftove,
receive
from the
light earth, and plunged
but others chufe to let
the roots continue in the ground all the winter, keep-
ing the pots always in the tan-bed: where this is
prjaifed, me w"
for as they are then in an inactive
frequently rots the

Ktato*
dw ivinter IWbn, bu thf jf m
vaat.nroom, where .hey <n
" Jg

roots.
Toward the btterr:
of March, or the beginning of
April, their ftalks will appear, wivn I P. ^ 1.
fome tall ftalks put down by them to fupport them,
otherwife they will trail over the neighbouring plants,
and the firlt flw will falen to the
by the vrn-
rrib, <hid> arc attWentio! the leaves^, 1 IL It. L •
of th> fort will nib tear twelve **&k lt <<"

on ire frong, and force of the IblkI will produce
two or three flowers, which come oui fram ffw; win*!
ui' iht (talk
near the top, their flowers make a fine
appearance in the flore, ;aring their countwbtc.
which is feldom more than ten days or a fortnight.
In rummer, when ilie jilan.H arc growing, they will
reqiitfe fr^qunrty to be watered, but the/ mui' not
have it in too large quantities, for t: y are very
fubjtit in ror wit)) row h wet at any feafon. Thefe
roots whit i are not taken Alt ot' the pots in »
the • :J be trunfpLintcJ .mJ | arted the : ylining of
March, before they pur otic new fibres, or ftalk*;
for i hey muit nor b- • moved when they are in i
growing Halt) the pots in which ihie roots are
plwited fhould not be too large l for unl is they are
confined, (they will • put out ftung ftalks; the
largcil roots may be planted in un
The I mill ones will require only pou (rfrnxtm live or
fix tncbu over at the top.

GLYCINE. Un.Gen.PIani 797. A k>.Bo<<.Ind,
air, KxoUi'J-roi!:-Lignoria Yaw,

The IHARACTfc
The
of the flower is of one leaf, divided
into t'co lipi at lie In;: the upper lip being larger and
under •rd li't Inwtr lip - is larger, wider, and acute, the
tiitUif iHiksUirt idtti . rounded beyond the other. The
lower - is of tin !> ;>
ly kind. The ftalks are
td, dtfiextdun ibe l,
yellow on the back, and
ikiUid r.t the paint, Ti
are faint, yellow, and
eval U
and bend backward. The hind
r< ifrtria- fu't-jh*ptiy •
are feparat' into two parts in
IttJiUnimv
of it breadth. It has two ftalks,
titctfvbitb art •
in one leaf, and the other ftalks
Jmgkt nmmaatd
by feveral joints. In the center is fea-
atai an nile^ggerm
supporting a fpiral cylindrical file,
vrvami by <M thuijfh
The ftalks ftirward be-
come w sbleitg pod with nut 1
htqi

This genus of plants is ranged in the third fection
of Linnæus's feventeenth clafs, which includes the
jilan;
bodies. Tournefort pUces the tirtl •
under this ge-
nut ui' Allxiigalus, wic I
is ranged in the fifth fection
of his icnth clafs, whjeh includes tjt: I
beruHy (lower, wlvoc pional tunii to a jxv
with
two cells.

The Spictu ire,
1, Gtvcina (Apoia) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

1, GLVCIHE (J'ntufi) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

1, GLVCIHE (J'ntufi) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

1, GLVCIHE (J'ntufi) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

1, GLVCIHE (J'ntufi) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

1, GLVCIHE (J'ntufi) foliis impari pinnatis ovato-lance-
olotii. Hon. Upfal. 1

The first fort grows naturally in Virginia, this hath roots composed of several knobs, or tubers, which hang to each other by small fixings; from these come out in the spring (tender twining stalks, which rise to the height of eight or ten feet, garnished with winged leaves, composed of three pair of oval spear-tipped lobes, terminated by an odd one. The flowers come out in short spikes from the side of the stalks, they are of a Pea-blossom kind, of a dirty flesh-colour, having little scent. These appear in August, but do not produce seeds in England. The stalks decay in autumn, but the roots continue, this is propagated by parting of the roots, each of the tubers being separated from the principal root, will grow; the best time for this is about the end of March, or the beginning of April, before they put out shoots. The roots should be planted in a warm situation, and in hard frost covered with tan or mulch to protect them, otherwise they will not live abroad in this country: where they have been planted against a fourth wall, they have thriven and flowered extremely well, which they seldom do in any other situation, and those roots which are planted in pots rarely flower, nor do their stalks rise near so high as those which are planted in the full ground, some ignorant persons call this the Twickenham Climber.

The second fort was brought from Carolina, but has been since observed in Virginia, and some other places in North America; this has woody stalks, which twist themselves together, and also twine round any trees that grow near, and will rise to the height of fifteen feet, or more. The leaves are winged, and in shape somewhat like the Ash-tree, but have a greater number of pinnae. The flowers are produced in clusters from the wings of the leaves, which are of a purple colour; these are succeeded by long cylindrical pods, shaped like those of the scarlet Kidney-bean, containing several kidney-shaped seeds, but these are never perfected in England.

This climbing shrub is propagated in several nurseries near London, where it is known by the name of Carolina Kidney-bean-tree. It is increased by laying down the young branches in October, which will be rooted well by that time twelvemonth (especially if they are duly watered in dry weather) and may then be transplanted, either in a nursery for a year to get strength, or to the place where they are to remain for good, which should be in a warm light soil and a sheltered situation, where they will endure the cold of our ordinary winters very well; and if their roots are covered with straw, Fern, Peas-haulm, or any other light covering, there will be no danger of their being destroyed by the frost.

The third fort grows naturally in both Indies, and also in Egypt. This is a perennial plant, with tender twining stalks, which twist about any neighbouring support, and rise to the height of eight or ten feet, garnished with winged leaves, composed of sixteen pair of small, oblong, blunt lobes, set close together; these have the taste of Liquorice, from whence the inhabitants of the West-Indies have given it the name of Wild Liquorice, and use the herb for the same purpose as the Liquorice in Europe. The flowers are produced from the side of the stalks in short spikes or bunches; they are of a pale purple colour, and shaped like those of the Kidney-bean, these are succeeded by short pods, each containing three or four hard round seeds of a scarlet colour, with a black spot or eye on that side which is fattened to the pod. The seeds of this plant are frequently sown, and are worn as ornaments by the natives of those countries, where the plants grow naturally: they are frequently brought to England from the West-Indies, and are wrought into various forms, with shells and other hard seeds.

This plant is propagated by seeds, which must be sown upon a good hot-bed in the spring; but as the seeds are very hard, so unless they are soaked in water twelve or fourteen hours before they are sown, they frequently lie in the ground a whole year before they

vegetate; but when soaked, the plants will appear in a fortnight after the seeds are sown, if they are good, and the bed in a proper temperature of heat. When the plants are two inches high, they should be each transplanted into a separate pot, filled with light earth, and plunged into a hot-bed of tanners bark, where they should be shaded from the sun till they have taken new root, after which they must be treated in the same manner as other tender plants from the same countries, always keeping them in the bark-fove, for they are too tender to thrive in any other situation in England. This fort will flower the second year from seeds, and sometimes ripens seeds here.

There are two other varieties of this plant, one with a white, and the other a yellow seed, but the plants do not differ from the other in leaf or stalk; but as these have not as yet flowered in England, I do not know how their flowers may differ.

The fourth fort hath a perennial root and an annual stalk, which decays in the autumn. This rises from two to three feet high, with tender herbaceous stalks, which are garnished with trifoliate hairy leaves, fitting close to the stalks, the small leaves or lobes, are of the oval spear-shape, ending in acute points. The flowers come out from the side of the stalks, at the foot-stalk of the leaves, the naked part of the foot-stalk is about two inches long, and the spike of flowers is about the same length, and is recurved, the flowers are of a Pea-blossom kind, fitting close together. They are small, and of a fine blue colour, coming out the beginning of June, and are sometimes succeeded by seeds in England, which ripen in August.

This fort grows naturally in North America, and is hardy enough to live in the open air in England. It may be propagated by seeds, or parting of the roots, the former is the best method, where good seeds can be obtained: these may be sown on a bed of light earth in the spring, and if the season should prove dry, they must be frequently refreshed with water, otherwise they will remain a long time in the ground before they vegetate: when the plants come up, they must be kept clean from weeds in the summer, and in the autumn when their stalks are decayed, if some rotten tanners bark is spread over the surface of the ground, it will protect the roots from being injured by the frost. In the spring, the roots should be transplanted to the places where they are desired to remain, which must be in a warm (sheltered situation, but not too much exposed to the sun, and in a light soil, where they will thrive and produce flowers annually. If this is propagated by parting of the roots, it should be done in the spring, before the roots begin to shoot, which is the best season for transplanting the plants: but these roots should not be parted oftener than every third year, for if they are often removed they will not flower so strong.

The fifth fort hath a perennial root and a climbing stalk, which rises near four feet high, garnished with woolly trifoliate leaves: the flowers come out in short bunches from the side of the stalks, they are small, of a yellow colour, and are succeeded by short pods, which contain two roundish seeds in each. This flowers in June, and the seeds ripen in autumn. It grows naturally in America, but is too tender to live in the open air in England. This is propagated in the same manner, and requires the same treatment as the third fort.

GLYCYRRHIZA. Lin. Gen. Plant. 788. Tourn. Inf. R. H. 389. tab; 210. [so called of *γαυκ*, sweet, and *ρίζα*, Gr. a root, q. d. sweet root: the ancients called it Scythiaca, because the Scythians first brought it into use.] Liquorice; in French, *Reglisse*.

The CHARACTERS are,

The flower hath a permanent tubercle empalement of one leaf, divided into two lips; the upper lip is cut into three parts, the middle one being broad and bifid, the under lip is single. The flower hath four petals, is of the butterfly kind, having a long erect standard, with

G L Y

... and a two-kiivrd keel roirri « "*/- "
... and oof Jim;
... (In tiu, and termineiu)
In di fatten) ufluatti a fieri germ
... fedjly!e the tr.yb ftiht fimiv, am
... cbluft fuggma. "Tilt strain afterward busnci an
... er aval eeiaprrffe.Jpedieib ate tell, intlat:

lilis genus of plants is ranged in thr thlrd feckion of
innitu's seventeenth class, intr.iid Disdulphia De-
ndrts, which iodod<a rliule planti which liav ten
Uuim joined in two bodies.

- The ijpicies arc,
1. GiveyxERZA (Glabm) Icgu mini bus glabris. Hort.
Cliff. 490. IJqaorice with fmoob pcdi. Glycyrliaza G-
lkjuofk, vcl Germanic C. B. 1'. Cwcam Lupnria.
2. GLEYEVA; mZA (Edinata) IcguminibiBechinaiis. Prod.
Leyd. 316. L. ;w<>r toib prickly peds. Gly-
capke cchinato. C. B. P. Rwg-pJsdcd TJf
3. GLVCTUHJIIZA (Hirfxia) Icgiminibui bicluta. Prod.
Leyd. 316. L. ;w<>r toib prickly peds. Gly-

The firft fort is tli« which ll commnty cultlvitcti in
lingljnd for medicine; the ... lids are pit-
Ircvcd in curious botanic tarcitni ... fill ... ; thcii
txm are not fo fuQ ofjuice u the Bift, nor ii the
juice folweett duHUB the ll-cond (tin fctim to be
liat which Diofcoridw [m detrihed and rttom-
icndodi but I fuppoce the goojncfs of the firft lias
occasionally f b bring ib gem ... d in Europe.

The roots of tiis run very iieq> into the ground, and
creep to a confiderable ... L; diifemc, elpccially where they
are permitted to ftml lonp unteiu ... thec
arile (hrong herbeaceous lliilks, four or f«« feet high,
garnitied with wingtd Itves, compofed of four or
five pair of oval lobes, terminated by an odd onti the
leaves and falks arc clammy, and of a dai-k gm-n ;
the llowers come out in fpi ... from the wings of the
... ilks, Handing creft; they ire of n pal? blue colour,
jid at (ucceJed by 0 ... :MJS, each con-
taininj; two or thirt kidnt ... d fped.
The burr end of July, but; the feeds lo not ripen in
England.

Tts pnbi delights in a light fandy foil, wM* fhould
be three fret deep at bolt, tor the gwXndi of Li-
quorice conffil' in the length of the roots: die pijtfeft
q W i r v of Liquorice v, hieh is p> ... in the
u about Sontefiaa in Yarkibire, and Goolstrom in
urry, though of lawyers there liah
«] cultivated in the «rden» nou- Lontta
... vnd in which y:

... b e w d l d u g w d W
due it, that tie <Tun ... E 6 ^ 1 ? r D tad > .fd
Zed with the «nn?otherwife it will be apt o (top
K ^ f t o m runningdawa, arJ before you plant,
be Y i « l b d d bedu, three lpad< deep.
J M- w n Four^ound is this well prepa d,

ll lrl

... a them is m the bc-
... K? following maniWr, »Lt. Fid to»»»
... ofctteEratimSin which you wwld
... lertw ithalongdibl>km.deo,npur).
... not, lb Hat the *bcJe p^m may be tet to*£)TM
... .B''
... itrfee ii
... till, for
... ground, y«"

f_r_o_m^weed,-,bi^an.b^

G N A

the Liquorice plants when they j ; - ; - above ^JUmfi
wlich Would greatly iryirc them ; and also cleave up
cut up all the On kins whirri pKiv ... near the heads of
the Lio,urice; ond fit ... year Omms are pulled up,
you fhould (iffvli]ly lion and ckon the gruuni. from
weeds t and in OQober, w! ... the shoots of the Li-
quorice are decayed, you fhould fpread i lirtle very
moxed dung upon the furface of the grovtinJ, whci
will prevent the weak from growing during the
winter; and the rain will wash the virtue of the dung
into the ground, which will greatly imptij.

In the Beginning of Marc I following you fhould
(lightly ilig tilt' ^rouid i between the rows of Liquorice,
bun-ing [lie remaining parti: the dung; but induing
of tiia, you fhould ttv very careful i not to cut the roots.
This Itirifnt; uf the jjiroimi will not only picli-rve it
clean from we!ls a lon-; time, buc uli> greatly
frcnptlicn tiu plants.

The ditaicc which I have allowed for planting th-fc
plants, will, I duubt not, by Ibme, be thought too
great v but in infwer to thzt, I v, could only obfcrve,
that 15 thie largenKls of the i ... is the clieft adven-
t ^ e to the planter, lb thu only mr' had to obferve this,
is by giviiiR [hein IIHJDI; and believes, i' l' will give
a greiitr Jint'riy to Ilir and J re Li tw ground. « each
isof greiu itrvic in Liquorice; and if the plantation
def- ued were to be ... an extraordinary benefit, I
w>u'd adviff the row* a> be maile tt h<i a in.

thifantit whetdjytwilj^cafyo Ilir the ground with
a heavy plough, «luca will j- ... iticcpxnce
of l-.

The pUnt fhould remnin thrci- years from thctinx
of plantii ... when they val be fit to take up ... or tiff,
which Oould not be done until die lBlks an-perfectly
decayed; ibr when it a wken up tao lon, it is fub-
ject to fink greatly, and ... -ie of its wli

The pi ...
found near London being ...
it appears of a very dark colour, and not near fo
fight ly as thit wiiich f ... upon a fandy Soil -a a"
open country.

The feconil fort grows onurally in fonw pans of lal-
md in the Levant! the ihtlki an.I ... of this are
rery like thuc of the lilt, but the flowers art pro-
duced in liorter i ... and the pottl vi ... lictard
them. arv very itott, bro-Ml at the fe. ... ending in
acute points, and ar. ... a med with fharp prickles. This
... at the fame time as the lilt, and in warm
treams will perfect feeds in England.

The third fort ^IOW^ naturally in the Levant, from
whence the feeds were ... to the royal garden at
Paris, by Dr. Tounic ... The lilt much the ap-
peawntc of the other two fpecies, but the pods of it
are biury, und longer than thofe of the other. Both
thefe forts may be propagated in the fame manntT as
the lilt, or true i eed, which may ... in the
... on a bed of light earth, but a number of thofe
are Uled, fo they artiLldoin ; propagated Udcki ior the
fake of variety.

GNA i* 11 ALIUM- Lin. Utn. !: ant. 850. | Uchry-
fum. Touri). Int. K. 11. 452. tab. 259. Uoldylock's,
or EicrnJ ... in French, linn. vteSt.

7; hah a compound flower, made up *I henrrpbrcito*
... rmpht-
... the hermaphrodite flowers are tubular, funnel shaped,
... and are five parts at the brim, which are replaid;
... the lilt five parts hairy fland, terminated by open-
... funnels. In the center is fixated a germ, fup-
... porting a flender ftyle the length of the funnel, crowned
... by a light stigma; the germ afterwards becomes a single
... feck, which in juve fpecies is crowned Kill- A h
... and in others a feabery down. The female flowers which
... are intermixed with thofe have no funnels, but a germ
... supporting a flender ftyle, crowned by a light colored stig-
... ma. Thefe are in juve fpecies fruitful, and in others they
... are barren. The expofure of the flower is permanent
... and long.

This

This genm of plants ii ranged in the Grft fe&ion of Linnjeu's nineteenth clafe, which includes [hole plant; which have hermaphrodite ind female flowers inclol<i in one common empalemt, and arc fruitful.

- The Si'ECU a ire,
1. GNAI'HALIUM (Stxcbas) frut'icofum foliis lin'aribus, ranlis virgrsis, corymbo comxifio. ! tort. Cliff. 401.
GADRkcis with a /sbmbyflaligarnijbed *itb very narrow leaves, and a tentpevd carymbuj nfjhvtvj. Ehchryfum leu fid'chis citrna angultifolia. C. B. P. 2(14.
I (.AfHALiuM (Angtijlijimum) foliis linraribu; cau' fruikofo ramolb, corymbo compolito. Hort. Cliff, 401.
Gsldylsets v>itb a branching fortibby jialk, end very v.r,rrym leaves, 3,7/i a cspmmnt corymbas of flowtrs. Elichryum angultifiumo folio. Tourn. Intl. R. H. 451.
GATTylocks with wry wtrna i.
3. GNAPHALIUM (Uniform!, lolii: alterni; acute den-tatij; fubtus villofis, peduncuiis longiflimis unifloru. Gvdjldtdi v.itb alternate leaves /burpfy *Kikttdi, tonally end their under fidt, /sjtib -sery fang fot-flakubainmg tut flower. EHchryliim lylveitci; taafolium, tiore p.ir-vmolgulari. Tourn. Intl. K. H. 45^ . Hrand-kovtd
4. GNAPHALIUM (iMteo-tSbm) tuliis femumplexicaul' bus enflloimibui, repandU obtuli^, mirttque pubefecitibus iijorimtu l' xlti . f'nd. Ley^d. 145.
leeks viitb; 'watt half embracing the jialks, which are obtufe, rjlxced, ufolf ex bethfidei, uiddfieuers growing in clujlers. Etictnyfum fylvellre latifolium cap. In conglobatui. C. B. P. 164. Broad-leaved wild
Gtdjibckj, with bends grexmg in (Ikfters.

K GNAPHALIUM (Ayo:i'iem) caule ramofo diflufo, fioribus confenis, Mor. Lapp. 300.
Getdylecks with a id Iranebiug jtdk, gMdJloweri ir.cluftiri el.
i-vum aqoatirum, ramofum, minus, capitulis, icliacei). Tourn. Inf. 451.
Lejfer branching arpiatie Go'dy&xil -r-'itb leafy beads.

GKACHA: (eticxm) caule fim)ki(Timo, floribus fparris. Flor. Lapp. 19S.
Geldyhts with afotgk iialk, and facets growing fiatteritgij. Hich ry fum fpicatum. Tourn. Inf. R. H. 453, Spiked GiHjlm.
v. GNJVPHALHTM (Ditievum) caule fimfittciJTimo corymbo funplici icrminii, drmentis procumbeniibus. Hon. Cliff. 400.
Geldybcii xeib aJinghiaSk terminated by a Jingle ceryahf, .nd :rai'ihg branbn. Elichryfim motitanum iiore roniuidiori candido. Tourn. Inli. K. 11.
ain Geldyhtcs with a rtunder white fia&er.
iptuntw (Me/tamim., tottis rjilicalibus cuneiformihus, caulinis aotitis (effilibus, caule Bmplkiffimo, capitulo terminaii apbyllo, iioribus oblonjiis. GiLh-leeks -Xiith the lower li* 'bapsd, ibofe en the jtelis aitcd, and fitting (loft, a Jingle ft elk 'ant bent leaves, termxUed by obkg jhwrs. bJidtryfnn nion-ium ire folio 6c tore alho. -Tourn. Inf. 453. A&HAI-'ain Gefdlloeis, isith & longer lei, /'tind tvhitejtzveT*.
9. GKAPHALIUM (Chryfcomum) humile, caule fdlTruti-cofo, foliis linearilnu fubtv argemeis, llijiam^ caly-cinis kopioribus ... natis. Lew Golti/kiks v>tb a zes, fihero nit their under ointed fialts to she empalnem.
pr'clon'ia^ purpuralccniibui^uc
D^arf Geldybcs

1 knger andpurplifti heads like Knap:
fjiAUUM (prrentle) juhherbarcutn, folii flidbui, corymbo compofitOi pculncoi elongati. Lin. Sp. 105.
Herbaceous GtrlJjr-a, and a temptuud lum Orwnt.alc. C. B. P. 164.
Ki>8er> fntmortal f'/(:

11. GNAPHALIUM (>ieste/ii) fruficoftiti), fuliis fubUn-Anento& fdrilibus; eorymbis alter:
itU, fiaritws glob^ Prod. Leyd. 140. Irubiy ?tar-p3ptA wsc'jr lanes fitting dele
& i<idki^ and Jitrnotr tlujitn ifglfsl*.-
calyce we aurro nitliintc-JMB Goltfykcki having a
"rrfeaceum fi
:.(pcrcnc

rathofo corymbii filiigiatls. Hart. Cliff. 401.
Herba-ceous (:b n.irroia, /piar-Jbiiptil, poinu.I Udfa placed ultrMie, and lit upper port of the jtalk hrt with, with a ceinpa; ujyrvnbui ypower; Klichryfum
Americanu btifolium. Tourn. Intl. R. H. 453. SroJ American G . . .

1 T GWAFH (Folii am) terbaccon fblls ^ipcaulibas, integemmis acutii liibmi tmentofis, c<ole ramofo. Hon. Cliff. 40a. Lin. Sp. Plant. 850.
H<r~batum Gtf&jhch milb entire I, -jilslks, an ihiir under file^ and a branding fieli,
Elichrytum AfrLjnum fceddflilum, wnpiffiaia Toorn, luff. R. H. 454. Msijt jliitking Africa* Gtdjltch nitb d large Uaf.

14. GNAPH • is M (Ar^entmm, • illis amples kauYtbas in-tegemmh ovarij Rtrrolu utrinque tomentofis, caule famofo, Hort. Cliff. 402.
Geltlmb mth entire atat 1 embracing lie Jluhl, 'joMf an both fullt, and a bramhingfilsk.
Elichrytum Africanum fetidiffimum ampMima folin calyce arg . . m Tourn. Intl. 45+, and afihtry etapleion in the tar.

15. GNAPHALIUM (Umbellum) herbaccuum foliis decur-remluw UticeoUiis acuti; undatis, fubtus tomentofis, (Siule mniob. I Inf. Cliff. 402.
Gobbled* tej/i amir *g letrvts ivhth are waved, mtdecs'lj CK fhar wtfer Jlit, and a branching jltilk.
Elichrytum gravcolens acutiolium, ciule alato. Hort. Elth. 130. Stinking fflait, with an ticutt leaf and winged jlali,

16. GNAPHALII: M (Cymfum) triibicum foliis lancco-Uris trincerviis fupta glabris caule infernc ram-inaJi, Hon. Cliff. 401.
GiUjktts with Jpear-ft>aped liches, bavigt three velia, fmooth en fber upperJ!d^ and the under hrnchu tcmunud tefibfwers. Elichrytim Afrkimuiti folio ubiongu, fiilnus beano, litpri viridi, Hiteo, Botrb. Ind. alt. 1. n.1. African Goldyluks ivib an cblong leaf, hoary an tit tadrful; tir.dp;cx aint, with a yellow jlewer.

v. GIWHAMUH ^inericanxia) cauk herbaceo fimPU cillimo, foliis laiccaLitii obcuGa tomcBsaQi, Hoiibus Jpicatis latralibufque. Gobytlefo with a Jatgl' brbn-etouijlalky elitvfe, Jjptcr-Jf-niped, vmUy leaves, andftwtn growing m Spikesfrom ibepdeifjfbefialks.
Gnaj : alium ad [la'chaicim citr):nui aect-dtns, Sloan. Cat. Jam. 125. Cudweed like gulden Caffidairy.

t8. GsiAPHALium (Rutiliw) herbiccum fblii lineari-latKeolaua, caule infernc ran; caule, corymbo compolito terminali. H»n. Cliff. 401.
Herbaceous Goldyluks with narrow fpter-jhajkd leu braiding, am! n Monoid corymb, terminated -jij tie bramti.
ElidiryCum Africanum folio oblongo v-guthi, flore rubellapofleaasi . . in. Afrriiin Gtdjlecks with m eileitg narrate leaf and J vlf!Dtr, *xbth ij fltfn .

19. GNAPHALTUM (Sangixexm) herbarciitiii, fblii decurranibus lanceolatis tomentofis planti apiculo vado terminali. Anictn. At3 d. + p. ;S. Herbacc.
Gtdjlecks, with fpcar-jhaped, n'5l/y, running leafe, a naked psiat. Ch ynicoma Syriaca, Brcyn. Cent. n<>.

2a. GSAI'HALIUM (Fmits/um) flLrefcens foliis infernc hnccoUri) cauli lanceolatis, utrinque Lofc, I" ymbu compolito terminali.
Herbaceous Goldyluks with fl fdi, ins,

lenninate,
flicrytum Africinum hutelcen canis. Hon. Amfi Uiki, with ledger fi-

olm.' inferne villofis, corymbis compolatis termina-tatibn Gtdjlecks with oblong leaves, try CM Sicker) ter-jKinat'uig dyflliik.
Elichrytum folio linearibus lanccr-rtntibus, fubtu? incam Plant. tab. 451. fol. n. Goldyluks with narrow running leaves, b&ary m their m;.

22. GNAPHALIUM (Plastariefibm) frufcofum foliis linearilanceolatis acutiusculis, acule .:(pcrcnc

...exilis, fomentis procumbentibus. Lin. Sp. Plant. 870. Galphidia with a single stalk, large wool leaves at bottom, and trailing runners. Graphalium plumaginis f. var. Virginianum. Pluk. Alm. 171. Virginia Galphidia with a Plumum leaf.

23. GNAPHALIUM (Olongifolium) icribawum foliis lanceolatis, c. uic Wn5! ... paniculata terminalibus glomeratis confinis. Lin. Sp. Plant. 871. Galphidia with four-fingered leaves, a woody stalk, terminated by a central cluster of flowers. Plichatium obovatum, capitulis argenteis compositis. Hort. Ekl. 178. Star-shaped Galphidia, with silvery heads growing in clusters.

24. GNAPHALIVIC (Aparaw) foliis lanceolatis decurren-
tibus momentosis, floribus spicatis terminalibus terribilifloris. Galphidia with four-fingered, woolly, running and flowers growing in spikes at the ends and sides
lava,
ef tbi Jlaliki. El
chrysum canic also, floribus spicatis. Sloan. Cat. Jan. 125. Galphidia with a woody stalk = dflAjU

The firrf'1... with a shrubby stalk, which rises about three feet high, branching out into long slender stalks irregularly, the lower branches are furnished with obtuse leaves, two, three and a half long, and an eighth of an inch broad as the leaf paint, I see these upon the flowers - cr-lhiks an* very narrow, ending in a point; the whole is very woolly; the flowers terminate in a compound eorymbusi their colour is of a filvery colour not white, and very neat, but afterward rum of a yillomili ftlphur colour. If these are gathered in the autumn they are much speeded, the heads will conanui in beauty many years, especially if they are dried in a dry place, and the plants are dried in a dry place.

The plants begin to flower in June, and there is a succession of flowers all the summer, some of which will continue in beauty most part of the winter. This is generally supposed to be the true golden Callifony of the shops, but I have seen a usually substituted for it in England.

It is propagated by slips, which may be taken in June or July, in it be cut in pieces, and covered with glass, and watered with water, observing to refresh them frequently with water, but not to give them large quantities; their cuttings will put out roots in six or eight weeks, then they should be taken up and planted in pots filled with light earth, and placed in a shady fituidon * they have taken root, M, ivien they may be removed to an open situation, and placed among other hardy exotics, till about the middle of the autumn, at which time they should be placed under a common frame, where they may be sheltered from frost, but in mild weather they should be exposed to the open air. When the ratnaacment in winter, die plants will be much more than those which are kept in the greenhouse, where they generally draw to rot; for this sort of plant wants to be freed from hml frost, being so hardy as in the winter to live about the house, where they may be kept with little labour.

The second sort is covered with a white down, and forms a thick bushy under shrub, and rises near three feet high, furnished with very narrow leaves, hoary on their under side, but green on their upper, jilaed without other on every side the stalks; the flowers are produced in a compound corymbus at the end of the branches; their heads are small, and are of a yellow colour when fully blown; they are continued in succession most part of summer. The grass naturally in France and Germany, and is hardy enough to live in the open air or in a garden. It is propagated by slips or cuttings, which may be planted in a shady border during any of the summer months, and in the autumn they may be transplanted into the places where they are designed to remain. This should have a dry moist soil, in which it is rarely injured in the most severe frost.

The third sort is an annual plant, which grows naturally in Italy and Sicily; this has an herbaceous stalk, which rises little more than a foot high, furnished with acute indented leaves, which are hoary on their under side; the flowers stand upon long five-fingered stalks, which rise far above the branches, each containing one small whitish flower. These appear in July, and the seeds ripen in September. It is propagated by seeds, which should be sown in various ways, but at eight or ten, where the plants are designed to remain; and when the plants come up in the spring, they should be thinned when they are two days, and kept clear from weeds, which is all the culture they require.

The fourth sort is an annual plant with woody leaves, which rise with woolly stalks about eight inches high, furnished with oblong leaves which embrace the stalks with their base; the flowers grow in close clusters at the top, and from the side of their stalks, which are included in dry silvery empulments.

There is another species of this with narrower leaves, run quite so woolly; the stalks rise higher, and are more branched; the flowers grow in close bunches on the top of the stalks, and are of a pale yellow colour. Both these sorts will come up sooner than the former, and when they are sown by art, but if the seeds are sown, it must be done when they are ripe, other wife they will not succeed. The plants require no other rare bin CO keep cheih clean from weeds, and thinned when they are two days. They flower in July, and the seeds ripen in autumn.

The fifth sort is an annual plant, which grows naturally in many parts of England, on places which are covered with water in the winter; this is a low branching plant, with silvery leaves and dark heads of flowers, but being of no use is not cultivated in gardens.

The sixth sort is also an annual plant, with narrow leaves, which are hoary on their under side; the stalks grow erect about a foot high, and at every joint it produces a flower spike of white flowers, with dark-coloured empulments. This is found growing naturally in some parts of England, so is not often admitted into gardens. If the seeds of this sort are permitted to mature, the plants will come up in the spring with greater copiousness than if sown, and they will require little culture. Their flowers in July, and the plants decay soon after they have ripened their seeds.

The seventh sort grows naturally in the northern parts of England, upon the tops of hills and mountains, where the flowers which are sent out from every side of the plant put out roots, whereby it is propagated in great plenty; the leaves of this grass close to the ground, they are narrow at their base, but rounded at the end where they are bound; they are near an inch long, and hoary on their under side; the stalks are single, and rise about four inches high, terminated by a single flower which is single. This flowers in May and June.

There are two varieties of this, one with a purple and the other a variegated flower, which have risen accidentally from seeds, but continue their difference in the next generation. They are easily propagated by seeds, which should be sown in the autumn, in a shady situation, where they will require no other care but to keep them clear from weeds. This plant is called Pex Cari, or Catfoot.

The eighth sort grows naturally on the Alps. This is a low plant, with under leaves like the last mentioned; the stalks are single, and rise about six inches high, furnished with very small acute leaves, and terminated by four or five oblong flowers, which in some plants are white, and in others of a purplish colour. They appear about the same time as the former sort, and the plants may be propagated and treated in the same manner.

The ninth sort grows naturally in Spain and Italy. This is a low plant with a lignous stalk, which seldom rises more than six inches high, furnished with very narrow leaves, want on their under side; the flowers are produced from the side of the stalks, each standing upon a separate foot-stalk; their empulments are hoary and long, ending in acute stiff points, and are of a purplish colour. This sort flowers in July, but seldom perfects itself in this country.

G N A

The first fort has been brought first from the beauty of its golden head; of (towers, which, if gathered brurc they are too open, will continue in beauty several years, but that in the winter ft-jfon day omnmn their rurdies with ihtf flowers, and many of them are annually brought to England, and fold for ornaments to the ladies. These plants have o ihon flrubby (talk, fldoro riling more than three or four inches high, pun ing out many heads; the leavei nre narrow and woolly on both sides, and come out with! or lower-ftilks arile from these head*; thr, grow eight or...n inches high, arc jjanifbrt! i II the way with narrow hoary leav - and *-minaic! by a compound corymbis of bright yellow flowtrs with large heads. Theie begin to flower in May, and there : a succession of ...; mejfi part of fummcr. Thb a propagated by flipping off the I seats during any i of the summer months, -nd after (tripping off the lower ienv , they should be planted in a bed of lightcarth, cov rring them with -nd-gln/Tei, which n jft be fhieed even' d jy when the fun is warm; and the rutting"; mu- be supplied with water, which floulii b : often reflatcd, bu; not in too great quantities, when these arc rooted tiev* should b! glinted i; ; etc, nri creaced • the lame banner take hi been divided for the Brll fort. These plants in mild i inners will live abrt'i: in . • very warm bord. with little water, and the trai ller they are treated, ilic greater number of flowers they will produce; for when the are drawn weak in a green-house, they ncvc! flower fo ilrong. The eleventh fort hath very woolly stalks and leaves, which are much longer than those of the tenth. stalks rise a foot high, sending out a few side branches, these are terminated by a comp. •nd coymbis of flowers, whose heads are small, and of a gold colour, changing a little red as they fade. This is propagated iy flips in the lame manner as the last mentioned, but the plants will live in the open air, if they art planted on i a dr hill.

The twelfth fort grow naturally in North America, but : has been Joni in the English gardens. This hath a creeping root, which spreads far in the ground, so as to become a troublesome weed very often. un!ris it is kept whole bound; the stalks of this are woolly, rising a foot and a half high, h, gamiflied with long leaves ending in iicuti: points, which are placed alternate, ami arc woolly on their un' side; the upper part of lite i'alk branches into two or thlireedi. each being terminated by a clofe enymbis of Jwcrs, withprtty large filvery empalements, which, if gathered and properly dried, will retain their beauty several years. This fort will thrive it; airoofl any foil or Gtation, and is easily y... spread by in creeping roots. It flowers in June anil July, and the IULks decay in autumn.

The thirrtinLh JbK grows naturally at >he Gape of Good Hope. This is an annual plant, whid leav out many otion* blunt leav-t near the root; the futlu rifeafooiandaMlfhigft, garnifhed with leaves placed alternate, which ut broati at their bal! where they embrace the A stalks, but end in acute point; B i they arc woolly, and when handled, <mm I vrr)- rink odour; the stalks are terminated by a corymbis of • ivers, in large filvery empalement, which will retain their beauty several years.

The fourteenth fort grows naturally at the Cape of Good Hope, and is an annual plant, very like the former fort, but the leaves are • r a ycUowilh green on their upper side, and woolly • r. their under j the stalks branch, and the heads of flowers are of a bright yellow colour, and these differences are permanent. Both these plants are propagated by feeds, which, if sown in the summer on a warm border, will more certainly succeed, than when they are sown in the spring; or if the feeds are permitted to scatter, the plants will come up without care, and may be transplanted while they are young, to the places where they are designed to inhabit: when the plants have taken root, they will require no other care but to keep them clear from

G N A

weeds. They flower in July, and the feeds ripen j autumn.

The fifteenth fort grows in Africa, and nlfo in Noitli America, from both ihelc countriw I have received the feeds, it a an -iriial pbnc, with oUcng • arcs at the bottom, which arc n little wavwi, MK hi ary on their under Jidc. The stalks life about a foot high, and arc gurnifcd with acun-pointed leaves from their bjfc runs a Ixirdcror wing along tlic (talk ; (he whole plant has a difagrccable odour. The Bowers grow in a mytttbui on the top of the ftafks, they art white, and apfjar in July. The feeds ripm in tlic autumn, which, if penttted to scatter, the plants will •itime up without care, n the two former forts.

The fifteenth fort riles with a Iiin thby stalk : rce oc four feet high, (i-ndin^ out many bi lower part, garnifhet! with narrow fj ear-shaped leaves, which half embrace (ie ihllis wi; their base, thty arc of a dark grirt on their upper lide, but are hoary on thrir under-, the ftulks are terminated by a compound corj mbi)5 of yellow flowers, whose heads are lmall : their cymbe iii fuccctTon great part of llic fummcr, but are rarely lucccddcd by feeds in England. k is esily ; ropag, ed by cuttings in a • of the fittmer months, which may be plaite-! in a shady bonier, and duly watered. Tlwfc will take root in a month or five weeks, and may then be taken up ind : lanted in pots, placing them in a (hady firuarjoo hill they have taken fresh root -, then they may be rrrr need to a (helrered situation, ad placed wtlit other liardy green-houli: plant's till aurium, when they r-: be carried into the grctri-hanfe, where, doling the winter fciibn, tll-y floukl iuve Hi much trei air as [joffible in tniUl weather, • r fi only requirir* prOEccium from froft; as they should be treated in the lame manner as other har.

The leventeenth (on is an annual plant, which gmvrS naturally in France, Italy, and Spain. This hath a woolly herbaceous stalk, which riles six or eight inches high, garnifhed with obtuse, spear-shaped, woolly leaves. The fiowenart- : reduced in short spikes from the fl - • id at the top of the stalks; they are of a filvery colour, and spj ; r in June and July. TUC feeds ripen in autumn, which, if permitted to scatter, the pi will come up without care, and require no other culture, bin to keep them clear from weeds.

The eighteenth fort grows naturally at the Cape of Gucc 'lope; this riles with a slender shrubby stalk, which ien is otic i may lateral branches below, these are garnifhed with very narrow leaves, which are hoary on ihrir under fide. The li. iwers are produced in a cuul I" bus at the end of t he bra n ch<> -, the y art at their first appearance of n pale red colour, but alterma change to a gold • Jour-, thr empalement ot itiss lbrtare linal!, and dry like i i other species of this genus. !his fort is propagar by cutte 55, in the lame manner as the leventeenth, and the plants require hefiuenaB ment.

The nincw th fort grows vs nuun'ly in l'arvpt and fl-lelline. This is a perennial plant, whose under leaves spread near the ground; they are woolly on their under fide; the stalks rise about six inches high; the leaves upon I hese are spear-shaped, ending in acute points; the tail:t and lev are woolly, and the stalk is terminated by a large corymbis of flowers fitting very clof i thett are 1 it' 3 line tot' red colour, so make a pretty appearance in the month of June, when they are in beauty.

This fort is propagated by cuttes in the lame manner M the seventh and eighth forts, but their doth not produce them in plenty, so is very scarce in the English gardens at present: it requires a drier soil than the seventh, and a warmer situation, but not too much r posed to the mid-day sun, it should be planted to a south-east aspect.

The twentieth fort grows naturally at the Cape of Good Hope, but has been long preferred in many curious gardens in Europe; the stalk riles three or four feet high, sending out several long irregular L... which are terminated by a compound corymbis

G N r

(bus of flowers. The heads of this fort are com-
posed of leaves, which are much bnger than thuit of
any other fort; the heads of the ... i'raan: ora i-
ght
itlver colour. Thiis is propagau-d by cur.

I lie twenty-fift fort was raised from seeds in the
Ched ... J ;Arden, which iimc r'fora the Cape of Good
Hope; the lower leaves of this arc ubiong ami
The stalks are [brobfcj, and divide Into ma
branches, which rill- about three i ... dc art
garn ... | v.iti oblong blunt-pointed ILL.

the under (Me, but of a dark green ubiiv ... from the
base of the leaves runs a bo:; ... I ... the stalk, like
a whip, of the tune cojiill-nee witti tl: ... leaves, is it
what the iibtner botaniibt termed a winf> ... stalk, but
Dr. Luunsoa calls it a running tea ... The stalks are
tenniitd by a compou nd corym but of i it ... which
a;e very clody joined together; ... id are of a
bright
gold colour, but Uic flower are frml, and c'i i
... u they iide, flu-r.

liiefc Huweri moft pano: the lutnmer, ai; ... the early
flowers are ... dy fucceeded by ... in England.
Thirfbtt imy be propagated by Hips, or cm; ... in
the iWne manner as the ... and the plants may
be t'lated in the fame manitr as is ... stated for that. It
isengravenin tht ... of the figu;
The"tw:nty ticond lore grows natur-illy in North
America, from whence die l<ds have been brought
to England, this is a perennial plant, whyV lowe
leaves arc large and oval | from the it!:: ... stalk there
come out cinctra, which ii take root in tht ... ground, and
have young plants ... ;;TCinly. The stalks arc
single, and ... >fified with
narrower woolly leaves,
placed alternate. I lie lluwrt a:
... conducted at the top
of the stalks in a corymb, they are of a white
colour and ... all. They ... appear in June and July, and
I ... inn ... by seeds, but the plants propa-
gated by cutt ... oSsets, thac lire feeds
I thrive in the open air, if planted in
a dry foil and a warm fi tun don.

Tl'ci' twenty-third I'bn grows naturally in v'orth Ame-
rica; it is an annual plant, with ... ulljTotnutc I
7lic ... ;j;lc, and rife about nine
The flowers grow in ipicki i; ... on the base of the stalks,
they arc ... make no great
the arc or a dim' white colour, li
211QC. If the beds of this are permitted to
fatten, the plants will rise without trouble. J only
require to be kept clean from weeds.

The twenty-fourth fort grows naturally in Jamaica,
and other of the best parts of America; this rises with
a shrubby stalk about two feet high, garnished with
leaves about the size and shape of those of Sage, but
wool; ... on their ... under fide, i ... of much veins; ... from
italk.
The leaf runs U border along the
I'htJtowrscsrepMtl' ... in spikes from the side, and
at ihe cml of tiititalk ... their are long, and closely
joined in die Ij.ike. It flowers in July and August,
tinjl ... perfect seeds; in Engle ... and
It is propagated by seeds, which ... itiauld be iown on a
hot-bed in pots, because the plants ... <io not of I'm rise
the i ... year; therefore when it is happens, the pots
should be placed in the shade in winter, and the mil-
lowing spring put upon a fresh hot-bed to bring up
the planu; ... tiicfe ... pp ... they must be planted
inju pots, tod kept confand ... in the hot-bed, other-
wise they will not ... in England.

Visit they will not ... See Microsc.
N API-'IALOUKS.
NIOIA.
The t ...
CHARACTERS &c.
It hath a funnel-shaped empalement ... stalk leaf,
with a long tube divided into four segments; the lower
two have plane petals flatter than the empalement infixed
to it, and eight erect oval segments, terminated by simple
filaments, and an oval germ supporting a single style in the
side infixed into the filament, crowned by a solitary five-
lobed pistil, inserted in the empalement.

This genus of plants is ranged in the first order of
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LJimrt-u!!! eighth d*6, intitled OaandrwM,,
the I ... having eight flammis and one style k s1

We have but one species of this genus, viz.
1. GOMPHRENA (Purshia) folia lanceolata, lobulata, flo-
ribunda, verticillata, aggregata terminalibus. Lin. Sp.
Plum. 274. Gomphrena with four-angled leaves, and flowers
... which is chiefly in colour resembling the flammis. Kapun-
culus foliis nervosis linearibus, floribus argenteis non
paleatis. Purn. Ann. 117.

This plant grows naturally in Ethiopia. It hath a
low shrubby stalk, which rises three or four feet high,
bearing out a few side branches, garnished with narrow,
oblong, acute-pointed leaves, which are green on their
upper side, but pale on their under, with a strong
longitudinal ... i] nerve, ran

the flowers come out almost in which form between
the leaves on the extremity of the branches, standing
(in Korr foot stalks) they have long slender tubes, and
are divided at the top into four segments which spread
horizontally, having eight very short flammis in the
middle of the tube, and several germs with a slender
style infixed to the side of the flammis; the germ
is upward succeeded by one oval pointed leaf.
There are two varieties of this, one with a white, and
the other hath a blue flower.

This is usually propagated here by cuttings, which if
carefully planted during the summer months, in pou-
ders filled with light earth, plunged into a very moderate
hot-bed, and covering the pots closely with either bull or
straw to exclude the air, being careful to shade
the cuttings daily, the cuttings will put out roots in six
weeks, when they should be gradually exposed to the
open air. In winter the plants should be placed in a
dry airy place, where they may enjoy free air in
mild weather, but protected from frost and damp air.

COMPHERNA Lin. Gen. Plum. 274. Amaran-
thoides. Tournef. Inst. R. H. 654. tab. 470.
The ...
The ...

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This genus of plants is ranged in the second section
of ...
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leaves, quite under the head of flowers arise from the ends of the branches. The heads are first appearance are globular, but as they increase in size become oval; these are composed of many leaves or petals, placed imbricatum like the llales of fifti-, under each of these is found a tubular flower, which will peep out of the covering, but it is not much enlarged by the neutrality (ji) people, for the Italy impostment which covers them is a beautiful, and these if gathered before they are too much faded, will retain their beauty several years. After the flowers are faded, the genus which is situated in the bottom of each, becomes a large oval seed, intended in a duty covtving, with ripens Lie in autumn, and the plants grow in the following year.

There are two varieties of this plant, one with fine bright purple heads, the other is white or filvery head, and these never alter from each other, so that they are permanent varieties, though in some respects they do not differ; there is also one with mixed colours, but varieties that arise accidentally from the seeds of either of the former, I cannot determine, for the varieties continue from seeds, and the other two I have cultivated more than thirty years, and have never found either of them vary.

There are also two varieties of the white which grow naturally in the West-Indies, one with purple, and the other with white heads, which are much smaller and rounder than the former mentioned. The plants grow much larger, and spread more into branches, and tilt) an later before they flower, so that in cold seasons the seeds rarely ripen in England; these are called *Bambos* by the inhabitants of America, but whether they are specifically different from the former, I cannot certainly determine.

The second sort hath much slender stalks than the first, which grow taller, and are irregular. The leaves are broader, and the flowers are broken, or divided into three or four parts, with a purple colour. The seeds of this were lent me by the late Dr. Hudson from Compochy.

The third sort hath slender upright stalks, which are parallel, with spear-shaped leaves placed opposite; they are heavy, and fit close to the stalks, which also are upright, and terminate in heads of flowers, which are open from each other, so as that the end of the stem appears distant, and are of a pale straw colour, and appear in June. The seeds are not ripen in England, but the plants will live two or three years, if they are preserved in a pot.

The two first sorts will grow heads of flowers which are mentioned, one with purple, and the other which are coloured, are very ornamental plants in gardens, and are now very commonly cultivated in the English garden; in Portugal, and other warm countries, they are cultivated to adorn their churches in the winter; for if these are gathered when they are fully grown, and dried in the shade, they will retain their colour a long time, especially if they are not exposed to the air; these plants are annual, so are only propagated by seeds, which should be sown in the first week of the beginning of March, but if the seeds are not taken out of their chaffy covering, it will be proper to immerse them in water for twelve hours before they are sown, which will greatly facilitate their growing.

When the plants are come up half an inch high, they should be transplanted on a fresh hot-bed, at about four inches distance, observing to shade them till they have taken root; then they should have fresh air admitted to them every day, in proportion to the warmth of the house; they will also require to be frequently refreshed with water. In about a month's time, if the hot-bed is of a proper warmth, the plants will have grown to large, so as to nearly cover, therefore they will require more room, otherwise they will draw up weak; thus a fresh hot-bed should be prepared, into which there should be a sufficient number of three farthing pots plunged, filled with light

G O R

itli eaiti, and when the bed is in a proper temperature of warmth, the plants should be carefully taken up with their roots, and each planted into a separate pot, observing to shade them till they have taken new roots, afterward they may be treated in the same manner as other tender exotic plants. Who the plants have situated the roots, they should be shaken out of the pots, and their roots on (be out of the bottom of the pot) must be carefully pulled off, then they should be put into pots a little larger, and when they have taken new roots, they should be plunged into mother ground, and it will bring the plants early to flower, and cause them to grow much larger than those which are placed abroad. In July the plants should be moved gradually to bear dii; open air, into which they may be removed alxii; the middle of the month, and intermixed with other annual plants to adorn the pleasure garden; but it will be proper to keep a plain or two of each sort in the kitchen for use, because when the autumn grows cold, or wet, these plants will be ruined, and their roots will produce small seeds.

GOOSEBERRY. See GADUSARIA.

GORTERIA.

The CHARACTER: me, *thetmfetc* of the flowers is stiff, simple, entire, and singly *spisec;* (fe/jwr ij i) of the leaves is compound, bipinnate, *mapht* in the form of a fan, and the rays or barbs, the female flowers are funnel-shaped, five pointed, having five short filaments terminated by cylindrical funnels, with a hairy genus supporting a slender style, crowned by a white stigma; the female flowers are funnel-shaped, have five rays or barbs, and are barren.

This genus of plants is ranged in the third section of Linnæus's nineteenth class, initial *Syngenia* Polygonia fruticosa, the flowers being composed of hermaphrodite florets in the disk, which are fruitful, and female florets in the border, having neither style or stigma, to be barren.

The SPECIES are, 1. *GORTERIA (Riviera) Scapis uniflarij, folijs lanceolatis*

pinnatifidis, caule depresso. ANTON. Acad. p. 86. Gorteria with one flower on each leaf-stalk, spear-shaped, long-pointed leaves, and a diverging stalk. ARTZNERI Rami circumscissilis, folijs foveis lanceolatis rigidis lobatis argenteis. Ed. prior.

2. *GORTERIA (Riviera) folijs lanceolatis integris denatis spinosis lobis terminalibus, caule fruticosa. LINN. Sp. i. 284. Gorteria with entire spear-shaped leaves, which terminate in five points, usually on their under side, and a shrubby stalk. CARTHAGENSIS Africainis fruticosa, folijs ilicifolij, flore aureo. WALT. Hort. 13. tab. 7.*

The first sort grows naturally at the Cape of Good Hope; it is a low spreading plant, with lignous stalks six or eight inches long trailing on the ground, having two or three side branches, each terminating in a close head of leaves, which are narrow, green on their upper side, but livid on their under, cut into three or five segments at their ends. The leaf-stalks or the joints arise from the base, and are six inches long, naked, supporting one large orange-coloured flower at the top, composed of several hermaphrodite florets in the disk, which are fruitful, but the female florets on the border are tongue-shaped, spreading open, each having a dark mark toward their base, with a white spot in the middle. The flowers appear in May and June, but are seldom succeeded by seeds in England.

This plant is easily propagated by cuttings planted in a shady border during any of the summer months, and the plants must be alternated treated as is directed for *ARTZNERI*.

The second sort grows naturally at the Cape of Good Hope. This differs with a shrubby slender stalk three feet high, sending out a few weak branches, furnished with oblong leaves fitting close to the branches; they are smooth on their upper side, woody underneath, and indented on their edges, each indented ending with a weak spine. The flowers terminate the stalks, having

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having leafy empalements ending with spines, the
low, and appear in
but are not succeeded by fronds in
It is propagated by planting of the
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the summer month*,
i Knglund.
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end of the brandies, in June (ir Jut),- which muil be
dofely covered with either bell i- it«, or
they will not fuceced, sndfhaukl be carefully fcrenod
from the fun. When theft-are well rooted, they lhoukl
be put each into i irnssl pot, and in miner ihould
be placed in an airy giniu-eafe fecurt from tin;"

r.OKZ. SeeUwit.
UOSSYj-ITJM. Lin. Gcd. Hint. 755. Xylon.
louni. Inf. R. H. 101. tab. 2J. Cotton.

The CHAHACTEHJ die,

•if • ihubtt ttupalmaid ^ Ibe a/Itr is linvd,
efetU kef. and <M int/via/ ituo tbrte jigixmts 1 tl< %/
iter • • ef em l&tf, cui into jhi cbiuft ftg~
at the tsp, it bath, it plain ijr~rt-fkaped pitsls,
tuiUt jiiit at their inj • It balb a
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and art tki j'utae ingtb if ticjlemiu, crewnd by four
riint jiieto I burnt?! a rmaJi/b
cnpfuit, eliding in :nr cells, whieb err
jilted tii/> vueljiids, wrapped up ts down.

This genus ul j
of Linnxm's lxtfentii
Polyandria, twhidi includes the pi
have many t.l.imina, which we jaitied together with
the ftyl« in one column or body.

The SPJTKS arc,
Gouv'fuM (Herbattum) fblih quinquebbis.
licrbaceo latvi. Hoit. Upfil.

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tmlb imtrr kawi, hiving shrtt Ubit tvirii ibrtt
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kt smrnul Sarbiduti Csltn, wilb Itavti it'-iug thru hhts.

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• jixi trr-M, ba-Jtiig fi'..

end a finthb fl<ili. Xvion arboreum.
Goss, it quinelobTf
Count with Uvsti

ialk. Xjrlon Amtritanum pi
•nine wrfceiite. Lign. Toum. lull. R,
:: Inufi Amtticiat Onto* with a great fild. _

The first fort is the common Lrvant Cotton, which
h cultivated in fveral l Hinds of the Arriiipdago, as
alfe in Malta, Si.

wn intilleJ groumi mill
J5 ripe in about fouf mom
Aowit har<ft« Own is in England; ihcpbnw

plant
KroJs abo

The flowers arc produced m.
bnnches at the tbo:ft>ks of the
tn-o hige Mnpa"HiTi<s, the ot inw liure

J'am, and the inner into iive: The
flower arcof a palewlrw colcmr, i
firife arc imxretlcl >" SmaJ

which are filled web
i><m, having four eel!
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Wdl I
fc«r or five free
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The flowers :c prtxiuerc
of the brioches *1"eh *« ^ P " l bk

llie ! emer fort, bnt arc larger, and of a greater
yell. * colour. TJJL- pods art larger, and thir
ait bl

The third fort hath a perennial shrubby stalk, which
nfes fix or i
fmootl: brandies i gam ill
leaves,
having loiir IT five Inbt'i. Tl:> flowers are produced
toward the end of the brandii . . . are larger, then
tiuile of the two funnel forts, uid arc yj" A dd
low colour. The poets of this fort are larger thian
thole of the fort

The fourth fort is a native of t)ic Ealt sn^ Writ.
Indes, from whence the fc. have been brought
to Europe; [his ie ilfoan annual plant, which perishes
toon after the leeds arc ripe. It rises to the height of
thircefort ormort, and falls out many lateral branches,
which extend to a great distance, where they are al-
lowed room to growj theft are hairy, and pr-
nilhi'tl with leave*, having I ibmc thircr, and othn
five acute-pointed lobes, with short hairy down
O:l their furfccc. The Howert arc produced front ific
fide, and it rhe CK5 of the bra
I • arc large,

lily vulpirar cotoor, each jwtaI hivi
it I he bafc, mid 3rc li'
ceded by oval
pods; which open into four cells, which are filled with
oblong green feed wrapped up ill a [bit down. \
the plants have room 10 fpnrad, rhtir branclu
will
proui
four or five pods of Cotton upon each, j that
from a single plant, thirty or more pods may be pro-
duced, and each of thofe are as large as middling Ap-
pits, iothfrewillbear, each greater produce from this
Lhn from any other fort l. and the flrpie i much ficer;

therefore it is well von it ilil*jt[cFuio]u>f ilic mhabiiaru
of the Btiith colonies in Amrcic.i to cultivate ai;
im-
prove this Gat, Gnce it will fuceced in Caralini, where
it it hi3 been cultivated for lome years; rnti mighc be
6 commodity worthy of encounicement by the pub-
lic, could they cotrive a proper gin to (cparan: the
Cotton from the Iceiis, tu which this li

ir.ucli dofet than any uf the other Jurti, the f
from rhii drub being preferable to any other ynt <<<
All thefc forts arc vei>
under plants, therefore will
live in the open air in England, but they a:

frequently (own in curious gardens for variety: thiefril
and fourth ttxa will produce ripe feeds in Eng-
ind, if
their seeds •red^n early in the fpring, upon a good
hot-bed; and i when the pl.mti are contt u]

to fepiraie poti, and plunged into a hot-bed <
tannc •larlc to bnn^ them forward -, and when tin
are too tall 10 remain under the flames,

removed into the tnn-M in the 6
larger •
when their roots have filled the other
with this management I have had their flowers appear
in July, and toward the end of September the feeds
have been perfectly ripe, and the pods as large as
thofe produced in the East ami West Indies; but if
tlit pl:r

are brought forward ct!
in the fpring, it will be late in icfumiDer betbri. the flowers
will appear, and jiete will be no hopes of the podj
coming to perfection.

The Shrub-cotton will rife from the feeds very eafily,
if they are Jbwn upon a g>L
hot-bed; and when
they are down early in the fpring, and brought forward
in iliefjmr mrtnn'

the plants will grow to be five or fix feet
high the late fummer; but it is difficult to perferrc
the plants through the winter, unlcs they are harden-
ed gradually in Auguft during the continuance of the
warm weather; for when they are rooted on at that
time, they will be fo tender, as to render them incap-
able of refifting the leaft froze. The plants of
her must be placed in the bitl:
dove in a itum,
and kept in the first clafs of heat,
odierwita tin

nor livr ihroiteh the w
>ni Qiii trwj
f-mncr, at

Retime m;c tree t

GRAFTING is the taking a shoot fr
and inferring it into another, in fuch a
that both may unice clofely, and
this is called by the ancient writers in husbandry and
gardening, incision, to distinguish it from inoculation,
which they call infectio sculis.

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'me uie of grafting is to propagate any citriotis forts of fruits, fo as to be certain of the kinds, which cannot be done by any other method ; for as all the good fruits have been accidentally obtained from feeds, io the feeds of thefe, when fown, will many of them degenerate, and produce fuch fruit as are not worth cultivating; but when fhoots are taken from fuch trees as produce good fruit, thefe will never alter from their kind, whatever be the flock, or tree, on which they are grafted \ for though the grafts receive their nourifhment from the flocks, yet their varieties arc never altered by them, but continue to produce the fame kind of fruit as the tree from which they were taken-, the only alteration is, that when the docks on which they are grafted do not grow fo faft, and afford a fufficient fupply of nourifhment to the grafts, they will not make near fo great progrefs as they otherwife would do, nor will the fruit they produce be fo fair, and fometimes not fo well flavoured.

Thefe fhoots are termed cions, or graffs; in the choice of thefe the following direCTIONS fhould be carefully obferved. ift, That they are fhoots of the former year, for when they are older, they never fucceed well. 2dly, Always to take them from healthy fruitful trees, for if the trees are fickly from whence they are taken, the grafts very often partake fo much of the diftemper as rarely to get the better of it, at leaft for fome years; and when they are taken from young luxuriant trees, whofe veffels are generally large, they will continue to produce luxuriant fhoots, and are feldom fo fruitful as thofe which are taken from fruitful trees, whofe fhoots are more eompaft, and the joints clofer together; at leaft it will be a great number of years before the luxuriant grafts begin to produce fruit, if they are managed with the greateft (kill. 3dly, You fhould prefer thofe grafts which are taken from the lateral, or horizontal branches, to thofe from the ftrong perpendicular fhoots, for the reafons before given.

Thefe grafts, or cions, fhould be cut off from the trees before their buds begin to fwel, which is generally three weeks or a month before the feafon for grafting; therefore, when they are cufoff, they fhould be laid in the ground with thcut downwards, burying them half their length, and covering their tops with dry litter, to prevent their drying; if a fmall joint of the former year's wood is cut off with the cion, it will preferve it the better, and when they are grafted, this may be cut off-, for at the fame time the cions muft be cut to a proper length before they are inferted in the flocks; but, till then, the fhoots fhould remain their full length, as they were taken from the tree, which will preferve them better from fhinking; if thefe cions are to be carried to a confiderable diftance, it will be proper to put their ends into a lump of clay, and to wrap them up in mofs, which will preferve them frefh for a month, or longer; but thefe fhould be cut off earlier from the trees than thofe which are to be grafted near the place where the trees are growing.

Having given direCTIONS for the cions and graffs, we next come to that of the flock, which is a term applied to the trees intended for grafting; thefe are either fuch old trees as are already growing in the places where they are to remain, whofe fruit is intended to be changed, or young trees, which have been raifed in a nurfery for a fupply to the garden; in the former cafe there is no other choice, but that of the branches, which fhould be fuch as are young, healthy, well fituated, and have a fmooth bark * if thefe trees are growing againft walls, or efpaliers, it will be proper to graft fix, eight, or ten branches, according to the fize of the trees, by which they will be much fooner furnifhed with branches again, than when a lefs number of cions are put in; but in ftandard-trees, four, or at moll fix cions will be fufficient.

In the choice of young flocks for grafting, you fhould always prefer fuch as have been raifed from the

feed, and that have been once or twice tranplanted; Next to thefe, are thoiç flock& which have been raifed from cuttings, or layers, but thofe which are fuckers from the roots of other trees fhould always be re-jedted, for thefe are never fo well rooted as the others, and confantly put out a great number of fuckers from their roots, whereby the borders and walks of the garden will be always peftered with them during the fummer feafon, which is not only unfightly, but they alfo take off part of the nourifhment from the trees.

If thefe flocks have been allowed a proper diftance in the nurfery where they have grown, the wood will be better ripened, and more compadt than thofe which have grown clofe and have been there drawn up to a greater height; the wood of thefe will be foft, and their veffels large, fo that the cions grafted into them will fhoot very ftrong, but they will be lefs difpo'ed to produce fruit than the other *, and when trees acquire an ill habit at firft, it will be very difficult to reclaim them afterward.

Having directed the choice of cions and flocks, we come next to the operation, in order to which you muft be provided with the following tools.

1. A neat fmall hand-faw to cut off the heads of large flocks.
2. A good ftrong knife with a thick back, to make clefts in the flocks.
3. A fharp penknife to Cot the grafts.
4. A grafting chiffel and a fmall mallet.
5. Bafs firings, or woollen yarn, to tie the grafts with, and fuch other inftruments and materials as you fhould find neceffary, according to the manner of grafting you are to perform.
6. A quantity of clay, which fhould be prepared a month before it is ufed, and kept turned and mixed, like mortar every other day, which is to be made after the following manner:

Get a quantity of ftrong fat loam (in proportion to the quantity of trees intended to be grafted, then take fome new ftone-horfe dung, and break it in amongft the loam, and if you cut a little ftrajv, or hay, very fmall, and mix amongft it, the loam will hold together the better; and if there be a quantity of fait added, it will prevent the clay from dividing in dry weather -, thefe muft be well ftirred together, putting water to them after the manner of making mortar; it fhould be hollowed like a difh, and filled with water, and kept fvery other day ftirred; but it ought to be remembered, that it fhould not be expofed to the froft, or drying winds, and the oftener it is ftirred and wrought the better.

Of late years fome perfons have made ufe of another compofition for grafting, which they have found to anfwer the intention of keeping out the air, better than the clay before defcribed. This is compofed of turpentine, bees-wax, and rofin, melted together, which, when of a proper confiftence, may be put on the flock round the graft, in the fame manner as the clay is ufually applied; and though it be not above a quarter of an inch thick, yet it will keep out the air more effectually than the clay; and as cold will Harden this, there is no danger of its being hurt by froft, which is very apt to caufe the clay to cleave, and fometimes fall off* and when the heat of fummer comes on, this mixture will melt, and fall off without any trouble. In ufing of this, there fhould be a tin, or copper-pot, with conveniency under it to keep a very gentle fire with fmall-coal, otherwife the cold will foon condense the mixture; but you muft be careful not to apply it too hot, left, you injure the graft. A perfon who is a little accuftomed to this compofition, will apply it very faft, and it is much eafier for him than clay, epecially if the feafon fhould prove cold. There are feveral ways of grafting, the principal of which are four:

1. Grafting in the rind, called alfo fhoulder-grafting, which is only proper for large trees; this is called crown-grafting, becaufe the grafts are fet in form of a circle, or crown, and is generally performed

formal show the Inner end of March, or the beginning of April.

2- Clasp-grafting, which is al(b) called flock, or flit-grafting; this is proper for trv« or flocks of i i7i-, from an inch, to two inches or more diameter; this gijitmir j, to be performed in the months of February and March, and supplies the failure of the first-chorr: way, which is practised in June, July, and August.

3. Wliiii'j'ril'iing, whii is also called tongue-grafting; this is proper for stocks of an inch, half an inch, or Iris, diameters this is the nioft t: way is, and which is most in use.

4- Grafting by approach, or abliibrinn; this js to be performed when the stock y «•• and the tree from which you take your graft, are to meet together, that they may be joined; this is performed in the month of June, July, and August.

to bo perron n«l in the motith <J: >ril, antl h allb calk-, and ischi jr Jafmincs, Oranges, and other tender cjoico trees. We [ome new] a the manner of performing the feveral nm of gr.:

The Hrtt itrttrod, which is termed rind, or ihoulcter-grafting, is itldum prttfitti bu(on large trees, when either the head, or the large branches, art cut off hoi essentially, and two or three are put in, according to the size of the branch, or the diameter of the tree.

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ferted into the flit madr • the slope of the stock, and thecion mull be placed on one side of the stock, so as to be the two ends of both cion and stock may be cut Uni, and join together exactly; then there should be a figure of both to insure the cion, Ib ns thar i* may not be easily displaced, onJ afarwaid clay it over, ai in thefirmrr methods,

The fourth fort of i- grafting is termed inch-grafting Iv. approach, orabjsfialion. This is only to be performed when the stock, v. hich are deji« to be grafted, and the tree from which the graft is to be taken, are to be joined together, or may be brought together, as that their branches may be united; this method is practised on tender rjotic plants, and some other forts which do not succeed in any of the oilier mciioodi,

In performing thii operation, a part of the stock, or branch, mull be slit off about two in the: in length, observing dwuva to make a notch in the end of the stock; then a small notch should be made in the end of the branch, and a slit made in the middle of the branch, to receive the slit of the stock, observing to join their ends equally, that they may unite well together; then make a figure of both, so keep them exact; and afterward clay the part of the stock over well, to keep out the air; in this method the cion is not separated from the tree, and it is firmly united with the root.

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wtUj buc theie tuftt be grafted by .iapproich, i or they
abound with u great quantity r; i'rcm which is apt to
evaporate from the graft, it' lepatmed trim the tree
before it U joined with the ttoc, whereby di y art
often destroyed; u «lk» tile L . . . Clierry, or
the : herry on the Ljurel. All die njrife-bouing trees
will i. take upon «' ii 01 her, and,tho: which have
a ttii her just abou r will do well if graftri
more wiy-, but djufe tiitit arc 01 a more firmeDutex-
I'irc, and aic lluw growers, fluuud be grafted tij- »p-
prow.

Jly ftriftly obfetving iliis rtitr, we (hall leklom mil-
carry, provided the operation be riglidy performed,
and it 1 proper foilbn, unlds die weather iliouId prove
very bad, IS :t fbaKtines li^n-iens, wlicreby whole
quarters of irvut-trecj mil'carry i and it is by this meth-
od that many kinds of atauc trees ;ru not only
prtjugited, bin alio rendered hardy enough to end-
ure ilit cold of "our climaic in Um opiii air) for,
being ^rjtft upon flock* uf* the Cjmc lort wtieh nre
hardy, the grafts are rendered more capable to tndure
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vain. the fruits now in Eng. Nil, WIULII were formerly
Dmoljparacd here from marc fouterly utiniites, aru!
were at Hrft too impatient of uur ivild to faced
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And ••••• the differ : t gral>ngs Iccin tolisve btcn greatly
l n u le a n-. oi: g the arajei« were certain ly
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to be miiiiken, or a • alert a fallow; whereas : f their
works are i rclully caarnined, it will he found, that
theii have 1 been copied from each other's writings,
with »t in iLijig i experiments to prove the truth of
their illertions : and it is well known, that the ••RⁱⁱK
of planu before • calpinus's time (which is iobotit
i;oyttirs time) was, by thdir outward appearance,
or fr'm ihi fuppoled virtues of Uicm, which meth-
od 15 now jiiLriy enplodrd; and it luth been ob-
ferved, from many rtjrmi'J iruli, th.it however
pbns awy rcllimble c.ich oilier in the ihapL and mike
of their leaves, manner of fhooting, &c., unkh iht-y
agree in ilicir fruit, and thrir (ithw dillin&ive cha-
racter, they wit! Upon well 01 he r, chough
performed with ever jo mitch an.

GRAMKN. Toui-n, ! . . . Rail Meth. S'liinf. ijri. (i, . . . in French, Chou-dent.

To enumerate all the ljecies of Grabs which ar found
growing naturally in England, would fave a l'le's article
greatly beyond the design of t' wortf 5 : hcrffire
I ihiii! only takir 1 tice of a few fpecies, . iicli srerit-
her ifed in medicine, or a ihivated for fjddtT; for
there is ijtree s pal hi re in this country, whdt at
JatJt i*erij diiitrtnt ij. . . . are not to be loind in-
termitted, ••••• in moll of til . . . more than twice that
numU-r. Thife were, by thi farmer writers on bot-
any . all included under the common denomination of

(granu-n, but were divided into 11 different fecti-
ons. Mr. Ray has ranged 'firm in tLe following order,
Gramen Tetradium, i. e. Winter-graf. Gramen Siza-
linum, i. e. Rye-graf. Gramen Lanaceum, i. e. Dar-
nel-c! Gramen Panicum, i. e. Pan-graf. Gramen
Phalaridis, i. e. Canary-graf. Gramen Alopecu-
raris, i. e. Fox-tail-graf. Gramen Lycopodium,
i. e. Cat-tail-graf. Gramen Elymum, i. e. Hedge-
hog-graf. Gramen Galium, i. e. Crick-graf.
Gramen Arvensium, i. e. Oat-graf. Gramen Dac-
tylion, i. e. Cock's-foot-graf. Gramen Arundin-
centum, i. e. Reed-graf. Gramen Milium, i. e.

Miller-graf. Am I under MO of thefe figns they
art: many Ijiecits; And : one are many others, which,
by oK'er wotter, were iucJutkti tu der this general
title, ImsB of svlich have no rtkti on to this title,
but there are others which, are near nearly allied to it,
a s i l . (. • • • • • Cyprefa Grada, &c. Thie Dr.
Linnaus has divided into genera, but by this method
of claffii them, he has feparated them as a great
diiiance Irani cadi other ; for all thofe whole flatters
have three Ibmii.i. are ranged in his third class, and
others which have male and female flowers, are re-
moved to his cwen; fult clafs. However it would
have Uctn much better (c have kept them together, as
Ur. Van Kfyfo has dgtw m Ihe Productions of the
Leader; gAraen, under one general in to the clafs
of Grtmi n.

As die genera under which the different fpec-
ies of Grabs are ranged, have different characters by
which they are diftinguifh'd, fo it would be to little
purpose to give them all in this work, and as there
are no general characters by which the whole clafs
can be known, fo I fhall not trouble the reader with
any of them here, but proceed to enumerate a few of
the fpecies

1. GRAMEN fpec. triticea, rep. m viik" re. caninum
dicum. Raii Syn. 2. p. 247. Common creeping Grab
with
PUnt.
er ifyutk-graf.
2. GRAMEN fpec. triticea, rep. m viik" re. caninum
dicum. Raii Syn. 2. p. 247. Common creeping Grab
with
PUnt.
er ifyutk-graf.
3. GRAMEN prostratum, paniculatum majus, annuatum
filiis. C. B. P. 2. Meadow-graf with large panicle and
a narrow leaf. The panicle diftuf, many-flowered,
driftors pubefcentibus, culms erecto teres. Flor.
Sicc. 77. Raii with a diftuf panicle, the fevile fpike
bearing four hairy flowers, and a taper and ftraight
leaf.
4. GUAMIS' prostratum, paniculatum minus, lacine filis.
C. B. P. 2. Meadow-graf with a large panicle and
broad leaf. The panicle diftuf, many-flowered, gla-
bris, culms erecto teres. Flor. Sicc. 76. Raii with a
diftuf panicle, four fpike with three flowers, and many-
right ftraight.
5. GRAMEN avenacum, prostratum, paniculatum, fave-
fcente, lacinis parvis. Raii Syn. 407. Taper and
dta> Vat-
Ave
Hilculis omnibus arborib. Procl. Leyd. non Oxyryth
with a large panicle, three flowers in each whorl,
which is foety, and in the panicle bearing many
6. GRAMEN tetradium. Ger. Emaculib. 2. cap. 76. n. 4.
Tall Meadow Rye-graf.
7. GRAMOI treni
Dunelm-graf, or Corn-graf. Raii fpeciebus vocibus,
fiofe
The first sort of Grab is that which is chiefly to be
used in medicine; the roots of them are chiefly used,
and are accounted aperitive and diuretic, opening ob-
structions of the reins and bladder, promoting urine,
and an; of Itrvier ,uzzant the gravel and stone. The
juice of the leaves and stalks was greatly esteemed by
Dr. Boerhaave, who generally prescribed this small
cure where he i (K>lc! them v
in die 'ble conclud.

This hath a creeping root, which spreads far in the
ground, and is a very troublesome weed in gardens
and waste land; for every small piece of the root
will grow and multiply exceedingly, fo it is very dif-
ficult to extirpate whole it once gets foot hold in
gardens, the common method of destroying it is, to
take out the roots as often as the blades appear above
ground, where this is done or three times carefully
repeated, it may be totally removed, but when the
surface of the ground is very full of the roots of this
Grab, the best way of destroying it is to touch

the ground two fpts and a flivoclling deep, turning all the couch into the bottom, where it will rot, and never fouth up v but this can only be praftified, where there is a fufficient depth of foil; for in (hallow ground the roots cannot be buried fo deep, as to lie below the depth to which they naturally Jhoot.

Where the roots of this Grafs get poffeffion in arable fields, it is very difficult to root out again \$ the ufual method is by laying the land fallow in fummer and frequently harrowing it well over to draw out th roots t where this is carefully praftified, the ground may be fo well cleaned in one fummer, as that the roots cannot much injure the crop which may be town upon it i but fuch land ihould be cropped with Beans, Peas, or fuch things as require the horfe-hoeing culture ; for where the land can be frequently ftirred and harrowed afterward, it will be of great fervice in cleaning it from the roots of this Grafs and other bad weeds. The blade of this Grafs is fo rough, that cattle will not feed upon it.

The fecond fort is frequently cultivated, efpecially introng cold land, upon which this Grafs will fucceed better than any other fpecies, and is an earlier feed in the fpring-, but this is a very coarfe Grafs, and unlefs it is cut very early for hay, it becomes hard and wery in the ftalks, fo that few cattle care to eat it j for this fpecies has but few leaves, running all to italk, fo is ufually called Bents, and in fome counties Bennet -, when this grafs is fed, it wiu be proper to mow off the Bents in the beginning of June, otherwife they will dry upon the ground, and have die appearance of a ftubble field all the latter part of fummer ; fo that it will not only be very diagreeable to the fight, but alfo be troublefome to the cattle that feed on it, by tickling their noftrils *, fo that the want of better pature only, will force them to eat of the young Graft which fprings up between thefe Bents, for thofe they will not touch; therefore thofe who fuppofe that thefe are eaten in fcarcityof feed by the caSe, are greatly miftak*n> for I have many years dofeiy attended to this, and have always found thefe Bents remaining on the ground untouched, till the froft, rain, and winds, deftroy it in winter; and, by permitting thefe to ftand, the after-growth of the S b l r e a d y retarded, and the beautiful verdure t toft for s three or four months * fo that it is good

mulberry to come and take the old made into the hay, cows feed in winter, and will pay the expence of mowing it.

There is not, whi growing hard much fooner, and having nar-ftalks >> B common in moft pature roWer W V S J h comes Jarly to flower, fo the feeds grounds, for ash >> Jarly to flower, fo the feeds

f^fl T J E S t fupplied with plenty of falling feeds the r J ^ f e who are defirous to keep this fort; < I o S e n r this Grafs afpofible, their patures as clear y m

lands as are defigned to be ploughTm few it with years, and the common method is to tow it m

Spring Com; always found, whas there has the Grafs, that any which has been fown in the common way. Grafs has often been fo rare, as to afford a good feed the fame autumn; and the following fpring there has been a ton and a half of hay per acre mowed very early in the feafon, and this has been upon cold foul land; fo that I was convinced of that being the belt feafon for fowing thefe Grafs; though it will be very difficult to perfuade thofe perfons to alter their praftice, who have been long wofided to old cuftoms. The fee, who have been long wofided to old cuftoms. The quantity of feeds which I allow to an acre is about two bufhels, and eight puckets of the common Clover, which, together, will make a good plants upon the

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ground as can be defired; but this is not td be praftified upon fuch lands where the beauty of the verdure is principally regarded, therefore is fit for thofe who have only profit in view.

The third and fourth forts are the two bed fpecies of Grafs for patures, fo that if the feeds of thefe were "carefully collected and fown feparately without any other mixture of Grafs-feeds, they would not only afford a greater quantity of feed on the fame fpacc of land, but the Grafs would alfo be better, the hay fwetter, and the verdure mere lafting than of any other forts; but there requires fome attention to the faving of thefe feeds pure without mixture. I have tried to lave the feeds of feveral fpecies of Grafs, feparately, in order to determine their qualities, but have found it very difficult to keep them diftint in gardens where the feeds of other forts of Grafs have been fcattered: the only method in which I could fucceed, was by fowing each fpecies in a diftint pot, and when the plants came up, to weed out all the other kinds of Grafs which came up in the pots; by this means L preferred a great variety of the graffy tribe feveral years, but not having ground enough to propagate the moft ufeful fpecies in any quantity, I was obliged to abandon the purfuit: but I muft recommend this to perfons of leifure and (kill v/ho have a fufficient quantity of land for the purpofe, to carry this projeft into execution, which ijjay be of fingular benefit to the public; for we have an influence of the advantage which the inhabitants of the Netherlands have made, by faving the feeds of the White Clover, or Honeyfuckle Trefoil, which is a plant common to moft of the Englilh patures *, yet few perfons in this country ever gave themfelves the trouble to collect the feeds from the fields for fowing, but have purchafed vast quantities of this feed annually, at a confiderable price from Flanders, where the peafants have been fo induftrious, as to collect the feeds and fow great quantities of land with it, with a view of fale to this country only. This is not an inconfidrable article in hufbandry, but deferves the attention of all thofe, who, by choice or otherwife, are engaged in the bufinefs of agriculture; for one acre of land will produce as much feeds of this fpecies of Trefoil, as will fell for 12l. where it is well planted and faved from the fpring crop *, and if the Grafs-feeds before-mentioned were feparately fown, and carefully weeded from all other fpecies, and permitted to ftand till their feeds were ripe, it might be of equal advantage with the other, especially now, when every gentleman is endeavouring to improve the verdure near their habitations.

The fifth and fixth forts are alfo very good Graffes for patures, and have perennial roots, fo are the next belt forts for fowing to thofe before-mentioned, which, in my opinion, deferve the preference to all the other; but as it will be difficult to fave a fufficient quantity of feeds of thofe alone, to fupply the demand which may be for their feeds j fo thefe two fpecies may be admitted in aid of the other, as they are very leafy kinds of Grafs, and their ftalks do not become ftiff and harfh like many other fpecies, but with proper care may be, made very fine; and, if duly rolled, their roots will mat and form a very dofe fward, therefore thefe fhould be included in the number of fown Graffes.

The feventh fort is mentioned for the fake of variety, and not for ufe j this hath an annual root, which fends up many broad hairy leaves, between which arife (lender ftiff ftalks from a foot to near two feet high, dividing upward into a large loofe panicle, garnifhed with heart-ftaped fmall fpikes, each having about feventeen fmall flofcules or florets; thefe, after the flowers are paff, have a fingle feed fucceeding them; the heads hang by flender long foot-ftalks, which are moved by every wind, fo that they generally appear fhakinf, from whence it had the title of Quaking Grafs.~ There are four fpecies of this Grafs, two of them grow naturally in England; and thefe Graffes coming to head in May, occasioned the following

Engliih proverb, M<\$ temtjb early come for late, wafri she cam pah. The Inrge IOM here mentioned, grows naturally in the fonth of France a rv italy, and is only preserved in fomic Englifli gardens for the £ of variety.

If the fctels of this iVirt are (own in the autiirfin, or permitted ro fesrtter when ri]e plws will come up fronger, and ilower mudi earlier, th when they arc frown in the i rring, fo good feeds may al"*ps be txpvi- id from : am, which can : klijin lie attained iron; the fring; plants in Engle...; and as • wo of thr: mans to this I will be hill enough in o garden for variety, fo thrff l'houed be allowed'w frjrtai • or where they grow at a diiljncce from eai h other, the roots will tend o'-'agreatnutnbTDflalL , which will b- fcortger, and produce much larger (Mnides than thofe which ire too near together.

The Cock.*foot Gnfce, CapanVwil GttJ and Millet Grades are. toocofrc todefrve attei- land, though fonth of their faecies arc very ufrifful in the warm parts of Amvrica, where [here i. .. great fec- city or finer Grj] and fome of thofe are much bet- r-T adapted to thofe: warm country , than any of our European Grats...; for many of them lie fiat on the grouiid, and tmit roots from, theii joints, fo are well prepared for this; their th! are large and juicy, fo will live in heat where tew of th; European Grats can be madi" to thrive.

The land on which Grats-feed is intended to l. form, fhould be well plougtd, and CICLE d from the roots of noxious wecl.i, fuch as Couch-™rafe, Ft m, Ruffes, Hual; Gurfce, froom, Rell-harrow, &c. which if Jcfi in the ground, will foon get the liccter •; the Gr'fs, and <> - run the land. A barrow in fuch places wlcrc eiijhcj • their weeds abound, it will be a good method to plough up the furface in \prlli and let it be fome time to tj ilr.; then harro¹ ihi roots into small heaps, and burn them. The afhes fo produced, when tptcad on thr land, will bcag. Ii manure for it. The method of burning the root? is particularly duced undi'r the artikle LAND, which fee: but wlcrc Couch-grals, Fern, or Refi-harrow i in plenty, which roots run I under ground, the Lndnuill be ploie and two or three times prtll deep in dry weather, and the roots carefully ham

which is the moll: hire n • thod to dclroy them. Winter the land is very low, and of a Riff clayey nature, which holds water in winter, it will be of lingular lcr- vice to make fame undi... and drains to ..any off the wet; which, if it'ained too long on the groun l, wjl render the Gratu lour. The i method of making thofe drains is prdu-ibecel under rhe nrricL-L ash, which fee.

Before iht freil is fown, the furface of the ground I'ould be m'adc li and lin , orhtrwic t'e ii. will be bi ried unequal. When d'le foil is fown, it muft be gently h arrow rd in, and the ground roll Id • with a wooden roller, which will make the furface even, and prevent the iceds being blown in patchei. When the tij.ih. comes up, if there fl uid be an; bare fpois, where the Jcxii hu no; grown, icy may U- fown agnir. and the ground roller. :L[[will tiji the feedi , and the belt kindly thofers will bring up the Grats, and make it very thok.

Where the land is defigned to continue in palture, it fhould be fown with the belt forts of Grats-feed, and when Death Gower, or what is commonly called Hon- ncrtable Grats in many parts of England, but there is a great difficulty of procuring hay-feeds which are good; for in all the good paltures near London, which abound with the belt forts of Grats, the hay is voin- mooly cut before the feeds of the Grats are ripe. fo that thofe feeds which are procured from the ftables where thi hories are fed with the belt fort of hay, are little moi

than chaff, or at belt are only dry; as any of the early kinds of Grats, with a great quantity of Ph- ton and other weeds: which has d'couraged many gentlemen from fowing them, nor had any one at- tempted to fave thofe feeds properly, and as it requires longer rime, and more attention, to ft

Jkd) of the purer fort of Grats than the generality of people ciir; tobi ihaw, fo I would recommend the fetting fume of thofe upland paltures, which are deaneft ftvrr weeds, and have the fceared herbage afide, to Jb: I for feeds; and although by fowing the Lry wlt /v: !• I valuable, yet from the fize of the feeds, it may uufw'r better to the palturer, than to mow it merely for the hay; for any gentleman who has regard to the beauty of his land, and better pve

Λ r;; as the price for fuch feeds, is exactly paid for the ordinary feeds, fince the difadvantage of weds is not to be put in comparifon with the beauty and ad- vantage of having fuch a fure feed; for when the land is brought to a good feard (which may be done in one yi ar, where it is properly prepared and fown with gi>d feidsj it rr.; be kept in good order, and by gotnl ni3nag< mci. improved annually, and thus con- unuc lb, is lon^ as ; wprc cam is taken of it. I know lonii-)ind which was fown in the method here- after Uired' d above forty years ago, which are now as good as uiriS a^ zΛ I have feen, and may be di- ways c: ;iljird lo.

Thefe grounds abounded with many bad weeds, fo they il iwint'lf, and fummer's fallow, in which time they were five times ploughed and fed times harrowed in order to dclroy the weeds, and on the furface of the ground, fince in Auguft they were fown with the belt Grats-feed as could be procured, three bu- chels of this, and nine pounds of the white Dutch Clover-feed were allowed to each acre; arthens happened rains foon after the feeds were fown, fo the Grats took up well; but altho' it were a great number of weeds, which were drawn up and carried off the ground, and in the beginning of October the fields were rolled with a heavy roller, in the fpring the fields were again weeded, and after-ward mowed, and that fummer there was more than two fies of hay per acre mowed off the land; and by conflant weeding twice a year, fceeping it with a heavy harrow, rolling and drifling of the land, the Grats has been vortally improved fince, and is now a good palture as any in England; and I in« I hi e land thofe great quantities of land in the fame manner, and with equal fuccefs; therefore from many years experience can recommend it, as the beft method of having good paltures.

But I know the generality of farmers will object to the belt forts of their crops, and will not be ex- pectic - weeding, rolling, &c. as too great for com- man practice: however, I muft be fatisfied from ex- rjcr!:-r, that whatever will be at the expence, will find it'eir accouj I in it; for the crops of hay will be ut much better, and the after palture alfo, that it will mart than pay the expence, as from many good ac- counts, which ha have been kept of the whole, is fully andly demonstrated, and the vendors of thofe paltures is charifing to all thole who have any talk of annual fecundities.

The proper management of palture land is the leaft underllocii of any part of agriculture; the farmers never luvé attr. led to this, being more inclined to the plough, though tl ; who depending that have not of late year; fawn fo pr: as to encourage them in that par of husbandry; but thofe people never think : laying down land for palture, to continue longer than three years, at the end of which time they plough it up again, to fow it with grain.

There is a fort of limped Grats which is preferred in many gardens for the beauty of its variegated leaves, which conrinu frith the .retteiV] part of the fummer. This fort is eafily propagated by parting the roots, either h fpring or autumn, for every other will ac- creafe to be a large root in six years time. It will grow on any lull or in any fituation, therefore may be planted in any fubject part of the garden, where it will thrive, and afi,jrj m^ nrrteable v; may. This fort is by many peribn^ callil Kibbai Grats, from the fimples of white and green, which run the whole length of the blade, like the ftripes in fome rib- bands.

For the further maintenance. -if Guil in rKL. See PASTURE and N. ADOWJ and for timin garden, see GRASS.
 Clover-grass. See TRIFOLIUM.
 Saint-fain. See OROXYCHIS, or HYDYSARIS.
 La I. attrne. See MIQH.M.
 Nonefish. See MKLILOTUS, or TRIFOLIUM.
 Trefoil. See TRIFOLIUM.
 Spurry. See St'iscui-A.
 GRANADILLA. See PASHIFLORA.
 G.R. • I.KS. See Vrms.

GRASS, The English Grass is of so good quality for milks & other uses, that if they be kept in good order, they have that equality of beauty that they are famous for in France, and elsewhere. But green walks and green plots are, in this part, not made by sowing the Grass seed, but by cutting turf, and, indeed, the turfs from a fine green, are much preferable to sown Grass. In sowing a fine green plot, it is not to be sown in the bay left without distinction; for that seed is not so good, and making large balks, the lower part will be naked and bare, and although it be mowed ever so often, it will never make handsome Grass; but, on the contrary, will come to nothing but a little of the common kind.

It walks or plots be made by sowing, the best way is to procure the seed from those parts where the Grass is naturally fine and clear, or else to keep it from being mowed and being Grass will be very good, and it will scarce ever look handsome. In order to sow Grass seed, the ground should be first dug or broken up with a spade, and when it is desired and laid even, it must be very finely raked over, and all the clods and lumps taken off, and covered over an inch thick with good mould, to facilitate the growth of the seed; this being done, the seed is to be sown pretty thick, that it may come up close and short, and it must be raked over again to bury the seed, that if the weather should happen to be hot, it may not be blown away.

As to the best time of sowing, the latter end of August is a good time, because the seed naturally requires nothing but moisture to make it grow; if it be not sown in the latter end of February, or the beginning of March, if the weather proves dry, it will not so soon make the walks or plots green. It is also best to sow it in a mild day, and in sowing to rain; for that, by sinking down the seed in the earth, will cause it to shoot the sooner. But where Grass is sown in gardens, rather for lawns or walks, there should always be a good quantity of the White Trefoil or Dutch Clover sown with it, for this will make the turf much better than any other sown Grass, all continue a better verdure than any of the other.

After the seed is sown, and the Grass is very thick and of a beautiful green, it will require a constant care to keep it in order; this consists in mowing the Grass often, for the oftener it is mowed, the thicker and handsomer it grows; it must also be cut with a cylinder or roller of wood, as low as possible.

If Grass is sown in a field, it will run into Quick grass, unless it is cut; if it does so, there is no way to recover it, but either by sowing it, or laying it over again, but that once in every two years; but if the ground be well cleared from the roots of strong weeds, the turf be taken from a fine level common, it will continue handsome for several years, provided it be well kept.

In order to keep Grass-plant or walks handsome, and in good order, in autumn you may see some fresh seed over any places that are not well filled, and where the Grass is dead, to mow and furnish them again; but there is nothing which improves Grass so much as constant rolling and pulling it, to destroy worms, and to keep the turf so tender.

It is a general practice when turf is laid in grass, to cover the surface of the ground under the turf, either with sand or very poor earth; the design of this is to keep the Grass fine, by preventing its growing too rank. This is proper enough for very rich ground, but is not so for such land as is but middling or poor; for when this is practised in such places, the Grass will run to seed, and decay in numbers.

When turf is taken from a common or down, there should be regard had to the season of it, and not to take such as is full of weeds; for it will be a very unprofitable piece of work, to weed them out after the turf is laid; and unless this is done, the Grass will never appear handsome.

Where turf is designed to remain for years without renewing, there should be drinking laid upon it every year, either of very coarse dung, ashes, or straw; it can be easily procured, very common too, on a good deal of land; but these dressings should be laid on early in winter, that the rain may wash them into the ground, before the drought of the spring comes on; otherwise they will occasion the Grass to wither when the warmth of summer begins. When Grass is so dressed, and kept well rolled and mowed, it may be kept very beautiful for many years; but where it is not dressed or fed with dung, it will rarely continue handsome more than eight or ten years.

GRATIOLA. Lin. Gen. Plant. 17. Rad. Meth. Plant. 90. Digitalis. Toorn. Hist. R. H. 167. Hedge Hyssop.

The C. CHARACTER etc. The first is said to be a perennial cropment, which is cut into five parts; it has one part of the growing stalk, with a stalk longer than the peduncle, cut at the top; the other four parts are the upper leaves, which are small, narrow, and pointed at the end, and are upright; the lower leaves are oval and equal. It has five and six-petaled flowers, three of which are longer than the petals, and four, the other two are longer, and others in the tube of the petals; these are fruitful in their tops; they are terminated by roundish joints. In the center is situated a central column, supporting an oval disk, crowned by a figure with two lips, which rise after being fructified. The crown of the disk is filled with small seeds.

This genus of plants is ranged in the first section of Linnæus's second class, entitled Dialectic Monogynia, which includes those plants whose flowers have but two stamens and one pistil; for he does not esteem the three last as having a staminal notice.

- The Species are,
 1. GRATIOLA (Coffinella) floribus pedunculatis, foliis lanceolatis serratis. Lin. Mat. Med. 17. Hedge Hyssop with flowers hanging on foot-stalks, and four-lobed leaves. Digitalis annua Gratiolosa Linn. Mar. Hist. 2. 479. Leafy Foxglove, called Gratiola.
 2. GRATIOLA (Fragrans) foliis lanceolatis ovatis, serratis. Flor. VIII. 6. Hedge Hyssop with straight peduncled leaves.
 3. GRATIOLA (Fragrans) floribus subsessilibus. Lin. Sp. Plant. 17. Hedge Hyssop with flowers sitting close to the branches. Gratiola latiore folio flore albo. Frull. Peruv.

The first sort grows naturally on the Alps, and other mountainous parts of Europe. The herb is thick, fleshy, fibrous, creeping root, which propagates very much when planted in a proper soil and situation, from which arise several upright square stalks, near a foot high, garnished with narrow spear-shaped leaves placed opposite; the flowers are produced on the side of the stalks at each joint, they are shaped like those of the Foxglove, but are small, and of a pale yellowish colour. These appear in July, but are seldom succeeded by seeds in England.

It is easily propagated by parting of the roots; the best time to do this is in the autumn, when the stalks decay; the plants should have a moist soil and a shady situation, in which they will thrive exceedingly; but in dry ground they often decay in summer, unless they are plentifully watered.

This stands in the list of medicinal iJ.ir.;, butij very rarely used in England, tlnun^li h i^ recommended by fame good writers as a purger of i^rious and choleric humuun.

The ficced fort grows naturally in North America, from whence I received the lcerfs. Thij grows naturally in moist place, wbcie it riles more than a foot high, but in England I have not seen it more than eight inches; the leaves are blunt, and indented at their ntremluq . the flowers; are white, utd come out from the fide of the (talk*, like thoir of" Uie other, but are not fuccerfeu I y feeds here. It may b.r propagated in the fame manner as the finV lbrt, and require the fame treatment.

The feeds of the third lbrt were frnt me from Carthagena, where it was found growing naturally in places where there had been a flat; waters, which were then dried tip. this plant grew about nine inches high, with it wscflUK, and the I was placed opposite; they were about three tuarler;. of a inch long, and half an inch broad, lawtrd un their edges; the Bower; came out fngle on each filc the ftilk; they wcrs wluu;. and much fmri^ than those of the first fort, but were not ficccicieti by feeds, fit d : plant was loft here.

GRAVEL and Grafs are naturally ornaments to a country-seat, and ilic glory of [lie linglilh gardens, and things in wh ch we excel all otht. nations, as France, Holland, Fianders, Sic.

[here are different forts of Gravel, liutfor thole who conveniently have it, I approve of that Gravel on acklicith, as preferable to most that we have in England; it confuting of linooih even pci bles, which, when mixed with a due quantity of I am, will bind extending . lofc, and look very beautiful, and continue hamlotnc longer ilum <ny other lbrt of Gravel which I luvc ve:.

Some recommend a part of iron-moud Gr.vvel, or Gravel with a little binding loim tvaogft i), than which not:;ng, they say, binds better when it is dry; but in wet weather it is apt to stick to the beds of one's shoes, and will never appear handsome.

Sometimes luam it m:..ed with Gravel that is over sandy or sharp, which must be very well blended u> cethtr, and lie in heapi, *fter which it *. ill bind like a rock.

There are many kind* of Gravel which do not bind, and thereby code u routinul trouble ot roilbg, to little or no purpoc •, as I or such,

If the Gravel be loofe .e sandy, you; should :ik« one luad ut' lbtmg loam, (two CH three of Gravel, and to cift them well icgether, and turn the mixture over three or four times, dial they may be ucll blended together; if this is done in proper porj* time, it wU bind well, am) nei thick to r-r vtd in uet weather.

There are many iirTent opinions about the choice of Gravel; some are for living the> gravel as i-httcaj possible, and in order tomak.: the walks more . i, they roll them well with tone rollers, which an often driven by the L mafon!, thu they may add a whistnet to the walk-; but this renders it very troublefome to the eyei, I reflecting the rays f' light to strongly, therefore T should ever be avoided; and loch Gravel as will be fine-oth, and teleci ihc leaft, ftould be preferred.

