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JOURNAL OF BOTANY



AND

KEW GARDEN MISCELLANY

EDITED BY

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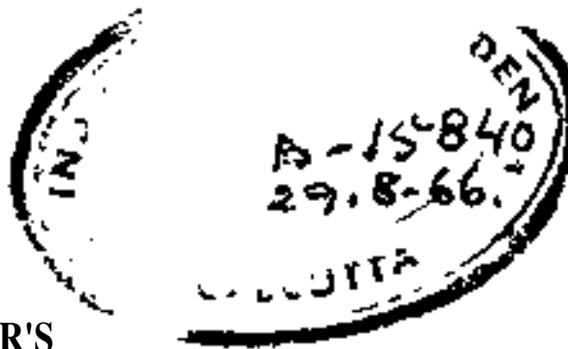


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HOOKER'S
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On two new Plants, EPICAKPURUS ZETLANICA and DOONA ZEYLAVICA., found in Ceylon; by G. H. W. THWAITES, ESQ., Director of the Botanic Garden of Peradenia.

(TAB. XI. and XII. of Vol. III.)

EPICABPURUS ZETLANICA, *Thto.* (TAB. XI)

Frutex ramosus, foliis subrhombico-lanceolatis acuminatis glabris remote spinuloso-serratis, floribus masculis dense capitatis, capitulis oblongis, femineis racemosis, pedicellis apice incrassatis fructiferis valde elongatis.

A *shrub* or small *tree*, eight or ten feet high, sparingly spinose, much branched; the extremities of the young branches with a few short scattered hairs. *Bark* dark brown, somewhat rugose. *Leaves* smooth, flaccid, lanceolate or rhomboido-lanceolate, serrated, one and a half to two inches and three-quarters long, by three-quarters to one inch wide, tapering towards the slightly hairy very short petiole, with glandular puncta very minute and numerous. MALE INFLORESCENCE pale yellow; anthers nearly round, with a green spot on the back; *bracts* small, inconspicuous. *Sepals* membranous, obtuse. FEMALE INFLORESCENCE : *flowers* green, on rather long pedicels; *sepals* acute. *Stigmas* with brown villi on their inner face.

The male of the species