Some creer the Gravel too fine, which ii an error-, for if it be caft into a round heap, and ihc great llooc* only raised off, it will be the i-eltrr.

Some arc apt ro lay Gravel-ivalks too round, bur. thi* it liknvic an error, because the . are not fo good to walk upon, and besides, it makes them look surrow; one inch rise is enough in a crown for a walk of five feet; and it will be sufficient, if a walk of five feet wide, that it lies two inches higher in the middle than it does on each side; if fifteen feet, three inches; twenty feet, four; and so in proportion.

For the depth of Gravel-walks, fix or eight inches may do well enough, but a foot thickness will be sufficient for any; but there should always be a depth of rubbish laid vndef tru Gravel, especially if the

ground is wet; in which cift- there cannot be too much care to fill the bottom of die walks with large Qones, ilinii, brick rubbil n, chalk, or any other materials which Lin be beil procur, l, which will drain off the moilture from the (.i gravel, and prevent its being po.ithy in wet we.v^ter; but as it may be difficult in some places .o procure a sufficient quantity of these materials to lay in the bottom of the walks, so there may be a bed of Heath, or Furze, which ever can be procured at i: - least expence, laid under the Gravel to keep it dry: and if >ther of these are used jnms, they will be a long time, as they will be covered from air, and tht'ic will prevent: the Gravel from getting down into the i lay, and will always keep the Gravel dry; and where there is not this precaution in the first laying

• the Guvi! by the clay, willi..• the Gravel to be partly whenever there is much rain.

In ii'aking of Gravel-walks, there must be great regard had to the level nti he ground, so as to i y the walks with ealy dHtm toward the low parts of the ground, that the wet may be drained off easily; for when • is omitted, the water will lie upon the walks a considerable time after hard rains, which will render them unfit for use, especially when the ground is naturally wet or strong; but where the ground is level, and there are no i nclivities to carry off the wet, it will be proper to have fish-bones laid by the sides of the walks, at convenient distances, to lit off the we I; and where the ground is naturally dry, that the water r <:il loon l ak away, the drains of the fish-bones may be contracted so as to convey the water in fishpools, fnnnwliich i: - water will soak away iaa) hot time; but in wet land there should be under-ground drains, to convey the wet off, either into ponds, ditches, or the nearest place to receive it; for where this is not well provided for, the . *lks will never be jo handsome or so useful.

The month of March is the properest time for laying Gravel, it is not prudent to do it sooner, or to lay walks in any of tin winter months before that time. Some indeed! turn up Gravel-walks in ridges in December, in order to kill the weeds; but this is very wrong, for besides that it deprives them of the benefit of them all the winter, it does not answer the end for which it is done, but rather the contrary; for though it does kill the weeds for the present, yet it adds a fertility to them, so to the great future increase of both them and Gravel.

If constant rolling them after the rains and . It wit! not etR-aiully kill the weeds and moss, you should turn the walks in March, and lay them down at the same time.

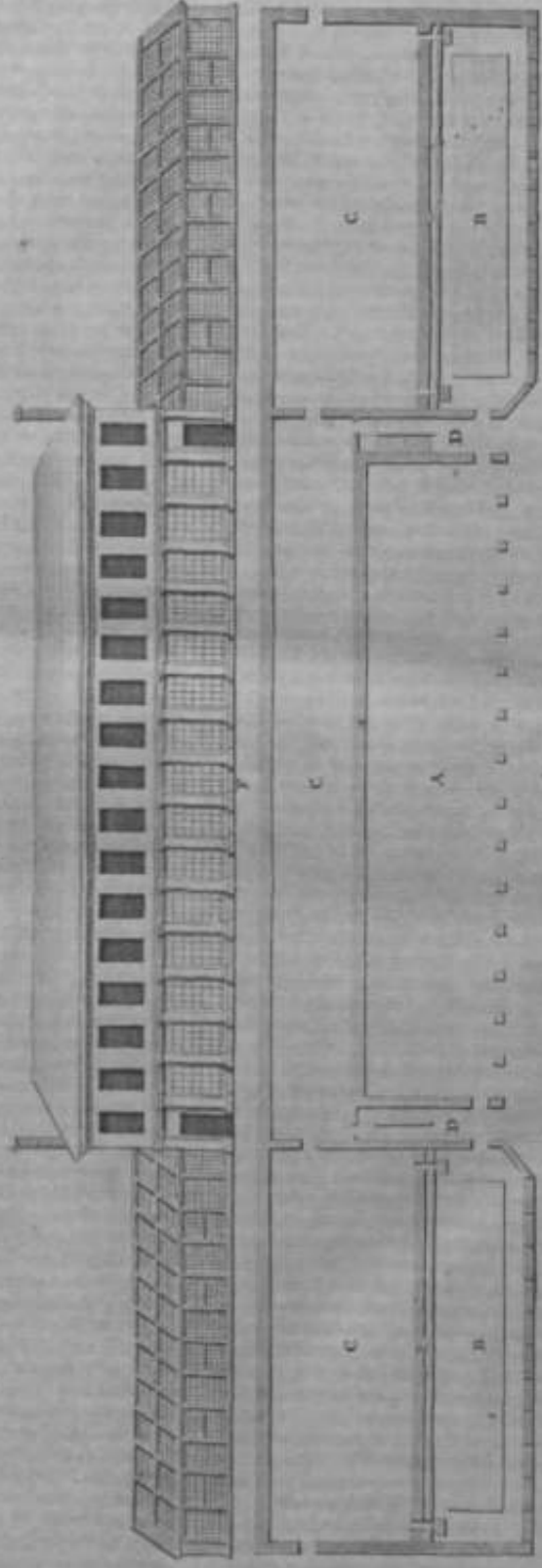
In order to deftro* worms that fpoil the beaury of Gravel, or Grass-walks, some recommended the watering them well with water, in which Walnut-tree leaves have been steeped, and made very bitter, especially those places most annoyed with them; and this they say, as soon as it reaches them, will make them come out hastily, so that they may be gathered; but if, in the first laying of the walks, there is a good bed of lime rubbish laid in the bottom, it is the most effectual method to keep out the worms, for they do not care to harbour near lime.

GREENHOUSE, or Conservatory.

As of late years there have been great quantities of curious exotic plants introduced into the English gardens, by the "iiiiiber of i. ren-houses, or Conservatories, li: .re increased; and not only a greater skill in the management and ordering of these plantias increased thereby, but also a greater knowledge of the nature and contrivance of these places, so as to render them both useful and ornamental, hath been acquired, and since there are many particulars to be observed in the construction of these houses, whereby they will be greatly improved, I thought it necessary not only to give the best instructions for this I was capable of, but also to give a design of one in the manner I would ciuue m erect it, upon the auocxeff cepp- . plant.

Plan of the Green-house.

- A. The ground-plan of the green-house.
- B. B. The ground-plan of the two Stoves.
- C. C. The Stoves behind the Green-house and Stoves.
- D. D. The passages of communication between the Green-house and Stoves where the Stairs are placed which lead to the Stoves over the Green-house.
- E. E. The Section of the Stoves in the back of the Stoves.
- F. F. The upright of the green-house and Stoves.



J. H. M. S. S. S.

As to the length of these houses, that proportion should be to the number of plants they are to contain, or the faculty of the owner, but their depth should never be greater than their height in the clear, which in small, or middle houses, may be six, eight, or ten feet, but for large ones, from twenty to twenty-four feet, is a good proportion; for if the house is long, and too narrow, it will have a cold within and without, nor

will it be proper to plant, if proper room be allowed on the back side of the house, and on the back side of the house which the plants are placed, and on the other hand, if the depth of the Green-house is more than twenty-four feet, there must be more rows of plants placed to fill the house, than can with convenience be reached in weeding and dressing; nor are houses of too great depth in proper for keeping of plants, as those of a moderate size.

The windows in a Green-house should be at least four and a half above the pavement, to within the front (lioultl Micn; from *br. of a cornice round the building, over the heads of the windows. As it is necessary to have these windows long, it will be impossible to make them in proportion as to their breadth, for if in the largest buildings the frames are more than seven, or seven feet and a half up and down, it is to be made it very difficult for one person to perform besides, their weight will occasion their frames to sink. It is also another inconvenience in having the windows too broad, which is that of being proper (hutters > them, in fidi a manner as ... they may fall back close to the piers, for as not ... be inwntm ... whieti open ...

... of the rays of light from reaching the plants. The piers between these windows should be as narrow as possible to support the building, for which reason I should think to have them of stone, or of hard well-burnt bricks; for if they are built with fine rubbed bricks, these are generally so soft, that the piers will require to be made thicker, and the building will be less strong, especially if there are any rooms over the Green-house, which a what I would always advise, as being of great use to keep the frost out in very hard winters. If they are made of stone, I would advise them to be two feet and a half in diameter, worked as columns cylindrical, whereby the rays of the sun will not be taken off, or obstructed by the corners of the piers, which it would be if they were square; but if they are built with bricks, it will be necessary to make them three feet in front, otherwise they will be too weak to support the building; therefore I would also advise to be sloped off towards the inside to admit the sun.

At the back of the Green-house there may be erected a house for mews, and for many other purposes, which will be extremely useful, and will also prevent the frost from entering the house on the back side, so that the wall between these need not be more than two bricks and a half in thickness, whereas were it quite exposed behind, it should be at least three bricks, or three and a half in thickness; and by this contrivance, if you are willing to make a handsome building, and to have a noble room over the Green-house, you may make the room over the mool-house, and carry up the staircase in the back, so as not to be seen in the Green-house, and hereby you may have a room twenty-five or thirty feet in width, and of a proportionable length, and under this staircase there should be a private door into the Green-house, at which the gardener may enter in hard frothy winters, when it will not be safe to open any of the glasses in the front. The floor of the Green-house, which should be laid either with Brecon Squares, Pitched Stone, or broad tiles, according to the fancy of the owner, must be raised two feet above the surface of the ground whereon the house is placed, which in dry ground will be sufficient; but if the situation is moist and springy, and thereby subject to damp, it should be raised at least three feet above the surface, and if the whole is encircled with low brick

... under the floor, it will be of great service in preventing the damp rising in winter, which are often very harmful to the plants, especially in great shades, when the air is often too cold to be admitted into the house, to take off the damp. Under the door, about one foot from the frame, I would advise a line of one foot in width, and two feet deep, to be carried the whole length of the house, which may be continued against the back wall, and carried up to proper benches adjoining to the front house, three inches over each other, by which the drafts may pass off. The simplest may be contrived at one end of the house, and the door at which the fruit is put in, so also the entrance may be contrived so open into the mool-house, so that it may be quite hid from the frost, and be in the day, and the food may be laid in the same shed, whereby it will always be ready for use.

I suppose many people will be surpris'd to see me direct the making of doors under a Green-house, which has been shew'd to be long, and by most people thought of ill consequence, as indeed they have often proved, when under the direction of mistaken managers, who have thought necessarily, whatever the weather was cold to make them tight, but however injurious doors may have been under such management, yet I have frequently look'd after they will be found of very great service; for though perhaps it may happen, that there will be no necessity to make any doors in them for two or three years together, as when the winters prove mild there will not, yet in very hard winters they will be extremely useful to keep out the frost, which cannot be effected any other way, but with great trouble, and difficulty.

Whithersoever of the windows, in front of the Green-house, you should have good frame shutters, which should be made with hinges to fold back, that they may fall back quite close to the piers, that the rays of the sun may not be obstructed thereby. These shutters need not be above six inches and a half thick, or little more when upright, which if made to joint close, will be sufficient to keep out our common frost; and when the weather is so cold as to endanger the freezing in the day, it is but making a bar in the over, which will actually prevent it; and without this contrivance it will be very troublesome, as I have often seen, where gardeners have been oblig'd to and men to shut their windows, or so that the hollow space between the shutters, and the glass work stays, which when closed, is completely sufficient to resist all the frost goes away, which if it should continue very long, the keeping the Green-house close shut up, will prove very injurious to the plants; and as it frequently happens, that we have an hour or two of the sun-shine in the middle of the day, in continued frosts, which is of great service to plants, when they can enjoy the rest thereof through the glasses, in when there is nothing more to do than to open the shutters, which may be performed in a very short time, and as soon shut again when the sun is clouded, the plants may have the benefit thereof whenever it appears; whereas, where there is so much trouble to uncover, and so much to cover again, it would take up the whole time in uncovering and shutting them up; and thereby the advantage of the sun's influence would be lost. Besides, where there is so much trouble required to keep out the frost, it will be a great chance if it be not neglected by the gardener; for if he be not as fond of preserving his plants, and as much in love with them as his master, this advice will be thought too great by him; and if he takes the pains to cover the glasses up with mats, &c. he will not care to take them away again until the weather alters, so that the plants will be shut up close during the whole continuance of the frost.

There are some people who commonly make use of peat filled with charcoal to sit in their Green-house in very severe frosts, but this is very disagreeable to the persons who attend their herbs, and I have sometimes known they have been almost suffocated therewith, and at the same time they are very injurious to the plants.

plmi; nor it. ihc trouble of tending upon ihc fmall and Uie many ha7ardi to which the ufe of ihc firrs U liable, havejuftly brought them into difufe with al fuHul perfons; and a^ ihc contrivances of fiici, am of the fires, arc bucfmail charges in their Sirl erecting, they arc much to be preferred to any other method for warming the air of the lieufr.

The wall on tht back part of the houfe fhould be either laid over with ftucco, or plaStered with mortar, and white-* afhed, for othefwift d* air in fuch ere frail wU penetrate through the walls, clpecial^ when [lie froft in attended wrii a Atoag wind, which is often the cafe in mod Seven; winter*. There arc ferae perfons who arc at [he expence of wainli:umng their Green-houfes, but whn this is done, it is proper to p (after the WJNJ with lime and hair behind ihc nemifcot, to keep out the cold *, and whert they are lined with wainfcot, they fhould be painted whije, as (ioulil the curling, and every part wiihinfiide of the houic *, for :ii reflects the rays of li^ht in • much greater quant:ty than any other colour, and is of iizul lc-vice to plants, rfpecialtj in the winter, when the huic is; pretty much dofctj, and bin a fmal ihare of light i admitted through the windows; for at fuch times I have obferved, that in ibme Green-houfes which have been painted black, or of a dark colour, the plants have call mo! of their leaves.

rWhere gern-lioufes arc built in filch places as will not admit of rootru over then), or the pertbii u unwilling to be at the expence of fi(ch buildings, there muft oe care mktn to keep out tie frofl from entering rough the roof. To prevent which it will be very proper to have a thkknfs of Rccds, Heath, or Fun, laid between the debug and ihc tiles y in the doing of which thicr tuft be tare taken in framing the iita, (b as io fupport thefc, that ihrir weight may not lie upon the ceiling, which might endanger it; for [hde fhould be laid a foot thick at leaf, Mid as ncuih as jrafTible, and Mrneci down well with Saths > prevent their riling, and iht-n covered over with a coat of lime anti hair, which will keep out the air, and alfo prevent mice and other vermin from harbouring i them, which, if left uncovered, they would certainly do. For wane of this precaution there we many Green-houfes • tilt, which will not keep out the froft i hard winters, and thii it many times attributed to the glafies in front admitting the cold, when the fault li in the roof; for where there is only the covering, either of tiles or (laces, over (he deling, every levtre iroB. will penetrate through thrm.

In this Green-houfe you fficuk have truffets, which may be moved out and into the houle, upon which you (hould tix rowi of plunks, fo «s to place the pens or tubs of plants in regular ruwi one above another, whereby the hi^cU of the pianis may be fo fitted, as not to iittrfctc with each other. The lowelt row of plants, which (houJd be the forwrtldt towardi the windows, fhould be placed about fo feet diftance, tli-it there may be a convenient brr ith left next the glafes to walk in front. aiut tie rowsot plants fhould rife gradually from the firft, in fuch a mner inerthatthc heads of the fecond row (houJd be mtireh/ ajvariced above the tirit, the ficms only being hid thereby; and at thr back fide of the houfe there (hould be allowed a fpace of at leaft five feet, -rthcconvnieny of watering the plants, as alfo to admit of a current of air roun J them, that the damp jccafioncii by the perfpiratioii of the plants, may be the better diflipated, which, by Staying pent in too clofely, often occafons i mouldineft i] on ihc tender (ho . and leaves, and when the hflufc L chafe ftup up, this dangerous vapour Li often very destructive to the plants; for which reafon alii- you fhould never crowd them too dole to each other.

Euphorbia, Torch Thistles, and other tender faculent plants, amongst Oranges, Myrtles, and other Evergreen trees; for, by an experiment which [•mde, anno I 750, I found that a Scedon placed in a Green-houfe amottg foch tr; , about daily increafed in weight, aithvHigh then ton BO WIICT givta to is the

whole linif; which increafe of weight WXM o wine to the moid tire imbibe*! from the air, which, bringV--plete with the tinnid vapours perijired from thc other plants, occaioned the lcavei to grow pale, * and in a (hort time they decayed and dropped ol', which I have often obferveri his been thecnie with nun] other fucculent plants when filacai in thofe houfes which were filled with many fort- of Evergreen trees, that required to be frequently watered.

Therefore, to avoid the inconvenience which attends the placing of" rjbuti of wry different natures in die fume houfe, it will be very proper to have two wings added to rhe main Grctn-houfrj which, if ula ed in the manner exprlFctd in the annexed plan, will greatly will (o the beauty of tl iv bnilding, and ilfo collect a greater (hare of heat. In this plan the Green-i. side is rilaredexiftly fronting the Ujuth, and oieut'tlir wings face the fouch-eaft, and the other the fouth-wd; fo that tram the time of the fun's firft ippralMC upon any part of the building, until it goes off a] night, it is conltimly reflected from one part to the other, and the LCIJ winds are all kept off from the front of the main Grten-houfe hereby; and in ilie area of this pbee you may contrive to place many or' the molt tender exotic planes, which will bear to be expufed in rhe fummer feafon -, and in the ipring, before the weather will permit you to fet out the jifonts, the beds and borders or' this area may br full of Aocmoniesj Rinunculufi;s, early Tulips, &c. whi^h will be pajt flowering, and the roots fit to tilke out of the ground by the time you carry out ihc plants, which will render this place very agreeable during thelpringfeafon, when the nowen arc blown: and here you may walk and divert yourRU" in a fuic day, when perhaps the air in TMft oihrt | of the garden will be too cold fur perfons not much usj thereto, u> ufcc pleajun: in being out of the hQufc.

In the center of this area may be contrived a fmall bafon for water, which will be very convenient for watering of plinu, and add much to the boury of the place; bides the water bring thus !; , will be fuffend by the heat which will be reflexd! from the glafes upon ir, whereby it «ll be re;;Jtred much better than raw cold water for thdc tender plants.

The two wings of the building fhould be contrived fo as to maintain plants of differing drgreei of ha: -; , which muft be effected by the firuation and extent trt' the fire-place, and the manner of conducting the flues, a particular account of which will be exhibited under the anid o(STOVES. But I would hen: obfrvr, that the wing facing the lbuth-eaft (hould always be preferred for the wirneft i; , as in :;tian being fuch, as that thr fun, upon its firft appearance in the mom- >ng, flüne* directly itpo: the glafes, which is of great lervtce in warming the i of the houfe, and adding life to the phn[5, alter having been (hut up during the long nights in the winter feafon. Thefe i-irgs being in the draught annexed, allowed fixty feet in length, may be divided in the middle by | of glafe, with glafe-doors to pifs from one t, the other. To each of thciethere flimild be afire place, with flues carried upa^ainft the back wall, through • hich the fluke (j, illdbe mniic'o . , as many tim <i the length of the houfe, as the height will admit of the numb: of flues; for the longer the fluke is in paffing, the more heat will br given [of the houfe, with a lefs quantity oi :uel, which is an article worth confideration, efpctially where fuel ii dear. By this contrivance you may keep fuch pUnti as require lit fime degree of heat in one pin of the houfe, am! hich will liinve in a much left warmth in the oilier part, but thiii will be more fully ratpUincd under the article of STOVES.

The other wing of the houfe, facing the South-weft, may illb be divided in die ti;ne unnce, and flues carried through both parts, which may be ufed according to the feafons, or the particular forts of plants which are placed therein; fo that here will be fuch difflont in the wngv cadi of which truly \x lcript up

to a different degree of warmth, which, together with the Grecn-houli^wiU be fulficient to miiituin plants from all the livcal countries of the world -, and without having ihcfc ll-icial uectrees of warmth, it will tin impofliukto pnHerve the various kind* of plants from the Gcvtta] piirts of A lica and richica, w are annually introduced into die linglifli garden for when i plants from ditiirrent countris are pbted in die lame hfufe, ionic are dellroytJror want of hex, while others are forced and (jioiled by tuo much of it; and this is often the cife in many places, where there ire Urge loMceimii of plants.

In the building thde wings, if there are not flieds running behind them their whole length, the wails lbrjuld not be left than three bricb thick; and if they are more, it will be ljetter, becaufe whic the wait are thin, and cXjvjLd to tlic open air, the cold will [(tetrac them, and when thi Erei arc mule, the heat will come out through the walk, lit that it will require a larger quantity of fuel, to mainuin a proper temperature (J! warmth in the houfe. Tie bick part of thefe boufi : having fluiiig roots, which are covered either with tiles or flanes, houkl illo be lined with Reeds, &c. uniii the evening, as it is lore directed for the Green-li'oufe, which -'li kvclj out iltc told air, and live a great xpence oi fuel j tot the dofer and Ut.c.r thefe lioules arc built, and the gliuuii of the lljpt, as ailb in front, ih' uitters, or Reeds in hard froll, ii • hls fuel • ill U" required to warm the Jioitlbfj ib that (tic firft expeticeiji building their houles properly, will be the dMMPeit, when tlie after-expence of fire is taken into conli- ration.

The ftoping glalles of thefe Louies ihuukl ht made to ilide and take off, fo that they may be drawn down more tr lefc in warm we.ither, to admit air to die plants; and the upright ghflej in front may be lb contrived, as that every ornat may open or be dixin iij>on hinges, and the ftoping glalles may be divided into two; the upper part of each fhould be covered d Co as to be drawn down like a lillie^, ib that citlitr of thrie may be ufed to admit air, in .. greater or l e6 propor- c may be occafion.

But beclde; the (. . . rriioncd, it will be p . . . ic a deep hot-bed iVape. Toth as is enm . . . raife l*g* annual* in the fpring, into which may be let pots of fuch plants as come from Carolina, Virginia, &c. while the plants are too small to plant in the open air, as alfo many other forts from Spain, &c. which require only to be freed from the violence of froft, and fhould have as much free air as poffible in mild weather, which ran IK no better effected than in one of thefe frames. litre the afles may be taken off every day when the fne weather permits, and put on every night, and when the fne weather glalles may be covered with mats, Seras, Peas-bauls, or the like, fo as to prevent the ftill from entering the pots to freeze the roots of the plants, which is all many times urefly deftroy them, though a light froft pinching the leaves or fhoots, very feldom does them much harm; if thefe pots are funk a foot or more, below the furface of the ground, they will be the better, provided the ground is dry, otherwife they fhould be built with bricks, with a curb of wood lwd round on the top of the wall, into which the gutters, the back wall of this frame may be four feet high, and two bricks and a half thick, the front two foot and a half; and the width of the inside of the frame about fix feet, and the length in proportion to the number of ljuAt-to be contained therein.

ST.

GREWIA. Lin. Gen. Plant. 474. This genus of plants was confidered by Dr. Linnæus, who gave it this name in honour of Dr. Grew, F. R. S. who published a curious book of the anatomy of plants.

The Character is, The flower hath a fmall hairy calycium, compofed of five fpear-shaped leaves, which are minorch, and spread open. The flower hath five petals of the fame form, but fmaller, and are inferted at their bafe, where is feated

a fmall yellowifh it iacob petal, teU. is thick and inward, which is ••£[oibt (nrdfT, ti. ii bettb m of ibt petals, term : by remtlijh fmaail the cat: i aiiflj g(rmc...

toritit; :bt gmm afterwarUt a fowf-temena ierry with four tllb, tmb itxkjingi iutiirftM.

This genus of jyltnts is ringed in the feveni fection of Linna:us'i twentieth dais, which indudei thofe pUnu whole iluwers have many ilimiiujoined to the ttyk, forming a colarnn of one body.

The ECIES aif, Guiwilf ipectaiteUs) fullii fulwvatif crenatii. I with mat trtnaud lcirws. Ult: facie arboresca Anhi- upica, r.imulii alaiis, floribi: - purpura [-l libus. Jf. Amrt. l. i

GREWIA (African) foliis ovato-lanct)lakis ft. Grewia with oval ;pcar-/bapid tcayti tohit art/ i the first sort has ixen long preferred in miny curioui garden*, both in England and 11 land, and ii • guied by Dr. Plukenet, by the tide gf Ulniifoliai bor Afric^na bacLifera, floribus purpiireii; but I Dr. Boer hi ave it MI liippoli'd to be one of i other Plum it's American pLin«, intitlcl Gui lousa Ulni folia, lure rofeo; but the diarafters of this do not at all agree with thole of the Guidonia, tla; p tpeciu of this genus being in die royal gal lra at Paris, which i i extremely different from tliis. It grow naturally at the Cape of Good Hope, from whence I liavc received the iveds, which have lucceded in r Chelca garden.

This will grow to ilie height of ten or twelve nuJ has a ftem jnd branches very like thofe of th small-leaved Elm, the Lurk being innooiii, and of th fame colour as that of Elm urticu young; the KAV ire ... to very li • tiofeof die Elm, and fall oB" i winter; the flower* arc produced fingly along th young brandies from the wing* of the leaves, whit are of a bright purple colour i ilicu- the end of July, and continue in Auguft, and the beginning of September, but are never fu- in this country.

This may be propagated from cuttings or I cuttings fhould be taken, i ult, and planted in April, before the buds fwil, for -iicy do no well after, their tinting* ihould be placed in fail] pou filled with loamy earth, and th pots fhould be plunged into a moderate bot-bed ofdooc bark, where, it" thq- are d ly watered, and in die I t of the day fhaded from the fun, they will take good root in ab'j at two months, and may th > be gr; uired TO beai the open air, into which they fhould be removed in Junr, and pbced in i : where they may warr • till autum! when they must be removed into • the grecn-houle-, tlit befi

liefon the buds tjnie out, and ihcfc will be rooted by tin (ame time the iblowin^ year, when they may be cut off from the oJ ptinn, and planted t.n:h into a f- parate pot fill' i with a lott loamy fail.

The bdt time to ; move or transplant this plant is, either in tlic (p ;ure the bu to fell, or in autumn, when the leaves begin to drop; for in fummer, when I c plants *re in faff Uaf, it will be very unproper to difturb them.

In winter thefe plants fhould be planted in • be green-houfe, but they are too tender to live abroad in Eng- land; but they fhould have as much free air as poffible in mild weather, for they only require to be protected from froft, and after their leaves are fallen, they will require very moderate watering; but in fummer they fhould be continually watered three or four times a week in dry weather, and placed in a fhaded fituation, with other hairy green-houfe plants, where they will add to the variety.

The feeds of the fecond fort: were fe-t me by i, mil. Richard, gardner to France at Mar- Sicut.

faller, which Btre brought from Senegal in Africa, by Monf. Admi. in this country with a shrubby bark 6 or fix feet high, lending out many lateral branches, which are covered with a brown hairy bark, and pruned with oval [pear-shaped] leaves, about two inches long, and one inch and a quarter broad in the middle, having fevct:il tranfverfc vcitw from the midrib to the fides, ivhere they are Gwed ; theft are :•aged alternately in the branches, hiving very short foot-ftalks, which continue in verdure through the year; the plants are yo^ngt fo have not as yet Rowel in England, therefore 1 cm give no further account of them.

This fort is tender, fo will not live through the winter in England, which it is placed in 4 warm stove; nor do those plants thrive well, which are placed on (helve; in the dry ivfive; therefore the only way to have them succeed, is to place them in the bark-bed in the tan-stove, where the plants have grown very well for some years. In furnishing these plants require a good share of free air to be admitted to them, and should have water thrice or four times a week in warm weather; but in winter they must be kept very watered, and require to be kept warm,

r. Lin. Gen. 659. Androvy Pear.

The CHARACTERS are,

The capsule is ovate, pale, of one leaf, cut into four equal segments; ikefcujtr has four kernels, the main part of the fruit is inserted into the capsule, and is defrried green when ripe, having nejt?; erxriud ha I

printed title

This genus of plants is ranged in the first order of Linnæus's thirteenth class, entitled Polyantha Vlonogyntia, the flower having many stamens and one style.

We know but one Species of this genus, viz.

- 1. GRONOVIA (Cassia). Lin. Sp. 771. f.chny Pear, Palcaudice non ramosa, foliis longifolius, flore tetrapetalo pallide luteo, fructu ex alboru truncu prodeunte. Sloan. Hist. Jam. 2. p. 122.

This plant grows naturally in Jamaica, and in many other warm parts of America, where it rises with a fruit undivided stem about twenty feet high, having a gray bark, marked with the veins of tin (often leaves, the top of the stem is greenish with leaves near two feet long and six inches broad. The fruit is without rib with five veins, and are of a lucid green; the lower part come out from the stem below the fruit, having no foot-stalk, in some places oval, and in others triangular, each having four thick yellow petals, and a great number of stamens which are fixed to the circumference of the flower; the pistil is included in the capsule, which afterward becomes a large oval fruit, which is a large pointed nut.

The fruit of this tree is by the Spaniards in the West-Indie pickled and sent to old Spain as presents, who eat them as Mango's, and some say the ripe fruit is eaten as a nut.

The fruit is planted by planting of the young, which should be put into the ground (bon ar) the fruit is gathered, and the plants must be constantly kept in the shade (in the stove, otherwise it will not thrive in this country.

GRONOVIA, Mart. Cent. ; Lin. Gen. Plant. 771. The name of this genus was given by the late Dr. Houllin, in honour of Dr. Gronovia, a learned botanist at Leyden.

The CHARACTERS are,

The flower hath a permanent envelope of one leaf, which is colored, and cut into the middle into four parts. It hath five small petals which are fixed to the centre of the capsule, and five hairy stamens the length of the petals, which are inserted into the capsule, and are placed alternately with the petals, terminated by two smaller which are oval. The germen is situated under the flower, fig-

psrtng s Jbnder Jyilt which is longer than the stem, crowned with a obtuse fruit a rousdijh-citmatd fruit a hrg < reuuiii/i feed.

This genus of plants is ranged in the first section of Linnæus's fifth class, entitled Penanthea Monogyntia, which contains those plants whose flowers have five stamens and one style.

We know but one Species of this genus, viz.

- GHONOVU (Sanidru). Mart. Cent. 2. Gronovia (Sanidru) lap pace; parrinca it-ndi. Houll. Catalogue of the Plants of the West-Indies.

This plant was discovered by the late Dr. Houllin at La Vera Cruz, from whence he lent the seeds to the late Mr. Knapp, which have succeeded in many gardens. It is an annual plant, which is like the Cucurbit, which are covered with broad green leaves, in the shape of the Vine; but the leaves are covered with small spines on both sides, which sting like the nettle; the branches have many tendrils or runners, by which they fall themselves to whatever plants they grow near, and will rise to the height of six or eight feet (cut; the flowers are of a yellow colour, and make a great appearance.

This being a very tender plant, must be raised on a hot-bed early in the spring, and afterward placed in the brick-stove, and treated in the same way as the Momordica; with proper management it will produce ripe fruit, but this having neither use or beauty, is rarely cultivated; it is used but in botanic gardens for the sake of variety.

GRO. SSUL. KIA. Km: Meth. Pbiir. 14°, Toutii. Lin. Gen. Pl. 401. Ribes. Lin. Gen. Pl. 401. Gro. SSUL. KIA. Km: Meth. Pbiir. 14°, Toutii.

This genus of plants is ranged in the first order of Linnæus's thirteenth class, entitled Polyantha Vlonogyntia, the flower having many stamens and one style.

We know but one Species of this genus, viz.

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This plant grows naturally in Jamaica, and in many other warm parts of America, where it rises with a fruit undivided stem about twenty feet high, having a gray bark, marked with the veins of tin (often leaves, the top of the stem is greenish with leaves near two feet long and six inches broad. The fruit is without rib with five veins, and are of a lucid green; the lower part come out from the stem below the fruit, having no foot-stalk, in some places oval, and in others triangular, each having four thick yellow petals, and a great number of stamens which are fixed to the circumference of the flower; the pistil is included in the capsule, which afterward becomes a large oval fruit, which is a large pointed nut.

The fruit of this tree is by the Spaniards in the West-Indie pickled and sent to old Spain as presents, who eat them as Mango's, and some say the ripe fruit is eaten as a nut.

The fruit is planted by planting of the young, which should be put into the ground (bon ar) the fruit is gathered, and the plants must be constantly kept in the shade (in the stove, otherwise it will not thrive in this country.

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tree? a:b J>lanted in lines ; for when the fun lincs between the trees, a ii mdt ilu i ... part of the day in u miner, the wall between them -ill be expanded to the ... with the bra...

of these trees more; whrtas in the irregular plantations, the t a berveue, and obtruiff the direct rays of the sun. When a person who is to lay out a garden, is 1b lappy as to mix with large full grown trees upon the spot, they should remain inviolate. ir' poffible v for it will be better to put up with many inconve... than to destroy them, which will ... in age to retrieve; so that nothing butthat oi'uftcudiny the habitations, by being so near as to occasion great 'Jjmsps or obfniffing fine vie-... should tempt the cutting Of' t lie ill ilown.

Mol' of the Groves which have been planted either in England or in [those cclrl'i. and gardens of France, are on a few regular lines of trees; many of which are avrn-Jcs ID the habitation, or lead to the I bttld- ing, or ...; but tilde do ntm appear fu g and, as these which have been made in wood; wlinv the trees have grown accidentally, and I at irregui. distances; and where the trees have large I reading heads, and are left at such a distance, as to permit the Groves to grow under them, then they afford the greatest pleasure: for nothing is more I We liim fine spreading trees with large stems, growing through Groves, especially if the Groves is well kept a good verdure; besides, most of these i lnted Groves have generally a gravel-walk n LJC in a Jlnic line between iJirm,

which greatly extends the light of persons who have true taste; therefore whenever a gravel-walk is absolutely necessary to a < dirriell tinough these Groves, it will be much better to t .ilt it about, according as the trees naturally stand, than to arrange regularly; but dry walks under large trees are not so useful as in open places, because the dropping of the trees will render these walks uilrb alter rjin, for a considerable time. Close Groves have frequently large trees standing in them, but the ground is filled under them ivicii fruite, or under-wood, so that the walks which are made in them are private, and secured from winds, whereby they are rendered agreeable for walking, at such times when the air is too violent or cold for walking in the more exposed parts of the garden. These are often contrived so as to bound th< open Groves, and frequently to hide the walls, or other inclosures of the garden; and when they are properly laid out, with dry walks winding through them, and on the sides of these trees-jimbling shrubs and flowers irregularly planted, they have a charming effect; for have a person may walk in private, sheltered from the inclemency of mild or violent winds, and enjoy the greater sweet of the agreeable kingdom: therefore where it can be admitted, if they are continued round the whole inclosure of the garden, there will be a much greater extent of walk; and these shrubs will appear to the best advantage, when they are not to be pruned.

These close Groves are by the French termed bosquets, from the Italian word bosquino, which signifies a little wood, and in most of the French gardens there are many of them planted; but these are reduced to regular figures, as oval, triangles, squares, and lines; which have neither the beauty or use which those have that are made irregularly, and whose walks are not that way on each side by hedges, which prevents the eye from seeing the squares; and these want the fragrance of the shrubs and flowers, which are the great delight of these private walks: add to this, the keeping of the hedges in good order is attended with a great expence, which is a capital thing to be considered in the making of a garden.

GUAIABARA. See Coccoloba. GUAYACANA. See Dicotyle. GUAYACUM. Plum. Nov. Gen. 16. tab. 17. Lin. Gen. Plant. 162. Lignum Vitæ, or Pockwood.

G U A

The CHARACTERS etc. The flower hath a serene disposition of six leaf, which is six-petaled. It hath six stamens, and six pistils, which are united in the receptacle and spread open, and the small Stamina inserted in the receptacles, terminated by small funnels. The style is long and slender, the ovary is oval and pointed, and the stigma is large and jntdar. The germin afterward becomes a berry which is round; 4. Mill nil ... and deeply furrowed, to be lay on oval hard seed. This genus of plants is ranged in the first section of Linnæus's tenth class, intitle: Decancim Mon which iocludn drole plant: whale lk.ivej-s L^ve ten ibmina jrn or c Iyle.

The SEEDS are, i. G; STACUM (Opuntia) toliolis bijugati tabula. Lin. Sp. Plant. 381. Guajacum with many pair of small lobes. Guajacum flore ceruleo hirsutum, fructu 1 teno. Plum. Nov. Gen. 191. C. Guajacum 1 with blue fruit. ?dffirtf. cud a ...

GUAYACUM (Stacum) foliis multijugatis orbatis. Lin. Sp. Plant. 381. Guajacum with many pair of small lobes. Guajacum flore ceruleo hirsutum, fructu 1 teno. Plum. Nov. Gen. 191. C. Guajacum 1 with blue fruit. ?dffirtf. cud a ...

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The bark and wood of this tree are much of the same nature, only the wood is accounted better; they are used in diet-drinks to purify and cleanse the blood, and to excite sweating; they are esteemed good for the gout and dropsy, the King's evil, and particularly for the French pox. The gum or resin, which is black, flaming, and brittle, and when dissolved, of a greenish white colour, of its aromatic smell, and pungent taste, is famous for cathartic, and a good purge in rheumatic cases, in the quantity of two scruples diluted with the yolk of an egg, and given in a convenient vehicle.

The wood of this tree is so hard as to break the tools in splitting them, so they are seldom cut down for fire-wood, being difficult to burn; but the wood is of great use to the sugar-planners, for making of wheels and craps for the sugar-mills, &c. It is also frequently brought to Europe, and wrought into bowls, and other vessels are made of the wood.

This tree can only be propagated by seeds, which must be procured from the countries where it naturally grows; these must be fresh, where in they will not grow, when they arrive, they should be sown in pots filled with light earth, and plunged into a good herb-bed; if the seeds are good, and the land is warm they are planted in of a proper temperature of heat, the plants will appear in six weeks by one month's time, and in six weeks will grow so big as to be of strength enough more

for transplanting them they should be cut full; rafen uuti.

the fresh ones, as in to preserve these roots as possible, and each planted in separate small pots filled with light earth, and plunged into a new hot-bed of tan, where they must be shaded from the sun till they have taken their root; then they must be treated in the same manner as other tender exotic plants from warm countries, admitting a large quantity of water to them when the weather is warm.

to be frequently refreshed with water in warm weather, but it must be given them with caution, for too much wet will inevitably destroy them. While the plants are young, they may be kept in a frame, but in the autumn they must be removed into the bark-ftovi, Mid plunged into the hot-bed of tan, where they liiukf l'oihihily rma and must be treated in the same manner as other trucker plants, be careful not to give them too much water in the winter, when it is very prejudicial to them, and in fismmr ilicj' fl; should have a large share of free air admitted to die in c the plants will thrive (low growth in their own country, is cannot be expected to msfcegr-

The leaves are many im: all leaves placed along the midrib by pairs, which are rounded and obtuse at their ends, but narrow at their bases; they are of the same form as those of the former kind, but of a darker green colour; the flowers are produced in loose clusters towards the ends of the branches, and are very large and showy.

The flowers are produced in loose clusters towards the ends of the branches, and are very large and showy. The fruit is a large, round, fleshy berry, which is very juicy and sweet.

The fruit is a large, round, fleshy berry, which is very juicy and sweet. It is used in various ways, and is very popular in the islands of the East Indies.

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from whence the seeds were brought to England. It is a native country plant to the height of twenty-five or thirty feet, with a flowing form, covered with a smooth bark, which in the young branches is green, but on the trunk it is of an Ash-colour; the roots grow knotted, and very thick. This, when young, is kneaded and used by the inhabitants in their country as a Liniment, having much the same efficacy; the branches are furnished with decomposed winged leaves; those which are situated at the base have but three leaves, but above the leaves are branched out into several divisions, which are again divided into smaller, having each two or six pair of oval lobes, terminated odd one; they are of a light green, and a little hoary on their under side. The flowers are produced in the bunches; the side of the branches; they are composed of an unequal number of petals, from five to ten; they have ten short stamens surrounding the germs, which afterward turns in a long taper pod, including several angular seeds, covered with a thin membrane. Their taste is like the sweet woodroot.

These five sorts are natives of warm countries, so will not live through the winter in England, unless they are placed in a warm flow, and the pots plunged into the hot-bed. They are propagated by seeds, but those of the two last sorts are so hard, that unless they are soaked two or three days in water before they are put into the ground, or placed under the pots in the hot-bed, they will not come up. The seeds of the first sort (ivtra, dity will remain years in the ground without vegetating; when they do come up, they will be fit to transplant in a fiun time; then they should be each transplanted into a small pot filled with light earth, and plunged into a moderate hooded of tanner bark, shading them till they have taken fresh root; then they must be treated in the same manner as other tender exotic plants, giving them a large share of air in warm weather, and but little water; and when the plants have advanced to be too tall to remain in the frames, they must be removed into the back-stove and plunged into the hot bed, where they will make great progress, provided they have not too much water, especially during the winter season, for these plants are very impatient of moisture in cold weather.

The fourth sort requires the same treatment as those before-mentioned, but the seeds will grow without being steeped in water; and the plants are with difficulty shifted from one pot to another, for their roots are large, fleshy, and have but few fibres, so that unless great care is taken, all the earth will fall away from them, which often causes their stalks to decay almost to the root, and sometimes occasions the loss of the plants. This plant must be watered sparingly at all times, but particularly in the winter season, and will cause them to rot in a short time.

The fifth sort grows naturally in Canada, from whence the plants were brought to Paris, whence it has been long years cultivated; but about fourteen years past, it was first brought to England. This, in the country where it naturally grows, rises with an erect stem to the height of thirty feet or more, dividing into many branches, which are covered with a thin ash-coloured bark very smooth, and furnished with large decomposed winged leaves which are of the oval shape, very smooth and shiny, but are ranged alternate on the middle; these fall off in the autumn, and new ones come out late in the spring.

There are male and female of this sort in different plants, as their bark was at first observed in any of the English gardens; so I can give no farther account of them, but of the first, having never seen any of them. This sort here sinned in the year 1703, and if sown late by seed, it is propagated by cutting off some of the branches, which will send them to their upward, so may be taken from the old root, and placed in pots, where the plant may be multiplied, as by breakers from the root. It requires a warm soil, and the soil.

This plant was first named by Dr. Turner, in the honour of Dr. Gundelshamer, who found it in his travels in company with Dr. Tournefort in the Levant. The CHANACALERIA, It has an upright slender form, composed of many hermaphrodite flowers, which are supported by water. They have but one petal which is white at the bottom, and falls off at the top, where it is joined to the stem, forming a long, thin, fleshy peduncle, terminated by long cylindrical germs. The stem grows in clusters at the bottom of the flower, covered by small leaves, supporting a slender style which is longer than the petals, terminated by two roundish germs. The germs afterward become a roundish fruit, just lodged in the common receptacle, which is annual, and the seeds are separated by a fleshy skin.

This genus of plants is by Tournefort referred to his twelfth class, which contains the herbs with fleshy flowers. Dr. Linnæus ranges it in the fifth section of his nineteenth class, entitled Symplocia Polygamia corymbata, which includes those plants whose flowers have a common empalement, and each of whose flowers are included in another.

We have but one distinct Species of this genus at present in England, viz. GERANIUM. Lin. Sp. Plant. 474. There is no English title to this plant, but there are two varieties of it mentioned by Tournefort, which are supposed to be the same seeds, as they were found growing promiscuously together. These are, 1. GERANIUM (Toursforti) Otophila acutula aculeati folio, floribus incanis purpureis, capsis rotundis lanuginosis obtusis. TOURN. C. 31. *Geranium* with prickly leaf, several leaves, long purple flowers, and a round covered seed, a scarcely a nutlet.

2. GERANIUM (Galabri) Otophila, acutula aculeati folio, capsis pallide. TOURN. C. 31. *Geranium* with a prickly leaf, several leaves, and a smooth seed. This plant was discovered by Dr. Gundelshamer, in company with Tournefort, near Harboun in Armenia, but has since been found growing naturally in several places in the Levant, where it is generally found in dry, rocky land. The stalk of this plant seldom rises more than a foot and a half high; the under leaves are long, narrow, and fringed on their edges, their teeth ending in a spine; the other leaves are broader, which are irregularly curled to the middle, and armed at the points with sharp prickles; the stalk divides upward into several branches, which are armed with leaves of the same form, but are narrower; and each is terminated by a conical head of flowers, resembling those of Fuller's Thistle, being surrounded at the base by a circle of long, narrow, prickly leaves; these heads are composed of many hermaphrodite flowers, which are shut up in the scales, each having an empalement, and a group with five stamens surrounding it; but there are few of the seeds which rises perfectly in each head; in the natural places of its growth. If rain happens at the time when the plants are in flower, the germs rot, which is the case with several other of these plants whose flowers are collected into heads.

These plants are propagated by seed, which should be sown the beginning of March, in a warm dry border of earth, not too rich, in the place where the plants are designed to remain. When the plants come up, they must be carefully cleared from weeds, as they grow large, they should be thinned, leaving the plants which are designed to remain, about two feet distant, that they may have room to grow. After this there is no other culture required, but to keep them clear from weeds, and if the soil should prove severe in winter, the plants should be covered with straw or Peat-bark to protect them, but this covering must be taken off in mild weather; in one year they will produce their flowers, when they will make a fine appearance in a garden; when they come in the pleasy garden. They bloom in May, and the plants lose their bark, and leaves, in autumn, but they soon will be ready for the year.

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These plants are propagated by seed, which should be sown the beginning of March, in a warm dry border of earth, not too rich, in the place where the plants are designed to remain. When the plants come up, they must be carefully cleared from weeds, as they grow large, they should be thinned, leaving the plants which are designed to remain, about two feet distant, that they may have room to grow. After this there is no other culture required, but to keep them clear from weeds, and if the soil should prove severe in winter, the plants should be covered with straw or Peat-bark to protect them, but this covering must be taken off in mild weather; in one year they will produce their flowers, when they will make a fine appearance in a garden; when they come in the pleasy garden. They bloom in May, and the plants lose their bark, and leaves, in autumn, but they soon will be ready for the year.

This plant was discovered by Dr. Gundelshamer, in company with Tournefort, near Harboun in Armenia, but has since been found growing naturally in several places in the Levant, where it is generally found in dry, rocky land. The stalk of this plant seldom rises more than a foot and a half high; the under leaves are long, narrow, and fringed on their edges, their teeth ending in a spine; the other leaves are broader, which are irregularly curled to the middle, and armed at the points with sharp prickles; the stalk divides upward into several branches, which are armed with leaves of the same form, but are narrower; and each is terminated by a conical head of flowers, resembling those of Fuller's Thistle, being surrounded at the base by a circle of long, narrow, prickly leaves; these heads are composed of many hermaphrodite flowers, which are shut up in the scales, each having an empalement, and a group with five stamens surrounding it; but there are few of the seeds which rises perfectly in each head; in the natural places of its growth. If rain happens at the time when the plants are in flower, the germs rot, which is the case with several other of these plants whose flowers are collected into heads.

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GUNDELSHAMER. Tournefort, C. 31. Tab. 166. Lin. Gen. Plant. 474. Hæussl. Vahl. A. Rep. Scind. 1774.

GYPHOPHYLA. Lin. Gen. Plant. 498. We have no English title for this genus.

The CHARACTERS are, The flower has a permanent, angular, bell-shaped envelope, cut into five parts at the top. It hath five oval three parted, white broad open, and two oval shaped divisions, terminated by straight points. In the center is situated a tubular germ, supporting two slender styles, crowned by single stigmas. The perianth afterwards becomes a tubular corolla with six cells, opening with five valves, lined with small roundish seeds.

This genus of plants is ranged in the second section of Linnæus's tenth class, which includes those plants whose flowers have ten the stamens and two styles.

The Species are,

1. GYPHOPHYLA (Agrostoides) foliis multicaulis recurvatis, floribus aggregatis. Lin. Sp. Plant. 498. Gypophylla with several recurved leaves, and flowers gathered in a head. Lychmus Hispanica hali folio multicaulis. Tournef. Inst. R. H. 171. Spanish Lychnis with a Glasswort leaf and many flowers.

2. GYPHOPHYLA (Pulsatilla) foliis lanceolatis linearibus, orbiculatis truncatis, levibus obtusis secundis. Lin. Sp. Plant. 497. Gypophylla with narrow spear-shaped leaves, having three four eight, and smooth orbiculate leaves in clusters. Scapania cruce simpliciter, foliis linearibus ex alio foliolum concavis truncatis. Hort. Cliff. 166. Scapania with a single stalk, very narrow leaves, coming out in clusters from the wings of the stalk.

3. GYPHOPHYLA (Pulsatilla) foliis lanceolatis levibus, cuspidatis distichis, stipulis cordatis campanulatis longioribus. Lin. Sp. Plant. App. 1192. Gypophylla with smooth spear-shaped leaves, stipuled stalks, and the petals longer than the germ, which is bell-shaped.

4. GYPHOPHYLA (Pulsatilla) foliis ovato-lanceolatis, lemiamplexicaulis. Lin. Sp. Plant. 498. Gypophylla with oval spear-shaped leaves, half embracing the stalks. Lychmus Orientalis, leporum folio & facie, flore parvo & multiplo. Tournef. Cor. 41. Eastern Lychnis with the leaf and appearance of Scapania, having many small flowers.

5. GYPHOPHYLA (Pulsatilla) foliis lanceolatis levibus, floribus dichotomis cuspidatis revolutis. Lin. Sp. Plant. 497. Gypophylla with rough spear-shaped leaves, male and female in different parts, and the petals of the flowers recurved. Alina frutescens caryophylli folio, flore parvo albo. Geopb. Shewby's Chelidonium with a Glasswort leaf, and a small white flower.

The first sort grows naturally in the south of Spain, and Italy, upon the mountains. The second hath a perennial root, from which arise many narrow leaves

ending in acute points, which are recurved; the stalks rise about a foot high, garnished with narrower leaves placed opposite, and at some of the joints there are smaller leaves growing from the stalks in clusters; the upper part of the stalk divides into smaller branches, each being terminated by a choice bunch of small white flowers. These appear in July, and are scarce. It is by Innull ovd caput lra, Ijllt with six seeds.

1 EL keond for: i: hJicwliJt like tin: firV, but the leaves are much narrower, and almost three corners. cJi tfev are pitted in du lra, which come out from the side of the stalk; the bunches of the flowers are smaller, and not so closely joined. Tjiii hjtti a perennal root, and grows naturally upon the Helvetian mountains.

The third sort is in j^arciinJronr, from wliarharife smooth spear-shaped leaves in clusters; thieUk are near a foot long, but are purple on the ground, the flowers have a purple corolla, and the stamens much longer than the petals of the flower. This flowers in June and July, and the seeds ripen in autumn.

The fourth sort grows naturally in the Levant, and also in Spain. It hath a thick root, which strikes deep in the ground, leaving up several thick stalks, which rise near two feet high, garnished with several spear-shaped leaves, the upper part of the stalk divides into many smaller branches, which are terminated with loose bunches of small white flowers. Theft O[ti in Julf, and [lrc feeds ripen in autumn.

The fifth sort grows naturally in Siberia and Tartary, the seeds of it writ me from t'crerfmrgh. It hath a perennial root, from which arise many bunching stalks a foot and a half high, garnished with narrow smooth pointed leaves, impeded like thole of Gilliflowers; at the top of the stalks are produced loose clusters of very small white flowers, which appear at the same time with the first sort, and the seeds ripen in the autumn.

These plants have no great use, so are rarely cultivated; but in botanic gardens for the sake of variety.

They are propagated by Tsets, which (should be ibwn in a bed of light earth, and when the plants are fit to remove, they may be transplanted into the garden where they are designed to remain, and will flourish without other culture but to keep them clear from weeds; for the roots will continue to live many years, and produce flowers and seeds.

H.

H I E M

HÆMANTHUS. . . . I . . . I hit est knger-, tnnisntA h •WHT frt^ratt fnumts. 1790. The length of the stem, (HXVMtJiy, single stigma. The perianth afterwards becomes a tubular corolla with six cells, opening with five valves, lined with small roundish seeds. This genus of plants is ranked in the first section of Linnæus's tenth class, included in the family Monogynia, which includes the plants, whole flowers have Ux (Umino) and one style.

The CHARACTERS are, The flower has a permanent envelope of six leaves, which is large, and shaped like an anvil. It hath one oval petal, which is cut into five parts, having a four angular robe, and six pointed divisions, which are inserted in the part.

H M M

hit est knger-, tnnisntA h •WHT frt^ratt fnumts. 1790. The length of the stem, (HXVMtJiy, single stigma. The perianth afterwards becomes a tubular corolla with six cells, opening with five valves, lined with small roundish seeds. This genus of plants is ranked in the first section of Linnæus's tenth class, included in the family Monogynia, which includes the plants, whole flowers have Ux (Umino) and one style.

H J E M

The SP:C:ES arc,

1. **H. ANTHUS** (*jCahtaa*) foliis lingOTiforinibus planb
lexibus. Prod. l. v.1, 4.1, *Blecl-jlm*.
Jbepti, fmsfitf if ova. Hactjuuhuu . H. L.
Jiai. • *-Jfic'jjer, t: Cafe*
2. **HjuANTiit::** (*Carixotui*) !<•

The **ird fort** Im been many year, in several curious gardens in Europe, where a tall Italian flowered. This hath a large bulbous root, from which in cic autumn tunics iut two broad flat leaves, of a fleshy conii' nance, shaped like a tongue, which turn back-ward on each side, and **Ipi** can flat on the ground, **lb** have a **Jingulir** appear-inec all the winter; in the spring these leaves decay, so that from the end of May to the beginning of August, they are destitute of leaves: when **i::** e produce their flowers, it is **Wys** in ilic autumn, just before the new leaves o• out. In the books where this plant is figured, the flowers irt represented growing upon a ltrong upright iboi-ilalk •, but all those which **i** have been in flower, never have more than two or three inches from the built, with a large ufter of bright icd (lower, 10c) >fd in a common **•**: -coloured <mpalern.cn r; these were ruinous, with one petal cut out, each having six long filaments, standing out beyond the petal, ami in the centre appears the germen sitting unAT the flower, supporting a single style, crowned with a stigma. The germen never opens to a seed in England, but decays with the flower, and then the green leaves grow and spread on the Ground.

The **itcon-j)hn** hath a large bulbous root like the **first**, which lends out **thti-c** a four leaves, th: grow a foot long or more; thec are n; - flat like iinfle of the other," but are hollowed like the keel of a i boat, and **L^nd** more **ercA** than **chafe** <f **rhrrjrm'**: fort, but are not quite **lb** bread; the **tloi**.ers of this are like **rf** the **first**, but are ol' a paler red; this is certainly different from the other. I received the roots of this tree •: Van **iiiojen**, **proiefibr** oi **bo**. any at **Ley** fl.

The **ird fort** hath roots cotnpoled of many thick fleshy tubers, nhj(h join at t' top, where they form a head, ouc nf which a rile, a fleshy spotted stalk, like iliac of the dragon, which turns out at the top into fevend ipcs-fur, >ed leaves, which arc waved on their edges. The stalks grow about afoot high, and the **Icav^** arc fix •• eight inches long, and two broad in the middle from the side of ich **IUIL** near the

read, breaks out a strong fleshy fibe **CbUk** about **or eight** inches long, sustaining **ill** the top :: | large clutter of flowers, included in one coin **irrtent** or **coverir.j** which :: **mnviciit**; the flowers are **fhjj** ed like thole of the oilier **forts** **bui** arc of a yellowish red colour. These **ippcar** in May. June, or July, and are succeeded by berries which **cofa** beyond red colour which **n** ripe.

The two full ears are with difficulty propagated in Europe, •• their roots put outoffii •• but sparingly, to the gardens in Holland are supplied with them from the Cape of Good Hope, where they naturally grow, and produce seeds; the plants are too tender to thrive in this country in **n;tr** in the open air, therefore the roots must be planted in pots filled with light sandy earth, and, in the winter, place **! M** a dry place, where, during that season, the leaves **Will** **W** in full vigour, it will make a pretty app: **rjnce**, when intermixed with other plants in the stove, and though they seldom flower here, yet are **;;?'** worthy to a place in every garden where there is **jnveni-** mcy of keeping them. The roots may be **•** taken up when their leaves are decayed, and kept out of the ground till August, when they should be **n - w** pot-

H A, M

iid may **I** remain abroad till the end of Sep-
Bmbefi at which time tl ey may be removed into the
glak-cafe; and during the **•** sun they are growing,
will **rtcjuire** to **L** have frequent waterings, but it must
not be given **•** them in large quantities.
If a border is ma < either against the front of the
green-house, or in a dry place, which may be contrived to
as to be covered with glass in winter, in which the
roots, with i the African Garden's, **Irax's**, Persian
Cyclamens, &c. are planted in the full ground, they
will liowcr nmre constantly, and the foot stalks will
rife much higher than thole kept in pots.

The third fort is also **i** native of the Cape of Good
1 lope, t'mm when it was first brought to Holland,
where it ha: been propagated and dispersed over Eu-
rope; this may be **;**
the bed lin;it; **ibr** :!<• **i** in the spring, before the plants
puccut new folks, w which is also a right time to shift
and new-poc them **•** but as the roots do not multiply
very fast: in ofBets, the h; it may be to propagate them
from feets, which they **•** plentifully in England,
these should be lown soon after they are ripe, in pots
lilhd with light cirrh, and **i** put in the stove till rhe
winter; **il' j** these pots are planted into the tub-bed in
the ha it-stove, in the vacancies between the plants,
the ean'i will be **•** kept warm, and will not dry so fast,
as when they are plioed in a dry stove, so the seeds
will be sooner prepared to vegetate; in the spring the
puts; may be taken out of the stove, and planted into
a tub-bed, which will bring up the plants; these must
have **•** admitted to them every day in mild weather,
tn prt near their drawing up weak; and when they
are fit to remove, they may be each planted in a sepa-
rate small pot filled with light earth, and plunged into
the h it-bed again, to promote their taking new root;
then they must be gradually hardened, and alternated
may be removed into the dry stove, where they should
constantly remain, otherwise the plants will not thrive
and flower in this country. In the winter-season they
must not have too much wi t, for as dense roots are
fi-Oiy and fuccuint, sp tl,<• are apt to rot with
moisture. In the summCT **I** they must have a large
riare nf air in M tern weather, and require to be fre-
quently watered, especially during the time of their
blossoming.

£M ATOXYLUM, Lin. Gen. Plant. 4t7.
Bloodwort], I^igwot, **I** or Camp **ea**slly Wood.

The **CHARACTERS** are,
Thif **tree** hath a **permanet** **rntfalnxcic**, **tshUK** **is cut**
into **five** **equal** **pieces**. **It** **is** **five** **feet** **high** **which**
are **equal**, **and** **larger** **than** **the** **regular**, **and** **the** **end**
flaves **ferme**, **which** **are** **larger** **than** **the** **petals**, **tried**
by **small** **filaments**. **In** **the** **center** **is** **fixated** **an** **oblong**
equal **germen**, **supporting** **a** **single** **style**, **crowned** **by** **a** **thick**
indented **ligula**. **The** **germen** **afterward** **issues** **a** **con-**
spicuous **oblong** **capitulum**, **with** **the** **cell**, **opening** **with** **two**
lobes, **is** **•**;**iKi/i^** (ire **or** **then** **along** **many** **flayed** **jeds**.
This genus of jitonts U i shaped in the first section of
Linnæus's tenth claU. entitled Decaserta Managge-
nia, which incluJes thofe pi into whole flowers have
ten stamens and one style.

We has cl...
HÆMATOXYLUM (*Campechana*), Hort. Cliff. 161.
Linæus, *Systema Campechianum*, species quod-
dam. SloaruCnt, Jam 113. *Campechy Wood*.

This tree grows naturally in the Bay of Campechy,
at Honduras, and other parts of the Spanish West-
Indies, where it rises from six feet to twenty-four feet
hij'h. The i:ms are generally crooked, and very
deiorntd, **jtiui** are seldom thicker than a man's thigh.
The branches come out on every side; they are
crooked, irregular, and armed with thorns sharp,
garnished with winged leaves, composed of three or
four i air of lobes, which are obtuse, and indented at
the to]. The flowers come out in a racemus from the
wings of the leaves, standing erect; they are of a
pale yellowish colour, with a purple empalement,
and **1 -** succeeded by flat oblong pods, each containing
two or three kidney-shaped seeds.

The wood of this tree is brought to Europe, where it is used for cycling pumps, and for the best blacks, as it is a valuable commodity. The Spaniards, who claim a right to the possession of this plant, where it naturally grows, are for excluding all other countries from carrying of the wood, which has occasioned many disputes with their neighbours, but particularly with the English; this it is to be hoped will soon be over, as there are some of the planters in Jamaica, and the other Islands in America, belonging to the crown of Great-Britain, who have propagated this tree in its great plenty, so as to have hopes of supplying the demand for this wood in Britain in a very few years; for the trees grow so fast there, as to be fit for use in ten or twelve years after they are first planted, and as they produce great plenty of seeds in the British colonies, so that seeds scattering about, the plants come up in all the neighbouring lands, therefore 'till faun belik, an indigenous plant of the country.

Some of the planters in Jamaica have inclosed their estates with hedges formed of these trees, which are very strong and durable, but where the hedges are cut, it will greatly retard the growth of the trees, so that those who propose to make an advantage by the propagation of this wood, should sow the seeds upon beams of wood, which may be used for growing of sugar, and permit all their branches to remain, wnjch

It will be of great use in augmenting the bulk of these Jtoms; and if, while die JILLs are young, they are kept free from weeds, &c. it will be of great advantage in promoting their growth. I have been informed by some of the planters in Jamaica, that they have had some plants of this sort upon their estates, so that it requires but few seeds to raise a supply of this wood, sufficient to answer all the demands for it.

This plant is preserved in some curious gardens in England, for the sake of variety. The seeds are frequently brought from America, which, if fresh, readily grow when sown upon a good barbed seed; and if the plants are kept in a moderate heat, they will grow to be upward of a foot high the same year, and while the plants are young, they are generally well furnished with leaves, but afterwards they make but little progress, and are frequently but thinly clothed with leaves. These plants are very

ly kriji in 'e bark-th...; where, if they are kept watered, and the roots are kept in a good degree of moisture, the plants may be preserved well. Inhere are some of the plants now in the garden, which are of the first J-gji, and Mr Inwiig a

HALESTIA. Lin. Gen. Plant. 596.

The C... The flower hath a small permanent envelope of one leaf, inclosed in four parts; it hath a bell-shaped feeding funnel of one part, divided at the throat into four lobes, and from thence is formed a narrow tube, which is pink, terminated by a long oval funnel; the corolla is situated below, is white, supporting a smaller style longer than the petal, crowned by a single stigma; the germen afterwards becomes a thick nut, surrounded at both ends, having four angles, with two cells, inclosing a single seed in each. This genus of plants is ranged in the first section of Linnæus's eleventh class, inclosed Diocleandria Monogynia, the flower having twelve stamens and one style.

- The SPECIES are,
- 1. **HALESTIA (Tropæura)** foliis lanceolatis ovatis, petiolis glaberrimis. Lin. Sp. 654. *Halestia* with oval leaf-shaped leaves, whose petioles are glabrous. Præter Petioli foliis serratis, floribus monopetalis albis campaniformibus, fructu triloculari. Cassin. Hist. Carol. i. p. 224.
- 2. **Halestia (Diptera)** foliis ovatis, petiolis lobatis. Lin. Sp. 656. *Halestia* with oval leaves having lobed petioles.

fmfulr. The seeds of plants received by the learned and reverend Doctor Hales, of Toddington, near Hampton Court.

Both the trees grow naturally in both Carolina; the first on the banks of the river, where it frequently comes up with roots three fathoms from the shore, which rise from thence to twenty feet high, sending out branches toward their tops, furnished with oval lance-shaped leaves, which in the distance the flowers are produced on the sides of the branches in clusters, from one or three to six or seven in each; they are bell-shaped, hanging downwards of one period, when, when in inclosed in four parts at the top, they are surrounded by oblong nuts, having four wings and four cells, each containing one oblong seed.

The second tree hath much resemblance to the first, the leaves are oval, and the flowers are smooth; the fruit has but two cells.

These plants are propagated by seeds, when they can be procured fresh from the places of their natural growth. They should be sown in pots as soon as the seeds arrive, plunging the pots into the ground, in a situation where they may have only the morning sun. The seeds often require a year in the ground, therefore the earth in the pots should not be disturbed, until there is no probability of the seed growing. When the plants appear, they should be increased from the fan, and frequently, but not too plentifully watered, for while the plants are young, much moisture will rot their stamens. The following autumn, the pots should be placed in a common frame, where they may enjoy the sun in a mild weather, and be increased from root. The spring following, before the plants begin to shoot, they should be each put into a separate small pot, plunging them in a frame, where they should be shaded from sun, and in the summer placed in a shady situation, screening them from the sun, and the spring following they may be removed out of the pots, and placed in the full ground where they are designed to remain.

HALICACABUM. See **PEREGRINA.**
HALICACABUS PEREGRINA. See **CALYPTROGYNUS.**
HALIMUS. See **AMARANTUS.**
HALLERIA. Lin. Gen. Plant. 679. Caprifoliaceæ. Benth. Bot. Ind. alt. 2. p. 328. *Artemisia* by *Halleriæ*. The CHARACTER is,

The flower hath a permanent envelope of one leaf, which is cut into three parts at the top, the upper part being much broader than the other. It hath one petal of the growing kind. The bottom of the tube is rounded. The lobes are fleshy and reflexed, the bract is oval and oblique, cut into four segments, the upper being longer than the other, and is blunt, with one nectary at the tip; the tube falls out in four parts, and remains, the lower is very fast and white. It hath four stamens, which are long, and have longer than the other, terminated by two funnels. In the bottom of the tube is situated an oval germen, with a style longer than the funnels, terminated by a single stigma. The germen afterwards becomes a roundish berry with two cells, each containing one hard seed. This genus of plants is ranged in the second section of Linnæus's fourth class, inclosed Dielyniæ Angiosperma, which includes the plants with a flower, which have two long and two shorter stamens, and the seeds are inclosed in a capsule.

We have but one Species of this genus, viz. **HALLERIA (Lactis).** Hort. Cliff. 212. This plant has its name from Dr. Haller, who was professor of botany at Göttingen, in Germany. *Capsellidium Africanum* foliis pruinosis leviter serratis, flore subsericeo, laccis nigris. Benth. Bot. Ind. alt. 2. p. 328. *Artemisia* by *Halleriæ*, with a broad leaf finely serrated, a very red flower, and a thick berry.

The English name which I have here added, has been given to this plant by some gardeners, who observed that the shape of the flower had some resemblance to that of the Upright, or Fly Honey-suckle, and for want of an English name gave this to it; or they might take it from the Latin name, by which it was called by Dr. Boerhaave, who made it a species of *Huesyfuckle*.

This

This plant grows to the height of six or eight feet, having a woody stem, which is well furnished with brandies-, the hives oval faved L-JVC^, which are placed opposite, and commuc gfea through the year; the Bowers come out finally, and at- (if a red colour, but, being intermixed with the leaves, are not Lien untr ft they are looked after, for tin. eringty in the branches; these come out in June, s> the seeds ripen in September; the leaves are green in winter, in tin: plants make a variety in the given locale during that localbn.

It may be propagated by cuttings, which, if planted in pots filled with light earth in June, and plunged into a gentle hot-bed, will take root; the plants may be exposed in the open air, and will reinjoin: plenty of water in that season; in winter they will be housed with Myrtles, and odior hardy e*otk plants, which require a large space of air in mild weather.

H A M A M L [S. Lin. Gen. Plant, 1531 Tribpus, Minch. Gen. 21. The White Head.

The CiARAuri&3 arc, ' TI mail airdfnixile in dijtriat fi. fifteen ':-jt aft,.- in 'ebitb srtfatar flowers; tbtfs • c'uib art •rtfialtr than the fr boned rejUx;d mid. Thefaatufacr? in a few-leaved tree.

in 'ebitb srtfatar flowers; tbtfs • an. 1, tri/i i l J leisured; tbtj i n:- Huh, wtirh are rftxtid, and fmr vtBurinms adhering 1 the fetels. fa the center isfitt-: /B,fnpp\$rtüttg i'jis ftfiis, trevntid ly beaded ftigwiai. be graa aftenasrd bu\$mti an <

tichKrum, having ;tw etBs, taib (ml&imng one hard, f,j'tasGihjed.

This genus of plants is ranged in the first order of Linnaeus's sixth class, entitled Pentandria Monogynia, the flowers five Linn:: five (bunil it u named in honour of Monsieur de Hamelin Moncaux, member of the Academy of Sciences at Paris, and fellow of the Royal Society of London; a gentleman weU known to the learned, by the many useful books he has published.

We know but one SPECIES of this genus, viz. HAMMATA (Palm) racemosa erect. Jacq. Amer. t. HAMMATA (Palm) racemosa erect. Jacq. Amer.

HAIUWILIS (Lycium). Flac. Vir g. 139. 11- Hazel Hüzel Pilliifij Virginia nigr, uuryli fonia. luk. Aim. ig6. BUik I'irginia PifioMa will- Htzel hazel.

This plant grows naturally in North America, from the latitude of the Woods have been brought into Europe, and many of the plants have been raised in the English gardens, where they are propagated by cuttings, which are sold by the nursery gardeners. It hath a woody stem, from two to three feet high, sending out many slender branches, lined with oval leaves, indented in their edges, having great resemblance to those of the Nut, placed alternately on the branches, the bark is very in aUUm, and when the planware deftimt of leaves, the flowers come out in clusters from the joints of the branches, and sometimes appear the latter end of October, and often not till December, but are not succeeded by seeds in this country.

As the flowers of this shrub make very little appearance, it is only preferred in the gardens of the curious, more for the sake of its beauty.

This plant, propagated by cuttings, in the autumn, will take root in one year, provided they are duly watered in a dry weath; but many of the plants which are in the gardens, have been produced from seeds when carried from America; their seeds always remain a whole year in the ground, so they should be sown in pots, which may be plunged into the ground in the shady part of the garden, where they may remain all the summer, and require no other care but to keep the pots clean from weeds, and in very dry weather to water them now and then; in winter the pots may be removed to a warm place, and plunged into the ground under a warm hedge; and if the winter should prove very severe, they should have some light covering thrown over the pots, which will secure the seeds from being destroyed.

In the spring it will come up, therefore at the first growth, the pots may be removed where they may have the morning sun till eleven o'clock, and if they are duly watered in dry weather, the plants will have made good progress by autumn, when they should be transplanted, either into small pots, or in a nursery bed, where in one, or at most two years time, they will be strong enough to plant where they are designed to remain; they love a moist soil, and a shady place.

HAMELLIA. Lin. Gen. 231. X h C c T t t j arc.

The appearance of the former is small, greenish, and cut into five acute segments, the former is of one piece, having a long stalk, which when it is cut into five acute points, it has five small flowers inserted in the middle of the stalk, terminated by linear bracts the length of the stalk, and an oval germ, which lower part is tubular, supporting a slender style the length of the corolla, crowned by an ovate linear stigma: the former afterwards bears an oval serrated berry, with five cells, filled with small cylindrical seeds.

This genus of plants is ranged in the first order of Linnaeus's sixth class, entitled Pentandria Monogynia, the flowers five Linn:: five (bunil it u named in honour of Monsieur de Hamelin Moncaux, member of the Academy of Sciences at Paris, and fellow of the Royal Society of London; a gentleman weU known to the learned, by the many useful books he has published.

We know but one SPECIES of this genus, viz. HAMMATA (Palm) racemosa erect. Jacq. Amer. t. HAMMATA (Palm) racemosa erect. Jacq. Amer.

71. iismr&u with ertB ffikt: of flowers.

This plant grows naturally in America, and is found in the warm parts of America; it is brought from Paris, which were brought from Senegal by Mr. Adairton, with the title of Mortaria on the paper; and before that, I received a drawing of the plant in flower, from the late Dr. Houlston, who found it growing naturally in America, which it has since been found growing by Mr. Jacquin, who has figured it. It rises with a ligneous stalk, five or six feet high, sending out several erect branches toward the top, garnished with oval woody leaves, placed by threes round the branches, having red fleshy stalks; the flowers terminate in slender spikes; the bark is very in aUUm, and cut at their brims into live linear segments, standing erect, of a bright red colour; AKC are not succeeded by seeds in England.

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As the seeds of this plant are brought to England, the plant may be propagated by cuttings, which if planted in small pots, plunged into a moderate hot-bed, and closely covered with either bell-glasses, will put out roots in about six weeks, and may then be treated in the same way as the seedling plants.

HAK M A L A. See FICUS. S E L Q U I S T I A. Lin. Gen. 241.

The CHARACTER is, It is an umbelliferous plant, whose marginal lobes are pointed at the spreading rays, they are for the most part double, the great: reticular lac. may. four leafly

leaves, the proper employment is very small, and both five
subulata, the former which is long cultivated; the latter
flowers are fruitful, but those in the disk are barren; they
have five petals, and five slender filaments longer than the
petals, terminated by exserted filaments: the undivided
germen is situated under the flower, supporting two slender
stamens, crowned by slender filaments; the germen
afterward becomes an orbicular fruit, composed of two seeds
having borders.

This genus of plants is ranged in the second or
third of Linnæus's fifth class, entitled *Peucedana*
Digyna, the flowers having five stamens and two
styles.

Its name is after Mr. Jussieu, who was the
inventor of the name.

- 1. *HEDERA HELIOPHILA* (Egyptiana). *Ann. Acad. Sci. Paris*,
1790. *Egyptian Hedera*. *Palinacæ Orientalis*, in
his elegantes insecta. *Bull. Cent.* 3. p. 16.

This plant is best preserved in England;
when the plants come up early in the spring, they
do not perfect their seeds the same year; and those
plants which sown in the autumn, seldom live through
the winter; therefore the best method to procure
good seed is to sow the seeds in pots
about the middle of August, placing the pots
where they may have the morning sun only, being
careful to water them daily, and as weeds will come
up in the pots, to take them out, and where the
plants are too dense, thin them; in October to
move the pots into a common frame, where they
may enjoy the free air in mild weather, but be screened
from frost: in the spring following, if the plants are
of the size of the pots, and planted in the
first ground, they will flower in June, and the seeds
will ripen in August.

HAWTHORN. See *MAYRUS*.

HAZEL. See *CORYLUS*.

HEDERA. *Linn. Gen. Plant.* 249. *Tournef. I. nil.*
R. H. 612, tab. 314. The Ivy-leaf.

The *Hedera* is a perennial, having a
stem which is woody in the lower parts. The
leaves are cut into five parts, and its roots are
flexible and
foetid

The germen is situated under the flower,
supporting a slender style, crowned by a single stigma. The
germen afterward becomes a globular berry with one cell,
encompassed by five or six large seeds, united by one stalk, and
situated in the disk.

This genus of plants is ranged in the fifth class of
Linnæus's fifth class, which includes those plants
whose flowers have five stamens and two or three styles.

THE SPERMATOPHYTES.

- 1. *HEDERA* (*Hedera*) *folia ovata lobulata.* *Flon. Lapp.*
95. *Ivy with oval lobed leaves.* *Hedera helix.*

- C. B. P. 305. *The Ivy.* and the *Hedera* common
Ivy. *J. B. 3. 141. Great common Ivy.*

- 2. *HEDERA* (*Convolvulus*) *folia ovata, ovata, serrata.*
Hort. Cliff. 54. *Ivy with leaves composed of five
lobes, which are round.* *Vallis cantuariensis* *Canadiana*
in Acadia. *Tournef. I. nil.* 614. *Climbing Convolvulus*
with five lobes, commonly called Virginia Creeper.

The first sort grows naturally in most parts of England,
where it meets with any neighbouring support. The
stalks will climb to it, and rise to a very great height,
sending out roots on every side, which get into the
joints of walls, or the bark of trees, and thereby are
supported; so that if there is no support near, the stalks
trail upon the ground, and when root all their length,
so that they only cover the surface, and are difficult
to eradicate; for when any small parts of the
stalks are left, they will soon spread and multiply.
While there are fixed to any support, or trail upon
the ground, their stalks are tender and flexible; but
when they have reached to the top of their support,
they become and become woody, turning themselves

into large woody stalks, and their leaves are larger,
more of an oval shape, and not divided into lobes like
the lower leaves, that is, both a different appearance,
which has occasioned some to take them for distinct
species.

In the latter part of the last century, when it was the
fashion to fill gardens with all sorts of flowered
greenery, there were many of these plants raised into
round heads, which were clipped into balls, or in form
of a cone, and as they were so easily injured by
weather, and would grow in any soil, so they
were then much esteemed; but since that
taste has been exploded, these plants are seldom
admitted into gardens, but to cover walls, or run over
grates, &c. for which purpose there is no plant so
well adapted.

There are two varieties of this, one with silver-striped
leaves, and the other with yellowish leaves on the top
of the branches; these are preserved in some gardens
for the sake of variety.

These plants are easily propagated by their trailing
branches, which when roots come their whole length,
which branches being cut off, and planted, will grow
up almost any soil or inclosure, and may be trained up
to them, or suffered to remain as climbers, to cover
walls, gates, &c.

They may also be propagated by seeds, which should
be sown soon after they are ripe, which is in the
beginning of April; if these are kept moist and covered,
they will grow the same spring, otherwise they will
remain a year in the ground; therefore few persons
trouble themselves to propagate the plants in this way,
the other being much more expeditious.

While the berries of this plant are on the
ground or upon walls, or other supports, they do
not produce any flowers, which has occasioned its
being called *fruitless*, or *barren Ivy*; but when the branches
get above their supports, they produce flowers at the
end of every shoot; these appear in September, and
are succeeded by berries, which turn black before
they are ripe, and are formed into round bunches,
which are called *myriads*, and from these the
essence of corymbin, is frequently used by botanists, is
taken.

The leaves of this plant are frequently applied to
wounds to keep them cool, and free from inflammation;
they are also used for curing of scabs, sores, and
scald heads. Mr. Jussieu, in his *Usefulness of Experi-
mental Philosophy*, commends a large dose of the
full ripe berries, as a remedy against the jaundice;
but Schroder says, they purge without and down-
ward. The gum of Ivy is viscid, but is recom-
mended by some to take spots and freckles out of the
face.

There is another species of Ivy,
which is called *Hedera Ponicæ*, by *Calpurnius*
Plinius, this grows in many of the islands of the
Archipelago, and produces yellow berries; but as I have not seen
this plant, I cannot determine if it is a distinct
species. Dr. Linnæus supplies it to be only a variety,
though he has not seen the plant; but *Tournefort*,
who gathered it in the Levant, puts it down as a dis-
tinct sort.

The second sort grows naturally in all the northern
parts of America; it was first brought to Europe
from Canada, and has been long cultivated in the
English gardens, chiefly to plant against walls, or
high buildings to cover them, which these plants will
do in a short time, for they will shoot almost twenty
feet high in one year, and will creep up to the top
of the highest building; but in the leaves fall off in
autumn, the plants make but an indifferent appear-
ance in winter, and as it is left before they come out
in the spring, they are somewhat obscured, unless it
is the full situation, where better views will not
show; for the plants will thrive in the middle of London,
and is not injured by smoke, or the cleanness of the
air, in any very proper for such situations. The stalks
of these plants put out roots, which fasten themselves

into the joint of the walk, whereby they are supported.

This may be propagated by cuttings, which if planted in KUtumn on a fhady border, will tak.; root, and by the following autumn will be 61 to plint where they are deligned to remain.

HEDE RA TERRESTRIS. See G L ECHOMA.

HEDGES. Hedges are either planted to make fences round incloiuures, or to pan off and divide the

In the feveral paru of l garden : when iliry jrc defined as outward fences, they are planted either with Hawthum, Crate, or lsl at k Thorn, wml.i is the ^{Soe} but thofe Hedges which are planted in gardens, either ro furround wildermeli cjuarere, or to fcrce the other parts of a garden from fight, r.re planted with various lons of plants, according ro the fancy of the owrtfot fone preferring ever-green Hedges, in whkb cafe th: Holly is belt, next the Vcw, then Laurel, Laurulbnui, i^htllyrca, &c. othera, who mike choice of the deciduous plants, prefer the Beach and Horn-bean Elm, or the Alder, to any other ; I fjiall I ^{English} l ledges which are planted for enitfidc fences, and dterward briefly touch on the other.

Thefe Hedfjts are moft commonly made of Quick, yet it will be proper, before planting, 10 confider the nature of the land, and what forts of plants will thrive bell in that foil, whether it be clay, gravel, fand, & c. li k c wife wh at: r, w h enve the pilan ts »re to be taken; for if the lsd they are taken from 11 much bettei ^{land that in which they} .wt to be planted, it u ill be more difficult to get them t J grow. As for the 6 •, the lets ought to be about the breadth of a goofe tjuill, and ^{cut within about four or five inches of the ground it.} they fhould be - f^{an} tik. iVnoth, and well rooted. Thole plants which arc ^{cut} in the nurfery, are to be preferred to all others, and if railed on a lpot near the place, it will be beft.

Secondly, If the Hedge has a ditch, it fhould be made fe feet wide ar tTp, ar,d one foot anda hilt at bottom, and three (CL) deep, that each fide may have a proper fpace ; i>r when the bank* an: made Eooup-right, they are > TV fubjeti to fall down after every froft¹ or ha(d tain ^{belides} if-the ditdici are made narrower, they are loon difked tip in autumn by the filling leaves, and the growth of weeds, nor are they a lifflitient fence to the Hedge againli cattle, where they are narrower

Thirdly, If the bank be without a ditch, the feu fhould be let ?n two n ^{ways}, almod perpendicular, at the didance of a foot from each other, in the tjuin-cunx order, fo thai in effect they will be but fix inches afunder.

Fourthly, The turf is to be hi I wjh the Grafs fide downwards, on that fide of the ilich the hank is de- ^{signed} to be made, and fbmc of the bftt mould Tioud be laid upon t^ to bed the Qiick \ then the Quirk ii w be planted upon it a foot afunder, fo that the ends of the Qitkk miy lbnd upright.

Fifth • •. When III- firil row of Qiick is planted, it muft be covmrd with mould, and the mrt laid upon it a» Iefore, fo ^{the} bank is a foot high, you may plant another row of fern againft the fpace of the lower t^uick, am! covet ilicm al the ^{water} ma done •, and the bank is to be topped with the bot- ^{tom} om of the ditch, and a dry, or etc ^{of} Hedge had on the other fide, to defend the under plantation from the eattk.

in miking of thefe dea;! l ^{edges}, the c fhould be ft-kes driven into the kwie cuth, at about tv ^{feet} and a half dufmcc, ib low it* to reich the iirn ^{ground}

Six iSakn are accountfti the beft, and Bkck Thorn and Sallow ^{the next}, then let the small bushes be Uk! at bottom, b ^{ut} for the thick, for that will result the bullie* • •, but the upper part of the Hedge ^{ought} ht hid v, ^{with long bushes} • J bind ilir ^{with} in with, by incinreivii ^{the} fact.

And, in order to ruder the Hedge yet ftrong;- you

m?y edder it (as it is called,) i. c. bind the top i of the iljkti in with iome fonsill lona; poles, or ilicka u. each Bdej and when the eddcting i; riirilicd, drii'ctheftakei anew, beetle the living of the Hedge andeddering is apt to IOECD the itakes.

The ^{kiick} mult be confantly kept weedcJ, and fe- cure it from being crypjwd by the eanlc, and in hc- braary it will be proper to tut it within an inch of the gnannd, if ir w^ not done before; which \v.Λ caoit it to ihrjot ItrOD", and hdp it tnuich in the growth.

When a Hedge is w al .lit eight or nine yeau growth, it w II be proper to pUth it ; the beft time for thii woik ii eiier in Oftober or February.

When a Hedge ls j;rown old, i. e. of livjut twenty or thirty ye;r; growth, and ilicrt arc in it old itiiiiis ss well :is new (hotiu, the oil! flitbi fhould he cu: Gop- ing off" within two or tlitci- inches of the ground, and thebcftandlonpct of the middle ficc footld be left ro luy down; and lome of the ftrongeft, at thr height of five or fix ^{feet}, aLcortUng as you (fcign the hi- ^{ght} of the Hedge to he, may he leti to fcrvc infbra^d of itakes, and frcjliitakcs fhould be jrut in thofe placeJ where t jcy arc wanting; the lledgi; Jhnuld be then thinned, fo ±4 to leave on the (tubs only fuch ihuowas arc dcigned to be of ule, [hat there may be room left to put a fpade in between them; the ditch alit> fhould be cleanfcd, and each fide of the flopei kept as in a new ditch : and where the earth is wafhed from the roow of the Quid. ^{or a hollow}, fae it me v with fo mUk of the fnl fpit of earth that is dug out of the ditch, as there h occalton for, and lay what is due out at the fecond ; i., on the top of the bank; for if it be hid on ihe [we, or face of the bank, ii will flip :ro the ditch again when w;t comes, and allb take a great dral at the bmk along with it.

In pUfhing Quicks, ihtre ore wo extremes to be avoided ; the firft ii, laying it too low and too thick; becaufe it r. ^{akes} the fap run all into the Dioots, and leases the j. ^{ishes} without nourifh: ;nt, which, with thet!; ^{lines} of l lledge, kills them.

Secondly, It muft not be bid too high, becaufe thit ^{draws} all the fap into the pi allies, and fo caoict but fmall fhoots at the bottom, and nukes the Hedge fo thin, that it will ^{be} hinder the caftc from going through, nor irom cropping of IL

When the (hoot ^{thats} delign'd to be plallid wheni, [jj]v'e it a fmall cut with a bill, half tin iugh, lijjing i little downwards, and then weave it about (he Hakes; and wlien the whole is fjjiiftied, trim off the fmall fu- jwrluotu branches that fraggte too far out on both fides of the Hedge.

Tt the futu are very old, CAi them quite down, and feure them with good dead Hedges on both fide*, till the young (hoots sic got up tall enough to jib: ^{and} plant j:cw feu in the void ^{facet}.

In making a Heilgt-, if il be fet with Crab -Stocks, it will be proper to leave one tranding uncut up ;t rvny thiny or forty feet, if thr irroi: :! on both fide* of the Hedge be your own ; ivhich being done, they may be fo ordered, by pruning or llaking, diat one may lean inro one ground, and the other into ano- ther, ^{iiiC}.

Tiitfe Rocks (houd be pruned up every year, till they are broiightout nf the ics-h of the cauk, mid then they may be (fritted with the Red Streak, Gennci- mo;l, or what other kind of cyder Apple you pleafe.

if the ftoirki be of Apnk kernel?, rhrymaythnd un- crafted, for ^{an} • of : : n will yield ver; ¹ (jooi! <cyder Jruk; butt ^{then} back i i k^ as an: nut grafted, will be longer before they bear; and afo whenyju do a ^{aff}, you may be certain of your kind ; but if you Eni a very natural (lock, ichii ^{by} leaf, fhoot, and bud, appcii!¹ likely, ^{to} j ma irf it, and fn you nuy have a ne« ^{the} fruit; and if you :a not bke it, you msjf graft it when you pleafe.

As for the rest of ^{the} J ledge, when it his (hot four or five yeau, you may lay it to make a ftrou for the colag' of which, take the following dire- ction:

H E D

Firstly, At every laying to lay Jown tiine old plants ; br, if the Hedge be thin, you ought to dig, but they must befoUtd, .15 to point > with their ends to the ditch side tif the I^mik, the ends bein;; kejit low on thr bank -, by being b orders], they -vil the better thkkn the bottom of the Hedge, and keep up the earth of the bank.

Secondly, To heighten the b4nk ev*ry time yo.i lay tarth on it, loss to cover the layers, all butth- ihii earth will very rnddi help the i^uic'; ; and by heightening the banks, anddrepning the ditch, you will render the fence ihc better.

Thirdly, N<t to cut cb^l plaites too much, but iuft fo as they may bend down weil -, nor to by them too upright, as looz, tio, bit lot. (p will the bet.tr break out at several plaites, and not run fo much to the end% as it will when they lie too tnuth upon the dupe.

If you have much wood to fpare, you may turupgr^t part of thofe that grow near ihcditdi. but then you ought to hang rhe tank with bufhej, ta prevent caide tram croppijj then) the firat year j thefe will (hoot fitonfr, fee in the Hedge, Lp the ban!:

thicken the bottom of the R. Fourthly, Take < to lay the i -dge pretty thick, and turn the beard on thr; ditch fide •; but yv\ no) let the riardhang uncut (thou. ithtrfirft making), but you must cut off all the

fraying, four or five foot of the Hedge on both lides, which will caule it to fit loot ftmng it i hefe places, and make the Hdgrf n

Fifthly, If the hank be h: low, that it nuy jull ferve lor a fence the thirt year, for it will looz •) -M highCT; and the lower the Hedge is to idc, the fillvr ihe Quick will gro

..il! be the thicker st the bottom -, taken to preferv! Sixthly, H you <hii'ji: new lay it once in fourteen or fifteen years, L coMUnrlvrootou; Elder, Tr^ellers joy (whch fane call **Bun-binc**), **Briony**, 8rc. 4sd **Atnoifci-e** So m'ny high ftw dirf., « P ° U ^ n ., theu mmh one 3 the brir; alfo no dead wood is n

.- bottom of the Hd g e s for * << . I =hc i^ukk, but if there be . gap, <he dead lkd& lould de at a dit

^ r^uemly pUn<d fe H (tom thekemel . ktobeprel ... rized from!: rochs of all forts of Apples without difiinctionib. A

never IW e fo strong as thofe of the Apples. It may be kept within the proper compafs of ledge s generally more thorn up i them, guarded against cattle, See ths

inorteqUJ than thofe which are raifed from the seeds of Apples, for thofe always pro- plants which differ from each other of growth, as much as in the fire and flavour of their fruit; fo that Hedges made of thofe vHUnotippi

to Thorn So the Crab will grow much bigger than thofe of the White Thorn, fo that the Hedge will not be of equal ground; which is not near fo beautiful as ufeftil, as when the plants of a Hedge keep pace in

the growth. or Sloe, is alfo frequently planted for Hedges, and is a ftrong durable plant for that pur- pofe, rfyt e • by as it is ftrongly armed with thorns, that can le seldom care to leaze upon it, but where this is planted, the belt way is to raife the plants from the ftrout of the fruit; for all thofe which are taken from the roots of old trees, fprout, and put out fockers in fuch places from their apots, as to fpend over, and fill the neighbouring ground to a conider-

able diftance on each fide of the Hedge, ., frj the4 pleni' of fockers drawing aythenouti] occur from the o: plants (M be Hedge, they never grow to well as where there are I w or no uckcri pmjd thoJe plant. which are propagated from the ftockers fend not ibi'li, or at leaft but fparingly, therefore miy with Jittle trouble be kept dtiir : them. The belt me thud of raifing thde Hfde.> to low the flouers in the place where the Hfde is Inti; and where it Can be convcnii-ntly done, for then the plants will makr a much greater progreis, than thofe which are traififplanted-, but the objection ta • his method will arife from the difficulty of fecuring the Hfde from froi'ni the cattle; but this can have little force, when ; mull: be confidered, [hat if LIC i! the Hedge is planted, it muft be fenced for fome years, to prevent the cattle from d'roying - v cherciore the jarnc fence will do for ir whtn town, nor will thi^ requir a fence much longer than the o LIT. For the plants which ftand un- removed, w i! riakc i belter fence in G years years, than that which ii pbnted, though the plants fhould be of three or folir yen.- growth wh:n planted; which is what I have feen two or three times, where the experi- ment hjs btrn trk-d. The (boji) of this • nh ihou d be fo un cnily in Junoary, if the wearid will permit; but wu a they are kept out of the gn.unj It may, it will he proprr to mi* them wit! land, and keep them in a cuol place. The bifbes • : the black Thon are by much the btrdrf un r for making of dead Hedges, being of longer dui'ui'i, and having many thorns, neither the cattle nor the Hedge-breakers, will care to meddle with them j thefe bushes are alfo the belt to be ufil for under groui. ur they will remain found a long time when the air : excluded From them.

H E D

The Holly is sometimes planted for Hedges, and is a very durable ftrong fence; but where it is expofed, there will be great difficulty to prevent its being defroyed, otherwife it is by far the moft beautiful plant, ii being an Evergreen, will afford much better shelter to cattle in winter, than any other ;

as of Hedges, and the leaves being armed with thorns, the cattle will not rjre to bronze upon it. Anodic objection to this plant is the low grow b, ID that Hedge; plant with this planr, rctquire to be fenced a much longer time than moft others. This is a reafon which muft be admitted, to prevent this being generally prafticed; but in fuch grounds as be contiguous to, or in fight of gentlen

houl good (ifrv! . hen they ar

the Spring of the year, when die il

it unpleasant to walk abroad in expofed places, thefe Hedges will afford good fiicler, A tiitj^l will

); • keptiSF thecoU wioi

by lowing the bur itJ p ihc pi

ftand;Bt ihclc licrritilhoulii be bui

one year before fey lie luu: by which method they will be j

The way of doing this is, to gather the berries about Christmas (which is the time they are usually ripe,) and put them into large flower-pots, mixing fome fand with them; then dig holes in the ground, into which the pots muft be funk, covering them over with earth about ten inches thick; in this place they may remain till the following Octobr, when the Hedge is intended

up, and low in the place where the Hedge is intended. The ground for this Hedge fhould be well trenched, and cleared from the roots of all bad weeds, bushes, trees, &c. Then two drills fhould be made at about a foot diftance from each other, and about two inches deep, into which the feeds fhould be fow- bered pretty clofe, left none fhould fail, for it is bet- ter to have too many plants come up, than to want.

The reafon of my advifing two drills is, that the Hedge may be stuck to the bottom, which is a fup- pofe row rarely happens, efpecially if there is not great care taken of them in the beginning. When the plants come up, they muft be carefully weeded, for if the

weds

H E D

weeds are permitted to grow among them, they will soon destroy them, or weaken them so much, that they will not recover [their strength in a long time. This should be commonly observed, by every person who is desirous to have good Hedges of either sort, for when the weeds are suffered to grow near the plants, they will rob them of a great part of the nourishment they are capable of receiving, and will also prevent their putting out flowers, which will occasion the bottom of the Hedges to be thin and naked.

When the Holly Hedges are drunged with water, they will be kept very neat, and they will be only defaced at the end of a year, in May and August, but they are only defaced at the end of a year, which (however) is about the latter end of June, or the beginning of July; and if they are not cut, they will be very beautiful.

The fences which are made from the Holly Hedges, should be contrived so as to admit as much fresh air as possible, which is absolutely necessary for the growth of the plants; for when they are crowded on each side with dead Hedges, the plants seldom thrive well. The best sort of fence for this purpose, are those which are made with posts and rails; or instead of rails, three ropes drawn from post to post, and holes made in the posts to let the ropes through; this

is the cheapest sort of fence, and will appear very handsome; but if sheep are not admitted into the fields, there will be occasion for two ropes only, which will be enough to keep off larger cattle; and if the ropes are painted over with a composition of melted pitch, brown Spanish colour, and oil, mixed well together, they will last found several years, and these sort of fences never obstruct the air, and the plants, at the same time being open to view, the weeds will be better discovered than when the fences are close.

In the latter case, the Hedges are to be covered with weeds, by which they are excluded from the light, and are frequently forgotten, especially in winter, when the weeds grow more luxuriant.

There are some persons who intermix the Holly with the White Thyme in making their Hedges, which if rightly managed, will have a good effect, especially when young; but when they are advanced, the Holly should be planted by itself, so that the Hedge may be entirely formed of it as it grows up, when the White Thyme should be quite rooted out; for as they advance, they will not keep pure in their growth, so that they will not appear beautiful when intermixed.

When the Holly is intended to be made by plants, the ground should be well trenched, and watered, especially when the ground is very wet; the plants should be set in October, but, in wet ground, March is preferable. The plants should not be taken from a better soil than that in which they are to be planted; for when it is otherwise, the plants are much weaker before they recover this change, than those which are taken from a better soil.

If the plants have been before removed two or three times, they will have heavy roots, and will be in less danger of miscarriages; besides, they may be removed with balls of earth to their roots. When the frost comes on, it may be laid upon the ground near the roots of the plants, it will prevent the tender fibres, which may thus have been put out, from being destroyed by the cold. I would never advise the painting of Hedges with Holly plants, of above five or six years growth from the berries; for when the plants are older, if they take to grow, they are longer before they form a good Hedge, than when they are much younger; and if the plants have been twice before transplanted, they will more certainly grow.

I shall next treat of Hedges for ornaments in gardens; these are sometimes planted with Evergreens, especially if they are intended to grow very high, in which case, they are planted with Deciduous trees. Evergreen Hedges are planted with Holly, Yew,

H E D

Laurel, Laurestinus, Phillyrea, and Atamurus, (Evergreen Oak, and four others of less note. The Holly is peculiar to any other, for the reason before given. See the article on this subject, in the account of the Yew, on account of its growing very close; for when these Hedges are well kept, they will be so thick, that a bird cannot get through them; but the dead colour of the Yew, renders these Hedges less agreeable. The Laurel is one of the most beautiful greens of any of the evergreen trees, but then it shoots so luxuriant, as to render it difficult to keep the Hedges which are planted with it, in a desirable shape; besides, the leaves being very large, if the Hedge is clipped with shears, the leaves will be cut through, which gives them a bad appearance; therefore where there are Hedges of this kind, it will be the best way to prune them with a knife, cutting the shoots full down to a leaf.

And although by this method the Hedge cannot be rendered so even as when cut with shears, yet it will have a much better appearance than that of most of the others, the leaves being cut through and the wood being exposed, in the winter time they will be when flowering.

The Laurestinus is also a very fine plant, but the same objection may be made against it as against the Laurel; and as one of the great beauties of this plant is in its flowers, which are produced in the winter time, so when these are desired, the flowers are generotly cut off, by which their beauty is lost. Nor can this be avoided, where the Hedge is to be kept in close order, therefore this plant is not so proper for the purpose, but in such places where walls or other fences are designed to be hid, there is not any plant better adapted than this, provided it is rightly managed; for the branches of this plant are slender and pliable, so may be trained up close to the fence, whereby it may be entirely covered; and if, instead of clipping these with shears, they are pruned with a knife, they may be so managed, as to have them full of flowers from the ground upward. This may be effected by pruning them in April, when the flowers are going off, cutting them so that they have flowered, or pruned them so that they are always cutting close to the leaf, that they may be kept in the best shape, and that they may be kept in the best shape, and that they may be kept in the best shape.

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dial the middle rj of the Hedge b frequently open and wide, and only the tides of thrm can be kept tolerably *cJoie, and thir. muft be by often dipping them. [V we Mid to this, their being frequently hid or broken down by faow in the winter, it null be div: and an improper plant for this purpoc.

The Ilex, or evergreen O*k, is alia plants! for Hedges, anil where thell- are defigned to grow pretty nil, it is 1 lit plant fur the ptirpult*, bccaiife it is a J/liat of large growJi, rfpccially the fort which it mull common in England; ibr there arc iwo Jbrts of iheiti which grow in the fouth of li.u * and Italy, that aifo! Hiuth hutiiL-ler growth, fo arc better adopt - e J to this purpoc, efpecially where the Hedge is not intemleti to be high, but thefe arc tun at prelni common lierc. When thefe Hedges arc planted very young, and kept clofe trained from the beginning, they may be very dole from the ground to the height of twenty feet or more; but theft mull always be kept narrower at the top than be W t, that ilitre may nut too much fnow lodge upon them in the winter, wlt' h is apt to break ami diplaci

the Hedges will be rendered uufi. There are allo fume perions who Imve planted the Pyncantha, or evergreen Thorn, Junipi Bay, &c. as alfu the H. i Furtunr, and tit* l"urz, Rofemary, W fceval utlier platiu for fledges; but the having Aery pliant branches, which will retrain fupported, and the three often deilroful by feverc froit, render* ttiem unfit tor ilia purpoc; nor are there other forti of evergrct'i plam in the Eng- Lih gardens, which arefo well idapttd for Hedges, « thofc befote-mentioaed.

The deciduous trees, which arfuually j SantwitoforiTi Hedges in pundens, aa- the following forts.

The ! lorn beam is much eft- epecially in fuch pUcci where they ire nor required to be very high, or noc wnti 1 • ery fail-, far this plant, while young, dor. grcji as many oitwrs l b growth, liic Hedges HBy be kept ofKwith Ids trouble than mr.il other plane - t and the branches naturally growing very dofe, they will make one of the cloiett Hcs of all the deckiuou* tretts; but as the leaves of this tree contiituc upon the branches all [he winter, and until the buds in the fpring force them off, they have -J. bad appearance during the winter

The Beech it alii per wee for this purpoc, having the fame good - Hornbeam . be leaves* OI this contine k « in win U P » the bratchM, vfhemhey will bwea.b«d appeMWcej bc)it«, the litter which is occdioQed by their leaves eiaiuallv filling molt winter, prevents the girder* from bel* while longer than if there are none of thiclc trees planted. The liujrl-toved Eng I M° a pt>pev tree for tall Hed

ly tlippfd fh»o th theHcdges and IK- very Me fuid thick the wliole height. But re planted for this purpoc, ilicy therastheyi when tile en well, their ftuns will approach to near each other, is ilui few branches can be maintained below, whereby the beams of the Hedge will be damaged; they ihou! not be planted in a row or eight feet, or if they are ten feet n will be liU better. And although it was diftance they will not form a clofe Hedge fo soon as when the trees are planted ofcr [o- gether, yet they will in a few years n. ing much clofe and bear

The Dutch Elm was formerly in grew efteie for Hedges, being quick of growth, and thriving in juh follows the English Elm would not grow; but the wretched appearance which thefe Hedges made

they had been growing a fevr yenri, very juitlv I- fioncd chcir bting ahnoft univerJaily p. gardens, far a more abominable plant v. inxluced intf) gjrt-ns than tiir. The Lime-tree hath alfo been recen' Hedges, and in Tome of the old ga many pliuited with this tree, which, after planting, made a tukrdb! when they grow upon a moist foil; but after they had flood feme yean, they grew very thin 11 :> and by being dicerdm the top, they were rendered very (wbb; and unlignity, their leaves growing very thitly upon the brandies, 3ml their frequently turning of a black difagreeable colour, and falling off vrry : art in theautiimn, anil lbrxedinfu in the fuinn~tr in dry Jii- funv, liiii broiiglrit dicli trec ia mm li as that few perfotr make use of them as prent for this puqiofc : nor fltoi I /hooting ttcci be applied 10 liiii me\ foi they are cut, the longer they will throt, and of couple will .; very unlignity; besides, the often coming of thil-lelleJ occasions great trouble and expence, and &equetn titier: in garTcu.

The Alder is frequently pkctrj fur Hedges, and where the foil is loit thire b rot any of the ti- Ob trees equal to it i' j tills furoofi for the k-aves are of a lively green, ca ill tilt late in the •utuinn *, and when they decay, their litw is ibon over, for (hry ill druj; in a flonr rime.

There, arc, 'be b fid- Dfenttoned, mwi y of' the fiowring Ihrubs which have been phnioed to form Hedges i fudias Roles, Honcyfuc^leJ, Jwect- briar, &c. but theft make a bad appe: ancc, be- ing more difficult to train; and if they are cut to keep thtrri witbin cotripali, ilieir flawer*, whiiti arc (bet; grcaclr. bt-aury, will be entirely deft- Buta* thicf arc but u low growth, they arc not proper to JJJIII where tie J Judges aje W be . any height.

Although i have given thefe full directions for; lam- ing and ordering of thiclc Hedy garden, yet J ani far fiam recom- mendiil or ufeful. Bui u 1 wlv inaydlftrtromein ihfirbpin might think it a dedication in my book, had I not given theft inftrui to aid thei reproach, I Lave infcti-ii as much as J thintl frill be Heccllary for the obtaining thefe Hedges wi i-i-v-r thejuedcured, and tt u left eipeni tthod an-v of phujting them lmdi been; i with; w. is HCC uncommon to Ice tour times uh; niitli- n wi planted in thre Hedges as would h»»v been nec- cclliir; or thai ca remain w g clofe togeJier with any liauty, llur m ilvo pUnt. are an too great a luury DO have ihrir garden filled . and there- lore ti frequently plant in clofe, as that in three • four yrar\$ (i' <heir trees thrive) thre-li tiem will rftniic to be taken aw*y Jgain, to make room for thofc which arc • a grow i and there arc not wniiti: • o arc ready enough to encourage c, raw: thfr own inctctd in therr>> mowd.

The taftein gankmng having b»ngr<islv 1 J i w yti better, theie clip] been almoft link lime Kill entirely banilh 1 IS, x, it has already been !. which, a few y latter was intro- :ild ibftf pi

Hedges wii in fome of which, the expence of the iron trellage, to fupport the trees which com- pofc ilieir railments, par abent, bowers, perilles, and otlicrp:L't-i-stt 1 jrat wthi

terni J.thsn thty are kepr clofely (horn into thihx; lor no fooner do the cars begin to make freh floata; but the whole frame is altered ; and inficatd of carrying the fine finihed appearance of a retruUr pi«c of architect ore, it is grown into 3 rails: anpolilbed form. This expenfive fort of wurk never rm made ninth pfogrci'; in En^ri. and 1st f the French taftt, in [nrroundingal! the feveral livilionsoi paders with mil clipped Hedges, making grtai alleys, forming the walks into ftars,ami ihe likt Mperformance . have too much obtained for lbmc years pail in En.] and : arul the uller tj;eic clipped Hedges were, the more they were admiral , though >uny umeschey (hut out die view the fight 0l" feme of thg nobld Onks, and other limber tr«% growing in the quarters, which are infinitely more pleafing t a perfon if true taft,

I

than all thicriiluruloui forms it is pofitbt form be framed Ikfides, when the expence 0; keeping thefc II' her with thic great litter theyoccafiv: , ifeonEdeitd, elide, added to many other rci . *'. midit be given fufficient to exclude them out of cardt-ns; where they can never be eftc me to ihut 0 the fitt' the fitt' p'ncipant : etzpatetint tj ant ktf, HEDYI'NOTS. Sec 11 It iief the lfflurfy I ! 1 * P V Si AR U J i Esiir t'ied, J'ntisrd, which is, in- tied at I. I. 4.JI. tab. 7:8. French mings are Mow W Th Ctie kett is esmpreffJ, bvadr at lit md, tut wbtb err Ic • 7 retr iamma an /Hf an alo,S d fr.gk p?nu. Tie rn-mt bitnut sjititil-ld ped &hkb is ewprffti.: iilafis ajitigk lik iJlJpd fd

This genus of planu » ranged in the third fection of ...:i.tiii Irvnteenth cloI Si rscitled DiaJelpi; Decitldria, which includes ihofe pbtu WIHJL- fluwtfi have ten ftatnina joined in two bodies.

- 1. HEDYIARUM (Citrakarum) foSis pinnat; legumibus articulatis acukatis, nudU, red is, c ule diftufa. Hort. CUE 3 ^, Troth Hmafttiklevsiib id, frildj, jointed peds, and a diffxed fitSk. Herts clypeatui , here h' tvicci rubrntc. H. Ey&. French Honyfuckle, with a delicate red flower.
- 2. HEDYIARUM (Sponfofow) folis pinnatis, leguminibus articulatis, aculeatis toznenrolis, caule diftufa. Hort. Uptal. 131. FrtA ; . jdnudf pricilj, mill pod/, ii:J a diffaji': . yliirum clypeumm mi: ; urptweo. Raii li;(t. Smci Hr.f
- 3. HEDYIARUM (Cameloz) folis simplicibus ternatisque, Jurbus racemofis. Hort. Chf. 227. French Honyfuckle with fingle and ternate leaves, and flowers in bunches. Hedyiarum triphyllum Canadiane. Coraut. bra-It &
- 4. HEDYIARUM (Socoz) folis pinnatis, leguminibus articulatis, aculeatis, flexuofis, caule diftufa. Lin. Sp. Plant. 750. French Honyfuckle with compound leaves, jointed prickly pods which are covered, and a diftufa. Hedyiarum annuum, filiqua fperit undulata inorta. Toom. Annual Frmb Honyfuckle, with a rough, weed, wrinkled pod.
- 5. HEDYIARUM (Daphnec) folis binatis perfoliatis, foalibus trifloribus. Flor. Zeyl. 291. French Honyfuckle with two leaves upon a foot-ftalk, being clift in the leaf. Hedyiarum minus perfoliatum, here 1000. Sloan. Cat. 77. Smaller two-leaved French Honyfuckle, with a yellow flower.
- 6. HEDYIARUM (Purpureum) folis ternatis, foliolis obovatis, floribus paniculatis terminalibus, leguminibus imortis. French Honyfuckle with trifoliate oval leaves, flowers growing in panicles at the ends of the stalks, and

- interted pods. Hedyi:iruit triphyllum fruticosum, flore purpureo, filiqua vane diftufa. Sloan. Cat. 7 J. Time- lib a purple flower and a variety of parted pods.
- 7. Htovsjiitu! (Cocofia) folis ternatis fol im nerve , caui- clibus fruticos floribus fpanicatis terminati. liLui. Tbrt . Three-leaved feebly hairy Honyfuckle, with veins in the under fide, a feebly feebly stalk, with flowers growing in fpiku at tit erJ;. 13cdyfamm triphyllum I ruitocum in inutBj florr purpureo. Sloan. Cat. Three- Icavtdfirmly dirarf I'roub Hextiffickl* tm/i a j- p'it flower.
- 8. HEDYIARUM (Socoz) folis ternatis, foliolis ovatis, foliolis ternatis, floribus fpanicatis alaribus terminalibusque. 11 ru , • ibtus fence; . here pur- pureo. Houit. Three-leaved French Honyfuckle with veins in the under fide, and flowers in panicles from the fide and the end of the stalks. 12. Hedyiarum triphyllum rrmri- ksvti jbnit! . ntyfi with veins in the under fide, 'Jihich art fiiij undenualb, and a purple flower.
- 9. HEDYIARUM (Pulchrum) folis ternatis, caulibus illi- folis villis, floribus fpanicatis terminalibus. • nat*, caulibus illi- • nat' iv-. calycibus, villosiflimis. Three-leaved French Honyfuckle, with dif- fufed feebly hairy art hairy, flowers growing in panicles at the ends of the branches, and very hairy expanfate. et it- Hv • natum triphyllum in inile, iiore conj: omerio ca' ^ievillofn. Houit. Dtofrfili. • natum fr <b Hony- <kle* 'Alb fl&wtri p'&zhi ir. (hijeri, and a heir, cat.
- 10. HEDYIARUM (Procumbens) folis ternatis, caulibus procumbentibus, floribus laxo fpanicatis terminalibus, leguminibus contortis articulatis quadrangulatis. Three-leaved French Honyfuckle, with feebly hairy in trmh of Halts, ftaotrs rr; - ing in half fides at the ends of the branches, and feebly hairy with feebly joint. Hedyiarum triphyllum procumbens, folis rotundioribus & minoribus, filiqua tubulosa & imorta. Houit. • natum fr & wtri p' & zhi i • French Honyfuckle with fwelkr and mxdir Itavtt, and KSTTCX (tr.lrtci p
- 11. HEDYIARUM (Incurvum) folis ternatis, foliolis lb- eordatis, cmle erecto trutngulo villofo, ncsoi ter- miniilibm, leguminibus articulatis incurvts. I ruitocum lit, trib triflislit lemn wbefe Selvs art ht.it, a triengshTr upright inrry Jlnik, ji.: huutbti at tht eti.
- 12. HEDYIARUM (Glabrum) folis ternatis, caulibus paniculatis, leguminibus monfpermit glabris. French Honyfuckle with triplicate leaf • rt-Jhtpd ,t-ctf, 1 paniculata falk, and feebly pod • imiaituf; me fit. Hedy ururti triphyllftfn, innuom, exal, ten, filiqua imorta, & ad extremum ititem amp lirib. ITf. Tbrt: • natum, annua, fperit French Honyfuckle, with covered pod, which are broad at their extremity.
- 13. HEDYIARUM (Scandens) folis ternatis, foliolis ob- ovatis, caule villofis, fpecul longiflimis, flexuofis. Three-leaved French Honyfuckle, with oblong oval lobes, a trailing falk, and a very long reflexed falk of feebly. Hedyiarum triphyllum Americanum scandens, flore purpureo. Three-leaved, climbing, French Honyfuckle, with a purple flower. • Titan Frnrrib //
- 14. HEDYIARUM (Rupum) folis ternatis, caulibus procumbentibus vaticis lateralibus. Lin. Sp. 1056. Three-leaved French Honyfuckle, with oval hairy feebly hairy falks, and flowers in the fall of the falks. Hedyiarum procumbens, tri- foli trifagteri folio. Hort. Elth. 173. Trailing French Honyfuckle, with hairy like the Strawberry Trefoil.
- 15. HEDYIARUM (Macedonicum) folis simplicibus ovatis obtusis. Hort. Chf. 227. French Honyfuckle, with oval, obtuse, feebly hairy. Hedyiarum humide, cap- paritit falko maculato. Hort. Elth. 170. Low French Honyfuckle, with a fperit Coper leaf.
- 16. HEDYIARUM (Fragrans) folis ternatis ovato-lan- ceolatis, lobis villofis, caule frutescente villofo. Trifoliate

Unit, hairy on titir W & J*, and a *frably hairy liaik*. Quei-c. Whether this be iit il¹ Hardy from Voliii tcmäis iüb-ov.ii *subtus illoGp eaulc fruic- cente. Flor. V. 74. ja. «.* Mwwr- l»(»)(, vilh run! Itavet ami a juruhh \$ <.*.**

17. *HEDYSAURUM (Pulsatilla) foliis ternatis, foliolo intermedio pediculis longior, racemis alaribus erectis*
i'ngin *Frabli Hedyrauris with 3 foliolis lobes, the middle one a longer foot-stalk, and very*
 to AWICIV \$ *fismen comm-g frt,i» let fidv of the*

B.Vi *HEDYSAURUM (Pulsatilla) foliis simplicibus* *ip n1m*
lobis obtusis, caule fruticose spinoso. Lin. Sp. 1111
Frabli Hedyrauris with single, bear-footed, **I'bnt.**

l»/i ferwv, and <>
n. Riuwuff. •

18. *HEDYSAURUM (Pulsatilla) foliis simplicibus* *i firdaio-*
oblonga integerrime glabris. Frabli Hedyrauris with
single, oblong, bear-footed lobes, which are
and twin. Onobrychi *Zeslanica auranti h /, ""*
Hon. *« W ^ <<*

Esfiaplicibu.
ovatis subtus ierocis, pediculis mucosis. Amant Acad 5.
*p. 4°3- **
*fly*stbt?*
tiom foutdemj cxi foliis, *ibus albis ad nodos con-*
naicentibus. Plum. Sp. 19.

ovatis (Gastrolites) foliis simplicibus ova-
tis, spicis longissimis nudis terminalibus.
Frabli Hedyrauris with oval single lobes,
under the, and a frabli foot-stalk. Spig-
very long naked spikes of flowers terminate.
An Hedyrauris foliis (implidbm oVath acuti i **bali**
(UpuUcis. Lin. Sp. 1051.

The iitl Ion has been long cultivated in the English gardens for ornament. It grows naturally in Italy; *iri:twc) varicii's oi* this, one with a bright red, and the Otlic- i. white flower, which vary rarely from one to the other but « * flowers, so they iWence but in the eoiur or that

TM- *h plant, whWi tower, the fcond*
fficfec. bareri << there
lh iis fcads up fcvend hf How fmwth
fo lk, twoprk *vliih branch out on*
i We. PT

& L

louluf red flowers i chefe
 are succeeded by compressed pointed pods, which are very rough, flat, and cordate, in each of
 pedged our kind. **JB»ped feed. Tlnsfert fowrim**

^ -iff

balx-d of llgfofe' *Other beds*
cone up. ^V *m. ar about*
Dxoi *her, leiiving*
jp *U. In thec*
ten may

both they may remain until Michichmas, when they should be transplanted into the large borders of a parterre or pleasure-garden, allowing them at least three feet distance from other plants, amongst which they should be interspersed, to continue the succession of flowers; when they will make a fine appearance, especially the red sort, which produces very beautiful flowers.
 As these plants decay after they have perfected their seeds, so there should annually be a fresh sowing of plants raised, when they are desired, for the old roots seldom continue longer. They are very proper ornaments for large borders, or to fill up vacancies among shrubs, but they grow too large for small borders, unless they stalks are pruned off, leaving only two or three on each plant, which, if kept upright

with sticks, will prevent their haingine ovr other floweri. They arc propagated for i:iplytn^ the markets with plants to adorn the London gardens arid balconies, by the gardeners in the neighbourhood (j'Lt-

The ibeund lott Li an annuul plant, which grows naturally in Spain and Portugal, the leaves of this are nit rowan d oblong, four or five pair being piao along the midrib, with an odd Ode at the end; [lie fitalcs i terminated by I mall fpikw of purple Mowers, which are succeeded j by filial! rough pods, fhiipitd like those of the former fort. This pUni is preserved in be;unit gardens for die fake of variety t it is j propagated by feeds, winch mould be fown the beginning of April, in the place v. here the plants are to remain, and will require no other culture but Co thin them where they arc too near, and keq> them clear Iron W(-uls. Tl is flowers in July, "W the seeds ripen in Autumn.

The iliird fort hath a perennial root, which will stand many years if planted in l dry foil. I his is propagated by (owing the feeds in the manner directed for [he former; but when the plans arc come up two inches high, thry fnoiid IM [ranf plan red where IM arc to remain for pond; but if they are not too thick in th^ seed-bed, they may be suffered to remain there until the following autumn, at which time they should be carefully taken up, and transplanted into the borders where they are designed to stand; for their root; generally run down a very deep, so that it is necessary to remove ilitci ol them. This plant produces its flower; abuc dll same time as the former, and if the season proves favourable to its growth, it will be in the open air very well, re lifting the fevetell coldj provided they are planted in aatj foil.

The fourth fort is an annual plant, which grows naturally in the Levant. This iuth one re-embles that of the foil, but is much smaller, and its flowers are a foot high, and nre [jnmilled with win; compofrdcif two or ihn • pair of oval lobes, terminated by an oblong spike at the top of the stalk, which are of a pale red intermixed, with = little bios. TheTc appeafinju! and are fucceeitd by jointed pods which are waved en both ficlc3, forming an obtusc angl' ar each joint; the (ieds ripen in the autumn. I'lii.i u propigaiet in the fmc way us the U-cond fort, and u equally hardy.

The fifth fort grows naturally in boili i fides; the feeds of tfik were fent inc from La Veru Criti. by the late Dr. Houlloun. Th't* i» an annuul plant, with a long tap mot which runs deep in the ground. it-njing out one or two ft.ilks, whitfi rift about pine inches high, the lower part being gumfithed with oval leaves by pair in on cadl foi-iMfci but titir upper part of the stalk where die flowers come uuc, is giium; with fmail leaves, ending in acute pomts, fitting close to the rtallu, and Jt eadi of thec is litLaicd a little, small, yellow flower, inclofd by the two leaves. These are insikc but little appearance, and are fact by oblong pods, e containing me kidney-limpe d f«xi. The fwtri fort wiS lent me by the the late Dr. I foot-toun from La Ve

This is an annual naturally, a* ii alii* docs in Jamaica. Italk upward of four feet high, dividing into fev branches, which are garnished with oblong oval cr.il bn that are trifoliate, standing up long foot-stalks, and die lobe an inch beyond the other; the branches are terminated by long look panicles of purple flowers, which are succeeded by narrow pointed pods which are twisted. The plants flower in July, and their seeds ripen in the month of August. The two last mentioned J arc tender pkmu, fo thir feeds must be sown in the spring upon a hot-bed, and when the plants are fit to remove, they should be planted in a separate small pot filled with light earth, and plunged into a hot-bed, keeping them shaded from the sun till they have taken new root; when

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then they must be treated in the same way as other tender plants from hot countries, always keeping them in the stove or glass-case, otherwise they will not flower or produce seeds in the winter.

The eleventh fort grows naturally in Jamaica, from whence the seeds were sent me by the late Dr. Houlton. This is a shrubby plant, which rises about five feet high, and divides into several branches, which are garnished with trifoliate leaves, which are oval, the middle lobe being much larger than the other two (the stalks are terminated by long spikes of small purple flowers, which are succeeded by narrow pods, jointed on one side, but jointed on the other.

The eighth fort was sent me from La Vera Cruz by the late Dr. Houlton, who found it growing (here naturally. This rises with a shrubby (talk six or seven feet high, dividing into several branches, which are garnished with trifoliate oval leaves, silky and white on their under side, but of a pair green on their upper side; the flowers come out in long narrow spikes from the wings, and at the end of the branches, fitting close to the stalks, they are small, of a bright purple colour, and are succeeded by flat, smooth, jointed pods, about one inch long, each joint having one kidney-shaped seed.

The two other forts will continue two or three years, if the plants are placed in the bark-stove. They are propagated by seeds, which must be sown upon a hot-bed, and the plants treated in the same manner as those just before-mentioned; and when they have obtained height, they should be removed into the bark-stove, where they should continue to remain, allowing them a large share of air in warm weather. These plants seldom flower till the second year, when they will produce seeds which ripen in the autumn.

The ninth fort is an annual plant, which grows naturally at La Vera Cruz, from whence it was sent me by the late Dr. Houlton. This seldom rises more than eight or nine inches high, sending out several branches from the root, which are diffused and hairy; they are furnished with small, oval, trifoliate leaves, a little woody. The flowers grow in small spikes; they are purple, and have very hairy empalements.

The tenth (on potatoes naturally in Jamaica. This hath ligneous trailing (stalks a foot and a half long, sending out several branches on each side, which are garnished with small, round, trifoliate leaves, of a pale green colour; the flowers are produced in very long spikes at the ends of the branches; they are small, and of a pale purplish colour, succeeded by narrow twisted pods which are jointed, each joint being four cornered, containing a single, small, compressed seed.

The two hit forts being annual, require the same treatment as the fifth and sixth forts before-mentioned, with which management they will flower and ripen their seeds in this country.

The eleventh fort is a shrubby plant, which rises with triangular stalks live or six feet high, dividing into several branches, garnished with heart-shaped trifoliate leaves, and sending out at the points of the flowers are produced in very long spikes at the end of the branches, which are of a pale purple colour, and are succeeded by narrow jointed pods which are variously twisted; the seeds are small and compressed.

This plant grows naturally in Jamaica, from whence the seeds were sent me by the late Dr. Houlton. It will continue three or four years, if the plants are treated in the same manner directed for the seventh and eighth forts, and will produce seeds in the winter.

The twelfth fort is annual, the seeds of it were sent me by the late Dr. Houlton from Campechy. This hath a slender stalk, which rises about two feet high, garnished with heart-shaped trifoliate leaves, the upper part of the stalk branches out into panicles of flowers, which are of a pale purple colour, these are succeeded by narrow jointed pods, which are variously twisted, and contain one or two seeds.

The seeds of this plant were sent me by the late Dr. Houlton from Campechy. This hath a slender stalk, which rises about two feet high, garnished with heart-shaped trifoliate leaves, the upper part of the stalk branches out into panicles of flowers, which are of a pale purple colour, these are succeeded by narrow jointed pods, which are variously twisted, and contain one or two seeds.

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prefixed kidney-shaped seeds. This is propagated by seeds, and requires the same treatment as the seventh and eighth forts.

The thirteenth fort was sent me from La Vera Cruz, by the late Dr. Houlton. This is a shrubby plant, which gets round the trees and shrubs which grow near it, and climbs to the height of ten or twelve feet, garnished with oblong, oval, trifoliate leaves, (landing upon pretty long foot-stalks, the flowers are introduced in long narrow spikes, and are of a tincture purple colour, and (it is said) to the stalk. This is an abiding plant, which requires a (love to produce it in this country, so the plant should be treated in the same manner as the seventh and eighth forts.

The fourteenth fort is an annual plant, which grows naturally in both Indies. The seeds of this were sent me from the Havannah by the late Dr. Houlton. It hath trailing branches more or less long, which are garnished with round trifoliate leaves, a little indented at the top, very like trifoliate leaves of the Strawberry Trefoil, flat, stalks and under side of the leaves are hairy in the rows are produced in long narrow spikes at the end of the stalks, they are of a purple colour and small, these are succeeded by narrow jointed pods, which are variously twisted, and contain one or two seeds. This flowers the end of July, and produces perfect seeds here.

The fifteenth fort is a low annual plant, having slender stalks a foot long, their upper part being garnished with trifoliate leaves, sending out (Tender trifoliate leaves their upper part is adorned with flowers, which come out by pairs above each other, to the end of the stalks, they are small, and of a reddish yellow colour, these are succeeded by jointed narrow pods, which are variously twisted, and are kidney-shaped. The two other forts are annual plants, which require the same culture as the fifth and sixth forts.

The fifteenth fort was sent me by the late Dr. Dalrymple, from South Carolina. This hath a slender stalk, from which arise two or three (shrubby hairy stalks near two feet high, branching out on every side near the top, garnished with oval, pear-shaped, trifoliate leaves, which are hairy on their under side, and stand upon short too-tended stalks; the flowers are produced at the end of the branches in long spikes; they are of a purplish yellow colour, and small, these are succeeded by narrow jointed pods which are variously twisted, and contain one or two seeds. This is propagated by seeds, which should be sown upon a hot-bed in the spring, and the plants are fit to remove, they should be planted in (a moderate hot-bed, obfervitig to (have them until they have taken new root; then they should have a large share of air admitted to them in warm weather, and in summer they may be exposed to the open air, but in the autumn they must be placed under a frame to screen them from frost, the following spring some of these plants must be taken out of the pot and planted in a warm border, where, if the summer proves warm, they will flower, but these should be planted in their feeds; therefore two or three plants should be put into larger pots, and plunged into a moderate hot-bed, which will bring them early into flower; so that if the glass is kept over them in bad weather, these will ripen their seeds in autumn, and the roots will ripen the following year, if they are kept from frost in winter.

The seventeenth fort was sent me with the last, from the same gentleman, it is an annual plant, which rises about two feet high, garnished with long trifoliate leaves, which are rounded at their base where they are inserted, and are of a pale purple colour, these are succeeded by narrow jointed pods, which are variously twisted, and contain one or two seeds.

The seeds of this plant were sent me by the late Dr. Houlton from Campechy. This hath a slender stalk, which rises about two feet high, garnished with heart-shaped trifoliate leaves, the upper part of the stalk branches out into panicles of flowers, which are of a pale purple colour, these are succeeded by narrow jointed pods, which are variously twisted, and contain one or two seeds.

He onr fits upon a foor-flilk an inch long ; tlic Bowers arc produced in long lpik« from the wings of the (talk, growing ereft-. the lower pan of ihr fpike is but : thinly fet with flwuer!, but on the upper pnn I they are : foaled very dote ; tiitli; are (mail, and of a : bright yellow colour, fitting very : ofe nUKUttUu, and are fuccceded (by juinteJ pods ill .it on one lide. This plant is propage .-il by iced- and roju « tlt time creumeni a? inc laft in* n (ions J, with which it will flower and produce ripe feed*. The eighteenth lort grows raturaily Jn Syns, - here *n 7ls one of the beancies of the ca may- « nki with shrubby stalks about i ,tx feet high, which branch OIK oi every lide, and are garnifhed with Gnglcktw, ftuped lik « hote of the brood-braved Knot-graf . • illr> , arc veryfn^h.ofM ->> J TM

! ,lks i under lUeic Iravci come out thorns, whkh arc near an isdl Jong, of a rrdidJb brown colour i llit fjuwr* ionic out from thi- fide of Che brandies in fmul dufters , they are at s j>urple colour in the middle, and reddifh *ho<t illy gim* i tafe are jointed on the other, bending « We m Dur... Ikkie. This pUM u:

eanh, and plunged ii.t- moderate hot-bed ; and if the plant* dTIWt«PPc= the pots ftwkl be wk«n «B W lie bed, (lid. pfaced where they may have only ihe nwrang fun, k«P''p sem clear from weakly , | in the autumn, they Aoy! be plunget! into in old .t under » iVanic, «firre tlwy may be forced from the fcoit and lifrl rmini in the winter, nvi ioipring plungctl io a frelh hw-bed, which will b

nihefcarefutoKir
into a
? h \$1 v l should be re in June, plaemg

ia.mn , «h,c.n. If hey are plunged into an old tan-bed in mild weather they will fucc ban if placed in a green- haulc, or more ! havefcnth

growing in uic IL
iu\j winter "it happening tlii

l-from this collcted, which i an exudation of the nutritious juice of the plan:. This drug is chiefly gathered about i luris, a town in rVrfu. «K grow plentifully. Sir Gee Weather found it growing in : not, and - '' was an undefcribed plant. T'ournecfort - '' ity in nu ic plains in Armenia

The nineteenth lort grows naturally in India, from whence the lark have been lately brought to Europe, and feveral plants have been raised in the English gardens; their leaves are like thofe of the Orange-tree, as fa" only to be diftinguifhed while young ; but as there are not any plants here of a large fize, fo I can give no further account of this lort at prefent. The twentieth lort was lent me from Cathagena in New Spain, by the late Dr. Houffner: this is a perennial plant with a woody ftalk, which twifts round any neighbouring fupport, rifing to the height at ten "r twelve feet, fending out a few fmall branches from the fide, garnifhed with oval leaves four or five inches long, and an inch and a half broad in the middle; the under fide of the leaves are like fatten; the flowers are whii- coming out from the fide of the ftalk in clufe bunches, they are of the fame form with the other fpecies of this genus, and are fuccceded by fhort pods, containing one or two kidney-fhaped feeds. The l. of the twenty-fift lort I received from the

East Indies; this is an annual plant, which riles about three fee: high, hai ng a flender ftalk inclining to be flirubby, jptrninW with oval i leaves placed fingle on very fhort .-ut-ftalk« tome of • be plants fend out one or two Uentier brandies from die main lulk, ti- lower part or which are garnill' ed with leaves of the fame form with thofe of the prinripal flalk, but are fmaller: the upper part of the print I of ftalk and the brandies are garnittird with flowers ncsr a foot in length, whicli arc of a worn-out purpli colour, ftanding fingle at each joint: thefe are fucceeded by jointed lKxb an inch an.l a hall long, ><:••• ming three or four • kidney-lhjpcd feed5 in cacfi.

Thefe two forts are too tender to thrive in air in England -, they are both propigai ed by feeds, which h nmft be (own on a hot-bed early in th; j • and when the plants are come up, ind fit to rtmuv, they ihould be parted, amTr

par;irt lmall pot, plunging them into a frefh hot-bed, wiiite they I should be increafed upon the fun till they have taken new ro , after which, they fhould be treated in the fame manner as i they tender plants.

The twenty fifth lort fhould be planted in the back-doye ill autuiiin, but the otlier will ripen foon i the ii yrir the begttnni:of October.

HEDTS ARUM Zeylanicuui majusfioiniui. See

HEL'YSA It UM mimofc foliui. See JEsciimo

HELENIUM. Lin. Gen. Plant. 863. Helianth- trum. Vaill. Aft. R- Pai. 1720. Ballard Sun flower, The CHARACTERS arc, l; barb a Sever compoftd effcmrtt! btrmaprbiitt fbrtts, • firm ibt diji, mid female kr;lfiertu So bib- pofe tit rays. Th: htrnitphrodie florets art mtw and cut into five parts at the bafe, thefe have each fix feet hairy flamma, fmmnaud lit nliuu.

i*£nl* *bt feitlejisft- am! ere ftrtibtd oui en cite JiJ; raj; tbfe art tHI in thty art bnwl I • nt m abvn% , likt tfoe of iht it

This genus of plants is ranged in the fecond fection of Linnæus's diartemata clafs, which includes thofe plants which have compound flowers, the hermaphrodite floure in die cen; and the female half floure on \$x 1 order, being both fruitful.

The HELIUM (Aconitum) is radiis bnceobtb-lir, integerrimis glabris, pedunculis acutis unifloris. Helianthum with floure narrow leaves, which are fouth, male, and axial feet-falls with fingle flouers. Helianthum folio lincolor & anguftiore. Vaill. Aft. R. Pai. 1720. Helianthum has floure with a longer and narrow haf-

HELIVUM (Lactuca) folio lanceolatis acutis serratis, pedunculis breviteribus, calycibus multinerviis. Helianthum with pointed, four-fingered, fround leaves, fower feet-falls, and a many-jointed empolument. Helianthum folio brevior & latiore. Vaill. Aft. R. S. 1720. Helianthum has floure with a broader and fower haf-

These plants rife to the height of fix or feven feet in good ground; the roots, when large, fend up a great number of ftalks, which branch toward the top; thofe of the firft firtare gamid ed with fmooth leaves, which ,iir three indies anJ » half long, and half an inch broad in the middle, with thort edges fitting clofe to the ftalks, and from their bafe is extended a leafy border along the ftalk, fo as to form what was generally termed a winged ftalk, but Linnæus calls it a running leaf; the top or part of the ftalk divides, and from each division arifes a naked foot-ftalk about three inches long, fufifting one yellow flower at the to], fhaped like a Sun-flower, but much (mailer, having long rays, which are r and pretty deep

deep inca four or five segments which appear in August, and there is a tuft of flowers on the plants till the frost puts a stop to them. The flowers are not thin, the leaves are more than an inch broad in the middle, ending in acute points, and are flurpily laved on their edges. The flowers stand upon a stalk, growing together, but they do not branch near so much as the other, they both flower at the same time.

There is also another sort which tares as narrow as the first, which are acutely pointed on the edges. The italics branch in the copious manner, but the middle flowers have smaller stalks than those which branch on thin stalks, and are provided with small leaves, almost to the top, but I am not certain if they are the same, or only a variety which has accidentally risen from the seeds of the other.

These are both natives of America; the first was first received from Virginia and New England, where they grow wild in great plenty in the woods, and often in places where the ground is moist. They may be propagated by seeds, or by jointing their roots; but the latter is generally practised in this country, because they seldom perfect their seeds here, but if the seeds are procured from abroad they will be the beginning of March on a border of high earth, and if the seeds should not come up the first year, the ground should not be disturbed, because they often remain in the soil for several years, and then come up.

When they first appear, if the soil is dry, they must be often watered, which will greatly forward their growth; and where the plants come up too close to each other, they should be thinned, and transplanted out into beds a foot asunder every way, being careful to shade them until they have taken root, as if you water them in dry weather. In autumn they may be transplanted where they are to remain, and the following summer they will produce their seed, which will continue till the frost prevents them; and their roots will produce many years, and afford many offsets, which they may be removed.

The bed of the plants should be kept clear of weeds, and to part them for the first time, in the end of October, when their flowers are just beginning of March, but before they begin to shoot; but if the spring is dry, they must be duly watered, and they will produce many plants the same year. These plants should not be removed every other year, if they are expected to flower; if they do not flower in a soil rather moist than dry, they may be divided in the wet in winter, but if they are planted in a dry soil, they must be often and plentifully watered in dry weather, to make them produce plenty of flowers.

HELIANTHEMUM, ELEGANTIS. Sec 15, 16.

HELIANTHEMUM, TOURNEFORTII.

Tab. 118. Cibus. Lin. Gen. Plant. 598. Dwarf Cibus, or Sun-flower.

The CHARACTER is, The flower has a three-lobed calyx, which is persistent, which afterwards covers the seed vessel. It has five round petals which spread open, with a great number of small stamens, which are terminated in final/ rounded points. In the center is situated an oval germ, supporting a style to the length of the filament, crowned by an oblong stigma. The perianth afterwards becomes a receptacle, or oval capsule, and then divides into three parts, each with three rough seeds.

This genus of plants is joined by Dr. Linnaeus to that of Cibus, and is ranged in the first section of his third class, which includes those plants whose flowers have many stamens and one style. As the empurment of the flower has but three leaves, and

those of Cibus, the flowers are of the Helianthemum habit, but the three calyx, and that of Cibus, (the characters are sufficient to distinguish them) separated into different genera, and as there are a great number of species of both sorts, so by this comparison they may be better ascertained.

THE SPECIES ARE,

1. HELIANTHEMUM (Germanicum) caulibus procumbentibus suffruticulis, foliis oblongis subpinnatis, stipulis bracteolatis, Dwarf Cibus with trailing fleshy stalks, along hairy leaves, and four-lobed petals. Helianthemum vulgare flore luteo. J. B. 2. 15. Gemma Dwarf Cibus with a yellow flower.

2. HELIANTHEMUM (Germanicum) caulibus procumbentibus, foliis trifloris, ramulosis, juncis floribus simplicibus. Uvrruf 1. Cibus with trailing fleshy stalks full of branches, and large petals in the flowers. Helianthemum album Germanicum. Tab. (con. 10G1. White German Dwarf Cibus.

3. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

4. HELIANTHEMUM (juncifolium) caulibus suffruticulis, foliis lanceolatis linearibus, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

5. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

6. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

7. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

8. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

9. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

10. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

11. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

12. HELIANTHEMUM (Panicum) caulibus suffruticulis, foliis lanceolatis obtusis, nervis reflexis, Dwarf Cibus with hairy fleshy stalks, linear four-lobed leaves, and reflexed petals. Helianthemum foliis linearibus. Son-albo. J. H. 1. 16. Dwarf Cibus with linear leaves. <d a vskiltfm

tra> long four stalk. Helianthemum folia pinnatifida. Journ. Int. 249. Dwarf Cistus with leaves. **Hü Plltr MzxHlaix.**

11. f : **HELIANTHEMUM** (Nemesiense) caule suffruticoso procumbente, foliis ovatis serratis, lobis incanis. Dwarf Cistus with a fleshy trailing stalk, and small round leaves, white on their under side. **IWunthenum ad humulillarum accedens. j. B. 1. lu.** Dwarf Cistus resembling Moxwort.

12. [j] : **HELIANTHEMUM** (Limonis) caule furruricofo, foliis linearibus oppositis oppositis lobis comenatis. Dwarf Cistus with a fleshy stalk, and four finger-shaped leaves placed opposite, which are easily as their under side. **Lichticum lavncnclul? folia.** Journ. Int. 249. Dwarf Cistus with a Limonis leaf.

14. **Hi** **HELIANTHEMUM** (Hircanum) caule suffruticoso erecto, foliis linearibus marginibus revolutis subtus incanis. Dwarf Cistus with a fleshy upright stalk, and narrow leaves reflexed on their edges, with their under side hoary. **Helianthemum folia Rostimari splendensibus.** Journ. Int. 250. Dwarf Cistus with hoary Rostimari leaves, which are art basry o* >> or under side.

15. **HELIANTHEMUM** (Sarcocolla) caule suffruticoso procumbente, foliis oblongo-ovatis subnatis, petalis acuminatis reflexis. Dwarf Cistus with trailing fleshy stalks, almost erect hairy leaves, and narrow reflexed petals. **H9Sg fffimi vain** Hort. Elth. 17. **ub.** 142. Common Dwarf Cistus with narrow petals* it we flowers.

16. **HELIANTHEMUM** (Laticum ;vm) caule suffruticoso erecto, foliis lanceolatis intaritis glabris cauk florali ramulis. Dwarf Cistus with a fleshy upright stalk, four finger-shaped leaves, which are hoary, and branched in former stalks. **Helianthemum Laticum** Journ. Int. 250. Dwarf Cistus with a Laticum leaf. **urTnirorio, fuliis**

17. **HELIANTHEMUM** (Rafines) caule herbaceo, foliis oblongo-ovatis oppositis, summis linearibus alternis. Dwarf Cistus with a fleshy stalk, almost erect hairy leaves placed opposite, the lowest the top being narrow. **enule ficrl3<o hiriuto,** Journ. Int. 250. Dwarf Cistus with a large leaf, and Rafines leaf.

18. **HELIANTHEMUM** (Gardunum) caule herbaceo erecto, foliis lanceolatis linearibus pilosis, pedunculatis longipetalis. Dwarf Cistus with an herbaceous stalk which is erect, narrow four-fingered hairy leaves, and large long petals at the base. **Helianthemum herbaceo lobis.** Col. Ceph. 2. p. 74. Dwarf Cistus with a four-fingered flower.

19. **HELIANTHEMUM** (Figuense) caule herbaceo, foliis subovatis pilosis, basi rugatis. Dwarf Cistus with an herbaceous stalk, hairy oval leaves, and a four-fingered flower. **Helianthemum annuum humile,** foliis tuberosis, basi rugatis. **Allian.** Journ. Dwarf Cistus with oval leaves, and a four-fingered flower.

20. **HELIANTHEMUM** (Ladifolium) caule herbaceo erecto, foliis lanceolatis oppositis, nervis serratis, capsula maxima. Dwarf Cistus with an erect herbaceous stalk, four-fingered leaves placed opposite, flowers growing singly, and very large upright. **Helianthemum Ladifolium.** Journ. Int. 249. Dwarf Cistus with a Ladifolium leaf.

21. **HELIANTHEMUM** (Sed-folium) caule herbaceo procumbente, foliis oblongo-ovatis oppositis, summis alternis, lobis serratis. Dwarf Cistus with a branching herbaceous stalk, almost erect hairy leaves, and long narrow upright petals, which are easily as their under side. **Helianthemum sed-folium.** Journ. Int. 249. Dwarf Cistus with a Sed-folium leaf.

22. **HELIANTHEMUM** (Frustratum) foliis fusciculis. **Rostm.** Dwarf Cistus with hoary grassy or hoary leaves.

23. **HELIANTHEMUM** (Limonis) herbaceo erecto, foliis linearibus oppositis petalis. calycibus lobatis corolla tubulosa. Dwarf Cistus with an herbaceous stalk, narrow four-fingered leaves, and finger-shaped petals larger than the petals.

24. **HELIANTHEMUM** (Marsiliense) caule herbaceo procumbente, foliis ovatis serratis lobatis. Dwarf Cistus with an herbaceous trailing stalk, and small hairy leaves finger-shaped at the base. **Helianthemum Alpinum,** foliis pilosella minoris Fockell. I. B. 2. 141. Hoary Dwarf Cistus of the Alps, with large leafy joint leaves.

The fifth sort grows naturally on the chalky hills and banks in the plain of England; the stalks of this plant are ligneous and slender, trailing upon the ground, extending themselves near a foot each way; these are furnished with small oblong leaves, of a dark green on their upper side, but of a smoky colour on their under. The flowers are produced at the ends of the stalks in loose pikes; the petals are of a deep yellow colour which is more evident in the day, but (but) in the evening, these appear in rose and purple, and are succeeded by capsules, including angular seeds, which ripen in August and September, and the root is bituminous.

The second sort grows naturally in Germany in the hills of the Rhine, and is much larger, and several times taller than those of the first; the leaves are longer, and are of the lower part of the stem are erect. The flowers are much longer than those of the first; the petals are white and larger. The empalement of the flowers are hairy and whitish; these differences are arising from the soil.

The third sort grows naturally in the mountains of France, in Italy, and Germany. The stalks of this plant are either of the farmer, and are more ligneous. The joints are farther asunder, the leaves are longer and hoary, in the spite of the lower are generally reflexed; they are white, and the flowers of the second sort are of a very narrow.

The fourth sort grows naturally on the Apennine mountains, and is much more erect than those of the first. The leaves are not so long, the stipules are very small, and the whole plant is very hoary. The flowers are white, and the spikes are shorter and more compact than either of the former. The fifth sort grows naturally in the south of France, in Spain, and Sicily, from the last country I have received the seeds; this is a low trailing shrub, which are hoary, but of a branched, and are more than four or five inches long. The leaves are narrow and hoary, and there are no stipules at their base. The flowers are white, and are in small clusters at the end of the stalks; this sort seldom continues longer than two years.

The sixth sort has trailing (Jirubby) stalks, which extend a foot in length, and are furnished with very narrow smooth leaves placed alternate; but their short stalks bear flowers, which do not flower, have shorter and four-leaved growing in clusters, these have no stipules at their base. The flowers are placed singly toward the end of the branches, they are yellow and striated; this sort grows in the south of France and Italy.

The seventh sort has very long, trailing, ligneous stalks, which are furnished with four-fingered leaves placed opposite, which are very hairy, and grey on their under side, having at their base three long narrow stipules. The spikes of flowers are near a foot in length, but grow singly; they are large, and of a deep yellow colour, with very hairy empalements; this sort grows naturally in the south of France and Spain.

The eighth sort has very shrubby crooked stalks, covered with a purplish brown bark like the common bush. The branches are slender, and furnished with narrow leaf-like leaves like those of Thyme, which stand opposite, having no stipules at their base. The flowers are produced on naked four-fingered, which terminate the branches in a sort of umbel; the petals are of a pale yellow colour, and a little smaller than those of the common sort; this grows naturally on the hills near Fontaine, in France.

HEL

The ninth fort grows naturally in Germany, from whence the feedi were fem to the Into Pr. Burchaavc, in uhufi; curious gard near Leyden I gared the Irrds; ihi- fends out from root biproous a great number of triliti" ftjls, which are fmoorii, artd ex-mud more than a foot -ich way, girmilhd with oval, fpoji -faped, fmooth leaves, placed J rcjipofire, having at their bafe three fpear-fhaped fl-pula. The flowers are i -rge, yellow, and grow in fhort clufters at the end i - the branches, the -w**s continue the fame from feeds.

The tenth fort grows naturally in Spain, from whctite I received it i this hath alhort, tvcl;, woolly ftalk. •ime -hich out fever.U (hurt fidc-branches, which are garnifhed with aviwoodJr leaves, havi: three long-euina! veins. The flower-felk which arifes from •i the main Hem grows about nine inches high, hav:;g tvraor three narrow leaves placed alternate. The flowers are produced in pretty longpe-dicles toward the ••; of the flaik, and hav' very finifh compen -nts.

The ele•vem U fan was fent ilc from Verona, where it grows naturally, this has ii •! luw ilirtibhy (UJk, from which come out s icw lhort brunches, garnifhed with fmall woolly fpears [Imped leaves, plictl oppofite. The fiower-ftalk riles amin fix uichi bigh, and branches toward the top, where the fle*CTS ire produced on jireny lunjj; 'tooE-falks; they are white, and fmaller than thoti; of the common lurr.

The twelfth ilii t hath long lhmbby flilks which trail on the ground, and divide into many branches, •which arc garnifl. A veined leavi

green on ihciruppiT fidc, but of agrayilh colour below, with three narrow crrel Ltiupit at their bife. Thy flowers are pretty large, whitt, mul gfuw in clivifcerst <t tht r<J of the hriiiches.

The fourteenth fort Inili Bin bby ftalks which grow pretty upright, garnifled with narrow IpL-ir-flupal leaves placed oppofite, w•••)- un thier und: fide, and three very narrow fl-pula growing II their bfc. The flowers are . I lite, growing in long (pikes at the end of the branches; thu grows naturally in the foutli of France.

The fourteenth fert hath in erect (hrubby (hik, which fends out many fide branches, whole joints are pretty clofe, and arc gara'Oied with vrry narrow leaves, placed oppoCtte, wiiofe borders are PC-flexed -, their up^er fide is of a lurid green, and their undfr fide hoary. The (lowers arc pretty Urge, white, and grow in final]ctuften sr the tndot the branches; thir: ows naturally in Spain, from whence (he roots were limr me.

The •tenth fert was found by Mr. F.dmund Du Itoij, near Chydon, in Surry, and was at Sft iup]>ofed to be ••ly an accidental variety of the common - fort, but the feeds of this always produce the f •if- I hive ••ltivated this above thirty years, and never • have found it vary from feeds, this is very like the corn-mon fort, but the leaves are hairy. The petals if the Bower imed, and fmaller than iliofc of the tmrmin CJTL

The fifteenth fert hath upright ftEabb: * ftaliti, which rife a foot and a half high, fending out branch?! the whole length; they are garnifhed with •:nall fpear-flaped livery leaves, placed oppofite, which arc ("moot). The flower-falks branch, and the flowers, • li:; are white, are produced in Ciort fpikes »i the rod of the branches.

The fixteenth fert was found growing ranjrally by the late Dr. William Sherrard, near Sayrus, w^ofenc the feeds to England; this hath flubby ftalks which do not trail on the ground, garnifhed with oblong oval leaves placed oppofite, but thofe toward the top are narrow and placed alternate. The flowers are produced at the end of the branches in long loofe fpikes; they are of a pale colour, and the fize of thofe of the common fert.

The eighteenth fert is annual, this grows naturally in France, Spain, Italy, and in Jerkey, where the late Dr. William Sherrard found it, and fent the feeds to

HEL

Eng; ihs hiA i branching herbaceous ftalk, whic! riles •• or fire inches high, garnifhed with narrow fpear-fhaped leaves, placed oppofite, which are ctx ••od with hairs; thofe •• the upper j •• of the ftalk-t arc placd akernare, -ird are narrowci. The flowers jrc prpdurd in loofe fpikes at the end of the branches, tending upon long tocc-ilalk; they are final), and i -ppofed of five yellow petals, with a dark purp'••: fpoe at tilt baft i' each; the flowers are very fugacious, for they open early in I the morning, and their petals drop off in a ft-w hou-. ten of the dock the llowfnjre all Bellen.

The nineteenth fert grows niuirtly u< on Mount !!;Jiis, from wjrnce the feeds were fent me; this is an annual jil'in', whir: fends out many herbaceous flails from the mot, gamiied with i oval leaves, which are hairy. The Howert arc i i produced in loofe fpikes at the end of the hraiKhes; th ey are of a pale yellow colour, and very fiteii i •• seldom lasting two hours before the petals fall o(T' ihi t thii which gfowi abdiit Vcron is another variety of ••, with upright ftalks. The twentieth fun grows naturally in the fouth of France and ttdy, and v

was found by the late Dr. Wil-

liam Sherrard, growing near Sni)rnj; who li-nt die feeds to ttlgland ami Holland by a new tale, fuppofing it to be a different plant; I when it was cultivated here, it proved to bL the limew" that growing in the

ibutli of France; far this plant puts on different appearance, according to the foil and fituation where it grows; tor, in a good foil, where the plant * land Itngle, and are not injured by weeds, aj will rife near J foot and a hair liii'li, the leaves will be two inches and a half long, and ric-r ball' an inch broad in the onddle; but in a poor foil, or where th; plants ttand too clof', or arc injured by weeds or neighbour- ing plants, they do not rife more than 1 1/2' thac height. The leaves are much narrower, and the feed- vels not half fo large; fo that any perfon finding ihclc plants in twu diffrent fituations may be deceived, and take them for (different - I feeds; but when they are cultivated in a garden in the fame foil and fi- LUitjrn, they do not diner in any particular. This is an annual plant, which pennies loou after ilie leeds are ripe.

The twentj-Srft (on is an ann:il vl:int, which grows nmirilly in Spain and ! orugal; this hath branching ftalks, wh< h rife a foot high, garnifhed with oval oblung lean •• placed oppofite on the lower part of the ftalk -, t out on the upper part they are alternate and ll crow, a fingle leaf being placed between each (lower, which oc -cations the title of Solitary Flowers, for they grow in loofe fpikes at the end of the branches, in the fame manner as the other fertes.

The twenty-second fert was fent me by Dr. Adriano Van Royer, who received the feeds from the Cape of Good Hope. This rifej with a flir bby ftalk about nine' < inches high, garnifhed with very narrow fine leaves, growing in clufters; the flowers arife out from the fize and at the end of the ftalks, ftanding oppo- fiender fbot-ftalkj; they are •• of a pale fcarc colour, unJ x very fugacious, seldom continuing longer than tfo >Du^ before the perils till GIV. "The seldom continues longer than two yfors.

The twenty-third fert grows naturally in Egypt; this is an annual plant having threuby erect ftalks, garnifhed with narrow fpear-fhaped leaves, ftanding on too: -ftalks; the upper part of the ftalks are adorned with white flowers, whole petals are not fo large as the crnpalcnKiu. and being very fugacious they make but litt! appearance; it flowers in July, and the feeds rife in September, foon after ••• the plants decay.

The twenty-fourth fert grows naturally about Ken- TV I dali^ Weftmoreland, and in fome parts of Lanca- (hire, i upon rocky fituations. This hath trailing her- baceous ftalks, which feldom extend more than three or four inches, garnifhed with oval leaves, which are v< ry woolly, and fit clofe to the branches; the flowers are produced at the upper part of the branches; they are white and fmall, to make no greff appearance.

Most of the perennial forts of Dwarf Ci (tus are hardy, fo will thrive in the open sir in England i they are propagated by feeds, ^takh may b^ lwn in ptacci where the plants are to remain, and I will require no other care but to keep them dran from weeds, and thin them where the>art too dole, always obll-rving to leave those forts at a liirthei dilbmce, wio ... ill on the ground, ami gruw to the grejtcfst length. Tholl-plants will continue fevcral years, cfpecfolly in a poor dry foil; but in rich grounj or moilt fitujtkins, they felJom lad long: but as they ripen feeels in plenty, lbtthey may be eafly repaired. They ail fWer about the lame time as the common Ion, am! thdr feeds ripen in (lie iimutut.

The annual forts maybe propagated with as great facility i for if their feeds are ibwn iupon a bed of common earth in April, th plants will come up n May, and require no other culture, but to thin them where they are too dof, and keep than dear from mii:.. Tilde will flower in July, and the feeds ripen in the autumn. The twenty-fceond fort will thnvr in the full ground in the fame manner as the other; but unleft the iummer proves favourable, the seeds ;, ill not ripen : thernots have lloud through die winter when the feason ... proved mild, without any fbeli have flowered the following fiiinmf.

The (weiry-fourth fort requires a lhatly Tuuition, orhcrwile it will nut thrive here,

HEL 1 ANTHOS. Lin. Gen. Plant. 877. CVnni luLi. Tourn. Inlt K. H. 4B9. tab. avg. the fun, susd ^A>J)&S a flower,] i. c. Sun-flower; in Fren.i

IThb genus of plants was titled Coronis folis, by mod of the botanic writerj but this bcinj* a compound n:ime. Dr. Ltnntm has filtered it to tills of Hdian-it hu allo by fome bten titled HeliotropiLiin, pamc is now applied to arwdier genus of] • which is very different from ttiiij.

The CMAAtJifrens are. It besb a temps**! MA ; the border or ray! kixg-imfoftd of female half and tbt diik efhermspbi... thefi iiri tmtaixid in en:

i expand. ^Tbt benwpkrodi'te fi-lag a. : :J at liar hit, p JWBd, vibcbfprMdWii (hfr have five ftnaiiKii which art myd at hterp. as bug a: g:maabewbjfd tmm-oud ei tbt hlum : :wmei: rghs: p: f: v: length 9/ th tale, me

!x*t, fsur-anen, p, m-efirti to% oitd nmi thitihm, hit m>M

The genus of plants is ranged in the thrd fectiojof Linnaeus's nineteenth class, in which he includes plants whose flowers are composed of hermaphrodite fruitful flowers in the center, and female flowers in the circumference.

The species are, 1. HELIANTHUS (Linnæus) folis 1 omnibus cordwistri- nervata, floribus cernuis Lin. Sp. 17. Sun-feaf; might here be all heart-shaped, : * three veim

fe HELIANTHUS (Mokkford) folis inferioribus r, clatis trinerviis, superi'ibus ovatis Lin. Sp. Plant. 1277. the lower parts of the leaves are heart-shaped, with three veins, and the upper leaves oval. Corona folis trinervis. Tabern. Icon. 704. the lower parts of the leaves, narrowly called pointed sun-flower.

HELIANTHUS (Linnæus) folis ovato cordaris 1nph- nerviis Lin. Sp. Plant. 1277. the lower parts of the leaves being oval and heart-shaped leaves with three veins. Corona folis ovato ... re wbetv'

jizsi-cr viith a fats!! flwer end c tukresu root, commonly 'ltd Jerufiltnt Jrtiibih; in French, Tattfi,

4. H. ANTHUS [Stmimjs] radice filiti formi. Ho Cliff. j 7.0. Son-fiasiy zuilb I: (... ! /-tv. Corona iblts buifolja ... Tourn. Inf. 489. Tattfi brvad-kaveJ \$mj-i;

5. HILMKTHUS • / • liii alwmii I bris, bili • iams, caule fricicibio. 1. Sp. Plant. 1178. Sin. • • water with four broad leaves, and a slender rsugb jtalk. Chryfknoiemuni V: ... mium anguilifblium pu ... p. 14. let; ... nd purple jl

6. HELIANTHUS (Dwarf) folis oppositis fclibus ovato obbi • • trinerviis, paniculis dichotomis. Lin. Sp. Plant. 1279. ... leais, /BK/wg thi Chr}farti:- pens, folii- ... minatis. MoV.

mugb-ptixtd tea: y. Ji uii 1 • -xin s ... colatis epp- fitis, fupenic 1. abri, inferni trinerviis, caule dichotomo ramolo. ... eppejtt, it(... thne ...

S. HIXMSTHL'; {RtBtffiiima) caule ramofifBnio, ... vcrjbrimblingfiat!., rsu\$B freer-fiaped Utr.-cs pi pfite at feiimt, but nBnwt ... falf, arid k/)fy mpalmi- ... rachfh folio t' i: uioit, l ... inartrj) Thrvatu

HELIANTHUS (Linnæus) M) flilib evartj crtnatia ... is Citlyctnis erefus loiiiginid... tiifci Fkir. Vig?., v\$ Stm-fiewer • a/lt mat, roxgb !td kavtj, booiing thrtt merves, tie fida of ti empelaueu bdt% ertti, aaJ as l<mg su the dip: tf th Livrona }w Caroliniana, par fofo trinervi amplo nfero, peJiculo alato. Martyr! ... 1. 10. Carolina Stm-fivwer • with fmtri! fideaers. lur'e rttigh leaves lwwiitg three vans, end 9 v. inged fs< it- Jtalk.

io. Hvi,i*STHtis (Dectiperatus) caute inferni hevi, fo lan' ... fwm whence we are often supplied with new kinds; and it iii very remarkabl, that tht, is not a single species of : r^enus tmtis nurnpean; fa that beiorc America w.i; dilcovered, we were wholly unacquaint^ with thtfc plant). Uur although they jrc not originally of our own growth, yet they tire faun to familiar to our diniate, as co thrive and : crafc full -as well u iFtbey were in tfeir native country (lbmc of the very laic (lower)s kinds ectyped, ... rqiitit- a tongi ... I wn we generally • enjoy, to bring them to perfection: Oand manyof ih, • to plentiful in England, ... t ptrtuu • acquainted with the history of thic plants, would imagine them at li- aft to have been inhabitants of ... it idnnd many hundred years; particularly the Jerusalem Artichoke, which, though it doth not produce seeds in our climate, < 1 doth lo multijly by its knobi ed roots, that, when once well fixed in a garden, it is nor t "ly to be rooied out.

The flit ftirt Li annual, v>& (0 well known si to u-quire ti. description. There are fingle and double flowers of two different colours, one of a deep yellow, • of the other of a sulphur colour; but el, ... vary, so are not worthy to be nam. i.nrd aa tdrTrent! They are easily propagated by feeds, which ... nilrl ^ fown in March, upon a bed of common earth; < d when tl. plants come up, they ... iuit be thinn ... where they are too close, and kept clear from ... vdi; when

the plants are grown six inches high, they may be taken up with balls of earth...

In July the great flowers upon the tops of the stems will appear, the best and most double...

The seeds of this sort of Sun-flower are excellent food for poultry...

The oilier [learned sorts rarely] produce feeds in England, but most of them...

The third, fourth, fifth, sixth, and seventh sorts may also have a place in fame large borders of the garden...

These sorts are all of them very hearty, and will grow in almost any soil...

The Jerusalem Artichoke is propagated in many gardens for the roots...

These are propagated by planting the smaller roots, or the larger ones cut in pieces...

when their stems decay, the roots may be taken up for use. This should be planted in some...

IC

Corona Sob., S < j ^ 1 ^

SILPHIUM.

HELICTERES. i. Gen. i. lanr. 313. Hora. Plum. No. Gen. 54. tali. 37. Serew-ti...

The CHARACTERS. HELICTERES. The flowers have five tubular petals, which are longer than the...

This genus of plants is ranged in the sixth section of Linnæus's twelfth Class, which includes those plants whose Sowers have ten umbels...

The Species are,

1. HELICTERES. (Linnæus) foliis cordato ovatis serratis, lobis tomentosis, fructu brevi coniformi. Helicteres with oval heart-shaped leaves...

2. HELICTERES. (Linnæus) foliis cordato-ovatis serratis, lobis tomentosis, fructu brevi coniformi. Helicteres with heart-shaped leaves...

3. HELICTERES. (Linnæus) foliis cordato-ovatis serratis, lobis tomentosis, fructu brevi coniformi. Helicteres with a two-lobed ovate leaf...

The first sort grows naturally in the Bahama Islands, from whence I received the seeds. This rises with a few joints...

The second sort grows naturally in Jamaica, from whence the late Dr. Hilliard sent me the seeds. This rises with a shrubby stalk...

The third sort grows naturally in Jamaica, from whence the late Dr. Hilliard sent me the seeds. This rises with a shrubby stalk...

HEL

IMTCS, which end in acute point*, fjwed an their tdecs, a little woolly on thnir under fide ; ih; flower are produced on the fide of the I... horrc ot .Ulki than the formrr; tlyv . . . of 6v ...id the fyle » ^ K ... wha is * L ...tmriah, and not half fi) lung M the otk; ... fruit is thicker, not an inLh long, but twitted

... manner, ... third fort fcong ... woody Italk CWWi or fourteen fcee high, fending out njany ugneou ^ ra...ches, which are closely covered wim hairy down ... i (heir edge., taring large veins run-fine from the midrib to the fides i they are of a liah: mrUowiffl BF*O. =>rd woolly on the fide of the brar.ches, they arc of a yeliow ... whi ... the ferti. ... f the fyle ... figur inches long, curved lita tiuu ol ... the fert ... about tme inch long, very thick at the bottom, and ... covered with hairy down; ... by Mr. Robert Millar, from Carthagina.

... ^rop^m^ by feed., which mull

S S ^ r S m c uf ltrong enough » remov.- they ... S be ewh planted in a ieparate Unall i>t. wSh Uga wr<h, and plunged in> a ^ f c n < to ted <h>, oblcving to fluc them iwim the fun £ have <k n new root, then they. . . » •

... or. to the wither. th< the plants may enjoy firfl. air which will llrcnphrn them, and prevent their drawing up we>k. Ln the (uiraner the planu may remain under ihc frames, if there is wfuitient height for them to grow; but in autumn ^ ^ ^ " ^ ^ planted into the tan-bed in the fhove, where they fhould always remain, being careful to fhift them to larger pots when they require it, and not give them too much wet in the winter; but in fummer they fhould have a large fhare of air in warm weather, and require to be often refreshed with water: the fecond year from the feeds thefe plants have often flowered in the Chelsea garden, and the feeds have ripened there, but the plants will live fo with proper management.

ARPOS. Lin. Gen. Plant. 533. Moo- Gen. We have no title in English for

this plan'-
THE CHARACTERS ARE,
The flower both are petal which is tub ... at the bottom,
It bath an ...
W • ... It bath an ...
jhperrh
tspalmtm of * " " £ ^ * jU
...
ueti. Tbt<r-
...
rpfukitt

^ir.thefeondfcfljon
indtkJ Dodcindr.w.Jh-
whofe l^-cr, h,vc

SR>>« ... pUnt,vi,
WVnav,
fHIMOC**!'' ...
folLo fruflu racemolo.

Hoult. MBS. ...
branching feat.
Thtt pit ...
Ealog naturally *
in, Trom vhen*
Lh ...
pbnt; ...
veral years. It riles with a thick, latt, woolly ...
from fifteen to eighteen feet hig ... lending o,

BEL

ral laical I ... toward the MJI, gimibn) vritit heart-shaped leaves full of veins, toward •• (heir edges, and ending in acute points, they ... ••••• loot stalks three inches long, which stand oblique to the leaves, and are ; ... Ueflowerjir. produced at the end of the ftock ; in hr.incl'uu'C^uftr'c , they are of a yellowish green, and are fucceeded by flat comprfi ... of an oval fhape, whole borders arc tloli. i ... with threads representing rays, of a ijrawniini cuicour wlica rijie; 'then explains a » dividni into I ... by an intermediate partition, in each of thefe ii ICKIJL-I J lingle rullfidi ... ending in a p'int.

This plant is propagated by feeds, which must be iquw upon a hot-bed in the fpring; and when the plutu are fit to remove, they fhould be each planted in a feparate fmall pot filled with light kitchen garden earth, andii [jliu.ytil into i hot-bed, trtMting them in the fime • ... as other tender plants, which will not bear the open ai ... to this confcaon ... of the year -, and wliik IIII- plants arc young, they require i< be plunged in the tan-bed, but after they h*vc acquired ftrength, they will thrive In the dry fhove. In winter they fhould havebu little water, and muft be ki ... warm, but in fumener tticy [UoulJ harff plenty of fhSh nir in miM weather, and niuft be freijitiently- rtrfricL with mn With this manage- mrrsr ... the plants will flower the third year, and produce good feeds; but may be pteferv-mi li ... with ; ...

I have ... d the feeds of this plans which had been kept leu <ft&, and can ic up as well as if it had been Jk<dthe ftmiwr yeau though from difappearance of tin feeds, it feems as ... unlike to grow afwr ihc firft jew a^ nny which I know.

Lli LIOPHILA. Lin.Gfn. St6.

Tile (... Jibift here.
It bath four lateral ... to have ... the two ... here ... of their leaf. The flower has four roundish plain petals ... pLut-J in form of a cell, and one yellowish, which are re- ... to blades of the capsule.
Juftamitia, four of which are longer than the ... r, ter- mbalca Jj < ... still ... and a cylindrical ... ;<r<< flupft'Hg a farl flyh, ... by an oblate figure; the gmnoi efurxurdkwmisin; ... ped, with two cells filled will - ' ...

This genus of plants is ranged in the fecond ledion of Linnæus's fifthenth class, intitled Tetradynamia Sili- quofa, the flower having four long and two fhort than inn, md the feeds being included in longpodj.

The SPECIES ARE,
1. LIOPHILA [htc^rifulin) t'''''i> Uneecokw ind ... N. Buman. IMapbil* with iftar-jbsfta ***, ... boots. Leucouium Africanum, ccwukofiore, hui'o- iium. II ! j64- African CilsJbtotr tsiib a ireeiUef end a Mmfio'j.r.

2. HitKH''''-* (Cmrnfi fcha) folui linear: ... [Jn Sp. !';:-" 927. Htliepbila with tmtar wm-pwitd ietoei. Lneahwi Afncanum, caruleo note." ... coronop folio rmap. !!- L- J*4- Afri- cm Gütijbater, w/i nsrroiv Hürtfemi ktrvet ind Ku ferarj,

These are both annual plants, which otw ... naturally at the Cape of Good Hope; the firft riles with an erect ftalk about four or five inches high, fending out two or three fide branches, garnifhed with long, nar- ra w, effiatr green Iaves, and terminated by a Ijofe bunch of W ... flowers without feet, which are fuc- ceeded by taper pods near three inches long, having a do ... itle row wf; at feeds.

The fecond fort grows about the fame height, but branches more; the leaves are cut into many wing- pointed divifion, and the flowers are like thofe of the other fort.

The (* ... of both forts may be fown in the fpring on a fourth bottit ... and when the plants come 'P, if they are thinned and kept clean from weeds, il is nil th< culture they require.

HELIO.

HELIOTROPIUM. Lin. Gen. Plant. 164. Tourn. liift. R. H. 138. tab. 57. rHJuAJ™, of *rou&>, the fun, and T:H™, to turn.] Tumlotc.

The CHARACTERS are, Tbt empalasseKl cf the fiercer is cf mi leaf, ttluhvs at bottom, but at into ifci figment* at tbt brim. Theficwcr hath BW fetal, Titub a tube the length of the empelantnt, fpraiding fat absoc, where it is cut into five figments, which en eiteritalSy larger than tht ether; the claps if the trie is clsfid, &td hath five prominent feaks, jcixtd :n farm afa fior. It bath five fiürt fitimim within the tube, terminated fa fmall JimnzU, and four mermen at the battm of the tuk, with one fender Jht the length of theft- :<*>! ty an indented Jlighia. Tbtgrmen. m j fids,fiting in ibt enp.

This genus of plants is ranged in the first Jection of Linmus's fifth clafc, intitktu Pentwdrin Monogynia, which includes thofe plants whose flowers have live (lamina and one fyle.

The SPICIES are,

- 1. HELIOTKOFIWI (Ema?) foliis ovatis imegerrimis tomentofis rugofis Ipicis conjugatk Hort. UpCd. 33. Helietrpt vith oval, eniirt, woolly, reu^i l... and temogaUi fpikts. Helimropium majus Dtoii l... C. B. P. 2jj. Thegreittr Tnr:itble of Diofcorites.
- 2. HuLioTau-iiM [IH&OU foliis cordato in'acis acutis fcaabriulfculis, fpitis (blkariis, fruclitnis bifidis. Flor. Zeyl. 70. Heliotropiv>itbbiin^hiipdevalUava, j)kich arc pointed and raigb, jüttgk fpikes of ficwcri and bifid fitdi, Heliotropium Americanuni cn-ruleum, fdtis horraini. Acad. Reg. Sc. Blue Amrieim Tamji,...
- 3. HELIOTROPIUM (Hormmfolium) foliis knceolato-ovatis acuminati* rug'.¹ Ipicis folitariis gracilibus alabun Sc lerminalibus. Ildjetrep? with fpejr-Jbaptd voal leaves, which arr rough, a<J end n> acute l, having fltnder Jt*.gl< fpüiccf flowers proicetlixg from tbt fides and tops if the ftalk. Heliotropium Americanum cceruleum, foliis hormini ingullioribus. H. L. Bhit Amriatm ftfmfek niitb mnotatr Clary Urns.
- 4. HELIOTROPIUM fCapitatum) fotiu obtonEQ-ovatis integerrimis gbbrii fubcus incans, floribus u| ataribu?, caule arborefcence. HeUettrpt aith oblong, cvsl, entire, fincalb havcs, which art hoary an tl dir !/dt, flo&ers ^fnc/V l< tends from tbt wing! of tbt flulis, and a tra-like jlatk. Heliotropium arborefceru, folio tcticii, Rure albo in t spinula de la congefto, Bochr Ind. ~Trce-Ifte Tttmfcle, with a Gtrmail. and xbite fit&gers growing in tbtkfirt beads.
- 5. HELIOTROPIUM (Canariense) foliis ovatis crcnatis oppolitic, floribus capitate aUnbus dichotomic, rtuic arborefcence. Heliotrope with nel crmated Ua~ plant cpyfi. ~s from tbcminzs of the fluts, which arge, and a trct-lik fidk. \< ! otropium Canariense jrbortfcerts, folio fcoth.li)!- Hort. Aml. Canary tree like Turjidi, with a Wood leaf.
- 6. HELIOTROPIUM (Peruvianum) foliis lanceolato-ovatis, caul; fruclulo, ipicis numerosis aggregato-carynibus. Lin. Sp. iS; . P.: Heliotropium p. -jrit fibapad leant.; ajh-aillfitdi, and many fpits of flowers joined in a very ahss.
- 7. HIUOTBO (Caryocarpus) foliis lat iccolato-linearibu glabris ovatis, ipicis conjugatis. Hort. Clial. 45. Heliotrope with narrow, four-angled, smooth leaves without veins, and elongated spikes of flowers. Heliotropium Curassavicum, foliis lineamiblicci. Hort. Bat. We. Heliotrope of Curacao, with a Peas Nectarist leaf.
- 8. HELIOTROPIUM (Guianense) foliis linearibus ovatis, pedunculis dichotomis, flocibus floribus quaternis, caule frutescente. Lin. Sp. 188. Heliotrope with broad, smooth, woolly leaves, forked four-folds, with four joints of flowers and a frandy stalk. Heliotropium abocuum maritimum, Guianense, Guaphali Americani foliis. Sloan. Cat. 93. Tree maritima woolly Heliotrope, with a Sea Cardinal leaf.
- 9. HELIOTROPIUM (Frustratum) foliis linearibus ovatis, ipicis folitariis terminalibus. Lin. Sp. 187. Heliotrope with broad, four-angled, hairy leaves, and forked spikes of flowers rising up to the stalk. Heliotropium

minus lithof]>ermi foliis. Smut/tr Heliotrope with leoiet likt Grmwll

- 10. HELIOTROPIUM [Proeumbot] caule proeumbente, foliis ovatis tomentofii integerrimis, ipicis folitariis terminalibus. Helietrpt -xiib a trmUxg ftalk, oval, szotty, entire leaves, and fmgk fpiku of fawtrs trminating the brentha. Hdlocrofuin Americanum IUJH-nu & tomentofum, foliis fubrotun Hooff. MSS. Lota AtHtricaB roelfy ffrliolrefff with roundifii l
- It, !! i :<ir'ti)iiuM [Amerieanum] foliis ohlongo-ovnti!! iroljs, fpicis conjugatii terminalibus, cayl fructicofo. Hel'mtrept tmibnblong, aval, nwllyf havcs, and double fpikts offlaviers terminatrig the jltlk, tobithis fhrtebby. Heliocrqphim Americantim rhat'e!t:n tomentofum, foliis oblongis, floribus albit. Hooff MSS. Shrubby and wocify American Heliotrope, cbcixg havcs and white J&ttm.
- The first fort grows an rally in the south of FtSnec, in Spain, Italy, and molt of the warmer countries in Europe. It is an annual plsnat, which fuccei; bcter fion fecdi which /carter in the autumn, tr Jbwn at thar leafon, than in the fpring; for whin tl. are Town in [he fprini;, they fdtiom come up the lame year; but if the plant h once obtaint-d, and the feeds iififered to fhed, it will maintain kclct without any trotable, requiring no other culture but to keep it clean from weeds, and thin the plants where (hey are too clofe.
- This rifers about seven or eight inches high, dividing into twt) or three branches, garnilhed with ovnl rough leaves, two inches long and fine broad in the middle, of a light green, Handing upon preclly long ibot-ftaiki alternately; the Howrs arc protlucrd at thr end of the brinchca in doubL fpikes, jcticat the bottom, which are about an inch and i luit kmg, turning backward like • fweep's tail. n, e flowc3 are white, and appear in June mil July •, the ten's ripen in autumn, loon after which tl: r l'; •
- The fecond Can grows naturally in the West-Indies. This ii annual l the rt;ik rifes 3 foot uu) a half, or two feet high, branching out toward the top: the leaves are rough and hairy. Handing upon pren long foot-flalks; they are two inches and .1 hail long, and nne and a half broad in the middle, cnd ing in acute points; the flowers are produced tow?.. the •! the branches in fingle fpikc=, which ate li\ incttea long, turning backward M the top like the other ippecies. The fiowera are blue, and appear in July and Auguft, the fteds ripen in September and October.
- The third fort grows naturally in the Weft-Indies. This is 3 fmailer plant than the former, feldom growing above two feet high -, the leaves are one inch and a half long, and about half an inch broad; the fpikes of flowers arc very (lender, and not more than two inches lonR; the flowers arc fmall, and of a light blue color-. They appear at the fame time with the former, and the leeds ri; in a sum >n.
- Thek rch, l-[snluftbefownon a hot- bed> in thr tyring, and when the plants ant fit to remove, they muft be tranfplanred on another hot-bed to bring them forward, treating them in the Umc way as the Billaminic, and other tender annual plants; and in June they may be ufcen op with balls of earth, am! planted in the borders of the fiWrr-garden, where they will flower, and in warm feifbn* produce ripe feed):
- The fourth fart rifes with a (hrubby ihlk fix or seven • whichjtheyoungbranchM; re dazily o wored with a white itewn, anil the lwv« on thole arcvery hoary and entire, but thole on thr older branches >re gref ner, .md fome of them an- m'ufian their etige? j at each joint of th« stalks come out nre floirt bwsht* oppofuc, which >rc usinillied with fmall hairy leaves plant oppofite: thole, when branhd, emit a ilrcm^ odot'r which to fome perfons is very difagreeable, biit others are pleafed with it. The plants rarely flower in England, but in Di in fifty years which I have cultivated them, I have but once fern them in flower. The flowers are white, collected in roundish heads, which turn backward, and fit clofe to the branches

illie !•oves continue all the year, for which the plants are j•ferred in green-houses. li) Lld W (lit Vji I in winter.

The sixth sort grows naturally in the Country of Peru. It rises with a woody stalk three or four feet high, dividing into many branches, which are garnished with oval leaves branched on their edges, growing opposite upon long foot-stalks; they are hairy, and of an Ash colour on their under side; the flowers are produced from the side of the branches on peevy long foot-stalks, each containing four short roundish spikes or heads, which divide by pairs, and spread from each other. The flowers are white, and appear in June and July, but are not succeeded by seeds in England. The leaves of this plant, when bruised, emit an agreeable odour, for which it is by some persons much esteemed; the gardeners have given it the title of Madam M liaicnoa, but for which I know not

TJje [wo lail for: are too tender to live through (W water r in the open an in this country. It is raised in a green-house during the season, but they require to be brought from fruit, so may be planted with Myrrils and the other hardy green-plants, where they may have a large share of air in winter, and be treated in the same way, as usually propagate eggs during any of the months of the year, which, if put into a tub of water, will be ripe in six weeks; then they may be planted in a pot, and placed in a fi•ti*1' fivation till they have taken new root, after which they may be transplanted into the old plants.

The sixth sort grows naturally in Peru, from whence the seeds were first by the youngicer lulleu co die Royal Garden at Paris, where the plants produced flowers and fruit; and from the curious garden of the Duke of Arco, at St. Germain. I was supplied with some of the seeds, which were sown in the Chelsea garden, where the plants have flourished and perfected their stalks for some years.

This rises with a fleshy stalk two or three feet high, dividing into many small branches, garnished with oval leaves flapped, rough leaves, set on without order; they are three inches long, and one inch and a half broad in the middle, standing on short foot-stalks; they are hairy, and greatly veined on their under side, which is of an Ash colour. The flowers are produced at the end of the branches in short reflexed spikes, growing in clusters. The foot-stalks divide into two or three, and their shrift again into six, each containing a spike of pale blue flowers, which have a strong sweet odour. The plants continue in flower great part of the year, and those flowers which come out in summer, are succeeded by ripe seeds in autumn.

It may be propagated either by seeds or cuttings. The seeds should be sown upon a moderate hot-bed in a glass, and when the plants are fit to remove, they should be transplanted into small pots filled with light earth, and plunged into a hot-bed, where they should be shaded till they have taken root, after which they should be brought to the open air by degrees, into which they should be removed in summer, placing them in a sheltered situation; and in autumn they may be headed with other exotic plants in a good green-house, where they will flower great part of winter, so will make a good appearance among the Orange-trees, and other green-house plants, whose culture this plant will thrive. If the cuttings of this plant are put into pots filled with light earth, during any of the summer months, and plunged into a moderate hot-bed, they will take root very fast, but these do not make so good plants as those raised from seeds.

The seventh sort grows naturally in the sea-shore in the West Indies; this is an annual plant, whose branches rise upon the ground, and grow a foot long; they are garnished with narrow grassh leaves, which are smooth. The flowers are produced in double spikes

from the side of their branches, they are white and small, and have a great appearance. It is propagated by seeds, and requires the same treatment as the second and third sorts. The eighth sort rises with an upright woody stalk six or seven inches high, with a hoary bark, full of marks where the leaves have grown; the upper part of the stalk divides into two or three strong woody branches, which grow erect, and are very closely garnished with long, narrow, woolly leaves, which stand on every side of the branch without order. The flowers come out from the side of the stalks, to which they sit close; they are short and reflexed, and of the colour of the Oiwmare purple, sitting in very regular order. The whole plant is very white and woolly, like the Sea-Cudweed, so makes an odd appearance when intermixed with other exotic plants; this is propagated by seeds, which must be produced from the places where it naturally grows, for it never produces any seeds in Europe; it is raised in a tub of water in the country, for when the dried seeds come over they seldom grow, and if they do, it is not before the second year; and from several parcels of the seeds which I have received from the West Indies, I have not raised more than two plants, and they came up from the seeds which had been sown more than a year; so that if the seeds are sown as soon as they are ripe in a tub of water, when they arrive in England, they will be plunged into a hot-bed of tanners bark, which will bring up the plants, and when they are fit to be removed, they should be each planted in a separate small pot filled with earth, composed of sand and light undressed earth, with a little lime rubbish well mixed together, then plunged into a hot-bed of tanners bark, and shaded until they have taken new root; after which, they must be treated as other tender exotic plants, always keeping them in the tub-bed by the roots, giving them but little water, especially during the winter season.

The ninth sort is a native of the West Indies, where it grows plentifully on the sea-shore; it rises with an upright shrubby stalk a foot and a half high, garnished with small spear-shaped leaves, scarce one inch long, and one-third of an inch broad in the middle, ending in acute points, sitting close to the stalk; they are hairy on their under side, but smooth above. The flowers are produced in single slender spikes, which come out from the side, and at the top of the stalks; they are but little increased, especially those on the side, but those at the top are more turn; they are white, so make but little appearance.

The tenth sort was sent me from Carolina, where it grows naturally on the sandy soil. This is an annual plant, with trailing stems, which grow six or seven inches long, garnished with small oval leaves, which are woolly and entire. The flowers are produced at the end of the branches, in single short spikes, which are reflexed; they are small and white, so make but little appearance.

The eleventh sort is by the late Dr. Houston from La Vera Cruz, where he found it growing in plenty; this rises with a fleshy stalk three feet high, dividing into slender branches, which are closely garnished with oblong, oval, woolly leaves, placed without order. The flowers are produced at the end of the branches in double spikes, which are slender, short, and fruit, not removed to the other species. The flowers are small and white, and the plant is perennial.

These three last mentioned are propagated by seeds, but the difficulty of getting them from America, and the uncertainty of their growing, which they are too slow, and brought over in earth, has rendered them rare in Europe; and as they are plants of little beauty, so few persons have taken the trouble to procure them; besides, as they require a slow and prolix culture in this country, and must have a peculiar soil

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LEBOUE

HELLEBORINE. See Helleborus and LIH.V. DORUM

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HEL

their appear in winter, and the seeds ripen . . . I rtx: fprjv; which, if permitted to flourish, the plants will rise without care, . . . Jiniiy Le u

or in wilJtriiei; qu great l; . . . wic^

The iccomi ii bridge, and in thewooti fordJliiR-. . . ih.in thole

The leaves are composed of nine long lobes, which unite to the foot-stalk at their base, and arc Jhrjrljr jawed on thi . . .

The flowers are produced at the top of ii. . . tlic foot-fa] . . .

pewk, with a gre.: number of stamina surrounding the permen in cbc . . .

Upeaii; the following . . .

Thecl and fort is supposed to be the Hellebore of the antieni . . .

many; thick fleshy fibres, which spread far into the ground, from w . . .

one large white flower, composed of five rounded . . .

ZMIKIL. The leaves of this are composed of seven or . . .

vialm; thick, fleshy, oblong lobes, which are slightly . . .

the title of Christmas Rose was applied to it; it is . . .

otkei The fourth fort is like the second, bdt diSl-r) from . . .

and entice, ihcu Iirtanc it imixitiier this flowers . . .

either o(the former iorts, but ii m at prelcnc rare in . . .

The fifth fort is the common Winter Aconite, which . . .

is so well known as to need no description. It flowers . . .

of a place in all curious gardens, CIJKL.iifly .is it . . .

after [heir Icavti decay, which ii gen., ally by the . . .

beginning of June till October, \ . . .

and nearly <J the colour I of the grun-: . . .

is not unken to feirch them, man^ of the rood wilt . . .

belcl; in the gr; ud; thclV roots . . .

of s foe, The w^A fort ii like the firil, but die I ober of the . . .

leaves are broader, and the stalks grow taller, this . . .

I tetr . . .

HELLEBORUS flore globofo. See TROLLIUS.
HELLEBORUSALBUS. See VBRATRUM.
HELMET FLOWER, or MONK'S HOOD.
See ACONITUM.

HEMEROCALLIS. Lin. Gen. Plant. 391. Lilio-Aphodelus. Thurn. Inft. R. H. 344. tab. 179. Liliaftrum. Tourn. Inft. R. H. 369. tab. 194. Lily Aphodel, or Day Lily \ in French, *Us de Saint Bruno*.

The CHARACTERS are,

The flower has no empalement; in fome [peeks the flower is of one petals cut into fix parts \ in others it hath fix petals, with a fhort tube, fpreading open at the top, which is reflexed. There are fix awl-jhaped declining ftamina furrotnding the ftyle, terminated by oblong prostrate fummits. The roundijh furrowed germen is fituated in the middle, fupporting a flender ftyle, crowned by an obtufe three-cornered ftigma. The germen afterward becomes an oval three-cornered capfule with three lobes, opening with two valves, filled with roundijh feeds.

This genus of plants is ranged in the firft fection of Linnaeus's fixth clafs, which includes the plants whose flowers have fix ftamina and one ftyle. Tournefort places the firft in the firft fection of his ninth clafs, which includes the plants with a Lily-flower of one leaf, cut into fix parts, whose pointal becomes the fruit; the fecond he places in his fourth fection of the fame clafs, with the flowers of the fame form which have fix petals.

The SPECIES are,

1. HEMEROCALLIS (*Flava*) corollis flavis. Lin. Sp. 462. Hort. Upfal. 88. *Day Lily with a yellow flower.* Lilio-Aphodelus luteus. Park. Par. 148. *Yellow Aphodel Lily.*
2. HEMEROCALLIS (*Minor*) fcapo compreffib corollis monopetalis campanulatis. *Day lily with a compreffed ftalk, and a bell-shaped flower of one petal* Lilio-Aphodelus luteus, minor. Tourn. Inft. R. H. 344. *Smaller yellow Aphodel Lily.*
3. HEMEROCALLIS (*Fulva*) corollis fulvis. *Du> *-~. -J:b a copper-coloured flower.* Lilio-Aphodelus phoenicius. Pack. Par. 148. *Aphodel Lily with a reddifh flower.*
4. HEMEROCALLIS. (*Liliaftrum*) fcapo fimplici, corollis hexapetalis campanulatis. Hort. Cliff. 128. *Day Lily with an unbranched Jingle ftalk, and beU-jhaped flowers with fix petals.* Liliaftrum Alpinum majus. Tourn. Inft. R. H. 369. *Greater Alpine Bafiard Lily, called Savoy Spiderwort-9* and in French, *Lis de Saint Bruno, i. e. St. Bruno's Ufy.*

The firft fort grows naturally in Hungary, Dalmatia, and Iftria, but has long been an inhabitant in the Englifh gardens 5 this hath ftrong fibrous roots, to which hang knobs, or tubers, like thofe of the Aphodel, from which come out keel-shaped leaves, which are two feet long, with a rigid midrib, the two fides drawing inward, fo as to form a fort of gutter on the upper fide. The flower-ftalks rife two feet and a half high, having two or three longitudinal furrows; thefe are naked, and at the top divide into three or four fhort rbot-ftalks, each fupporting one pretty large yellow flower fhaped like a Lily, having but one petal, with a fhort tube, fpreading open at the brim, where it is divided into fix parts, thefe have an agreeable fcent, from which fome have given it the title of yellow Tuberoft. It flowers in June, and the feeds ripen in Auguft; this plant is commonly propagated by offsets, which the roots fend out in plenty, thefe may be taken off in autumn, that being the beft feafon for tranfplanting the roots, and planted in any fituation, for they are extremely hardy, and will require no other culture but to keep them clean from weeds, and to allow room that their roots may fpread; they may alfo be propagated by feeds, which, if Town in autumn, the plants will come up the following forms, and thefe will flower in two years; but if the feeds are not fown till fpring, the plants will not come up till the year after.

The fecond fort grows naturally in Siberia, this hath roots like thofe of the former fort, but are fmaller: The leaves are not near fo long, nor more than half the breadth of the former, and of a dark green co-

lour. The flower-ftalk rifes a foot and a half high, is naked and compreffed, but has no furrows 5 at the top is produced two or three yellow flowers* which are nearer the bell-fhape than thofe of the other fpecies, and ftand on fhorter foot-ftalks; thefe flower the beginning of June, and the feeds ripen early in Auguft. It is propagated by offsets from the root, or by feeds, in the fame manner as the former, but the roots do not increafe fo faft; it fhould have a moift foil and a fhady fituation, where it will thrive much better than in dry ground.

The third fort is a much larger plant than either of the former, and the roots fpread and increafe much more, therefore is not proper furniture for fmall gardens -, the roots of this hath very ftrong flefhy fibres* to which hang large oblong tubers. The leaves are near three feet long, hollowed like thofe of the former, turning back toward the top. The flower-ftalks are as thick a man's finger, and rife near four feet high; they are naked, without joints, and branching at the top, where are feveral large copper-coloured flowers, fhaped like thofe of the Red Lily, and as large. The ftamina of this fort are longer than thofe of the other, and their fummits are charged with a copper-coloured farina, which fheds, or being touched, or if a perfon fmells to the flowers, it will fly off and fpread over the face, dyeing it all over of a copper colour, which is a trick often played by fome unlucky people to the ignorant: thefe flowers never continue longer than one day, but there is a fucceffion of flowers on the fame plants for a fortnight or three weeks; this fort flowers about the fame time as the former, and the roots propagate too faft for thofe gardens where there is but little room. It will grow off any foil or in any fituation * the beft time to tranfplant the roots is in autumn.

The Savoy Spiderwort, or, as the French call it, St. Bruno's Lily, is a plant of humbler growth than either of the former: there are two varieties of this, one is titled Liliaftrum Alpinum majus, and the other Liliaftrum Alpinum minus by Tournefort; the firft of thefe rifes with a flower-ftalk more than a foot, and a half high; the flowers are much larger, and there is a greater number upon each ftalk than the fecond; but as there is no other effential difference between them, I have not put them down as different fpecies; but the firft is by much the finer plant, though not common in England, for the fecond fort is what I have always obferved in the gardens here. I received fogie roots of the fecond fort from Monf. Richard, gardener to the King of France, which continue their difference in the fame foil and fituation with the firft, which fflowers earlier in the year; the leaves of this fort are fomewhat like thofe of the Spiderwort, are pretty firm, and grow upright; the flower-ftalks grow about a foot and a half high, and have feveral white flowers at the top, fhaped like thofe of the Lily, which hang on one fide, and have an agreeable fcent; thefe are but of fhort duration, feldom continuing in beauty above three or four days; but when the plants are ftrong, they will produce eight or ten flowers upon each ftalk, fo they make a good appearance while they laft.

This fort is ufually propagated by parting the roots; autumn is the beft feafon for doing this work, as it alfo is for tranfplanting the roots; for when they are removed in the fpring, they feldom flower the fame year, or if they do, it is but weakly: thefe plants fhould not be tranfplanted oftener than every third year, when the roots may be parted to make an increafe of the plants, but they fhould not be divided too fmall for if they are, it will bg. two years before they flower: thefe plants delight in a light loamy foil and in an open expofure, fo muft not be planted under the drip of trees; but if they are planted to an eaft afpedt, where they may be protected from the fun in the heat of the day, they will continue in beauty longer than when they are more expofed.

HEMIONITIS [*He*wk, of H'otas a.Mule, q. d. Mulewort, becaufe ihis plant was believcd to be as barren as a mule.*] Moonfern.

Tlii? : a plant whi is fridoni p:rp.i:- LI id in gardens, therefore 1 •' all not r...ible the a-ader with any account of it more than this. Tjtai whoever liati a mind 10 or 11... of the sort, must procure the plants from the •>m tries wt v: they naturally grow, there are iwo lbr» which art natives of th= warmer part; •. Europe, but in America •••re is a great number of very different kinds, these iimft be planted in pots filled with loamy undruggd, 1 iiii, 1lm [uch tit them as art natives of hot countries, must be placed in thi flower; the others may be sheltered i ;ider it common franc in winter, and during iJic lumail-r they must be 1 1 cjucndf watered, but in winter they will require but little. In summer they lliould alfo have plenty of free air admitted to them; with this manner • merit the plants will rflit.

HEPATICA • A. Boerh. Ind. Plant. Ranunculus. TERN. Inf. R. Fl. 150. American. Linl. Gen. Plant. 614. [Hepatica, or Hepas, the liver, is called, because the leaves of this plant are divided into lobes, like the liver (but it does not at all take its name from its ufi for it is of no virtue against the diseases of the liver, us many have croutoudly imagined); and trissha, iiom iti uuil made thereto.] Hepatic >> of Noble Livci..

The Jharr hath a ti-t-ltaoed cmpnlrmt. Is hath for petals, which are oval, and expand to the bottom, with a great number of slender filamentous flowers. km tl<t petals, surrounded by single lamina; and several forms collected into a head, supporting accumulated stamens, crowned by white filaments. The perianth consists of five acuminate pale fleshy scales the styles.

This genus of plants is by Tournefort ranged among the Crisifoots, and by Linnaeus it is placed under American; but as the flowers of American have no enfilaments, and the Hepatica hath a three-leaved one, it may be separated from that genus \ and ai C it is well known in the garden by this title, so should we range it with the American, it might occasion confusion. This is ranged in the Systema section of Linnaeus's thirteenth class, which includes the herbs with flowers having many laminae and styles.

The VARIETIES of this plant are,

1. HEPATICA (Nobis) trifolia, circulo RCB◀. CM. 71M *Jugh the Hepatica, or Noble Liverwort.*
2. HEPATICA (Pisa) trifolia circulo p.'no. Cluf. fir *Askle the Hepatica, or Noble Liverwort.*
3. HEPATICA (Alta) trifolia, flore alba i implki. Boerh. Ind. *The pale white Hepatica, or Vait IJi'truwt.*
4. HEPATICA (Pulchra) trifolia • mbroflora. Clu.: *Single red Hepatica, or Noble Liverwort.*
5. HEPATICA (Rubra) trifolia St. flore rubra Nle-na. Boerh. Ind. *Double red, or Ptaib-idkurdt Hpa-tica.*

Theic plliir are some of the g-iteft bea' •ers of the fp'ng; thic t'uwcis arc produced in Febrii.

In great plenty, before the green leaves appear, and make a very beautiful figure in the borders of the pleasure-garden, especially the double sorts, which commonly continue a fortnight long in flower than the single kinds, and the flowers are much fairer, I have seen the double white kind ofttn mentioned in books, but could never see it existing, though I do not know but such a flower might be obtained from seeds of the double white, or blue kinds. I have sometimes known the double blue sort produce some lowly; in autumn, which were inclined to white, and thereby Ionic pwijlle Juvc b«n ikcciv«l, who have procured tr roots at •itat feafon, and planted them in their gartiwi: but the spring following their Sowers were blue, ai before t and this is what frep. A illy happens, »! i in the autumn is so mild as to cause them to flower, but whether the double white sort, mentioned in the books, was only this accidental alteration in the colour of the flower, I cannot say, though it seems very probable it was. I see not could hear of any person who >ever £1* the double white sort grows in the f

The single sorts produce f... r-ryycar, whereby

they are easily propagated, and alfo new flowers may be raised; ii way t)bt...ed. The brtftcfcon i or lowering of the let-dsii in ihc begitnir^ pi August, either in pots or boxes of Hgln earth, which should be placed in a to luvc onl) the morning sun until October, when they Qwuld be removed into the full sun, to remain during the winter leaf inij but itt March, when the young pbnt: will begin to appear, they must be removed again to a shady situation, nil in t.r) weather should be frequently watered, and about the bfjjiit- r^N^ of August they w!! Lr in inij [jt tr,tninUnted; ac which time you (huuM ijrff]arc a border lacing the Mil, of good, frech, loamy earth, into wiiidi you (liould remove the p'am., ;lacing iima about fAK inches • difUrcc t... way, closing the earth pretty fast 0 thcir roof, to prevent the worms from drawing iheni out 01 the ground, which they are very apt to do at that season; and, in the spring following, they will begin to show their flowers, but it will be tiit, two years before they flower freely, and till then you cannot judge of their goodness; when, if you find any double flowers, or any of a different colour from the common sort, they should be taken up, nnet I: and planted into the borders of the flower-garden, where they should continue at least two years before they are taken up or parted; for it is remarkable in this • plant, that when they are often removed and parted, they are very subject to die; whereas, when they are permitted to remain undisturbed for many years, they will thrive l exceedingly, and become very large.

The double flowers, *1 which never produce seeds, are propagated by parting their roots, which lliould be done in M.;; ch, at the time. Ion tiey arc in 1lt/weij but •! lliould be careful not to separate them into very [i small heads, nor should they be parted •-iienter than every third or fourth year, if you intend to j]it... them thrive, for the reason before given. They delight in a strong loamy soil, and in an eastern position, where thejr mny have only the morning sun, (houg; they will grow in almost any aspect, not too warm, and are ; ever injured by cold.

HEPATICA TORFI. M. See ERYTHRODIA. 11.

Hi-ITAPHYLUM. See POTTIA IU-A.

HER. • CLEIM. Lm. Gea, 3+5. Sphonjylium. Tourn. Inf. 1. Cow ParCncp.

The CHARACTERS are,

The calyx of the greater united is large, composed of many smaller, which are plain; the general involucre is composed of many leaves which fall off; the partial united have involucrems of three to seven leaves, the outer being the longest. The general involucre is deformed, the furrows are mostly pentafid; each of the lobes have five equal petals, which are reflexed; Most of the rest have the same number of unequal petals, the outer being the largest; they have each five filament longer than the petals, surrounded by a single lamina. The perianth is fringed with the leaves, and is almost oval, supporting four styles, crowned by simple stigmas. The perianth of several becomes an elliptical fruit, composed of two oval compressed seeds.

This genus of plants is ranged in the second order of Linnæus's sixth class, under Pentandria Digynis, the flowers having five Stamens and two styles.

The SPECIES are,

1. HERACLIS (Sponjylium) foliis pinnatifidis. Hort. Cluf. 303. Cow Parjog with white pointed lobes. Sphonjylium vulgare hibernum. C. B. P. 157. Cow-parjog.
2. HERACLIS (Pinnar) foliis pinnatis, foliis quibus, intermedia trifidis, floribus radiatis. Hort. Lugd. 69. Cow Parjog with orange lobes longer than the, and radiated flowers. Petax Sphonjylii rad. in Hieracium. C. B. P. 157.
3. HERACLIS (Sponjylium) foliis simplicibus, floribus radiatis. Lin. Sp. 359. Cow Parjog with large white and radiated flowers. Valant from Sponjylium glabrum. C. B. P. 157. Double Spun Cow Parjog.
4. HERACLIS (Silybum) foliis pinnatis, foliis quibus, intermedia trifidis, cordatis uniformibus. Hort. Uplid. 69. Cow Parjog with orange lobes, having five

lobes and a uniform corolla. Paftinaca foliis fimpliciter pinnatis, foliolis pinnatifidis. Flor. Siber. i. p. 218.

The firft fort grows naturally in moil parts of England, fo is rarely admitted into gardens; there is a variety (if not a diftinct fpecies of this) with narrower leaves, which are more divided than thofe of the firft; however, as they are feldom cultivated, I fhall not trouble the reader with their defcription.

The fecond fort is placed in moft of the Pharmacopoeias as a medicinal plant, but is rarely ufed as fuch, efpecially in England. This rifes with a tall ftalk near fix feet high, which is embraced by the bafe of the leaves 5 thefe are winged, having generally five roundifn lobes, whofe furface is rough, of a dark green colour: the flowers are produced at the top of the ftalks, being clofely inclofed by the empalement when they firft appear 5 but this afterward burfting, the umbel expands, having large petals on their exterior row, which are almoft heart-fhaped, and are fucceeded by flat compreffed feeds like thofe of Parfnep, but larger, having black ftreaks on their outfide. This grows naturally on the Appenines.

The third fort grows naturally on the Alps, as alfo in Siberia: the ftalks of this rife as high as thofe of the former, but the leaves are fmooth. This is feldom cultivated.

The fourth fort grows naturally in Siberia and Tranfylvania; in the former country, the inhabitants eat the ftalks and leaves of the plant for want of better food.

As thefe plants are rarely cultivated, unlefs in botanic gardens, fo I fhall recommend to thofe who are defirous to propagate either of the fpecies, to fow their weeds in the autumn; and in the fpring, when the plants are up, to hough the ground, cutting up the feeds, and thinning of the plants, in the fame manner as is direfted for Parfneps, with which culture the plants will thrive.

HERBA GERARDI. See ANGELICA SYLVESTRIS MINOR.

HERIBALIST, HERBARIST, a perfon who is fkilld in diftinguifhing the kinds, natures, or virtues of herbs or plants.

HERBA PARIS. See PARIS.

To HERBARIZE, to go abroad in the fields in queft of different or new herbs or plants.

HERBIFEROUS fignifies bearing or bringing forth herbs.

HERBIVOROUS, i.e. devouring or feeding on herbs or Grafs.

HERBOSE, graffy, or full of Grafs or herbs.

HERBOSITY, graffinefs, or abundance of Grafs or herbs.

HERBULENT, graffy, full of Grafs or herbs.

HERMANNIA. Tourn. Inf. R. H. 656. tab. 43*. Lin. Gen. Plant. 74a. The title of this genus was given by Dr. Tournefort in honour of that great bo-Lift, Paul Herman, M. D. Profeffor of Botany at Leyden.

The CHARACTERS are,

The flower bath a pitcher-fhaped permanent empalement, divided into five parts at the brtm. It bath five petals, which are narrow at their bafe, and twijt agatnjt the fun within ibe tubulous empalement, but fpread open above, where they are broad and obtufe. It bath five broad ftamina, which are joined in one body, terminata by pointed fummits, which are joined. In the center is fituated a roundijh five-cornered germen, fupporting an owl-toaped fyle which is longer than the ftamina, crowned with five fpikelets. The germen afterward becomes five-lobed.

The germen is ramred in the firft feftion of This gemis or F T X h includes the plants Lmnaeus's fixteentn crais, * < ^ . 5, ^ whose flowers have five ftamina joined in one body to the fyle.

The SPECIES are, >. Itawu c***) * & % ? £. Hermannians, crenato-emarginatis. Hort. ^ u ^ 3+

ma with wedgefhaped folded leaves, which are crenated and indented. Hermannia frutescens, folio oblongo ferrato latiori. Boerh. Ind. Shrubby Herinnannia with a broader, oblong, ferrated leaf.

2. HERMANNIA (Grossularidfolia) foliis obovatis acutè incifis, pedunculis bifloris, Prod. Leyd. 347. Hermannia with oval leaves acutely cut, and foot-ftalks bearing two flowers. Hermannia frutescens folio grossulariae parvo hirtuto. Boerh. Ind. Shrubby Hermannia with a fmall, hairy, Gooseberry leaf

3. HERMANNIA (Althaeafolia) foliis obovatis plicatis crenatis tomentosis. Hurt. Cliff. 343. Hermannia with oval, folded, woolly leaves, which are crenated Hermannia frutescens, folio ibifci hirtuto molli, caule pilolo. Boerh. Ind. Shrubby Hermannia with a soft, hairy, Mershmallow leaf, and woolly stalk.

4. HERMANNIA (Hyjlopifolia) foliis lanceolatis obtusiferratis. Hort. Cliff. 342. Hermannia with obtuse fpear-fhaped leaves, which are fawed. Hermannia frutescens, folio oblongo ferrato. Tourn. Shrubby Hermannia with an oblong ferrated leaf

5. HERMANNIA (Trifolciato) foliis oblongo-ovatis crenatis tomentosis flore mutabili. Hermannia with oblong, oval, crenated woolly leaves, and a changeable flower. Hermannia frutescens, folio oblongo molli cordato hirtuto. Boerh. Ind. Shrubby Hermannia with a soft oblong, hairy, beard-fhaped leaf.

6. HERMANNIA (Pinnata) foliis tripartitis, media pinnatifida. Hort. Cliff. Hermannia with tripartite leaves ending in many points. Hermannia frutescens, folio multifido tenui, caule rubro. Boerh. Ind. alt. Shrubby Hermannia with a narrow multifid leaf, and a red stalk.

7. HERMANNIA (Lavendulifolia) foliis lanceolatis obtusis integerrimis; Hort. Cliff. 342. Hermannia with obtuse fpear-fhaped leaves, which are entire. Hermannia frutescens, folio lavendulae latiori & obtuso, flore parvo aureo. Boerh. Ind. alt. Shrubby Hermannia with a broad, blunt, Lavender leaf, and a fmall golden flower.

8. HERMANNIA (Hirtuta) foliis fimplicibus tematicis hirtutis feffilibus. Hermannia with fingle and trifoliate leaves which are hairy, and fit clofe to the stalk.

The firft fort rifes with a fhubby ftalk fix or eight feet high, dividing into many eredt irregular branches, covered with a brown bark, garniied with wedge-fhaped leaves, which are narrow at their bafe, but broad and round at the top \ they are about an inch long, and three quarters broad at the point, where they are indented and crenated. The flowers are produced in fhort fpikes on the upper part of the branches; they are of a pale yellow colour, but fmall; thefe appear in April and May, and are often fucceeded by feeds, which ripen in Auguft.

The fecond fort is a fhrub of lower ftature than the firft, but fends out a great number of branches, which fpread wide on every fide, garniied with fmaller leaves than thofe of the former, which are rough, and fit clofe to the branches. The flowers are produced in fhort clofe fpikes at the end of every fhoot, fo that the whole fhrub feems covered with flowers; they are of a bright yellow, and appear toward the end of April, but are not fucceeded by feeds in England.

The third fort is a plant of humbler growth than either of the former, feldom rifing more than two feet and a half high ; the ftem is not fo woody, and the branches are foft and tender, garniied with oval woolly leaves, which are plaited and crenated on the edges; the flowers are produced in loofe panicles at the end of the branches ; they are larger than thofe of the other fpecies, and have very hairy empalements. This fort flowers in June and July, and frequently puts out more in the autumn.

The fourth fort has been longer in the European gardens than either of the other. This rifes with a fhubby upright ftalk to the height of feven or eight feet, fending out many ligneous branches from the fide, which alfo grow ipore eredt than any of the other; thefe are doathed with obtufe fpear-fhaped leaves,

ahair an inch and a half long, and hilt' mmch broad, lawed on (he edges towir l the end. [he flower* come out in linull buncim from ilv lido of the *Cniki* ihey *MC of v.* pale Straw colour, ami appear in May and June; tiicie arc frequently luccccited by lccds, which jil ripen lhc latter psn of Augult.

The fifth • rt kidom nfes more thin two feet high, with * fort Ligneous (ULk, lending out llcndcr irregular brarKh-s, garniihed with oblong, oval, woolly leaves, ftandir r. up n pretty long foottalks; the low produced in Joofc fpikes it the end or the bran thefe arc, al rheir firft appearance, of a gold colour, but after they have been lomc days open, they change to yellow. Th(S flowers in Jurw and July.

Th* fufth fort hfes with a. Ihrubby llalk near three feet high, fending out many lknder branches, covered with a rrdiJh bark, garnifhed with narrow wing-pomted leaves ; the flowers come out from the fide of ih: branches in fmall clufters; ihey are ii.iall, <nd of a deep yellow colour. This flowers in June and July.

The feventh fort hath ftrubby branching ftalks, which arc very bufiiy, bur {*Adam* rife more than a foot and s half high •. the branches arc very fender, Mid garni[hed with hairy, paic, green leaves of different lizes -, *fame* of them are two inches long^ and one bioad at their ends •, but their common fric is felclom more dun one inch long, and half an inch broad at their points; they are entire, and fit pretty close to tilt branches -, the (lowers come out from the fiJe of the il alls fitgly, they are fmatl, a;id of .l yellow colour. This fort flowers molt [urr of Kimmer.

The eighth fort I raifrd from feeds n-hldi came from ihe. Cape of Good Hope. This r.--^ with * ihrubby hairy Halk about two tccr iii^n. It-tiding out many fide branches, which grow more atEt tfu of tie former, gamifhed with oblong, Veined, hairy leaves, wliich arc fomctimes Qrglc, and at oit times come out by thrcci, the middle one bring die large! j the flowers arc produced toward t^ end of the branches; they are large, and of a deep yellow colour, with large, iwollen, hairy ejnalcments. Thii fort continues flowering mulV part 01 furmncr.

All the fpecies of thi) genci yn known, are natives of LHC country about tht- Cape of Good Hop. from whence moft of them were brought to the gardens in Holland, where they have been propagated and lprrad through moil parts of Europe.

The plants are all propagared by planting cui. of them during any otihc lummer month*, in a bed of frith earth, obferving to water and iludc them until they arc well rocurd, which wil be in sbfil wrtks after planting; then you fhouid rake diem up, pidrrvtag a ball of tanh to ilicir roots, and pl:n: them into pots filled with light frith earth, pljcinf; ihem in .l Cwdy fituation until they have taken freili root; after which (hey may be ejtpofed to tin open air, with Myrtles Geraniums, See. until (he middle or latter end of October, when chry mull be removed into ilic greca-houfe, obfervin^ to place them in the mokflpart of the houfe, where they may l> nmcti free air as poffible; ior if they arc too much drawn in the houfe, they will appear very faint and fieldy, imdfeldoni produce many flowen; whereas, whn they arc only preferved iroin [he fruft, => a great fl. r, they will .ippr.ir ft rang ar.d healthy, and produce Urge qvsniities of flowers in Apr: and May, during which tcurytialic a very hirullomc appearance in the grern bout: rticj mult alio be frequently waii red, and w. I require to be pew potica at leaft twice every year, i. e. in May and Scptember; otherwife fhdrn>ti will be ib rnmtdtd, 3\to it their growth.

These plants rarely l produce good fruct with us, except the fourth and eighth forts, which ripen their fructs every year in England; the • other tart: productiis any, t Iippoic tlui nuy be their).

Having been long purpofed from couages, for thofe plants which I have raded from feeds, have been fruful two or three years after, but I have always

found thole plants which have been prop snared by cuiinjptaken from thefc, luyc four tecmnc barren: the lame thing I have ubicrved in n any other plants, tEic^elueie Lhole who arc dTiru'ji to continue tluir plants fruitful, (liquid cortljtitly reite them from iceds. Theft-, as alfo thole which arc gbtained troiu abroad, muft be lown upon a molLer^te hoi and when the pUnts come up, they mult be trtnl-planted into finsUpocs, am: abanqued into anucher very tnodernte hot-bed, in offio to pntow their rooting •, after which they mull be hardened by de-prcccs, to endure the open air in fuminci and may then be treated us the old pkots.

Ij fix M O D A C T Y L U S, the HefmodaSy], commonly called Snake's-head Iris.

This genus is by Dr. Ltnn:eus joined to Iris, the characters of the flower agreeing pretty well wit at thm gL-nus; from which Toura it has feperand it from the difference of ihe root, which is .jt ai; COTdiog to his own fylleii, wliere i be lhfpe of the petals with their nuhier ami pofition, the principal chrn.ictcriitics in diftmguifliing die clsfils and genera ; but as this plant rquires a particular treatment, Jo J have continued it under Tournurfurt's title.

The CIMKVK-TERS are, *It beth a Lsty-jbaped jlrarr, wtfijtini tf cm lajf, end Jhopti rx.kify likt an bit, tut has a txbema* rwi, Ji -l iwte t'jjs or tbrte dags, like ol/txg LuH'S.*

We have but one Snoui of this plant, HatwoDACTVLUS [*TuhmiNi*] foliu quad ran 511 St C. B. P.

Snekti-besd Iris, vul^o. "iliiis is alio called Iris tu-be noth Belgarum, i. c. *fuixroii Iris* if lite iitiitib.

'iliii plant u eaCty propiflfted Ly hi tubers, whkh lhottld be cackit off soon after the green leaves decay, but they fhould not be kept long out of the ground, left they fhrink, which will caufe them to .l wken they are planted. They ihould have a loamy Jbil, nor too Jtrong nor deep, and muft be planted to or caft afpect, where they wil flower very weli.

The roots fhould not be removed (-fctner thia: onct three years, if you detign to iooMls ilirfij but then mey ihould be planted at 3 farther L:ftance from each other, thari if they were to remuj) but one years and the beds fhould be kept cleir from Weeds, and at Michaelmas ilicre fhould be (one line earth laid over the beds, which will greatly ltingthen their roots.

The diftance which thrfr plants ihould be allowed is fixinchesfquire, and they ihouldbt. placed three, inche> deep to the duce U jeir fy •• rrs in M ay, and their feeds arc ripe in Auguft ; but as tley multiply pretty fa& by thier TOOLS, tew people are it the tremble of roofing them from fecdj \ buc rhofc who havean inclinai on to do, muft m:; them in the man: or directed for the bulbous Iritb.

The roots oi this plant are very apt u> wn deep into the ground, and then rhyr lldum product llovers; and many times they ihoot fo deep as to lce foil, elpcciiily where the foil b very li;:tii; [ht-reibre to pccr ont tho, it will be proper to lay a ftack of tubbiih under the beds where thefc lre planted, to hinder them from getting down. This fhould al-ways be pradifed in light i round, bu; in ftrong land ihe're will be no occafwn'io maJ.: uie of this precaution, becaufe they do n< flioot downward io freely in that.

This plant has by fome botanic writers been fuppofed the true Hcrtnodactyl, but w] as has been long whd in Europe for thtat ia the root of a Colchicum.

H. E. R. S A N D I A. Plum. Nov. Gm. j. 1737. 47. Lin. Gen. Plant. 431. jack-in-a-Box, vulgu.

The CHAÏAOTIXI (IC,

It hath male and female flowers on l. lant, the male flowers have a partial corolla.

*b*ra titter i&JbmtJ trnfaitmnu*

are shaped like the male, but want stamina, they have a rounded germen, supporting three slender styles, crowned by acute stigmas. The empalement afterward becomes a large, swollen, oblong fruit, perforated at each end, inclosing one hard globular nut.

This genus of plants is ranged in the third section of Linnaeus's twenty-first class, entitled Monoclea Triandria, which includes those plants which have male and female flowers in the same plant, whose male flowers have three stamina.

We have but one SPECIES of this genus in England, viz.

HERNANDIA (Sonora) foliis peltatis. Hort Cliff. 485. tab. 13. Hernandia amplo hederæ folio umbilicato. Plum. Hernandia with a large umbilicated Ivy leaf, commonly called in the West-Indies, Jack-in-a-box.

This plant is very common in Jamaica, Barbadoes, St. Christopher's, and many other islands in the West-Indies, where it is known by the name of Jack-in-a-box. The fruit of this plant when ripe, is perforated, and the nut in the inside becomes hard; so that when the wind blows through the fruit, it makes a whistling noise, which may be heard at a distance, from whence, I suppose, the inhabitants gave this name to the plant. It grows in the gullies, where there are rills of water.

In Europe this plant is preferred in curious gardens, with other tender exotic plants. It is propagated by sowing the seeds in a hot-bed in the spring; and when the plants have arisen two inches high, they should be transplanted each into a separate pot, filled with rich earth, and plunged into the hot-bed again, observing to water and shade them until they have taken root, after which time they must have air admitted to them, (by raising the glasses) in proportion to the warmth of the air, or the heat of the bed in which they are placed, and should be frequently watered, otherwise they will not thrive. As the plants advance, they should be removed into larger pots, which should be filled with rich earth, but in doing this, you should be very careful not to break the roots, as also to preserve a good ball of earth to them, and if their leaves should hang after being removed, the plants must be screened from the sun until they have taken new root. The best time to shift these plants is in July, that they may be well rooted before the cold approaches; the plants must be constantly kept in the bark-stove: in winter they should have a moderate share of heat, and in the summer they must have plenty of air in hot weather. With this management, the plants will grow to the height of sixteen feet or more, and the leaves being very large, will make a beautiful appearance in the stove. It hath not as yet flowered in England, though we may expect some of the large plants to flower in a short time.

HERNIARIA. Tourn. Inft. R. H. 507. tab. 228. Lin. Gen. Plant. 272. [of Hernia, Lat. a rupture.] Rupturewort.

The CHARACTERS are, The flower hath no petals, but a coloured empalement of one leaf, cut into five parts when spread open. It hath four small unequal styles situated on the division of the empalement, terminated by acute stigmas, five others which are shorter, placed alternately between them. In the center is an oval germen with two stigmas, which have acute points; the germen afterward turns to a small capsule included in the empalement, having one unequal-pointed seed.

This genus is ranged in the second section of Linnaeus's twenty-first class, entitled Pentandria Diogynia, or the whole flower alive.

- The SPECIES are, 1. HERNIARIA (Glabra) glabra herbacea. J. B. 3. 378. Smooth Rupturewort. 2. HERNIARIA (Filifolia) * * herbacea. J. B. 3. 379. Rough or hairy Rupturewort. 3. HERNIARIA (Alba) alba herbacea. Tourn. Inft. 507. Rupturewort with a Chickweed leaf.

4. HERNIARIA (Fruticosa) caulibus fruticosis, floribus quadrifidis. Amoen. Acad. 4. p. 369. Rupturewort with ligneous stalks and quadrifid flowers. Herniaria fruticosa, viciculis lignosis. C. B. P. 382.

The two first sorts grow naturally in England, but not very common; they are low trailing plants, their branches lying on the ground, and extend seven or eight inches each way; they have leaves like the smaller Chickweed, the first is smooth, and those of the second are hairy; the flowers come out in clusters from the side of the stalks at the joints; they are small, and of a yellowish green, to make no appearance.

The fourth sort hath shrubby stalks which trail upon the ground, garnished with small hairy leaves like the second sort; the flowers are all very like that.

The third sort is an annual plant, which grows naturally in France and Italy. This doth not spread so much as either of the other sorts, but the flowers and leaves are somewhat like the first, but larger.

These plants are seldom cultivated, but in botanic gardens for the sake of variety. The three first are annual plants, seldom continuing longer than one year, and must be permitted to shed their seeds, whereby they are better preserved than if sown with art. The fourth sort is an abiding plant, which may be propagated by cuttings; but as they are plants of no beauty, they are rarely preferred in gardens.

The first sort is what should be used in the hops, but is rarely seen in London, the herb-women commonly bringing the Parsley Breakstone to the markets, which is sold instead of this plant.

HESPERIS. Tourn. Inft. R. H. 222. tab. 108.

Lin. Gen. Plant. 731. [some derive the name of this plant from Heperia, Italy, from whence the people were anciently called Heperides; but it is pretty plain, that the name was taken from Ἑσπερίς, because the flower commonly smells most in an evening, either of these may be admitted. It is called Viola Matronalis, because it resembles the Violet, and was at first cultivated by women.] Dame's Violet, Rocket, or Queen's Gilliflower, in French, Juliane, or Juliene.

The CHARACTERS are,

The flower is composed of four oblong petals in form of a cross, whose base or tails are narrow, and are situated in a four-leaved empalement, which falls away. It hath six unequal styles, four of them as long as the tube of the flower, and two much shorter, terminated by narrow crescent-shaped stigmas, reflexed at their points. It hath a honey-gland situated between the two short styles, and a four-cornered germen the length of the styles, but no style, the oblong erect stigma fitting on the germen; the stigma is divided into two parts, which join at their points, the germen afterward becomes a plain, long compressed pod with two cells, divided by an intermediate partition, inclosing many oval compressed seeds.

This genus of plants is ranged in the second section of Linnaeus's fifteenth class, entitled Tetrastemonia Siliquosa, the flowers having four long and two short stamina, and are succeeded by long pods.

The SPECIES are,

- 1. HESPERIS (Matronalis) caule simpliciter erecto, foliis ovato-lanceolatis denticulatis, petalis mucrone emarginatis. Lin. Sp. 927. Dame's Violet with a single upright stalk, oval, spear-shaped, indented leaves, and the petals of the flowers indented at the top. Heperis hortensis, flore purpureo. C. B. P. 202. Garden Rocket with a purple flower. 2. HESPERIS (Alba) caule simpliciter erecto, foliis lanceolatis serratis, petalis integris. Dame's Violet with a single upright stalk, spear-shaped sawed leaves, and the petals of the flower entire. Heperis hortensis flore candido. C. B. P. 202. Garden Rocket with a white flower. 3. HESPERIS (Inodora) caule simpliciter erecto, foliis subulatis dentatis petalis obtusis. Lin. Sp. 727. Dame's Violet with a single upright stalk, halbert-shaped, indented, obtuse leaves and petals. Heperis sylvestris inodora. C. B. P. 202. Unfavoury wild Rocket.

4. HES-

- 4. HESPRIS (*Trips*) cade hiipido ramof patents. Hort Upl'al. 1E7. *Dinar's Fiottl testb a pridty b>-...*, *fpri&iingfir-ik*. Hefpcr> moiuana, (iillidiii, odnriiJIV m~ C. B. P. zoi. Sweittjl paii Msimian fa...
- 5. HESIB (*Sium*) caue impuncti, foliis lanceolatis ikntaQO-lerratis, petalis obtullillinti!; integris. Lin. Sp. 917. *Dam/i Vidit wiib e fntgU jlak, fptar-jiafn Jaani ti'M, and blmii entire fdaiss te ftjl*
- 6. HEM'SKIS (*Exigüe*) cauk ramofiffimo dirTufo, foliis liqeari-hncL-oUtis denratis, filiquis apice truncatii. *DmiSi VwUt vciib a very fine twig diffinedf«!k, norrev, focsT-fb&pti, Mxted Utmxs, md iki piimi if tin teds fbaptid ltki a trwibtm. Helpcris exigua lutea, "folio dentata angufto. Boerh. Ind. 146. liocist <xib a vay futalljilvu; fievicr, mia tarrew indented leaf.*
- 7. H i m s (Dtmw<λ foliis denrato-p'inoanfidis, cauk tew.Lin.Sp.PJant.6S4. *Danfi ykltvütbwmgp...* in *Jotted fa. iSySuda fmcetbfiali. Helpcris [i l... albo minima, fiiiqul longi, folia profunde denu<0. Boerh. Ind. »lr. % zo. Rocket with a final! tshilt Jfcaw, a kite pod, end leava dupfy bub*
- 8. Htsi'iRrs (*ifriiaKa*) caue nmofiffimo dilTufti, foliis [Nitiolatis liricoiatis acute denmtk fcabrb liiqui^ (i bus. IJn, Sp. Plant. 918. *DJI. ... sb wry ... d j f i f d l l h j h d ... b f d l ...*, and pads fitting cleft to the *Jleüi. Hdpcris Africans, hierfldi folio htrfuto, (lore tninimo purpurafcenic. NifflBL Aft. rfneati Racket with a hairy Hoa:faxed kaf, aid u very fwU purplijb fltvxr.*
- 9. HtiriRis (*I'ir/Kt*) cauleccto ramofu, fuliis corditi» 1 mptlicaulims icrratis villofis. Lin. Sp. Plant. 66+. *JDimV Vitet with an tri3 bramhing fiali, ord bitny, funxd, biert-jhaptid iemxt embn'ng the Jialk. Turritis annua v<rns, purpuraJccnte Doie. Touni. Iuft. 214. Annual iaiuu Tower A&Jlard, with a pur-*

The first fort grows naturally in Italy -, this was formerly in greater plenty in the Englifh gardens than at prefent having been lofi igneglfced becaufe the flowers were tingle, and made but fede apjicarance j however, as the flowers have a very grateful item, 6l the plini it worthy of a place in every good garden. This rife wrth an upright (talk a foot and a half high, garnifhed with fpear-lhaped leaves which fit doJe to the ftalk, and are (lightly indented on their edges, tming in acute points : the flowers are produced in • loofe thyrle on the top of the Italks ; they arc compofrtl of four petals, which are roundifli and indented at their points, of a deep purple colour, and fmell very firm, rfpeciüilly in the evening or in 1 cloudy weather. It flowers in June, and the feeds ripen tht hvttw end of Auguft. It is a bkaoiat plant, fo that yotinn plants (hould be raifrd every year, to litply the plate of thoiie which decay: if the. feeds arc permitted to fcarter, the plants nil! come up v about trouble in the fpring -, and if the feeds arc Joivn, the ferfttrafonforit is inihcaatumn ; bevaui, thole which arc fown in the fpring often fail if tht ftafon proves dry, or will remain a long time in the ground before they vegeair. Thi^ phut OKJIIIJ have 3 louy IIII-dang d Foil, in wh:di it will thrive better 1 in in rich land.

There « a variety of this with double Rowers, in ibmc of the gardens in France i but that which we have in KnglanJ, K a variety of the third Ibrt with UnUvOury hWen.

The fit-om) fort h» been generally fupposed only a variety of the firii>, diBiring jn the colour of the flower, tmr is certainly a tiifinfnt fp. ; the leaves of this are t, e to long, but much i mder tli'n thole of the firii, and their bo. itrs are entire; the Howersare run oult fc large, nor Jo they form fo good spikes; itaysrc white, atid have not i > fice a flice in the firii. This is alfo a ...w plant, : requiring the fame treatment as the firii.

The third fort grows naturally in Hungary and Auftria. This rife with an upright ftalk near two feet high, garnifhed with fpear-fhaped leaves, ending in acute points, and fharply indented on their edges, they are of a dark green, and fit clofe to the ftalks ;

the' flowers grow in loole (pikes on die cop of tiir itJks 1 in Ibnir ch> are white, in others purple, an: functimes both colours llii>ed in dtc Iknie ; theje have no odour, ii> arc ,••••• rfa pilaw in gardens, but may be prupigrficd in iüv iuuu nantier as the two fer ...

From this fort, the double white and purpli: Rock' ... t been accidentally obtained, which ircmuch cQeetned for tiic beauty of their fleuuerj v and if they had die agreeable otour uf the CtrdcQ liutket, tiicy would : bi; ibmc ot ilic Li-lt fumiurc 10r the borders or the ikwcr-g.irden, but they are wiifour ... however, for the qpatuvof their flowers, ilny are by Jymc greatly elteemed, thei-eforc I lball bere injert the beft method of propagating ilium yet known.

Thefe plants are Batuolly biennial, fu the plants with finglc flowers rarely i'urvive the lecondyear ; iur will thole w'nb duible flowers continue mud. ... fo that imlels young plants arc annually mud 10 ilipply the place or the otl ooes, there w" ... a want

of them, wh ch is what :i-wperfun; are careful enough to obferve. j but thinking the roots to be pc; ... trail ro their putting out uHk^s, or the jllinta remairang after they have fkwetfd ; and fiaking them decay, are apt to tliint their ... rr tor them, pads arc at a loin macci ... for their decayng, whereas, when the plants hi ... flowered, they have finifhed their pcciuil, and tcldom continue to riowr a fecond tiinc From tie lame ram, though 1 poor Jgwi, they will often put out ji ... <! ... facts, fillftch may flower auaiti, bu: ... fo ftrong as the pincijl roots, ; ... :ole who arc delirous to propagate theie jllams, QiOuld do it in the following manner:

Then- floutii be iiii.c frong roots of each fbit kept apart for this purpoi. ... which arc not intend to flower, when uwfe have thai, vp tbcii fiowrr-iUlki about fk inches high, ti-'y thould be ... jfc o the bottim ; eich or' thefe may h. ... in the middle to make two cuttings, wiich Ihoulo be ; I ... in aloft, gentle, kra;ny luJj toancast exj ... where dicy may have only the morning lun ; a. ... they may be planted pretty near together, Jo as t> be covered with hand or bcll-lalTt-, which fhould be put over (hem after i ... uccn we'll wtrn-i!

and clutlly (hm Jow, drawing lie earth round die rim of the glilica to euclutic die air; then the gliT- (hould be fliadeti nith mt» every day when the fun is hot; and if thecu; ... are gently refrefhed with waa-r once in lcvn or ... days, it will be lufticient, for too much nsoiituc i ill CMTk Urm co rot: when theic arc watered, the giHes fhould be tbfriy ... down again m fccfoti: -, with tiis managern ... the cutting! will put oui roots in fire tir Ox 11 cttis, gnd will begin to ilioot sbovci ... the plates fhould be gently railed un one Bdt toad ... the air to them, and jii gradually harden them to the ... open air, to prevent their dra'ing up weak. When theic have ir-ide gooil roots, they thould be cirri ... gently removed, and planted in an salt border... about eight or nine inches afunder, obferving to > fhade and i ... after them till ilicy have ukrn new rs>oi -, ... which they will require ro other tare, but to keep the weeds till the autumn, when they may ix ir>uilp ... into the bntters of irk- (Acii'ure-garden, where they are defigned to flower.

The roots which are thisi cat down, « il fead up more ftalks than brtorc i and whti: ... they are of a ppijirr bright, ilicy auy Lc cut off a and treated in the liime tray ; Ju that if tl> roots are found, then they be two 0l three crops of theic cuttings taken from them and by lii duing, the old toots may becoi.; ... much longer than if thiy are perm; ... wd to flo»" ... and by this management, there may be always a fupply of good plants for the flower garden.

These plants art i ... very fubject to canker and rot when they are planted in a light rich foil, but in poor ftrong ground, I have feen them thrive and flower in the v moft perfettion, where the ftems of flowers have been as large, and the flowers as fair as the beft double ...

HEL

Such pillflowers. Their rSm of flowering is in the beginning of June, and I have frequently...

The fourth sort grows naturally in Hungary. This is much cultivated in the gardens abroad, for the great fragrance of its flowers, which in the evening is in...

The ladies in Germany are very fond of this plant, and during the season of their flowering, have the apartments every evening, that they may enjoy the fragrance of their flowers, for they have but little beauty, being smaller than those of the Garden Rocket, and of a pale colour, but the scent of their...

The fifth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The sixth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The seventh sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The eighth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The ninth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The tenth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The eleventh sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

The twelfth sort is very rarely (cm in the English garden) like Ac Gen: n Rocket, which is propagated by root in the...

HIB

Spice-flax. The leaves are on their sides, and terminate in June and July; these are succeeded by long...

The third sort is an annual plant, which grows naturally in the south of France. This sends out several heart-shaped leaves from the root, which spread on the ground; they are broad and long; the stalk rises...

The fourth sort is an annual plant, which grows naturally in the south of France. This sends out several heart-shaped leaves from the root, which spread on the ground; they are broad and long; the stalk rises...

HEUC HERA. Linn. Gen. Syst. 183. Sanicle.

The genus of plants is L'ngedin thefeonJ fcllion of Linnæus's fifth class, which includes these plants whose flowers have five stamina and two styles.

We have but one species of this genus, viz. HIBISCUS (American) Hort. Cist. St. Michx. Americana, four fringed purpureo villosa, Boott. Ind. alt. Hibiscus of America, with hairy flowers of a dirty...

The plant grows naturally in Virginia, and is hardy enough to thrive in the open air in England. It hath 3 perennial root, which send out many heart-shaped (ova) leaves, which are imbricated in four or five rows, and are crenated on their edges, of a luscious green, and smooth; between their veins are...

It is propagated by parting the roots in autumn. It should be planted in a shady situation; there is no beauty in this plant, but it is preferred in some gardens? [...]

![[>] SCUS. Lib. 22. Plant. 756. K. tnuu. Tourn.

Int. R. H. 99. tlt. 16. Syria. Worn.

The genus of plants is L'ngedin thefeonJ fcllion of Linnæus's fifth class, which includes these plants whose flowers have five stamina and two styles in one body, forming one column.

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HIB

- ru; isk b wdcg-foeped real knmits, wbyft upper ferfi art ail, indnit.-d, and a tra-Hiejiak. kviu-u. Syrorum quibuklsm. C. B. P. 316. 'I'bi SjriM to/w.v.v.; c\$mma;ly called Hibba. str.*
2. **Hibiscus (Hibiscus)** foliis cordato-quinquangulicris obfoliis ferratis, caule arlxjro. Hurt. Upfi 109. Hibiscus with heart-shaped leaves, having five angles each are ferris, and its stalk is prickly. *K L-terl-fijaptad lesvtf, having jivt tugh* Kctn.U Chen-th, li-u&u luluirotundo. Toiirn. Inf. R. M 100. China Ketmia with a ntaijib fruit, temnaxlj tclUd China Ryfi.
3. **Hibiscus (Hibiscus)** foliis cordatis quinquepartitis, caule scabro. Hort. Clit. 439. Hibiscus with heart-shaped leaves divided into five parts, and its stalk is prickly. *ismc Utbtbagfibus* foUis fUbjxrntto-cordatis fcp-
Hun
4. **Hibiscus (Malvaceae)** foliis pdrwrto-digitatis septem-partitis. Hort. Clit. 439. Hibiscus with seven-fingered leaves. *ieib arc dividrd into Jhita pom.* Ketmia Americana, folio l'ji;je, l'ie magno flv. icenitf, fundo jimpuiuio, frutucreiStojJTT.iiiUilili hexauono, foinic rotundulo lapore lat o. Booh. Ind.alt 1.171. Aw-rtfd.i Ktnria 'uilb a Papm leaf, and a large yellow flower. *fsjrrj. bsing apurpk iMlin, a pyramid Jx ...* erell fruit. *ctdiefa just tesie.*
5. **Hibiscus (Temnatafuf)** foliis cortlatw angulitis ferratis tenure caule a rboiso. Hiliftss with angular, btrrt-jkn[<td, ftiuicdj weolfy Uirjcs, and it trt-tiki fiali. M&lv arbor<), folio oblongo acumiutu vcluo den-
*v icvHcr finuito, Bore ex rubro (lavckntc. Slojn. Cat. 99. rre Mullen with eiitnj, amle-pc-mltd, in-
1 Jk&ktb Jimtatd, and a reddij.
6. **Hibiscus (Tikawa)** foliis cordatis tuberculatis in-
caule scabro. Hort. Clit. 439. Hibiscus with heart-shaped leaves, and its stalk is prickly. Ketmia Indka (Ue) lulo, Tourn. Inf. li. H. 1 TO. Indian Ktm'ta ".alba Uix'trttkaf.
7. **Hibiscus (Triamca)** foliis ovatis acuminiatis, foliis ferratis glandis, wulcuorco. Flor. ZeyL i60. *il-
tl-pc;atal, JIKCSJ, fnt* jUnrcftui, flore pleno
jrUnrcftui, flore pleno Beyen. Cent. ill. ubt 56, Tr< *I'rvn* Me.*
8. **Hibiscus (Fidula)** foliis ferratis incrimatis ovatis indivisis, superioribus quinquepartitis, caule scabro. Hort. Clit. 439. Hibiscus with serrated leaves, divided into five parts, the upper into five, and a prickly stalk. Ketmia Indka with a five leaf and a large flower.
9. **Hibiscus (Sakurigo)** foliis ferratis .. inferioribus cor-
caule scabro. Hort. Clit. 439. Hibiscus with serrated leaves, the lower into five, the upper into five, and a prickly stalk. Ketmia Indka with a five leaf and a large flower.
10. **Hibiscus (Goffipia)** foliis quinquepartitis fer-
caule scabro. Hort. Clit. 439. Hibiscus with heart-shaped leaves divided into five parts, and its stalk is prickly. Ketmia Indka with a five leaf and a large flower.
11. **Hibiscus (Hibiscus)** foliis quinquepartitis, caule scabro. Hort. Clit. 439. Hibiscus with heart-shaped leaves, divided into five parts, and its stalk is prickly. *Uo-palmatis, intlicc*
12. **Hibiscus (Saratoga)** foliis quinquepartitis, foliis 6-angulatis lobatis cre-
Hibiscus with leaves divided into five parts, which are six-angled, hairy, and its stalk is prickly. Ketmia Indka aculeata, foliis digitatis. Tourn. Inf. 101. Prickly Indian Ketmia with heart-shaped leaves.

HIB

13. **Hibiscus (Corkfolia)** foliis cordjU h
*foliis crenatis, floribus multibus, etule irborco ramoin. Hibiscus with heart-shaped, hairy, cre-
ftj from th / American frutricosa foliis branding fistk. Kerni. fubn mundia crenatis hirtata, flore hiea Houft. Shabby American Ketmia wlb Mtuutijb, hairy, a rated tearj,... and a yellow flower.*
14. **Hibiscus (Rabanopsis)** foliis oblongo-cordatis gU-
brn, dentulatis, tubulis incrimatis, liiiribus lur.plitrimis, ihbfw&ithebkgjfltrirl-Jhiiped, fmBstb, indmtUaVil, htKTy on tbrir under f-dc, and very large fimuert.
15. **ttmscoi (Ftciftiui)** foliis quin; *caule pedaria, calycibus inferius IIIII Utre ninipecitubu'. Lin. Sp. Plinc 667. Hibiscus uti telrvcs Skt a IKW;. divided hile Jtee parts^ mid tbt lmvtr earpleaitm tarn / Ketmia BrafficJ a, trrudup^ntmidato wl-
tato. Tourn. Inf. R. H. 1 fitt Erafih with a Fig lf of, and a jrymiikl furmt/i*
16. **HIBISCUS** foliis cordatis ang:Ut:., ^>vr: *foliis multibus, liltjis, floiibiii iibim-
untibiu, piftitlo cemua Lin. Sp. Plin. 677. I.Uftvs with fever leaves htm: *twmiot fpar-Jba]- a rt-
uffrd pijul. &*****
- Eorc paryo purpunleciite, fifuAu dcprllb pentngo-
Evmich. Venet. i.:**
- leaf, * /mull pu** and a *jvivi-ceritTcd dprnjd fruit.*
17. **1-iiHisc's (Pepu)Wi>** *caule ovatis acuminatis. fetra-
tis enujerimplititimo, pcLiuli^ iloriferis. Hnn. Up-
ilb cjal-pMr.,
^i-flatsk biviurfiowm, K*
- CJ:13 Fopuli folio. Tuurn. InLL 100. African Kama
v.iitiB PipilirUaf.**
- foliis 'vatis tuberculatis. floris tomentosis, floribus
urillaribus. I 1 Sp. Plant. 693. fi
:Me<iM Jlak, tvei h^.-a having tbrt lcbti,
CM (bar under J Ketmia palustris flore purpureo,
Tuurn. Inf. loo. M&pi A
axv.b (Triagafi) foliis 1
s>dafvf:i: ...-irnia vcli
>ulgiri9, TdCta. Int. I**
- 20. H** **hirli 1** *folia tripartita dentata, lobis
angustioribus caule scabro, calycibus inferius Hibisc-
cm ; *tripartite incanae hanc habent varietatem lobis,
a bain folis, and fatHex emp
cama Africana. Tourn. InB. 101. jn Bladder
Ketmia.**
21. **Hibiscus (Hibiscus)** folia inferioribus lobata, sum-
*mil luvque partim obtusis crenatis calycibus infla-
lis, r! caule hispido. Hibiscus with serrated leaves,
the into, the rprpr bam a: into five ebluji fegwifuits,
xliicb are crtnared, jhtn&n empascxurti, and cprkkl;
:I. HIBIS! (Malvaceae:tl) foliis cordatis crenatis, an-
culis later-! *caule scabro, calycibus inferius Hibisc-
cm; *tripartite incanae hanc habent varietatem lobis,
a bain folis, and fatHex emp
cama Africana. Tourn. InB. 101. jn Bladder
Ketmia.***
- The best sort is commonly called Ahhez frax by
ilie ntrii-r.
- cattitally in Seria, from whence it h¹*

flalk to the height of fix e • seven feet, fending out
tub; (-igneous branches, fovcred with a finood gray
bark, garnished with oval spear-shaped leaves, whose
upper parts are ! icquitrilly divided into three • tobcs,
which are lower; [litrc r.n placed alternately on the
Ura:clici, ft.indiri'ruil' look ilcei. IK floivtrs
come out from the wings of I stalks • every
joint of he fame year* (hoot, tin are large, and
fhapeJ like rhofo of the Mallow, having five large
nuiutsth pciois, whk' joint at their base, spreading
open at the top in fhape of an open liell their
appear in Angiifti and ii the leaves is not too
thick will be a fucceffion of flowers P>n <* Sep-
tember-, the early fl owe wan: fucceeded by fevcn cap-
fules with five cells, filled v.ith kidney-fhaped feeds,
but unlcls thelfbon p roves warm, they will not ripen
inthi country.

It is propagated by [teds, which (h'uld be li
puts filled with light earth the terend at'March;
sntt it they are plun ed into a gentle heat, it will
greatly forward the growth of the feeds. When the
pUnis are come Up, they mull ue inured
open jir, and in May the pots are iv •* plunged into
the ground, in .l barrier expofed to the
they may have the rooming fun: of my
advifing the [KIB to I into the ground,
isw prevent the earth from drj ft as it
would iot when the pots (land •
that the plnes will nut require m much water in
iiimn-r- ibefcp(*ts will ruiuire no other cuhure,
JUJ to k<p them ek-an from w<di, and in Wry
dry ••afferto refrdh thetnwnh water during the
hrft lunimtr, but in autumn it will be proper to rt-
c ihc puts udder a common frame to fcreen
them from the froit, n where there is not filch con-
venience, they iay be plunged clofe to a hedge,
pale, orwdlij to a goo
ihould beo
the cold of our winters,
x tender, arc
fo that
id of March
plants, «whkh
ilprep

Jii ihc pLn IKould beflukenout of the pots with
them, and fepaWKd with care, for
their roots are very tender, and apt to break
little force
f.cfcfnov.ld b. pknnd u *boxE nine
r intbeds, fo thai if fiwr f
ffTni. bed, hen: will be to<d
htween theoutliderowsand the paths. The groi.nd
rt S h, pntty c 1 about the rooLi to prevent

generating a
ners bark, or mulch, and over the surface of the
beds, it will prevent
of great ufe to the pla
mer they mull be kep
following winter prove
cover the plants again
thout late in the feafon, or the aut
and moft, for then the plants will be
per of having their tops killed: in the
plants may remain two years, by which
be fit to transfere where they are defign
ice if they are kept longer in the nurfe
not reft. The beft time for transplanting
these plants is the end of March, or the beginning of
April, for they seldom begin to fhoot till the end of
April, or the beginning of May. rhy (hould have
a lit i
prow

These plants may also be propagated by cuttings,
which, if planted the latter end of March, in pots fill-
ed with light earth, and plunged into a gentle heat,
will take root; but the plants so raised, are
good as the seedlings. The several varieties may

pro]-gated by p rafting upon
racli other, which h the
common method of propitg^ing the form n-kh fljujed
tem
The fecond fort grows naturally in India, from
whence tin French first carried the feeds to
the Weft-Indies; and the inhabitants of
theBriiilli colons there have been fupplied with the
; and from them, fo have given it the title of Maracoon
; and there are the double and fingle flower-
ing, which from the feeds of the double the fingle is
frequent!) produced, but the feeds of the fingle plant
differ in the double. The ilowcrs i of these plants
alii: their colour, before their full opening they are
white, tin they change to a bluish Rose colour, and
as they decay they turn to a purple. I ithcWeft-In-
dies, a: their alterations but n the hmc day, a; I
fuppofe the flowers in thofe hot countries are not of
longer duration; but in England, where •• the Qowert
last near a week in beauty, the c changes arc not fa
fudden.

I III: plant has a soft spongy stem, which, by age,
becomes lignous and pulpy. It rises to the height of
twelve or fourteen feet, branching out
every III* toward the top, which art hairy, gar-
nished with bran-fhaprd leaves; that into five acute
angles on their bndr.Tf, and are fightly f: wed on their
edges, of a hieit rjrem on their upper fide, but pale
below ftanding alternately upon pretty logg foot-
rtiJk:. The flowers are produced: ?fin the wig j of
the fljlk, I in thofe of the firl fort, the flomc one
is compofed of v.ry large petals, which spread open,
and are tidl white, but afterward change in the man-
ntr before-men trailed •, thec are fucceeded by short,
ihkk, blunt omfbitt, whki. are very hairy, having
five cells, which contain irony fir.all kidney fhaped
feeds, having ^ line plume of fibroul down adhering
to them.

This fort is propagated by feeds, wiiith wuft be
(own upon a hot bed in the fpring, and when the
plants are fit to remove, they fhould be planted
in I feparate fmall pot filled with litcher-irden
earth, and plunged into a moderate hut-bed, when:
ilicy mull l • fhaded till they have takci new root,
then they mull be treated si u:her pl:its from wann
countries, but not too tenderly, for thec require 3.
large pure of air in warm weather, othenwfethey
vili draw up very w<ak: thi I plants fhould not be
quite expofed to the open air the firl feafon, and
the firl winter will require the warmth of a
rate flovey; but as they get more through, they mxy
bt treated v. I In a cave, for they will bear the open
nil in fummer, in a warm fhaded fiteuation, and will
liw through the winter in a very good green-houfe,
provided they have not too much wet, but the plants
thus hardly treated, will not make: i freat prugreft,
nor fhower fo well as w: h t little additional warmth i
and if the are not fo ierly managed, they will .lrj-
up weak, fo will be less likely to flower. This fort
usually Q'ears in England: November, ft that it
keeps... the vint •• cffloweing in its native
country.

The third fort ••fl« naturally in the Weft-Indies,
where it is commonly known by the title of Mufk,
the French cultivate great quantities of these plants in
their American Iflands, the feeds of which are usually
lent to KrJncr in great quottii; fo that they
certainly have loilli way of rendering it: [u); it
feems to be a considerable branch of trade. It
rises with an herbaceous -Ijlk 3toviit threecor four feeti
lending out ruw of three lide brinchr=.. (• milled with
large leave) nut fmo fx or fewn any lei, which are
acute, and dwell tj] their ed(" they stand on long
foot-(talks, ititi are placed altnately. The stalks and
leavr^ > this are very hairy. The flowers come out
front the wings of the stalk upon pretty long foot-
stalks, which stand erect; they are large, of a sulphur
coltL, with dark purple bottoms, and are fucceeded
by pyramidal five-cornered caufules, which open in
fi™ cell, filled with i Urge kidney-limped leedi of a
vcj™: mufky odour.

Tfm fort fddom lives more than one year in England. bin in it-native century will Lift two years, [it propagat... d by fertls, which, if own on a good hot bed in the fpring, and the plants afterward plantet in pots... I with lip lit earth, and plunged mtoafrelh hot bed, treating... ifterwjrjd i... the same way as the Amar...tkus, they will Rower in July, ar.d their ii-cl- will ripen in IUCUI.

The fourth ii ion grows naturally In both the I... with ;n jjerbaseoui... I ilk. three tir feet high, garnifhed with leaves which aiv divided into... Segments a] molt to the bottom; the middle segment being four inches long, and the an inch broad, tin- 'upper later I Eegmcim abotil three inches long- and the fame breadth; theft a<- in... at their ex;... the lower feginems arc not much man... than an :LClI long, and have... flowers are produce! from the wings of the ftalk?- towird ilie top, Handing on Ihott foot [talks] they are compofed of rive large tujpbur... ired petals, which, when open, fprecd five inches wide, they have i ih.ik JH:l[... bottom, with a column of... in ins ami liyl.c i riling in the center, and an... ceded by large, pyramidal, live-cornered, creel... opens rig i n five cells, < led with pretty large kidney-itaped feeds, ivhich have little Jim-U or ufte.

It is propagated by feeds in (he fame manner A- the fornir Ibn, and if fo managed, will pnotiL flowers and perfect fctda the fame kafon; bin the plants may be continued through the winter in a moderate warmth, though few perfons are at the trouble of preserving the plants after they have ri- j:rntt their feeds, becaulb the young plants make a better appearance.

The fifth fort grows naturally in die Wefl-loci, where it riles with a v... ody flalk lbven oreighbfct high, fi nil ing out many fide branches toward the top, which are covered ! with a whitifh bark, and garnifhed with angular heart-lhaped leaves, which are wixilly ; they are about iuur inches long, and three broad toward their tafc, ending in acute poieKSt and have 1c-v;ral longitudinal veins. Xhe ftowers are produced from the... of the flalk upon long foot ihllki ; (he) arc compofed of five roi... petals, which are joined at their bafe, but fpread open above, and are of a yellow colour, turning to a red as they decay ; theft arc licceeded by large, obtufr, five-romered, tmiry ftd-veOe's, which open in five ctk, liiltl with large Udney-fturx-d fctclj.

Thits is propagated by liedts, which muft be (own upon a hot-bed in the fpring, and the plants afterward irtated in the lame way as the two lift m?n-tionri, during he firll fumrncr, but in the autumn (hey mult be plunged into the un-bed in the ftove, where they fiouulul conftantly remain, and be i... in (he lame way a^ other tender plants from ci'. (ame counir)', giving them but little watef in winter ; the fecond yeji tht plants will flower, but they have not as yet perfected... in England.

The fifth fort grows naturally in both Indies; thu riles with i woody pithy fem eight or ten teet high, dividing into feveral brandies toward the cop, which are covered uith u woolly down, and garnifhed with round heart-flujxd leaves, ending in acute points ; they are of a lucid green on their upper fide, and hairy on their unlet, full of large veins, and are placed alternately on the ftalks. The flowers are produced at the ic end of the brandies in loule fpik<; they are of a whitifh yellow colour, and are Tu<ctciid by fevee acuminate capsules, opening iF five cells, filled with large kidney-lhaped teeds.

This fort is p... d in die fume way, and the plants require the lame treatment aa D)C fi'f', and I flower the fecond year, provided they are brought forward, otherwife the... will not fluer before the third or fourth kafon i, but they will bear the open uner, in a wjrm fituation, though ti... will not make great progref there.

The feventh Tort grows naturally on the toaft of

MnTabar, from whence I received ihc rVUni... this rife with a WJLU... flalk twelve or fourteen feet high, dividing into nuny fmal I branches toward the top, which are gainiix'J with oval fawed leaves, ending in acute points ; the ; arr tit i mciil gR-tu abovx; ; b'L are pale on that under lidc, and arc placed without order.

The ; lowers come out from the fide of the branches, at the wings of tin: leaves, on ptettj... rbrly arc com poled of many obl'i... - - J's of 3 red colour, whi... expand like the Rofe, the flowers being its lurge whe fully blovm, as the oosunoo red Rofe, and as durable. This is a perennia 'uui, which is propagatiii by cuttings -, and the plants mud continue to be kept in tin- (tove, giving them a larjc lharc of air in warm weather, and but little water in winter. There is a variety of this with wfiitt flowers, but I have not f<n any of the piano in the Engtlb. gardens ; nor I have feen... flowering kind, for the inhabit'...

of India propagate that with >oubc fio*cri by tmtingi, which put out roots freely ; this they do rorthelale of flowers, which the wafenof that country make ule ut to colour their hair and eye-brows black, which will not wa/h oG": the F.ng-lifti thiere ufe it for... it Hiuti, and from thence have called it Shoe-flower.

Xhe eighth fort is an annual plant, which riles with an upright folk feven or eight feet high; the lower leave; are oval, lcrated, and entire, but the upper leaves are divided aUnoi... to the root-ftalk, in to five fpcar-flaped fegimets, like the fingers of a hand, ftarding on very long foot-ftalks, which have thorii at their bnfe, and are ihu-ply lawed on their edge.

The flowers come out from the wings of the flalks ; they are large, of a pale fulphur colour, with a dark purple bottom, and are fucceeded by oval, acuminate, prickly capsules, which open in five cells, filled with large kidney-shaped feeds.

This is propagated by feeds, which muft be fown upon a hot-bed, and the plants treated in the lame way as the third fort; and when they are grown too full to Hand under ilte 6 times, they muft be planted in the lltive, where they will flower in Aug. ii, and die feeds will ripen in autumn.

The ninth fort is fcarcely known in the eighth, bin the (btlki do not grow fo tall; the lower leaves are licait-liaped and entire, the middle leaves are divided into three and ii. upper into five fegments, almost as the foot-ftalks; they are fawed on their edges. The Italli ii prickly. The ftowers come out tram the wings of the lliil... they are of a very pale bluphr colour, with dark buttonis, but not fo large as the feeds of the lad.

This is propagated by iet'ds in die fame way as the eighth, and die plants require the fame treatment. It Rowers in July in England, and the feeds ripen in autumn.

The bark of both ihrfe plant- is full of drop fibres, which I have been informed the inhabitants of the Malab... are and make into a strong curdage i and b\... that I have observed, it may be wrought into His firoig thread of any size, if properly manufactured.

The tenth fort grows naturally in the Weft-Indies, where the inhabitants use the green pods to add an acid taste to their victuals; there are two varieties of this, one with a light green, and the other a deep red pod, which ; ways maintain their difference; but as there is no other difference but that of the colour of the pods, they do not deserve feparate titles. The riffs with ai; herbaceous stem about three teet high, sending out feveral lateral branches, which are furnished with Gnoot... leaves divided into five lobes. The fl'jweti... come out from the fide of the branches; they are of a dirty white, with dark purple bottoms, and are fucceeded by obtuse heart-ftalks, divided into five cells, which are filled with kidney-shaped feeds.

This fort is propagated in the lame way as the third, and will flower and perfect feeds the fame year, in a feldom peiturbed longer in England.

The eleventh sort; baaiur; i (Ceylon; his lifts^.... an herbaceous stalk, which is prickly, from 3 to 4 feet high, dividing upward into small branches, which are garnished with hand-shaped leaves, divided into five segments. The flowers come out from the wings of the leaves; they are small and white, with purple bottoms, and are succeeded by short oblong capsules with five cells, filled with kidney-shaped seeds. The seeds of this sort were first sent me by Dr. Sprengel of Dant.

This plant is an annual, and is to be treated in the same way as the third.

The twelfth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort.

The seeds of this were sent me by Dr. Joffea, from Paris. This thirteenth sort was discovered by the late Dr. Houffton on the island of Cuba, from whence he sent me the seeds. This rises with a woody stalk twelve or fifteen feet high, sending out many lateral branches, garnished with hairy heart-shaped leaves, from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The fourteenth sort was discovered by the late Dr. Houffton on the island of Cuba, from whence he sent me the seeds. This rises with a woody stalk twelve or fifteen feet high, sending out many lateral branches, garnished with hairy heart-shaped leaves, from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris. This fifteenth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The sixteenth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The seventeenth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The eighteenth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The nineteenth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twentieth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-first sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-second sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-third sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-fourth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

rising sun, but long before noon in warm weather. These are succeeded by capsules of very different forms, in the different varieties; in some the capsules are not thicker than a man's finger, and five or six inches long; in others they are very thick, and not more than two or three inches long; in some plants they grow erect, in others they are rather inclined; and these varieties are common in the country; I have many years cultivated these plants, and have not found them vary.

This sort is propagated by seeds in the same way as the first; and the plants are the same as the first; but they are too tender to thrive in the open air in this country; I have often transplanted the plants into warm borders, after they have acquired proper strength, and have sometimes in very warm seasons had them thrive for a short time, but the first cold or hard weather their leaves have all dropped off, and the plants have decayed gradually, so that they have but rarely flowered, and have never in the best seasons perfected their seeds; therefore those who are inclinable to cultivate these plants, must constantly shelter them in bad weather.

The sixteenth sort grows naturally near Venice, in moist land, this has a perennial root, and an annual stalk, which rises from three to four feet high; the lower leaves are regular and heart-shaped, but the upper are spear-shaped, and slightly indented on their edges; the flowers are produced from the wings of the stalk, upon long foot-stalks; they are small, and of a purple colour with a dark bottom, and are succeeded by five-celled compressed capsules. The seeds of this sort are propagated by seeds, which are to be sown on a hot-bed, and the plants should be treated in the same way as the thirteenth sort, otherwise they will not flower; for although the roots will live in the full ground here, yet the summers are not warm enough to bring them to flower. I have found the roots which have remained three years, putting up many stalks, which rise upward of three feet, and have the flower-buds formed on their tops; but these appear late in the season, that they are not so common.

The seventeenth sort grows naturally in North America; this has a perennial root and an annual stalk; the roots of this sort will live in the full ground, but unless the summer is warm, the flowers seldom open. It rises with single stalks from the root, two feet high or more; the leaves are oval and broad, the flowers are large and purple.

The eighteenth sort grows naturally in North America, in moist ground. This has a perennial root, and an annual stalk like the former, which is herbaceous and never branches; the leaves are oval, with three lobes which are not deeply divided; they are of a bright green on their upper side, but woody on their under; the flowers are produced from the wings of the stalk; they are of a purple colour. The sort, like the former, will not flower in this country, unless the summer proves very warm, but the roots will live in the full ground, if they are placed in a sheltered situation. The only way to keep these plants flower in this country, is to keep the roots in pots, and shelter them under a frame in winter, and in the spring plunge them into a hot-bed, which will cause them to put out their stalks early; and when the stalks are so high as to reach the glasses, the pots may be removed into a glass-case; where, if they are duly supplied with water, and have plenty of air in hot weather, they will flower very well in July, and in warm seasons will ripen their seeds.

The nineteenth sort is an annual plant, which grows naturally in some parts of Italy, and has been cultivated in the English gardens, by the name of Venice Malva. Gerard and Parkinson call it Alcea Veneta, and the Italians call it Fiore di an hour, from the short duration of its flowers, which in hot weather conanue but few hours open; however, in the country, they are not so common.

The twentieth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-first sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-second sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-third sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-fourth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-fifth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-sixth sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

The twenty-seventh sort is also annual with us; this rises with an herbaceous stalk three feet high, chiefly fit with prickly hairs, and divides into branches upward, garnished with hand-shaped leaves, divided into five lobes, which are spear-shaped, ending in acute points; they are hairy, and creased in their edges, standing upon very long foot-stalks; the flowers come out from the wings of the stalk, and are very like those of the third sort. The seeds of this were sent me by Dr. Joffea, from Paris.

h ft u«STinn of Bowers which op- n daily for a conf- d crniifi time, fo that a few of thie plants may be allowed a place in every curious garden. It ril's with a branching iblk a time and a half high, having tnanj* thi r stems which are soft, and do not appear unlefti (ndey viewed: the les-!! *rc divided into thrc lobes, which ai deeply jagged almost to the midrib: il:rn-jag are opposite, and the segments are obtuse; the (lowers come from the jjiots erf the ftalki upon pretty lon; foot-stalks, having a double empalcment, the outer being composed of ten long narrow leaves, which join at their base; the inner n of one thin leaf, swollen like a bladder, cut into five acute fi'gmeiui at the top* Having many longitudinal l! purple ribs, and in liniry. I both these are permanent, und inclofe the capfui after the flower is paf. The flower is composed of; five obtufe petals, which

ad open .it thir top, the lowci an open bcll-Qiaped flower j thefe have dsrfe purple bottoms, but are of i pale fulphur colour above, having • the ftamina and apices joined in a cmlmm m the center-, artw tht flo-wcr is paf, the ^er.Ticn tunii to a blunt Cjiplule opening in five cells, which nre Elled with (mall kidnry-thapwl f«ds. It flowers in June, July, and Anpuft, and the feeJs ripen about ;i month alter. Tliis ion is propagated by fecdi, which Jhould be Town «»efe tht plants are defigned lo r?-miiiji, for they tio not bear tra? plants well; if the feeds are Yown in autumn, the plant* will come up early in the fpring, i; will be per in the fdmner, and dicfe innch arc fbwn carly in the fpring will fdceele them ; fo that by fowing them I! three diftrent fefons, th ey may be continued in fcccEftion liH the froft (topi then-.

These require no other culture but to kucp them clean from weeds, and thin them where they are too clofe; an if the feeds are permitted to fcatter, the plants will come: up fjill ai well as when fown, fu that it will maintain its Groa-tion tiiolefi it is weeded out.

The rwentie-th fort grows heturaily at the Cape of Gtxxl Hope j this is alib an annual plant which ricim- bks the former, but li • plants grow more erect, are of a purple h colour, and very hairy, the leaves are compolci! of three lobr . which are divided almost to the root-lik ; tlelc are narrow, the middle • lobe freaching out more thn twice the l< length of the two fide lobes, and they are but flightly indented on i their ed^ci, wht?; at thole of the former are cut almost to tht middle; the flowers are larger, and their colour deeper, rhi thole of the other.

The k of the twenty-fecnd fort •vere Cate me from the Cape of Good Hope, a few years I id This is alfo an annual plant, having at firft light fome re- femblance of the other forts before-mentioned.

It is with ftrong hairy brufching ftalks; d; but it wih much hr. : leaves thin either of the former, the tower being di vided into three, and the upper five • wide lobes, which are crested on th ; per into the (• other. This has maintained the difference ten

years, fo liwt thcie is no doubt: of its bdng ddititid

All thefe aye *s hardy «s ihc nineteenth fort, fo may The twenty-third fort grows naturally at Cunpeachy, from whence the late Dr. Houflon's fort are the feeds. This differs fo essentially from the other fpecies in its fructification, as to derive another title, for all the have dry capfules with five cells, including many kidney-fhaped feeds, but this hath a fift vil-cous berry, with a hard fhell-lucdot, containing five roundish feeds: it riles with a flrabby ftalk ten or twelve feet high, dividing into many branches, which are garnifhed with fmoth, heart-fhaped, angular leaves, which are crested on their edges; the flowers come out from the wings of the ftalks fingly, fanding on them heart-ftalks; they are compofed of five oblong petals, which are twisted together and never expand; they are of a fad colour, and are fucceeded by rwadifil tc-ncj uf c fcarlet colour when ripe, in-

doling a harri (he'l which opens in five ecil) each containing a tingle rutindilh feed. This ibrt is generally piopsp.ned here hi-r . strings, bee.icik«the feeds do not often ripen IUT. if the cut-tinga arc planted in trots fsilcJ with Hjjb plunged into a gt'nllc hot bed, !tceping the air from them, they will foon take root, and : . will gradually inureu to benn the ope:: . These plants require amodmteftoveroprefcrvrthem ti; . though the winter; aiui if thr." are kept in warmth in . . winter, they will flower, and fomerimes ripen fruit, thoi. if they may be placed abroad in a fhctted fituation foj two or thrcr months in fume.xr, hu: tht p«nUB lo treated lel-dom flower fo well.

HIERACIUM f. Lin. Cen. PUni. B18. Toum, Intl. R. 11. 469. tab. 207. [oCtiffu, (.IT. a hawk; fo called, beexufe hawki as -well as eagle, have i ftning anil quick Gght; anJ it is reported, that if by mafon of I the heat of the air, a filus grows over the evtsof this.bird, then the parent let fall a drop of the juice MI n in its eye, which takes it off, and that, in Iw manner, it is good w dear the iuntra fight.] Hawkwctd.

The t CHARACTERE etc, It hath a flower composed of :'.any herm«pbreMli with, viitb arc included in one common juft empalcment, Vih&fi fidlri art :: and very crowded in their top > ondpejilknl \ the flowers are small and unopen, they have CXipftui -L- is fuppl'd like a tongue, indented in five segments at the point, placed vertically near each other; there being each five joint hairy funnels, terminated by cylindrical funnels. In the bottom of the petals fl-aiiti the supporting a slender style, crowned : h *TM the perianth of several leaves a four-angled peduncled with down, fitting in the empalcment.

This genus of plants • is ranged in the first section of Linnæus's nineteenth class, which includes the plants with a L-ompouitd fisma, composed only of fruitful florets.

There nrr a great number of species of this genus, many of which grow naturally in woods in England, am! thcotlr are fo in different countries, therefore I Oiall only I clect thole which are the most beautiful, and beftwonli cvivating from the number, which in enumttnte, wouU well thin work greatly beyond its bourula.

1. HIERACIUM (Astrucianum) foliis integris caule fib- nudo simpliciflmo pibulo corymbifero. Hort. Cliff. 308. Herbaceous with entire leaves, and a fingle, hairy, naked stalk, terminated by a corymb of flowers. Hieracium i orientale, floribus atro purpureis. C. B. P. tie. G

J. HIEKACIUM (Cristatulum) foliis radicalibus obovatis demicubtis caulibus obliquis semierectis. Hort. Cliff. 124. Herbaceous with heart indented leaves at the base, the stem in the flalks oblong, and half embracing them. Hieracium Pyrenaicum folio cristatis. Schreb. Bor. Arm

3. HIERACIUM (Bismoridum) foliis lanceolatis amplic- caullibus dentatis, floribus fistulatis, calycibus laxis. Hort. Cliff. 187. Herbaceous with spear-shaped indented leaves embracing the stalks, flowers growing singly, and half embracing the stalks. Hieracium Pyrenaicum, latius folio minus fistulatum. Toum. Ind. 472. Bismorid Herbaceous with a Milk Milkish leaf, leaf hairy.

4. HIERACIUM (Asperifolium) foliis amplicaulibus cordatis subdentatis, pedunculis unifloris fistulatis, caulibus nudis. Hort. Cliff. 187. Herbaceous with heart-shaped indented, hairy leaf stalks, leaves embracing the stalks bearing one flower, and a terminal stalk. Hieracium Pyrenaicum rotundifolium amplicaulis. Schreb. Bor. Pyrenaicum Herbaceous, with round leaves embracing the stalks.

5. HIERACIUM (Salsolium) caule erecto simplicifloro, foliis ovatis lanceolatis dentatis semierectis. Hort. Cliff. 124. Herbaceous with an oval leaf hairy, by many flowers, and oval spear-shaped leaves half embracing the stalk. Hieracium Salsolium oblongifolium foliis ovatis brevibus, crebris marginibus. Mart. Hill. 3. p. 71.

&, HiiRACiuM (*UmbeUatum*) foliis linearibus fubdehatis pparfis, floribus fubumbellatis. Flor. Lapp. 287. *Hawkweed with linear indented leaves placed thinly, and flowers almoft in an umbel*, Hieracium fruticosum, anguftiffimo incano folio. H. L. 316.

The firft fort grows naturally in Syria; this fends out from the root many oblong oval leaves, which are entire and hairy; from between the leaves arife a fingle ftalk, little more than a foot high, covered with hairs \ the flowers are produced in a corymbus at the top \ they are of a dark red colour, compofed of many florets, which are fucceeded by oblong black feeds, crowned with a white down, which, when ripe, by the elasticity of the down, is drawn out of the empalement, and by the firft ftrong gale of wind, are wafted to a confiderable diftance. The flowers appear the beginning of June, and the feeds ripen in about five or fix weeks after, but there is frequently a fucceffion of flowers till the autumn.

It is propagated by feeds, which fhould be fown on an eaft appe&ed border in March; and when the plants come up, they muft be kept clean from weeds, till they are ftrong enough to remove, which will be by the beginning of June; then they fhould be tranfplanted to a fhady border of undunged ground, at fix inches diftance, obferving to water them if the weather fhould prove dry, till they have taken new root, after which, if they are kept clean from weeds, they will require no other culture: in the autumn they fhould be tranfplanted where they are defigned to remain; the following fummer they will flower and produce ripe feeds, and the roots will continue fome years, if they are not planted in a rich moift foil, which frequently occafions their rotting in winter.

The fecond fort grows naturally on the Pjrrean mountains. It is a perennial plant, whole lower leaves are oval, indented, and of a grayifh colour; thofe on the ftalks are fmaller, but of the fame fhape and colour, and half embrace the ftalks with their bafe; the ftalks rife a foot high, branching out in feveral divifions, each being terminated by one yellow flower. This is propagated by feeds as the firft fort.

The third fort grows on the Pyrenees; this hath a ~~perennial~~ root, which fends up feveral ereft ftalks, ~~garnifhed~~ with fpear-shaped leaves which are indented; the flowers are produced from the wings of the ftalks, upon fhort foot-ftalks, each fuftaining one large yellow flower, having a loose compofition; ~~the flowers in June; it is propagated by parting of the roots in autumn, and will thrive in any fituation.~~ The fourth fort rife with a branching ftalk a foot and a half

high \ each divifion of the branches terminate in a foot-ftalk, fuftaining one large yellow flower, which appear in June and the feeds ripen flower, when it is a perennial plant, which is

indented leaves, half embracing the ftalk, with a large yellow flower, the flowers are pretty large, or a deep yellow colour, terminating in a double, in flowers in July. The fecond fort grows naturally in Holland, it is a perennial plant, rifing with three or four fender ftalks, garnifhed with hoary linear leaves, and terminated by yellow flowers. This rarely produces feeds in autumn, fo is propagated by parting of the roots in autumn; but the fifth may be propagated either in the fame manner, or from feeds at the firft fort, as it produces plenty of feeds here.

HILLS have many ufe, of which I fhall only mention three or four. They ferve as greens, to keep off the cold and fift, they ferve as greens, to keep off the cold and fift, clipping blades of the northern and eastern winds. adly, The long ridges and chains of lofty mountains,

being generally found to run from eaft to weft, ferve to ftop the evagation of thofe vapours toward the poles, without which they would all run from the hot countries, and leave them deftitute of rain.

3dly, They condense thofe vapours, like alembic heads into clouds and fo by a kind of external diftillation, give origin to fprings and rivers; and by amaffing, cooling, and confpitating them, turn them into rain, and by that means render the fervid regions of the torrid zone habitable.

4thly, They ferve for the produ&ion of a great number of vegetables and minerals, which are not found in other places.

It hath been found by experience and calculation, that Hills, though they meafure twice as much as the plain ground they ftand upon, yet the produce of the one can be no more than the other; and therefore, in purchafing land, the Hills ought not to be bought for more than their fuperficial meafure, i. e. to pay no more for two acres upon the fide of a Hill, than for one upon the plain, if the foil be equally rich.

It is true, that thofe lands that are hilly and mountainous, are very different as to their valuable contents, from what are found in fiat and plain ground, whether they be planted, fown, or built upon, as for example:

Suppofe a Hill contains four equal fides, which meet in a point at top; yet the contents of thefe four fides can produce no more grain, or bear no more trees, than the plain ground on which the Hill ftands, or than the bafe of it; and yet by the meafure of the fides, there may be double the number of acres, rods, and poles, which they meafure on the bafe or ground-plot.

For as long as all plants preferve their upright method of growing, hilly ground can bear no more plants in number than the plain at the bafe.

Again, as to buildings on a Hill, the two fides of a Hill will bear no more than the fame number of houfes that can ftand in the line at the bafe.

And as to rails, or park pailing over a Hill, though the meafure be near double over the Hill to the line at the bottom, yet both may be inclofed by the fame number of pales of the fame breadth.

HIPPOCASTANUM. See ESCULUS.

HIPPOCRATEA. Lin. Gen. Plant. 54. Coa; Plum. Nov. Gen. 8. tab. 35.

The CHARACTERS are,

// bath a large fpreading empalement of one leaf, cut at the top into five figments \ the flower bath five oval petals, which are indented at the points. It bath three awl-fhaped flamina, terminated by broad fummits, and an oval germen fituated below the petal, with a fnyl the length of the flamina, crowned by an obtufe ftigma. The germen afterward becomes a heart-fhaped capfuh winged at the top, mclofing five feeds.

This genus of plants is ranged in the firft fe&ion of Linnseus's third clafs, intituled Triandria Monogynia, the flowers having three ftamina and one ftyle.

We have but one SPECIES of this genus, viz.

HIPPOCRATEA (*Volubilis*.) Lin. Sp. 50. Plum. Gen. 8. *Hippocratea with a triple roundifh fruit and a twining ftalk*. Coa fcandens, fru&n trigemino fubrotundo. Plum. Nov. Gen. 8. *Climbing Coa with a triple roundifh fruit*.

The feeds of this plant were fent me from Campeachy by Mr. Robert Millar, and feveral of the plants were raifed in England, which continued two years in feveral gardens, but not one of them lived to flower, they grew to the height of eight or ten feet, twining round ftakes, but their ftalks were very tender, and decayed at the bottom, probably from their having too much wet.

It is a very tender plant, fo muft be constantly kept in the bark-bed in the ftove, and fhould have but little wet in winter.

HIPPOCREPIS. Lin. Gen. Plant. 791. per* rum equinum. Tourn. Inft. 400. tab. 225. *Horfe-fhoe Vetch* \ in French, *Fer de Cheval*.

H I P

The CHARACTERS are,
 'be mptStmnt ef tic jivxer is ptrmmxt, of ant leaf,
 'hided intafi • parts, the stem upper being round. The
 frter is ef tbt l... the flander is of a nar-
 TVJa bafit tie i' r.gth ej ikt r...ment, but is heart-
 shaped else... tbt wiüig art a... "J Hunt;
 ibt... is more jagged and... It has two pe-
 tals, one fixed and one separate, which stand erect, sur-
 rounded by single bractlets. It hath an oblong narrow per-
 tutu, J'IMXg <a & r...-shaped style, crowned by a single
 ffgmn. 'tiit grm' •... forward because a long, plain, con-
 stituted ped. which is cut into many parts from the wider
 jtam ts tit >'pl'f-> "'^P^{ITI} few-'... a roundish base,
 l'Sib otitufe iltra-crrmrd jciüts ter-... i vftpr
 from tmbjeitit being ftmped liit a berfc-j
 ^fiüghfted.

This* genus of plants is ranged in the third faion of
 Linnæus's recent method, intitled Diodoriana De-
 candra, which includes the plants with a leguminous
 Bowel, having ten flamina joined in two bodies.

- The SPECIES are,
 1. HIPPOCRATIS (*Urtica*) leguminibus full ubu fa-
 lincis Hort. Cliff. 364. *Horse-foot* with single
 pods growing close to the stalk. Petrum equinum, filiqua
 triangulari. C. B. P. 349. *Horse-foot* with a single
 pod.
 • HIPPOCRATIS (*Crepis*) leguminibus pedunculiciCon-
 fertis, marginibus ciliatis repandis. Prod. Leyd. 384.
Horse-foot with pods growing in clusters upon
 foot stalks, which later border is turned inward. Petrum
 in Germanicum, filiqua in ciliatis. C. B.
 P. 346. *Gtruwti i* - *Horse-foot* with pods on the top
 of its stalks.

- I. HIPPOCRATIS (*Urtica*) leguminibus peduncu-
 latis ciliatis, marginibus alatis. Hort. Cliff. 364.
Horse-foot with pods growing in clusters upon foot
 stalks, the border of which is later. Petrum equi-
 oum filiqui muiiiplci. C. B. P. 34. *Horse-foot*. • *Vilth*
 with • *IQ P&I*.

The first Ion grows naturajly in Italy and Spain.
 This is an annual plant, which sends from the root
 tvcr... trailing stalks a foot long, that divide upwird
 into 1. other branches, garnished with winged leaves,
 compoled 1. four or five pair of narrow small lobes,
 terminated by an odd one. 1. liidi arc oli1... and in-
 dentated at their ftltii from the wings of the stalk
 come out fingle Bowen of the butterfly kind, which
 »rc yellow, and luce ceded by single pods fitting clofc
 to the stalks, which are about two... long, and
 1 third of an inch broad, heading inward like a
 fickle... This flowers in June and July, and the
 seeds ripen in the autumn. Jban if... which the plants
 do.

The second sort is found growing naturally in Jbmc
 of England, upon chalky hills, partic:drtly -M
 on the hilly near Cambridge, this is 1 fl.mllcr
 plant than the former, and hath a perennial root, send-
 ing out slender trailing stalks about six inches long,
 which are garnished with narrow winged leaves; the
 flowers grow in clusters on the top of long foot-
 stalks; these are succeeded by pods which are shorter,
 and twisted inward in roundish curves, but have joints
 shaped like those of the former sort.

The third sort grows naturally in the fouth of Lancf,
 Germany, and Italy. This is an annual plant, with
 trailing stalks greatly resembling the first, but the
 flowers are produced in clusters on the top of pretty
 long foot-stalks; they are shaped like those of the
 other sort, and the pods are jointed in like man-
 ner, but the joints are fixed in the opposite border.
 Their plants flower in June and July, and the seeds
 ripen in August and September.

These plants are propagated by seeds, which should
 be sown in the autumn, when the plants are designed
 to remain; and when the plants come up, they must
 be kept clear from weeds, and thinned where they
 are too close, which is all the culture they require.
 The two annual sorts will decay in the autumn after
 they have perfected their seeds, but the roots of the

H I P

either will continue two or three years, provided they
 are not in too good ground.
 HIPPOLAPATHUM. & ; F. Mix. .
 HIPPOMANE. Lin. Gen. 30. 20. 30. The Man-
 chinchil.

The CHARACTERS are,
 It hath male and female flowers in the same spikes, the
 male flowers come out in small clusters, from a small
 cup-shaped receptacle; they have no petals, from the
 center of each receptacle arise a few styles, surrounded
 by five stiff bracts. The female flowers have no petals,
 but an oval stigma wrapped up in a star-shaped receptacle;
 they have no style, but are crowned by a trifurcate
 style figure. The stigma after it becomes a roundish
 fruit with a fleshy cover, which is rough hard shell
 with several seeds, each inclosed in a woody husk.

This genus of plants is ranged in the ninth section of
 Ljni. Lin's twenty-fifth class, which includes the plants
 with male and female flowers, which have but one
 flar.

- The SPECIES are,
 1. HIPPOMANE (*Mangifera*) foliis ovatis serratis Hort.
 Cliff. 484. *Hippomane* with oval serrated leaves. Man-
 tanelU [the tree. Plum. Nov. Gen. 30. Mandarinal
 with the appearance of the Palm tree.
 HIPPOMANE (*Engelhardtia*) foliis ovatis serratis, hull
 violola. Lin. Sp. Plant. 1431. *Hippomane* with
 oval serrated leaves, which have glands at their base. Man-
 ganilla laevi foliis oblongis. Plum. Nov. Gen. 30.
 Mandarinal with oblong leaf leaves.
 3. HIPOMANE (*Stemona*) foliis subovatis dentato fpi...
 Lin. Gen. Plant. 1431. *Hippomane* with oval leaves
 which have pretty indented. Mangonilla nigra 1051
 foliis. Plum. Nov. Gen. 30. Mandarinal with lilly
 leaves.

The first sort grows naturally in all the islands of the
 West-Indies. This is a very large tree in its native
 soil, almost equalling the Oak in size; the wood is
 mud l efteci... for making of canisters, book cases,
 &c. being very durable, and taking a fine polish; it
 is also said, that the worms will not eat it; but as the
 trees abound with a milky exudate juice, in before
 they are felled, they make fires round their trunks to
 bum • out their juice, otherwise they who fell them,
 would be in danger of losing their sight, by the juice
 Bying in their eyes; and whenever this falls on the
 skin, it will raise blisters; and if it comes upon linen,
 it will immediately turn it black, and on being washed
 will come into holes; it is also dangerous working
 of the... It is fown out, for if any of the dew-
 doft happens to get into the workmen's eyes, it causes
 inflw. mations, and the loss of sight for some time;
 to prevent which, they generally cover their faces
 with fine linen, during the time they are wuriifig the
 wood.

This tree hath a smooth brownish bark; the trunk
 divides upward into many branches, which are
 garnished with oblong leaves about three inches long,
 and at an inch and a half broad, ending in acute points;
 they are tightly fixed on their edges, and are of a
 lincid green, standing on short foot-stalks. The flowers
 come out in thick spikes at the end of the branches,
 being of both sorts in the same spike, but having no
 petals they make but little appearance; these are suc-
 ceeded by fruit, about the size and the same shape
 as the Golden Pippin, turning of a yellow colour when
 ripe, which has often tempted strangers to cut
 them to their cost, for they inflame the mouth and
 throat to a great degree, causing violent pain in the
 throat and stomach, which is dangerous, unless re-
 medies are timely applied.

The inhabitants of America believe it is dangerous
 to sit or lie under these trees, and affirm, that the rain,
 or dew, which falls from the leaves, will raise blis-
 ters, but it is very certain, that unless the leaves are
 broken, and the juice of them mix with the rain, it
 will do no injury.
 The second sort grows naturally at Carthagena in
 New Spain, and the third at Compechy, from which
 plants

places (lie late Dr. Houftoim fcnr me their ft - la. The lecond fort grows to as large a Czc as the I...

The third fort is of humbler growth, feldom riling more than twenty feet high i the leaves of tiiis greatly rcfcmble thofc of the common Holly, ami are itt with (harp pnckJessthe tod of ncli indenture; they arc of a lucid green, and continue alt [lie yc.tr.

HIPPOPHAE. Lin.Gen. Plant. 950. Rhamnoide. Tourn. Cor. 51. tab. 481. Baflard Klianimis, or Sea Buckthorn.

The CHAJIACTIRS arc. ILUKUitlouJ female in different flanSi i th Ktkfweri bevt m empalemm °fout I">A «< »• tut Opiau, vUci thfe «' t'» or ?**» Il, »plavi M p'mis»

afterward turns to a globular berry with out cell, including an resemble find. This genus of plants is ranged in the fourth section...

- 1. Hippo. al (Rham Plant. 1023. Hippophas with nodules falcis folio, Tourn. with a Willow leaf. 2. Hippophas (Ceanothus) folis ovatis. Lin Plant. 1024. Hippophas with oval leaves, called - & de Sea

5 f i t J S S

id» and Deal, in Kent, the«re two « « « « J :»ne with yellow, and the other with rC n«orally in EngUwt, the other Wg°n the

come out from the fide of the younger branches, whidi they Gt very clofe; the male flowers growing in (mall duflers, but the female come out singly...

This fort is fully propagated by fiakers froyr. the roots fecad wide, ;iJ fend up * :near number of shoots, is reform a thicket: if thefe rtrc Eakeh off in autumn, and transplanted bro • nursery, they will be lit to tranfplant after one year's growth, to the places where they are to remain: ai thert is little beauty in this plant, fo <ne or two OI them nuj' be allowed a place in J phtrnadoo ol'ihrub) fi»r the fake of* variety.

The fecond fore grows btinnJTy in Norfl Afflericaj thii hath much the ajpearance of the fimner (brt, but die leaves differ in their (L:ipe, these being much (horter and lirwider, and an; not fo vrhirc on their under Ode. Tot hath not U ye: flgwered in [his country, but the plants Icon equally liardy wit) the former, and may oc ea-jty praptgatrd by fuckmor layers.

HIPPOSKLINUM. SeeSwrimn* H I R U N D [N A K I A. Sec AtcuH*s.

HOEING is nefefiary and btnefidal to pilots, for nvo Things: lit, For dtfr&ying of weeds; idly, Becaufe it difpofes the ground better: to imbibe the nightL dew, hence it in a confiant frchmcls, and adijs a vigour to the plants and trees...

This operation is performed Uy the hand, with an inftrument called a Hci, vliicli is well known to every gardener. There are icveral liars of thelc v the fnulleJV^ which is called an Onion Hoe, is not more than thirre inches bread, and U ulcd for Hoeing of Oniutii, nut only to cm up the young weeds, But tljp ro thin the Onions, by cutting up jll thofc which are too dole. The nexr toe a nc.ir tour inches anil a half bro:lj, niij is called a Carrot Hoe; this is ufcd for Hoeing of Carrots, or any other crop which requires che&nc room as ihoc. The targctf uze Li about feven inehcj liroad, andisfrequenty ciilkiaTitrnepHoe, being uibdfor Hoeing of Turncpt; but tkji is generally uicd by the kittlien-gaidcners, fur HD-tng betweeuaj) their crops

to die toward the perf.jn who lifer. tiVjn, r I iher ibrt of a difictcn: form, whkh i; call'd a s Hoe; this is» maie for the perfrn who ufa ft to pulh from him, fo chat lie docs not tread over the ground which is hoed. This is ^ very proper inlument ibr fcuffing over the ground to dc ft ray weeds, in filch placct where the phna wll admte aj its being ufcd, and j perfon will go over a mudl greater ipr.ec of ground in the Gifte time wiili one of (hefc inftrumen to, Jlian with the common Hoei but the inftrument is not lo proper for Hoeing out crops, fe ai to leave the plants at a proper d tance, nor will ii penetrte tile ground ib fir; therefore the oihrr lbrt of toe is 10 be preferred to AU, becaufe it!.;; the ground ami loobnv the futjL-c, wlicrebj the dew peccing the ground, and thereby promote the growth of the plants. Of late years lii ere ha allii bt-ini another i till ru men t introduced in thefidd culture, called the Flur • Hoc, which is a fort of plough, with the beart let more inclining to s ho: zental pofition than the tominort plough i buf is moil of the t... are il a lujs huw to ufe I his inftromerit, fo it haj bern but littl: prnfilcd in tfii' count 17 as yet; nor ii i: likely 10 be brought into ufr, unlelt diejpdai finncrs near Lrfjidjincwlio are undoubtedly the beif bufbandmen in Europe, infroductiu fi) the eoniiii"! firmien on neve'rbc fup-ar&A to alter their old etlabJimed innho-Js, till by ne... zeffe, they an- dr</ to it: a strong inaj.icc we l-svc of this kind, irithe' < nitur • s Turnep, whichfor many years were t... in moil of the countries in England, but fill within about fixty years paff, they *ere never

HOI

ioed, except within twenty or thirty miles of London, where the g.riteieri who had bten brc-1 in the litteir:-girtfens near Loni . . . every .-alun went out in particular | . . . in. uf the ncighbouri:}; count . . . and each party engaged o lux: the Tumep: . . . in Lucr a j . . . , it i certain prci: per acre . . . and from the facces of the farm . . . who firfl employed d . . . iibotirs wi-r- a; kngtli tcsnp . . . example^ fo that it becn= ncelti, . . . for fome of their labourers to undcr'lund this ivnrk ; and from that time ic iiis prevailed fu much, us ih' . . . tijVcnowcnjiasici!

in th: . . . and ii die HorJc-honng liulbandry was but w<: . . . established among th' farmers near Lends:!, there wuld bs lr; lu Joubc of in ipreakling into the difUnt tounriei; but there arc gear prejudices againft it at preferK, moft of theai anting from the . . . incc of the farmers in genenil and orlien from the . . . idnefs of the author to his own tVhcntvs, which has in many particulars cirricd him into many known absurdities j and thtfc being well known to ever) practical turner and gardener, art luficient arguments with them againit making trial or the ufd'ul part of his P'dieme.

The utility pf [Ms method of hutbandry, is firir, in proportioning the number of plants to the paiturc, which the ground ii luppofed capable of nouriihing properly. The fcond ii, by frequent tiring of the furface of the land, all weeds which rob the crop of its nourifhmenti3ddtroyed, aridthe clofs of earth are hereby dtvijed and pulverized, fo that the roots of the plants can more eafily penetrate them, and fearcii their proper food j beTides, the dew and moillutr are eafily imbibed in the loofe ground, wlvreby Lie pknts ret nvc > greater O . . . c n t.

There are firw p< . . . ly confidCT i I what confequence the tiring and breaking . . . iijof the furface of the ground is to ill a . . . growing therein. I have frequently made iriul of this, when the crop has been fa bad as a be thought iwt worth ihrdinc, which has been occaConed by the great quantity of rain which has fallen, -whereby the furfaceof the ground has been io dofely bound, u that the pUnts could find nonou-i l h . . . but have changed their ufuil verdure to a purple colour, and have made no progrefs > but upon S . . . -round and breaking the clods, the plants have put out ne v roots, and have flourifhed exceedingly. From a wny rrpc^tcJ trial of this kind J can affiim, that if [he Wheat in general wn fowed in rows, lb 85 that the plough may be brought behind them in the fpring, to iooen tht ground, which by the winter's rains may have been mo dofely bound, trie trap would more than double what is the common pToducl.

But the author of thb ftbeme was too fanguine in hii propofalT, 5rft, byaderring, tharin this method of hutbandry, the land woukt cncinfntly produce the fame fort of crops without diminution i and fecondly, it might be done without dtviling or murthering the ground; and his inducen for his own icHEME carried him fo far in the profecution of it, as at laft LO have much woukt crops :li4u any <.; his neighbours; itow-i'er, th'k II . . . could not discourage others from the practice of it, though upon dift'icnt principles: for although the tend i . . . cultivat' . . . wJU rO| nQuriflv the fame plant without manuring lcvcrs! yean, yet by this method rhuflw . . . affirm, that all crops will be fo much improved. . . as to doubly ant' r the diffrerence of expencr, and It . . . than a fifth part of . . . a feed will be enough for the I . . . of the commonfv. . . plough will antwer all kinds of I lorfeborinc

HOI.' US. Lin. Gen. Plant, 10:5. MUIurp. Toum. tab. 2<K. S:rgu:n. Mich. Indian

The Characters are, . . . in both male and hermaphrodite flowers . . . <m tie . . . plant, as others in different parts. The male flowers are . . . and have a . . . their . . . and to . . . with

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ar. eai . . . hairs, they have a small hairy cavity with their hairy . . . terminated by silky . . . The . . . flowers are single, in a . . . hairy . . . inner of . . . hairy, and left that the . . . ;tk

wpdaaatt; ibtj have ibr: r . . . fitMmin, vcitib a nun.U . . . try fiytfS, cnantfJ with . . . sixa J; ; aval

This genus of plants is ranged in the first section of Linnaeus's twenty third class, entitled Polypetala Monocotyledon which includes thole plants which have male and hermaphrodite flowers in different parts of the same plant, whole (lowers have five petals).

- The Spr.cjt's are,
1. HOLCUJ (*Sargrnn*) glumis villofij, feminibus ariftatis. Hort. Upiiii. JOI. *Hilcui with hairy (biffii); d kairdei faJi.* M ili ii m arundinaccuni, liibronincto femilie. Sorgo rvorAi . . . B. P. Iti. *Rtd-lik Mtillt, «tib li YQliJldilh ' . . .*
 2. H:n . . . j/w)gIumU gtabris, feminibus multiis. Lin. Sp. Plant. 1047. *lh/cai wib/rojufii iifj, onit:di wibfut a-jins.* Milium Indirrvim, aru . . . cea ciule, aranii . . . dbus. H.L. 4.15. *iah-in Milki 'with ii rtdj ftalk, andjtHnrzilb grams.*

There are feveral other of die go % tribe which belong [y thij cenui, bu; as they are - no: cultivat' . . . ufe, lb l ll;ill no: enumerate them here.

The >no forts here mentioned, grow namrjly in Lidia, . . . rbere their grain is often used to feed poultry, and die feeds <J' thec arc ii frequently sent to Europe for the Cunc purpose j but : . . farmers are seldom warm enough to ripen the feed in the open air in England, but in Italy they are both cultivated. The stalks of these plants are five or fix feet high, which are . . . and like those of the Male, or Turkey Wheat, but smaller. The leaves are long and broad, liaviug a ii-e> fir: . . . through the center, where the midrib is d . . . on the upper furface, and is very prominent below, i . . . the leaves are two feet and a half bog, and two inches broad in the middle, en j . . . the stalks with their hair. The Bowers come out in large panicles at the top of the Ualk . . . resembling, at first appearance, the male lbikes of the Turkey V. . . their are succeeded by large roundfilic . . . which are wrapped round with the chaff. These plant . . . are propagated in a few gardens for the lake of vanity, but as =icy ore late in ripening their grain here, to they are not worth cultivating for use. The feeds should be (own on a warm border, or upon a gende hot-bed in March; and when the plants come up, dtry lould be dunned -ml ; . . . Ac diltance of a loot afunder in the rows, and the rows (ould be three feet distar. ee j the coltii: . . . after tiis, is to keep the ground clean from weeds, and draw the earth up with a hoe. to the (I . . . of the pUdti i if the lea lon proves warm, their ; . . . will appear: in July, and thr grain will ripen in Sec: . . . aber, but in bad seasons their grain will not ripen here.

HOLLOW ROOT. Set FOMARIA.
 HOLLY. Seektx.
 HOLLYHOCKS. See AtctA.
 HOMOGENEAL or HOMOGENOUS plants, are (yieb plinrs as are of die. (amt I . . . and, ce nature, with others
 HONEY SUCKLE, See PSUCJ-YWIUUM.
 HOIS. Sec Lui . . .
 [1 <j It DE U M. I. in. Gen. Plant, g . . . TOUR . . .
 H, 513. tab. igj. Barky; : . . . French, Ory . . .
 The t . . . j are,
 It has a partial . . . of its berries . . .
 wttt . . . contains three flowers. The great of the flower . . .
 imib 1 . . . valves, the under valve is circular, fending, . . .
 evil, utul f . . . being longer than the . . .
 rnJiHg in A lent bitri; sir it: . . . is small and . . .
 fbtfixucri. . . with three hairy . . .
 The male flowers . . . terminated by silky . . .
 gynnia, supporting two hairy . . .
 like figure. The germen afterwards becomes an . . .
 . . .

fid, pointed <i>... This genus of plants is ringed of Linnass's thiid whole flowers last • ilirec lUmina and two!

- the SPECIES are. 1. HoKdgi'ri... 2. HORDEUM (Dijliiw>) HofculU lateral, mud... 3. HORDEUM (Dijliiw>) HofculU lateral, mud...

Hordeum (Dijliiw>) HofculU lateral, mud... The first tan h tdc common Spring Barley, which is principally... purenaic cm.- fertl Barley flora the... in ripening .15 the comnta! linrly of...

S

The third sort is usually called Sprat Barley, this hath... The fourth sort is rarely cultivated in the southern parts of England, but in the northern counties, and is generally low, being much harder... All these sorts of Barley are sown in the spring of the year, in a dry time, in some very dry light land, the Barley is sown early in March, but, in strong clayey soils, it is not sown till April, and sometimes not until the beginning of May, but when it is sown late, if the seeds do not prove very favour-

able, it is very late in autumn before it is fit to mow, which it be the rather ripe for, which is often ripe in some weeks from the time of sowing. Sown people few Barley upon land where Whett grew the former... Tiiiii it ehc l quantity of grain ufuuiUy (b#r I... k:d flu on the ground:... JL ha* cotnc u;

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grew »M aol wry rich: Inn I !uvc frequently i Served «n the fide* of h-Jt-lie-i" in the kite h where Hurley-fl raw ha* heei' uled fos; [beds, that fain; of the grains left'iu the Mrs ha.

its have product from •thirty (∞ HMV [talk. MCh, *hd rWe been three or tour tlnics Urgcr than the ftaiks ever arrive at in ihe roiiimon «My . but 11 ehw I know it will lie ob- I, that iklough upon rich land in a garden, thdi: roos of corn they will not have such au «i thro-

•jULnlLiv of •it be worth ibrnliv, which n one. of the greatt fides that can bt imagined, for tu ftoopd du u fx>>- land «n nourifh more thin twice ibr n number of roos in the feme ljiicc is rich land, is (itch n abinrlity, is one could hardly fupjiofc any I.TihndinQ; r jr the general [raticc h ta allow a greater : I«J B» poor [arid, thin for richer gn and, not coudring that the rooti lUnd w dote, they will deprivc • rath orlric of thtr nourifhmem, fo ftraw thcmfelves, which is always the cafe where the roos ftand clofc . which any perfert may at firft fight observe, in =y part of the fields where ihe corn happens to feat: or when tlley *rc ("owing it; or in : places where, by harrowing, the fad is drawn in heaps, thofe patches will ftarvt, and never grow to a third part of the (tic i5 the other pans of the feme field *. and yet com •man as this i:, it is little noticed by farmers', otherwil'e they furty would not continue their oH £11(100L(11* fowing. I have made many experimts for feveral years in the pooreft land, and have always found that ail crop* which are (own or planted a: a greater diluance than ufua, hivr dicccailed be ft; «wJ f: ., if i he firmers could be prevailed on to quit their prejudices, I make trial of this method of (owing their torn tlin, they would (bon ice the advantage of this hufbintry.

Tiic noblemen and ecrnkmen in France arc very hnly • letting examples of tu bulbandry in myft oi' their province*, being convinced by many trials of its great utility; and it were to be wilhfd, the fame was dorc in England,

When the B, they is fow i, the grou: should be: rolled after the firll uUvfr of rain, to brrak the clods and lay the earth Cmoodi, which will raider it licter to mow, and alfo caufe tl;c earth to ltr dol'rr to tic n »ts of the corn, which will be of grejt femcc to it in dry weather.

Where Barley is fown upon new broken ujllnd, the ufual method is, to' plough up the land m March, and let h lie fallow until June, at which time it * ploughed again, and fown with Turiwps, wkbk are eateib)'(heep in winter, by wh'lcdu: the lands greatly improved; and tixtn in March following the ground is ploughed up again, and fown with i barley as before.

There are many people, whp low Clover with their Bafley, and (bnenave town the Lucern with Barley; but ntlticr of tUelc methods is to be commended, lor where there is a good crop of Barley, the Clover or Lucern muS be lo weak as not to iiay i or ftand up, to the better way is to fow the Barley alone widoit ovit any other crop among it, and then the land will br at liberty fcrar-, other crop, when the Barley i taken off the ground; but this practice of fowing Clover, Rye-gras, and other Gras-feds, with corn, has been in long and universally eftablifhed among farmers, that there a little hope of prevailing with thofe peo-

ple: Q alter . - dium which has been landed down to them from their production, although there fhould be many cx.i npls produced, to fhew the utility of thii [inifticr.

When •lieBarley has been up three weeks or a month, it will be a very good method to roll it over with a weighty roller, which will prefs the earth clofe up to the roos of the corn, and thereby prevent the fuc and air from penetrating the ground, which will be of fingular fervice in dry feafons; and the rolling of it before it ftalks, will caufe it to dil out into a greater number of stalks; fo that if the plants fhould be thin,

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this will aiufe them to fpced fow to fill liic ground, and like wife ta fremtken t!c (talks.

Thertmcforcuttrngcf Barlcyn, (then tiicred •> ' " ears is off, and the -frac curju yell to hang down : in the north of I they always • thier Bjrlej'. and rrvt!

flicavti, a) prattS m Wheat, by which method they do nor' the mch corn, ami it »jdfc more handy to fUck ; but tlis mi-;! (b well be (ititified where there are niaay weeds arnngft the corn, which h too frequently the cafe in the rich land; near London, especially in mmft feafonj; th <t- fiirc when this is the calt, ihe Barley muft lie on tlie! fwarth til! all the weeds arc dciai i bu! U it B ^pi r' fproul in wec weather, it mull be (book up, and <iry fair day after rain to prevent it. When it ft carried in, it fhould l- thoroughly dry, inherwil'e i: it be (lacked wet, it will iurn niulty-, or if too green, ic a (iibjcf! to bum in the mow. The common produce of Bitfey, h two and a fiilf, or three quarters on an acre, but I have lometimci known fix or (even quarters on an acre.

HORIZONTAL SIIELTERS have, by fome perlbtM, been greatly recommendeil to prelcrvc frittrws fntn blights; but with how little realbn, or upon what flight experiments, every one who has ever made ufc of them will cily judge; efucially thofc which are contrived by placing tiles in the wali it eerMO dillances, nothing being mure obTM-, than that vegetables, when prevented from recriv, the advantage of dews, rains, Sec. thofc kindly benefit! of heaven, grow weak, languid, and at laft mairly decay : and lincc, from vaft number of experimts which have been lately made, we find (hn trees im-bibe great quantities (it nOLirihmcnl ihrrijthg the pores of their lcnves and branches, who chy they are rendered vigorous and tteitry; nVrn \, i, on such ians, and upon fuch foil?, where one would think it is; possible they fhould receive much nourifhment from the earth; to deprive them of this advantage, b no left thin de-ftroying them ; rjiough perhaps, if the rre« arj -, •gorous, it may not be efctL-d fuddeniy but there •will be very viiible figns of decay on them daily, an; I a few ytars will put a period to their lives, as I have more than once obferved, where fuch wcls were built.

The only fort of theft fhelters which I have ever o!v ferved irfcful for Guir-ueti, wns made with two leaves of flit deal, joined over each other, and painted -, this being fixed upon the top of the wall with puliifs, to draw up and down at pkafure, formed a fort of pent-houfe; which being let down in great rains, or cold nights, during the time thit the trees were int r!o*rr, or the fruit was letting, proved fervitable; but then their fhelters were removed: MJV ioon ; for the fruit was fit, (b that the trees might enjoy all tKe ad'an-tages of rain, dew, &c. in ihe funtner, which is ab-folutely necTiry, if we would have healthy trees or good fruit.

H O R M T N U M. Tourn. Intl. rrS. tab. St. S*)via. Lin. Gca. Plant. j6. Clirf i in French, Onmn.

1'hc L characters are, Tlti • palment of the flower is per. tanent, ef m kf> tvbtiL-, and the middle, betw iij i-xs lips! th upper is Mw..l . being in three main parts . : bembdiTi! *exJisrin I.*

The flower has one ... divi & dit ... the upper is ... covered by four petal-fruit ... In the bottom of the tube are four ... * upper Up ej tit pits', i Pi g ftfrm <-pzlcm>t-

Toumtfurt'i four.h ctaft, v. which include» the herb* with a lip flower of our kind, whose upper lip^ ^ forked, or shaped like .5 helmet. Pr. Lmnaui*^ ^ joined this genus. and allb the Sclarea of Townc-lbrt to the Sahta, in iudiitg them all in dun geniu t

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but as there are many species of each genus, so it is better to keep them asunder, whereby their oldities, by which they have always been known in the fiops and market will be retained, though there is no very essential difference in their characters.

The SPECIES are,
i. HORMINUM (Ferknacea) Mis finuatu ferraus, corollis calyce angustioribus acutis. Claty with finuated fawedleaves, and the petal of the flower narrower than the cup. Horminum sylvestre lavender flore. C. B. P. 2/0. Wild Oary with a Lavender flower.

2. HORMINUM (Lyrata) foliis pinnato-finuatis rugosis. ZU Angioribu, < A E E E % S 1 3 1 1 ro B, Indtbe n's W than the petal of the flower, Horminum folio Volk. Oak-leaved Clary.

3. HORMINUM (Verticillatum) verticillis subnudis, stylo collato in labio inferiore incumbente. Clary with heart-shaped, crenated, indented leaves, naked whorls and the style rises under the lip of the petal. Horminum sylvestre laciniatum verticillatum. C. B. P. 283. Broad-leaved wild oary, with flowers growing in whorls.

4. HORMINUM (Napifolium) foliis radicalibus pinnato-verticillis, crenatis cordatis crenatis, fummis femipennatis radicalibus. Clary, whose lower leaves are cut and the upper ones are broad and crenated, and SKZopbls tracing the stalks. Horminum napifolium Mor. Hort. R. fatt Clary with a Navev leaf.

5. HORMINUM (Salsum) foliis obtusis crenatis, bracteis fummis (terribilibus majorebus coloratis. Clary with obtuse crenated leaves, the bracts at the top of the stalks large, colored, and barren. Horminum comit purpureo-lanceolatum J. B. g. 309. Clary with a purple flint top. The first fort grows naturally on sandy and gravelly JrSunds, in rainy parts of England. Thus a perennial plant, the lower leaves grow upon pretty long foot-Mks, and are near four inches long and two broad; they are finuated on their borders and blundy

ground; raised on their edges; the flowers grow in a whorled manner at the top of the stalk, each with two spikes; one on each side; the flowers are small and blue; these are sweet to the taste; they have but one petal which is longer than the under lip; the upper lip is a little longer than the under. and almost the same as the feel stamina in each flower, and after supporting a little while the seeds fall down. This fort propagates itself in plenty, if the seeds are permitted to scatter, and requires no other care.

plants clean from the garden. This fort propagates itself in plenty, if the seeds are permitted to scatter, and requires no other care.

Jut. The virtues of this are J3 fnnowerful. The second fort grows naturally in the south of France and Italy; the lower leaves are upward of four inches long, and not more than one broad, regularly incised on both sides, in form of a winged leaf; the stalks rise about the same height with the former, but all the leaves upon the stalks are finuated in the same manner as the lower; the flowers are smaller than those of the first, but grow in whorled spikes like them. This is a perennial plant, which is very hardy, and will propagate itself in plenty by the scattered seeds. It is seldom kept in gardens but for the sake of variety. The third fort is a perennial plant, which grows nat-

H OS

urally in Auftria and Bohemia. This fends out from the root a great number of heart-shaped leaves; which are fawed on their edges and deeply veined. Handing upon pretty long foot-stalks which are hairy, the stalks arise from between these, which are square, and grow two feet and a half high, which are garnished with two heart-shaped leaves at each joint, whose base fits close to the stalks, half embracing them; the stalks at the two or three upper joints, put out on each side a long foot-stalk; these, and also the principal stalk, are garnished with whorls of small blue flowers, not much unlike those of the common fort, but larger; the spikes are more than a foot long, and toward the top the whorls are nearer together. It flowers in June, and the seeds ripen in August.

The fourth fort grows naturally in the fourth of France, and in Italy. This is also a perennial plant, which has some resemblance of the third, but the lower leaves of this are cut at their base to the midrib, into one or two pair of ears or lobes, which are but small, and are often at a distance from each other; the leaves are not fawed, but are bluntly indented; the stalks of this are flenderer, and do not grow so tall as those of the third, nor are the spikes of flowers so long. This flowers and feeds at the same time with the third.

Both forts may be easily propagated by seeds, which, if sown in the spring on an open spot of ground, the plants will come up, and require no other care but to keep them clean from weeds, and allow them room to grow; for the plants should not be nearer than two feet apart, for they grow very large, and will last several years.

The fifth fort is an annual plant, which grows naturally in Spain, of this there are three varieties which are constant, one with purple tops, another with red tops, and a third with green tops. As they differ in nothing but the colour of their bracts on the top of the stalks, so I have not put them down as different species, though from more than thirty years cultivating them, I have not known them alter.

These plants have obtuse crenated leaves, shaped like those of the common red Sage; the stalks are square and grow erect, about a foot and a half high; their lower parts are garnished at each joint with two opposite leaves of the same shape, but gradually diminishing in size toward the top: the stalks are garnished upward with whorls of small flowers, and are terminated by dufters of small leaves, which in one are red, in another blue, and a third green, which make a pretty appearance, and are preserved in gardens for ornament. They flower in June and July, and their seeds ripen in the autumn.

The seeds of these are sown in the spring, in the places where they are designed to remain, and require no other care but to keep them clean from weeds, and thin them where they come up too close.

Garden Clary. See SCALARIA. HORNBEAM. See CARPINUS. HORSE CHESTNUT. See ESCULUS.

HORSE DUNG is of great use to make hot-beds for the raising all sorts of early garden crops, as Cucumbers, Melons, Aparagus, Sallading, &c. for which purpose no other sort of Dung will do so well, this fermenting the strongest, and, if mixed with long litter, and fea-coal ashes in a due proportion, will continue its heat much longer than any other sort of Dung whatsoever, and afterwards when rotted, becomes an excellent manure for most sorts of lands, more especially for such as are of a cold nature; and for stiff clayey lands, when mixed with fea-coal ashes, and the cleansing of London streets, it will cause the parts to separate much sooner than any other compost will do; so that where it can be obtained in plenty, I would always recommend, the use of it for such lands.

HOSE IN HOSE, a term used in gardening, to signify one tube or petal within another, in the Polyanthus,

of thus, where there are in some varieties two or three.

HOT-BE1>S are of genml use in ricfc northern part* of Europe, wtv i ... Lo many of the jirodu&s ot'warm ntrv; nor could we h.n'r the ulilrs Itintilnl with the lewrnl prodaSi of the girdta, durSn ... end fptug moru ... of England, beti- i any or her country in Europe: for although we cm not Goall of the clemency of ou rei v* ... with all fon* qfdufeiiiplan.es tor the uble, much earlier in the I ... in dwgudem of our neighbour*, which h awing to our (kill h)'

The ordinary Hiibciij which arecommemly > used in the tritcheff-jjardeoj, are made with new horlc dung, in the following nuinnR':

I It, There is a quantity of new horfc dung from the ftjblt (in which there fnuW be pirtoflhs titter or fraw whkh is commonly ufed in dfeftzbtte, but not in to ... • P'rcar jiropporion co the dun

• Lit be accoxling <v> tiv if furi/ in thi ... I nri ibe*ch ... • Loilalhc5,ronic 'raves of trees, and ... irttdi will be offer vice ;o continue! . . heat of the d mgi it

ould remain iix or feven dnys in this heap; then it should be turned over, and Li ... iogether, and caft into a heap again, wh?r; i; rruy continue five or fix days. I mger, by which time it will have acquir'd ... altdutfhun, then info

t of the girtfen, you mult ... trench in length and width, proportionable to the frams you intend it for; and if the ground be dry, about a foot deep, but if wet, not above fix inches; then wheel the dung into the opening, observing to stir every part of it with a fork; and lay it exactly even and smooth thro' every part of the bed ... otib.

of the Turcacc of i... bed, this will prevent the steam from rising so plentifully as it would otherwise do. To prevent this, and the heat from rising so violently as to burn the roots of whatever plants are put into the ground ... it w

of nc<S dung nil over : the surface of the beds done, which ... dse DM ... ruled (or Cucumbers or McH:

Id not be laid all over the be.: at first, only j hill of cartel fntilid ivs firfb laid iti them: ... liiight on which thepl.ir.es lhould beplai ned, and ihe're-outning fpace ftiould be filled up from tme I ... ajihs roots ot the planu lptcidt bu[thii; fully (jflplainJ urxirc thofe wo artidw. Be: if the hoc-bed ii inMnded for i ... M bed ij Well pre: ... e left two O) :lirt two days t'irihe llean to pat oil, below the earth is laid upon (heth ng.

In the making of these hot-beds, it must be i v,fully observed to make us dung close with a fork; and if it be full of long litter, it should be equally trod down close in every part, otherwise it will be subject ro htiti too violently, and consequently the heat will be much sooner spent, which is one of the greatest dangers these sort of beds may be liable to. During the first week or ten days after the bed is made, you should cover the glasses but slightly in the night, and in the day time carefully raise them to let out the steam, which is subject to rise very copiously while the dung is fresh; but as the heat abates, so the covering should be increased; otherwise the plants in the beds will be blasted in their growth, if not entirely destroyed. In order to remedy this evil, if the beds be very cold, you must put a pretty good quantity of fresh horse manure, and cover it up the next a confiderable time after; and as the spring advances, the sun will supply the lack of the dung's heat; but then it will be advisable to lay some mowings of straw round

lite GdM of itir bed, especially if the night should prove cold, as it often happens in May, which is many times, even if thou liL ... very harmful to tender plant on I IMI-1'-1-

But although the Hut-bed I have described is what the gardeners commonly use, yet those made with tonntrs b<k are a much preferable, especially the alt tender CKOf- plants or fruits, which require an even degree of nmrnth t j l. continued for several months, which h wfial cannot be effected by heating ciung only. The manner of making these beds is as follows:

There must be a trrndi dug in tdt earth about three feet deep, if the (ground be dry, but if wet, it must rot be above a toot or fin tnchei deep. The dung must be r.iiftd in projn ... above ground, so as to iidmit of die nih being laid thtm; ... The length mi; be proportioned to the frames intended to cover ii, bu: (hoold nvrer fxc li-li ilun rk or twtlvc feet -, buiifitb twice lhar Jm'f. it will be better, and the v ... iliiin fij. ^

Such is the best use of these beds for ... round the beds above mentioned ticifthio! tirtf fci ... paying the bottom with bricks to prevent tticem! ... on, m< \ fir and be tiled in the space with trenchers bark (i. e. such as the tanners have lately drawn out ofvhc:!

• T >ave used it for tanning leather) which should be laid in a round heap for a week or ten cays before ii is put iii the trench, that the moiflure may be better strain out of it, which, if detained in t;tgreat » quantity, will pn-nt its ferment-itioti; then; put it into the trench, and gently beat it down equally with a dung-fork; but it must not be trodden, which would also prevent its heating, by fitting it too close; then you must put on the frame over the bed, covering it with the glasses, and in about six days or a fortnight it will begin to heat; at which time you may plant your pieces of plants or fruit. into It, ObiCTVJJIE IIII i> : read down the back in doing it.

A Boi thus prepared (if the back be new and not ground too flint) will continue in a good temper of warmth for two or three months; and when you find the heat decays, if you stir up the back again pretty deep, and mix a load or two of fresh bark amongst the old, it will cause it to heat again, and preserve its warmth two or three months longer. There are many ways for some hot beds in the bottom of [p] the trench, to cause it to heat; but this I would never practise, unless I wanted the bed sooner than the bark would heat of itself, and then I would put but a small quantity of dung at bottom, for that is subject to make it heat too violently, and will occasion its being the best sooner than ordinary; and there will never be any danger of the bark's heating if it be new, and not put into the trench too soft, though it may sometimes be a fortnight or more before it acquires a sufficient warmth, but then the heat will be more equal and lasting.

The frames which cover these beds should be proportioned to the several plants they are designed to contain: for example, if they are to cover the Apples or Pine-apples, the back part of the frame should be three feet and a half high, and the lower part fifteen inches, which will be sufficient depth to carry off the wet; and the back side will be high enough to stand in the large framing plants, and the lower side will be sufficient for the smaller plants; so that by placing them regularly according to their heights, they will not only have an equal distance from the glasses, but also appear much handsomer to the Eye. And although many people make their frames deeper than what I have advised, yet I am fully persuaded, that where there is but height enough to contain the plants, without breaking their leaves, it is much better than to allow a larger space; for the deeper the frame is made, the less will be the heat of the air included therein, there being no artificial warmth but what the back affivti, which will not heat a large space of air, and

H O T

at the Fine-ijiple reityuH to I? foi-far.tly kfpt vary warm, in order w r'p'm the fruit tvcjl, E) it will be figure i upon trial, • at the d fph I have allowed will

u porpoff I mater.
 Iliuif lit Bed be in. ends: for under plants, then the /rune mud be made in depth proportionable thereto; but ij it be for f. **back, and reins the heat will be mud** (in the frame, by which the heat will be mud greater; and this is common
 proportion of lowt I, the frames usually uJeufrof in the kiEdicj)-" u Iens. As to their length, they are generally according to the fancy of the owner, but they commonly twain three lights each, which i u in the vale about ele on feet in length, though sometimes they arc 01 • contain four lights, but lus is 100

gte«ra length tor the buses, for the frames thi; are not so handy to remove, as which they are shorter, are not so handy to decay at their corners. Some indeed have them to contain but two lights, which is very handy for raising Cucumber and Melon plants v?h. young, but this is too short for a Barke-bed, as

tia! allowing room for a pot. • <er quantity of bitle ro continue a warmth for any considerable time, and befoi (.-.mention..]. but for llic cilirri put; two fiidi frame* art very convenkn: ; Dunf

As : those frames which are made very deep, it is mu. the better way to have them made to take afiair- with care, otherwise it will be very lliJkuicotakethi' ee take out the old. The main m put innnewturk. frames it generally by 5 ihefe 'iwn, or may be much, better liati tin be orprldtd in writing, therefore J fiwtU ioibear uybg any thing more an 11

H O T I O

Gen. IL
 Wat • HABACTES
 The (• jAr. it has one petal, an <rt-jlawv is fumtl-jk., lit tub i <tti jrMci •> mui arc bdb Jivcjhort imtjihptii H (w :nic of tit petal, tppfili to ibt tuUi urmiiiMi iy i-hiwj fumrnus. h ibt oter iijitt- faert finukr fijk crtxiuj t-y a eMxLr figma, which

tiuu genera of NUWM • raised in the first section of Li.1'aur's fifth class, intitled Pentastrix Montgry- nU, which iicUuka rlif plan ftjunitia anj one I

We know but on: this genus, viz. **HOTT** : this genus, viz. **WATER**

HOTT **Water** **Viola**. **Milichium aquat** caule nudo. B. P. 141. icum five viols «!

Water Viola, with a naked stalk. This plant grows naturally in standing waters in many rtirfl.; and in the winter, are freely winged and Oar, like rm.it oi the ice plants; their rounded roots, which fruke into [litriKIi trie Uower-fU^ ric five or six inches above the wa. toward the top, have two or three whorls of five, arraigned by a small cluster of these flowers have the appearance of those of the cilliflower, to make a pretty appearance. The lower appear in

It may be pWJMj • in deep standing waters, by pro rring its brach, when they are ripe, from the plants of their natural growth, which should be immediately tire pped into the water where they are desired to grow, and the f >ng following they will appear, and

H U R

If they are not liillurbet!, they -will (oon propagate thematicWcs in great ultriv.

HUMIDITY i the quality commonly called moistness, it are, or Ili power of wetting others, which quality fume i mmois and fluids are endowed with, and is distinguished from fluidity, in that it depends also on the congruity of the component particles

of any liquor to the parts or surfaces of fluids particular liofici, a' it is capable of adhering to. Tims, quickfilvcr is not a moiii: nLjujr, in rejpe to our hands or clothes, and n. of other things it will not fitk to j but it may be called & mout liquor, in respect to gold, lead, ••rtin, to chcfurfijcesor i which it will pitfetujy ad] are. Nay, wjicr icit, that weu nlmfv. ev<ry thing, anc i rd of Hum id H), or me here, it not capable of wetting every thing, for it floats, and it ins easily off'n globular drum, OII the leaves of Cabages, and many other iijnti. ami will wet th: feathers of ducks, swans, and other water fwl

And it is xry pj>in, thsc it U only tie texture (hat may cause the Ruid 10 be humid •, beutule neir; quicklilver alone, tior bifmuth, will ftiek upon glass, yet being mixed togetheri ill-y will form i mafi that will ftick off it <, as it is very well known in the dissolving of looking-glass, in which such a composition" is used.

HUMULUS. See Ltrpt i
HURA. Lin. Gen. Plant. 9. j. Hum, or • and hax-tree.
 The CnAK.Acr.Rs <re,
 H i. •mtsh ttjd small flowers on the four plmt- tbi

but a column of stamens, which are joined at htturn ts tit tip, forming a cylinder, slope spread out at the top, and are terminated by single stamens hing rgr ...L -1'er. The female flowers have a swelling empanumet of one leaf, with one tubulous petal, the rounded extremity situated in the bottom of the empanumet, supporting a long cylindrical style, crowned by a large funnel shaped stigma, which is a black colour. divided into seven

oi<y> f/irtj. Tif germen af/rrward iin fmi en nrtialir Urnmufruit, depr^fal et up end bottom, eaving rxfot stiff j .. fa nulls? (t't, '.:') open at the top with us tfafhhiiy, each (vuliamng cm tujuf fat fitd. This yonLi of plants ia ruiged in the ninth [E-o f], mure's twenty-fist class, intitled Ao iua's Monodoclipia, which includes those plants which have male and female flowers at separate distances in the same plant; whose stamens are joined to the style, forming one botiy.

We Know but on. Species of this genus, viz. **HURA** (CrcpHsm.) Hon. Cliff. 286. Sord-ho-tro ; Hv r» Amencana, Abutil., Indiol palm. Hort. Amt. 2. 111. • ib. 66. American (huiss, wot

This i -rows rawrally in the Spanilh Wefl-Indics, J from whence it has been inw-ered into the Brit', cok nies of America, where some of the plants are pntferve d by way of curiosity. It rises with a fast lignon, is fier to the height of twenty-four feet, dividing! into many branches, which abound with a milky juice, and • luvc firm on their bark, where the leaves luvt fallen off. The brindies fu-egwmi; od with heart-shaped leaves, three which are the broadest are eleven inch: long and nine inch: it u^d in it. middle, indented on r' or tdgw, hating a prominent middle, with several transverse veins from i Oiai totlic ljes, which are ^alternate-

these stand upon long slender foot stalks. the male flowers come out from between the leaves, upon foot stalks which are three inch: long; they are formed into a cluR- fpik, or hacket, forming a column, lying over each other like the scales of fish. The female flowers are situated at a distance from the male, they have a swelling cylindrical empanumet, which rises the petal of the flower, which hath a long funnel shaped tube, spreading at the top,

object C which rises the petal of the flower, which hath a long funnel shaped tube, spreading at the top,

top, whisre it is divided into twelve parts, which are rncxed. Alter the fn«cr » paf, the germen [wells and become a round, ci... ligneous r... having twelve deep furrows, each being i dutinf, ctll, containing one large round comprefed feed; when the pods ate ripe, the/ burft with an claffitiry, and throw out their feedi to a confiderabli. du-rance.

It is I ropagated by feeds, which (hould be fown rnrly in the (pring, in pan tiled with light rich earth, and plunged into a hot-bed of rannm bark. If the feeds are frclh, die plants will appear in about five or fix weekj after ihe feeds are lbwn. AS the plants will advance very faft, where due care is taken of ihem, fo they fhould have i large (hare of fxfch air admitted to them in warm wearier, otherwife tiify will draw up too weak. When (lie plants are about two inches high, they (hould be rranrtianted «c!i into a fepatare fmall pot filled with lipht rich earth, and plunged again into the hot-bed of miners bark, being cieriul to lhadc them from the heat of the fan, until they ha vi ukenncw root; after which time they mult have free air admitted to them, by railing of the glalles in proportion to the warmth of the featbn, and Inould be foquenily, but gently, watered. When the plants have filled thefe {mall pots with their roots, they mult behakenour of them, and their roots trimmed, and then placed in larger pots, which (hould be filled with the like: rich earth, and plunged again into the hot-bed, where they Jlwuld remain rill Michwlm, provided the pLms have room, without tquthmg of the gjaffes, at which time they mult be removed into the tmrk-ftove, and plunged in the warmed pirt thereof: during the winter ieafon they mud be Iparmgly watered, for as the plants have focculrm Hulks, much mifiture v.itl rot them \ they mud life be kept very wirm, oilierwic they will not live iit this country. In fummer they mult have a large Jhare of frfh air in warm weatlicr, but they mult not be removed into th: open air, for they arc too lender to live abroad in the warmed pan of the year in this country.

This plant is now pretty common in the Englifh gardens, where there are collecfions of tender plants prderved, lbzne of which are grown ro die he... of twelve or fourteen feet, and many of them have produced fkiwers, but there has not btxn »ny of their fruit produced as yet in England.

As thrc plants have ample leaves, which are of a beautiful green colour, they afford an agreeable variety among other tender exotic plants in the ftove -, for where they are kept warm, and duly rcfrelhed with water, xhep retain their leaves all the year in verdure.

The fruit of this plane is, by the inhabitants of the Weft Indies, cut open on the iide where tht- tbot-ftlck grew, and the feeds carefully Likim out, after which the (hells are ufal to contain land for writing, which gave rife to the name of Sand-box. "When thefc Iruirare brovgh; entire into England, it is very difficult to preferve i hem; for when the hea; of the fummer comes on, they usually burft with an expjofion, *nd t... their feeds about, and from the noile nude

I

the ripe fruit, it was by...

by t" Arbor crepi;..

YACINTHITS. TotaL Inft. R. H. j«. ub. 180. Lin. Gca. Plant. 417. Hyacinth; in French, /tu.;v.-.

The CIA^ACTIM 4«, The fitwtr bdi aa myelat.-s^ j, fa, , M fit pjris, natriou en ibtrquisiifo dfeidit nrm

The great of mts a ranged in the firft fe&im of fisih dili, tndrcd I Alexandrii Monogy

nia, which intluJci thole pUnts ivhoie fiovsrn hire fix it. miiis and bur out llyk:-

The SPBCLES arc, 1. 11^ACIXIHLt (Nenfrrip(as)mrQI)s campanuk partitis apice revotuus. Hort, Cliff. !.,• tsiib a bdi-jhspep ptal divided into fix par; refitxtid at iitir saps. Hyacinthus oblongt) iore canieus major. C. B. V. 4.3. Greater Hy/aimb %v;tb an cl* lc#g Mm Jhu'tr', and the Hyacinthus Anglicui. Ger. 90. Eng&jb Hyarmul, nr flare Bells.

2. Hv>j (ratimii) enrolbnfn rterioribus petalis fubdifinftis, imcrjoribus co.iduiuiis. Lin. Sp. Plant, 453. Hjtrfnth Tuhefi txcrtiar fart of lk: bat dijlintl ptUih, but ibt wtiriari jointd. Hyacintlini obtblew flore. C. D. P. 4 +. f-h/adnth viitb n jfawer.

3. Hv iCifTMm (Ufrinjee Floriuis) corollis canipannlj-cis fexpartisii, lloribus wrinquir liipolitis, Ihudub with a bell-jkaped petal vbitb is divide,! it fex parts, and ftowers ranga on tach fidt cf tbeft/t.k. 1! Hyacinthus floribus tBrnpauuir atriDque dilpufris. C. U. P. +4. ffyainth v;itb beljbaptd flowm dijpfosed en tvni fide OtJHk.

4. HVACINTHUS (CernKiu) corollis campamli: : rpar-titis raceniu tornuo. Lin. Sp. l'ant. 217. li. u/ith btU-ftisped petals divided into fix prtri, end a bedding branch offavats. Hyacinthus floribus rump-nulK, una vrfu dijjoitit. C. B. P. 44. H with btU-fcaptdf/Qvitri ranged mi oxt fide tbeftalk.

5. HYACINTHUS (jfmeltrrJHnum) torollis campanulatis femifeicfidis ball cylindricii. Hort. Upfal. 55. Hyacmb with klt-Jbaptdprtals cut bug may into fix parts, and a tylandritel bale. Hyacimiws obfcogo «crt;IL-j fiort minor. C. B. P. 44. Lifer l-fy&ixtb with kng bint fitxstr.

6. Hv tJNTiuis (OrinttUs) Corellis mfundibulirorni-bu>remifexfidu b... rrticoida Hirt. Upfal. 85. Hy ednth -Kith a fu.-... J m halfinto fix puts, and failing at I... Hyacinth, Orientalis albus prirnu. C. B. P. 44. fary Hiile Eujlnt lfy-atimb.

The forts here mentioned are all of them diltrCWpe-cies, of which there air feve: I... especially of the lixtk, which have been cultivated: ith fo much art, as to render fetwban the molt valiuble 6owers of thespring; i: Holland the p«Jcnjabound with iieem, where the fiorifS. :fomanyva-rieties as to unpunt to Innte hundreds % sod fonie ot" their flowers are lo large, tiauble, and finely coloured, as that iheir roots, ire valued at twenty or thirty pounds fclrling l... O cnumcraw thdc vark-tie* here, would lwell this work to very little purpofc* as every year produces neu- | ends.

The firft fort grows naturally in woods anrl near hedges, in hind? which have htely been w> : , I many parts of Hngbnd, lo i> iel.ion; admitted ir.(J gardens; but the poor people, who nuke it their hufinc& to gather the wild flowers of the LLJ M^O^ woods for nolcgays, &c> b: ing great quantities of thele in the Iprirtg ro Lonion, and fell them about tlic ftreets.

There i a variety of this with white flouen, wl ich id kept in !... gardens, whic b only differ* in the colour of their Jcwens from the other.

The fecond fort is preferred in tornr few gardens for the fake of variety, but as it hath as little beauty astlielirft, (b is li kdom allowed a place in the flower-garden. The Sen ers of this are narrower than thofe of the firft fort, and feem as if their petals were divided to the bottom, thofe of the fecond legments being fe-parated from the other, ftanding as a fmall diftance from •... three intervals, but they are all feinet redde blue colour, but before they decay, they take to a worn-out purple colour. This flowers early in the Ijiring, and yrowt natura [y in SpaLn and Mau-ritania.

The ihtRJ fwt grow* natur. ly in Spain and Italy: the haxh biue lki«m of the open ijtrcad b«df.* with b ^rt? tivided in:...

m, m. r-f disposed on every side the stalk. The stalks rise about nine inches high, and when the roots are strong; ilic tlyrfe of ; roots are large. This flower about the same time with the first fore, and was formerly preferred to gardeners, but since there have been io many finer Bow . raised from the seeds of the Eastern Hyacinth, these have been almost totally neglected, so that they are seldom seen but in old gardens.

The fourth sort seems to be a variety of the first, the flowers brint; ranged t'nrjhe m of part upon one lid; y| ilc lbik, and the top of ; . The flower is always bent on one side. The iloft ers are of a bluish peach coloir, am! appear abo at the Ihmci

The fifth sort grows naturally in Spain; this hath a smaller root than either of the former sorts, and comes earlier in the stabn. The petals rise into five parts liah I The length of the stem is referred, at the bottom, the lower part is L-cylindrical, a lie in tweling at the base. The stem is of a deeper blue ilun tintier of ihe for nitr. Thii is usually qjlltid by the gwdenrj die CeivCH: y blue Hyacinth.

This is the E-farli Hyacinth, of which we formerly h'td no otrirr vani l in the English gardens, it is the single and double white .mil li flower raised in England; and also by the L:1710D girtteners, it came over annually with their flowers to vend in England; but the gardeners in Holland have within the last fifty years raised so many

to render [lie formr (brs t-l) or no vi] . The roots propagate in great plenty in any soil or situation, and will require no other care but to take up their roots every other year, and plant them again m nuti; for if they are left longer in the ground, their roots will be spoiled to great a degree, so as to render their flowers very small and weak, so of little worth.

All the different sorts of Hyacinths are propagated by seeds or offsets >m thi old bulbs; the former method has been used in England till very lately, but in Holland and Flanders it hath been followed for many years, whereby they have obtained a very great variety of the most beautiful flowers of this kind; and it is owing to the industry of the florists in those countries, that the lovers and delighters in gardening are so agreeably entertained, not only with the curious variety of this, but of most other bulbous rooted flowers; few other plants thinking it worth their trouble to wait four or five years for the flowers of a plant, which when produced, perhaps there might not be one in fifty that may deserve to be preserved; but they did not consider that it was only the loss of the four or five first years after sowing, for if they continued sowing every year after they began, there would be a succession of flowers annually, which would compensate at least some sorts that might be different from what they had before seen; and new flowers being always the most valuable and useful sorts, provided they have good properties to recommend them, it would always be a sufficient recompence for their trouble and loss of time.

The method of raising these flowers from seed is as follows: having provided yourself with some good soil (which should be saved from either from double, or such single flowers as are large, and have good properties) you must have a parcel of square shallow boxes or pots, with holes in their bottoms to let off moisture, which must be filled with fresh light sandy soil, laying the surface very level; then sow your seeds thereon as equally as possible covering it about half an inch with the light earth; the time for this work is about the middle or latter end of August. These boxes or pots should be placed where they may enjoy the morning sun only until the latter end of September; at which time they should be removed into a cooler situation, and towards the end of October they should be placed under a common hotbed (i.e. where they may remain during the winter)

in a cooler situation, for the heat of the sun at that season would be too great for these tender plants, causing their blades to decay much sooner than they would naturally do, if they were screened from its violence. In this shady situation they should remain during the heat of summer, observing to keep them constantly clear from weeds; but you must not place them under the dropping of rain, for you should you give them any water over their blades are decayed, for that would infallibly rot the roots. About the latter end of August you should lift a little light rich earth over the surface of the boxes, and then remove them again into a warmer situation, and sow them, during the winter, spring, and summer months, as was before directed: and about the middle of August following you should prepare a bed of light rich sandy soil, in proportion to the quantity of your sowing plants, and having levelled the surface very even, you should take the earth from the boxes in which your plants were raised, and mix it with the soil of the new bed, which by this time, if they have grown well, will be about the thickness of a small quill; these roots should be placed upon the bed at about two or three inches asunder, observing to set the bottom part of their roots downwards; then cover them over two inches thick with the same light earth; but as it will be impossible to get all the small roots out of the earth in the boxes, you should spread the earth upon another bed equally, and cover it over wide flat earth, by which method you will not lose any of the roots, if they ever be found.

These beds must be covered over with hoops, and in very hard frosty weather they must be covered with manure, to prevent them from frosts; and in the spring, when the green leaves are above ground, if the weather should be very dry, you must water them with water; but do this sparingly, for making a more vigorous in these bulbs than use great quantities of moisture. During the summer season you must constantly keep the beds clear from weeds; but after the blades are decayed, you must never give them any water; and in autumn you should lift the surface of the bed with a very heavy tined fork, being extended circular not to thrust it so deep as to reach the roots, which, if hurt, are very subject to perishing after. Then lift a little light rich earth over the bed

about an inch thick, or somewhat more, and in winter cover them again (as was before directed.) In this bed the roots may continue two years, observing to treat them, both in summer and winter, as before; then the third year the roots should be carefully taken up a little before their leaves decay, laying the ends horizontally in the ground proper for their growth, after which they may be kept out of the ground all the end of August, when they should be planted in new beds prepared as before, placing them at the distance of six inches asunder; in these beds the roots may continue, till they flower, during which time they should be treated as before, with this difference only, that instead of covering them with manure in the winter, the surface of the bed should be covered with tanners bark, which will keep them from being scorched by the sun, and should be covered with tanners bark.

When the roots are taken up, they should be carefully examined, and the decayed ones should be burnt, and the good ones should be preserved in a cool dry place, till they are wanted for sowing.

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When their flowers begin to liew themselves, you should mark all such as appear to have good property, by thrusting a small flick down by each root; which roots, at the time for taking them up, should be selected from the rest, and planted by themselves though I would by no means advise the rejecting any of the other roots, until they have blown two years, before which you cannot be ascertained of their value. When the green leaves or three plants begin to decay, their roots must be taken up, and a bed of tight earth, in a shady situation, should be raised into a ridge, the better to protect the moisture, the roots should be laid into the earth again in an horizontal position, leaving the green leaves hanging out of the ground from the roots, whereby the great moisture contained in their very succulent leaves and flower-stalks may be exhale, and prevented from returning to the root, which, when suffered to rot, is very often the cause of their rotting after they are out of the ground. In this ridge the roots should remain until the leaves are quite dried off, when they must be taken up, and after being cleared of all manner of filth, which would be hurtful to them, they must be laid up in boxes, where they may be preserved dry until September, which is the proper season for planting them again. The method of doing this is all but the same as after mentioned, when we treat of the management of old roots.

I shall now proceed to the culture of lily Hyacinths which have either been obtained from Holland, or are of our own product from the seeds of such flowers as were very beautiful, and worthy to be preserved in collections of good flowers: and it is indeed the want of skill in the management of these noble flowers, which has occasioned the ill success most people have had with them in England, whereby they have been neglected, supposing their roots to degenerate after they have flowered in England, which is a great mistake; for were the roots managed with the same care as hath been practised in Holland, I am fully convinced they would thrive near as well in England as there, or elsewhere, as I have experienced for, from some hundreds of roots which I have received from Holland at two or three different times, I have had a very great increase of their roots, which were at first scarce, and produced as many flowers upon their stems, as the same sort generally in Holland.

The soil in which these flowers are sown, should be a rich, sandy, freestone, rich earth, which may be computed after the following manner: take half the earth from a common, or pasture land, which is chiefly of a sandy loam; this should be sifted, and not taken above eight or nine inches deep at most; and if you take the turf, or green (Ward with it, it will be better, provided you have time to let it rot before it is used; to this you should add a fourth part of leaf-mould, and the other fourth part of rotten cow dung; mix these well together, and call it into a heap, where it may remain until you use it, observing to turn it once in three weeks or a month, that it may well mature. If this compost is made two years before it is used, it will be much the better; but if you are obliged to use it sooner, then it should be frequently turned, that the pans may the better unite, this soil should be hid two feet deep on the beds which are designed for Hyacinths, and if you have a little rotten cow dung, or tanners bark, at your command, which may be within reach of the filth, you may touch the bulb, it will be better, especially if the soil is very wet where these beds are made, you may raise them ten or twelve inches above the surface of the ground; but if it be dry, they need not be raised above three or four inches.

The manner of preparing the beds is as follows: first, take all the former old earth out of the bed to the depth you intend, which should be not more than three inches (prod fame rotten new turf, or tan, in the bottom about six inches thick, laying it very close upon the surface of the above-mentioned earth two feet thick, levelling it very even; then

scour out the differences for the roots, which should be eight inches square, in straight rows each way; after which, place your roots exactly in the squares, observing to set the bottom part downward; then cover the roots six inches deep with the same prepared earth, being very careful in doing this not to displace any of the roots, and if the tops of these beds are made a little rounding, to protect them from the wet, it will be of service in moist ground, provided the middle of the beds are not made too high, which is a fault the other way.

The best season for planting these roots is the middle or latter end of September, according to the condition or situation of the soil, or the weather when it happens; but I would advise you never to plant them when the ground is extreme dry, unless there be a prospect of some rain soon after; for if the weather should continue dry to a considerable time after the roots will receive a mouldiness, which will certainly destroy them. The *Ufa* will require a farther cure until the fruit comes on very leisurely, at which time they should have some rotten tan spread over them, about four inches thick; and if the alleys on each side of the bed are filled up, either with rotten tan, dung, or sand, it will prevent the frost from penetrating the ground on each side to the roots, and secure them from being destroyed; but when the winters prove very severe, it will advise to have some Peas-hair, Straw, or such like covering laid over them, which will keep out the frost better than mats; and lying hollow, will admit the air to the surface of the ground, and allow permit the exhalations to pass off, whereby the earth will remain dry, and prevent the roots from rotting, which has often happened when the beds have been too close covered. But you should observe to take off this light covering whenever the weather is mild, and only let it continue on in very hard frosts; for when the beds are covered with tan or sea-coal ashes, so common a soil to penetrate through, the coverings are necessary, except in very severe frosts; for a small frost cannot injure the roots before the green leaves appear above ground, which is seldom before the beginning of February, at which time the beds must be arched over with hoops, that they may be covered either with mats, canvas, or some other light covering, to prevent the frost from injuring the buds as they arise above ground; but these coverings must be constantly taken off every day when the weather is mild, otherwise the flowers will be drawn up to a great height, and become very weak, and the stalks of the flowers will be long and slender, and rendered incapable of supporting the bells; which is a great disadvantage, to the flowers, for one of their greatest beauties consists in the regular disposition of their bells. When three hoops are fixed over the beds, the rotten tan should be most of it taken off them; in doing of which, great care should be taken not to bruise or injure the inclosed Hyacinths, which by that time will be breaking out of the pound with the flower-stem, therefore the tan should be removed by the hands; or it may be made use of in the doing of it, there must be great caution how it is performed. When the stems of the EOWIM are advanced to their height before the flowers are expanded, you should place a hoop (lick, down by each side, to which a wire formed into a hoop, the stem of the flowers should be fattened, to support them from falling; otherwise, when the bells are fully expanded, their weight will incline them to the ground, they are not screened from the wind and rain. During their season of flowering, the plants should be covered in the heat of the day from the sun from all heavy rains, but they should be left to receive all gentle showers, and the moisture of the evening sun; but if the night is frosty, they should be covered with mats, or such like covering, to be constantly kept on. The Hyacinth in bloom should continue your Hyacinth in bloom at least one whole month, and during that time should be kept in their strength, or the favourableness of the season.

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When their flowers are quite decayed, and the tops of their leaves begin to change their colour, you must carefully raise the roots out of the ground with a narrow spade, or some other handy instrument; this is what the Dutch gardeners term lifting of them: in the doing of this, the instrument must be carefully thrust down by the side of the root, being careful not to bruise or injure it, as also to put it below the bottom of the root; then by the forcing of this instrument on one side, the fibres of the root are raised and separated from the ground. The design of this is, to prevent their receiving any more nourishment from the ground; for by imbibing too much moisture at this season, the roots frequently rot after they are taken up: about a fortnight after this operation the roots should be entirely taken out of the ground, and then carried to beds situated where the morning sun only shines upon them; the earth of the beds should be loose and raised into a sharp ridge, laying the roots into it in a horizontal position, with their leaves hanging out, by which means a great part of the moisture contained in their thick succulent stalks and leaves will evaporate; which, if it were permitted to return back to the roots, would cause them to rot and decay after they are taken up, which has been the general defect of most of the Hyacinths in England.

In this position the roots should remain until the green leaves are entirely decayed, which perhaps may be in three weeks time. This is what the Dutch gardeners term the ripening of their roots, because by this method the roots become firm, and the outer cover is smooth, and of a bright purple colour; whereas those roots which are permitted to remain undisturbed, till the leaves and stalks are quite decayed, will be large, spongy, and their outer coats will be of a pale colour, for the fibres of many of these flowers are very large, and contain a great quantity of moisture, which, if suffered to return into the roots, will infallibly cause many of them to perish. After they are so ripened, you must take them out of the ground, and wipe them clean with a soft woollen cloth, taking off all the decayed parts of the leaves and fibres, putting them into open boxes where they may lie singly, and be exposed to the air, but they must be preserved carefully from moisture, nor should they be suffered to remain where the sun may shine upon them, in this manner they may be preserved out of the ground until September, which is the season for planting them again, at which time you must separate all the strong flowering roots, planting them in beds by themselves, that they may make an equal appearance in their flowers; but the offsets and smaller roots should be planted in another separate bed for one year, in which time they will acquire strength, and by the succeeding year will be as strong as the

~~old roots~~
The single and semi-double flowers should be planted also in a bed by themselves, where they could be carefully flickered (as was directed before) from the frost, until the flowers are blown; at which time their covering should be entirely removed, and they should receive the open air, but one HUUU-IMUM *W__ be supported with flicks; which, though the weather may soon deface the beauty of the flowers, yet is absolutely necessary to promote their feeding; and when the feeds are quite ripe, you must cut off the vessels and preserve them, with the feeds therein, until the season for sowing it. But you must observe, that after these flowers have produced feeds, they seldom flower so well again, at least not in two years after, so that the best method to obtain good feeds is, to plant new roots every year for that purpose. Although these roots are, by most persons, taken up every year, yet if the beds are well prepared for them, they may remain two years in the ground unremoved, and the roots will increase more the second year than the first, though the flowers are more liable to degenerate, therefore those who cultivate these for sale, take up their roots annually when

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they are large and saleable; but the offsets and final roots, they usually leave two years in the ground.

There are some persons who let their Hyacinth roots remain three or four years unremoved, by which they have a much greater increase of roots, than when they are annually taken up* but the roots by this great increase are frequently degenerated, so as to produce single flowers; therefore I should advise the taking up of the roots every year, especially those of the most valuable kinds, which is the most certain method to preserve them in their greatest perfection, though the increase may not be so great; and if these roots are planted a fortnight or three weeks earlier in the autumn than is before directed, it will cause them to produce stronger flowers, and those roots which are annually removed, will be rounder and firmer than such as stand two years unremoved.

For the other sorts of Hyacinth, see MUSCARI and ORNITHOGALUM.

HYACINTHUS TUBEROSUS. See CRINUM and POLYANTHES.

HYDRANGEA. Groo. Flor. Virg. 50. Lin. Gen. Plant. 492. We have no English title for this genus.

The CHARACTERS are,

The flower hath a small permanent empalement of one leaf indented in five parts, and five roundish petals which are equal, and larger than the empalement. It hath ten stamina which are alternately longer than the petals, terminated by roundish Juments. Under the flower is situated a roundish germen, supporting two short styles set a distance apart, crowned by permanent obtuse stigmas. The germen afterward turns to a roundish capsule, crowned by the two horned stigmas, divided transversely into two cells, filled with small angular seeds.

This genus of plants is ranged in the second section of Linnæus's tenth class, intitled Decandria Dygynia, which includes the plants whose flowers have ten stamina and two styles.

We have but one SPECIES of this genus, viz*

HYDRANGEA (Arborescens.) Gron. Flor. Virg. 50.

This plant grows naturally in North America, from whence it has been brought within a few years past to Europe, and is now preserved in gardens for the sake of variety more than its beauty. It hath a spreading fibrous root, from which is sent up many soft, pithy, ligneous stalks, which rise about three feet high, garnished at each joint with two oblong heart-shaped leaves placed opposite, standing upon footstalks about one inch long; the leaves are three inches long, and two broad near their base, fawed on their edges, and have many veins running from the midrib upward to their borders; they are of a light green, and fall away in the autumn; the flowers are produced at the top of the stalks, in form of a corymbus; they are white, composed of five petals, with ten stamina surrounding the style. These appear toward the end of July and in August, but seldom perfect their feeds in England,

This is easily propagated by parting of the roots; the best time for this is the latter end of October, which is also the best time to transplant them: the plants should have a moist foil, for they grow naturally in marshy places; they require no other culture but to keep them clear from weeds, and dig the ground between them every winter. The roots are perennial, and if in very severe frost the stalks are killed, they will put out new ones the following spring.

HIDRRASTIS. See WARNERIA,

HYDROCOTYLE, [of ftp water, and water, a cavity* because this plant has a cavity in the leaves which contains water, and the plant grows in marshes.] Water Navelwort,

This plant grows in great plenty in moist places in most parts of England, and is never cultivated for use, so I shall pass it over with only naming it.

HYDROLAPATHUM. See RuMEX.

HYDROPHYLLON. Lin. Gen. Plant. 187. Hydrophyllon, Tourn. Inf. R. H. 81. tab. 16. Water Leaf.

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The Characters arr,
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We know but one Sr; 1

HYDROPHYL[ON fyir'oiui&w'ii
Sp. 208. Mtrini Joncq. Hurt. Water Lt.-fj;h

This plant grow* nitu ally in many parts of North
Amenci, on moht [par. y ground. The root
of it 15 coinpofa] of mif
wilL
manj
al'ititi EJ l'
cdgLP,
io (he fkle*: they are of a lucid green, and in the
fpruig have water llanJiog on the
when-e 1 luppole Morinus giVi- it the title of Water
Leaf. an J not from this plant growing in water, as
TQI
ftulks from the root, i
of the fame fhape with the lower; the flowers are
produced in
arc of a dirty white 3f :
««*!
Xamctms ripier here in At;

This yh
(hould bi:
11 conftrar

HTDRUPIPER, the common
i alinoli c\

HYDROSTATIC

Hydrostatics (Species, of the, water,
and cases, of conf. flanding, of Love, I fluid or fup.
Hydrostatics being conceived as the doctrine of the
equilibrium of liquors,) or the doctrine of the gra-
vitation of fluid, or it is that part of the mechanics
which confiders the weight or gravity of fluid bodies;
particularly of water, and of folid bodies immerged
therein.
To Hydrostatics belongs whatever relates to the
gravitates and equilibria of liquors, with the art of
working bodies in water, in ordtr to
Of the use of this Science in horticulture, the Rev.
Dr. Hales, in his excellent Treatise of Vegetable Statics,
has given many examples, by experiments,
knowing the quantities of moisture imbibed and per-
fpired by plants and trees, necessary to be known, in
order to produce the best effect of vegetation.
Some of the most useful heads of this Science are:
1. That the upper parts of all fluids press upon the
lower.
2. That a lighter fluid may rife upon or press upon a
heavier.
3. That if a body that is confidered to the water,
be the same, or is just, lower than the upper furface
of the water, the lower part of the body will be
pushed upwards by the water which touches it
beneath.

4. Tiine nctds only a compemir tciEht of an x-
ternal fluid, w account for the vSw^ oi waier in
pumps, Sec.
s. If * body be pbc<t under wtter, t: 1

permauffurfciccJie pamille to the ho
L. iii.it it fuftamj . no more than that of a co-
lumnoif water, vrhi
the water which runs on the
body be ctmaint: d in pipes wliich are open at boti
tni's, the piefiure of the water is to be estimated
by the weight of a

1 to ti e lov
iutigii'. it equal to a perpendicular, which reaches
from d
it lliould be cvt, to regularly fliaped, and much
broader in fume O: her place than the bottom.

6. A body which is immeried
a natur.l pel:
as [lie body is placed d

7. T x r«(lin *hy wnier afcentli in iip'ro.v, tad
by which ii flows through them, may be explained
from d

8. The r. iff tull-, body, which will sink by its own
weight at the furface, yet if it be j
Bveaty times greater thari that of i's own
it will not sink
in cum [lent water.

9. If a body whirl
be immerfid in '
proportions bit-w

10. If lbvj
mtricd, it

11. If any vessel be filled with water, or any 'jihet
liquor, the furface of which is capable of being even,
it will continue fo till diffrU

11, When 1! 1 fluids are p
Qed, they are puffed

How far the knowledge of any of these properties
of fluids may conduce to the philosophical improve-
ment of gardening, and the husbandry of vegetation,
will be more clearly perceived when well confidered
by the ingenious reader, than being set forth by words.

HYGROMETER (Species, of the, moist, and
f 50 meaiun-J
liicw or

These are divers kinds of Hygrometers; for what-
ever body either ferile or ferrous by drench or moi-
sture, is capable of being formed into an Hygromete-
ter; fuch are the woods of most kinds, particularly
Ash, Deal, Poplar, &c. fuch also is a cord, cat-
gut, &c.

Stretch a brazen cord or fiddle-string along a wall,
bringing it over a trussel or pully, and to the other
end tie a weight, unto which fit a scale or index;
on the fame wall be a piece of wood, divided into
any number of equal parts, and the Hygrometer is
complete.
For it is a matter of undoubted observation, that
moisture ftrips the length of cords and strings; and that as the moisture evaporates, they re-
turn to their former length, mid th(like may be said
of a fiddle string.

The weight therefore, in the perfect state, upon an
increase of the moisture of the air, will descend, and
upon a diminution of the same will ascend.

Hence, as the index will show the spaces of ascent and
descent, and these spaces are equal to the increments
and decrements of the length of the cord or gut, the
instrument will discover whether the air be more or
less humid now, than it was at another given time.

The ordinary contrivance w: : whip-cord is one of Jki: shell, for that will infall Wy (horten andlcr then as the air grows moifrrr atul drier. Some recommend a cat-gut.; the bed, which may be 3 yard in length fulpended, having a plumber on piece olead, with an index or (jointer hanging ar ric lower end, by means of which the w-gai will twill will as the air dries ormoiftw and from en and Jen«he» fo ns to raise and sink the plumb: with the index, uid this We* will point out in* degree lughl for.

The weigh! of this lead ur plumber, hould be about two ounce. Some perlbru who approve a fine whip-cord, ntoad of Mi sur, use a greater weight of lead, thewnftuig andunWwifring ofthe cat gut or whip-cord, will make the lead with the index turn round, as well as nic sndfall. The degrees may be made up^n an Open pJumbet^{all} screw of brass within, will which the pJumbet^{all} tncxx has its m! jn_ i ..

When you we provided with a barometei and Hv- sromcter, rom^irc tin modum of the aneTMth dt other in order to idugr what pro^mcr. the rife or ofW^khlverinttetaromctei twilling it ihe cat-g- or whip cord, the degrees of which modon may be observed by the index or pointer of the Hygrometer; and at the same time both their moil be compared with the rising and fall- in of the pint.n a dierno meter, to know what de- grfc rf h< or cold IKCIW- every different change of weath *

Xworcortfiderj a mKhineAcramcai tin hygro- mcier and l>r il< font ules. TkefeinAi .. confer vatones, for meal'uring or lhtvng the danipnds or dnnifs of them in the winter leafon.

HYMEN.^rs V Lin. Gen. Plant. 572. Courbairil. Plum. Nov. Gen. 49. tab. 14. Locust-ree. rcc

The CHARACTERS are. The outward appearance. It is divided into two parts, the outward is .. t,m leaf, f*;. The flower has five petals, which are equal in size, and spread open. It hath ten declining stamens, which are short, terminated by oblong filaments. In the center is situated an oblong pistil, supporting a declining style, .. by an acute stigma; the pistil is surrounded by a cover, a large oblong pod, with a thick lignous shell, di- vided into several partitioned transverse, in each of which is compressed a large seed, surrounded with a fe- rous ..

is tofcwfw • ^ A p U n o -ranged in the firft fci ; in of The great variety of .. Monogynia, which includes the plants whose flowers have ten sta- mens and one style te S_e of < ^ | ^ vh We know but ..

HYMENEA (Cerebrat.) Hart. Cliff. 4. 4. .. Plum. Nov. Gen. 49. tab. 14. Locust-ree. rcc

Z\$ cBd W * 7_ i 5 S e in the West-Indie, S E ith.rhabgrlrcr., where it grows ..

covered with a r... spreading branches, furnished with smooth stiff leaves, which stand by pairs, their base joining at the four stalks, to which they stand obliquely, one side being much broader than the other, the two outer sides being rounded, and their inside flat, so that they reflectmble » P^: of deep blue; they are pointed M the top, and fund d em. branches, f<w< of the short inopous four-stalked sup- porting two, and others three flowers, which are com- posed of five yellow petals striped with purple; the petals are short and spread open; the stamens are much longer, and of a purplish colour; these flowers are succeeded by thick, fleshy, browni p-> . . . j inches thick of the Garden Bean; .. are f* . . . inches long, and two inches and a half broad of a purplish brown colour, and a ligecous confluence, with a large fo-

turs on both sides; these contain three or four roundish compressed seeds, divided by transverse partitions.

The wood of this tree is esteemed as good timber in the West-Indies, and it yields a fine clear resin, which is called gum anime in the shops, which makes an excellent varnish.

It is easily raised from the seeds if they are fresh; these must be sown in pots, and plunged into a bed of tanney bark: there should be but one seed put into each pot, or if there is more, when the plants appear, they should be all drawn out to one hole after they come up, before their roots entangle, when it will be barbarous doing it; for if great numbers are utUf, the plant intended to be left may be drawn out with the other. As the roots of this plant are but Hem' r, in they are very difficult to transplant; for unk; a ball of earth is preserved to their roots, they seldom survive their removal, therefore they must be seldom transplanted from one pot to another. The plain most constantly remain in the tan-bed in the Itovt, am! should be treated in the same way with other tender plants of the same country, giving but little water to them, especially in the winter. When these plants first appear, they make considerable progress for two or three months, after which time they are at a stand perhaps a whole year without budding, being in their growth very like the Anacardium, or Castw Nn.: to be very difficult to preserve long in thio coui

HYOSCYAMU.S. 1 Burn. Ind. R. H. 117. tab. 43. Lin. Gen. Plant. 215. (of 5, a twin, and ..) a-Bean, q. d. Uog'i-bran,] Hcnl auci in French, Japponae.

The CHARACTERS are. The root has a cylindrical envelope of one leaf, which is permanent, joining at the bottom, and cut into five or six segments at the top. It hath one funnel shaped pistil, with a short cylindrical tube, and an oval spreading rim, .. into five shallow parts, .. being larger than the .. It hath five inclined stamens, terminated by roundish filaments. In the center is situated a roundish pistil, supporting a slender style, surrounded by a round stigma. The pistil is surrounded by an oval shell, .. it tmp.ilai; .. divided into two cells by an intermediate partition, opening with a lid at the .. of, to ki out ibt nny fall feeds vibtc b e&rrt in the ..

This genus of plants is ranged I in chr UNICOUS fifth chfj, inti in which lit: Includes thufe plants whose flowers have five .. iLimini end • ..

HYOSCYAMUS (Niger) foliis amplexicaulis limnibus, fii-ribus .. Hort. Cliff. 26. Herbari .. and .. Hyoscyamus vulgaris, vel niger. C. B. P. Common Black ..

1. HYOSCYAMUS (Niger) foliis amplexicaulis limnibus, fii-ribus .. Hort. Cliff. 26. Herbari .. and .. Hyoscyamus vulgaris, vel niger. C. B. P. Common Black ..

2. HYOSCYAMUS (Major) foliis petiolatis, floribus pendunculouii' termia i fitted iraiuh Hyoscyamus major, albo-fimbria, umbilico .. T. Cor. Great Herbari .. the .. with a dark purple bottom to the flower.

3. HYOSCYAMUS (Minor) foliis petiolatis, floribus sessilibus Hort. Upsal. 26. Herbari .. and .. Hyoscyamus minor, albo-fimbria, umbilico .. Greater Herbari .. the .. with a green bottom to the flower.

4. HYOSCYAMUS (Minor) foliis petiolatis, floribus sessilibus .. Herbari .. and .. Hyoscyamus minor albo-fimbria, umbilico .. Young Cor. 5. double Herbari .. the .. with a dark purple bottom to the flower. Hv .. floribus inie^ctrimis, r- .. Lin. Sp. 257. ..

Vtd, aMtelann npat f&>t-fta'ki, aid rntirt fteeffai n. HycJcyamusrubelloflore. C. B. £ //dii-w with a ridijb celmtrd flavor.

- 6. HvosevAMifs {Aurtm) foliis jietiolstis emfo-denti-tjs n u n , Iloribua pedunculms fructibus pendulis. Lin. Sp. %TJ. limbatu withamuinisMtdkavn jlwiring <M foot'falks, tU fievrstr laving fitl-finih, end ibt frail baxgiig. HycJcyamui Crcticiui luteus major, C.B.I'. Greattr yilhw Heitent tf Ci>:..
7. HvoscraWi foliis lanceol acts dencatis, floralibus interioribui bints, colycibus ipinoCs. Hort. Uplal. 4+ Htxfaxi viiib fpitr-fiaptd Matted Uteset, aid a rrittlf impatmtiie. HycJcyamus pufillns totem Amrcctunus, arttirhir.i foliisglabris. FJuk. Aim. r88, tah.

The first ... is very common in England, growing upon the fides of banks and old dunghills. Imoft evtry where. It is i biennial plant with long fleshy roots, which (bake deep into the ground, fenf ing out fevtrll large loft leaves, which ore deeply frashed on their edges, and fpread on the ground; the following prinTM the folks come out, which rile about two te« high, garnitbed with leave: of the fame ftiape, buc fmallr, which embrace the folks with thieir bafc i the upper part >.. garnificd with flowers lUndtng om one fide in a double row, Erring dole to the llalki alternately j thele are of a dark purplih colour with » black bottom, and arc (ieeceedk by roundilheapfules, iurring within the em-palemsr i thelc open wih a lid at the tup, and have two cells filled wim lciull irrrguar feeds. This u i very poibnous plant, and Hi>util be roowd out in ail plbcei where children arc iuficrcii to come j tor in the year 1720, there were three children puilbnvd with eating ihe fecdi of (his plant, fleir lottcnhtun-tourr; (wo of which (kpt two day* and two nightu before they could be awakened, and were with difficulty recovered; but AK third being older and llrongcr, efcapec better.

The rout; of this plant arc iifed for anodyne neck-laces to hang about children's necks, being cat to pieces and frung like beads, 10 prevent fie and caule n eafy breeding of their teeth, but thty arc veiydan-eroui to ufc inwardly. For fomL' years pift there was a mixture of thele roots brov; ih Gentian, and ufed as fuch, which was anened with very bad effects, u hath been mentioned under the irucle of Gentian, fo I ihall not repeat it here.

The fecond fort grows naturally in the tflands of the Archipelago. This luth rounder leaves, which arc obtufcly Graated upon their borders, and thud upon foot-fUlks j die Balks branch more than thofcof the first, and the wen grow in clulUrs toward the end of the branis iVanJint: upon (Hort foot-iblk; j they «re ut" a pale yellow colour, with very dark purple bottoms.

The third fort is much tike the feeond, bur die (lowers arc in larger bunches, fitting very dole on the end) of the branches! they are of a greenilh yellow colour, K-itj green bottoms. It grows naturally in the warm parts of Europe, an, ii3the fort whose feeds should be used in medicine, living the white Henbane o: tile ..

The fourth fan was brought from the Levant by Dr. l ... Thii hith n GrsaDet italic than either or the former, whose joints are further diftant; the leaves arc roundiil, and deeply indented in ob> tvjfc fepTienn, Handing upon prrny long foot-ftaUu % the flowers come out singly from the fide of che (falks, at a fmall diftance from each other; they arc of a cycl-cotein-wit dk bx

'Joe fifth (on grows naturally in Syria; this riles with a branching stalk two feet high, gvnilhcd with long spear-shaped leaves having two-balks, tli: lower leaves are regularly cut on both fides in ladDte figments which are oppofit, fo are fhaped like the winged leaves, but the upper leaves are ... the flowers grow at the end of the stalks in ii bunches; ; they ur: of t wgn-out red colour, and fhaped like

of the common fort, but their tube* are fata,

All thefe are biennial plants, which perish soon after they have perfected their feeds. They flower in June and July, 2nd their feeds ripen in the autumn, which, if permitted to scatter, will produce plenty of the plants the following spring; or if the feeds are sown in the autumn, they will succeed much better than in the spring, for when they are sown in the spring, the plants themselves come up the same year. They are all hardy except the fifth one, and require no other culture but to keep them clean from weeds, and thin the plants where they are too close. The fifth one should have a warm (it is a double and a dry soil, in which it will live much better through the winter than in rich ground.

The sixth one grows naturally in Candia, this is a perennial plant with weak stalks, which require a support; the leaves are roundish, and acutely indented on their edge; standing upon pretty long four-sided stalks; the flowers come out at each joint of the stalks, they are large, of a bright yellow, with a dark purple bottom in the middle or this lobe is much longer than the petal. It bears a soft part of summer, and sometimes ripens seed in the autumn. If their seeds are sown in pots as soon as they are ripe, and put under a hot-bed frame in winter, the plants will come up in the spring. But if they are sown out of the ground till spring, they rarely succeed. This one will continue several years, if they are kept in pot? and (sown in winter, for they will not live in the open air that (eafan, but it only requires to be protected from frost; if they are placed under a common hot-bed in winter, when they may enjoy as much free air as possible in mild weather, they will thrive better (when they are more tenderly treated. This one may be easily propagated by cuttings, which, if planted in a shallow box during the winter of the summer months, will take root in a month or six weeks, and may be afterwards planted in pots, and treated like the old plants.

HYPERICUM. Town. Inf. it. H. jjo. ab. Tis. Hypocoum Lin. Gen. Plant. 157. We have no English name for this plant.

The CkMHACrrKsarc,

Tbt apaiimnt offio llewr ij tsmpojii t>ft-aiia [mall oval leaves, ... :it fttt ctiter vbiib art ttovfit, are ... tuff leba; tbt tvio after v>biib ore aliomaltt ere mt into thru pans at tbtir feints, ft htlb feur Jianiira futiattd bes-wtrr. tbtfetab, <tobitb art tfrmitattd fry tbleng fxxnmits. In tbt tmtr is pktd an tile ... ; £trmTM, f*pptrliKg tw jhert jlylti, creaMi ... ma. Ibt gunnen afttrverdbe-ema cti>%, KMfr ... which is the innd, with mt Tmtdtjb tmprtjfid fted m abjmat.

This genus is arranged in the second section of Linnaeus's fourth class, which contains the plant whose flowers have four stamens and two styles.

The SPECIES are,

- 1. Hypericum (Prmnia) fitteculj areuatis cnmprnii anieulam. Hon. Uptil. S. Nypfit ... i l f o l j i i n u i p > A s h x t H U B * * * - Hypocoum larioe folio-Toum. Hrc-J-icavfd Hjpto

- x. HVPICOUm [Pmtithm) iUiquis cernuii tercebui cy-Lyndricis. Hort. Upfal. 31. Hypttom teilh fafer, tj-JMBMM, ned&xi puds. Hypocoum tenuiore folio. Toum. Saffms-ttinrd hhpustm.

- 3. HTPKCOUM {EreStiu) filicniit ere&H teretibiu torulofij. Hort. Upfal ja. liypamm mitb tape, ... , arrrrxM pcdi, Hypocoum filtqub erecbstCT: ... A mm. Ruth. 58. Hyptecvm onlii en; .

The first one has many winged leaves of a grayish colour, which grow near the ground, and slender blanching stalks, which lie parallel to the surface of the ground, the art naked below, and the top ere gsnuQied with two or three small leaves of the lame size and colour: the flowers come out from between the leaves, and are yellow, each finishing or ... yellow flower with ...

HYP

petals, 2nd a pointal stretched out beyond the petals, which afterward turns to a jointed compressed pod about three inches long, which bends inward like a bow, having one rotundish compressed seed in each joint. This flowers in June and July, and the seeds ripen in August.

The second sort hath slender stalks which stand more erect, and the segments of the leaves are longer and much narrower than those of the first; the flowers are smaller, and come out at the division of the branches, these are succeeded by narrow taper pods, which hang downward. It flowers and feeds at the same time with the first.

The third sort grows in the east; Dr. Amman received the seeds from Dauria, and I received the seeds from Istria, where it was found growing naturally. This hath much the appearance of the second sort in leaf and flower, but the pods grow erect, and are wreathed and twisted about. It flowers and feeds at the same time with the others.

These plants are all of them annual, so their seeds should be sown soon after they are ripe, otherwise it will be a year before the plants will appear, on a bed of light fresh earth where they are to remain, for they seldom succeed if they are transplanted. When the plants are come up, they should be carefully cleared from weeds; and where the plants are too close, they must be thinned, leaving them about six or eight inches apart; after this they will require no other culture, but to keep them constantly clear from weeds. In June these plants will flower, and their seeds will be ripe in August.

When the seeds are sown in the spring, and the season proves dry, the seeds will not grow the first year; but if the ground is kept clear from weeds and not disturbed, the plants will come up the following spring. I have known the seeds of these plants remain in the ground two years, and the plants have come up the third spring very well; so that it will be very proper to sow some of the seeds in autumn, soon after they are ripe, in a warm border, where the plants may come up early the following spring; and these will be stronger, and more likely to perfect seeds, than those sown in the spring, by which method the kinds may be preserved.

If the seeds of these plants are permitted to scatter, the plants will come up the following spring without any care; and if they are treated in the same way as the others, they will thrive equally, but when the seeds are sown in the spring, they should be taken out of the pods, and divested of their fungous covering, which adheres close to them, so prevents their growing, till that is rotted and decayed.

These plants are seldom propagated but by those who are curious in botany, though for the sake of variety they may have a place in large gardens, because they require very little trouble to cultivate them; and as they take up but little room, so they may be intermixed with other small annual plants in large borders, where they will make a pretty appearance.

The juice of these plants is of a yellow colour, resembling that of Celandine, and is affirmed by some eminent physicians to have the same effect as opium.

HYPERICUM. Tourn. Inst. R. H. 254. tab. 131. Lin. Gen. Plant. 808. St. Johnswort; in French, *Mfflepertuis*.

The CHARACTERS are,

<The flower hath a permanent empalement, divided into five oval concave segments-, it hath five oblong oval petals which spread open, and a great number of hairy stamina, which are joined at their base in three or five distinct bodies, terminated by small summits. It hath in the center a roundish stem, supporting one, three, or five styles, the same length of the stamina, crowned by single stigmas. the stem afterward becomes a roundish capsule, having the same number of cells as there are styles in the flower, which are filled with oblong seeds

This genus of plants is ranged in the third edition of Linnæus's eighteenth class, entitled Polyadelphia

HYP

Polygynia, which contains the plants whose flowers have many stamina joined in distinct bodies, and several styles.

The SPECIES are*

1. **HYPERICUM** (*Perfoliatum*) floribus trigynis, caule ancipiti, foliis obtusis pellucido-punctatis. Hort. Cliff. 383. St. Johnswort with three styles to the flower; and obtuse leaves having pellucid punctures. *Hypericum vulgare*. C. B. P. 279. Common St. Johnswort.

2. **HYPERICUM** (*Quadrangulum*) floribus trigynis, caule quadrato herbaceo. Hort. Cliff. 380. St. Johnswort with three styles to the flowers, and a square herbaceous stalk. *Hypericum Afcyron didtum*, caule quadrangulo. J. B. 3. p. 382. St. Johnswort with a square stalk, commonly called St. Peterwort.

3. **HYPERICUM** (*Hircinum*) floribus trigynis, staminibus corollâ longioribus, caule fruticoso ancipiti. Hort. Cliff. 331. St. Johnswort with three styles to the flower, stamina longer than the petals, and a shrubby stalk with two sides. *Hypericum foetidum frutescens*. Tourn. 255. Stinking shrubby St. Johnswort.

4. **HYPERICUM** floribus trigynis, calycibus obtusis, staminibus corollâ longioribus caule fruticoso. Hort. Cliff. 381. St. Johnswort with three styles to the flower * obtuse empalements, stamina longer than the petals, and a shrubby stalk. *Hypericum frutescens Canariense multiflorum*. Hort. Amst. 2. p. 135. Shrubby St. Johnswort from the Canaries, having many flowers.

5. **HYPERICUM** (*Olympicum*) floribus trigynis, calycibus acutis, staminibus corollâ brevioribus, caule fruticoso. Hort. Cliff. 380. St. Johnswort with three styles to the flower, acute empalements, stamina shorter than the petals, and a shrubby stalk. *Hypericum Orientale*, flore magno. T. Cor. 19. Eastern St. Johnswort; with a large flower.

6. **HYPERICUM** (*Inodorum*) floribus trigynis, calycibus obtusis, staminibus corollâ longioribus, capsulis coloratis, caule fruticoso. St. Johnswort with three styles to the flower, obtuse empalements, stamina longer than the petals, coloured seed-vessels, and a shrubby stalk. *Hypericum Orientale*, fructu foetido simile, sed inodorum. Tourn. Cor. 19. Eastern St. Johnswort, like the stinking kind, but without smell.

7. **HYPERICUM** (*Afcyron*) floribus pentagynis, caule tetragono herbaceo simpliciter, foliis indivisibilibus integerrimis. Hort. Upfal. 236. St. Johnswort with five styles to the flower, a square, single, herbaceous stalk, and somewhat entire leaves. *Afcyrum magno flore*. C. B. P. 280. Tutfan with a large flower.

8. **HYPERICUM** (*Balearicum*) floribus pentagynis, caule fruticoso, foliis ramisque cicutariatis. Lin. Sp. Plant. 783. St. Johnswort with five styles to the flower, a shrubby stalk, and scarified leaves and branches. *Afcyron Balearicum*, frutescens, maximo flore luteo, foliis minoribus, subtus verrucosis falvad. Boerh. Ind. alt. 1. 242. Shrubby Balearick St. Peterwort with a large yellow flower, and small leaves wadded on their under side.

9. **HYPERICUM** (*Androsium*) floribus trigynis pericarpis baccatis, caule fruticoso ancipiti. Hort. Upfal. 237. St. Johnswort with three styles to the flower, a fleshy seed-vessel, and a shrubby stalk with two sides. *Androsium maximum frutescens*. C. B. P. 280. Common tutfan, or Park-leaves.

10. **HYPERICUM** (*Bartramium*) floribus pentagynis calycibus obtusis, staminibus corollâ sequantibus, caule erecto herbaceo. St. Johnswort with five styles to the flower, obtuse empalements, stamina equalling the petals, and an erect herbaceous stalk.

11. **HYPERICUM** (*Monogynum*) floribus monogynis, staminibus corollâ longioribus, calycibus coloratis, caule fruticoso. St. Johnswort with one style to the flowers, stamina longer than the petals, coloured empalements, and a shrubby stalk.

There are some other species of this genus, which are preserved in botanic gardens for the sake of variety, but as they are seldom admitted into other gardens, I have not enumerated them here, lest the work should swell too large.

The first joint feeded sorts are both very common plants, growing in the fields in most parts of England; the first is used in medicine, but the second is of no use: these are rarely propagated in gardens, but I think to mention them, in order to introduce the other sorts, which deserve a place in every good garden.

The first sort has a perennial root, from which arise several round stalks four and a half high, dividing into many small branches, which are furnished at each joint with two small oblong leaves, standing opposite, without foot-stalks; the branches also come out opposite. The leaves have many pellucid spots in them, which appear like so many holes when held up against the light. The flowers are numerous on the tops of the branches, standing on slender foot-stalks; they are composed of five oval petals, of a yellow colour, with a great number of stamina, not quite so long as the petals, terminated by roundish laminae. In the center is situated a roundish pistil, supporting three styles, crowned by single stigmas. The pistil afterward becomes an oblong angular capsule, with three cells, filled with small brown seeds. It flowers in June and July; and the seeds ripen in autumn. The root is perennial, so will continue many years; and if the fresh are permitted to remain, the plants will come up in too great plenty, so that they will be very troublesome weeds. The leaves and flowers of this are used in medicine; it is esteemed an excellent febrifuge plant, and of great service in wounds, bruises, and contusions; there is a compound oil made from this plant, which is of great use in the foregoing accidents. From the stamina of the flower is expressed a red juice, which is sometimes used in colouring, but fades very soon.

The second sort hath square stalks, which rise above the first height with the first, but do not branch so much. The leaves are shorter and broader than those of the first, and have no pellucid spots. The flowers are short foot-stalks at the end of the branches, which are shaped like those of the other. This sort and feeds at the same time with the other, and will propagate in as great plenty if the seeds are permitted to remain.

The third sort grows naturally in Sicily, Spain, and Portugal; this rises with slender stalks about three feet high, sending out small branches at each joint opposite, which are furnished with oblong oval leaves, placed by pairs, fitting close to the stalks, which have a rack smell like a goat. The flowers are produced in clusters at the end of the branches; they are composed of five oval yellow petals, with a great number of stamina which are longer than the petals, and three styles which are longer than the stamina. The pistil which supports these, afterward becomes an oval capsule with three cells, filled with small seeds. It flowers in June, July, and August, and the seeds ripen in autumn.

The fourth sort grows naturally in the Canary Islands, it was formerly preserved in green houses during the winter season, but is found to be hardy enough to resist the general cold of this country, so is now cultivated in the gardens as a flowering shrub; this rises with a shrubby stalk six or seven feet high, dividing into branches upward, which are furnished with oblong leaves, set by pairs close to the branches. The leaves of this have also three sides, but are quite so hard as the former. The flowers are produced at the end of the stalks in clusters, and are very like those of the former sort, having a great number of stamina which are longer than the petals; this flowers at the same time with the former, and perfectly ripens in autumn. Both these plants have a very strong odour like that of a goat; so that when the plants grow in large quantities, the smell is carried by the wind some yards distance; or if the leaves are kindled, they emit the same odour.

These two sorts are propagated by cuttings, which are to be made in the first of the old plants. The best season for taking of the former is in March, just

before they begin to shoot, they should be planted in a light dry soil, in which they will endure the general cold of our climate very well. The second sort is propagated by cuttings, which should be planted at the same season or by roots, which may be taken in August or September, which is as soon as they are ripe and ready to be planted.

The first sort grows naturally on Mount Olympus, where it was discovered by Wheller, who sent the seeds to the Oxford garden; this rises with many upright linear stalks about a foot high, terminated by small spear-shaped leaves, fitting close to the stalks opposite. The flowers are produced at the top of the stalks, three or four together; they are composed of five oblong petals, of a bright yellow colour, with a great number of stamina, which are of unequal lengths, some being longer, and others shorter than the petals, terminated by small roundish laminae. In the center is situated an oval pistil, supporting three slender styles, which are longer than the others. The pistil afterward becomes an oval capsule with three cells, filled with small brown seeds. This flowers in July and August, and in winter ripens its seeds in autumn.

This plant is usually propagated by parting of the roots, because the seeds seldom ripen in this country; the best time for doing of this is in September, that the plants may have time to get root before winter; this will live in the open air, if it is sown in a warm situation and a dry soil, but it will be proper to keep a plant or two in pots, to be flickered under a frame in winter, lest in very severe winters, these in the open air should be destroyed. If this is propagated by cuttings, they should be taken from after they are rooted in pots filled with light earth, and placed under a frame in the winter, to shelter them from frost; when the plants are taken up, some of them may be placed in a warm border, and others in pots, and treated in the same manner as the old plants.

The fifth sort rises with a shrubby stalk about eight feet high, with a reddish bark, and many small branches, which have small oval leaves, which are placed by pairs, fitting close to the stalks; they are produced opposite. The flowers are produced at the end of the stalks in clusters. They are composed of five oval petals, with a great number of stamina which are longer than the petals, and three styles which are longer than the stamina. The pistil which supports these, afterward becomes an oval capsule with three cells, filled with small seeds. It flowers in May, June, and July, and the seeds ripen in autumn. This is now propagated in the gardens as a flowering shrub. The flowers are of a purple red colour, and are composed of five oval petals, with a great number of stamina which are longer than the petals, and three styles which are longer than the stamina. The pistil which supports these, afterward becomes an oval capsule with three cells, filled with small seeds. It flowers in May, June, and July, and the seeds ripen in autumn. This is now propagated in the gardens as a flowering shrub. The flowers are of a purple red colour, and are composed of five oval petals, with a great number of stamina which are longer than the petals, and three styles which are longer than the stamina. The pistil which supports these, afterward becomes an oval capsule with three cells, filled with small seeds. It flowers in May, June, and July, and the seeds ripen in autumn.

The sixth sort was first brought to England from Constantinople, but has long been very common in the English gardens, for the roots spread and increase very fast, when it is permitted to stand long unremoved. The stalks of this are slender, and incline downward; they are furnished with oval, spear-shaped, smooth leaves, placed by pairs, fitting close to the stalks. The flowers are produced at the end of the stalks; these are very large, and of a bright yellow colour, with a great number of stamina, which stand out beyond the petals; there are five styles in each flower, which are of the same length with the stamina. The flowers are supported by pyramidal foot-stalks with five cells, containing many small seeds. It flowers in June and July.

This plant is easily propagated by parting of the roots; the best time for this is in October, that the plants may be well established before the drought of spring; otherwise they will not produce many flowers. As this will grow under trees, so it is a very proper plant to place under trees and trees to cover the ground, where they will make a good appearance during the season of their flowering.

H Y S

Both tittle forts are very hardy, and may be etfily propagated by feeds, which lliouM be lwn in autumn; tor theft ibwn in ihu ipling, often Jic a yeat in Jic ground before they vegetate j wlien the plants come up, they muft be fcepr clean from weeds, and thinned where they ate too clofe. The following autumn (hey fliould be rtanJplanted where they aje to remain, and the plants will flower in Jiimmer, and produce feeds, but the roots will stride foaac years.

H Y S

It hath been a great tlifputc amongft modern writers, whether the HyBbp now commonly known ii ihe fame which is mentioned in Icripture about which there ii great room to doubt, thrcr beingj vi-ry little grounds to alcermin tluit pUiu, though it is moil generally thought to be the Winter Stvory, which plant is now in great mjuelc amongft the inhabitants of the: cifltru l0 un tries, fur uutw&ti w*!h-ings cr purification.

J.

j A C

JACVCEA. See CEKTAUREA.
IACOB JEA. SeeS'rcto and OTBOSWA.
j X C O U I N I A. Lin. Gen. 25*.

J The CHASIACWS are,
<n., empidemeit af iht fixvtr is anpqfd of fat round-
A unrat t kasts, ami n ptrmant. Tit fa

BBB

1. JACQUINTA (*Rufifolia*) foliis lanceolatis acuminatis. Jacq. Amer. 15. Lin. Sp. 271. *Jacquinta* with four-angled acute-pointed leaves. Fruticulus foliis rufis fcl- latis. Hort. Elth.
2. JACQUINTA (*sermifolia*) foliis obtusis cum acuminis. Jacq. Amer. 15. Lin. Sp. 272. *Jacquinta* with blunt leaves ending in acute points. Chrysiophyllum Barbato. Linn. h. 204.
3. JACQUINTA (*Linnæi*) foliis linearibus acuminatis. Jacq. Amer. 15. Lin. Sp. 272. *Jacquinta* with linear sharp-pointed leaves.

The first fort grows naturally in the island of Cuba, and in fome other warm parts of America; it riles with a shrubby stalk about a foot high, which is ligneous at the bottom, and about the size of a swan's quill, covered with a dark brown bark, fend- ing out a few slender branches, garnifhed at inter- vals with hand-shaped Bfl leaves, placed in whorls round them; thefe are stiff like thofe of Butcher's Broom, ending with fharp points, of a deep green on their upper fide, but pale on their under; the flowers are (according to Plumier's figure) produced from between the leaves on the top of the branches; but having been no flowers in England, I can give no farther account of them.

The second fort grows naturally at Carthage, Mez- itimus, and other parts of South America, where it riles with a shrubby stalk four or five feet high, di- viding toward the top into four branches, which are furnished in whorls round the principal stalk, garnifhed with oblong blunt leaves, placed alfo in whorls, having a fharp Denier apex. The flowers are produced in a racemous at the end of the branches, each containing five or fix white flowers of a thick confiftence, which

J A S

hive i ktax. like Jafmincflowers, whi I they remain after they decay, (o are worn by the lidita of thofe: toutburys Air ornament.

The third fort grows naturally on the borders of the fea, in the island of Domnita; this is an utKkr-lhml¹, of a very low growth, rarely riling about two feet high, di- viding into feveral branches, garnifhed with linear stiff leaves, ending with a thorn; thefe are placed in whorls round the branches and from the middle of the whorls come out the foot-ftalks otche flowers, each being ter- minated by one lnaU white flower withsux (cent,

As thefe plants are natives of thefe parts, they will not live in England, inlefc they are planted in a wanti ilove, and treated in the manner commonly ufed for uilicr plants from the Rime countrie; giving them tirtje water in winter, and in warm in-n. ltr pices of frelhair. They are rjiied from feed, when thicj can be procured from the countries where tinnat- ural¹ grow; iikh mull be lbwn on a fv-bed, and may afterwards be propagated by cuttings, though it is with difficulty they take root.

J A S M I N U M. See CHRYSA. See CARYOPHYLLUM.
J A S M I N U M. See CARYOPHYLLUM.
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J A S M I N U M. See CARYOPHYLLUM.
J A S M I N U M. See CARYOPHYLLUM.
J A S M I N U M. See CARYOPHYLLUM.

The CHARACTERS are,
The flowers have a tubular empalment of the leaf, which is permanent, and cut into five segments at the base, which are oval. The stem is of two sorts, having a long cylindrical stem, which is cut into four segments at the top, which grows open. It hath two sorts of leaves, which are terminated by small junipers, and are furnished with the side of the petal. In the center is situated a round- ish racemous, supporting a slender style, crowned by a leaf- like stigma. The racemous afterwards turns to several berries, with a soft fleshy pulp, which are flat on their flat sides, and convex on the other.

This genus of plants is ranged in the first section of Linnæus's second class, intitled Diandria Monogynia, in which I have placed those plants which have two imina and "n" f.

- The SPECIES are,
1. JASMINUM (*officinale*) fr i m oppositifolium, foli- ois acuminatis. *Jasmin* with opposite leaves, pointed up- ward.

J A S

if Loft Ula trtd in acute points. Jafminum vulgare flore albo. C. B. F. 397. *Tbt (tmmv vsbti)*

JASMINUM (*Hwmlt*) Foliis alternis remans firoplid-butque, ramis angularis. Hon. Upiil. 5. *Jafim:* *trifoliat viingJ Itava plated ai<nw<i aid angular brtubci.* Jafinimum humile lurum. C. li. V. 397. *Dwarfyelk'ji y-ifmi/u, tommmh lalltd the Italia* jelh >*

JASMINUM (*frutUans*) foliU alternis ternatis fimpli-cibulque, ramii nngulatis. Hon. Cliff. 5. *Jafaitexiuh trifilmit JmtU luva plated attr::;* *gu^r brtxibu.* jafinimum luteum, vuljji bsteite-rin. C. B. V. 39S. *Tbe cemma je*

Grax&fierw- Jafimium with several leaves, foliolis brvriaribua obtuli *Jafimium with several leaves fUud Bpssij<ca, wbeft hbts or* *Jafimium with several leaves* minium humilb, magno fiorr.

mjb vibitt, er Calafarim "Jairtant with a largtrfvair, JWUINL-H [*OdarJifiminn 1* (uliu alterms terflaiis, fo-ItolU ovatis, ramii ten *"mint wtb trifoti&tt Uxvit fluted a'triiuUr, wbeft kbt art aval, and taper brtnebti.* Jafinimum Indicum finvum tKloritiffinnim. Ftr. Ftor. *Tbt fwft'jieittdyll&tu Indian JafmtM.*

JASMIMOM (/&<...) Jafimium with several leaves, foliolis cordato-auminatii. *Jajm* *Uo-jis fktid tppftitt, •wbuft khci art bturl-jhnptj anifmmti,* Jafinimum Aioricum trifolotum. tiore albo, liBimuni. Hurt. Amft. *mist, tvUb ftry fwtt vi* *Jiy-itMtd Jiij*

JASMIVCM [*Cefmfi*] fbliii lanceoteis fr:--genimii, floribuj triandris. *Jafmim* *ouirt itevJ fktid tppqile. Mid* *miaa.*

The first fort U the common white Jifimne, w a plant fo generally known as to need no A-
don. This grows naturally U MiUbar, and in it-
veral pans of India, yet has been long inured :o our
climate, fo as to thrive and flower extremely wdl, but
never produces any fruit in England; ths hath weak
tniting brinehci, fo m... the alliance of a wall
or pale to fupporr them. It u ciiil' pi...
by laying down the branches, which *il take root in one
ycir, and may (hen be cut firoai the old plant, and
planted where they are A... (niain : it may al-
fo be ;... Should be planted
caHy m the autumn, and if the winter (hould prove
fe<rc, (he furfice of the ground be nretn them
Ihnuld he covered with tan, fe3<oal aihn...
which will prevent thefruft from penetrating deep in-
10 the ground, and thereby prfrve the cuttings 1 or
where theie are v... nc f'as-haulm, or other
light covering (boud be liid over the cuttinp in hard
h mil-', for they will keep off the air and wtafion
damps, which often deftray them.

When these plants are removed, they flioudt be
planted where they *rc deligned to lie continued,
which I should be... lit fome wall, pale, or
other fence, where the flexible branches (may be lwp.
parted, for although it is... lomedmes planted as a
ttancianl, and formed into a lead, yrt it will be very
difficult to keep it in any... !fome order; or if you
do, ... iii inuft CL;... all the flowering b ranches t fur
the flowers are always produced at the extremity of
the tamt year's... ft... it the
flower* arti... will entirely deprive the trees of
flowers. These plants should be perm... ed to grow
rude in tr... for the reason before given, nor
should you prune and nail them unto the middle or
latter-end of March, when the frody weather is past ;
for if it should prove sharp frody weather after their
rude bran... are pruned off, and the strong ones
are exposed thertto, they are very often destroyed ;
and the plant being very backward in thouring,
there will be... »o danger of hurling them by late
freezing.

There are t... la varieties of this wrth varweated kivcs,
wtiac, tad the other yellow ttnpci, but the

J A S

latter is the molt common these are propagated by
budding (hem osn (lie plain jafimne, and it often hap-
pens, that ; lie bucis tJo not tike, bvit yet thi
cannuniciated thf i r g> ikted mifta to the plmas ;
fo that in a short time after, many of the branches both
abovo and below the ploa where the buds have
been infenced have be<... thoroughly viciated ; and
ml: t... wing year I have often found very diftant
branches, which bx" no other communication with
thole which were budded than by the root, have been
as templatly ringed as any of the most... irer br
to that the juices muft have •... raded into the root.

Tiic twu impeded foru Jliuuld tx: j... in 1 wirin
fiuatiim, especially the white lhipred ; for they are
much mun: ... they are very lub-
ject to be destroyed by great frosts, they are very pe-
jioied (here; ... ed Hquid be
It.int. ... anil in very
levere winters their branches ihoLid be cover:.. with
mats of ... its', (o prevent thair bcingkillcil
the yellow damped a nut ib tender, fo miybenbnted
ag: iftwaUscba ... or well aspect ; but thelepkna
with virkgaied Kaves, arc not la much in rfteem ns
formerly.

The ... bnd fort l> frequently called Italian yelluw Jaf
mute by ii. ... nuaihr
brought from thence by those who come thither with
Orange-trees. These plants are generally grafted upon
the common yellow Jafimne stock, so that if the graft
decays, thic filann ari of no value. This fort is
fomewhat Efldem than the common, yet it will en-
dure d... cold of our ordinary winters, if it is planted
in a ... The ficmen of this kind are
generally larger than those of the common yellow
fort, but have very little force, and are seldom pro-
duced in early in the season. It may be propagated by
laying down the tender branches, as was directed for
the common white lbt 5 or by •... or marching it
upon the common yellow Juiminc, -... lity of which
is preferable, as making the pbiits hardier than those
which are obtaineii from layer?: tttcyhoukl be plinr-
ed a Lintl a warm wall, <nd in very fevere winters
will rrequire SO be flickered with mats, or ionic other
covering, othrtwifc they ire fubjucl to 1: destroyed.
1 he 1: ... (Tina and pruning being tile lanc
43 wiidire&ed for the white Jafimne, 1 (ball in
repect it.

The third fort was formerly niore cultivated in the
gardens than at present, for as the Howers lue no
(cent, To lew jicrlons regard them. This hath weak
angular bmnchex which require fupporr, ar:l will rile
to the height of eight or ten feet, if planted...
awall or pale; but the plants do often produce a
great number of fuckers from their root\ whereby
they become trouble fume in ihe burden of the...
fure-g>rdeni andasdicy cannot beke.pt in any iirdet
as ftaodard^ fo there are fewof thephmrc at present
introduced into gardens. It is easily propagated by
fuckers or layers.

The fourth fbrt g: was naturally in India, and...
in the illand of Tobago, where the woods are full of
it(th<... Mr. Robert M... lir fent me aver A...
quantity of it from thence\ This Imh much (trnngcf
branches than the common... -hitr fon-, the leave* »rc
winged, and are composed of three pair of most obtuse
lobes, terminated by an odd oic, ending in an acute
point -, ihdc \<A\ are placed clofcr than thofc of the
common Jafimne, and are i) a lighter g:ten, the
flowers come out from the wings of the stalks, hand-
ling in two balls which are two inches long, each
foftaining three or four fiowti

at t: ... the tu
is no i... [tie 1
Jhoos- 1 from the ftotkj of thlt furd *''y

if permitted to stand, will produce flowers; and these often starve and kill the grafts, so that there will be only the common fort left; and this has been the case with some plants which he examined, therefore supposed the difference of the other sort was wholly owing to culture; whereas, if he had only observed the difference of their leaves, he would have certainly made two distinct species of them, which he has now done in the last edition of his species.

This plant is propagated by budding or inarching it upon the common white Jasmine, on which it takes very well, and is rendered hardier than those which are upon their own stocks. But the plants of this kind being brought over from Italy every spring in so great plenty, they are seldom raised here: I shall therefore proceed to the management of such plants as are usually brought into England from the place above-mentioned, which are generally tied up in small bunches, containing four plants, and their roots wrapped about with moss, to preserve them from drying; which, if it happen that the ship has a long passage, will often occasion them to puff out strong shoots from their roots, which must always be taken off before they are planted, otherwise they will exhaust the whole nourishment of the plant, and destroy the graft.

In the making choice of these plants, you should carefully observe if their grafts are alive, and in good health: for if they are brown and shrunk, they will not puff out, so that there will be only the stock left, which is of the common sort.

When you receive these plants, you must dear the roots of the moss, and all decayed branches should be taken off; then place their roots into a pot or tub of water, which should be set in the green-house, or some other room, where it may be screened from the cold; in this situation they may continue two days, after which you must prune off all the dry roots, and cut down the branches within four inches of the place

Where they were grafted* and plant them into pots filled with fresh light earth; then plunge the pots into a moderate hot-bed of tanners bark, observing to water and shade them, as the heat of the season may require. In about a month or six weeks after they will begin to shoot, when you must carefully rub off all such as are produced from the stock below the graft and you must now let them have a great share of air, by raising the glasses in the heat of the day; and as the shoots extend, they should be topped, to strengthen them, and by degrees should be hardened to endure the open air, into which they should be removed the beginning of June, but must have a warm situation the first summer; for if they are too much exposed to the winds, they will make but indifferent progress, being rendered somewhat tender by the hot-bed. If the summer proves warm, and the trees have succeeded well, they will produce some flowers in the autumn following, though they will be few in number, and not near so strong as they will be the succeeding years, when the trees are stronger and have better roots.

These plants are commonly preserved in green-houses, with Oranges, Myrtles, &c. and during the winter season, will require to be frequently watered; which should be performed sparingly each time, especially in cold weather, for too much wet at that season will be apt to rot the fibres of their roots, they should also have a great share of fresh air when the weather will permit, for which purpose they should be placed in the coolest part of the green-house, among plants that are hardy, where the windows may be opened every day, except in frosty weather; nor should they be crowded too close among other plants, which often occasions the tender part of their shoots to grow mouldy and decay. In April the shoots of

these plants should be raised down to the roots, and all the weak branches should be cut off; if you have the convenience of a glass-house, or a deep frame, to place the pots in at that season, to draw them out again, it will be of great service in forwarding their flowering; yet still you should be careful

not to force them too much; and as soon as they have made shoots three or four inches long, the glasses should be opened in the day time, that the plants may, by degrees, be inured to the open air, into which they should be removed by the latter end of May, or the beginning of June; otherwise their flowers will not be so fair, nor continue so long. If the autumn prove favourable*, these plants will continue to produce fresh flowers until November; and sometimes when they are strong they will continue flowering later; but then they must have a great share of air when the weather is mild and will admit of it* otherwise the flower-buds will grow mouldy and decay. But notwithstanding most people preserve these plants in green-houses, yet they will endure the cold of our ordinary winters in the open air, if planted against a warm wall, and covered with mats in frosty weather; they will also produce ten times as many flowers in one season as those kept in pots, and the flowers will likewise be much larger; but they should not be planted abroad till they have acquired strength, so that it will be necessary to keep them in pots three or four years, whereby they may be sheltered from the frost in winter; and when they are planted against the wall, which should be in May, that they may take good root in the ground before the succeeding winter, you must turn them out of the pots, preserving the earth to their roots; and having made holes in the border where they are to be planted, you should place them therein, with their stems close to the wall; then fill up the holes round their roots with good, fresh, rich earth, and give them some water to settle the ground about them, and nail up their shoots to the wall, shortening such of them as are very long, that they may puff out new shoots below to furnish the wall, continuing to nail up all the shoots as they are produced. In the middle, or toward the latter end of July, they will begin to flower, and continue to produce new flowers until the frost prevents them; which, when you observe, you should carefully cut off all the tops of such shoots as have buds formed upon them, as also those which have the remains of faded flowers left; for if these are suffered to remain on, they will soon grow mouldy, especially when the trees are covered, and thereby infect many of the tender branches, which will greatly injure the trees.

Toward the middle of November, if the weather proves cold and the nights frosty, you must begin to cover your trees with mats, which should be nailed over them pretty close; but this should be done when the trees are perfectly dry, otherwise the wet being lodged upon the branches, will often cause a mouldiness upon them, and the air being excluded therefrom, will rot them in a short time: it will also be very necessary to take off the mats as soon as the weather will permit, to prevent this mouldiness, and only keep them close covered in frosty weather, and in the nights; at which time you should also lay some mulch upon the surface of the ground about their roots, and fatten some bands of hay about their stems, to guard them from the frost; and in very severe weather, you should add a double of treble covering of mats over the trees; by which method, carefully performed, you may preserve them through the hardest winters. In the spring, as the weather is warmer, you should by degrees take off the covering; but you should be careful not to expose them too soon to the open air, as also to guard them against the morning frosts and dry easterly winds, which often reign in March, to the no small detriment of tender plants if they are exposed thereto; nor should you quite remove your covering until the middle of April, when the season is settled; at which time you should prune the trees, cutting out all decayed and weak branches, shortening the strong ones to about two feet long, which will cause them to shoot strong, and produce many flowers.

There is a variety of this with semi-double flowers, which is at present more rare in England, and only to be found in some curious gardens; though in Italy it is pretty common, from whence it is sometimes

brought over amongst the fingle ; the flowers of this kind have only two rows of leaves, so that it is rather cultivated for its curiosity, than for any extraordinary beauty in the flower. This may be propagated by budding it upon the common white Jasmine, as has been directed for the fingle, and must be treated in the same manner.

The fifth kind grows naturally in India; this rises with an upright woody stalk eight or ten feet high, covered with a brown bark, lending out several branches which want no support; these are closely garnished with trifoliate leaves of a lucid green, which are placed alternate on the branches; the two upper lobes of the leaves which grow opposite, are much less than the end one; they are oval and entire, continuing green all the year: the flowers are produced at the end of the shoots in bunches, which have long slender tubes, and are divided at the top into five oblong lobes of a moderate width spreading open; these flowers are of a bright yellow, and have a most agreeable odour. They come out in July, August, September, and October, and continue to the end of November they are frequently succeeded by oblong oval berries, which turn black when ripe, and have each two seeds.

This sort of Jasmine is propagated either by seeds, or laying down the tender branches; if you would propagate them by seeds, which they sometimes produce in England, you should make a moderate hot-bed in the spring, into which you should plunge some small pots, filled with fresh light earth; and in a day or two after, when you find the earth in the pots warm, you should put your seeds therein; about four in each pot will be sufficient, covering them about an inch thick with the same light earth, and observe to refresh the pots with water as often as you shall perceive the earth dry, but do not give them too much at each time, which would be apt to rot the seeds.

They will appear above ground, at which time it will be necessary to remove the pots into another fresh hot-bed, of a moderate temperature, in order to bring them forward; you must be careful to water them as often as is necessary, and in the great heat of the day the glasses should be tilted pretty high, and shaded with mats, to prevent the plants from being scorched with heat. About the middle of May you should begin to harden them to the open air, by taking off the glasses when the weather is warm, but this must be done cautiously, for you should not expose them to the open air in a very hot day at first, which would greatly injure them; rather take off the glasses in warm cloudy weather at first, or in gentle showers of rain, and so by degrees temper them up to bear the sun; and in June you should take them out of the hot-bed, and carry them in some well sheltered situation, where they may remain until the beginning of October, at which time they must be carried into the green-house, observing to place them where they may enjoy as much free air as possible when the windows are opened, as all to be clear from the branches of other plants.

During the winter season they will require to be often watered, but you must be careful not to give them too much at each time; and in March you must remove these plants each into a separate pot, being careful not to shake them from their roots; and if at this time you plunge them into a fresh hot-bed, it will greatly facilitate their rooting again, and be of great service; to the plants, but when they are rooted, you must give them a great deal of air, for if you draw them too much, they will become weak in their stems, and incapable of supporting their heads, which is a great defect in these plants.

You must also harden them to the open air, in which they should be removed about the middle of May, observing, as was before directed, to place them in a situation that is defended from strong winds, which are injurious to these plants, especially while they are young. In winter house them as before, and

continue the same care, with which they will thrive very fast, and produce annually great quantities of flowers.

Theft plants are pretty hardy, and will require no oilier care in winter, than only to defend them from hard frosts; nor do I know whether they would not live in the open air, if planted again. It will not, which in what I have said by planting for a new sinfi a wall for that purpose, and I think we have no reason to doubt of the success, since they are much harder than the Spanish; but there is the difference between them, viz. these plants have large, thick, Evergreen leaves, so that if they were covered with mats, as was directed for the Spanish Jasmine, the leaves would rot and decay. It is however, but as they will only require to be covered in extreme frost, so if their roots are well mulched, and a mat or two loosely hung over them in ordinary limits, it will be sufficient; and the method here is to roll them up, or taken quite off in the day, there will be no great danger of their being hurt, which only can proceed from being too long dole covered.

In the spring these should be pruned, when you should cut off all decayed branches; but you must not shorten any of the other branches, as was directed for the Spanish sort, for the flowers of this kind are produced not only at the extremity of the branches, but also in the axils; and therefore they would be cut off, and their growth of a more vigorous substance than the other, will not produce shoots strong enough to flower the same year.

If you would propagate these plants from layers, the best method is to lay down in March, and if you give them a little care, as is practised in laying down Carnations, it will promote their rooting; you should always observe to refresh them often with water, when the weather is dry; which, if carefully attended to, the plants will be rooted by the succeeding spring, and may be transplanted, when they must be planted in pots filled with light earth, and managed as was before directed for the Spanish Jasmine.

This sort is frequently propagated, by inarching the young shoots into (locks of the common yellow Jasmine, but the plants so raised do not grow so strong as those which are upon their own (lock; besides, the common yellow Jasmine is very apt to send out a great number of suckers from the root, which renders the plant, unless they are constantly taken off, as they are produced, they will rob the plant of their nourishment.

The sixth sort grows naturally in the Azores; this hath long leaves, which require little care, and may be trained twenty feet high; they are gamished with trifoliate leaves, whole lobes are large and heart-shaped, of a lucid green, and are placed opposite on the branches, they continue all the year. The flowers are produced at the end of the branches, in loose bundles; they have long narrow tubes, which at the top are split into five spreading open; they are of a clear white, and have 3 veils of agreeable scent. This is the same time with the former, the gardener call it frequently the Ivory Jasmine.

The seventh Jasmine is also pretty hardy, and requires no more care than the former; and I am apt to think, if this sort was planted against a warm wall, and managed in the same manner as the yellow Indian Jasmine, it would succeed very well; for I remember to have seen some plants of this kind grow against a wall in the garden at Hampton Court, where they had endured the winter, and were in blossom in June, and I have never seen any of the kind in pots, and I produce a Rattrerqua of flowers. These plants are propagated in the same manner as the yellow Indian, and require the same management.

The plants are deserving of a place in all green-houses, in any which are there preserved; for their leaves being of a shining green, make a good appearance all the year; and their flowers having a fine scent, and continuing so long in succession, renders them very valuable.

The first fort was brought from the Cape of Good Hope, by Captain Hutchinbn of the Godolpliin, who discovered it growing naturally, a few miles from the land from the sea, being drawn to it by the fragrance of its flow. L.T.S. which he found it to be different from the plant, which was then in full flower; and after having viewed the plant, and remarked the place of its growth, he returned thither the following day with proper help, and a tub to put it in, and caused it to be carefully taken up, and [itemed in the tub with some of the earth on the spot, and conveyed on board his ship, where it continued flowering.

Rose, and Twigs, in the curious garden of the Duke of Devonshire, at Woburn, in Effix, who is obliged to favour me with branches of this plant in the month of June, of the number of which I have been informed in the description of it to have been known to the first discoverer, for I have not met with any figure or description of it in any of the books; (her fort which is figured in the book of the plants of Ceylon, and also in the book of the plants of Nandi evatum, Lujur. Hort M., in having longer and narrower leaves, the tube of the flower is larger, and the segments do not spread so much as this; the flowers also of the Cape Jasmine are white, and the leaves are dark green, there is no doubt of its being a different species from that of Dr. Uurnarii but it is surprising to find that it should be unknown to the people at the Cape of Good Hope, for there is a plant of it in the curious garden, nor can I find any other plant of it but that which he brought away.

The stem of this plant is large and woody, becoming green by pairs of opposite leaves, which are first green, but afterwards become yellowish.

The leaves are five linear, and are terminated in a point, they are of a reddish green, having a venal traofveile vclus from the middle to the borders; they are round, and of a thick confidence. The flowers are produced at the end of the branches, they are of a tubulose emulose, and are deep red, the segments, ending in a but one petal.

Segments at the top, yet the all joined in one tube below; some of these are much more double than others, having four or five orders of petals; these which have so many, have only a bifid stigma, but those which are less double have trid stigma. All these flowers which I have examined have but one or two stamina, which may be occasioned by the fulness of the flowers; as is often observed in many kinds of plants, whose flowers have a greater number of petals than usual, many of which want both parts of generation, and are therefore sterile. This flower is fully down, as large as a middling Rose, and some of them are as double as the Damask Rose; they have a very agreeable odour, on the first approach it is like that of the Orange flower, but when more closely touched, has the odour of the common double white Narcissus. The season of this plant flowering in England, is in July and August, but in its native country it is supposed to flower great part of the year; in Captain Hutchinbn, who brought the plant over, said there was a succession of flowers on it, till the ship arrived in a cold climate, which put a stop to its growth.

Dr. Linnaeus has been induced from what has been printed in the Transactions of the Royal Society, to alter the title of this plant to Gardenia; but as the description of the plant with its characters as there printed, wsi taken from a double flower by some jicuple, who thought have innibrrd what Linnaeus has written to call Joci perjb., against regarding the double flowers of all kinds, in ranging them in their classes: nci generS, which if they had adhered to, they would not have made this mistake. For I have found several of these plants from Kr. Some of which have produced flowers which visit Tingle, having all the marks of the double, the flower is white; "to » the colour befoit they faded, and all the flowers had such but five funina and i trid it: whereaj in Ae thai is own by Linnaeus, there h no famiia, but Five linear anthera, by which it u plain from the increale uf the number of petals (or ivirher their Jegutent^ hit occufun an alteration in the parts of generation, which is also very conspicuous in the double flowers of Dianthus, where some flowers have but two or three stamina, when the same species with mynrl Qowe have usually ten. Linnaeus atlu fuppofe the capsule of the Rose to have two full of equal seeds; but the person who told him this mistake, have since suppi the figure given by Dr. Plukeiet in his +4Bill plate, under the title of U-11-ky, to IK* the fruit of this plant, whereas this has three cells lilkil withi angular ferec-fected feedi, as the specimen: I have of that demonstration, by which it is certain they are the fruit of a different plant; for the seeds, which I found of this Jasmine, were a berry composed of two seeds is like the Jasmine; therefore I have continued it under the name ^cnus, with an add id an to the title of its h: :lif«ftamina.

This plant is easily propagated by cuttings, or by the inner scason i tic cuttings Short be planted in pots, and phingtdintoamudcratc I ilum clofc with either bell or band-j

the external air, being careful to screen them from sun in the day time, when they have taken root they should be carefully parted, and put each into a separate small pot, planted again into the bed, and fitting them until they have taken new root, atkr whk& they should be gradually raised to the open air.

Though the cuttings of this pbnt take root freely, and make a strong shoot a year or two after. Yet in the first or four years they are very apt to stint in their growth, MB, tfeir kara turning pale and licky, and frequently die soon after; this has happened ever, where within my knowledge, although the plants have been kept in various degrees of heat in winter, and in fomrotr when they tavi beta differently managed, they have frequently faild. I have also been informed by a gentleman who lived fomr yvars in India, where he had the plants in his garden, they frequently went oil in the same manner. This has been the case of the plants in England.

JASMIN, (J M ARABICUM. See Cm JASMIKUM ILICIS FOLIO. See LAV-TMHA.

JASMIN E, the Amban. See Nver-. THE JASMIN E, the Petfii. See STRINGA. r \ TRO1 II A. Lin. Gen. Plant. 961. Manihor Totim. Intl. R- H. 958. tab. 43K. Caflada, orC<f-f.iva! in J>ench Qip

TheCiUR*c<i are, h IKUSI and female fruits in the same plant; the flowers have a faint odour, they are pale, edged, of the petal, with a short tube, whose base is cut into five roundish segments which spread them; they have ten oval-shaped stamens, the long alternately shorter than the others, and are joined with together, pushing well to the center of the flower, terminated by rounded long filaments. The female flowers which are situated in the same whel have no segments, but have five points spread out like a Rose. In the center of a roundish greenish tube long forams, supporting these styles, crowned by single stigmas. The points afterward become a roundish capsule with three cells, each containing one seed.

This genus of plants is ranged in the ninth section of Linnaeus's twenty-first class, intuled Mosceria Mosceridiphia,



nodolphia, which includes thrift plants which have male and female flowers ort the fame plant, and the ilanuiii «re collected in one body.

The SIEC-IIS are,

- 1. J ATB e tH A (Aftwiidt) fol i is palnia us, lobis Ian ceolaus bus. Lin. Sip. 1 Tant. too; . JatraplM
- J. B. ;

I It) fclulH.

- 2. JAT:.- foliis quinquodobatis, lo- [but, caule Fh fo;
- fo.;
- Qeik. Julfii via frau; non Ipinoin, wit mi;

- 3. JATBOPHA (Vrensj acuh'au, Jliis quiaqu •cute incifis, caile btrtacea Prvkk 'jatrtpi. Item beving Jfae Uies which cri Jbnrpfy cut m thtir tdgei, ai;J eoitriucata Jle.li. Jufievii h',
- MSS. fbcj, Mi Jijj/kvia,

- 4. »vTi<*iHerfai;etij atucicata, folik irilobis, cauc hetbaceo. 1 Sp. Plant. 100 17. Priely Jatr^pha,viitb Itavi >i irbatesiifS fiatk. Juf- ficvij herbacea spinofifima, urms, trSotutu mining inciCs. Houft. MSS. Prickly Jangue in 'xiaoa Jafreia, wib IWJO setting the' late, which' ate very

Hort.-Cliff: 4+.; Jatropha with hand-finged, irnd

Flora. Cjt. 20, r^t « prickly Coffea with a fine leaf

- 6. JAI (Aconitum) foliis lobatis densatis acuminatis, serratis, caule arborio. Jafrefha 'j ad a mt-tike Jtiili- Jiilfievis arfaoro, niins'i, Ipinoli. tloribus albis umbelUtis, foliU aconiti un-ntibii. Hoaft. Miis. 7rt; Jyvitvie which is Ufi prickfy, virilr vbit fousrigrewixg in umitls, jDiJlit^iBg larjes like tlofcefird/,-

- 7. JAT: jliis multipartiris l.tvibus, ftipulis ferebris multib. I maty parts, atA brijlly JMpuj* with many parts. Ricinoides arbor Americana, folio tmeritaM Bc.JlarJ Rsama •with ; (tannenfy <dkl Fraub Pfajic Jiiil m Ant&.ifi.

- 8. jATAoniA {CM-CMS) folii cordatii anguhtis. Hort. Cliff! 44j. Jmnpba vcilb /mguUir ti,;n-biiptd larjt.. Ricinoitici Americana goflypii folio. Town, Inft. 636. Aattruen Bastard Rkua! wib a CilleH let, ceiKmvnrf

- 9. JA T f (:••J) ts qu i n quepartitu, lob- bil ex:itis integris, teta glandulofis r:ofit. Flof. Leyd. Prod. 202. Jatropha with leaves divided into five parts, the lobes wherof are oval and entire, and
- raubüg
- ctmmt,

The first fort here mentioned, is the mmoaCaCTada or Callava, which is cultivated for foJ in t> warm parts e: America, where, after the juice is exprell-

out of the root (which has a poisonous quality) it is ground into a kind of flour, and made up in cake; or paddings, and is esteemed a wholefome food.

This plant with a sturdy stalk fix or seven feet high, garnish'd with smooth leaves, standing upon long foot-stalks alternately, they are composed of seven ribs, which are joined at their base in one corner, where they are narrow, but increase in their breadth till within an inch and a half of the top, where they diminish to a narrow point; the three middle lobes are about six inches long, and two broad in their broadest part; the remaining are about an inch shorter, and the two outside lobes are not .i

inciis long; line mtdll lobes are fimted on each fide near die top, but ticc wic) outer ate capture. The flower* ait: prvduccd in umbcU u the top 01' the folks, theft arc Umc in sic ami od*ra female n [be fame umbel; they are comprJt'd of five roundlh petals which frcad • pen; the male Bowtn have their ten Ur.minij joiU'd together in » column, and the female ftoicvri have a roundfil (jtrmen with three furrows in the tmrcr, luppomng three ftyleij two are fupsrattkl at a distance, and the third irifes between them. nut is not fo long; they arc crcwned by fingle figma*. Th<! germen .iferward turns w a rounctifh capfule with chtec lobes, each having a diftinf cell, containing one ked.

The fecund ilm was difcovered by the late Dr. Houf-toun at [he Lavanna, from v hepce he fent die feeds. This rifo with an upright ftalk ten or twelve Tc high, which ii firt giten tind herbaceous, but after-wart becojna licccctuj, (itidint; out 3 few b^inchj at the top, which are gamifliot with imwich leaves, compute j of five ov>l lobes, n hic' end in acute p tlic eilges arr allu indnued in fveral irremiar] •whidi arc acme. The (lowers arc prouectT in m umbel at the extremity at' the (talks, they arc of an herbaccciii white colnlir, nri arc mole «nd fan in the time umbel, as the other in; n the cjpfcle is fmoodi and has three cdk, tich including a (ingle feed

The third :rt was difcovered by the bue Dr. Houf-toun, growing nacurally in tin sandy grounds about the town of La Vera Cm.: from whence he lent the feeds, which fuccced in dit Chichef garden. Tfiis haili a very thick fleshy root, in (nape like ihe wite Spaniit Ridiit; the ftdlk rifei from one to two ftrt high, it i? taper, iirrbictous, and branching, and cloclly armed on ever) fide with long white spines, which arc not very (iff, but are pungent and fling- ing; the ftives are divided into five lobes, the middle bt-ing the lungcfl; the Others arc floated, the two new bring about an inch (honor, bu[the two outer are not more than half die length oi the middle; these are deeply jagged on both fides, and are w^ved on thrir edges; all the veins of die leaves are clofely armed with Ringing fpincs, fa tiat it is dangerous handling them; for all the imcrmedute parts of th* Icavr8 have (mail flinging fpines like thofe of the Nettle, but [hey do not appear fo vifible. At the end of the brail cites [lir I lowers are produced in umbels j they are while, anti have rmpalments dofcljr armed with die lime fpines a* rlie inlks nrd team: diec are male and female flowm in the fame imbel -, die female (owers arc fuccceded by tricaptular veutb, containing three feet?.

The fourth fort rfc« with an herbaceous folk about afoot high, dividing into two or three branches, which arcga: nish'd with leaves ftan :;ngalternatc\ipon\ong foot-:hanks, they are com-pofed of three oblong lobei which are lightly notched on their edges, ending in acute points; the n hole plant i* clofely armed with long, briftly, flinging Ivincs. The (WM ers grow in an umbel at the cml of the branches • rhr are small, or' a dirt) white colour, and are male and female in the fame umbel: the female flow n arc fin covered by oval capfulei with three lobe., which are covered with the lime fpines as the plant; thtfe ha. are three cck, rich containing 3. angle feed. Thii [plant is annual.

The El h fort was found growing natunilljr at Carthagena in New > guao, by the late Sir. Robert Miller, wlio ft i-urious pa:: This has a thick, swelling, fleshy • jot, from v which arises an herbaceous stalk as big as a . man* thumb, whk

long brc

deep- on their fides, and the cerv., are armed ft. .":

Stinging spines; the towers arc produced in umbels at the top of the branches, standing upon long naked foot-folkm the m>lenn,li<m.ilt: in the fame umbel: the appear Grff. i. fiortul rna fiijt TIK moutli

The GXEII fon v as discovered by the lat. Dr. Houftoun at La Cruz where it is frequently permitted to grow as a way of ornament; it lives with a strong, white, lignous stalk, ten or twelve feet high, covered with a gray bark, and divides into many branches, which are garnished with leaves that are serrated with small prickling spines like those of the Nettle; at the end of these branches come out the flower-stalks, which are five or six inches long, resembling an umbel of white flowers. The male flowers are of one petal, having a tube, which is divided into five parts like those of the common M. that are ilividi

form of a Koff, having the general m the centfr, which afterwards becomes a prickly fruit with three lobes, growing in three ccUs, <ch conuining >

is introduced from the continent, first into the West-Indies, where it is called French Poytic Nut, is distinguished from the following sort, which is called Poytic Nut, from its pungent quality.

This rises with a stiff thick stem eight or ten feet high, dividing into several branches, covered with a grayish bark. The leaves come out on every liJe of the branches on strong foot-stalks, which are five or eight inches long; they are divided into three or four parts, which are joined together at the base.

The upper side of the leaves is of a lush green, but their under side gray, and a little covey. The flowers come out upon long foot-stalks from the end of the branches, formed into an umbel, in which there are male and female flowers, as in the other species; these umbels are large, and the flowers being of a bright scarlet, they make a fine appearance; and the leaves being very remarkable for their beauty, has occasioned the plant being cultivated for ornament in most of the West-Indies.

The eighth sort grows IK; usually in all the idintlj of the West-Indies; this rises with a strong tall stem, or fourteen feet high, which divides into several branches; these are garnished with angular heart-shaped leaves, which end in acute points. The flowers come out in umbels at the end of the branches; they are male and female, of a L herbaceous colour, the male flowrs are succeeded by oblong oval capsules, the female cells, each containing one oblong black seed.

The seeds of the two last sorts have been used as a purgative by the inhabitants of the West-Indies, but they operate so violently, that now they are seldom used; three or four of the seeds have worked upward and downward near forty times, on a person who was ignorant of their effects; but it is affirmed that this purgative quality is contained in a thin film, seated in the center of the nut, which, if taken out, the nuts are harmless, and may be eaten with safety. The leaves of the tall sort are used in baths and fumigations.

The ninth sort grows naturally in all the islands of the West-Indies, where it is sometimes called wild

Cassida, or Cassava, and at others Belly-ach Weed, the leaves of this plant being accounted a good remedy for the dry belly-ach. This plant rises with a stiff herbaceous stalk to the height of three or four feet, covered with a purple bark, and at the joints have branching scabry hairs rising in small bunches, not only upon the principal stalk, but also on the branches, and the foot-stalks of the leaves. The stalk divides upward into two or three branches; these are garnished with leaves standing on very long foot-stalks, divided into hVc k l e s which are oval, entire, and end in acute point. The flowers are produced at the end of the branches, upon slender stalks called foot-stalks, in small umbels; they are small, of a dark purple colour, having male and female flowers in the same umbel; the female flowers are succeeded by oblong triangular vessels, smooth, and covered with a dark film, when ripe, in each of the cells is lodged one oblong brown seed.

All these plants are natives of the West-Indies in America, but some of them are now cultivated in England. The best sort is cultivated in the West-Indies for food, where it is propagated by cutting the stalks into lengths of seven or eight inches, which, when planted, put out roots; the method of doing this having been mentioned in various books, I shall not repeat it here.

The other sorts are easily propagated by seeds, which should be sown on a good hot-bed in the spring, and when the plants are fit to remove, they should be each transplanted into a small pot filled with light earth, and then plunged into a fresh hot-bed of tanners bark, carefully shading them; after which they must be treated in the same manner as other tender plants from hot countries, admitting fresh air as their daily proportion in the warmth of the Stove; but as many of the sorts have succulent stalks, some of which have a milky juice, they should have but little water given them, for they are soon destroyed by wet.

The fourth sort is an annual plant, to if the feeds are sown early in the spring, and the plants are brought forward, they will perfect their seeds the same year; but the other sorts are perennial, so do not flower till the second or third year; therefore the plants should be plunged into the water in the Stove, where they should constantly remain, giving them a large flow of air in warm weather, but in winter they must be tenderly treated, and in that season must have very little water. With this management the plants will continue several years, and produce their flowers, and frequently perfect their seeds in England.

THE BERRY. Dillen, Nov. Gen. 6. Lin. Gen. Plant. 721. Thisopodium, Tournef. Inf. R. H. 214. tab. 101. Scitica Cistis. The CHARACTERS are, The flower stalk an enlargement of four oval leaves, which spread open, are bell-shaped and fall away. It hath five unequal petals, which are oval, sharp, and spread open, having along with each, the two outer petals are longer than the other. It hath six oval sepals with flammets, the two on the sides being shorter than the rest, terminated by rounded flammets. In the center of the tube is situated a round compressed germin, supporting a first single lobe, enclosed by an acute stigma. The germin afterwards becomes a roundish compressed vessel, having two cells, each containing one oval seed.

This genus of plants is ranged in the first section of Linnæus's fifteenth class, entitled Tetradynamia Siliculosa, which includes those plants whose flowers have four long and two short Stamens, and the seeds grow in their pods.

The SEEDS are, The seeds of the first sort are small, oval, and have a smooth surface, with a small point at the end. The seeds of the second sort are larger, oval, and have a rough surface, with a small point at the end. The seeds of the third sort are small, oval, and have a smooth surface, with a small point at the end. The seeds of the fourth sort are small, oval, and have a smooth surface, with a small point at the end.

The SEEDS are, The seeds of the first sort are small, oval, and have a smooth surface, with a small point at the end. The seeds of the second sort are larger, oval, and have a rough surface, with a small point at the end. The seeds of the third sort are small, oval, and have a smooth surface, with a small point at the end. The seeds of the fourth sort are small, oval, and have a smooth surface, with a small point at the end.

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- 3, Istkn {Umtrkla} herbacca folii lancedsrus acuminatis, inferioribus ferratis, fuprioribus integerrimis. Lin. Hort. Cliff. 330. Herlz*ti. < Stiatiet Cr/s with ufsp pi Jaba Jii inJrj onis butjja-wel. mt tbt upper aitirt, crmntafy ccUtJCuinijTift. Thlrfr-pi Crdcum tjuibufdain, flore rubenie & alba. J. B. 2. 924. rat Crdiix Trtaelt Mxfird. with a rdwd vibiu Jbmr.
- 4. iBZTüs {Oicrata} foliis linearibui fuperre dilatis femiis. rior. Leyd. 330. Scisiica Crefi with narrokovu Slislti ai their up, mdfsau. Thlafpi umbtl-Utum Creticutn, Rare ilbo odoro, minus. C. li. 1'. 106. SmallumMLiudTreasU Mufierdof Crat withefu fotatr.
- 5. IBERIS {2inEta&Ui} herbaces foliis finuatiu caule nudo Cmplici. Lin. Hort. Cliff. 31B. ii<ftV« Crr/r viiib jmtmeA kcvei, <nt/ s jb^lt i&kcd polk. Nafiurium pstraium. Tab. Ic.4.; R. C. "fi.
- 6. tezms {Amarii} herbacca foliis lanceolatis acutis fiibdentatis, Boribua racemofis. Lin. Hon. Qpl 124. Jtirt.va Olyfi aa/i M / (, fpir-jhsptd, inim: faves, mdJUmers grazing is famchti. ThLiljii avenfc 1 mbel-llium atnarum. J. B. i. 925. Biittr, umidlattd, frtlii

IBK 1. ; foliisrubrutundiicrenitis.Roycn. Lin. Sp. Plant. 49. Heris with rumbit ronalid leaves. Thilapi Alpinum, fika rntuadire carnio, flore purpuneante. Tourm. Ind. 122. Snow French Maylow with a rumbit feby leaf, and a purple flower.

IBK 2. {Lingula} fruticens, foliis linearibus acutis, corymbis hemiparaticis. Stralby Scisica Crefi with narrato scMtUax and low spherical heads of flowers.

Thhfpj L'jfiiankuin umbcllauim, graoninc. folio, purpuneante flort. Tovim.Inft, R. H. 113. Psritt-ge, m... of truck Majieti, with a Graff L'fad a purple flower.

This first ibn here mentioned is a low Jh: bby plant, which ill'tiom rifa above 3 foot and a h: high, having many tender branches, which spread on every fide, and the ground if they are not kept paired. Theft branches are well furnished with leaves toward their extremity, which continue grKTrall the year; and in Tummer the Sm are as p... it the end of the Ihooi, which are white, and grow in an umbel. Theft Dower, continue long in beauty, and are succeeded by otbors, ft thu the pbna arc rarely defitute of flowers for near fight months, from the end of August to the beginning of June, wltich ft>- dery 1 hi plant valuable.

This ptinr it fomewnt tender, therefore is gencll:- pric. .ftl in green-houfes in winter, where, bdn^ placed imor.s other low plants tow^rd the Iioiir of the houfe, it mate) act agreeable variety, as it com fawning all thc winter. But I though it s conunply to be •tcd, y« in mod crate winter] this plant will live in ihc open air, if t be pUnu in a warm situation •od on a dry hill; and if, in very hard frost, they arc cot red either widi nuts, Reah, Sera», or Pcas-haulm, cte may be . fen'ed very wr!¹. and these plants which grow in the full ground, will thrive better, and produce a number of flowers, than those which are kept in pots; but the soil in which these are planted, should be: be over rith, nor 100 w«.

for in either of these they will grow too vigorous in summer, so will be in greater danger of suffering by the frost in winter; but when they grow on a gravelly soil, or among lime rubbids, their flowers will be show, strong, and not so expicte with moisture, so will better resist the cold.

This plant very rarely produces seeds in England, therefore is only propagated by cuttings, which, if planted during any of the summer months, and shaded from the sun, and duly watered, will be rooted in two mon: j, lid may afterwards be either •, planted

IB E

in pea, or into die borders where &cy are drfigntd to (land. There ia a varirty of this with variegattd Icai-fs, which is prefervei in some of the gardens where perfoni dtli(jlic in chcl- ti ped-leaved plants. This is not fo bard] as the plain sort, therefore must be treated more icn. rly in winter; thins is also increased by- tutLJigs in the fame niui! , or as the caler.

The feontl frt is a j.l.itit of humbler growth than the firil •, this feldotn rifes more than six or eight Liches high, nor du the brc; ches grow woody, but are rather fierbaci out, the leaves of this plant continue green through iht year, and the flowers are of as long duration as 1 title of the first sort, which renders it vihttbi*. : a rarely produces seeds in England, but 1 propagated by slips, which in summer easily take 1 «t, and tt: plants may be treated in the same manner M kith iorn directed for tin; (:it fort, and will thrive in the open air.

The third fore is a low annual plant, the sedj of which were formerly town to make edgings for boxes in the pleasure-garden, for which purpose all the low annual: flowers are very improper, because they do not answer the intent, which is to prevent the earth of the borders falling into the walks, which these plants never can do and though they make a pretty appearance during their 1 continuance in flower, which is seldom more than a fortnight or three weeks, yet after their flutters are , all they become very unsightly; therefore all these sorts of flowers should be kept in Iniall patches in the borders of the flower-garden, where, if they are properly mixed with other Bfiacn, Ln • will have a very good effect; and by having uf trirrii at three or four different seasons, there may be a succession' : n of [hcin t continued in flower till autumn.

There arc two different varieties of this third sort, one with red, and the other hath white flowers; but the white is DOTcomm on in the gardens, but the best of the IV th sort are generally sold for it, and is seldom dltfinguilhed bui by those who are skilled in botany; tilts plant fdiu... rises more than five or six inches high, and • they have room will branch out on every fide, but when they are left too close, they draw each other up, and are weak; as these do not bear transplanting well, so the seeds should be sown thin in patches, and when the plants are grown pretty strong, they should be thinned, leaving but six or eight in each patch to flower; and by this means them, they will put out side branches, and flower much stronger, and continue longer in beauty than when they are left close together; these plants will require no other culture but to keep them clear from weeds.

The fifth sort seldom grows so large as the third, and [he flowers are much smaller, but have an agreeable colour. It grows naturally in Helvetia, and is preferred in botanic gardens for variety. It is rampant, and requires the same treatment as the third. The fifth sort grows on shady and rocky places in several parts of England, but rarely succeeds in gardens. The leaves of this are small, and cut to the middle into many juze; these are spread on the ground, and between them will a naked stalk two or three inches long, supporting small umbels of white flower. This is an annual plant, whose seeds should be town in Jutumn where the plants are desired to nrmiin, and require no odicr : are but to keep them clear from weeds.

The sixth sort is very like the third, but differs in the shape of the leaves. The flowers of this are white, ib may be sown to make a vi :!* red. It requires the same treatment.

The seventh sort grows naturally on the Alps, from whence it was first sent; this is a perennial plant, which roots pretty deep in the ground. The lower leaves which rise from the root, are round, fleshy, and rounded on their edges. The stalk rises four or five inches high, and is garnished with small oblong leaves which half embrace the stalk with their base. The flowers resemble the stalk in a round cov-

Tte

ICE

prft umbel i thty <r of a purple colour. -A sp-
pear in June, I in are seldom exceeded by '• in
England.

It is propagated by seeds, which firmbl be lwo on
dry borders in autumn, and when the plants are
strong enough to remove, they should be transplanted
on a shady border where they are designed
and will require no other care but to keep them clear
from weeds.

The eighth fern grows naturally in Spain and Portugal;
it has a great resemblance of the former, but
the stalks do not spread so much; they grow erect,
about seven or eight inches high, are lignous and per-
ennial. The leaves are very narrow, and seldom
more than an inch long, bending thinly upon the
stalks, having no foot-stalks. The flowers
row III nemifchrri. It flowers in May and June,
but seldom produces good seeds.

They are propagated by cuttings, in the same way as is
the case with the former. Some of the plants may
be ordered in a dry soil, where they
will be better than in ordinary winters very well.

It will be proper to have two or three plants in
each pot, which may be inclined under a frame in winter,
to preserve the kind, or by severe frost. In
the open air it should be destroyed.

IBIS - U.S. - See HISTORIC.

ICAC - O. - See CHRYSEALAC.

ICE is a hard transparent body, formed from some
liquid condensed, or fixed.

Ice is said to be the natural state of water, which re-
mains firm, and not liquid, when the external
force upon it.

The true cause of the congelation of water into ice,
is not to be the introduction of frigid particles into
the pores of water; but the particles of wa-
ter, in the ordinary winter season, to near them, & to

the open air should be destroyed.

water, by cold should imagine, that being cold.
Denser water, is ought to be more condensed, and
consequently heavier; but it is to be considered, that
there are always four bubbles of air interperled in
ice. It is certain, by the experiment, of ice upon wa-
ter, that it is specifically lighter than the water, out of
which it is made by freezing; and it is aⁿ amin.
The height of ice proceeds from the numerous
cubbies that are produced in it by congelation.

Water, when it is frozen into ice, it loses imp more
space than it did before it was congelated. This is very
fible, the fibres of water are increased by
freezing, its particles being kept at a distance
the one from the other, by the intervention of the
frigidific air.

Anil- Besides the air, there are many little volumes of air
included at several distances from the surface of the
water, and in the pores of the ice, both in the pores of die
spherical figures. Now, by the intervention of the frigidific
air, the volume of air is driven out of the
watery particles; and many of the air, being united, form
lorgi bubbles, by a greater force
to ex) and themselves than water, which they displace,
and to both enlarge their diameter, and to rise up
specific gravity of water than that of ice, which is
l into Ice.

It seems very probable, that cold, and consequently
the air; in that lilt, sail
more eminently these particles are driven out of
with ice or snow, do wonderfully increase the force
and effects of cold.

It is a visible, that all these bodies cause a
nests a: a frigidicy in the air, which they enter.

It is manifest, by observing that the air is by
that the Bguntt of the air, is by the miaofcope,
fan. - d*y & ° < »

ICE

tnaflw, nrc thn double wedge-like particles, which
have abundance of surface in respect to their fluidity,
and this is the reason why they begin in water, when
once they are raised in it, although they are specul-
cally heavier, their small pores are driven into
the pores of the water, whereby they are, in some
measures, suspended in the water, when the water
is not ordered to be frozen; but when it is ordered to
fall into fluid, to break their points, and to keep
them in perpetual motion, which being left disturbed,
are more at liberty to approach one another, and by
floating into chrysalis, of the form above-mentioned,
do, by their extremities, infuse themselves into the
pores of water, and by that means freeze it into a
solid form, called Ice.

Mont. Marston, in his Treatise of Hydrostatics, gives
the subsequent account of what happens to water in
freezing, which he discovered by the following experi-
ments.

Having filled a cylindrical vessel, of about eight
inches high, and six inches diameter, with water
eight inches high, and six inches diameter, and
two inches of the top, with cold water, he exposed it to
the open air in a great frost, and observed exactly the
whole progress of the congelation.

The first congelation was in the upper surface of the
water, in little long water thons, or masses, which
were jagged like a saw. In the same manner the re-
maining still water, though the top of the water
was already frozen to the bottom of the vessel, was
found in the ice, that began to form on the bottom
and sides of the vessel; and others
remained entangled in the ice, which made him un-
agine that these bubbles taking up more space in the
water, than when their matter was, as it were, dis-
solved in it, they pulled up a little water through
the hole at the top, after the same manner that new
wine works out at the bung hole of a small when it
begins to heat, and the little water that oozed out at
this little hole in the ice, spreading itself upon the
upper surface of the water, which was already frozen,
became ice also, and there began to form a little
ice in that hole continuing open, by reason of the
water which passed successively through it, and
pushed up by the new bubbles which formed them-
selves in the ice, which continue to increase about
the sides and bottom of the vessel, he observed that
the lower surface of the ice water re- frozen above an
inch thick water in the vessel, and
above an inch more a hole round about the little
hole, before the water that was contained in it, as
in a pipe, became frozen, but at last it was frozen,
then the middle of the water remaining unfrozen,
and the water which was compressed by the new
bubbles, which formed themselves for two or three
lines, which rose up at the little hole, the ice broke
at once towards the top, by the forcing of the
included air.

In the manner the frost acts upon vegetables, by
the frigidific particles cutting the tender shoots of
plants, and infusing between the pores of the top,
thereby increasing its bulk, so that the tender vessels of
the plant are broken, and those parts of the plant, are
(MII killed; ami tl) greater the quantity of the air
is in vegetables, the more they are in danger of being
destroyed, but we frequently see many plants which
grow on the top, and from the joints of walls, escape
the severest frosts, when those of the same kind are
all destroyed which were in the ground, which is en-
tirely owing to their vessels being stronger and more
compact, and not so full of water, so when
the autumn proves cold and moist, whereby the ves-
sels of plants are not properly hardened, and are re-
plete with moisture, a small frost will do great mis-
chief to them, whereas when the autumn is dry and
warm, the tender shoots of trees and shrubs are har-
dened, and trained of their vessels, so are not li-
able to the like accidents.

ICEHOUSE is a building contrived to preserve ice
for the use of a family in the summer season.

This

I CE

Tisti: are more generally used in war*ci* cuumnes, than in kngland, but particuliy in Italy, where tin: meanrft prfbn who tons a hemfe, a not widi on a vault or cellar for keeping of ILC, but »i [he ufe of kx in En^lind. is much greater ot' late than it was forniefly, <> the number oi Ice-houfes fw been i-re.itij' n. ... Etoi ol'ihelc ... he, lei ... subject, yet if it is conidred, that theft buiking» »re generally creffleJ in gardens, and as often put undo¹ tiic LJFC of ganicnen, it may nut be amft for me to give fome general dircifvions tor the choice of ilie Jiuuation jmi ltruaurc of the building, as .illb for the management of the ice.

In the choice of : fnuwion for MI Ice-houfe, the principal regard : Iould be, thit of a dry fjot of ground, for wherever there is moisture, the ice will melt; therefore in all i'ong land, which detain : wet, there cannot be ri much care taken to make drains all round the building to cany off all ii moisture: for when this a lodpd nnr tUe building, it will occiUoij adamp therct which will always be jinrjudid.il to the keepin;: ol the ice.

Thit next consideration must be, to have the place in elevartii, that there may be dclene CIHJUJII tocairy orFwrldivi; wet may happen near iht huilit: or from the ice melting, abo, that the place be .lll much expoed to the [un *nd air as pofftblc, and r.o: phto i ntlr thcilrip, or in the Diace of trees, ai liatii been too often profbiid, under a t, ... lid be txpoed to :hc fun, th imcr, whit.

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It is necessary that the place should be so situated, that it may be exposed to the sun, and wind, all iamps and vapours will thereby be removed from about the building, which can never be kept too dry, or free from moist vapours. As to the figure of the building, this may be according to the fancy of die owner; but for the well into which the ice is to be put, a circular is the most convenient; the depth of the well, as also the diameter of it, must be proportioned to the quantity of ice wanted, but it is always best to have enough; for when the hoick is well built, it will keqj the ice for mo or three year •, and there will be this advantage in having a large enough to contain ice for two years consumption, that if a mild winter should happen, when there is not ice to be had, there will be a stock to supply what is want.

If the quantity wanted is not great, a well of Sixfeet diameter, and eight feet deep, will be large enough; but for large consumption, it should not be less than nine or ten feet diameter, and as many deep; where the situation is either dry chalk gravel, or sand, the pit may be entirely below the surface of the ground; but in strong loam, clay, or moil ground, it will be the best way to raise it so high above the surface, as due there may ix no dampness from the wet.

At the bottom of the well, there should be a iucc 1ft, about two feet deep, to receive any moisture which may drain from the ice, and a small underground drain should be laid from this, to carry off the water; over this space of two feet, should be placed a strong grate of wood, to let the moisture fall down, which may at any time happen, from melting of the ice. The sides of this well must be backed up with a wall, at least two bricks and a half thick; but if it is yet thicker, it will be better, because the thicker the walls are made, the less danger there will be of the well being affected by any external cause. When the well is brought within three feet of the surface, there must be another cover such as wall began, which must be carried up to the height of the top of the intended arch of the well; and if there is a second such cover over from this well, it will add to the goodness of the hoick; but this must be fabricated to the

turn of the well, and if there is a second such cover over from this well, it will add to the goodness of the hoick; but this must be fabricated to the

J E Iⁿ

perfun wlio build:, i he will be at the expense, but it cot, then the plain into which the roof is to be fram: 1. must be laid on this outer wall, which should be carried high enough above the inner such, to admit of a door-way in, tugecaut the ice.]] the building u to be cov. ... should be ti thick:) ... the fun and external air, if these floods are but two feet thick, and plastered over with lime and hair, there will be no damage of the heat getting through it.

The external wall need not be built circular, but of any other figure, either square, hexagonal, or octagonal; and where this stands much in sight may be so contrived as to make it a good object. I have seen an ice-house built in such a manner as to have a front porch above that in the front, and behind this porch was contrived a passage to get out and put in the ice; and by having the entrance behind, to the north aspect, a small passage being next the porch, through which a jicilun might enter to take out the ice, and a large door being contrived with a porch, wide enough for a small cart to back in, to drop down the ice upon the floor near the mouth of the well, where it may be well broken, before it is put down. The aperture of this mouth of the well need not be more than two feet diameter, which will be large enough to put down the ice, and if it was greater, it would be inconvenient; there should be a stone fixed to stop this aperture, which must be cleft up as secure as possible, when the ice is put in, and all the vacant space above and between this and the outer door, must be filled close with barley straw, to exclude the air; for the door to enter for taking out the ice should be on the opposite side, immediately behind the above door, as was before mentioned; and this door should be no larger than is absolutely necessary for the passing of the ice, and must be strong and close to exclude the air; it should be at five or six feet distance from the outer door, which should be contrived, which should be easily dim when the inner door is opened, whenever the ice is taken out.

The building being finished, should have time to dry before the ice is put into it; for when the walls are green, the damp of them imparts to the ice. At the bottom of the well, upon the wooden grate, should be laid some small ragged, and if upon these a layer of straw is placed beneath for the ice to lie upon. It will be better than straw, which is commonly used, and in the corner of the pit, the diameter is, the better it may be broken to powder, for the smaller it is broken, the better it will come when put into the well; in putting of it in, there must be care taken to ram it close, so close to allow a vacancy all round next the wall, of about two inches; that it may give passage to any moisture, which may be occasioned by the melting of some of the ice on the top, which, if pent up, will melt the ice downwards; when the ice is put into the well, if there is a little salt-petre mixed at every six inches or a foot thickness, it will cause the ice to join more closely into a solid mass. The instructions here given, being carefully observed, will be sufficient to guide persons wholly ignorant in their manner.

JET D'EAU is a French word, which signifies a Fountain that casts up water to any considerable height in the air. Monsieur Mariotte, in his Treatise of Hydrostatics, says, That a Jet d'Eau will never rise so high as its reservoir, but always falls short of it by a space which is in a subduplicate ratio of that height; and this he proves by several experiments; that though Jets ought to rise to the height of the reservoir, yet the friction of the sides of the spout, and the resistance of the air, are the causes that in Jets do not have very high reservoirs, the height of the Jets does not come up to that of the reservoir, by a great deal.

He adds, That if a greater quantity of water is sent in smaller cases, or is distributed through several Jets, the square of the diameter of the main pipe must be proportioned

to the height of the reservoir, and if the diameter of the main pipe is to be the same, the height of the reservoir must be the same. He also says, That if the diameter of the main pipe is to be the same, the height of the reservoir must be the same.

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He adds, That if a greater quantity of water is sent in smaller cases, or is distributed through several Jets, the square of the diameter of the main pipe must be proportioned

portioned to the sum of all the expences of its branches; fciat if the refervatory be fifty-two high, and the ajutages half an inch in diameter, the pipe ought to be three inches in diameter.

He fays. That the beauty of Jets of water confifts in their uniformity and tranfparency at the going out of the ajutage, and fpreading but very little, and that to the higheft part of the Jet.

That the worft fort of ajutages are thofe that are cylindrical, for they retard very much the height of the Jets, the conic retard it lefs; but the beft way is, to bore the horizontal plane, which fhuts the extremity of the pipe, or conduit, with a fmooth and polifhed hole, taking care that the plate be perfectly plain, polifhed, and uniform.

Thefe fpouts of water are fome of the greateft beauties of the Italian gardens, and are certainly better adapted for gardens in thofe warm countries, than they are for our climate, becaufe, in the great heats of fummer, the fight of thefe water-fpouts is cooling and refrefhing to the imagination, and they certainly add a real coolnefs to the air; but in cold countries they cool the air too much, therefore fhould not be erected -, or if they are, they fhould be placed at fuch diftances from the habitation, as that the damp may no ways affeet it.

Where thefe Jets are contrived, if there is not a conflant fupply for a large column of water, they fhould by no means be made, for nothing can have a meaner appearance, than thofe pitiful piffing fpouts, fo frequently to be feen in England, which perhaps have not a fupply of water to play above an hour or two; therefore where there is not a natural body of water, to fupply thefe Jets, without the expence of raifing ir, there fhould never be any of thefe contrived in gardens.

I L E X. Lin. Gen. Plant. 158. Aquifolium. Tourn. Inf. R. H. 600. tab. 371. The Holly-tree, in French, *Houx*.

The CHARACTERS are, they have male, female, and hermaphrodite flowers on different plants. The male flowers have a fmall permanent empalemt of one leaf which is indented in four parts; they have but one petal, which is cut into four fegments aUmeft to the bottom; they have four awl-Jbaped ftamina, which are Jhorter than the petal, and are terminated by fmall fummits. The female flowers have their empalements and petals the fame as the male, but have noftamina 5 in their center is placed the roundifh germen, having four obufefigmata fitting on it. The germen afterward becomes n roundifh berry with four cells, each containing a fingle hard feed.

This genus of plants is ranged in the third lection of Linnaeus's fourth clafs, intitled Tetrandria Tetraoyonia, which includes thofe plants whofe flowers have four ftamina and four ftyles; but according to his own fyftem, it fhould be placed in the third fection of his twenty-fceond clafs, with thofe plants which have male and hermaphrodite flowers on different plants.

The SPECIES are,

1. ILEX (Aquifolium) folus oblongo-oyatis, undulatis, fpinis acutis. Holly-tree with oblong leaves which are waved, and have acute fpines. Hex aculeata ~~Waldst. & Schmidt.~~ C. B. P. 425. Prickly berry-bearing Ilex; and t ~~The com-~~ folium five agrifolium vulgo. J. B. 1. 114.
2. ILEX (Echinata) folis ovatis, undulatis, marginibus aculeatis, paginis fuperne fpinofis. Holly with oval, waved leaves, whole borders are armed with fpines above, and their upper furface prickly. Aquifolium echinatum folis fuperficie. ~~Comar. Canad. 180. Holly-tree with a upper furface of the leaves are prickly, commonly called Hedge-hog Holly.~~
3. ILEX (Caroliniana) folis ovato-lanceolatis ferrugineis. ~~Hoet. Chiff. 40. Holly with oval, fpear-shaped, fawed leaves. Aquifolium Carolinense, folis dentatis, baccis rubris. Catesb. Carol. 1. p. 31. Carolina Holly with pointed leaves and red berries, commonly called Dabber Hc'Jj.~~

There are federal varieties of the common Holly with variegated leaves, which are propagated by the nurfery gardeners for fale, and fome years palt were in very great efteem, but at prefent are but little regard, ed, the old tafte of filling gardens with (horn Evergreens being pretty well libolifhed; however, in the difpofition of the clumps or other plantations of Evergreen trees and ihrubs, a few of the moil lively colours may be admitted, which will have a good effect in the winter feafon, if they are properly difpofed. As the different variegations of the leaves of Hollies, are by the nurfery gardeners diftinguifhed by different titles, fo I fhall here mention the moft beautiful of them, by the names they are generally known: Painted Lady Holly, Britifh Holly, Bradley's beft Holly, Phyllis, or Cream Holly, Milkmaid Holly, Pritchett's beft Holly, Gold-edged Hedge-hog Holly, Chcyney's Holly, Glory of the Weft' Holly, Broad-erick's Holly, Partridge's Holly, Herefordfhire white Holly, Blind's Cream Holly, Longftaff's Holly, Eales's Holly, Silver-edged Hedge-hog Holly.

All thefe varieties are propagated by budding or grafting them upon (locks of the common green Holly: there is *lib a variety of the common Holly with fmooth leaves, but this is frequently found intermixed with the prickly-leaved on the fame tree, and often on the fame branch, there are both forts of leaves.

The common Holly grows naturally in woods and forefts in many parts of England, where it riles from twenty to thirty fcephigh, and fometimes more, but their ordinary height is not above twenty-five feet. The ftem by age becomes large, and is covered with a grayifh fmooth bark; and thofe trees which are not lopped or browsed by cattle, are commonly furnifhed with branches the greateft part of their length, fo form a fort of cone *, the branches are garnifhed with oblong oval leaves about three inches long, and one and a half broad, of a lucid green on their upper furface, but are pale on their under, having a ftrong midrib: the edges are indented and waved, with fharp thorns terminating each of the points, fo that fome of the thorns are railed upward and others are bent downward, and being very ftiff, renders them troublefome to handle. The leaves are placed alternate on every fide of the branches, and from the bafe of their foot-ftalks come out the flowers in clutters, Handing on very fhort foot-ftalks *, each of thefe fuftain five, fix, or more flowers. In fome plants I have obferved the flowers were wholly male, and produced no berries; in others I have obferved female and hermaphrodite flowers, but upon fome large old trees growing on Windfor foreft, I have obferved all three upon the fame trees. The flowers are of a dirty white, and appear in May; they are fucceeded by roundifh berries, which turn to a beautiful red about Michaelmas, but continue on the trees if they are not deftroyed, till after Chriftmas before they fail away.

The fecond fort grows naturally in Canada, from whence it was brought to Europe. The leaves of this fort are not fo long as thofe of the common Holly, and their edges are armed with ftronger thorns ftanding clofer together *, the upper furface of the leaves is fet very clofe with fhort prickles, from whence the gardeners have given it the title of Hedge-hog Holly. This fort is ufually propagated in the nurseries, by budding or grafting it upon the common Holly *, but I have railed it from the berries, and found the plants to be the fame as thofe from whence the feeds were taken, fo make no doubt of its being a diftint fpecies.

There are two varieties of this with variegated leaves, one of which is yellow, and the other white. There is alfo a variety of the common Holly with yellow berries, which is alfo accidental, and is generally found on thofe plants which have variegated leaves, and but feldom on plain Hollies.

The common Holly is a very beautiful tree in winter, therefore deferves a place in all plantations of

the three first sorts grow naturally in Spa³l. Perin-
palk and the fourth of France; the
stalks about a foot high, garnished
with trail leaves
like those of Knot-grass; the flowers
come out (ingly
on the side of the stalks, which make little appat-
ance, so is seldom preserved in gardens.

lie fetond and third far- have trailing " " s near
a feet long, which, spv and on the ground,
shed wi those of the last sort, the
heads of flowers come out from the joints of the stalk,
thomthi

the a prt'y appear. These flowers >hear in
June, and there is generally a succession of them for
a least two months; and when the autumn proves
warm, they will ripen their feffa the beginning 01
October.

Thirfe three Ibru may be propagated by seeds, which
shuuld be sown on a bed of light earth the beginning
... April; the plants will come up in May, when they
(houi]- tx kept den should be carefully tak-

CO vip planting some of each sort in small pots, and
the other into a warm dry border, observing to wa-
ter and shade them until they have taken new root;
after which, those which are planted in the full ground
will require no other culture but to keep them clean
from weeds; for in the ordinary winters of England,
they will live in the open air; but as thos plants are
sometimes killed in severe winters, therefore I advise
some plants to be placed in pots, which may be placed
in a common frame in winter, where they may stay
the open Ut in mild weather, but b

As the fecdi of theft phina do n constantly
inEnrfaod, so they may be pop^otted I
tho if carefully taken out in May or June, and
planitd in a (bad] border, will in tw mwnlis pu
out iw

The other three sorts are nat- BMSI? * {
iveil ol' ilic warm | parts of
America; the fourth sort grows IUaturally a; lfcunt;
J. " h and Sxlh, in many of the illanJs in
the W^o n jt. ^tiii-h fi-n] out roots Jr

Theft hwecrewn then to the ground in their native
soil, whereby they spread to a great distance; and
in this country, when they are plunged into a
tan-bed, they will multiply as fast, by taking root in
tan, or any of the other pots of plants which are near
them.

The flowers of the fourth sort are
ance, therefore the plant is easily pro-
cept in botanic gardens for variety; but are pointed in
and first sort have dry heads of flowers, resembling
the of ilic Ainaraothoides, under which genus they
tt'ercioni" ¹ are placed.

These three sorts are tender, so wil| noi thrive in
the open air in England; therefore they should be
be sown on a v-bxU in the i< ring, at th< r lime time as
the Ananthis, Gompilens, and other tender planwi
and afterward, if they are plunged in othe: ran- b d
in the stove, their branches will put out roots, whereby
they may be propagated in plenty.

MPATIENS. Rivin. Oul. 4. Lin. Gen. Plant.
100. Balsamina. Tournef. Inst. R. H. 218. tab. 235.
"lisle Balfuwin^, w French, Balsamine.

The Characters are,
The flower has a two-lobed small empaleum, which
is tubular, and placed in the side of the petals. It hath
five petals which are unequal, and shaped like a lip-
flower. The petals are roundish, the upper is oval, slightly
cut at the point into three parts, where it is sharp-pointed,
forming the upper lip; the two lower petals are broad,
obovate, irregular, and reflexed; these comprise the lower
lip; the intermediate pair are small, and are placed oppo-
site, joining at their base. It hath a callicum in the
bottom of the flower, shaped like a hood or oval, which
is oblique to the mouth, rising on the outside, whose edge ends
in a tail or spur. It hath five short stamens which are
narrow twrsd tkir lft and tubular, terminated by

stamens, which join at the top round the flower, but are
divided at their base. In the bottom is situated an oval
sharp-pointed ovum, having no style, but a single stigma
shorter than the stamens. The genus is of several kinds
it agrees with one another, agreeing with an equality in five
calves, tubular petals, and certain stamens reaching
into half to a crown.

This genus of plants is ranged in the fifth section of
Linnæus's nineteenth class, which includes those plants
which have single flowers in the compound, while
Linnæus was in number and in rank.

The SPECIES are,

1. IMPATIENS (Nig. tanger) pedunculata multiloba foli-
oformis, foliis ovatis, petalibus corollæ tubularibus.
Flor. Suec. 702. Balsamina with five petals following
more single flower, oval leaves, and stalks being
January 1000. Balsamina lutea, five. Non me tan-
gere. C. B. P. 1206. Yellow Balsamine, or Touch me
not.

2. IMPATIENS (Balsamina) pedunculata uniflora aggre-
gata, foliis lanceolatis, archam floribus tubularibus.
Hort. Upsal. 270. Impatiens with five petals following
single flowers, which rise in clusters, spear-shaped leaves,
and tubular which are shorter than the flower. Bal-
samina formosa. C. B. P. 1206. The French Balsamine.

3. IMPATIENS (Fragaria) pedunculata uniflora foliolata,
foliis angustis lanceolatis. Flor. Zeyl. 215. Impatiens
with three flowers in a just-pink, and narrow spear-
shaped leaves. Balsamina erecta, in formis, Petalibus
angustis foliis Zeylonica. Hort. Par. Bat. 104. Upright,
or French Balsamine of Ceylon, with a narrow spear-shaped
leaf. There are several other species of this genus, which
grow naturally in India, which are plants of little
beauty, so have not been introduced into the English
gardens; the first sort mentioned, are all I have
yet seen growing here, except one tall sort from
North America.

The first sort grows naturally in several parts of
West-India and Yucatan, but is frequently in-
tro. I

It is an annual plant, which rises about a foot or a half
high, with an upright succulent stalk, whose joints are
fleshy, garnished with oval smooth leaves, which
stand alternate on every side the stalk. The flowers
come out from the joints of the stalks upon long
tender foot-stalks, which branch into several other
smaller, each sustaining one yellow flower, composed
of five petals, which in youth are shaped like the lip
or grinning flowers, but as their base have a tubu-
lar with a long tail like the flowers of Indian Cress;
these are succot... and by taper pedic, wllii is, when ripe,
bunt open upon being touched, and curl spirally
like a screw. Ring out il: seeds with great elac-
ticity. If die > tal of this plant are pointed in
fe<ier, th, generally succeed better than when they
ate fewn; but unless they are sown in the autumn soon
after they are ripe, they very rarely grow. The plants
require no are lux to keep them clean from weeds,
and thii them where they are too close. It flowers in
June, ami "e I seeds ripen about a month or five weeks
afters diis ddigi at in a shady situation and i moili
fall.

Tiie. Seam I sort is the female Balsamine, of which
there are several varieties; the common sort has been
long "l inhabit-
is th: white, the red, and striped flowered, and the
Wiiir: in single and double flowering, with variegated
flowers of two colours. Their seeds are so hard as
to rise in (he lull ground; and when the seeds are
rider, i the plants will come up the following spring;
but such self-sown plants do not come to flower so
early as those which are raised upon a hot bed, how-
ever, they generally are stronger plants, and continue
much longer in the autumn in flower than the others,
so are MI ornament u* ihe garde. when there is a
meattr feircity of r' flowers.

T)ib ion ril is a foot and a half high, dividing into
many succulent branches, which are garnished with
long, spear-shaped, serrated leaves. The flowers come
out from the joints of the stalks, upon slender foot-
stalks.

IMP

i about an **Itch bug**, each **iuftaining a fingle**
flower, but **! there are two, rhree, or four o:** these
 foot-stalks arising from the same joint. **The Awers**
 ate **CMT!** out of five larger uncles: **petal***, which jre
flia-; **!**; **!**; **!** **former** **t!**; **!**, but **!** **larger**,
anil f!>reil' open mini wider-, **these are white, Jiur-**
ple, and red of this sort, as also **fingle and double**
flowers. If the feeds of these are sown on a moderate
 hot-bed in the spring, the plants will flourish in **Jiir;**
best table which are sown in the **full ground**, will
 not flower before the middle of **Jy**; **ly; and thiffe will**
 continue flowering till the first of **lit puti £** (top to them in
 the autumn.

There are two other varieties of this, **! no* Jittincl:**
 species, one of them grows naturally in the East, and
 the other in the West-Indies; that is from
 the East-Indies, by the name of Immortal Eagle Flower,
 is a most beautiful plant, the flowers are double,
 much larger than those of the common sort; they
 are **coral and white variegated, and purple and**
white in others, and the plants producing **mm**
 flowers, **render them very valuable**; and if the feeds
 of these are carefully sowed, the feeds may always
 be preserved; but I have raised some **plant* from**
 foreign feeds, whose flowers **ere !u very Jouble**
 as to take these male parts, **i !lid nor produce any**
 feeds.

The feeds of these plants; **i fliouU be sown on a mode-**
rate hot-bed in the spring, the plants are
 commonly **up about** an inch high, they **lliiiiild be trinf-**
 planted on a moderate hot-bed at about **lit four**
 inches distance each way, observing to shade them
 from the sun till they have taken new root, after which
 they should have a large share of free air admitted
 to them, in all times when the weather is favourable,
 to prevent their drawing up tall and weak; they
 will require to be often watered with water, but as
 much not be given to them in too great plenty,
 for as their stems are very succulent, **i ihty are apt**
 to rot with much moisture. When the plants are
 grown to large as to touch each other, they should be
 carefully taken up with balls of earth in their roots,
 and each planted into a separate pot filled with light
 rich earth, and plunged into a very moderate hot-bed
 under a deep frame, to shade the plants to grow,
 shading them from the sun until they have taken fresh
 root; then they should have a large share of air ad-
 mitted to them every day, and by degrees hardened,
 for **a wbcirifie open atr, into which pare of iht pUius**
 may be removed in July, placing them in **.. warm**
 sheltered situations; where, if the season proves favour-
 able, they will flower and make a fine appearance;
 but it will be proper to keep part of the plants
 either in a glass case or a deep frame, **in order to**
 get good feeds, because those in the open **lit will**
 not ripen their feeds unless the summer prove **as AT!y**
 and the plants in shelter must have a good
Hun of free air every day, otherwise they will grow
 pale and feeble; nor should they have too much of the
 sun in the middle of the day, in very hot weather,
 for this occasions their leaves hanging and their re-
 quiring water, which is often very **iunful - , ifn**
 if the plants are shaded in the middle of the day for
 three or four hours, the plants will thrive better, and
 continue longer in beauty than when they are exposed
 to the heat of the sun. Those who are curious to preserve
 their plants in perfection, pull off all the single and
 plain coloured flowers from the plants which they pre-
 serve for feeds, leaving only those flowers which are
 double and of good colours; where this is carefully
 done, they may be continued without the least depre-
 cation constantly.

The last which grows in the West-Indies, is there
 called Cochian. This is a plant as large as the
 last-mentioned one, but I never saw any of them
 more than half double, **md oni**; with white and red
 stripes: the plants are very apt to grow to a very large
 size before they produce any flowers, so that it is late
 in the autumn before they begin to flower; and some-
 times in bad seasons they will scarce have any flowers,

IMP

and but rarely **riyrn th.** feeds here, so that *** per-i**
son * »re tr cuinvate this fort, tlpecilly **u tin** can
 bear the other.

The third (art here mentioned grow naturally in Cey-
 Ion, and in many psm cflnd this hath very nar-
 row l] **ed-shaped leaves**, which are sowed on their
 edges, the foot-stalks **ustian** K!! three ti:>nL-ii, whid
 are smaller than those of the common sort, so are not
 worthy of a place in gardens, except for the sake of
 varir. This is a tender plant, and requires the same
 treatment as the **Immortal l'agle Mower.**

IMI'ERATORIA. Lin.0en; Flint. 311. Tourn.
 Int. R. H. ub. 168. M>fterwort. in French,
 Imperatrice.

The CsiARACrm «r,
 A **iiirii .dit &»** **flower**, the principal word is
 p'nin, and temp of many fingle, the greater
 part are immortelles, but the feeds are here, which
 are - J-ipilfMcf f.
 ill umhf; (the principal word is mofura, the feeds
 have four-angled petals, which are round and in-
 feid. They last for long times, terminated by
 round feeds. The period is finished under the pe-
 tals, separating the vertical fibres, enclosed by white sig-
 nals. The period afterward becomes a round, un-
 proved fruit divided in two parts, containing two and
 lateral feeds.

This genus of pbnti i in the second section of
 Linnseus's liriih cL wh
 flowers have **e to-**
 rriii: and two styles.

We have of the Species of this genus, viz
 IMPERATORIA (Qbrafiam.) Mart. Cliff. 109. Aghy-
 wort. Imperatrice major. C. R. P. 156. Grand
 Mofure, and the Admirals of Dodonaeus. Impat.
 200. Mofure, or the Palmyra of Spain.

This plant grows naturally on the Apennine and Sep-
 timan Alps, and upon other mountainous places in Italy;
 the root is as thick as a man's thumb, running uni-
 formly in the ground; it is fleshy, acorned, and has
 a **ihong ac;** **!** rills, biting the tongue and smooth
 like Primula of Spain, the leaves arise **nmedtai**
 from the root; they have four-stalks seven or eight
 inches long, dividing into three very blunt ones at the
 top, each sustaining a trilobate leaf, indented on the
 border; the foot-stalks are deeply compressed, and
 when broken emit a rank odour. The flower-stalks
 rise **&b** not two feet high, and divide into two or three
 branches, each ter-
 minated by a pretty large um-
 bral of white flowers, whose petals are faint; these are
 five-angled b<, oval compressed feeds, somewhat like
 thole of Dili, but larger. It flowers in June, and the
 feeds ripen in August.

This plant is cultivated in gardens to supply the
 markets. It may be propagated either by seeds, or
 by putting the roots; if you would propagate it by
 feeds, they should be sown in autumn upon a hot
 bed or border, on a bed or border, in a shady situ-
 ation, observing not to sow the feeds too thick;
 nor should they be covered too deep. In the spring
 the plants will appear, when they should be carefully
 weeded; and if the season should prove very dry, they
 should be now and then refreshed with water, which
 will greatly promote their growth. Toward the be-
 ginning of May, if you find the plants come up too
 close together, you should prepare a small fresh bed
 (and thin the plants carefully, leaving them about
 six inches distance;) and plant those which you draw
 up into the border about the same distance apart every
 way, being careful to water them daily, if the feeds
 should prove dry, and they have taken root, they
 which time, these plants (as also those remaining in
 the hot-bed) will require no other culture but to
 keep them clear from weeds, which may be easily ef-
 fected, by holding the ground between the plants now
 and then in dry weather, which will destroy the weeds
 and by thinning in the ground, will be of great service to
 the plants. The following manner these plants should
 be transplanted, where they are designed to remain,
 which should be in a rich moist soil and a shady situa-
 tion.

tion; where they will thrive much better than if too much exposed to the sun, or in a dry soil, for they delight in shade and moisture; so that where these are wanting the plants will require a constant supply of water in dry weather, otherwise they will thrive but feebly. The distance which these plants should be placed, must not be less than ten feet every way, for where they like their situation, they will spread and increase much. When their plants are rooted, they will require no other culture but to keep them clear from weeds; and in the spring, before they shoot, the ground should be every year yearly dug between the plants, in doing of which great care should be had not to cut or break their roots. These plants, with this management, will continue several years, and will produce seeds in plenty.

If you would propagate these plants by offsets, their roots should be parted at Michigama, and planted in a shady situation, at the same distance as has been directed for the seedling plants, observing to water them well they have taken root, after which it time thw

The roots of this plant are used in medicine, and are greatly recommended for their virtue in contagious distempers, or the bites of venomous creatures; they are alexipharmic and sudorific; by some they are recommended for cholera and asthma, for the cramps, and all cold distempers of the nerves.

INARCHING is a method of grafting, which is commonly called grafting by approach. This method of grafting is used when the stock you intend to graft on, and the tree from which you would take the graft stand so near (or can be brought so near) that they may be joined together. The method of performing it is as follows: take the branch you would attach, and having fixed it to that part of the stock where you intend to join it, take away the rind and wood on one side about three inches in length. After the same manner cut the stock or branch in the place where the graft is to be united, so that the end of both may join exactly together, at least on one side, then the top may meet; then cut a little trough upward in the graft, and make a notch or slit in the stock downward to admit it, so that when they are joined, the rind will prevent their slipping, and the graft will more closely unite with the stock. Having thus placed them exactly together, you must be them with some lute, or other hot humours; then cover the place with grafting clay, to prevent the air from entering to dry the wound, or the wet from getting in to rot the stock; you should also fix a stake into the ground in which that part of the stock, at the graft should be fastened, to prevent the wind from breaking them asunder, which is often the case when this operation is not observed.

In this manner they are to remain about four months, in which time they will be sufficiently united, and the graft may then be cut from the mother tree, observing to dig it off close to the stock; and if at this time you cover the joined parts with fresh grafting clay, it will be of great service to the graft. This operation is always performed in April or May, that the graft may unite with the stock before the succeeding winter, and is commonly practised upon Orange, Myrtle, Juniper, Walnut, Fir, Pine and several other trees, which will not succeed so well by common grafting or budding. But although I have mentioned Orange trees among the rest, yet I would by no means advise this practice when the trees are clipped to grow large, which in this method they rarely ever will do; and it is chiefly practised upon those trees only as a curiosity, to have a young plant with fruit upon it, in a year or two from seed. Inarching is a tedious, yet these plants are seldom long lived.

INDIGOPERA L. G. G. 186. Indigo.
The *Crotalaria tinctoria* L.
The empurple is a tree leaf, spreading almost flat
but into four points; the flower is of the lavender kind.

... being a smooth spreading fluted, which is indented at the point and returns; the wings are oblong, striate, and their angle border spreading; the tail is striate, ... and acute pointed. It has the flowers double in a corolla, which points upward, terminated by smooth ... and a cylindrical ovary, supporting a four lobed crown by an oblong stigma. The crown is formed by a long taper pedicel, including thick fluted stalk. This genus of plants is raised in the third edition of Linnaeus's seveneenth class, entitled Diadelphia Decandria, from the flowers having ten stamina joined in two bodies.

- The Species are,
1. *INDIGOPERA* (Tinctoria) *lymniscus arcuatus incanus*, racemosa foliis serratis. Flor. Zeyl. 173. Indigo with leaves divided into five, and the branches of flowers from the joints. And see Indigo Americana, filiquis in foliolarum modum contractis. Acad. R. Scien. 1735. Guineale Indigo.
 2. *INDIGOPERA* (Tinctoria) *lymniscus arcuatus incanus*, vixle fraxinea. Indigo with a fluted stalk, and leaves divided into five. Cochlearia affinis fraxinea argentea. Etonius spiraeae vixle purpurea, filiquis lobatis. Sloan. Cat. Jan. 1722.
 3. *INDIGOPERA* (Tinctoria) *lymniscus arcuatus incanus*, quibus spinis longioribus spiculis, radice perennante. Indigo with longer stalk, leaves with five lobes, long leaf stalks of flowers, and a perennial root.
 4. *INDIGOPERA* (Tinctoria) *lymniscus arcuatus incanus*, communis, foliis pinnatis. Indigo with widely compound, long leaf stalks, and several leaves.
 5. *INDIGOPERA* (Tinctoria) *lymniscus arcuatus incanus*, foliis trifloratis. Indigo with rounder stalk, and triflorate leaves.

The first and fifth sorts are common plants with us; the seeds of these must be sown on a hot bed early in the spring of the year, and when the plants are come up to two inches high, they should be transplanted into small pots filled with good rich earth, and the pots plunged into a box full of sawdust, which the plants have obtained time through, they must have a great deal of fire-heat, by raising the glasses in the day time; and in June they may be exposed more to the open air, by which time they will begin to produce their flowers, which will be succeeded by seeds in a short time after, and in August these seeds will be perfected, if the plants are brought forward in the spring.

The second sort grows to the height of five or six feet, and will abide some three years, if it is preserved in a very warm stove in winter; this produces stalks of flowers from the wings of the leaves on the sides of the stems of the plant, and long stipes will produce seeds in England. This must be raised in a hot bed, as was directed for the two former, but must not be wholly exposed to the open air, even in the hottest weather.

The fourth sort is supposed to be particularly adapted to make the Indigo, but the first is the commonest which is cultivated in the English plantations in America; but I have been informed by a person of great credit, that he has made a great Indigo from the second sort, as may also be produced in our plantations; and this being a much higher plant, will afford a greater quantity from the same compass of ground, than any one of the other species, especially if cut before the stalks grow lignous; and this sort will grow on poorer land, so may be cultivated in such places where the first sort will not thrive so well, by which means great improvements may be made with this plant in our American plantations. There are some other sorts of this plant which are natives of India, from which the Indigo is made; two of which, viz. the fourth and fifth sorts I have had growing in the garden at Chelsea, both which are very different in their leaves and seeds from either of the American sorts which have been cultivated. I have also received seeds from India of the third sort, which is the true mother of Indigo which grows naturally in South Carolina, and which was greatly esteemed

S

I N D

John v tutt a goby the Iniligo planters of that cecuniry. for the beauty of the color: iio:Jily chilli it [tftnlucN] ; but the plants beinn lkn<ler>nd thinly garni tiled with leaves. whil i wen (hull, they ; did not furnish a quantity of i:ill'Ci ill [HXipOfwi pa their bold. loot late this lurt. but I Jjpt I an M'utii cwuwa:=ii there; though the account I rec'd with tile feeds was. (hai ii t<u >liar the bt& Indigo or." InJU was made from.

The whole process in making the Indigo 0 being exactly described by Fern Labat in his voyages, I think >uuah it would not be unacceptable to the English reader, to translate his account in this place, which is as follows.

There was formerly a great deal m Indigo made in the parish of Macouba: there is JOE a l'revn nor river in it, where one does not meet with S'tl'ligu wwl. that is, beds or vats of stave work w' ll ce- imented, in which the plant that yields the dye itipui to digest: there are usually three of these vats IB OQC above another, in the manner of a cascade, so that the second, which is lower than the bottom of the first, may receive the liquor contained in the first, when the beds which are made in the bottom of the first are unstopp'd, and that the third may in it. run receive what was in the second.

The first, largest, and highest of these vats is called the flarger or vat; it is usually made twenty feet long, twelve or fifteen feet wide, and three or four feet deep. The second is called the beauty, it is about half as small again as the first: and the third, which is much less than the second, is called the desiviling.

The names of the two last perfectly agree with their uses, for the plant is laid to steep in the first, where it ferments, is macerated, and becomes like green dung: after that the juice and substance of the leaf are separated and dissolved in the water by the fermentation, which the heat and vapors of the plant has excited in it. It is in the second that they agitate and beat this water, impregnated and loaded with the juice of the plant, till having collected it, re-united, and, as it were, coagulated them with one another, they form the 1 species which compose the dye.

As for the name of the third, I do not see how it agrees with it, which it is because this vat is deeper coloured than the others, for the Indigo already formed remaining in it, consequently dyes a I U CO lump it much deeper than the others.

To which I should add, that it is only at St. Domingo that they make use of this name. In the Windward Islands they call this last vat the levery, and this name fits it perfectly well, because it is in this, that the Indigo begins to be deeper, and perfected at the bottom: it never grows into a mass, separates itself from the particles of water which remained in it, leaves them at top, and settles at the bottom of the vat; whence it is taken out to be put into little bags, and then into the boxes, as I shall mention hereafter.

Nothing could be so equal in the building and making these vats substantial, the strength of the construction is so great, that unless the floor-work and pillars be very well done, and the mortar carefully chosen and wrought, they crack; and a very moderate daily infiltration to let out a vat of Indigo, and cause a considerable loss to the owner.

When this misfortune happens, the following is an easy and infallible remedy, which I can answer for, as having experienced it. Take some six beds of any kind whatsoever, spread them without burning staves, powder them, and fit them through a fine sieve. Take an equal quantity of quick lime and fill it up with water enough to make a stiff mortar, and in quick it you can, dip the sides of your vat with it. This mortar impregnates, cracks, and does in a moment, and immediately prevents the water's running out of the vat.

It is very hard to say, or should know, that Indigo is a dye used in dye wood, silk, cloths, and stuffs, that the Spaniards call it Anil; the French they make it call in New Spain, comes from Guatemala, which makes

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a great many people call it birry Gi animalo. il b made also in the East Indies, particularly in the dominions of the Great Mogul, the kingdom of Golconda, and other places thereabouts, as Mr. Tavernier rtijti'i in his voyages. This last is in Europe otherwise called: India 11441 lad -J O. Anil, peopl

ii? proper a Some audio of our oider, having fancied that the Indigo which comes imni the L:IU-1IH;IC^ h tnor.

and vicriTh ttian tint wltidi comes from the West-Indies. wht< li they all flat Imligo, wliile th; call that from the East ii batvly IiwBt They would have Ipokt- pttyi if tjitry haj call the latter round India; for, by rhiir h.ivr, all the difference between the two Indias, or Indigos, is that that made in the East Indies, for as for goodness and a Itujx'i! likr kill' eg di the West like cases, for as for goodness and b^iuiy, the one will i be a whit superior to the other, if both are wrought with exact care and fidelity.

The shape of the Oriental Indigo obliges the merchants who would carry it into Europe to pound it, that they may get the more into the chests, or barrels rirey put it up in. It is certain, that being thus pounded, its grain having been broken under the pebble, ground, and reduced to powder, makes it firu- than the West-Indian Indigo, which coming in cakes): as it was dried, there is grain entire, and CCofccjuently i must appear coarser; but what is that to the mini l products of the commodity. I maintain it is the same in both, though there seems to be a dd.

To be con i tQed of iliU truth, uke a lump of fudge equally white throughout, break it in two, pound one part of it, and reduce it to powder; this will look fair and white, though there is a waste, which proceeds only from this, that the grain of the one has been separated and divide into a greater number of parts, which, though very small, and almost imperceptible, yet have a greater number of surfaces, and consequently reflect more light; whereas the other or-tnau ting coarse, presenting to the eye only a liige grain, which has but little surface, of course reflects less light, and by a necessary consequence must appear less white; which is the same as appearing less beautiful, since the beauty of sugar consists in its whiteness. Methinks we may reason in the same ma: ore upon Indigo, and say, that coarser puribus, the West-Indian Indigo is as beautiful as the East-Indian, when they are both wrought alike.

I think I should add, that the American Indigo is better for use than the other; for who does not see, that there is no powdering this dye, without the most filthy parts being dissipated in the air, as Mr. Tavernier allows? And who can doubt that these pans are the best, and th-JIC thai fu tirtheft when it is used?

I guess that the Indigo which comes from the East-Indies, is coarser than that which is made in the West-Indies; the reason is plain, it comes farther, runs greater risks, and those who bring it would not find their account in selling it, at the same price with that which comes from a much nearer place; but that does not at all prove it to be more beautiful, or better.

Indigo is composed of the salt and substance of the leaves and root of a plant of the same name, so that naturally say, it is a dissolution or dispersion of the plant, caused by the fermentation it has excited in the water it was laid to steep in. I know some writers pretend, that the substance of the leaves does not penetrate the Indigo, which, as they would have it, is only a violent texture, or colour, which the fermentation of the plant diffuses in the water: but before I take their words for it, I desire they would tell me what becomes of the moisture of the plant; for when it is taken out of the flarger, it is certain that it has no longer the same weight, consistency, nor colour, as had before. The leaves, which were very plump,

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plump, juid very full of juice, are light, flabby, and withered, and Luk m-*re* like dung than any illing elc, which jtniks thri- frequently give the name of rot to the deeper. It then we no longer find in the leaves, and the rest of the plant, the time fulfiance that was obierable in it before irwas laid to lleij>, as it not weat ;:Urai to be' here, that it is the same

lillufai in the waier, /*****

utuc mau which thry tali indi^J, i< ucfu! in painting and dyeing?

The culture. J ¹ his plnac requires a good rich tewl foil, not too thryi it gratjty tubs am' imjiovrrritics the ground where it grows, : :nd mull be alone. There cannot be too much rare taken to keep it dean, and iüider herca of any kiod wh<rv<r from growing near it.

(hey weed and dtjuvlie the ground where they plant it, five times. "Vtr- should think they mi ulJ Vail it fowing, but the ferns of planting is conf. i: ited in our illes, ntn dank I oop it fiir rhloi. e of a word to fall out with our phnr.-rs *!, . . . ir tltwm HI iboufatid :-:oum, th"tigh they have pot n h

of manuring the French language. They sometimes carry their weatels in such a pitch, that they liveep the pecc of ground as they do a rooth. After that rfiy mal e the holes whereas the seeds are to be put for this purpose, lic flave,<, nt . others, who are to work at it, range the :nfi:l<5 in die Gune line, at the top of ie piece of ground, and going in kwanis they mak

little drills the breadth of their hoe, or the depth of two or three inches, at about a foot distance every way, and as much as possible in a line it inc.

When the weat come to the end of the ground, t'icli furnishes himself with a little bar of seeds, and returning that way they came, they put eleven or thirteen seeds into each of the holes they have made. A mistak of superstitio has taught them that the number must be odd. They so meanly approve of this practice, but I shall take care not to endeavour to show them the usefulness and folly of u, being satisfied I shall only kill my time and labour.

This work is the most noblest of e; in tic manu- facture of Indigo; for those who plant it must be always slooping, without rising up, at the planting of the whole length of the pecc is ended, (o that wten that is large, which almost always happens, they are obliget to rcnW. two hours, and other must, in this rolhire.

When they come to the top of the pecc, they go back again, and cover the holes where they have put the seed in, by shuffling in with their feet tit nrnth they had taken out of them, and to the feet covered with about two inches of earth.

The culture of this plant may be rent.-ed very easy, provided the inhabitants of our colonies in America could be brought to make use ct' rhe drill | though, for with this instrument two persons and a horse or mule will dig more land with h Indigo in one day, than twenty persons can perform in the same time, in the method now practised; for the plough makes the drill, and the harrow which is fixed to the plough covers it, and frames the seeds at equal distances in the drills; and an instrument behind the harrow covers in the drills, whereby the whole operation is performed at the same time, and with great ease. Indeed the use of this machine must be understood by the persons who are to perform it, otherwise they will do it in a bad manner, but a little practice will bring any person to the right use of it.

As the Indigo is sown in rows, a hoeing plough may be made of a proper dimension, in order to clear the ground from weeds, and to make the soil more loose. It may be performed in this manner, and the method now practised. But in doing of this, I would advise the stirring of the ground, soon after the Indigo plants are come up, because the weeds have got much strength, in which time they are best destroyed, and by stirring of the ground ;: plains will be

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plains will be

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encouraged; and the strongest and most thriving plants will always make the best Indigo.

When the best ways of cutting the plants before they are too old, in order to have the Indigo of a better colour, is certainly right. Therefore as soon as the flowers begin to appear, it should be cut; for if it stands much longer the stems of the plants will grow hard and stringy, and the lower leaves will change to a yellowish colour, which will render the Indigo less valuable; as will also the plants being too close together, which will I occaffii* th bottom leaves to decay for ivanr of I see air, the same will happen if weeds are suffered to grow among the plants. Therefore there must be great regard to their being kept always eloni.

Thenjj all seasons are good for the planting of Indigo, yet care must be taken not to put it in the ground in a dry time: it is true, the seeds may keep a wh'.k' iLLHh in the ground, without being sowed; but when k ð pl:ed to, one runs the risk of having it eaten up by vermin, or carried away by the wind, or choked by the weeds that rising up with it, so that the prudent planter never runs the risk of planting it dry, &c. at a time when rJicj do nor probably expect rain in two or three ty after the planting is ended; they chuse therefore usually, a moist season, which promises rain, and then ifie: . . . fear of seeing the plant rising up in three or four dayi nfttr iti being pl.intcl.

Notwithstanding all the care that has been taken in clearing the ground where the seeds have been planted, the planter must be careful when the Indigo is got above ground; because the goodness of the soil, joined to the moisture and warmth of the climate, and the plentiful dew that fall every night, makes a prodigious quantity of weeds spring up, which would choke and absolutely kill the Indigo, if extreme care was not taken to weed them up as soon as they appear, and to keep the plant extraordinary neat, and very often the weeds are partly the cause of the withering of a kind of cancrulars, which devour all the leaves in a short time.

From the time of the plants rising above ground, to its perfect maturity, it but two months, and then it is fit to cut; if not cut by this time it would blossom, its leaves would grow stiffer and harder, and consequently they would yield less substance, and the colour would not be so beautiful.

After this best cutting, the new branches and leaves which the plant produces may be cut again every six weeks, provided the leaves be dry, and this care be taken not to cut it in a time of drought, because then we should inevitably kill the plant, or, as they call it there, the Champans, and be obliged to plant again; but all things being rightly managed, the plant may last two years; after which it must be plucked up, and new ones planted.

When the plant is ripe, which is known by the leaves, which grow brittle and less supple, they cut it three inches from the ground. They use for the cutting of it great crooked knives made like sickles. Some planters make it into bundles like double hoes of hay, but a negro may easily carry them to the harrow, but most people put it into large pieces of coarse cloth, which they tie by the four corners, and this is more convenient, the plants less handled and spoiled, and the seeds are carried away as safely as the great and bundles the work goes on quicker this way, than in making bundles, and as new is pretious every where, and especially in America, there cannot be too much care taken not to kill any.

Whether in twenty weeks of plants, each about the size of two bottles of hay, are sufficient to fill a harrow of the other mentioned size. When it is filled with water, so that it covers the plants, they put pieces of wood on the top, that the plants may not rise above the water (much after the manner as they do upon the Grapes that are put into the press), and let all ferment. According as the heat is greater or less, or the place niort 01 less ripe, the fermentation is called faster or

liter, fomctimci in fix, eight, or ten hourti »nd famctimo one is otitigeil w wait eighteen of twenty hours, bur very icclom in iger. Then tbc efkSt of the fermentation v... by :ijipi-ari. the water heats, and boils up on all sides, /t the Grapes do »n cb var, and the vriter which it firii was dear, infer... thick, siwl become* of i blue, inclinim, to a Violet coltj

I then without trampling at all with the plants, they open thtr codes, which *ru it the botto;T' of the... per, wxi It! all this water... r, loadrd widi the (kits and liililbnc of the plant, which were freed by the fermentation, m... the battery; and while they throw away ai uldd'v, and almost rotten, the... plants that were in the battery, and I clean it, t hit it may be tillci with freJli, thfy heac rhe water, which they have let out of the battery, and I clean it, t hit it may be

They frmrrly vied for this purpofc t hasedoor whed, *i»le (tffe <35 placed upon the ;... of the vat, and which they turned by two handles that were a: th... of the same axle. Since that, as the soon of batikdoora, they have put little boiromctf boxes, and others, which bottoms were bored full of holes: atpre... they use a kind of pretty large nails, fastned in strong poles, placed upon c... cedupon c...

lieti, by moat of WL... the seeps violently and cononaily rail'e, bc^t, amf... the water, till the ii];s and otherjuni or* the lublhnc of (he pUnc are united, and fomented, as it were, coagulated to incorporate.

The totting thu minute exaffly (hews the (kill of him who overfecs the making of the Indijio; for it he mLtes (hem leave olf bea: a little too soon, the grttr... not yet formed, remains dispersed in the water, without linking and gathering together at the bottom of the vat, and is left with the water, when they are oblige... to let it out, which is a great loss to the ownti... as if when it is formed they continue to beat, they diiti hi n, and the same inconvenience follows.

The iiiute then mull be nicked, and when it is ibuoct, they moil leave off beodn:/ and let the nuLer

To :nd this minute, they mjkf ufc of J little silver cup, deliqued for this... it'e akme j.they fii... it with this water, while the negroes beat it, and according as they observe that the fibres sink to the bottom of the cup, or remain dispersed in the water, they cease, or continue beating.

TheC.eneralD'; history praised it Tn •oux, rrim very seriously, upon the credit of father Plomer a mission, that the Indigo-makes having taking up some of the water of this battery in his cup, dips in it, and that if the Indigo be formed, the fibres immediately sink... of the cup, and that then he makes them leave off beating, if not, he makes them continue. This is not the only incident in which people have imposed upon father Plomer's credulity and simplicity. I have been a witness of it upon other occasions.

When they have left off beating they let the... latter... boctom oi... the vat, and gather together like a kind of mud, and the water freed from all the laka it was impregnated with, swims above it, and grows clear. Then they open the cocks, which are placed in the battery at different distances from the bottom, and let the water run away, and when they come to the surface of the fibres, they open the cocks of the bottom, that the fibres may all fall into the screwing or fether. Then they let it settle a little while longer, after which they put it into linen bags, fifteen or eighteen inches long, made with a pole, where it perfectly purges itself from the rest of the water, which remained among its particles. When that is done, they spread it in little boxes three or four feet long, six broad, and about three inches deep, and expose it to the air to dry it perfectly. They observe not to expose it to the sun, because it would flave the colour, by drying it; and they take a great deal of care to keep it from the rain, because it would destroy the colour.

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It ; imrtimes happens (ha; the water pillars get among the Indigo, and if they are let alone they will settle a while they eat all the leaves, and often the very thick nml end' of the branches, and kill the stocks; it is but a loft time to i... endeavour to destroy them, or hinder than from •... a whole piece, by flopping them with a stick. The usual way is to cut down the Indiguwith all luci: let its age be what it will, and as tlirow bail; plants and waterjules together into the fiteperi there th... and part with... they had devoured, and i'i... Indigo is not the best beautiful til i... It is true, when the plant is not come to its perfect matur: it yields much less, but many have thought so, that the colour it yields Mcperimen!- tsmuchnwir beautifuU fit tl... what is full one way is greater another.

I would not wait for its perfect maturity before I cut the plant. Perhaps all the leaves of these whole Indigo is so much scattered beyond ours, but only in cutting the plant when it yields the lowest colour. I have experienced that in having some excellent files upon some Indian figs, which were too ripe, instead of being red, they grew of a firmest colour, like the fruit they fed upon. The same thing might happen in Indigo, but I have supposed it not a ground-kfi doubt, hence it is backed by the experience I have jutr rcbtai... which plainly proves, that the same plant, cut at different ages, produces colour different in beauty. I would not venture to give this advice to the Indians, who value the quantity rather than the quality of their commodity; but I believe it will do nothing so far from our islands, who are generous and so confident, sometimes even beyond their abilities; I shall then therefore propose different trials, as to the soil, the water, the age of the plant, the water they steep it in, the point of dissolution, &c. and I am sure, with a little care, labour, and patience, may still make things that will equal, and even excel, the most beautiful Indigo of foreign countries.

The planters of St. Domingo have that in 1701 their cochinele sugar was very bad, and was nm made without infinite trouble, and at present every body allows, that by their labour, industry, and enquiry, it is grown much more esteemed than that of the Windward Islands; why may not the same be hoped for in Indigo?

Mr. Pomet, author of the General History of Drugs, says in his first part, chap. 20. That the Indians of the village of Sanguin, near Antioch, use only the leaves of the Indigo, and throw away the plant and branches, and that it is from thence the most esteemed Indigo comes.

I am pretty much of his opinion, for we see, that those who take the pains to strip off the Grapes from the branches, before they put them into the vat, and then wash the stalks carefully, make much the best wine, because the stalks always contain an acid, which mixes with the juice of the Grapes in the pressing and peeling them both together, and for the same reason, the stalks of the Indigo plant much contain a kind much less perfect in colour than that of the leaves; but one ought to have the labour and patience of the Indians in undertaking such a work, and have workmen as cheap as they are in that country, supporting the fact true, as Mr. Pomet delivers it from the relation of Mr. Tavernier.

Though I am a great friend to those improvements which may carry our manufactures to a greater perfection, yet I dare not propose this, because of the expense they must be at, who should try it; and because the profit arising from it would not perhaps equal what, however, I have here given the method of the Indians of Sanguin, that I may have no reason to reproach myself with having advised a thing which may be of some use to my country.

Good Indigo ought to be so light, as to swim upon water; the more it sinks the more it is to be suspected of being mixed with earth, either, or produced from its colour ought to be a deep blue, and to be a Violet, brilliant, lively, and bright; it ought to be

When that is done, they spread it in little boxes three or four feet long, six broad, and about three inches deep, and expose it to the air to dry it perfectly. They observe not to expose it to the sun, because it would flave the colour, by drying it; and they take a great deal of care to keep it from the rain, because it would destroy the colour.

more beautiful within than without, an! •ok •ning, and as it were filverd,

If it is too heavy in proportion wit'. bulk, i; ought to b; suspected, and its quality examined into; for as it is in price, it is fit that those who buy it, should be acquainted with the fraud:

It may be committed by the following: . i in it. the plant too much I the beating I the kind of it may be the li that the li certain that the quality of the matter is considerably increased by this distillation, but the Indigo is a great deal lighter II. beautiful for it, ii w bbeckifh, thick, heavy, and cuter -> b= thrown away than usual.

The second is the mining of the earth, or a certain brown filir, no land (which is pretty commonly found in th; bays by the sea side) and especially powdered KMC, wk'li die facts, stirring all well together, that it may incorporate, and the fraud not appear; and this fraud is much more easily committed in the powdered Indigo, than in that which is in cakes; because it is very difficult for those heterogeneous bodies to unite so well together, as not to make in many places, as it were, beds of a different nature, and thus, by breaking the piece of Indigo, the fraud is easily perceived.

The two following expedients may be used = ulc of, in wder 10 know the goodnet* or b*Jne& of InJig*

The first is to distill it in a glass of water. If it is pure and well refined, it will dissolve; but if it is adulterated, it will sink to the bottom of the glass. The second is to burn it. The good Indigo will burn all awi/, wher as the other, it rut, and flaw, lemoi after the true Indigo is consumed.

In itti, Indigo was sold at the Windward Islands, from three to four sols, no four sols per pound, according to its beauty, and the number of vessels to be freighted with it. I have known it sell at a much lower price; however, the planter would see fit of making a very considerable profit of it. [though he should sell it for no more than forty sols per pound, because it is commonly requires fewer vessels: iild lttf charge than a sugar-work.

Since the cultivation of Indigo in the West Indies has been brought from thence to England; and it may be hoped that the management granted by parliament to the proprietors, will enable them to procure this branch of commerce with such success, as to be a great advantage to the country, and of equal advantage to the colonies: but as yet the planters have not arrived at so much perfection as to be able to raise the quantity of it for most of the islands; so that I have seen of that country, has been to lurd as to render it almost insupportable, occasioned by the quantity of lime-water into the vat, in order to it; jkc ihc ta

As to the culture of the plant, by all the information I have been able to procure from thence, they commit a great error in sowing their seeds too thick, whereby the plants are drawn up with slender stems, which are not sufficiently garnished with leaves; nor are the leaves so large and succulent as they would naturally be

grow with the plants allowed a greater share of room, so that the stalks consist of little else but stringy vessels which are not dissolvable by the fermentation, and it is only the upper parts of the plant which are furnished with leaves; the young stems growing close together which are drawn up with slender stems, having no lateral branches, nor leaves, but at their tops; therefore it is not to be supposed, a great quantity of Indigo can be produced from plants so managed; for it is a common observation of the cultivators of Wood, that when their plants thire, and have narrow, thin leaves, they produce but little of the dye; so that they make choice or take strong land for sowing the seeds of this plant, and are careful to thin them, that they may have room to spread, and produce large succulent leaves, from which they always receive the greatest profit. If the planters of Indigo in America would but imitate the cultivators of Wood in the particular, [ny wwife certainly find their advantage in so doing.

Another thing in which they err is, letting the plant stand too long before they cut it, supposing from the height of the plant to procure a great quantity of the dye; but in this they are greatly mistaken, for the older the plant is before it is cut, the dirt and filth will be the thicker; therefore the best time of the plant will be dissolved by fermentation, nor will the leaves of the old plants be near so beautiful as that of the young. Therefore it is to be wished, that they would try some few experiments in the culture and management of the plant, by sowing thin, and keeping the plants perfectly clean from weeds, as also to cut them while young and full of juice, and hereby they will be better informed how to improve it to the greatest advantage. Not as labour is dear in that country, so many persons probably object to the expense of cultivating the Indigo in this method; therefore, to avoid this, I have before proposed sowing the seeds with a drill plough, whereby the soil appears will be greatly loosened, and the seed more equally sown; and by the use of the horse plough, ten acres may be kept clean from weeds with as small expense, as one when managed by the hand hoe, and by liring, of the ground often, and casting up the plants. Jicy wrmi^: grow more fronger, b- 1L: liable of Iwine dcjb-tiyed b/ Eies, and liave btger and more fucculcot falki and leaves.

INGA. See M. inia. INOCU. AT ING, or Budding. T; u i, ectnioni. practised upon all sorts of stone trees, as such as Peaches, Nectarines, Cherries, Plums, as also Oranges and Jambines, and is profitable; sort of grafting; irmoft ibra of fruit. The nicthead of performing it is as follows: you must be provided with a sharp penknife, having a flat half (the use of which is to raise the bark of the stock, so admit the bud and foine found with it, which ifluniM be soaked in water w incruz: in strength, and make it BVe pliable; then having taken off the cuttings from Ac titrej, you would propsgaw, j-ou I could choose a smooth part of the stock about five or six inch above the surface of the ground, if designed for dwarfs, and for half standards at three feet; but for standards, they should be boulded six or seven feet above ground; then with your knife make an horizontal cut cross the rod of the stock, and from the middle of that cut make a slit downwards about two inches in length, so that it may be in the form of a T; but you must be careful not to cut too deep, lest you wound the stock: then having cut off the leaf from the bud, leaving the two stalks remaining, you should make a cross cut about half an inch below the eye, and with your knife slit off the bud, with part of the wood to it, in form of an excubation: this done, you must IJI with ymir k: ife pull off that part of the wood was taken with the bud, observing when i-rthe eye of the buii bt left on it, or not (for all those buds which bite their eyes in slipping, should be thrown away, being good for nothing); then having F^: rided the bark of the stock where the cross is-

grow with the plants allowed a greater share of room, so that the stalks consist of little else but stringy vessels which are not dissolvable by the fermentation, and it is only the upper parts of the plant which are furnished with leaves; the young stems growing close together which are drawn up with slender stems, having no lateral branches, nor leaves, but at their tops; therefore it is not to be supposed, a great quantity of Indigo can be produced from plants so managed; for it is a common observation of the cultivators of Wood, that when their plants thire, and have narrow, thin leaves, they produce but little of the dye; so that they make choice or take strong land for sowing the seeds of this plant, and are careful to thin them, that they may have room to spread, and produce large succulent leaves, from which they always receive the greatest profit. If the planters of Indigo in America would but imitate the cultivators of Wood in the particular, [ny wwife certainly find their advantage in so doing.

Another thing in which they err is, letting the plant stand too long before they cut it, supposing from the height of the plant to procure a great quantity of the dye; but in this they are greatly mistaken, for the older the plant is before it is cut, the dirt and filth will be the thicker; therefore the best time of the plant will be dissolved by fermentation, nor will the leaves of the old plants be near so beautiful as that of the young. Therefore it is to be wished, that they would try some few experiments in the culture and management of the plant, by sowing thin, and keeping the plants perfectly clean from weeds, as also to cut them while young and full of juice, and hereby they will be better informed how to improve it to the greatest advantage. Not as labour is dear in that country, so many persons probably object to the expense of cultivating the Indigo in this method; therefore, to avoid this, I have before proposed sowing the seeds with a drill plough, whereby the soil appears will be greatly loosened, and the seed more equally sown; and by the use of the horse plough, ten acres may be kept clean from weeds with as small expense, as one when managed by the hand hoe, and by liring, of the ground often, and casting up the plants. Jicy wrmi^: grow more fronger, b- 1L: liable of Iwine dcjb-tiyed b/ Eies, and liave btger and more fucculcot falki and leaves.

INGA. See M. inia. INOCU. AT ING, or Budding. T; u i, ectnioni. practised upon all sorts of stone trees, as such as Peaches, Nectarines, Cherries, Plums, as also Oranges and Jambines, and is profitable; sort of grafting; irmoft ibra of fruit. The nicthead of performing it is as follows: you must be provided with a sharp penknife, having a flat half (the use of which is to raise the bark of the stock, so admit the bud and foine found with it, which ifluniM be soaked in water w incruz: in strength, and make it BVe pliable; then having taken off the cuttings from Ac titrej, you would propsgaw, j-ou I could choose a smooth part of the stock about five or six inch above the surface of the ground, if designed for dwarfs, and for half standards at three feet; but for standards, they should be boulded six or seven feet above ground; then with your knife make an horizontal cut cross the rod of the stock, and from the middle of that cut make a slit downwards about two inches in length, so that it may be in the form of a T; but you must be careful not to cut too deep, lest you wound the stock: then having cut off the leaf from the bud, leaving the two stalks remaining, you should make a cross cut about half an inch below the eye, and with your knife slit off the bud, with part of the wood to it, in form of an excubation: this done, you must IJI with ymir k: ife pull off that part of the wood was taken with the bud, observing when i-rthe eye of the buii bt left on it, or not (for all those buds which bite their eyes in slipping, should be thrown away, being good for nothing); then having F^: rided the bark of the stock where the cross is-

of GoR wt< made, whh the Hat haft of your penknife
cicir w LIC win)¹- you should the IA The bud therein.
obteryne r o pint- it in mouth betw... and and the
wood of the (lock, cutting off any part of the mid
blr-ripping to die bud, which may be tsj
(lit nude in the fluck i am; to having exactly fitted
the bud to the (bx.iu)ou r m, the them closely round
with haft iTiji, I • pinning at the under part of the fit,
and fa proceed [to the top, taking care that you do
not bind round ;: the eye of the bud, which should be
left apt n.

Wlwii your buds have been inoculated three weeks
or fi : month, you will see which of them have taken ;
ihdc of th which appear discolled and black, being
dead . but those which remain fresh and plump,
you may depend are joined, and at this time you
muu look to the lardage, which, if not done in
timi. will pinch the flock, and greatly injure, if not
destroy, the bud.

The March full iwine Jou moft tut oi the flock
about three inches above the bud, hoping it that the
wv may pass off, and not enter the flock, to this
part of the flock left above the bud, it is very proper
to fisten ti. float which proceeds from the bud, and
would be in danger a.
veoii being blown out, if not pre-
vented, but this must continue no longer than one
year, after which it must be cut off close above the
bud, that the flock may be covered thereby.

The time for inoculating is, from the middle of
Junt I into the middle of August, according to the
for : rdodi of the fisifc, and the particular sort of
tree* to b< propsgatnf , but the time may be easily
known, by trying the buds, whether they will come
off well from the wood. I However, the most gen-
ericd rule is, when j ou observe the buds formed
at tin : extremity of the time year's shoots, which
is a fl ; of these having finished their spring growth,

The : if first commonly inoculated is the Apricot,
Md tie nail the Oringe-trrrt, which should never be
done until die n : of the month of August, and in doing of
this work, JOJ fioulti : always make choice of cloudy
wcafter ; •: if it be done in the middle of the day, in
very hot weather, the shoots will perforce fall, as to
l<ve the bud : distance of moisture, nor should you
t*kc off ih : cuttings from the trees long before they
ait u . . : if it be done in the middle of the day, in
dng) from some distance, as it often happens, you
hould then be provijrd with a tin box or case, hav-
ingaf< ; set about ten inches long, and a cover - the
cop, . : which must have five or six holes, in this fucket
you J'ould put as much water as will fill it about
two or three inches high, and place your cuttings
therein in ai : upright position, so that that part which
•wasr, it from the tree may be set in the water, and is
taken down the cover to keep out the air, and the
holes in the cover will be sufficient to let the respira-
tion of these branches pass off, which, if pent in,
would be very harmful to them; you must also be
careful to carry it upright, that the water may not
reach to the buds ; for it is a very wrong practice in
those who throw their cuttings all over in water, which
is saturates the buds with moisture, that they have no
straining force left to insulate the tip of the flock,
whereby they very often miscarry.

But before I leave this head, I beg leave to observe,
that though it is the ordinary practice to divide the
bud of that part of the wood which was taken from
the shoot with it ; y^{rs} in many sorts of tender trees,
it is best to preserve a little wood in the bud, with-
out which they often miscarry. - The not observing
this, has occasioned some people to imagine, that some
sorts of trees are not to be propagated by inoculation;
whereas, if they had perceived it in this method,
they might have succeeded, as I have several times
experienced.

INTYBUS. See **CYRUSIVM.**

INULA. Lin. Gen. Plant. 860. Ennis. Catalp. He-
lminis. Raii Meth. 33. Alter. Tourc. Inf. R. II.
431. tab. 274. Eleagnus.

II. CHARACTERI GEN.

It hath a spatulate compound flower, made up of indicated
impulses, composed of 12 rays, spreading from base,
the outer being the longest. The disk, or middle of the
flower, is composed of 40 or more fertile, and the fer-
tile, or ray of the female, and fertile, together, and set
a torus. The hermaphrodite flowers are funnel-shaped,
crisp, and set into five segments at the top; these have
five long slender stamens, terminated by cylindrical an-
thers, which stand up at the top: they have an anther-
mon, crowned with hairs, together a female five the
length of the stamens, •**JJL** by an upright leaf sig-
na. The female half forms a narrow concave torus,
or stigma, and a long crowned germ with a hairy style,
and an upright stigma. The pericarp is tubiform be-
come a single, narrow, four-cornered leaf, crowned with a
down, being as a solid receptacle.

This genus of plants is ranged in the •• fecotid feffior
of Linnæus's nineteenth class, intitled Syngenesia
Polygamia superflua, which includes the plants with
a cen : compound flowers, made up of hermaphrodite flowers
in 11 : iiiile, intl female halt' :oi : for the rays, which
are fringed.

The Species are,

1. **INULA (Helicium)** foliis amplexicaulis ovatis, ri-
gulis, lobis tomentosis, calycum squamis ovatis.
Amar. Arab. 1. p. 410. Eleagnus with erect rays,
fertile, which enclose the buds, singly in their under side,
and the fields of the uppermost row. Alter monachum
maximus, Helicium dictum. Tourc. Inf. 432. The
great Eleagnus, called Helicium.
2. **INULA (Oera)** foliis amplexicaulis dentatis, hirsu-
tibus, radice tuberosa, calycibus lanceolatis acute
pinnatis, Lin. Sp. Plant. 1236. Inula with long es-
serted rays, entering the buds, singly at the bottom row,
but none on the buds, four-angled, which have but few
flowers. Alter Inula radice odora. C. B. P. 266.
Yellow Mountain with a sweet root.
3. **INULA (Salsica)** foliis sessilibus lanceolatis retuseis
serratis scabris, floribus inferioribus sterilibus, ramis
sub-angulii : Amar. Arab. 1. p. 410. Inula with
four-angled, serrated, rough, pointed leaves, sitting close
to the buds, and the under flowers growing taller than
the upper, and singular branches. Alter montana lo-
tris, foliis glabro folio. C. B. P. 266. Yellow Moun-
tain Mountain with a smooth Yellow leaf.
4. **INULA (Germaria)** foliis sessilibus lanceolatis serratis,
scabris, floribus subsessilibus. Lin. Sp. Plant.
113. Inula with four-angled serrated leaves sitting close
to the buds, which are rough, and flowers growing in
clusters. Alter Thuringicus alpinus hirsutus,
montanus, flore luteo parvo. Haller. Jen. 132. Yellow
head-headed Mountain Mountain of Georgia, with a
small yellow flower.
5. **INULA (Crotonea)** foliis hirsutibus cordatis trian-
gulatis. Lin. Sp. Plant. 843. Inula with narrow fully
erect rays in three rows. Alter maximum flavis
crithimum chrysanthemum dictum. Raii Meth. Ed. 3.
p. 174. Yellow mountain Mountain, called Golden Sam-
ple.
6. **INULA (Montana)** foliis lanceolatis hirsutis integris-
simis, caule unifloro calyce brevi subulcano. Lin. Sp.
Plant. 124. Inula with long, four-angled, entire leaves,
one flower on a bud, having a short stalk ray. Alter
montana luteo magno flore. C. B. P. 267. Moun-
tain Mountain with a large yellow flower.
7. **INULA (Oera Gled)** foliis amplexicaulis oblongis,
hirsutibus hirsutis, caule pinnato, corymboso. Lin.
Sp. Plant. 1237. Inula with oblong, entire, hairy leaves,
and flowers growing in a corymb. Contra Panagæa
longiora. C. B. P. 265. Mountain with 5 flowers.
8. **INULA (Africanus)** foliis amplexicaulis lanceola-
tis, distinctis serratis, subna villosis, caule ramoso
villoso crasso. Flor. Ind. 720. Inula with four-
angled leaves, entering the buds, none on the
under side, and an oval branching leaf. Alter palustris
hirsuta, foliis longiore longioribus. Tourc. Inf. 432.
Yellow Mountain with a large smooth leaf.

9. IKUIA [Bait] folii ferrugine lanceolatis recurvatis, subterris o^afactoris, flw
caulis teretibus...
foliis...
floribus...
an.
lutws

10. IKUIA (Lupinus) foliis oblongis decurrentibus decussatis, floribus corymbis terminalibus subsessilibus.
caulis...
foliis...
floribus...
an.
lutws

11. IKUIA (Spartea) foliis ovalibus in verticillis ternatis...
caulis...
foliis...
floribus...
an.
lutws

12. IKUIA (Spartea) foliis lanceolatis carnosis truncatis...
caulis...
foliis...
floribus...
an.
lutws

13. IKUIA (Spartea) foliis lanceolatis hirsutis oppositis...
caulis...
foliis...
floribus...
an.
lutws

14. IKUIA (Marianus) caulis erecto hirsuto, foliis lanceolatis...
caulis...
foliis...
floribus...
an.
lutws

15. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

16. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

17. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

18. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

19. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

20. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

21. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

22. IKUIA (Fragaria) foliis lanceolatis acutis, subtus...
caulis...
foliis...
floribus...
an.
lutws

decays; these should be planted in rows about a foot
apart, and nine or ten inches distance in the rows;
the spring following the ground must be kept clean
from weeds, and in autumn it is slightly dug; it
will promote the growth of the roots; there will be
fit for use after two years growth, but the roots will
abide many years, if they are permitted to stand; how-
ever, the young roots are preferable to those which are
old and thrifty. It loves a gentle sandy soil, and a
dry.

The second sort hath a perennial root, from which
arise several stalks, about two feet high. The leaves
at bottom are oval, adpressed, and hairy; those above
embrace the stalks with their base. The stalks are
divided into several branches, garnished with
flourishing yellow flowers. It bears but a very short
colour when broken. It flowers in July, but rarely
ripens seeds here.

The third sort hath a perennial root, from which
arise many spear-shaped leaves, which are smooth
and incurved. The stalks rise near two feet high,
they are angular, and branch at the top into several
foot-stalks, each sustaining one yellow radiated flower.
It flowers in June, July and August, and the seeds
ripen in September.

The fourth sort rises with an upright stalk between
three and four feet high, with spear-shaped leaves,
which are turned backward, indented on their edges,
and rough on their upper side. The flowers are col-
lected in close bunches on the upper part of the stalks;
they are small and yellow. It grows on the hills, and
other mountainous parts of Europe. It flowers in
June, and the seeds ripen in autumn.

The fifth sort grows naturally on the sea-coast of many
parts of England. I have seen it growing plentifully
near Sheerness, in the life of Sherry, in 1660. It
rises with an upright stalk a foot and a half high,
garnished with spear-shaped leaves, which are erect
in clusters, and are shorter on each and a quarter
long, and one eighth of an inch broad, ending broader
toward the top. The flowers come out at the top of the
stalks in small umbels; they are yellow, and have a
bunch of rays; this flowers in July, and the seeds
ripen in autumn. The younger branches of this
plant are frequently sold in the London markets
for Saffron; but this is a great mistake, because this
plant has none of the warm aromatic taste of the true
Saffron.

The sixth sort grows naturally in Germany; it rises
with upright stalks a foot and a half high, garnished
with spear-shaped leaves which are covered with soft
hairs, and are erect. The stalks each support one
large yellow flower, which appears in July, but rarely
ripens seeds here.

The seventh sort hath a perennial root and an aerial
stalk; this grows naturally in Hungary. The leaves
are oval and hairy; the stalks branch at the
top into several smaller branches garnished with
oblong oval leaves, which are indented on their edges,
and end in acute points. The flowers terminate the
stalks, each branch ending with one large, yellow,
radiated flower, sitting in a leafy empulment, whose
leaves are oval, and placed like the scales on fish over
each other. The flowers are succeeded by narrow
four-cornered seeds crowded with down. It flowers
in June and July, and the seeds ripen the latter end
of August.

This sort may be propagated by seeds, which should
be sown in autumn soon after they are ripe; for if
they are kept till the spring, they seldom grow; but
where they are permitted to stand, the plants will
come up the following spring without any care, and
may be either transplanted the following autumn, or
if they are designed to remain, they should be
hoed out to the distance of ten inches, or a foot each
way, and constantly kept clear from weeds; their
roots will be fit for use the second year.

But most people propagate the plant by offsets, which
if carefully taken from the old roots, with a bud, or
eye, on each, will take root very easily; the best time
for this is the autumn, as soon as the leaves begin to
fall.

The eighth sort grows naturally in the town of France,
Spain, and Italy; it hath a perennial root, from
whence arise several stalks about one foot high; the
lower leaves are spear-shaped and prickly; the upper
half embrace the stalks, which divide into several
branches, each being terminated by one yellow flower,
which appears in July, but seldom perfect seeds
here.

The ninth sort rises about a foot high, dividing into
many branches, which are garnished by oval hairy
leaves, which half embrace the stalks with their base,
and are smooth and shining.

S

W. but it is « nriirally in
"A, B, which ate usal in medicine,
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ong,
^ Tife. l
fc

each of the branches is terminated by one Urge yellow (lower, who' emralctnetn ij compofed of oval feals. li (lowers in July, and I Auguft, but never perfects feeds

The eleventh fort grow* naturally in I lungfry i tti: rils with feuple ftraight flalks near two feet high, garnifhed with oval fpear-fhaped leavts, which are flighly indented on the edges, and fit clofe to the ftilli', wrsiuh arc hairy, and divide in form of a corymbu at the top. The flowers are irepretty Urge, of a pjlt yellow colour, and appear in July, but a« not fucceeded by feeds in this country.

The twelfth fort growi J. naturally in the Canary [dandjs this rils with feveral flubby flalks near four feet high, which divide into feveral branches, t, gsniihrd with clufers of narrow feble leaves, which are Ji-vided into three fegments at the joints. The flowers conic our on the fide of the branches at the top of the ftiiik-, they are fmall, and of a pole yellow to- low, appearing in Augoft.

Th. twelfth fort, firth, fixth, feventh, tight!), nll. ninth fort are abiding filing, which vll tiiriv and flower in the open air in England i they may be all propagated by parting their roots. The belt time for doing of this is in autumn, it which time the plint: may be removed, they may be in'enTii*ed with oth.: flowering plants in the borders of large gardens, v. here they will make an agreeable variety during the continuance in flower. As their roots multiply precily flit, they ihould be fifted more than LWO feet fr)m other ah. and if they ut removed every third year, it will be often enough, provided the ground between them is dug every winter, and, in flummer, if they are kept clear from weeds, they will require no other care.

As fow of these forts produce good feeds in England, they may be propagated by lowering of the feeds in the fpring, when the plants appear, they fhould be kept clean from weeds till they are fit to remove, when they fhould be transplanted on a fandy foil, fix inch; funder, obferving to fhade and water them till they have taken new roots, and digging them up in autumn they may be transplanted into the borders where they are to remain.

The thirteenth fort grows naturally in thci'onthof Francr. And on the Pyrenean mountains. Kbit lath a thick fibre in a root, which is perennial, sending out many trailing indented leaves, whole bulk runs along the flalks from one joint to another: from the root arife three or fiir flalks about two feet high, which divide each into three or four fmall branches, which are terminated by clufers of fmall yellow flowers, fitting clofe between the fmall leaves, thofe appear in June and July, and are fucceeded by narrow leavts, crowned with down, which open in the autumn. It is propagated by feeds, which fhould be fown in a bed of light earth early in the fpring, in May the plants will appear, which fhould be kept clean from weeds till they are fit to transplant, when they fhould be planted in an ead bedden, at about fix inches diftance each way, watering and fhading them till they have taken new roots, after which they will require no other culture but to keep them clean from weeds till the autumn, when they fhould be planted where they are defigned to ftand.

The eleventh fort grows naturally near Montpellier, and rife in July, the lath a firm root, from which arife two or three oval flalks about two feet high, garnifhed with broadly oval leaves placed alternat, fitting clofe to the flalks, the veins of the leaves are ftrander, and ftrander like net-work. The flalks are terminated by one yellow flower, fubfied in a fough fealy empolvement, and at the two joints of the flalk immediately under the flower, come out fmall foot-flalks, with fmall flowers that clofe on the top. This plant follows ourfelves above two or three years,

The twelfth fort was difcovered by the late Dr. Houfhou, growing naturally at La Vera Cruz; this riles with a flubby flalk about two feet high, dividing into many fmall branches, which are hairy, and garnifhed with narrow fluff leaves placed oppofit, without foot-flalks; from the edges of thofe are long hairs, which are fliff, and come out by pairs, at the end of the branches with the naked foot flalks, which are four or five inches long, containing one fmall, yellow, radiated flower.

This is propagated by cuttings during the fummer feafon, which muft be planted on a bed of light earth, and fhaded till they have taken new roots, which the plants muft be treated in the ufual manner as other hardy exotics, fhading them in winter. The fourteenth fort grows naturally in Maryland, where it grows naturally; this rife with a ftrong flalk about a foot and a half high, and is very clofely fet with prickly leaves, which are fpear-shaped, and near one inch broad in the middle: toward the upper part of the flalk they are broader, and terminate by a clufter of fmall yellow flowers, difpofed in form of an umbel. This plant flowers here in Auguft, but has not as yet perfected feeds in England. The fifteenth fort was difcovered growing naturally at Carthagena, by the late Dr. Houfhou; this riles with a flubby flalk to the height of ten or twelve feet, divided into feveral large branches, which are terminated by fpear-shaped leaves five inches long, and one inch and a half broad in the middle, and ftrander on their upper fide, but on their under have three longitudinal veins. The flowers are produced at the ends of the branches, having very large fealy empolvements, they are of a large and a fmall fower, of a pale yellow colour. This plant is too tender to live in the open air in England, fo muft be continually kept in the back-ftove. It is propagated by feeds, which muft be procured from the country where it naturally grows, for it does not propagate here; these muft be fown in a bed of light earth, and when the plants are fit to remove, they fhould be each planted into a fmall pot filled with light earth, and plunged into a frefh her-bed, raising them in the fame manner as other tender plants from the fern copery.

JOHNSON. LA. Dale Callicarpa. Lin. Gen. Plant. 127. Spondylococcus. Mich. 20. This plant was difcovered by the late Dr. Dale, of South Carolina, in memory of Dr. Johnfon, who published an edition of Gerard's Herbal, corrected and much improved.

therefore your plants fhould be raifed from feeds in fauxed ilic.li. The feeds may be fown in the faine lime, and in the faine manner as is directed for the tenth fort, and the plants afterward treated in the fame way.

The fifth fort grows naturally in the fide of the hills in the north of England, which are fowed by the air, therefore is feldom attended from abroad. The roots of this are perennial, but the flalks decay in autumn; and if any one has curiofity to keep a plant or two of it in their gardens, they may conveniently fet to a fandy border from the place of its natural growth, and, by keeping it moft in dry weather, it will thrive pretty well, but the flalks will not rife high, nor will the leaves be near fo fliffy as in the fide of the hills.

The twelfth fort will not live abroad in the open air in England, during the winter feafon, fo muft be removed into fhelter in autumn, but fhould have as much free air as poffible all times, when the weather is mild, otherwife it is apt to draw up weak, and cold weather the plants muft have very little water, for their flalks and leaves being fo tender, they are very apt to rot with too much wet; in fummer they fhould be placed about wuh ailver harly garden plants in a fhaded fite, where they will add to the variety, though they are plants of no great beauty, and feldom D Sower in England, unless the fummer is very trunnt. This is eafily propagated by cuttings, any time in fummer, which, if planted in a fandy border, will take root in a fhort time.

The thirteenth fort was difcovered by the late Dr. Houfhou, growing naturally at La Vera Cruz; this riles with a flubby flalk about two feet high, dividing into many fmall branches, which are hairy, and garnifhed with narrow fluff leaves placed oppofit, without foot-flalks; from the edges of thofe are long hairs, which are fliff, and come out by pairs, at the end of the branches with the naked foot flalks, which are four or five inches long, containing one fmall, yellow, radiated flower.

This is propagated by cuttings during the fummer feafon, which muft be planted on a bed of light earth, and fhaded till they have taken new roots, which the plants muft be treated in the ufual manner as other hardy exotics, fhading them in winter. The fourteenth fort grows naturally in Maryland, where it grows naturally; this rife with a ftrong flalk about a foot and a half high, and is very clofely fet with prickly leaves, which are fpear-shaped, and near one inch broad in the middle: toward the upper part of the flalk they are broader, and terminate by a clufter of fmall yellow flowers, difpofed in form of an umbel. This plant flowers here in Auguft, but has not as yet perfected feeds in England.

The fifteenth fort was difcovered growing naturally at Carthagena, by the late Dr. Houfhou; this riles with a flubby flalk to the height of ten or twelve feet, divided into feveral large branches, which are terminated by fpear-shaped leaves five inches long, and one inch and a half broad in the middle, and ftrander on their upper fide, but on their under have three longitudinal veins. The flowers are produced at the ends of the branches, having very large fealy empolvements, they are of a large and a fmall fower, of a pale yellow colour. This plant is too tender to live in the open air in England, fo muft be continually kept in the back-ftove. It is propagated by feeds, which muft be procured from the country where it naturally grows, for it does not propagate here; these muft be fown in a bed of light earth, and when the plants are fit to remove, they fhould be each planted into a fmall pot filled with light earth, and plunged into a frefh her-bed, raising them in the fame manner as other tender plants from the fern copery.

The fourteenth fort grows naturally in Maryland, where it grows naturally; this rife with a ftrong flalk about a foot and a half high, and is very clofely fet with prickly leaves, which are fpear-shaped, and near one inch broad in the middle: toward the upper part of the flalk they are broader, and terminate by a clufter of fmall yellow flowers, difpofed in form of an umbel. This plant flowers here in Auguft, but has not as yet perfected feeds in England.

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JOHNSON. LA. Dale Callicarpa. Lin. Gen. Plant. 127. Spondylococcus. Mich. 20. This plant was difcovered by the late Dr. Dale, of South Carolina, in memory of Dr. Johnfon, who published an edition of Gerard's Herbal, corrected and much improved.

JON

The CFIARACTEP.
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Dr. Linnaeus ranges this genus of plants in the first
section of his fourth class, entitled Pentandria Monog-
gynia, which includes the plants whose flowers have
four stamens and one pistil. As the seeds of this plant
were first discovered in Carolina by the late Dr. Dale with
this title, in the year 1744, and with them the
name of the genus, which was before it was men-
tioned by Dr. Linnaeus, I have continued it un-
der Doctor's title.

We have but one species of this genus, viz.
JONQUILLA (Americana) floribus verticillatis bulbibus,
foliis ovato lanceolatis oppositis, caule frutescente. Dale.
Astrucy Jonquilla with oval spear-shaped leaves placed op-
posite, and flowers growing in whorls from the top of the
stalk. Carolinae. Ad. Upland. 1744. Mr. Catesby,
in his History of Carolina, has figured it under the
following title, Frutes baccafer verticillata, foliis obo-
vatis lanceolatis deorsum de conjugatis, baccais purpureis deni-
catis. B. Carol. vol. II. p. 47.

This shrub grows plentifully in the woods near
Charleston, in South Carolina. It rises from four
to six feet high, sending out many branches from the
root, which are woody when young, like those of the
Waxing-tree, garnished with oval spear-shaped leaves
placed opposite, standing on short stalks; they are
about three inches long, and one inch and a quarter
broad in the middle, growing narrow at both ends,
and a little indented on their edges, their surface

anc
lms. . . - IWB hoary. The flowers come out
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into four obscure lobes as the
and one of a deep purple colour;
which afterwards change
turn lUft to a bright red colour, bu:
to 3 deep purple when ripe, and inclose four lin
lung l

The Jonquilla of rhit plant wetr frm me b
from Carolina, in 1744. The plants were
then raised in several curious gardens in England;
most, if not all all of them were afterward planted in
the open air, where they flourished very well for some
years, and several of the plants produced flowers in
the Chelsea garden for four or five years, but these
were not succeeded by fruit; and in the severe frost
in 1740, they were most of them destroyed, as were
in 1740, they were most of them destroyed, as were
in 1740, they were most of them destroyed, as were

dlb ilu
young plants which were raised from Dr.
Dale's seeds the year before, which were only sheltered
under a frame; so that until the Doctor sent a fresh
supply of seeds in 1744, there were scarce any of the plants
living in the English gardens; but since then, there
has been quantities of the seeds brought to England.

This plant rises easily from seeds, if they are sown in
a moderate hot-bed, the best way is to sow the seeds
in pots, and plunge them into a raised bed of a moderate
warmth; and when the plants come up, and have ob-
tained some strength, they should be gradually raised
to the open air, from which they should be removed
in June, and placed in a fresh-red situation, where
they may remain till autumn, during which time
they must be kept clear from weeds, and gently re-
freshed with water in dry weather; but as these young
plants are tender, they should be placed under a frame
before the early frost comes on; for a frost in au-
tumn will kill the tender part of their shoots, which
often settles their stalks to decay most part of their
length before the spring. During the winter season
they should be covered from frost, but in mild weather
they should enjoy the free air, otherwise their shoots
will turn m

Jul't I. sive the plants shoot, they should be carefully
carefully

IPO

turned oilt of the pots, fo at not to break thsir ror;tg)
and pan oj ilitm my be planted in finall pota
with light i irth, and die otliera into .1 run kJ
to a warm situation, at about four or five inches above
ijwi chofc : the pots should be plunged into a moder-
derm; but bed, which will forward their taking root,
but afterwards they should be opened in the open air
as before; their piano in the pots should be flack-
tured under a frame in winter for three or four years,
ill ility havi obtained strength, then they may be
tum'd out of rie pots, and planted in a warm situa-
tion, where they will line in the open air in common
countries; but in severe frost they are in danger of be-
ing killed, if they are not sheltered; therefore the
surface of the ground about their roots should be cov-
ered with old tan to keep out the frost, and their
tops covered with Straw, Peat-moss, or Fern, which
will protect them.

These plants in the beds should also be covered with
peat, or straw, in frosty weather, and after they have
obtained strength, they may be transplanted into a
warm situation, and treated every winter in the same
manner as the other.
The leaves of this shrub were often used by Dr.
Dale in tiropfic] cases, with very good success. A
particular account of the virtues of this, and many
other plants of Carolina, was sent me with dried sam-
ples of each, by the Doctor, during the last war; but
at this time were taken in their passages, they were all
lost, and the Doctor dying soon after, I could never
recovery ilictn.

JONQUILLA VSPI. Sec-
JONQJIL, Sec-
IPO MOEA. Lin. Gen. Plant. 192. Quamoclit.

Tourn. Inst. R. H. 116. tab. 39. Quamoclit, or Jon-
quilla Americana.
The CHARACTER is,
The flower both a small permanent capsule, cut into
five parts at the top. The pistil is four-lobed, being
cylindrical tube, which rises to five parts, spread-
ing into five lobes. It hath five oval-shaped leaves, near the
base of the pistil, terminated by small filaments. In
the bottom of the tube is situated a round germ, support-
ing a slender style, crowned by a round stigma. The
tube afterward becomes a round capsule cut
into five parts, which are always full.
This genus of plants is ranged in the first section of
Linnaeus's fifth class, entitled Pentandria Monogynia,
which includes those plants whose flowers have five
stamens and one pistil.

altar
cylindrical tube, which rises to five parts, spread-
ing into five lobes. It hath five oval-shaped leaves, near the
base of the pistil, terminated by small filaments. In
the bottom of the tube is situated a round germ, support-
ing a slender style, crowned by a round stigma. The
tube afterward becomes a round capsule cut
into five parts, which are always full.

Thi
lie first section of
Linnaeus's fifth class, entitled Pentandria Monogynia,
which includes those plants whose flowers have five
stamens and one pistil.

Iron
floriri
futsolentis Hart. Cliff. 60. Jonquilla with
very narrow many-pointed leaves, and solitary flowers.

2. IROQUOTA (Americana) foliis cordatis acuminatis, basi
angustatis,
Quamoclit foliis tenuiter serratis pennatis. Tourn. Inst.
R. H. 116. Quamoclit with narrow, cut, winged
leaves, and many flowers on a stalk. Quamoclit Ameri-
cana folio hederæ formæ mucronato. Com. Rar. Plant.

2 [Aman;a
-tud 1e
floriri
futsolentis Hart. Cliff. 60. Jonquilla with
very narrow many-pointed leaves, and solitary flowers.

3. IROQUOTA (Americana) foliis cordatis acuminatis, basi
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leaves, and many flowers on a stalk. Quamoclit Ameri-
cana folio hederæ formæ mucronato. Com. Rar. Plant.

4. IROQUOTA (Americana) foliis cordatis acuminatis, basi
angustatis,
Quamoclit foliis tenuiter serratis pennatis. Tourn. Inst.
R. H. 116. Quamoclit with narrow, cut, winged
leaves, and many flowers on a stalk. Quamoclit Ameri-
cana folio hederæ formæ mucronato. Com. Rar. Plant.

5. IROQUOTA (Americana) foliis cordatis acuminatis, basi
angustatis,
Quamoclit foliis tenuiter serratis pennatis. Tourn. Inst.
R. H. 116. Quamoclit with narrow, cut, winged
leaves, and many flowers on a stalk. Quamoclit Ameri-
cana folio hederæ formæ mucronato. Com. Rar. Plant.

Flu
pluceo odorata. Sloan. Cat. 55. Greater from hand
Bul.

Bix&euA with a ylt&w faat / <tw, cgltd Spexijh Arbour Vim.

f. IwvriiA [fiilAi) foliis trilobis cordatis, pedunculiv rristorU. Lin. Sp. Plant. 101. Ipomtn with liavt-fiy.pfd Irtn-ci iffojo^ tra bin, a>ut tkrtjfiouxs t* a fit/lk. Convolvulus pentaphyllos minor, flare purpOltK Sloan. Cat. 55. Smtuir fivi-kaixd Sit cn'A a furpit firjHt.

f. IPOMOEa ffigetnsfolia) foliis pilmatis, ftoribu!. ag-grgatis, Flur. ZcyL 79. [fmmata miib bisd-Jbafai Tur-ti, .ittJjictuergrewJHg indujctrt. Voliibil' bnrna prs tipnuss diiU, Hart, liltii. 318. f'akbiisof feet.

S. IPQMOEA foliis digitat» glabr'u floribuj fellilibus, caule lasvi. Lin. Sp. Plant. 161, fpuwtt taiVi fmsub taad-Jbupei Itmes, wttfe teiafi cleft, end a fmsib fldk. Convolvulus qi glabor Americanus. PILIC. Aim, 116. 5m.

The first grows naturally in both Indks; in the West Indies it is called Sweet-William, and is (bated Indian Pink) it rises with 2 twining stalks seven or eight feet high, ending out many Qcadet twining brinchts, which twist about any neighbouring plants for support; (the leaves are) winged, being pointed at the ends; of very fine narrow Ubc., not thicker than a ribbon; when they are about an inch long, of a deep green, and sometimes in pairs opposite, and it is then they are alternate - die flou 1 - come out singly from the side of the stalk; Hanging upon (the leaves) are about one inch long; they are funnel-shaped, and have a tube an inch long, which is narrowed at the mouth, and is divided into five or six segments; they are of a moderate size, and are of a deep purple colour, and are very beautiful. This is an annual plant in England, but in the Indies it is so in the native place; I cannot tell for as the seeds fall to the ground, (as there is a Tuccellion of young plants, which continue flowering great part of the year.

This is a tender plant, so will not thrive in the open air in England; it is propagated by seeds, which should be sown in a hot-bed in the spring, (as the plants will soon appear, they should be each transplanted into a small pot filled with light soil, where they twine about each other, for then it will be difficult to disentangle them without breaking their tops. When they are pottrf, they should be plunged into a new hot-bed, and should be covered by each plant first.

[talk] to turn about; after they have taken new root, they (should have a good share of) air in warm weather; their drawing up weak and when they are advanced (so high to remain under the frame, they should be removed into the can-bed in the stove, where they should have support, for their branches will extend to a considerable height. They will begin to flower in June, and there will be a succession of flowers till the end of September, and the seed will ripen well in this situation every autumn.

The second grows naturally in Carolina and the Bahama Islands; - this is also an annual plant in the Indies, but it is so tender as to require a hot-bed. It has a twining stalk, which rises to a considerable height; high, garnished with heart-shaped leaves ending in acute points, which are divided into three or four at their base; the flowers come out from the side of the stalk; branches, upon slender foot-stalks, which support three or four flowers of the same colour. And uze

Qowen of the same kind. This is a variety of the first with orange-coloured flowers, but they do not differ in any other respect. If the seeds of this sort are sown in a hot-bed in the spring, and when the plants come up, if they are gradually hardened, and afterwards transplanted into a warm border, it is possible to have the seed flowers and fruit in good season, but most people raise the plant on a very gentle hot-bed, and transplant them afterwards into another, by which method they are brought forward, so will permit them to be earlier.

The third sort is like the second, but the leaves have

no alpiK, and the flowers are of a Rose colour, and are called italk Itallainini one flower. This may be treated in the lime manner as the second fort.

The fourth fort grows naturally in the West-Indies, where it twines about any neighbouring support, and rises ten or twelve feet high; it is furnished with heart-shaped entire leaves; the flowers come out from the side of the branch, and are upon slender foot-stalks; they are of a blue colour, and they are not an inch long in the finest specimens, but entire.

This sort is propagated by seeds, which should be sown in a hot-bed in the spring, and when the plants come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

The fifth fort is cultivated in most of the West-Indies, but is supposed to have been introduced thence from the Spanish Main, the seeds of which are called in the Indies, and sent out many years ago; (as the seeds are) very tender, and are not so hard as the seeds of the first fort, from whence it has the appellation of Spanish Arbour Vine.

The sixth sort is a perennial plant, but too tender to thrive in the open air in England; the seeds of this must be sown in a hot-bed in the spring, and when they come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

This is a perennial plant, but too tender to thrive in the open air in England; the seeds of this must be sown in a hot-bed in the spring, and when they come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

The eighth fort grows naturally in most of the West-Indies; it has a twining stalk, which rises ten or twelve feet high, and is furnished with leaves divided into three or four at their base; the flowers are of a purple colour, and are upon slender foot-stalks, which support three or four flowers of the same colour. This is also an annual plant, and should be sown in a hot-bed in the spring, and when the plants come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

The ninth fort grows naturally in the West-Indies; it has a twining stalk, which rises ten or twelve feet high, and is furnished with leaves divided into three or four at their base; the flowers are of a purple colour, and are upon slender foot-stalks, which support three or four flowers of the same colour. This is also an annual plant, and should be sown in a hot-bed in the spring, and when the plants come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

The tenth fort grows naturally in the West-Indies; it has a twining stalk, which rises ten or twelve feet high, and is furnished with leaves divided into three or four at their base; the flowers are of a purple colour, and are upon slender foot-stalks, which support three or four flowers of the same colour. This is also an annual plant, and should be sown in a hot-bed in the spring, and when the plants come up, they should be gradually hardened, and afterwards transplanted into a warm border, it is possible for the first fort, for it is 100 tender 10 thrive in the open air here.

Thii fort require* the fame treatment a the two fer- per, with winch it will proikier fluwm ami perfect its fcedi in England. I R K S J N E. Lin. Gen. 1113. Amaranth us. Sloin. Cot. Jam. +9,

The CHARACTIKS are, ••!> mult snl female Jkuvri en Jifftrftii/ pl,xnt<; the •mat Jltweri bayt cm empitlmtt ampefrj of t^M mat Jmell fcaava, arujr.t crt. 't.j>.,;!!; ;-tir.jlw/Y; !p?ta'r, tinJ fi:t ntSorijitiiia.: 1 'ffjiluaixa, taircA ••miiatrtt try • lir siber pknti, botit ~jh; Hit tmp.iUmO U ami cm tit mate, with *» fJOL prmn itu 1. l;yo rMt&jh ftgma\ tbecmpoianmt efaratri faamaas This genus is •ged in the fifth order of Linreus*s (wenty-leromi tsi's of plui: I) icedj Vn- tandria, {torn their having male ind female flowers on different plants, and tlic male flower, having five ffjusiiia.

Wt know but one SPECIU of this genus, rV, luttmt (Ctb/mdet.) Ljn-i Amaranth** ynthfim-i* This plant grows rsl. the 01W iflands in the are weak, ib require fupport i twy rife ten or twelve i'ect high, having large knots ««chjoit d, gamifhri with oval, lhear-rttrped, fmooth ICJVCJ. The art very (Jiftuted, branching out o every fide; the dowers »re produced on the top, : of a pale yellow colour; the'e appear in July and i—r» —I • a warm ftom the feed. It is propagated by J 9 ivut-beti in the fpirr- terward treated in rife fan; mana ,ccWd far the tender fore oi' AJ>: : arc grown too tall to remain in the fan: fhouJi be removed to the bwk-ftove, plunging the poa ioro the an-bed, ind fuppor: tlic plants wiib a trellis to previ 1 other plants; in this firuation they will p- anJ i'eedj the licond year, but the plants may be con- tinued three or (bur years longer.

IR ISL Toum. Itift. R. H. \$\$\$3. tab. 186, 187. ISS- R ISL Toum. R. Fknier^e-ineeiif i J-Itmk.

CHARACTERS ARE, fi*aito)w <tb4 (face* j ert ^ fi l f i£ GJtr ibt poxr 't Ut The Sr

- 1. Iria (Amaranthus) corolla imberbibus, petalis in- ... Cliff. m.4r tkse ilultrii lo
- 2. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 3. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 4. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 5. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 6. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 7. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 8. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 9. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 10. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 11. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 12. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 13. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 14. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 15. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 16. Iria (Amaranthus) corolla barbata, caule foliis longiore ...

Usvts.

- 4. Jura [Varifnta] corallis barteiis, caule Tub InngitLJint tiilii.riiin multiflo ... viiib a Usrdtd JfanMr, and a Italy A,, ... ttx-a, ti-i. 't mjriJItxBtn. ... colore multiplici. C. B. f. 31. U Vmiiit-dt-lta vj many colxn.
- 5. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 6. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 7. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 8. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 9. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 10. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 11. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 12. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 13. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 14. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 15. Iria (Amaranthus) corolla barbata, caule foliis longiore ...
- 16. Iria (Amaranthus) corolla barbata, caule foliis longiore ...

I R I

trj flews, evA feard-Jbap/d km». Iris liumiii minor, fiore piclo-Tourn. Intt 361, Lrffir Dwitrf ftepr-it-hit %ritk apm*Uf

17. IB.IB [yt>na] i' ... s. caule uniliora foli i i b i ... Ptof- Virg. i<- /TM «*;*; dedfier, u tUik fimtr tbc» tit leauti, u-iik Mtjhwtr, aad a fibrexi not. Iris Virganuui punila live chimayrif vtrn* anguftifoLi, nilco odonto. l'luk, Aim. 190. ' rinm FI(*xxr-&Iiuf> will- a mmi>.

IS. U1 s {Vtrjctfar'irortiHisitnrbribus.grinii; trigonis, caule u-ria, t'oltis erimormLbus. Lin. Sp. Pl 35.

American* verficlor tylo crena! Dist. Hort. Eht. iss. Party-coUmrt d Imtriun Flmar-Jt-luti, WM* it trenaudjlyt.

15. IK is (Ernfidijaw) corollts imberbibm penLU irnri-oribus patrnuflimis, ca

16. ... [15 iixt...]

so. Teis {SiirKt} corollis imberbibu, gcrminithU trigonis, caule tercti, foliivlncaribif

6 u iwV* M xnterid J?<WT, J /ire. wra, a :a^r jSjif' W JWTJ>QI /atrtj. Iris p... angvitholta nor

11. IRI (Taberna) corollis imberbibu, foliis serratis. Vtr. Cliff. 6. Iris with an unbordered flower and four-curred It ova. Vlcwvtoti

22. Iris (Flavida) corollis barbati, caule folliculatore

13. Un (SsahniM] corolla barbati, caule foliis sicut molillo, petals deflexis platis, exdus emarginatis. Lin. Sp. 55. Iris with a bearded ovella, falls taller than the leaves, having many flowers whose petals are de-flexed, and the upright are man-v<. Ins latiol i Ger-

The first sort grows naturally in ditches and standing waters in most parts of England; this is called in the Plantarum, A torui rj.lui

roots of rhil ire pretty thick, fleshy, and spread every way near the surface of the ground, the leaves are sword-shaped, very long, of deep green colour, and not so stiff as those of the Garden Iris, the stalks rise from three to four

lowers one above another, which gradually succeed each other; they are shaped like the ordinary Flower-de-luce, but the three inner petals are less than the flagons, so they want the three upright petals which are termed lunilards. These appear in June, and are succeeded by large three-cornered capsules, containing three rows of flat seeds.

This sort is not cultivated in I fsnlrv but bring an official pl.mt, h is here mentioned 10 introduce tht

been : The second sort grows naturally in Germany, but has long cultivated in the English garden for ornament; the roots of this are very thick, fleshy, and divided into joints, spreading just under the surface of the ground; they are of a brownish colour on their outside, but white within, the leaves are in clusters, embracing each other at their base, but spread slender

spread in form of wings; they are a foot and a half long, and two inches broad, having sharp edges, ending in points like swords; the stalks between them, which are a half longer than the leaves, having at each joint one leaf without a root stalk, thick enough in their first upward; the stalks divide into three branches, each of which produces two or three flowers one above another at distance, each enclosed in a

I R I

(heaxh; tlicy (12vt three large Violet coloured pctit what 1 turn backward, and are cilled rails; diclc have beards near an inch long on tilcir midrib nmaid their bili, and have a Ihon artiecd j^tai whicfi com do btard, with three broad crret petaU of the linie c(i* bur, ciH«i (iauiiarJi-, the lUMina lie UJKMI > hie fltxcl pcuJs. Under each flower is fnu.iii-J long germen, which turns to > large tin c.iplulc with three Ltlli, hiltvl with laj-v

This flow •Ti in June, and c! seeds ipea in August.

There is a vari ••/ of thi) with blue standards and purple falls, which is called Iris ho: rnis latifolia, by Casper Bauhin, and one with pale purple standards, another with white, and a third v,uh .1 Inialler flower, but these are accidental varieties whidi liaw come from seeds.

The third sort is 1 brooder kiv « than tht l*ft, the stalks iiivcnole^, upon them, and are called ii-ngh with die Itave»; they have liircc Or tour large bright .l.tnd above each other, h

h ficaths 01 lie liircc bending petals or falls are striped with white, from the base to the end of the beard; the flowers are succeeded by large blunt triangular capsules with three cells, filled with con; jit

It flowers the latter end of May, and the seeds ripen the beginning of August.

The fourth sort grows naturally in Hungary; die leaves of this are like those of the second sort, but are of a darker green; the stalks rise as tall as the leaves, and toward the bottom are furnished with one leaf at each joint, whose base embraces the stalks. The upper part is naked, and branches into Jirre, eicli having two or three flowers above one another. tilt: three upright petals or standards are yellow, and the bending petals or falls are variegated with purple stripes. This sort is rarely succeeded by seeds in England.

The fifth sort grows naturally near Constantinople, and in other parts of the east. The leaves of this sort are not so broad as those of the second sort, and are of a grayish colour, the stalks rise two feet and a half high, supporting one very large flower; the three upright petals are almost as broad as the leaves, but very thin, of mixed black and white stripes; the three bending petals or falls are of a darker colour. IVort whence some gardeners have called it the Mourning Iris. This flowers the latter end of May, or the beginning of June, but never has any seeds in England.

The sixth sort hath broad leaves like those of the second sort, but shorter; the stalks rise six or seven inches high, branching into two or three at the top, each supporting two deep purple flowers. This flowers in May, but is not succeeded by seeds in England.

The seventh sort hath narrower and flower leaves than the former; the stalks are shorter than the leaves, and support one flower on the top, of a light purple colour. This flowers the beginning of May, but rarely produces seeds in that country. There are two or three varieties of this, which differ in the colour of their flowers.

The eighth sort hath the largest leaves of any of the Flower-de-luce; they are of a grayish colour and spread wide, embracing each other at their base, where they are purple. The stalks rise near four feet high, and divide into several branches, each supporting three or four flowers above each other at distance, colored with a thin flesh; the three bending petals or falls are of a faint purple inclining to blue, with purple veins running lengthways; the beard is yellow, and the three erect petals or standards are of a bright blue with some faint purple stripes; the flowers last in a considerable space. They appear the latter end of June but are seldom succeeded by seeds in England.

The seeds of the sixth sort were brought from Carolina, by the Right Rev. Dr. Pocock, Bishop of Orlery, who found the plants growing there naturally; these were sown in the Chelsea garden, where they flourished very well, and the plants have been since communicated to many curious gardeners in Europe.

IRI

This plant hath a thick fleshy root, divided into many
 ltnots or tubers, iviich frctj ajid multiply in the
 ground; thric lend out many II: long, thick, fleshy fi-
 brers, which (trike deep in t^l earth, putting out fev-
 venil jmall< fibres from their sides. From the roots
 arise clusters of lin broad-shaped leaves of ¹ deep
 colour, wlv- in three feet long,
 and iitile more t^l in one inch broad, ad in the broad "it
 ^..rt, eni) in points, these leaves are connected to-
 getha at their base into several heads or bundles,

wrapping over each other; and between these arise
 (he t: lower stalks, which grow four feet high and are
 jointed, having very long spines or filicals. M eitli
 of the upper joint- which include the flower, Tbdc
 stalks generally consist of two flowers, one coming out
 each fhesth o: (petals); these are permanent, and
 when the first are past, chiefly cover the seed-vell.

The flowers are divided into nine leaves, three of
 these stand erect, which are white, and fix turn down,
 which are joined together at their base, the lower
 spreading out into a broad ovate, upward fall,
 having a broad white line of a bright yellow colour; the
 upper is arched over the lower, so as to form
 a sort of semicircle; the third is arched backward; under this
 is situated an oblong three-cornered seamen, which af-
 terward becomes an oblong, swollen, three-cornered
 seed-vell, ending in a long point, which opens
 three longitudinal cells, in which the seeds are lodged;
 these are angular and compressed. This plant flowers
 the latter end of June, at the beginning of July, and
 the seeds ripen in the summer. It is very hardy, and
 thrives well in the open air without any protection.

The leaves decay to the root in the
 UEuui, and new
 ones arise in the spring. The root also propagates
 very fast, when they are in a light moist soil, so that
 it may soon be had in plenty, without waiting for
 plants from seeds.

The tenth fort grows naturally in Aurfri: this hath
 narrow, flat, Grass-like leaves, about a foot long, of
 a light green colour; between these arise the stalks
 about six inches high, having two narrow green leaves,
 which are much longer than the stalks; these stalks
 sustain two or three flowers, which are smaller than
 any of the former species; the petals have no beard,
 but have a broad yellow line adorned with purple
 stripes; the three falls are of a light purple colour
 striped with blue, and have a convex ridge running
 longitudinally; the other are of a reddish purple va-
 riegate with violet; rfun have a foot like frsh
 Plum: It flowers in July, and is succeeded by seed-
 vells which are short, having three borders or wings
 running lengthwise, opening in three cells, which are
 filled with angular seeds, which open in September.

The eleventh fort grows naturally near the sea, in the
 fields of France, and in Italy. This hath narrow
 broad-shaped leaves, three more than a foot long, of
 a deep green colour; the stalks do not rise so tall as
 the leaves, they sustain at the top two or three flowers
 which stand near together; they consist of a bright
 purple colour with very deep falls, and the three
 standards are blue; the beading teeth have no beard,
 but instead of that white broad stripes through the
 middle. This flowers in July, and the seeds ripen in
 September.

The twelfth fort hath narrower leaves than the former,
 but of the same deep green colour; the stalks do not
 rise higher than the leaves, and support two or three
 flowers, which have long permanent standards
 standing erect, which cover the seed-vell; the
 seeds are ripe; the flowers are smaller, and of a
 paler colour than those of the eleventh fort.

The thirteenth fort has very narrow long, Grass-like
 leaves, of a light green; the stalks rise two feet and
 a half high, sustaining three or four flowers above each
 other, which have blue falls, and purple standards;
 Bowers in July,
 (trip) and the seeds ripen at Michaelmas.

The fourteenth fort grows naturally in Germany; this
 hath leaves like those of the eleventh fort, which,
 when broken, have a disagreeable scent; but this is
 accidental) ind not aconxM a all the plants; the
 ftUu of tl, are taper, and rise a little above the
 leaves, and sustain three or four flowers >one above
 another, which have light blue standards; SUJ puqjlc
 variegated falls without beard; instead of which, they
 have a broad white line in the middle; Idle; thele a: s-
 eceeded by ihort thick capsules, which are filled with
 angular seeds. It to ws in July, ami tic leedj ripm
 in September.

The fifteenth fort has narrower triive* than rfioll* of
 the (econd, of a pale green colour, and not j'o tuiff,
 rfe stalks are equal in height with the leaves, and
 bwnel out on both sides wjth long foot (talks, each
 sustaining one pretty large yellow flower, iittdL-LJ in
 a long two leaved sheath, at each joint: wtere tht
 seed-stalks come out there is a single leaf which em-
 braces the stalks with their base. This flowers in June»
 but rarely produces seeds in this country.

There are two varieties of this fort, one with
 purple-coloured, and the other with a variegated flower,
 which is supposed to be only varieties which have
 been accidentally produced from seeds.

The sixteenth fort hath broad broad-shaped leaves
 about eight inches long; the stalks rise about the same
 height with the leaves, and divide into two or three
 foot-thick stalks, each sustaining two or three
 flowers, which have yellow standards, and the
 falls are variegated with dark stripes. This flowers
 in June, but does not produce seeds here.

The seventeenth fort grows naturally in North Amer-
 ica; this hath thick fleshy roots, from which arise
 many Grass-like leaves about nine inches long; from
 between these come out the stalks, which are shorter
 than the leaves, flaring out purple flowers with
 blue standards. This fort flowers in May, but seldom
 produces seeds in England.

The eighteenth fort grows also in North America; j
 this hath narrow broad-shaped leaves about a foot
 long, of a light green colour; the stalks rise a little
 above the leaves, they are taper, and support two or
 AKC flowers one above another, the flinthirds are of
 a light blue, and the falls are purple variegated, with
 a broad white line instead of a broad stripe in the
 middle. The germs, which is situated under the
 flower, is three-cornered below, but taper toward the
 top. This flowers in June, and often produces seeds
 in this country.

The nineteenth fort grows naturally in many parts
 of England, so is seldom admitted into
 gardens. This hath thick tufted fleshy roots; the
 leaves are of a Grass-green broad-shaped, and when
 broken emit a strong odour, not much unlike that of
 hart's wood beef at the first heat, but if fresh too close,
 becomes disagreeable. It is generally (a) I think
 Glasweg in England; the stalks rise about the same
 height with the leaves, supporting two small flowers,
 of a purple colour, variegated. It flowers in June,
 and the seeds ripen in autumn.

The twentieth fort grows naturally in Aulbia and
 Bohemia; this hath narrow broad-shaped leaves
 a foot and a half long, of a dark green colour; the
 flower stalks rise above the leaves, and support two
 or three flowers with light blue standards, and deep
 blue falls, with a broad stripe of white, instead of
 the middle. This flowers in July, and the seeds ripen in
 September.

There are several varieties of these flag or weed-leaved
 Irides, which chiefly differ in the colour of their flow-
 ers, so are not to be regarded as distinct species; those
 which are here enumerated are supposed to be spec-
 ially different, (some part of them) have cultivated
 by seeds, and found them constantly produce the same
 as the parent plants.

All these forts are generally propagated by sowing
 of their roots, which most of them maturely fall
 enough. The best time to remove and put the roots
 in is in summer, that they may get good roots before the
 spring, otherwise they will not flower during the fol-
 lowing summer. All these forts which spread much

ac their roots flould be mofplanted every other year, to keep them within bounds, urtherwife they will firact lo much as to become traubldome, especially il they arc planted new other flowersj indeed, the large growing kinds are matt of them too fpredltdg for the flouvrr-garden, fo are only fit CO fill up the fpacea between trees and frubrs in large plantations, whete they will have a good effect during the time of their flowering.

The fitli, fixth, feventh, tenth, eleventh, ftxcecnlh, fevritocntfi ami eighteenth forts, grow in left compafe, fo may be admitted into the large borders, or in flumps of flowers in the pteafu re-garden, where thty will add to die variety. The fifth fort ftioufd hive a wannr litumicn, being a tilde tender, but all tic other forts will grow in almeft any foil or ftuation *, thefe (Bay all be propagated by lced;, which fhould be fcwn loon after they are ripe, then the plants will come up lbe following Jpring; but it the iecds arc femm in the fpring, they will Fie a yeir in the ground before they vegetate : when the plant* come up they mult be kept dean from weeds, and the following autumn fhould be transplanted into beds at ten inches or a foot diftceuce, where they may remain till they Jlowfr, which will be the fceond fummCT after trans-planting-, but as moft of the forts nre fo eafily propagated by their roots, few penpie care to wait tor i l !

The twenty-firft forts grows naturally in die ill fide of the Archy lagO; this liftha tubenous koubbe- root, from which rife five or UK long, tiirrow, four-w need leaves, between which anfe the flalk, which fuppo ooeflower, fhaped like thole of the Irb, but fmall, and of a dirk purple eolotu- This flowers in April, but ..Ki not produce lced'. in England. It is propa ed by the root-, which fend out oBseti-, thife i p and tmnflplamed -when their leaves decay, but fceon l not be kept TOO long our of the ground. If the v are planted in a deep loofe foil, the roots will rounown, and be loll in a feu- years where they are not difhirbed, lb they fhould be annually trinlplantitt, and have a fiifllow foil; they are iiarjy in relJKCI to cold, and require no farther can; but to keep thtrn clt'an ftyom w

The twenty-fecoad lort grows naturally in ttf vrim parts ot Europe, but is hardy enough to thrive in the open air iaEDglantd the leaves of this fort are broad, of apale green colour; the flower-Halki rife caller ihan the leaves, fupporting one or two white Bowers which fit dofe to (he IUTks. The roots of this are ufrd in TH-dicine, and it ufually calle! Sut-et ! • Tiic twenty-thitd fort hath broid leave;, of JI deeper green than thofe of the latt lbrt. The (talk* rife much abow the leaves, each having four or five flower*, h have * yellow ground, variegated with dark brown Gripes, ;tnd have * frent like lilderj the two fotu flower the latter tfl of May, or beginning of June.

They are fo hardy fli w thrive *) well ax rhe fceontl fort in the open ar in this cr tinnny, and may be pm- propagated by parting of their root, or by feedf, in the luma way as is dire- ted for that fort,

- 1. IS bulbo&. 1 ..
IRISPerfia. } Set XtffUW.
; A T I S. Toum. Inf. R. H. si i, tab. loo, Laf. Gen. Plant jjiS. Wo; in Frum ji. Pajh.

The CHAfuertui arc.

Tic fiKpohnt *f tUfioexr it tmpefid effwr *va! w-lwrcd >;ovn, whicb fprtj (yn. &J fjil awn* Thi JSKwr biUbfam elkug pf'oh, pkiti infirm of# crofi, tbiitb are narrow ti ibitr lufi, fat irted ai&aktitf at thrmdf. It batefnfamiau, feur tf &li>:b art r.sk>^ &i die etlak, lit ubtr two «rt Jbertr^ (left art tr- mitat/4 bS obi&fi Iitrral fiiimuki. It btu t>n&h rfrmtK, tit tuqib fjt tht fa fartrJ trnntittif on duKc jlgma. Thugirvaa inamit en ab- lom ttmprrii • j Utd in tbt (titter*

The roots of plants is reared in ch< (rennd fcllion of Linnzon) ftrzech clais, intiteld T<tiwlynamij

Siliquofa,, which incluclis the plants whole flowers have four long and two ihorttr i lamina, and their ferdz in puds.

The SnciEs arc,

- 1. ISATA (Fragaria) foliis radicalibus lanceolatis cre- natis r, caulibus laciniatis, filiculis breviteribus emarginatis. fpiat'fhfff.
2. ISATA (Fragaria) foliis radicalibus crenatis, caulibus fagittatis, peduculis fubio:
3. ISATA (Fragaria) foliis radicalibus crenatis, caulibus fagittatis, peduculis fubio:
4. ISATA (Fragaria) foliis radicalibus crenatis, caulibus fagittatis, peduculis fubio:
5. ISATA (Fragaria) foliis radicalibus crenatis, caulibus fagittatis, peduculis fubio:

The fir lirl fort is cuivired in icvent pan of England tor the pilrpofo E • during the be- g ufed as a m- dication tor numy of the dirk coloure.

Thb is a wmmody well rating in jll places where the iand it luhablt; for it, which ; will be i pccrv frongfoil, li' not too .oift.

The plant is olennial, m which it differs from the third wd fourth ion, which are annual. The lower leaves, ot thlit are of air obltt; oval figure, and pretty thick comfiance, when growing in a proper foil, they are narrow it their bale, bur broad ibe^, and endin chiufe roundilh potn's, entire t. their edges, anci of a lucid n: . The flalks rife near four feet high, dividing , into feveral branches, garnifh i wj,h MTOvr-lhaped liaves, fitting clofe to the flalks, the ends, of the bra: are ornamented by fmall yellow flowers, in >erj (Cloufters, which are compofed of four final ietai< . placed in form of a crofs; thefe are fucceti! and by roots fhaped like a bird's tongue, half an inch long, and nne eighth c: an inch broad, which

*he,i ripe <orn black, a-d open with two valves, having one cell, in which is fituated a fingle feed. It flowers in July, and the lcedz ripen the t of September.

The third fort his been (bppoftd to be the fsmr fpeciew the fir, only differing by culture, but I have propagated both forts ! • have been forty years, and have not found either of them alvay, there are alio very effential differences between the two plants, particularly in the (hape of the ur:: leaves, which n ;h* with fort are narrow and fpear-feaped, and xho't t-n the (talk; are not more than half the breadth of thofe of the cultivated Woad. The (l>ks < i> not branch f> much, and the jxiri? are narrow- than thofe of the other Coir, nor do the root, abide fo long, tor (hff generally die the : one year.

The fecond fort growj naturally it Dalmatia; this is a bit: nial plant, the lower leaves are fpear-fhaped, sndatnato: on their edges, but thofe on the flalks arc very rarroMfr. The flalks rife more than thole « the fir fort, and rife higher. The flowers are Ltrerr, and oi s a brighter yellow colour. The r:d-reficls Arc Ihorter, m: broader at their ends, which are indented. I have plants all flower in July, and their fetus ripen in September.

The fourth fort grows naturally in Egypt, and is an annualplanc, which a toou-der to thrive in the open air in rngl.iml, (hertrorf the feeds fhould be fown in a hot-beu io cbe lpnng ; it: when the plants are fo lo n.TiiiVc they mod be i;nlj>Unc bed to bri: them toward, but as foon as they have taken new : , they fhould have a large fhare of frifh air admitted to them daily, to prevent their being drfwn up weak. In that bed they may remain for a Gx we , by which time they will be fit to transplant into poti, v which fhould be carefully performed, not

to let the c.uh fail I own their ; Kits; the pott should ailb be plunged into n nift.icra;c hot-bed, giving tin plants jtnnty of Ml at .ill tunes who) the weathe will permit, and liipportirig their llnfcs, which will other wile LLiil on ilie grou;id*, with (his management the pdnii itill (lower in June, and ripen their feejd in ptember.

i he three lafl ibrts art nor cultivated for oft, fo • only prferred in botanic gwtiens tor the fitke of .I icty ; the frcond and third TOTIS arc prop>gaid by the seeds, which should be sown in aour.in ; and when

• plans Cflne up, the^ muft be thinned, leaving them i ix incbciapajX) aherwsu-J they mult be kept clear, from weeds; the summer following •>' will fewr an J produce ripe seeds, after which the forts must decay, the roots of the first fort will live another year. A second fort which is propagated for use, is sown upon fresh land which is in KO-XI heart, for * which is a cultivation of Woad pay a large rent, they generally think that their land is i,nain\ near prr: towns, where there is plenty of dreAing, I

Ions ii will no: admit of being sown with Woad more than twice, for if it is sown repeated, the crop seldom pays the charge, OS CI Cl

le wboc omtnoditf, have g*n^s of people, who have been bred to this employment, so that whole families travel about from place to place, wherever their principal busi-ness is for the purpose ; but these people go on in one track, just as their predecessors have done, and do not have their principal de- VULII twm tli i tap: I

decrfii VULII twm tli i tap: I

trial: in the culture of this plant, therefore I shall in- fect them here for the benefit of those who may invc ingenuity enough to strike on i t the old beaten track.

As the good K-6 of Woad conflt? in the fize and fatness of the leaves, the only method to obtain this, is by sowing the seed upon ground at a proper season, and allow the plants proper room to grow, to be able to keep them clean from weeds, which, if permitted to grow, will rob- the plant* vi tlieir nourishment.

The method practised by some of the most I ikilnil kitchen gardeners in the culture of Spinach, would be a great improvement to this plant, for some of them have improved the round-leaved Spinach to such by culture, as to have the leaves more than six times the size they were formerly; and their success has been in the same proportion, upon the best land, which has been obtained by sowing of the plants when young, and keeping them perfectly clean from weeds, but to /urn to the culnife of Woad.

After having made choice of a proper ipoE of land, which should be tot be too right ancf flkndy, nor m of fluf and moist, but rather a sandy soil, the whole part will earth (enime' thf JUFhtijup high ridges, just before winter, laying it in narrow ridges, so that th. ten the<lod>, then in the spring plotigh row ridge* i

it <g>J), nimrt** and the after the rain some time in this season, when the weeds begin to grow, it should be well harrowed to destroy them; this should be twice repeated while the weeds are young, and if there are any sorts of large perennial weeds, they must be harrowed out, and re- moved off the ground. In June the ground should be a third time ploughed, and the furrows should be nar- row, and the ground turned as deep as the plough will go, and the parts may be as well prepared as possible; and when the weeds appear again, the ground should be well harrowed to destroy them. Toward the end of July, or the beginning of August, it should be ploughed the last time, when the land should be laid (smooth) and when there is a D'oft)rl of lhowcj, the

ground must be harrowed to receive the lctta, which should be sown other in rows with the drill plousii or in broad rows, after the common metjujj, butjt ijj •f P^oP7 T to free the feeds ne night in wntei before 'AF" is sown, which will prevent the nforveeteion; * t f l e : i seeds are sown in drills with a Plough, thierwm

be covered by an instrument fixed to the plough for that purpose; but should be sown broad-cast in the common way, mull be wclt harrowed in. If the feeds are good and the (vitfon (t vourable, the plants will .app^ai in a fortnight, and in a month T five week.l after will be fit to hoe; for the sooner this is performed when ! the plants are distinguished, ii', the ijTut! they will thrive, and the weeds being then young, will be soon destroyed. The method with hoe- ing their plants is the best in the T crops, with this difference only, that these plants need not be thinned so much; for at the first hoeing, if they are sown to the distance of three or four inches, and at the IC Lift

of the Tljhr. if this is carefully performed, and in dry weather, most of the weeds will be destroyed; but as some of them may escape in this operation, and young weeds will arise, in the ground, a second time hoeed in October, always choosing a dry time for this work, at this second operation, the plants should be sown to the distance of six inches, they are to remain. .. say this the ground will be clean from weeds till the spring, a few young weeds will come up, there- fore about a fortnight in April will be a good time to hoe the ground again, when the weeds will be young, so may be performed in less than half the time it would require if the weeds were permitted to grow; and the sun and wind will much sooner kill them; this hoeing will also fix the surface of the ground, and greatly retard the growth of the plants, if it is performed in dry weather, the ground will be elrjn till the first crop of Woad is gathered, after which it must be again well cleared, if this is ctBcAIRI repeated, after the gathering of each the land will always be close, and the ;lmm will thrive the better. The expense of the first hoe- ing < will be about six shillings per acre, and :Ot E)C

vittt-1, things half that price will be suffi- cnr, provided they are performed when the weeds are young. (or if they ore [u' rred to grow large, it will require more labour, and can it be so well performed; therefore it is not only the best husbandry to do this work soon, but it will be found the cheapest method; for the same number of men will hoe a field of ten acres three times, when it is performed while the weeds are young, as LI re.. need to hoe it twice only, because the weeds have longer time to grow between the operations.

If the land in which the seed is sown, should I have been incut, it will require dressing before it is sown, in which cali rotine thier thing is preferable to any other; but this should not be lost on till the J.ilt ploughing before the seeds are sown, and not spiv: id but as the land is ploughed, that the sun may not nehale the gotxli

of it, which in summer is. soon lost, when sown on the ground. The quantity should (I not be k-ks than twenty loads to each acre, which will keep the ground in heart till the crop of Woad is sent.

The time for gathering the crop is according to the season, but it should be performed as soon as the leaves are fully grown, while they are perfectly green; for when they begin to change pale, great part of the chcir g odata is over; for the quantity will be less, and the quality greatly diminished.

If the land is good, and the crop well husbanded, it will produce three or four gatherings, but the two first are the best; these are commonly mixed together in the i

manure; for if these are mixed with the other, the whole will be of little value. The two first crops will fall from twenty-five to thirty pounds a ton i bu the latter will not bring more than feven of eight pounds, a r k. *Wie not ! i much

As

As

An acre of land will produce a ton of Woad, and is torn! Jealous near a ton and 1 half, when the pianists intend to favc the freiK they cut three crop* of the leave*, and then let the plants rtanJ till rhf notl year for feed ; but if onJy one crop is cut, and iliac only of the outer leaves, ktin" all the mid- dle leaves (land to nourilh the ftlnks, tnc puivi will grow frongcr, and produce a much greater quantity of feed.

Thefe feeds are often kept two years, but it is al- ways belt tofow new feeds when they can be obtained. The feeds riprn in Auguft; when the pod« turn to a dirk colour, the feeds lhoul be gichrrred i it a beft done by (taping the Halle* in die fatre nuntr a; Wh it, (pTCiling thi; (tdki in rows upon the ground, and in four or live Jays the fee4i will be fit to thedb out, provided the weather is dry ; for if ir lies long, rhe penis will open and Jet t>ut the feeds.

Thrrr ire Jomc of the Wosd pUnters who feed down the tram in winter with (beep, which is a very bad method ; for all plants which are to remain for a future crop, fhould never be cuen by cattle, for that greatly weakeni die plants; therefore lliofc who eat down their Wh<l rit winter with Jleep are equally blamcable.

ISOPYRUM. Lin. Gen. Pbnt. 611. Hellebore. Amman.

The CHAFACT!

The flower has an embowment. It hath five equal oval petals, which fall off, and five flcies tubularis setaria, situated within the petals, divided at their base into three lobes, the middle one being the largest. The stem is very hairy, the middle one being the largest. The stem is very hairy, the middle one being the largest. The stem is very hairy, the middle one being the largest.

This gtiusof pi... in the il-vcnlh feftion of Linn«US's thirteenth cUk, inritled J'... which includes ti.ife planli wtioc flowers have many iljrmaa and iylss.

The SPECIES XK, hopv^uu [FsMtriiia] (tipulis fiibuliris, petalis iru- Hort Up61. 157. Tfifi/Tüm wiib ivl-/h6ptJJji. HeJlborui foinaria; Jotiii. Amman. Ruth. 5;. ub. 12. HtSeien vitt Fnimtery

L. Uorvfow (Tfc... Lin. Sp. Pl... Ranuncitius nemorofut, thjl lin. C B. P. i;8. ff^ OwtB./>i wtf* d I.

njjiWtJ) ftipuUj obfoktii. Lin, Sp. iuikgia

The first r: gtowj natmatly in Siberia, from whence the)> were lent to 'he Imperial gar.'... ite Dr. Amman, possitor of botany iherr, k*ni me part of the feeds; this Li in wuiwl... thin three or four inches high. The leaves... ihaped like thole of Punitory; they ire fmall, and of a gray colour. Thr folk 'the top, where ihcre h a citric of leave* ull tinder die flowrrj. The Bwvers air fnttl, cf an hcrbjceoui colour on ditir t, side, but jreliow •ridun, having live anise peuk, and as irur. honey glands, with a great number of Basma which are fforvr than the petals, and ferml rfeated moon- ftiaepd gernien, hiving (o (tuny fujgle ft-... crowned by ubruTe Itigtntsj, The ftowenarr... by many recurved j... filled with small fliining h'.. It flowers the beginning of Apr., and ihe Icedi... ripen than the planci

The seeds of this plmt flinuld be fjwn in a shady bolder (ban after tlicy arc 1... for when they are fetTK long out a:... ground, they fricken grow the first year 1 ifaere&te wncn rhe fetdi art... permitted to

feauer, they fucccd better ti... it what i are luwn, and ilis plants will require no other care but to keep [hen ck.W from W<cs; ; ftj there i... us plant, fo a Gnk patch or two of them in any ihady [jrit uf tht garden, b way of variety, will be fuffident.

The second and third facts were sent me from Venosa, near which place they grow naturally. The second fbrt hath I di)w Rue. The stalks rise four or five inches high, sup- porting a i- w small white flowers, with obtuse petals, containing many small seeds. It flowers the latter end of March, and the seeds ripen in May.

The third fact hath leaves like the second, but a little larger, and of a greener colour. The stalks rise about six inches high, supporting two or three small white flowers. The flowers like those of the second fact, these are succeeded by recurved seed-vessels, filled with seeds.

Imatl in'di. It ftowen in Aprn, and the seeds ripen in June.

Boih thde plan: - delight in a moist shady situation; they ATC propigwed by fmis in tie fume way a the first fact, but these will live two or three years.

ISORA. See He... ITEA. Lin. Gen. Plant. 14. Flac. Vig. 143. Di- conangia. Mitch, Gen. 5. The CiiAaActi are.

The empowment of the flower is small, permanent, and erect, rising in five acute points. The flower has five petals, which are inserted in the empowment. It hath five stamens, which are inserted in the empowment, which are as long as the petals, terminated by smooth filaments, and an oval germis supporting a tubular style, which is permanent, crowned by an oblong stigma. The stigma afterwards becomes a long oval capsule, with six style at the top, having one cell fixed with each style.

This genus of plants is ranged in the fifth section of Linnæus's fifth... which flowers have five flamina am one flye.

We have but one Species of this genus, viz. ITEA (f'rgimca.) Ftor. Vigf. 143. We have no English name for this plant.

This ihrub grow in moist hills in several parts of North America, where it rises to the height of six or seven feet, sending out many branches from the ground upwards garnished with spear-shaped leaves placed alternately, singly fixed on their edges, which are reflexed, wrinkled, and of a light green. At the extremity of the lower year's shoots, in the month of July, are produced fine spikes of white flowers, three or four inches long, erect, and when these shrubs are in viir, they will be entirely covered with these spikes of flowers, so that they make a fine appearance at their season of flowering.

This shrub is now pretty common in England; but [he gprJen where I have seen it in the greatest vigour, is that of his late Grace the Duke of Argyll, at Whitton, near Hounslow, where the fall agrees to well with this plant, that it thrives and flowers there is well as in its native country.

This shrub will live in the open air in England, the cold nor... ;vgrouj

IV A. Lin. Gen. 1099. Taraxacum. Vall. Ad. Pelt. 1710.

The Characters arc. It hath male and female flowers in the same plant, the female have a roundish permanent empowment, including several stamens, which are curved, the male flowers have one petal, which is funnel shaped, and inserted in five parts of the base; these are situated in the eye, they have five long filaments, terminated by oval filaments, oppositely

JUG

:tb tba-, tbt fault half fiinti & JW vtiitr pitat
:m'mit; tiny tavi tin okng r-L-
tikl j)*ts, crewntJ -rita
palmtm! eficnverдитеoinu tl.
This gtnuj of plants k r.mgtcl in the Bfl
Liniwui'j cwetiy-firt cljli, iimtfcd Mouxcia Pen-
tonJria, frotu the plants having male 3.
rets, and the male flOrctshflvingfWc lbminj.

The S...

1. li i (Juglans) foliis lanceolatis serratis, c.tute herbaceo.
Hort. VplM. 2S5. Ivy with eve'.
And nu irrtiuteH f... rcon^ntnm: foliis cordatis
ferTuis nni...

a. IVA (Frtilfims) foKi
AmtEn. f.
end a Jhni...
tefer;...
Thecflrt (on ^rows n... naturally in many parts of the
West-In... annual plant, with an her-
bacous stalk, which rises from two to three feet
high, arising out of the sides,
which are furnished with oval
leaves, having three deep longitudinal veins, and are fringed
on their lower edges; the stalks and branches are termi-
nated by small clusters of pale blue flowers, which
appear in July, and are succeeded by seeds which ripen
in the autumn.

This is propagated by seeds, which should be sown in
the spring upon a moderate heat, and when the
seedlings are fit to remove, they should be transplanted
into a nursery, where they should be kept forward, treating
them in the same manner as the preceding species, until
they are fit to be planted in the field.
The second sort has been introduced by the
English gardeners, which is less known by the
name of the French Walnut. It has slender lignous
branches which rise eight or ten feet high, furnished
with spear-shaped leaved leaves; the branches (in
warm seasons) are terminated by small clusters of
purple flowers, which appear in August, but we are
not informed by seeds in England.

This third sort has been introduced in green-
houses, being supposed too tender to live through the
winter in the open air; but late trials have made it
apparent, that the ordinary winters in England seldom
hurt it, provided it is placed in a dry soil and a sheltered
situation. It is propagated in the nursery-
ground about London for sale, and if the branches are
laid into the ground in the spring, they will in six
months or a year be fit to be planted in a
shady border in May, they will be ready.

JUGLANS LIN. GEN. PLANT. 930. NUX. TOURN.

uti...
The CHARACTER...
It hath male and female flowers at separate distances on
the same tree. The male flowers are disposed in an oblong
spike, or tail, which is cylindrical and tuberculated, with
flavescent scales, each scale has one flower, with
one pistil fixed to the same stem, towards the middle of
the scale. The pistil is divided into four parts; the
middle is furnished with four stamens, surrounded by one
ovary furnished. The female flowers grow in small clusters,
sitting close to the branches, they have a short, thick, four-
pointed involucre, fitting on the ground, and are
terminated by a large oval pistil, supporting one pistil only,
surrounded by large reflexed scales. The ground is
furnished with a large oval dry leaf, with one vein, and a
large oval nut with round corners, which grows
flat like a shield, which are commonly forward.

This species of plants is ranged in the eighth section
of Linnæus's taxonomy Scd class, called Monocotylæ
Pentandria, including those plants which have male and
female flowers on the same plant, and the male flowers
have many stamens.

JUG

The Species are.
1. JUGLANS (Nux) foliis ovatis serratis glandibus subternatis
subterminalibus. Hort. Cliff. 499. Walnut with oval
small leaves or lobs, which are serrated, female, and round.
Nux juglans. 1. See Regia vulgaris. C. B. P. 417. Com-
mon Walnut.

2. JUGLANS (Nux) foliis lanceolatis serratis, exterio-
ribus minoribus gemmulis super axillari-
bus. bui. 1. n. Sp. 1212. Walnut with oval
leaves which are strongly serrated, the middle being the
largest. Nux juglans Virginiana nigra. H. L. 452.
Black Virginia Walnut.

(Glabra) foliis cordato-lanceolatis in-
terius serratis, pediculis foliorum pubescentibus.
Walnut with heart spear-shaped lobes, bearing many veins
on their lower side, and having flat stalks to the leaves.
Juglans nigra, fructu oblongo pedunculato inflexato.
Cat. Hort. Cliff. Black Virginia Walnut, with an oblong
fruit very much forward.

4. JUGLANS (Alba) foliis lanceolatis serratis, exterio-
ribus majoribus. Lin. Sp. Plant. 907. Walnut with
spear-shaped serrated lobes, the outer being the broadest.
Nux juglans alba Virginiana. Park. Theat. 1414.
White Virginia Walnut called Hickory Nut.

5. JUGLANS (Glabra) foliis trunciformibus serratis, ex-
terioribus majoribus. Walnut with wedge-shaped lobes
which are serrated, the outer being the longest. Juglans
alba fructu ovato cordato glabro. Cliff. Flor. Virg.
White Walnut with a smaller fruit, and a smooth bark.

6. JUGLANS (Glabra) foliis lanceolatis serratis glandibus
subterminalibus. Walnut with smooth spear-shaped serrated
lobes, which are equal. Juglans alba fructu ovato
compresso, nocivo dulci, cortice spinoso. Cliff.
Flor. Virg. White Walnut with an oval compressed fruit,
a joint kernel, and a hard lark, commonly called Dog-
lark in America.

There are several varieties of the common Walnut,
which are distinguished by the following titles; the
large Walnut, the thin-shelled Walnut, the French
Walnut, the late ripe Walnut, and the double Wal-
nut; but these do all of them vary when raised by
the seed, so that the nuts from the same tree will pro-
duce plants whose fruit will differ; therefore those
who depend upon the trees which are raised
from nuts, till they have produced fruit, so that
those persons who plant the trees for their fruit,
should make choice of the best when they
may be directed, by having such as they would
not choose.

The second sort is commonly called Binck Vi-
giniana Walnut; this grows to a large size in North America.
The leaves of this sort are composed of five or six
pair of spear-shaped lobes, which end in acute points,
and are fringed on their edges; the lower pair of lobes
are the least, the other gradually increase in their size
to the top, where the pair at the top, and the single
lobe which terminates the leaf, are smaller; these
leaves, when bruised, emit a strong aromatic flavour,
as do also the outer cover of the nuts, which are
rough, and rounder than those of the common Wal-
nut. The shell of the nut is very hard and thick, and
the kernel small, but very sweet.

The third sort grows naturally in North America,
where the trees grow to a large size. The leaves of
this sort are composed of seven or eight pair of long
heart-shaped lobes, broad at their base, where they
are divided into two round ears, but terminate in acute
points; they are rougher, and of a deeper green than
those of the second sort, and have nothing of the aro-
matic taste which they have. The fruit is very long.
The shell is deeply furrowed, and is very hard. The
kernel is small, but well flavoured.

The fourth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The fifth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The sixth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The seventh sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The eighth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The ninth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

The tenth sort is very common in most parts of
North America, where it is called Hickory Nut. The
leaves of this sort are composed of two or three pair
of oblong lobes, terminated by an odd one; these are
of a light green, and fringed on their edges; the lower
pair of lobes are the smallest, and the upper the
largest. The fruit is fringed like the common Wal-
nut.

nut; but the fliell is not furrowed, and isi/a ligit colour.

The fifth fort is nor (a Urge as \K fourth. Vh= leave; are competed of two pair of lobci, terminated by sn wtd OIK S ihffe are narrow at their bife, but ... and rounded at their ends; they asr Ciwiedon (heir edges, and arc of a light green. The noti art fmsll, haw a Imooih ftdl, and art very hard ami white,

Tlit sixth fort grows iaruraHy in North America, where it riles to a middling (laiure. The fcaura of this (on are computed of ihree pair of Imooth fpear-Jhaped lobes, of a chirk green colour, fawedon their edges, and ending in scute points. The fruit isoval, the (hell white, hart!, and Imooth; the kernel limit, boi very fwert. The young (hoots of the ttte ate covered with a very Imooth brownilh bark, but the Items and older branches have a ruugli icajy bark, from whence it had the appellation or Shagbaik, in

America.

Tta common Walnuts propagated in many parttof England :^r the fruit, and formerly the trees were pr.ipagaied for their wood, which was in very great e'lecm, till the quantity of Mahogany, and other uit-ful woods which have been of tare years imported into England, have almolt banilhed the ufc of Walnut.

Thefe trees are propagated by pUning their nuts, wlich, as wai before obferved, fldom produce the lame (bit of fruit as are Town ; (a thac the only way to h*v'e the defired fort, n to few the nuts ci* the beft kindii and if thii is dewe in a nurcry, ilic trees Qiculd be tmfpntated out vrhen they have liati three or four years growth, to the place where they arc ddigndc to remain i tor ihic teen tia not bear tranfplimng when they mrt of a larat fat, therefore there may be a good number of (tre trew plmtcti, which need not be put at more than fix feet ap^rt, which will be diftance enough for them to grow till they produce fruit; when wofc whofc truii ate of the defired kind may remain, and the otlicrs cut up, to ailow them room to grow; by this method a fufficient number of die trees may be generally found among them to remain, which will thrive and flourth greatly when they hive room *. Uuc K; many people do rut care to wait (6 long for the fruit, fo the next beft method it to make choice of fume young trees in the nuicries, when they have their fruit upon them; but though theft trees will grow and bear fruit, yet they will never be lb large or fo long lived, u thole which are planted young.

All the forti of Walnut* which are propagated for timber, (hould be town in the placo where they are to remain -, for the roots of thefc treej always incline downward, which being flopped or broken, prevent their afpiring upward, fo that they afterwards divaricate into branches, and become low ipreading trees ^ but iich as are propagated for fruit, are greatly mendtd by iranfpantung j for hereby they are rendered more fruitful, and their fruit arc f ually large i and fairer; it being i common obfervatijti, that downrigit roots greatly encour>gc the l^ nutz grow [h of timber in all fortj of tri , but h^h neti 3i have their rood fpreadr... near the fort'ace «f the pound, are alwayi the owl fruitful ind bdt B>vouted.

The nun mouW be preferred in (heir outer ewer* in 'ry land until February, *hen they fhould be planted in fines, at the diftance you intend them to remain; but in the ro* they may be placed pretty tlofe. For feir the nuu Oio ... millerry, and the young trees, where they are too thick, may be removed, after they kave grown two or three years. Itaring the reuinde; at the diftance they are to ftand.

In rratifplanting thrfe trees, you fhould ob- ferve never to prune either their roots or large branches, both which are very neceffary to them ; nor fhould you be too bold in hipping or pning the branches of thofe trees when grown to a large

file, for it often caufesthjttn 10 decay; but when tile re ... a neceffary for cutting any of their branches off. it:: ... could be done early in September (before the

fralbn; ... be from an eye to fubject to blight) that the wounci ... may heal over before the cold inclofes ... the branches (i.e. ... fhould be cut off quite ... at the trunk, ... fhould be the ftump which is left and decay, ... the body of the tree.

The beft ieafon r ... transplanting thofe trees is as foon as the leaves begin to decay, at which time if they ire rarctuliv ... ferved entire, di ... will be little danger of their fucceeding, although thej ... are eight or ten years old, as I have feveral times experienced ; tl ... though, at weather before oblerred, thofe trees will not grow to large, or continue to long, as thofe which are removed young.

THIB tree di ... grows in a firm, rich, moift foil, or fuch as is inclinable to chalk or gravel; and will thrive very well in fhady ground, and on fhady hills, as may be icci. ... their large plantations near Earthenhead, Godftone, ... and Carthage in Surrey, where are great numbr: ... of thofe trees planted upon the downs, which annually produce iarp quantities of fruit, to the great advjni; ... of thofe owners, one of which I have been told, hrm- ... the fruit of his trees, to thofe who fupply the markets, hr wl ; or annum.

The diltii; ... thofe trees fhould be placed, ought not to be lds t! ... in forty feet, especially if they be had to their fruit j ilmugh vrher. they are only d ... ed for timber, if they ftand much nearer, it prevents their ujright growth. The black Virginis Walnut it much more inclinable to « low upright than the conjni ... on foot, and the wood being, generally of a n.uil. i ... careful again, renders it peculiarly fit for, antt be ... for worth cultivating. I have feen fome of [K19 WQO1 wKlch luib berfi beat ... only wound with black, and wi ... which, when pointed, has appeared at a diftao ... like virginis marble. This wood is generally cftemed by die cabinet-makers for inlaying, as alfb for bedfhw ... beds, tables, and cabinets; and is one of tht ... of Englilh growth, being lefs liable to be injured with moft other kinds (which may proceed from its extraordinary brittlenefs); but it is not proper for Lvailings of ftrenngth, it being of a brittle n.lurc, and exceeding fubject to break very fhort, though it commonly grows under thofe, by its cracking (bmi: time before it breaks.

The general opinion is, that the befting of this fruit impro' ... the trees, which I do not believe, ftand in the doing • f that, the younger branches are generally broken and dtroyed; but as it would be exceeding troublefome to gather it by hand, fo in burning it off, great care On ... be taken that it be not done with violence, for the reafon before affigned. In order to preliirvc A ... fruit, it fhould remain upon the trees till it is thoi ... hough ripe, when it fhould be beaten down, and laid in heaps for two or three days, after which they fhould be ftrawed abroad, when, in a little time, their fhells will eafily part from the fhells; then you muft dry them well in the fun, and lay them up in a dry place, where mice or other vermin cannot come to them, in which place they will remain good for four or five months; but thofe are ion* y perfons who put thofe Walnuts into an oven p ... heated, where they let them remain four or five hours to dry, and then put them up in oil jars, or any other clofe velfel, mixing them with dry fand, by which method they will keep good fix months. The putting of them in the oven to dry the germ, and prevent their fprouting, but if the oven is too hot it will caufe them to fhew, therefore • it OUT: limit be i

All the other forts are propagated in the fame way, but as few of the forts produce fruit in England, fo their nuts muft be procured from North America; which fhould be gathered when fully ripe, and put up in dry fand, to preserve them in their juftnefs to England; when they arrive here, the fooner they are planted the greater chance there will be of their fucceeding.

oeedirtg j when :e plains come ne iip, they should be kept clem frotr. ... autumn, Hl be covered ... to prevent il ... fiderabile k ... reTcedfiv ... So in or tin ... a little ... will be har-ly enough to refill the ground ... Old of

The black Virginia Walnut is full in hairy as the common fort: there are force Jar ... in the Cliecia Barak: ... have enecraily rfpem^i fo well there is 1 their kernels ire fmall, IQ arc of little v. The tree* ill require the 6me ctilturr mon Walnut, but iuu-y grow bdt not too dry, and where there u * depth of their roots to run down. 1 hr I :nyoinif is very touah and pliable. To the Ki rfb*r*d i but the wood when gw*-n hrge ts very brittle, fo not of any great. Walnut h ... faneofftetWMarabeutifWlyvd! a eood pefflh, bul oihers hare very hide beamy, which is the cafe of many other forts. wood:

JULIUBE. See ZANTHO. JULIANS, or ROCKETS. See HASTARD. JULY FL. OWELL- See DIABTHP*. JUNCUS. Town, Ittfe R- H; 146. ah. 117. Gen. Plant.

The CHARACTERS arc, It hath a cleaf opening with blue colour, ... i.wr ptmta- rat tti nlmtd em- it, tuttis. h bash fix Aert ortlt fuwrui, tad a ... irii Monogr. crs hive fix (fi-

The Species are, mo Totnucio (ereti mucromtn, paniculi terminali, involucro duplito ipono. Lin. Sp. Plant 325. Rob with a naked, open, point. iivolu capitulis forel., C. U. P. 11. ... membrana- ... inncus acutUi, panicwla Kufb. Jo (bitw, paniioili tete-

0 nutlo ftri<eo, capitulo ;<^ wfji a <k>ft mM ...-ii, panicul't nan men tvnfdSfMidt. thil genui, lame of ... ind are very trou- ... re not TCorthy of ifc which are here puiniout 1 method of deftro-

banks of dw fc) in Holland, in order to prevent the water from washing away the earth, which has very Inrcfc. ... could be in danger of removing every tidii, ifii ... repair them ... prevent further damage. In the summer time, when the ... are fully grown, the inhabitants cut them, and tie them up mtu bundles, which are dried, and afterward c: ... Bit wrought into

% and few ... other world things, which li are JTtqucmly frnt :x> England, ThcJe ions di not growlbiii': ... i thcMaefe, jnd lbme othrr [' ... 'Tbnd, where I have ften i!:Ti upward of four feet high.

The third and fourth sorts grow on noilr, ftron^, un- cultivated lands i moll paru of Ingldini), and'eon- liime tir hirliagc where tiny art fudcred to remain. The beft roethud of dellroying tiefe Rufflers is, to fork them up< in Ly the roou in July, and afr;- hiving let thea lie a turtngih or three weeks to dry, to lay them in heaps, and in ... them ^rittty; and the affies which dick; .nioii.l, will be good nitruie for the ... i but in i>Mirru invent thir growing again, and to nuke the p.liute good, the limil Jhould be drained, otherwjc then ... will be no delc ... >i'g ^left

Ku(hc\$ entirely i but tfta it U well dntUKdt if the rooa ire annually drawn up, nnd the ground kept duly culled, they may be lubdurd. JUNFIPERUS. Tonrn. itUL SL H, 38S. ub. 361. Lin. Gen. Planu 1005. Junipct; in French, Cci

The CHARACTIRS arc, /; iuub mdi at&fnck fcwri in differed plans, <mi mejtJfctrn grnu an a iret ploiti if tbrut), !;;<> nfi li tail sppufit, laminated bt a /!xEl* me \ tin irnaJ, pert, /finj; *;r « i » tit; Iwiiit h\ ... I at <0 Pit' ... Hamitaih u til ... loteroi fin • The w* Jburrs beve a frail thra-pebtid tmpakmflt J>'i'x£* ^ • gtnua, w/bkb a permam femuntntf: • fuppert: three/ing/* ftytt) Htm aftertax w the fitxy fi 1 Q ami fl*J<i-

This genus of p ... ursii ranged in the twelfth frifion of Linnæus's twenty-second clafs, ... Pannia Monadelphica, which includes thofe plants which have male and female flowers in different plants, hofeiU- mina in one body. IUNIMSVS [Cemmsais] tolus ternu pillfntibuj mu-

... bu>, 1 amia erodocibus, bacca longissima. Junger ... jti ptaktd kff 1 b ... 8. Ti, ... ntibu,, acutiori- bus, 1 amia erodocibus, bacca longissima. Junger ... C. B. P. 418. The Tree, or Juniper Juniper. ... which art L ... 11. L. Fo ... rrii. Ind. CeJitr efFirpmi- er rtd Oder. frmrtira (QtrclimMn) folm 1 ... narjs, j ... nioribut imbricaris, fenioi 464. yxw/w »i'i ' •

etdmtsfrriitixg; J imperis Virginia, iulia inf- rionbus junipi ... fum itfcrenubw. Be<h. B

5. JUNIPERUS (B&Mdieta) folia inferioribL M ternh, ttttdrifariim imbricatis. *J. Juniper with*
lptaa; iHt trdrer icstvr) plated by tints, end tit upper tr
je lin, which the title over *t ttbr*. Junipcrii Ber-
 mudawi, H. J. *Color of Bermudas.*

6. JUNIPERUS (Zar/era) foliis quadrifariam imbricatis
 acutis. -J.ta. Sp. 1471- *juniper z^ttb tuini-Fltptd a**
htKli f faced by /SKM, Mng ever tech ether. Juniperus
major baccu ca:nilci.'C. B. P. Cuattr Juniper with
 -TT.CS.

7. JUNIPERUS (Pbjrmda) foliis ternis obKccr.itis imbricatis obtu:
 <-y~' • *J-fuiptr ariiL luraitplenea*
by tbreti, wbi-l' arc tbttraie, cbtufl, tint! lying tv/r
amb uat. Cedrus folio euprcflil major, tru"tu fkve-
 C. B. P. *Crwter Cedar with a Cyprefi kafetnd*
ytUxaiijh fruit.

8. JUNIPERUS (id*) foliis ternii undique imbrirati;
 ubiifo. Flor. Lcyd. 90. *Juniper icith «J**
blunt kirLi, -xhit.il every where tit ever cub ether. Co-
drua folio cujircfii media, majoribus baccia. C. B. P.
ijk Cedar, with a Cyprefi leafand larger
lerrin.

9. JUNIPERUS (br.dmfii) foliis omnibus rjmdTifarinn
 junioribus ov-iltS lctoribus acutife Prod.
 J.Leyd W •ait). *U lit luKifufed hj frnt,
 tr.er each olbr, tbt jwog <*** i' cldtr
 Juniperus maxima cuprcfici folio niLn'imo, cor-
 licc cxtrJOTcin trnuc* philyras ij.^
 Cat. Jam. I iS. *Gmtifl Junper witi tie Itnijl Cptrfi*
ad tk: oulr iarifpHttag tgin thin duMe pirns,
centmzch eailtd Jamsica Brpp-ltmiiig C,

10. JUNIPERUS (Sahinn) foiiis oppofitiv eprctfs dreur-
 remibus, ramis patuib. *Jumper wfl> eppsfm, ercti,*
rwixix Itavn, and jpremiig hramUi. Sabjna iblio <-
*inarifct, C.11.^.467. SMtm v/ub *Tusoriji kaf, er*
cemtn SactK.

11. JUNIPERUS (Lafizaria) i, loliis oppafitis patulis de-
 (*[inrititij, rai!; *Juniper vitib eppijste*
 ! run over emb tber, and mere
 breaches. Sabina folio cuprcclil. C. B. P. 487-
 1 «J o Cjprefi Unfa ummeiUf ceiUd Berry-btarinz

JJ. JimiPMDt (OajceJrat)foilit undJqec imbricirisob-
 whj, rami> urctibus. *Juniper with cbltife leaves evert-*
tebere itixg tvtr eatb ether, and taper hrtstbll. J uni-
perus major, bat ne. C. B. P. 4.89. *Greater*
Jarnprn /i4 brmrmjc

1^ JUNIPERUS (Irfariini) foliis qua Irfariini ioibrks-
 Irtxl. Lcyd. 90. *Juniper •ciib sen:-.*
 ittr e<xl>Siler, placedfcuixrts. *Cedrus Hifpa-*
 nica proccrior, fruclu niaximo nigro. Tourn. Infl.
 5S 3. -*TaSet Upaitifb CfJor, with a nerj krgt Mo.-kfnai.*
 The iirt lbrt grows naturally upon chaiky lands
 many pna of England. This is a low fnrub, fel-
 tn ritng more than three feet high, fending out
 ny frwdtng branches, which incline on ev
 ivered with a brown bark, and garni;
 iW awl-lhaped leaves ending in acute points, which
 placed by threes round the branches, pointing
 rond* thtfc arc of a grayifh colour, and conti-
 ihroujtfc the year; the male Eawcre lbmttaies
 t fituaicil on the lame plant with the female, but at
 ce, at other tiaiM they are upon diftinf
 plints: ihe frmatc Bowen are fucc<TLd by round-
 berries, which are firft green, but when ripe, <re
 a dark purple colour. The berries ripen in the
 mn.

The wood, the btries, and the gum, arc ufcd in
 tcinc •, tlic gum is titled Saadcuracui.
 The lechil fort it known in tlc garden; by the ti-
 ot Swcdifh Jumpei this is many iuppofed to
 be only a variety of the firft,- but is ,
 diHincL fpecies, for t liave many year raised both
 forts : on the top di, and have nev
 lei. Thb Un n to the height of ten or twelve
 the branches grow more erect, the leaves are
 rurto^rer, and end in more ocute points: they are
 placed further ftander on the br*i>, and t< ber-
 ries are longer. It grows untunly in Sweden, Den-
 mark, and Norway.

The third fort grows nalvrelly in mod : :
 North America, where it is called red Cedar, to diffi-
 guifh it from u i^ri ol Cyprefi, which is called white
 Cedar Lhere. Of this there are two, if not tin
 rietiei, belides the ipccies here enumerated •, one of
 which has leai-cs in everv Jiart, like thofe of the Sa-
 vin, and upon bring rubl^cd, emir, a very ftron" un-
 grateful odour; this is commonly ilibnguilicil in
 America, by the title of Suvin-tree. There is ano-
 ther with leaves very like thofe of Cyprefi, but as
 ibefc generally arile from the fame feeds wicth tity
 arc fnt from America, ib they may be fur
 to be only lcminal virtaions.

The lower leaves of the fourth fort are like thofe
 of the Swcdifh Juniper, but the tiprrr kaves a;
 tliofo of the Cyprefi; and thu difference is tonftant,
 if the fteds arc carefully gathered from itic linne tree ;
 but xi molt tif thtpe people who fend over thefc feciis,
 arc not very careful to diftinguifh the differen-
 it ofwn liippens that the f«Ji of two or thrt.
 are mixed together, which has given occafion to peo-
 ple to imagine them hut one fpecies; but all the Itaves
 of the third arc Uk: vhoie of ihc Juniper, fo the gar-
 deners call ih» red Virginia Cedar; and the fourth
 they c •-J] Caroli.Ti Cedar, ihough kti JIB lbr> grow
 naturally in Virginia.

The fifth fort is the Bermudas Cedar, whole wood
 has a very Strong odour, ami was formerly in great
 dteem for wainkoting of rooms, and atfb for l'ur-
 niture; but the odour tie in^ too powerful for l
 rxrfbns, has rendered it let vilLabii-, and at prt-
 bnt there is nst much of l: imported Lira Eng-
 bn^ . Tlitfc phnts, »hi young, have acute-pointed
 leaves, which ftead open, and are placed by three
 round the branches, but as the trees advance, fo
 the leaves are very •, and placed by fours round
 the branth
 of filh; the berries ue prtnuccd I toward the end of
 the branches -, the
 are of a dark red colour, inclining
 to purple. J there are few of thefc trees of any
 great hzc in !
 I have not had an oppor-
 tunity of examining itw
 flowers, thefc
 re du not
 know if tity ha
 male and female flowers on the
 fame plane, or ii they are on different planes; for
 although I have received very fine fpecimens from
 Bermudas, yet they ate all wi-
 fully grown, and nntonrwith male (lwvers,
 and entire
 treesartcommonlydeltrojcdinEngljndwhe::! it r
 there happens a fever winter, where they are not Ihcl-
 cd, ib we h:ive little hopei of feeing them in (lower here.
 The fixth fort grows naturally in I rta, from vrlenci
 I receivcttthe berriesj which i, *er hccou, -d»*
 in the Chdlt-a garikn. This hath fceding branches,
 grow
 g thinly, which are gatml
 with acute-pointed le-
 c>, placed by fours round the branches
 they
 are of a deep green, and no;
 other, but grow horizontally, pointing out
 the berries arc much larger than thole of the cc
 Juniper, and are blue when ripe.

The fevetvth fort grows naturally i Porto"
 whence I have fr.
 I have lately received the berries. This
 fort
 has branches in a pyramidal form;
 the lower ones are covered with fhort, acute-pointed,
 grayifh leaves, placed by threes round the branches;
 the upper branches
 are of a dark green, lying Ol
 for each other like the
 ftuiks of tuiit iit en>!
 in acute points. The male
 iluven arc produced at ilL
 extremity of the branches;
 they are fi:>lin) in a luali
 foaly, conical habit;
 ftanding upon a fhort foot-ftalk erect, the foot it
 produced fometimes upon the fmg tree, at diftance
 from the flowers, and at other times they are upon
 feparate trees; the berries of this are of a pale yellow
 when ripe, and about the fize of thofe of the common
 juniper.

The cigl-,h fort growl naturally iñ Spa. Q arft ft
 from both which countries I have received it. The
 branches of this fort grow erect, and are covered with
 a reddifh-brown bark, the leaves are fmall, obov-

and like over each other like the folks of fffhj the jialc ilowrrs grow at the exu-emicy of the branches in a conica • • iikin, ami die fruit gro

The ninth fair grows naturally in Jamaica, anil idfo w the other iAji... ihtre it rites to be one of die largest timber trees in thofe countries : (L-L woexi is frequently fetched from the tree by tilt inhabitMite oi North America, for bull I \A of (hips. This fort generally oafatmnded with il... Bermudas Cedar, ... which were sent me by the late Dr. Louf toim,prwf them tube i... ilic branches ... nis'lpresH veryvritfc, il ... ilmsll, and are cwry where over each -other; the brnk is ri. fpliu ati' in ltriiigj, 411 ... iln- berries are I mailer i tun tl

of a light brown colour wlicti dj-t-: this lort is nrft-anil fntmlefl ... ihr comfum Savin ; this grows natunlly in. liily, Spain, and ... leads out its branches mountains where it is cold. ... more than three or four horizontally, ft fekioni riles • fen hijrh, but iprcatU K> n COofideFible distance every way, ... which run ... CUK-(Join) •

I hi* furc very rarely jirmlui ... pUsu (Iwjn Itmidinji mere than firry year.

have not more ; ... Found any mule Howen up. ... the berries were smaller than those of the common Juniper, but of the same colour, and were a little compressed; the whole plant has a very rank strong odour ... ilimb ... is j and Mr. It ay com m' ... tol it mixed with milk, sind Iwctened with fugur, aa an excellent medicine for children • ho urr troubled with v ... The leaves btiven into a Mcapl.ifin wiih hog's-lird, will cure cl iliren's Ecabby heads. Therlcvemh fort lias, by many, been fwipo ... i there

*H^a a i ... i thLm t for the branch ... of the f'rr, i ... leaves are shorter ... acute points which ... upward, ... rise to the height of ... feet, and produce great quantities of berries. I have propagated them from seeds, but have never found it vary. It has been distinguished by most of the old b - inifts, by the title of berry-bearing Savin. It grows wt naturally on the Alps, from whence I have received the berries.

The twelfth fort grow* naturally in Spjin, Pen ... and the south of France, where it rises to a twelve feet high, ... IJng out brsn, ... i fifb, the branches are small and taper, having no angles or corners, as most of the others have; the male flowers are situated at the end of the branches in conical heads, and the berries grow below from the side of the same branches. These are larger than those of the common Juniper, and when ripe are brown. The thirteenth fort grows naturally in Spain Mid Portugal, where it rises from twenty-five to thirty feet high, sending out many branches which form a sort of pyramid; the branches are furnished with acute-pointed leaves, which lie over each other four ways, so as to make the branches four-cornered; the berries of this fort are very large, and black when ripe.

These plants are all propagated by sowing their seeds, the best season for which is as soon as they are ripe, if

they ran then ha [irucured i for when il ... they are kept until :pring before they are sown, they will not come up until the second year. The ground in which the seeds of the hardy sorts are k • vn, "ihilLk be freli light, bui i should not be dug too deep: it floiitil! In well dug and levelled fury even ; iin:n fijw your diem) pretty thick, Rodfi/t ftune earth over... about half an inch thick ; this bed will require no farther core than only to keep it dt . . . words, and toward the middle or latter end of April, you will find some of your plants appear above ground,

though, perhaps, the greater I part of durra n may be till iric Ipi ... following before they come up; therefore you should carefully clear the ixve from weeds, and in very dry weather water them with some water, which will greatly promote the growth of those plants which are up, and also cause the other iixdi to vegetate; but if (lit bed in which these feed) ure fown is much expted to the Tun, it ; should be fhate'd with mats in \K Jay; for wti'n die plants come first dp, ttry v:ijj n&t bear ion much heat. In this bed they should em3in til! ihv [econd autumn, when you must prepare some beds to transplant them into, which should be i \x or' light, ... and having well dug and cleared the ground from all noxious weeds and roots, you should make it kvd |iiii then in the beginning of October • bcr, which is the proper season for removing these plants. you should raise up the young plants with a trowl, preferving as much earth as possible to their roots, and plant them into beds about five or six inches asunder each wsy, giving them some water if k-ttk the earth to their ; roots; and if it should prove very dry weather, you may lay a lit ;c muldi upon ihp lurtaz:e of the ground round their roots, which will be of ffin frvice to the plants. But as many of the beds will be yet left in the ground where they are sown, to i he beds should not be disturbed too much in taking up the plants; for I have known a bed sown with the berries, which has supplied plants for three years drawing, some of the berries i in so long in the ground before they sprouted; therefore the surface of the beds should be kept level, and continually dtnn : rain weat.

The plants may remain two yeas in these beds, observing to keep them clear from weeds v • on the first year; ymi lliailJ liir the ground yearly between them, that their roots may not grow greater eaf: rtrick into it; after which time they should be transplanted, cidicr into ariurftry, at the drfh ... of the feet row from raw, and eighteen inthes jtunder in the rows, or into the places where they are to remain for good. The best season to transplant them (as I before observed) is in the beginning of October, when you should take them up carefully, so preserve a ball of earth to their roots; and when planted, their roots should be i ... all which, if carefully attended in, as also ... rvmg W rcviffa th-m with water in vt iy dry weather until the • h«w taken new rlor, will preserve ic them from the danger of not growing; and they being ... in respect to cold, will defy the severest of our winters to injure them, provided they VK not pbnu••! in a moist or rich (oil).

In order to have these trees alike in height, I ltrir under ; inches ... JM be tik ... t)w/ arr inclined to grow • mt be ktT: their ... s do more ... i liot

weather is very wet to draw out from such places, if wounded; so that it will not be advisable to take off too many branches at once, which would make many wounds, from which ... i Htp in liot »i other would flow in such plenty, ... to render thuircci lwick and unhealthy.

The two sorts of Virginian Cedars grow to a much greater height than the former, and in their native country afford excellent timber for many uses, but with u there are very few whidl sve ii'ore twenty-

five or thirty feet high, though there is no doubt to their growing larger for they thrive very fast after the three first years, and refill the (harpest frost of on climatic exceeding well, and are very apt to grow fruit and regular, provided they are not furlered 6 (hoot out too much at bottom.

These plants are *Mo* propagated by seeds, which must be procured from Virginia or Carolina (for they rarely produce seeds in England) and sown as was directed for the other Junipers; but as this seed cannot be procured in England till spring, so when sown at that season, it remains in the ground until the succeeding spring before the plants appear; therefore you must observe to keep the bed clear from weeds, and not suffer seeds to be disturbed, which is often the fault of some impatient people, who think, because the plants do not rise the first year, that they will never come up, and to dig up the ground again, whereby their seeds are buried; but if they are let remain they seldom fail to grow, though for times it is two years after (owing before they come up. When the plants come up they must be carefully weeded, and in dry weather (should be refreshed with water, which will greatly forward their growth; and the autumn following they (should have a little rotten tan laid between them, to keep out the frost. In his bed the plants may remain till they have had two years growth, then they (should be transplanted into other beds, as was directed before for the other sorts, observing to preserve a ball of earth to their roots; and after they are planted, if the season prove dry, they must be carefully watered, and the surface of the ground covered with mulch, to prevent the sun and wind from entering the earth to dry their fibres; but they should not be too much watered, which often proves injurious to these trees, by rotting their tender fibres soon after they are emitted, whereby the plants have been often destroyed.

In these beds they may remain two years, observing to keep them clear from weeds; and in winter you should lay a little fresh mulch upon (the surface of the ground round their roots, which will prevent the frost from penetrating to them, and effectually preserve them, for while the plants are young, they are liable to be injured by hard frosts, when too much laid thereon; but when they have attained a certain strength, they will resist the severity of our

After two years, they (should either be removed into a nursery (as was directed for the common Juniper) or transplanted where they are designed to remain, observing always to take them up carefully, otherwise they are subject to rot when transplanted; and it is best to mulch the ground round them as was before directed, until they have taken their roots; after which they will require no farther care, than only to keep the ground even about their roots, and to prune up their side branches to make them aspire in height. The soil in which you plant these trees (should be fresh and light, but must not be dunged, especially in the time when they are planted, for dung is very hurtful to them, if it be not quite rotted to mould; therefore the mulch which is laid upon the surface of the ground should not be dunged, but rather some old tanners bark or sea-coal ashes, which will prevent the frost from penetrating deep in the ground.

These trees being thus managed, will in a few years rise to a considerable stature, and by the variety of their evergreen leaves and manner of growth, will greatly add to the beauty of all plantations, and are highly esteemed, which indeed is what we seldom observe in any of the English gardens or plantations; for there are few people who consider that the different growth of these few trees with which they are so much pleased to plant their plantations, as to place the tallest growing first, and the smallest next, and so gradually diminishing till we come to the common Juniper, and others of the same kind; whereby all the trees will be seen, and the gradual de-

clivity of their tops will appear like a verdant Hope, and be much more agreeable to the sight, as it is more advantageous to the growth of the trees, than to place (the tops of humble growth near such plants as will grow to the first magnitude, whereby the shrub is hid from sight, and will be over-shadowed and destroyed; nor can the distance which each tree requires, be so justly proportioned any other way; for in this distribution, the largest trees being separated by themselves, may be placed at a due distance, and then the middle growth succeeding, may be according to the allowed sufficient room; and the smallest, which are next to the first, being placed much closer, will hide the naked stems of (the larger tree), and have an agreeable effect to the sight.

The timber of these trees is of excellent use in America, for building of vessels, wainscoting floors, and for making many sorts of utensils, it also yields a bitter resin, which prevents its being destroyed by vermin, but is very brittle, therefore not so proper for tubborn uses, but however, by increasing the number of our timber trees, we (shall find many more (ago, besides the pleasure their variety affords; for we may hereby have trees of very different kinds, which are adapted to grow in various soils and situations, whereby we (shall never want proper trees for all the different sorts of soils in England, if proper care be taken in their choice; which will be a great improvement to many parts of this kingdom, which now lie unplanted, because the owner, perhaps, find that neither Oaks nor Pines will thrive there, and consequently concludes, that no other sort of tree will, which is a great mistake, for if we consider how different the sorts of trees are (being designed by the wife Author and contriver of all things, to grow on different soils and situations) and only observe what is adapted for growing on dry barren mountains, and what are designed for the lower and richer valleys, we need never be at a loss for proper trees for all sorts of ground.

The Bermudas Cedar being a native of that island, and also of the Bahama Islands, is much tenderer than either of the former sorts, except that of Jamaica, is not likely to thrive well in this country, for although many of these plants have lived several years in the open air in England, yet whenever a severe winter happens, it either kills them, or (so much defees* them, due, they do not recover their verdure in the next year. These plants are propagated by seed in this manner as the former, with this difference, that these (should be sown in pots or tubs of earth, that they may be removed into the shelter in the winter time, otherwise they will be hurt by the winter frosts; but they will require no other care than only to be placed under a common hot-bed frame, where the glass may be constantly kept in a moderate weather, when they cannot have too much (KT air, and only covered in the winter froth. The plants continually remain in the ground until the second year before they come up, therefore the earth (should not be disturbed; and in the summer time they should be placed in the Shade, to prevent the earth from drying too much, by the west wind, which they should be often watered, but do not give them much water to them (once, which would hurt them.

The spring following, when the young plants come up, they must be carefully cleared from weeds, and in dry weather refreshed with water; but should be kept in a place defended from strong winds; and in winter they should be covered under frimts, where they may be covered in hard frosts with mats, but must have open air when the weather is mild. In April following you should plant them each in a tin; the half penny pot filled with fresh earth, being careful to raise them up with a ball of earth to their roots; and when they are planted, you should water them, to settle the earth to their roots; then place the pots in a warm situation, where they may be defended from sun and wind; but if you will before * modestly hatted to plunge the pu-

will greatly promote their taking new root; however, you must carefully defend them from the great heat of the sun, which is injurious to them when fresh removed; but when they have taken root, you may expose them by degrees to the open air. If you suffer the pots to remain plunged all the summer, it will preserve the earth therein from drying so fast as it would do, if they were set upon the ground.

In October you should again remove these plants into shelter, or else plunge their pots into the ground under a warm hedge, where they may be protected from the cold north and east winds; and in the spring following you must shift the plants into pots a size larger, taking away some of the earth from the outside of the ball, and adding some fresh, which will promote their growth; and so continue to manage them as was before directed, until you plant them out in the places where they are designed to remain; which should not be done till they are four or five years old, by which time they will be strong enough to bear the cold of our common winters.

The reason for my directing these plants to be preserved in pots until they are planted out for good is, because they are difficult to transplant, and being tender will require some shelter while young; and whoever observes the method here laid down, will find the plants so managed to gain two years growth in six, from those raised in the open air, and be in less danger of being destroyed, and as the trouble and expence in raising them this way is not great, so it is worth practising, since in a few years the trees will recompense the trouble.

The timber of this tree is of a reddish colour, and very sweet, and is commonly known in England by the name of Cedar Wood; though there are divers sorts of wood called by that name, which come from different parts of the world, especially in the West-Indies, where there are several trees of vastly different appearances and genera, which have that appellation: it is this wood which is used for pencils, as also to waincot rooms, and make stair-cases, it enduring longer found than most other sorts of timber, which, perhaps, may be owing to some extreme bitter taste in the resin, with which the tree abounds; for it is very remarkable, that the worms do not eat the bottoms of the vessels built with this wood, as they do those built with Oak; so that the vessels built with Cedar are much preferable to those built with any other sort of timber, for the use of the West-India seas, but they are not fit for ships of war, the wood being so brittle as to split to pieces with a cannon ball.

The Jamaica Juniper is more impatient of cold than the Beronides, so will not flourish through the winter in the open air in England, and the plants must be preserved in pots and covered in the winter; this is propagated by seeds, in the same way as the Beronides Cedar; but if the pots are plunged into a moderate hot-bed the second spring after the seeds are sown, it will bring up the plants sooner, and they will have more time to get strength before winter.

All the other sorts are hardy enough to live in the open air, so are very well worth propagating, as they will add to the variety of Evergreen plantations; some of the sorts will rise to a very considerable height, so may prove to be useful amber, and may be adapted

in autumn in a shady border. Those plants which are raised in autumn in a shady border, will grow upright, nor to so large a size as the plants

in autumn in a shady border. Those plants which are raised in autumn in a shady border, will grow upright, nor to so large a size as the plants

which are raised from seeds; so that when these can be procured, it is much the better method, but the other is frequently practised on those sorts which do not perfect their seeds in England.

As several of these sorts grow to the height of eighteen or twenty feet, the procuring as many of the sorts as can be gotten from the countries of their growth, will be adding to the variety of our Evergreen plantations which cannot be too much propagated in England where, in general, our winters are temperate enough for them to thrive to advantage; and as the sorts which are a little more tender than the others obtain strength, they will be in less danger of suffering by severe winters, as we find by many other plants, which were so tender as not to live in the open air at first, but now defy the severest cold of our climate.

JUSSIAEA. Lin. Gen. Plant. 47S.

The CHARACTERS are,

•// bath a small permanent empalement, divided into five figments at the top, fitting upon the germen. The flower has five roundish spreading petals, and ten short flendef stamina, terminated by roundish summits. The oblong germen supports a slender style, crowned by a flat stigma, marked with five stripes. The germen afterward becomes a thick oblong capsule, crowned by the empalement, which opens lengthways, and is filled with small seeds.

This genus of plants is ranged in the first section of Linneus's tenth class, intitled Decandria Monogynia, which includes the plants whose flowers have ten stamina and one style.

The SPECIES are,

1. Jussiea (Suffruticosa) erectavillofa, floribus tetrapetalis, decandriis feffilibus. Lin. Sp. Plant. 55\$. Upright hairy Jussiea, with flowers fitting close to the stalks, having four petals and ten stamens. Lyfimachia Indica non pappofii, flore luteo minimo, filiquis caryophyllum aromaticum aemulantibus. H. L. 396. Indian Primrose with a very small yellow flower, and pods resembling Cloves.

2. Jussiea (Pubescens) villofa, caule erecto ramofa, floribus pentapetalis, decandriis feffilibus. Hairy Jussiea with an erect branching stalk, flowers having five petals and ten stamina which fit close to the stalk. Lyfimachia lutea erecta, non pappofa major, foliis hirsutis, fructu caryophylloide. Sloan. Gat. Jam. 85. Tellow upright largwTrce-Primrose with hairy leaves, and a fruit like Cloves.

3. Jussiea (Erecta) erecta glabra, floribus tetrapetalis, o&andris feffilibus. Flor. Zeyl. 170. Smooth upright Jussiea with four petals, and eight stamina to the bewers, which fit close to the stalk. Lyfimachia lutea non pappofa, erecta, foliis glabris, fructu caryophylloide. Sloan. Cat. Jam. 85. Tellow upright Tree-Primrose with smooth leaves, and a fruit like Cloves.

4. JUSSIAEA (Onagra) caule erecta ramofa glabro, floribus tetrapetalis o&andris feffilibus, foliis lanceolatis. Jussiea with an upright, branching, smooth stalk, flowers having four petals, and eight stamina fitting close to the stalk, and spear-shaped leaves. Onagra foliis pericariis amplioribus, parvo flore luteo. Plum. Cat. 7. Tree-Primrose with a large Arjijmart leaf, and a small yellow

5. JUSSIAEA (Hiritta) caule erecto simplici hirsuto, foliis lanceolatis, floribus pentapetalis decandris feffilibus. Jusfoa with a single, upright, hairy stalk, spear-shaped leaves, and flowers which have five petals, and ten stamina fitting close to the stalk. Onagra erecta, caule ruTro hirsuto, foliis oblongis, flore magno luteo. Houft. MSS. Umbel Primrose with a hairy leaf of a reddish colour, oblong leaves, and a large yellow flower.

The first sort grows naturally in the mountains whence the seeds were sent me by the late Mr. Robert Millar; this rises with a slender stalk near three feet

which come from the seed of the stalk singly, having four small yellow petals, which are crowned by the four-leaved empalement, and has a great number of small seeds.

femblance to Cloves. This plant flowets in July and Augull, and the feeds ripen in Oiflobcr.

The lecond fon grows naturally in J.unsica. The feeds of this were fent me by the late Dr. Houftwin v this rife with a hairy branching ftalk two feet high, ;nj is garrHbed with narrow fpcar-ih.ipcd I

alternatc. The flowers come our toward the end of the branches (wigly from the wings of the leaves, fitting ciofe to the (talk; they arc comi>ofcd of five prcry large yellow petals, and ten (lamina; thefe lit upon a long germen, which afterward be-comts the leed-veffel, crowned by the empale- thtfe arc Biled with fmiil feeds. It flowers and feeds al-oui the fame lime with the loft.

The third fort grows naturally in Jamaica, from whence the feeds were lent me with thole of the former fort-, ihis riles with a Smooth creel iULk three feel Ivgh, <iarnifhed with long, narrow, fmooth, fpcar- Itupnl leaves. The [lowers arc large axi yellow, firting clofe to the iULk j thet arc fucceeded by long feed-vedels, fitaped like thofe of the other forts. It Mowers and feeds at the lame time with the former.

The fourth fort was tent me from Canhagena by the late Dr. Houftoun "• this hath a branching fmooth flalk near three feet high, gamutied with fpcar-hiped leaves, (landing upon lhort tbot-ftalks. The flowers are fmall, yellow, and arc compofed of four petals nmf eight (lamina-, the[e fit very dale to the ftalk, and arc fucceeded by feed-vefliris, fiaped like thofe of i he former forts.

The fifth fort was fenn me from La Vcra Cruz, by the law Ur. Houftoun; this rifts with Tingle upright red ftalks three lest high, which arc hairy and chan-nelled. The leaves are fpcar-fiaped, and placed al-ternate on the Itslks, Handing nemr mgttlter Uiao in any of the other ions. The flowers conic our from the wings of the ICJVCS, toward the top of the Stalk, tliry arc compofed of live large yellow petals, and ten [lamina fitting dole to the rtslki, and arc fitcceeded by feed-vedcls which are one inch long, andflwped like thiofc of the former fores.

The firft, lecond, ajid founh forts arc annual plants, at leaf they are fo in England; tor if the plinu arc raifed early in the fpring, (hey wiiil flower in July, and ripen their feed the beginning of October i and thofe plants which are raifeiflater m the fpring, cannot be preferred through the winter, though they are placed in a warm ftove; nor do their iVaiks ever grow jgnous, or (hew any (igns of their being perennial ~i their native country.

he third and fifth ions have continued through the winter in the bark-ftove, but thole have bei plin in as did not Bower and Iced the fir (I ; < "tr they lud perfected feeds, the following fummcr the pbnts decayed.

Alt thefe fore are nroitagatcd by feeds, which (ioiild be fown early in the fpring, in pou filled with n foft loamy loil, ami pluntd into a moderate hot-bed; but k feeds often lie a whole year in the ground before they vegettte, the canji mufl be kept moift, and (lie gkflti of [he hot-bed lhaded in the heat of the day, by this method the feeds may be brought foon to v^Aruie; when the plants come up, and arc

to r... they Ihould be each planted into a fmall feparate pot, filled with light lojmy earth, and placed in 10 « hot-bed of uiincrs bark, where they fould be (haded from the fun till they h:ve i a w root; after which dicy (liould have free air ad-mitted to them every dayi in propoion w thic warmth of the fceion; they mufl allu be frequently refreshed with water, but it muft no(be given to them in too [plenty: when the roots" the plants have filled thic fmall jiot4, the plants fhould be removcii into others a "• c largrr j and if the pi are too tall to ftand under the : jineJ of the hot-bed, they film be removed into the bark-ftove, •

i-nts I rly in the fpring, and arc brought forward in ^heds, all the forti will flower and perfca their

feeds the fume year, which is better tlun to h.r. e them to keep through the winter.

JUSTICIA. Houll. Nov. Gen. Lin. Gen. riant*. 27. Atiliattxi*. l'ourn. lull. R..H. 175. t. 79. This plant was fo named by the late Dr. I Inultoun, in lit-tour of James Juitite, Efiji a p on laves uJ (n-couracr of gartlening and botany.

The CHARACTERS arc, The empukmem cfthejbmerisJrMll, aid dhidtd ix .I tat jigmtMi at tbt Up. Tt f;vj,ir balb tut pital, tebitb is divided into l«w lips tilmeji it tbt bottom, art entire. Tin tspper lip is raiftd trrtbv undtr is rejUxttd, It bath ivx > awt-fi: u mdr tb* upper tip, UnniuJiJ by art bifid at their Imfi. It bulb an parting a jkitdtr fijk vrtirtl ll fe<g creamed by a Jli.

comes tut obting tapfiUe p ; d ly <i ^ : r- titioa, vobich is contrary ta the twa voraei, v.iieb epea j'iitb JH ehjuiciy, and tijl <ui 'c'riir.

This genus of pUnts is ranged in the Brit feftion of LinnxusV; Iccond dats, in tilled Di (which include!) thofc plants whole (Liritna and one llyte. To thti genus of Or. Hou-toun's n joined the Adhatoda of l'ournofort, but rher^ is a diftinction in their Bower lipiof Julti- oa arc entire, but the upper lip • Adhatoda it in- tentett at the end, and the ur Adhatoda there are liction more than two fordi, but in Adhatoda feveral.

The S^t(iE5 arc, t. JUSTICIA (Sterpisiiks) foliis oblongo-ovatis hirtulis, feflilibus, nuribus fpcicaris al j'ujlicU with eileng, «ad, hairy leaves being rife to tbtjlatls, axifavers growing in jf. tb* ftdt if Cms. Hoil MSS. ftrally Jufitica with large flowers growing in jpikei.

2. JUSTICIA (Stxmipikris) caucis trecto raniol'o hcKan-gulari, fohis ovvis oppofids, bracteis runcirortnibus contertis. Jufitida whb an erel bramtiigt fntkt bmix Jix anries, caul lmes p: fmat leaves (sr haBtr) g: J u fticia an - nuj hex.ingulari CJUIU. 1 jug ininiato. liau&. MS3. ^imuci lurfici, EmbsKiirs A a tansixi flavor.

JL: Trt 1. s ovaw-lsuiceoUtii, pedic- latis, hirt'utii, bi iicv fiet-Jlalk, Jbrsdybful.

JUSTICIA (Adhatoda) arborea, foliis lanceolato-ovatis, bracteis ovatis peribrevibus, cordatarum gales concavib. Flou. Zeyl. 16. Tree Jufitica with oval four-fajed leaves growing as

4. JUSTICIA (Adhatoda) arborea, foliis lanceolato-ovatis, bracteis ovatis peribrevibus, cordatarum gales concavib. Flou. Zeyl. 16. Tree Jufitica with oval four-fajed leaves, and a narrow lance to the flower. Adhatoda Zeylanthim. H. L. 622. Adhatoda of Ceylon, commonly called Adhatoda Nov.

5. JUSTICIA (Adhatoda) arborea, foliis lanceolato-ovatis, bracteis ovatis peribrevibus, cordatarum gales concavib. Flou. Zeyl. 16. Tree Jufitica with oval four-fajed leaves, and a narrow lance to the flower. Adhatoda Indiae, folia lanigata, non albo. Boerb. Ind. ah. 1. 229. Indica Adhatoda with a white leaf and v>bitf ictlj cal

6. JL-S-I JUSTICIA (Adhatoda) arborea, foliis lanceolato-ovatis, bracteis ovatis peribrevibus, cordatarum gales concavib. Flou. Zeyl. 16. Tree Jufitica with oval four-fajed leaves, and a narrow branching foil. Adhatoda Antiquaria, Lycu fact. Jufitida Peru. Fructu Adhatoda of Antigua, with the appearance of Bauhinia.

7. JUSTICIA (Adhatoda) arborea, foliis lanceolato-ovatis, bracteis ovatis peribrevibus, cordatarum gales concavib. Flou. Zeyl. 16. Tree Jufitica with oval four-fajed leaves, and a narrow branching foil. i. Trtt

...eir under fid: ...
 h h ... Adhato
 villolt', Roribil',
 with oibrtg kavtj.
 ef while jfmmtri.
 JDSTICM 'IUBsSum) arborrai foliis Jancnchito'
 brjckis ovatis tleciduis mucronari*, corollis in
 rchHexa. Flor. Zeyl. 17.
 mal havts, mial-frnxtd tiradrj *jffs/li faBefj,
 refixtd bt'met In the fltxetri. Adiiuaidia ipicJ Inggiffi
 *ore relirxo. Biirmm. Zey). 7. rail, 4. t' 1. Ad-
 da with a -very ... I a reflextdf-

likovered mowing naturally M Ia
 ... by the late Lr. Houttoim, who lent the
 ... ending out many branches,
 which are gai ... (leaves, two
 nehcs long, and one inch broad, which are hairy and
 placed opposite; from the wings of the leaves come
 out die Ipikcj 'of flowers, which are reflexed: like a
 scorpion's tail. The flowers are large, of a cirmim;
 colour, and ranged 01' one side of" the Jpikcv thec
 are succceded by J;ort pods about half an inch tang.
 The fecund lbr wU di I covered by the f-ine genii c-
 man, in the fume country -, this is ait annual plant
 with an upright stalk, having its angles which rise
 two i three feet high, dividing in > many brandies,
 gnmi and 2 ... iiiey are I smooth,
 as are also the stalks. At each joint ionic out duftera
 of fm". wedge-shaped leaves, which jrc by Dr. Lin-
 nseus ti ... r:Qt of the larger leaves fall
 only their first leaves remaining. The flowers are pro-
 duced in small spikes at the side of the b ... unhw,
 fitting very close among the leaves, they are of a
 beautiful carmine colour, and have but one petal,
 which has two lips. The upper lip is arch'd, bending
 over the lower, which is also a little reflexed, but
 both ire entire. The flowers are succceeded by fiort
 wedge-shaped c ... pfules, opening lengthways, intituling
 two : small oval seeds.
 The third fort u difcovered by [he fame gentkmtn
 at CaiDpcai ... rhy mby ftalk
 fret high, dividii • into ... il branches,
 garnished with • oval, spear-ibapeti, hair)- leavrs, four
 inches ... itl two iichcj and a bull" broa.l, (bnding
 upon ttjot-ftulks -fbkh are above an inch long, placea
 oppofiti'. At (he bale of the foot-rtlsks wine out»
 r I lifter of fnwll i ... shaped leaves, ending in acute
 points, which are termed brattea:. The flowers come
 out in Joofoe dufters from the wings of the Jtalks, tu-
 want the end of the branches •, they arc of a pale red
 colour, and lhaped like thofe of the former fort.
 Thefc piittsarc propagated by feeds, which I
 be fown early in the fpring, in fnall Jkts filled with
 fresh light earth, and plunged into n moderate hoic-
 bcii i ... rmpcr-bath, obferv mg to water the earth
 goiik ... liy. The teeds of thec pUnts
 Jreqaemly lie a year *m the ground, fo that the pots
 mutt not be ihliirbcd, if the plant* do nor come up
 the fame v< ... but in the winter fhould be :
 in the ftovc, and thi fpring following plunged iito ^
 firfh hot-bath, which will bring up the plants iito ^
 if die ... wtrc good. When rhr pTmu begin to i
 the glaffo oi' the boc-bed 'hould be raiffd eva j
 day, when the weather is ... Mtn, toadmii frefhairw them.
 The plants muft alib be frequently watered in ...
 mull: alib be frequently watered in ...
 weather; but water fhould not be given in large
 quantities, while the plants are ... bt they
 are then very tender, and fufcept ... roc n the bottom
 of their ftems, with much moisture.
 When the plants are about two inches high, they
 fhould be carefully taken up, and each transplanted
 into a feparate fmall pot filled with fresh light earth,
 and then plunged into the hot-bed again, being cat'e'fil
 to water and fhade them until they have taken n new
 root, after which time they fhould have an admur'd
 to them every day, in proportion to the warmth of

the season, and should be (iuily watered every two i
 three days in hot went her.
 As ^Bhim.s Advance in their growth, th...
 into larger pots, for if their roots are i
 m... lined, the plants will not make any t
 progress; but they should not be ...
 •Mr i
 ibrt thntwill be ... i
 becaufe wile they are planted in very large pots, they
 will flarve and decay, without producing any flowers.
 They arc tor; ... o endwi; the OIKM are in this
 country, thcrefore tticy fhould always remain
 hot-bt-d, being careful to let them have a dm
 portion nf air in hot weurher; and the annual fort
 fhould be b: aught forward is fast a pcfible in the
 fpring, that the plants may flower early, otbtwiiie
 tley i will not produce good feeds in England.
 The lirlr u a third fort fhould remain in the hot-bed
 during the summer feafon (provided there is room
 under the gtailes, without bi-ing : covered) but at
 Michaeltnis they fhould be remov
 and plunged into the b>rc-be , where they muft re-
 main during the winter feafon, obferving to keep
 them wirm, as allow vi.
 a week, accordint; as they fhall require. The following
 rummer rJicic pis ... flower, and while feveral
 years, but tley rarely fri !
 The fourth fort grows i:
 Ion, but tins beer; !
 it is o ... naturally in the ifland of Cey-
 lon, in the French garden, where
 it is o ...
 but was for-irly call'd i Ueete Nut, and
 was by fime funpold to Le the creed
 the Chirke ... and fums this, • >ugh 3
 native of [b warm n country, is hard' enough] i
 in i cpod green-lioufc in F.ngland, n-tidiut any ar-
 tificial : heat, [tnfes here m ... vuoody (talk
 to the height of twelve or fourteen feet, forming out
 many spreading branches, which are garnished with
 fpc<r-(hajji : oval leaves more than six inches ... JodyF,
 ;inJ three inche ... placed oppofite. The flowers
 are produced on short spikes at the end of the
 branches, which arc wliiit, with forhe dark ipotij
 ihcle appear in July, but are not liicedced by wf
 feeds in England.
 This fort nvly be propagated by cutting!, whi
 ted in pot* in June or July, and plunged into a
 very mode rale hor-bed, wilt titce roots; but they muft
 br every (by freectied from the fun, and if the external
 air is excluded from them, they will Igcceeil beircr
 than whtn it ii admitted to them. It may ilia be
 prop tged by by ing down their young br ... ches,
 which, will take root in the nose of pots in one year;
 then the youn* plntis fhould v x y t each into i it-
 p'ante por, tilled with loft loamy raruh, ... and placed
 in the rfiacd tilt they have taken new root, ivhen they
 may be placed in a fhceded li: ... during the
 lummer, but in winter they muft be 1: ... and
 treated in the fame way as Orange-trees, with only
 this difference, that thcfe require more water.
 The fifth for? nri iv, naturally in India, this rics with
 ii Ihnibby ftalk f:om three to four feet high, ending
 out branches on rery fide from the bottom, fo as to
 form ft kind of r ... ramish; thcfe are covered with a
 whiw bark, and garnished with ipcar-fbiptd cmire
 leaves, near two inches long, and one third of an in
 broad; they are fmooth, thiff, and of a : r; p gn m,
 ftanding oppofite. At the bafe of the foot-ftalks come
 out clufters of smaller laves, of the lii'ie /hape an
 texture. The flowers come out upo 1! (h rit fooft
 from th ... fide of the branches, each fup-
 Malfc fup-
 porting CM oi' two whit flowers, having 1 lons; era-
 pifetnents; theft an ... fluted by oblong red-veils,
 which, when ripe, call out their feeds, with an ebf-
 tivity, fromi whent it had the title of Sleep-woe.
 This is propagated by cuttings during any of the
 lummer months; they fhould be planted in pots tilled
 with light hoary earth, and plunged into a moderate
 hot-bed, and fhaded from the fun, and now and then
 gently refreshed with water, jrid not 100 much 1 if
 admitted to them. In jf out two Jntte tue (cuttings
 will have taken root, djen ihcy ir.itft b* | gradually
 p M ... mard

ir.ured (o beir the open air, into v> which they should be removed, placing them in a thelicred litiuuon, where they may iljy till autumn; but if they get root pretty cirly in the touner, it will U* prqptr to leparltt them ea>h into a (ingle liiall pot, fetting them in the fhjeir till they have uCn new toot, after which iliey iniy be placed as before directed; but when it is late in the feason before they take root, it will be better tolc: them remain in the fame pots till the following fprinj;. Ir: winter thefe plants muil be placed in a warm green-huule, or in a moderately warm (love, for they ue impatient of coU and damp, nor will >ly thrive in too much wsrnmbi thiy will often re^uire wawr in winter, but during thieir feafon it muil >c En^rn than nicxkrtjctly; in fuimmer they muil be moved into the open air, but fhould have a warm sheltered ftuation, and in warm weather they muil have plenty of water. This plant flowers at different feafons; but never produce* fruit Ir.

The fixth iLn giwes naturally in Jamaica, from wheri. the late Dr. Houfloun fruit in j lingUnd; ihi* i: with many thrubby flemier flalks about five fcc high, fending up branches on every fide from the r upward, which grow erect, and are covered with I whitifh b; , garnifhed with li Imjll, oblong, o:l Ifiyft, to ruing on; on each ride the ftal oppofite, and under the leaves are placed at every joint two (harp horns like thofe of the berber i • lie How- er: come out fingly from the wings of the leaves, they are tn-ill, and of a pale red colour, fhaped like thofe of the other fort.

The ninth firt was found by the late Dr. Houfloun, gT>winy [iituniJ at Cambrack; : his rife with a llrong vooi'y ft-i i twenty feet high, dividing into many i ooked irregular branches, covered with a figh brwn bat-. : with fpear-shaped oval leaves, rtenr four i>che> Wnj and two broad, which are covered with a foil (iawn on their under fiJe. The flowers; erow in Di<u; from the end of ih-i btanch, three, rom', or five of diete fuik; I arm: from the point, the middle fpike being near three inches long, *nd the othen abuuE hill' ; hat knuth. 'Jhe flower arc fmall and white, but fluped like thofcof the other fpecies.

The eighth lort grows nainrally at Malabar and in Ceylon •, this rik> in ns native fui) with a Krong woody dstr. itn or twelve fert high, dividing into many brandies, which are girnttht! with fpcf-(biped oval leaves five in •, m long, and two and a half braid, of a lucid green, place I oppolue. The flowers grow in very loiv spikes from : the end of the bndii. they arr or a E" ends color" with x lbjde of blue; the helince d thir Flower a reflexu.

Thefe three kinj are p-ogated j fecj^ in tic fame manner as the three & , and the p • i« m^l fac trcir-i in the fame WJV, t; ; ally w "le thry arc young; but after xami the eightli I'jit may be more hardi I trejU'd, when they have gotten ftrcngthi. This lorr may alii be uropigJted by curtingf, in the fame minnr u die fifth fort -, aud when the plan:>;; two or three years old, thry will thrive in a moderate degree of warmth in winter, ami in the fctnmrr they may be placed abroad for two month* in the wirnill feafon of the year; but they !••iuUt have a warm (heltered ftuation, and when the n- begin to grow cold, they muil be removed into the flou r, but "they muil have free ay admitted to them n at all timn when the v: other is warm. The other two lhorttd constantly remain in the bark-flou r, and reqi are the fame u • annct i, o;hir tL-nderplanti from the warmcil countries.

IXIA Lin. Gen. Fhr;. 54. 20jrio, iitum. Com, Hort. And.

THE CHARACTERS ARE,
It hath a long perennating falk (or flalk) which rifeth up from the ground; the flouers are in a long fpear-shaped patch which is equal, and there are fpear-shaped flowers which are placed about the patch, fometimes at equal diftances, fometimes by fingle joints. It hath an oval three-cornered green flalk above the flowers, fupporting a fingle flk

which is tin Irngth of tU Jiantina, crammed by a fat i:ftii JJJ^na; thi gennen aftercard iscsnui an aatbrc- caran .I capfull vitib thru cd's, fiiUd 'Jnlb rt&tJJji jeds.

This •jenos of plints is ranged in the firft kQxx of Linn*ta*a third dais, intitlctj Triandria Monogynia, which includes thofe plants whole flouen lave three ftoniitia ami one liyle,

The SECT II tte,
i. ILEM (Cinnam) folis enfiformibus, floribus notis panicula dichotoma, & 'ibii> peJunctilii Hort. Upul. 16. Iria with fpear-shaped leaves, and flowers growing ramit in ficked panicles upon joint-falks. Bermudiana Iria fol • iiojuri Huc trotto, ciegu:; punctato. KriuL Mort. irj. ^tb. /=: BenguJum with a large fru high, and a fegret coloured feafely spotted.

1. IXIA (Africana) floribus capitatis, fpathis lacertis. Lin. Sp. Plant. 36. Iria with round flowers, being topped flalks. Bermudiana Capensis, capitulis lanuginulis. Det. Hort. Sicc. 242. Bermudiana from the Cape of Good Hope, with round heads.

2. IXIA (Africana) folis gladiolatis, nrrvi; , bifidiis, floribus fpathis terminalibus. Icon. tab. '55. 'ig •• Iria with fpear-shaped, bare, round leaves, and flowers growing in fpathes at the end of the flalk.

3. IXIA (Africana) folis linearibus gladiolatis, floribus alternis terminalibus. Icon. tab. 155. fig. 2. Iria with narrow fpear-shaped leaves, and flowers growing from the fides and top of the flalk.

5. KI^ (CTKIWOJ loliu gtjdkjtdris glabris, floribus corvmbafis terminitibus, L in. tab. 1 -, 6. Iria with round fpear-shaped leaves, and flowers growing in a crown embracing the flalk. Syzygium Afric. floues lano maculi rotatis. Cidem. Greater Afr. ractum with a yellow flouer.

6. IXIA (Africana) folis linearibus gladiolatis, cicutis alternis, caule bulbifero. Iria with narrow fpear-shaped leaves, flowers placed alternately, and flalks jointed.

7. IXIA (Sperg) folis gladiolatis, caulis distansibus. Iria with fpear-shaped leaves, and flowers growing j lant.

f. IXIA (FkxKtfa) fblii linearibus, floribus fpathicatis fefiltbii icrniiuibus. Iria with narrow fpear-shaped flalks, and fefilt jli/intri%oi&\& top :

The firft lort grows natunllf in Imiii^ wh ac (talks rife ta til: height of five or fix firt, I - ju E:;gbf!ti they ire icMom more than half that In height. It hath a pretty thick flalky root, divided in knots or joints of a yellowish colour, ending out many fibres; the flalk is pretty thick, hollow, and jointed, par-Jiilnil with kOrs: shaped leaves a long time and one inch br>iad, with feve/vJ longitudinal furrows embracing the ftalk with the: - bafe, ending in acute points; the upper part of the flalk divides into two fmaller, with a tv^c flalk arifing between them, which fupports o'ic (lower; the fmaller branches divide again in the fame manner into four flalks, which are two inches long, each fupporting one flower. At ach of thefe joints is a fpi the or fteath embracing (lie Oak, which it the luweT joint ar v I five inches long, but die upper arc not more dvui one inch, rndmg in acute points which are permanTnt, the flowers arcompol'ed of fix equaj ptLili, ota y*lle colour wifh:n, aid vai if gated with dart rnd flouers die outside h of an Orange colour. Thele appear in July and Aitgull, and in warm fealbru arc fuccedc by feeds.

This fort may be propagated either by feeJi or parting of the roots: if by "feeds they (hmJJ be taken in pots, and plunged into a moderate hot-bed, which will bring up the plants much loofer than when they are lbwn in the full crouid -, i then the plants are fit to remove, they fhould be each planted in a fmall feparate pot filled with light earth, and if they are placed under a frame till they have taken good root in the pots, it will greatly forward their growth; afterward they may be placed in the open air in a fhaded ftuation, where they muil remain till the ie jui was. *'' they

• they nwft bs placed under a fraive to i green them from ii-off-, and in the ipring nidi of the plants may be (umcc! out of th... >lanted in a warm border, where they wilt abide through the commor v.-inters very well, but in (evert frofi they are ofci killed, unlds il... n-ti with tin, or other covering to keep out the fr...; therefore i few of ih-plants may be kpt in pots, and flickered under a fr*nic in v. inter.

The ihllts and leaves of" this pla.it decay to the mo' in autumn* fo that if the lurfice of the ground sbuot the i... covered two or thrtv inches thi it with tan, it will ferurc them I... danger of froit; and if the luring, before the rom» (boot, "ill be the beff time to remove and p... the rooy ./but this lhotid not be done o... ncr than every fiird year, for when they are often paried they will be weak, mnd will not flower fo well.

The fecond fort grows naturally at the Cape of Good Hope; thil » i low plant, which rarrly nft mure than three or tour invhethighj Uie leivej are nrwru and veined, the flowers ;u... in a <towny lead on the top of th... ir.alte iittle appcai'rtce, fo nrc only kept ibr the hike of varyery.

TLc third fort I raifei! from feeds, which re fent me from tl: Cape of Good Hope. This hath a round bulbous root a unle a... ivered with n red fltin, fromwhic!... ord-shaped leavci about three or four inches la... hairy, and with fvtral longitutiv! fiirrows; the embnee each othr itthcibare, bwfpread afinanderat the top-, between thefe come out the flowtr-ftJk, which rifei fix or... top, andierv

duller of Rowers, cich having i f; wiiivh dries and h pcrmda|^A'... deep blue colour, and appear in May, then are fucceeded by roundish three-cornered feed-vefels with AreeceS, filled with roundifh feeds w -ch ripen in July, then the learn and (talks dc. v.

The thurth Ion <'u railed from fceai in the Chlfea rarden, which came with riol'e ot' the former fort, "his huh a fmail roUiid bulbous roor, rran which "fr four or five narrow, long, fword-ftuipi I

en inches long; between thefe come out a I:rufer round ftalk abtut ten inches long, from fide of which there conva out one or two r

•powers, Handing upon ftort foot-fia... of the blk. the fiuwers grow in a look... they are of-apult whit, and fhaped like thofe of the... h cr jpc. Their appear in May, aid the ftob

ripen in Jul... The feeds f^the-iifth fort were feft me from thcC.tj:e fGoodHojxr, this has an oval bulbous roo... which

;ssrs' <>>>' << leaves, by a round... it is w... flender, naked, and remains... clofter of flowers, each having a matha or... are compofed of fix pretty large oblong petals which are concave, and of a deep yellow colour. each having a large black fpot at the bafe. The floB-en early in May, -nd thfi fit ripen the liter end of June.

Thef... th fort hath narrow fpear fhaped leaves about fix or feven inches long; the ftalk rifei near a foot and > half high, garnifed with one leaf at each of the I werjo... their embrace the ftalk with their late, and ftand erect; the upper part of the ftalk is adorned with flowers, compofed of fix oblong teal petals of a full blue colour, which are placed alternat on the ftalk, which is bent at each joint where the flowers ftand; the flowers have three ftort ftamens which are joined at their bafe, terminated by long, flat, erect ftamina; the germen is feated under the ftaves, fupporting a long flender ftyle, crowned by a trifid ftigma; the pecten afterward becomes a roundifh capsule with three cells, filled with roundifh feall feeds. The ftalks at each of the lower joint throt

bulbs, which, if planted, will grow and produce flowers.

The... iventh fort hath Qiortrand Rroacfcl' Irsv/ the former, the ftalk is flender and furrowed, ami a: of the lower joint... wlrh om-l fame lbspe, n... ^jfc; ihe Bowers come out reward the top u:" the li... two or three incies tin... each ftalk fupporting two of th«« flambur-coloured flowers, which are each compofed of fix Ipcar fhpsd pewli an h-iii fong, equal in their lize and r- the) have u lhort permanent empiUcncj two long and two fhorter aaite (egments led by round capi... tillc; witi round lceLt, Thii ion flowers in March, p a^j the feeds ripen about two months ai

The eighth fort hath very fmall, rouftr, buitwui roots, from v. iiiiell a rife three or four long, (lenJcr, (I... ivcs, of a dark e... ibnJerand ro... rifioq... foot and a half high; at the top the flowers are collected in a ftalk, ftanding clofe to the ftalk, each

hnfing a thin, dry, ;... ^liidj corer. i... ers an- fptci«, but are fmalleri th... fmikl wunti feed-vefels with three ceQ each cwi-taining two or three round end of May, and the fr. open in July.

There are other w... of this genus, which have Howen-J in the Ci... in the colour of ili

be ttiitinct ipccies; one (J: fide, and white within j a... other has white flowers, with a blue ftripe on the outside of each petal, and a third has white flowers with yellow bottoms. These have already flowered in the Chelsea garden, where there are many more, which have been fince raised from feedj, whofe floweri have not as yet appeared; tna ai tht Cape of Good Hqj i

naturalif, there are insrc tun... mentionrf in a catal... of Dr. Herman's. The roos of moft, il' not all theft forts, are frequently eaten by the Dhahitwa at the Cape of C... od Hoje, who greatly efcten ihein.

All the ftays multiply very !:ft by offsets, fo that when on < nbr^ined, thei... will be no occafion to raife them from feeds; for the roots put out offsets in great plenty, moft of which will flower the following Italon, whereas thofe from feeds are three or four years before they flower. These plants will not live through the winter in the full ground in England, fo fhould be

planted in small pots filled with light earth, and placed under 3 (r: me in winter, where they may be protected from froft, but in mild weather fhould enjoy the free air. bui ijurir-j; the winter they muft be guarded from mice, who are very fond of thefe roots, and if not prevented will devour them.

IX@HL'i. Iiir. Gen. iji. Jahninn; Burman.

11:c CHMI CETERA etc.

It hath a small permanent engulment cut into four segments, the former has one fmall fhaped petal, having a flender tube, cut into four segments at the top. At both four feet ftamens ftand at the bottom of the petals, terminated by oblong ftamina, and a roundifh germen feated at the bottom of the ftamens, fupporting a flender ftyle the length of the tube, crowned by a trifid ftigma; the pecten a roundifh capsule, containing three roundifh feeds.

This genus of ; bnti ii nnped in (he firft order of Linnaeus's fourth clafs, intubed Tcirandiia•Mm: ma, the flowers having four riomini and one fyle.

The SPECIES are, 1. Indica (Ceylon), foliis Clvata fi-miamplexicaullbufi floribus facculatis. Flor. Zeyl. 22. Linn with seed flowers long embracing the ftalk, and flowers • fearing rx faculis. Jahninn Indicum laur folio, involucrum umbellatum, floribus trochilatis. Phil. Im: ;ib. 55. f. 2.

IXORA (*jflba*) foiiis ovaw-lanceolatis, fioribus fefcicu-
Jaris. Lin. Sp. 160. *Ixora* -& *iib tuafptar-fkaptd l'avts*,
and *fiatotrt p-a-jüxg is fombts*. Jalminum Indicum,
iauri t'olin, inodorum, fluribus albicanijbus & album.
Ptak. Phyt. 109. f. 2.

; *Ixa*; (*America*-1) foiiis temis lanceolaio-ovatis, flr-
ribu • *hyrioiden Armen. A. d. 5. p. 333. Ixa* - *est*
oval jpcar-jhapui leasts platti by tbrta, and jkviert in a
lecfjfpilu. Pavrrta ibliis oblongo-ovatis oppofiris, flj-
pau. ieiaceis. Brown, Jam. tab. 6. f. 2.

The firft fort grows naturally in India, where it rifes
with a woody' folk five or fix feet high, fending out
many fender branches covered with a brown bark, ear-
nished with oval leaves, pl. i Led fbmetimes oppoTi te,
and ar oibrts there arc three < r four at each joint.
The fioweti terminate the brandies in chillers -, they
have very long (lender tubes, ire cut into four oval
Icgmcms at the cop, at the end of i deep red colour.

The fecond ion grows idfo in India ; tins haili a woody
ftalk i i g fr* i high, fending out weat
brarx'ies, garnished with oval fpcar-Hiapel leaves
yhic ; tlole to tie brant It; ihe flw-
en terminate the branches in fnull cluftertj they have
long Render mbrjs, divided into four fegments at ilie
top, wid arc white, without f<nt.

The third ibrt grows naturally in Jimaiai, and fome
other ifljiiidi in the Weft-Indies, wiere it is called
Wild Jafmine. This rifez with a Ihmby (talk four
or fr ka high, fen: ing out lender brandies oppo-
pofite, which arc garnished with oval lpcar-ftiafK-d
leaves placed oppouic, whkh arc Ax inches long, and

two inches and a half broad, having iliorr foot-fbll.s,
the flowers ate produced at the end of" LIC branches
in a kuli: fpik; they uc white, and have a jetne like
Jafmine.

Thefe plants are propagated by feed*, when tlicy can
be pnxurcti from the countries where they grow natu-
rally, for they do not pcrctft any ft-tds in Knglind.
They fiould be fown in fmall pot? as (bon as tl: y ar-
rive, and plunged into a hoi-bed-, if they arrive in
autumn or winter, the poti may be piongetl in the
tan-bed in the ftove, between the other pots of planet,
fo will tike up little room ; but when they strive in
die (pring, it will be beft to plunge them in a tan-
bed undtr t'r.ncncs; the feedj wiU fometimj come up
in about fix weeks, it they arc quite frtlli; otherwile
they will lie in the ground four or five monrhs, ud
fometimes a whole year; therefore the earth *thooUi*
not be thrown ou' of the pots till there is no
of their growing ; when the plints come up, and arc
fit to remove, they fliould be eith pljncd in a fit pa-
rate fmall por, iilled with Jitrth earth, and afrerw-ij
treated in the manner directed for tic Coffcc-tree.

They may alfo be increaied by cutting; during the
fmmTncr months, and planted in t'mall poti plunged
into a moderate hotbetl, covering ihem doft¹ either
with bci! or iiland-gtafi-s to cvclgile the external air,
ihding them carefully
of the day, mitil they iiave put 'ut gix> ;
theylhould be patted,

pot, treating them at tin teedlmg plant).

K.

K A L

KALI. Sec SALWIA.
KALMIA. Lin. Gen. Plant. 481. Cha-
mxrhodendros. Tourn. Intt. R. H. 604.
Ob. 373.

The CHAKAC-TIRJ arc,

tshjuiko hot a fmall ptmoatnt toiftdmcl oil ituefiot
perls, and L: *pot l'at fatuous, whitb fprtod*
ffpin and art mat hie. *It hat tat Jiamiaa lit tenpb ef*
*th*fetal, v: th delias in the mid; terminated by trva!*
fitimniti. hibe unler ifi: uattdnreiiRiiijhgrmttt, fi]>~
parting a jltvda jtyk as fang as ibt ptal, cTavHietikj an
ehluj. Jyca. i i gtrvux afterward btesmti an tvaI or
llsimlitr uiffult •mib Jh't nlh, Otd with very fmall
frds.

This genus of phnts is ranged in tie firft fefflon of
Linnaus's tenth c>D, iiltitied Decandris Monogynia,
which includes 1 vocf phnti vnhofc flowers have ten
Ranina and one oviz.

The Species arc,

1. KALMIA (*Lanifia*) foliis ovatis, corymbis cermioili-
bus. *Amerc. Acad. 1. p. 19. Kalmia v: fr evai Itavn,*
and flowers growing in bunches terminating the branches.
Chamaedaphne foins vni, floribus bullatis umbellatis.
Carrth. Carol. 2. p. 67. tab. 23. *Dwarf Laural with a*
*Time leaf, and fabled flowers growing in bunches, com-
monly called Bayberry in America.*

2. KALMIA (*degrifolia*) foliis lanceolatis corymbis la-
teralibus. Lin. Gen. Nov. 1179. *Kalmia with fpear-
fhaed leaves, and flowers growing in bunches on the*
filcs of the fide. Chamaedaphne sempervirens, foliis

K A L

oblongis anguftis, foiorutn fafeiculis oprxili tis. Catdli,
Carol 3. p. 17. *Evtgrttx Dj: erf Laurtl.* wrfi *oMcng*
*tutrrtrjikavtsgsrnii'ng 111 ht/tika, *xi-i'b on ptattd sppojit.*

The firft fort gtowj naturiity upon recki and in barren
foils in Virginia anil Penfylvf iia, where it rifez with
a branching tllik 10 the height of i.e. or twelve feet,
giimilhe<l with very fffif leaves, which arc two inches
long and one broad, of i lucid green on ilicir upper
fide, but of * pale green on tlr under; they
have fhore foot-ftalks, and Stand without order rounJ
tlw branches -, between thde the buds arc formed for
thencxt yeat¹ flowers, at the extremity of the branches,
the'e *put i'v' durn JUtumnu u and fpring months,*
till the • • opening of June, when the flowers burst out
from their empdetnenii, forming a round bunch (or
cor/ni!) being very clofe w man' h, they arc
of a pale blufh colour, the outtde of tie peal is rf
a Ptsch colour. The flowtr hai but one peial, wbofe
bafc is tubulous, but w cut into five n *ovoid feg-*
ments, ftudded with purple f pots, < nich arc y rbm>
nenf. after the flowers are pall, the germen in the
center becomes a; oval capsule, crowned by the per-
miner t llyli. having five cells, which are full of very
ffmall feeds. This herb in its native foil continues
flowc; ing great part of the fummer, and is one of the
greatest ornaments to the country, but as yet it is not
so well naturalized to our climate as could be wifhed,
though i: >e pin nts are not injured by the cold, and
feme of them have flowered feveral years past in the
Chelc l g>rden

In the country where this (hrub grows natur.illy, it But plenty of fucker* from the roots, lb tfm they form the k r; which arc almuitt impartible j but here they have HM ;s yet produced any flickers, tor do the seeds c line to maturity, f0 that the phnn .sri: not very common in England; for the fecils w! are fent from America lie in the-ground a whole year before the planes appear, andalcncvardthey make very flow i ... our&ged noft people from attempting to nific the plants in that method. The only perfon who has fucceeded .ll in the riutigt of theft, is Mr. James Gordon of Mile End, who has a good number of the plants which have arilin frani

iii.- fecund Tort is a native of the fame country with the firft, where it riles from three 10 dx feet high, dividing into fmall ligneous branches which in very elole, covered wirth a dark gr.iy hark, garmllcd with Jllir' leaves about two inches long and half an inch broad, uf a lucid greeflj placed without order upon ttit branches, landing upon fender fbot-italks; rin: flow- ers grow in heads but - iies on thf fide of the branches, upon Dender foot-ftalkst they arc of one petal, having >n tube, but iprcsd open at the top, where they tte flowH are of a bright red , they nrft open, but afterward fade to a blulh or Peach bloom colour; thofl' arc Cuccetled by roundi L'omprelled (eed-vefiels crowned by the permanent tyli-', iJivilleed into five cells, which are filled with ftnall rmondilh feeds. This llirub flower! freat of (iiuimer in in native country, but IJ not yet ! naturalized to this country as to do the like.

i leoanc jilanr are foppofed to have a noBOUJ quality, detroying fltccp and oven when feed upon then), yet the deer cat them with i:itpurity.

Both thcli: forts multipliy by (hrir creeping roou in their native (i)l. «nd nt W/iii ton, where ihry Jiave Itood unrrfnoveti uconriderable time, ttey put out flickers in [irlLry great plenty . and as theft' pfaim which from fuckers, are much more likely to produce others th;in thofe which ire raifed from fe«is, am] will flower much lboner, fa the plants fhould noi bt; removed, but encouraged to lprcad their roots and fend out

KARA I A S, the Penguin or wild Ananas. The CHARACTERS are, // hath a tibtkuts kll-jhpd flviccr, wli:b':. I r ture* faris cl ibr vwitk, from wbeft tmptiktuii I

tiegtm Amji ctnicfl fruit, a/tab is dividnl by tmnti'rim hue tbn ails, that are

There isbut one fort of this plant at pretent known in Englami, which i?,

KARA AS (r«gif«) fullis filiatD spinofis mucronatis, racemo terminali. fbt wiU Anar.es cr Penguin.

l-aiherHumierfiM made a g^m the figure and defcription of the characters of this plant, and the Caragiata i for he ha; ioincd the flower of me Car- Euau to the fruit of tbt taratas, and vice veri- has led many wrfons into miitakes, who have] the Bromeiiaand Ananao to this, mating them tlol the Time genut, whereas by their diarafters they fhoud be frpwated.

This plant is very common in the Weft-Indies, whrc the juice F,ts fruit is often pu: into punch, being ot a (harp acid flavour. There is alto a wine made of the iince or this fruit which is very frang, but u will rp good very lon;, fo is only for prdMt ofe- ine B vtry intoxicating and heats the blood, therefore (hould be draftk very ftntngly.

); !.ILUUI xkit plant is prelerved, as a curiosity, tor the fruit feldom arrives to any ... i curiosity, tor thlis country, though it has often produced fruit in the gardens, which fometimes has ripened iprettj well, here a in its but It ic wite to ripen as thoroughly here a in its native country, it would be little value i on ac co unt

of it, gwt aviferit, which wi ll often&it ft: ind WΛ

This plant is propagated by seeds for though' there are oitcn fuckrrs lent btrth from !l old plants, yet thqr come out iroiij between the leaves, and long, lknder, and ilUhspen, they feldom make regu] be fown early in the fpring, in fm I!

unged into nets bwk. When the plgna an- orinfpajjttheyfhoudbeciirrfb plani. srwepotfilli and plnngni into the hor-beil. fclrb them trnjucnrly with w.irc.

w^ter in projor]i)n to the ws: this bed the pl.tnis may rem:

which time they fhould be removed into Otc I and plunged into the bark-bed, where they (houJ tieatW in the lame manrrr;is the Arinn,K Theft plants will nor produce their budi thq- arc three or four yv.- be flifted into larger pots, a their growth; for it their roons the) wilt make but little , lit- placed at a pretty great Uitbnce j for their leavn v. ill be three r.r four :

The icaves of this plan'i are-cmoky. hich renders it vi fhift'jr handl hold of whatever approaches them by their crool

'l)me bent one n-ay, and others the that they catch both ways, and tear the ffcinor l of thi -I hwulle them, w* -not tte gpreatft care ukrn of them.

The fruit v/ [lib p)Ant U produced in clitiV.-rs, prnying upon a {talk about three feet high, an: nerally t tuft of lewa growing on dirtop, fo h firft %ht, the appr.iratice ofa Kne Anile, bur clofcr viewed, they will be (bund to bL OWIOW fruit, each U-ing about the fir.; ofa tinker.

! i' K. I N K in ijr!;g:HC of fummiti, haneing down in form ofa rope, or Cat's nil lluw, l, Birch, Br. alid k irall'i in Latin iulua, ttpFERIA. I.in. Gen. Visa

The CHASACTIM are, // hath c/. rZr>ff) e/us; knf l:«IL> &nr pant* ietiba kagJSmir lut purl abirvc; thnt cf tbox art tillers.;! tqttiA, titatbertnnik wdethitm main wbcibatvrlitoJlf ban

ty a lindir Jkmmit, falfa xlofting . ty ait oia ffr ia: th gtm tsmi .I reiwidjbtbrt-temcra tepjuk with it.

This genus of plants .5 ran^f-d in ihr hrlr StB of Linnaius's firll oil's, in titled Moni: uria Muscaylia, which includes thote plants whoLV Bowers ha', one ftamen and one Uyle.

The SPKCIE.1 arc, CIA {Gekage'i foliis orati fillibus. Flor. K.tmpfria miti Kalltmiaj

rest. Katsjuli Kekngu. ! Ion. Mtl, and h Wanbom. Kxnpf. Ainmii 901. Galanaz.

Flor, Ziyi. i). k.rmpfrriiwirf, fceS-fisSh- Zedoarii rotunda. B. P. Ranaid Zedary.

Thefe pl.mr? we both naireiofthe \ their rows are £'•• tly uicd in medicine as hutoric tod carminative. I he full firt both much the fong of grenCinjrer, whi a frilh taken out of the ground; the rours are tiivillel ti to feveral flubby rubes, which are fometimes .•. !l ic J, and grow about i iaelm io'ig, the leaves are oval, about four ii

and two bro-d ; thec arc withrut root-Hulks, growing clofe to me toM, and Item as if lit on by pairs, (presiding open tach way; and from bttwdeil tJ.ile leaves the flowers are produced lingl\ having no
 • [talks, but are et"
 the flowerj nrc whc, having ibrigh purple bottom
 Theft are not lui my Im it in linglind,
 Tht: l'«»Hkl fort lut'i iü< ;it like thole of the firft, but arc fticmer, growing in lar^c tlwlers, covered with ai Afh-rjoburedlkin, bur wit ii in are white; from cite roots ante the leaves, which fold over eicli other sit their baft-. they are fix or eight inches long, and three broad in the middle, gradually ending in icut point* -, the flowers arilV immediately from the mots, each having a fpattia (or /heath) at bottom cut into two fegmrnts, wticch clofely embrace the foot-fhilk; theft have fix petals, the three lower which decline downward are long and narrow, the two upper are
 dod It) deeply as to apjw-ir like a ilowcr with iour [icuti, and the lifle petal is bilk); they are of mixed colours, blue, purple, wliiu and red, haying a fragrant, odour: ihe)' flower in July and Auguit, but do not produce feral in Engl
 Thefc plant, being natives of hot countries, will not beat tlic open air in England, fa rtquires a warm ilnvt tj proervt them tin . the whiten but as their leaves decay in the autumn, f> the plane* mould not have too much wee while they we in an inactive (late. If the plants arc placed in the bark-Hove, and ited in the fame manner as is tiintUd for the Ginger, they will thrive, and produce plenty of fruitvers every fummtr. They are both propagated by parting or' their roots ; the belt rime for this is in tlic fpring, juft before they begin to pot tint thei leaves.

KfcTMTA. See Hmiscui.
 KK.fIEI.ARIA, Lin. Gen. Pl.itir, IOOI. Lam us. Sirrb. We have no f-regliih ode lor this plant.

The CHARACTERS in;
 It lsbw-VanAherm*\$brii<Litfii.v>tTsfüütauAvH&ffirtM tint j tit male jlvxtir farm an empekmem of cue Iral, tax ir.ta fiv: oticavt jig-wmi.<, aeJ Jk-t imatue petals whitb art hngfr than ibt mpaltuunl, jpad like a r i eeb of the ftiah hir.-.: bail? glauJf
 baf, which bm-e three cl
 ide tbt taih cftr petals, ikr/ Isr.-c ten
 irrnixald l\$ th/m^ funin:i:i. 'Tbi htntp
 n tavt mrd tab tiki tbt male, foil fro
 fibem beotfumaia. k:bti, adanittüijh
 ,,fuppcrthi* jvti ftylii, trvsnca bj oiutufiji\
 : crmti cfta+wA bttow a rt>rb phialer fruit
 mitt a tüüfi teoo; levity ene tell, fiHd -J.'ilb angular

This gntu of pUnis is r.mged in tlie ninth feftion of i m'j Mem; fexual claf. • tcd Dkcca Dec-
 •ii but it fhould k- removed to his twent; third claf, as the - herraaphrocliiE Rowers are fhihfu,J, tho' the jre fituaued upin tiirtincl plants, whole malt-
 flowers have in flüüüinj.

We Iwvt- but one Si'r.crrs of this g=ntw, viz.
 KINDELARIA (Utna.)Hon.C. 40 --'•• J9, Euony-
 pica lempervirens, fnlftuglobofofel-
 bio, folia l'illüis rigidis ferrads. 21- J. i ;y. An
 Eriopias Erythra •.'mt rtjintb'jv* th* Spindle-tret,
 with a r:Ab gk&ulor fmit, Mid jüff famed iVilbu/
 herba.
 This plant growsmiralK¹ at dieCapcol • Good Hope, v.in i. it tries to be a tree of mid ting flitures I it it as if ill not live in the open a' bex, they can >ot be expected to grow to a great nu^itude in England. The arc phnu of it in the * elia garden upward of (en ftL high, with l'rotir woody stems and pretty lJree hrt<-; tlc brantio* hai'e 3 fmuoUi bark, whii'li ii firft gr*vn, but itLerward chsnf.' to a purplifh ru-
 lour . the leaves are about three inches lori" wid one broad, oi a light green colour, and faved on thin
 cftes, ftanding upon fhort foot-ftalks, aliternately. 3!the
 fio<< ;i the chailiile ocj the
 bran. • % tdownwar J; they ire of an herb-

ceous white • colour, and • | year in May, at which time the plants arc L
 moftof thould li
 pear. Thu malu
 is thcti, butthc In
 globular fri
 tie cover of ill' I
 fiitenre, opening in fii i
 cell tilled ••
 grwn to their fiüil lize in the Chelfra ganten, but the li
 The! plants we-iv.it very commi.
 years p-dl, being very diffi
 by Gsedi, which fomc planes both in J Li land and England We lately produced, to thru they are now much more plenty than they were in both wv;
 for when any of the young branches arc laid i
 they art- two years bd
 the cuttings fuctced better, for noi
 them will take root, when planted with the i
 care: the belt time to plant the cuiiinc? l. .
 the lining, juft before the plants begin tu (hoot:
 ihould be planted in pots tilled whl
 and plung<l into a very moderate hot-bed, <v
 them clofe with a glafs, toexducd the air iVom
 and (hade them every di
 bftve very little water
 of Lhem grow, they fl>
 final! pots, filled with k
 •ill 3 flüclliation till autumn,
 when they mufl be rerai
 in the fame manner a Orange-trees.

KITCHEN-GARDEN. A good Kitchen-
 is almoft as neccllary to a country fem, is a kuehen
 tlt lioufe i for without one, there is no way of
 being fuppled with . & w x j, . . r neceffny food, the
 markets in the country being bul
 with rculenr. herbj, ant' thiole only upon the mark<
 days, which are leldoin o:ti-ncr than nnc a week ; f>
 that unlcs a perfon hai a garden of hi; own, (here
 •will be no fad) thiw; as procuring them treili, id
 their goodncts confidsj nor tan an) Jirfe
 be had in the country markets i therefore whoever
 propofes to re fide in the country, mould be cairful
 to make choice of a proper li>ot of ground (a
 purpoc (and the fooner that is mode and [. i
 the produce of it will be e.irlirr in pcrfeitten
 fruit-trees and Aparar. require r,ccc years to grow,
 before any produce tan be expected frum tu-m^ fii
 that the laur the garden is nude, the lurger >
 be hrfyre a fopalv of thefc thinsi can be had for the
 table. And although the uJcfujndi of thh garden is
 acknowledged by almolt every one, yet there JTe few
 who nuke a proper choke of (oil ind flnution for
 fuch a garden •, the modem taitc, which is, perhaps,
 carried to as t xtravagant lengths, in laying opi
 and throwing every obftnction down, as the lornier cu-
 nim of induling wiliin nails was ridiculous; (o that
 now oi- frequently lees the Kitchen-garden removed
 to a very great diftance fr:m tlic hoult and ofikes,
 «Jiith is attended with great iiKonvefieneir!; nnd
 often lituateil on a very bail foil, fomorimes too moid,
 and at oiliers without wucr, lb thiat there a . l
 rn mce in buildi
 id making the garden,
 where there can be little hopes trf Euccdi.
 Nor will i Kite hen-gjrdcn be well aitendr' l t',
 ii it iii [itiutej us to be out of % hi of 1;
 epecially if the •!Jencr has not a Invv sni
 it, or if it lies at a grvnt diftance frv
 or the other parts of cl
 happens, a grcji part of the Ubourer's time will be kilt
 m going from one parr to the uti. ;
 a pro;
 purpol
 garden may not become oSenftve to 1
 ntay be eluded . . pjoixrr
 fercen the walls i and tlto-

contrived form... inking walk? to lead to the Kitclitci
 garden, which will have as got, an effect as those
 v/lliii' are now commonly made in gardens for pleasure
 only. In the choice of the situation, if it do... es no
 obstruct the view of buer objects, or illiut out any
 material prospect, the < i^n be ru... objection as the
 placing it at a reasonable dillanc froiii tlic houie of
 offices, for as particular things may be wanted for the
 kitchen, which were mn thought of at the time
 directions were given for the garden; ncr what to bring
 in, if the garden is liiuiitrd as a great di...
 from the houft, it will be found very incooveni...
 fconl thither as of... as things are wanting: therefore
 it will be con... iived as near the (tables as pofliblc,
 the convenient) of carrying the dung ihiitiir;
 if a great diftance, will atM to the expen...
 of the garden.

AJ to the figure of the ground, that is nf no gftir
 moment, Qnze in the distribution of the quarters all
 -ijHrics mpy be hid v though it you a« at tull
 liberty, an exact f'uarc or an obtong, is prefr.tbic to
 any other figure.

The great... be confijered k, I make choic
 good foil, not too wer, nor over dry, but of a
 ding quality; nor fhould it be too strong or flob-
 ding quality; nor fhould it be too heavy, and
 en-... and be-... are an ad-... perfect le-
 h is, the having one part dry ground
 craps, and the low part for late craps,
 the kitchen may be the better fupplied
 t the leaves with the various forts of herbs,
 And in very dry feafons, when in the
 upper part of the garden the crop will gressly fufficr
 with drought, then the lower part, < wIU fuccid
 I would direct the
 moist spot of ground for this pur-
 in fuch foils garden-herbs are
 more vigorous and be fimpler
 they are feckon fo... I or whole-
 ie which grow upon, modewr foil, » d
 some... "fi^ta... a foice brin
 the planned, it would be wrong to have a very
 and... &c. and... wind
 which are very... but if it be defended f... will greatly p... your
 by a... the fign; as... /rum tie frang
 -well w... which are very hurt... in gucuinn
 fruit and garden-herbs. But these plantations fhould
 not be too near nor very large; for I have generally
 found where Kitchen-gardens are placed near woods or
 large plantations, they have been much more r... roobind
 with blights in the fpring, than thofe which have been
 more expofed.

The quantity of ground necessary for a Kitchen-garden
 fhould be proportioned to the largeness of the family,
 or the quantity of herbs defired: for a small family,
 out, but for a large

otic ac
 family
 and planted with ep...
 after be directed, this quantity
 croual, notwithstanding what

Thi, ground ^ * ^ t ^ TM, ,, bath 6* of the
 « lb which h^e good, (p^S, « ^ and L, flps
 of ground... iVI[III]Tr... iC.rr.n...
 be... kitchen plants, is
 Ser... useful with any of
 then they may be ren...
 the quarters within the walls; but these flps fhould
 not be too narrow, left the hedge, pale, or plantation

He will greatly p... your
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of ihrubs, which inclofr them, f/>uy il
 ders where the fruit-trees stand, the least width of
 which flps fhould be twenty-five or thirty feet, but if
 they are double that, it will be yet better, and the flps
 will be more useful, and the fruit-trees will have a
 larger fpace of good ground for their roots to run.
 These walls fhould be built about twelve feet high,
 which will be a fufficient height for any fort of fruit.

liihi foil where you intend to place your kitchen-gar-
 den be very strong, then you fhould plough or dig it
 three or four times before you plant any thing therein,
 and if you throw ; ujn ridges to receive the froft in
 winter, it will br of gn... fervice to meliorate and
 loofen the foil.

Thi manure which is mod proper for futli toll, is
 fca-coal afhes, and the deanfin of flreets or ditches,
 which will render it liglii nuirh IIMIH 71 iirui any atti-
 dung or manure, and khc j^rcaitr the oi>^ntiv of
 afhes the better, efpecially if the ground be cold,
 and when: d... afhes are not to be obtained in p... y,
 fca-fand is a very proper Jrt(Ting, whtte ii tin be
 eafily procured, or rotten wood, or the parts of ve-
 getables rotted are very good; all which will greatly
 fooled the 1... and chaic it to be i... only eafier to
 work, but alfo u...

But, on the contrary, if your foil be light and warm,
 you fhould mix with rot... which
 is much preferable to any other dung for hot foils;
 but if you use horse dung, it must be well roned,
 otherwise it will burn up the crops. Lipon diti tird hot
 dry weather.

The foil of this garden fhould be at least two feet
 deep, but if deeper it will be still better, otherwise
 there will not bed... enough of foil for many forts
 of... fi knnt wots, ai Carrots, Pars;
 which ntn down i... every deep in the ground, and most
 other forts of excellent plants delight in a deep foil;
 and many plants, whose roots appear short, yet if
 their i... by which they receive their nourishment
 arc tratcJ, they will be found to CXICIKI to a confi-
 durable dt^Jth in tin. gro... fo that when there are
 !lon-ed hy meeting with... gravel, chalk, clay, &c. the
 plants will food lhov... rfoot Jii^i 9...
 growth.

You fhould alfb tntkavow to have a fupply o: wa-
 ter in the different parts of the garden, w... if pof-
 fible, fhould be ran wined into... baions or refervoirs,
 where it may be expofed to the open air and fun, that
 it may be heated thereby; for high water as it taken
 out of wells, &c. juft as it is ufed, is by no means
 prone for any fort of plants.

In the diftribution of this garden, after having built
 tile walls, you fhould lay out banks or borders under
 them, which fhould be at least eight or ten feet broad,
 whereby the roots of the fruit-trees will have ground
 liberty ih... in fucii places where the borders are not
 above three or four feet wide s ami upon these banks
 you may fow many forts of early crops, if expo... ET
 chtfouihi and upon thofe expofed to the north, you
 may have fome late crops; but I would by no means
 advife the planting any fort of deep rooting plants up-
 neM the fruit-tms, efpecaU; Peas and Beans; tho'
 for the advantage of the walls, to preferve them in
 winter, and to keep them foil... and in the fpring, the
 mnlei... are too apt to make ufe of thofe
 bon!... which are near the bcf... affected walls, to the
 eteai... of their fruit-trci... but for their pro-
 p... s... Red-bedges fixed
 in fome of the warmed q... quarters, under which you
 fhould fow... nd plant cai I... Peas, Beans, &c. where
 they will thrive as well as if planted under a wall, and
 hereby your fruit-trees will be enu... ly freed from fuch
 troublesome plants.

Then you fhould proceed to dividing the ground out
 into quarters, which must be proportioned to the lar-
 gencs of the garden; but I would advife never to make
 them too small, whereby your ground will be full in
 walks, and the quarters being inclofed by espaliers
 of fruit-trees ths i! ints therein will draw up fender,
 and

He will greatly p... your
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 -well w... which are very hurt... in gucuinn

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I Kver irrvtve ijj hall" the fize as diey would do in i more open rpx*/ure. The walks of this jja^rilen shoud be allb pro; ...

The brwdth of theft middle walks whkh I have here affige: I them, nw by many perfons be thought too great; but myrraJon for this is to allow proper room between i die efpaliers, that they may not fhsid each other, or thrir roots ioterftt tnd rob each other of their nourimment: but where the walks are not requied of this breadth, it a only enlarging of the borders on each fide, and lo mjucing tin- walks to the breadth of fired.

But the wnk5 of thefe gardens shouM not be gravelled, for as ihic will confUmly be ofcaftion to wheel manure, water, &c. upon them, theywouldJboa be defaced, and rcmleretl unfightly -, nor fhould they be bid with turf* for in grefli walks, when they ate wheeled upon or much troddrn, the turf is foon de-ftroyed, and whole piaces where they are much ufed, become very unfightly atlo; therefore the bert walks for 3 Kitchen-garden are uSofc which are laid with a binding fand; but where the foil's frong and apt to detain the wet, there (Wild be foine narrow under ground drains made by iht Ode of the wal- tiffthe wet, othrwile thtr will b too.

walks, in i^Ml wejther; ami where the ground i very wet, and the water is detainni by the li(fuel's ff the soil if icinc limc-ruliulii, ffinB, chik, oranyfuch aietial as can be procured with theaftexpente, and i laid at the bottom of thefe waiki; or if neither of ihrte can lie had, a rwii of Heath or Furze fhould be and tlic coat of farul laid over it; the fand will be kept drier, and the walks will be found and good *n alheafons. Thefe land-walks when thfy are well Jad, are by much the eafidt kept of atn-; for wfen either weeds or Mtifs begin to grow, it is'but fcuffling icvti ui:lifl!)!ii:iiriocin dry weather, and

making them over a day-cr two after, and they will be as clear [is when firil brid. The beft figure for ihe quarters to be difpolid into, I a fquare or an oblong, where the ground is adapted to lich a figure •, odicrwife they may be triangular, or of any other IKipe, which will be mult advantageous to the garden.

When the garden is laid out in the ^i;pe inren - : d, if the foil is ftrong, and fubject to detain the moillure, icreftliould always be undtr-(rmi:: drains made, to tarty off the wet from every cjuir-ter of the garden, for 'ithenwife motl (bro of kttech- plants will fuffer great • by mou I rein winter; and if' ihe mats of the fruit-trees go: into tlic wet, they will never produce good fruit, fo that the e cannot be too r-uch care taken to let off all fuperfluous moifture from the Kitchen-garden.

These quarters fhould be conflantly kept clear from weeds, and when any part of the ground is unoccupied, it [iiouja u I may be trench'd up into ridges, that it may be ufed to imbibe the mairous particles of the air, which is ut ; great advantage to all forts of land, and the ground will the i b; indy to lay down when ever L i m d.

The ground I in thefe quarter* fto^ld not be fawn or planted with the fame crop two years together, but the crops fhould be annually changed, whereby they will prove much better than when they conflantly grow upon the fame fpot. Indeed the kitchen-gardens near London, where the land is clay, are often obliged to put the fame crop upon the ground for two or [luce yens t'-.g;-iir i 1 but then they dig and manure

their land Ib well every ytar, as to rend it abed new, though necwUhiullngAU tliii, U i: ohii'rvcit, il'.ii irelli bntl always pi duces the best crops.

In one of thrc quarters, whii h is fanned search to the flabls, and tn it detented from the cold winds, or if either oJ the flms without the garden wall, which is well expold to tie fun, li is convenient, and is of a proper wltthi that II could be preferred for a place to make hw beds for early Cucumbers, Melons, &c. The rrafimi TV i. giving the preference to uod of these flps, is, firft, there will be no dirt or later

carried over the walks of the K itchen-garden in winter and fpring, when ;lic weather i generally wet; fecond, the w^lki will be rndnted unlightly; tertially, the vkw<; the hot be !s will bt* excluded from flps; and billj, the tonvenienceof can; ii the dung into these flps, ior by making of a gate in the J edge, or rail, wide enough for i final cart to enter, it may be done with much Ids trouble iliam!.. ar of harrowing a thir' ilir garden; and whrn-i i can be a flp long enough to contain a fiiffitait nun ber of beds for brood three years, it will bc o) great ufe; becaufe by the fiftroy of the beds anruuliy. they will succeed much better than when cl y are continued for a number of years on the fame jpot . of ground; and as it will be abfolutely neceffary to fence ih. Melon-ground round with i Rred-hedge, it may K: I be contrived as to move away in pannrls-, and thru ths hedge which was on tlr uppr Cde the lirt year, being carried down to a proper did.iice below that which was the lower hedge, and which may remain, there will be no occasion to remove more than one of the profe hcilgef in a year; iherrfort- I am perfuad'd, whoever will make i: al of this mrtlitwl, will find it the mod el-ible.

The most important points of general cymre confiffr in well digging and mowing the foil, and giving a proper distance to each plant, according to their different growth* (which i conflantly exhibited in these feveral wtkki in this 1 ok) as alfo in keeping them clear from weeds; ftr if freedj aac permitted to grow until their ferdi are rife, tlicy will fhid vjkon the ground, and fill it lb as not to be gotten out t% in a kver.il year. You (liould ally obieve to keep your dunghill] always clear from weedj, for it will be to lira purpule to keep the garden clean, if this is not obferved; for the ferfa falling am,; the dung, will be brought into the garJen, whereby ihrir K, 'I be a confl: at fupply of weeds yearly introduced, to the small ctamage of your pi mts, and ;i perpetual labour occafioned to extirpate them again. Another thing which is abfolutely neceffary to beobfervci is, to carry off all the refuse teavet of Cabbages, the (talks of Brans and haulm of IViiV, as foori as they are done with, for the ill fcent which rrrnl people cunipl. in of in the Kitchen-gardens, is wholly n-ccafioned by th*fe things being i'')Herd to rot upon die ground; therefore when the Cabbages are cut, all leaves fhould be carried out of the gi! en while they are fresh, as alk time they may h very useful for feeding of hogs, cm; her animals, and this will always keep the garden neat, and free from ill fcent. As for all other neceffary tin-itions, they will be found in the articlei of th. feveral forts of kitchen plants, which renders it need! to be repeated in this p-ee.

KLEINIA. See CACALIA. KNAUTIA. L. n.Gtn.1'ant. 109. L; chni-Seabiofa. Soerli. tnd. 1. Ijt, This time wai jpplicJ toillii! plant by Ilr. Lini in liunnurcifih nemy at Or. Christian Knaut, who publill-ed a method of claffing plants.

The CHARACTERS are, It hath a single oblong capsule, containing several fpecular flowers, which are ranged fo as to appear regular, but each irregular, having twice the length of the capsule, tui are ml at the ends into four irregular segments, ttt euirr Waf ti* Irnpb tshh tute, and is in the receptacle, terminated by short peduncles, and a perianth under the petals supporting a slender style, crowned by a thick soft stigma.

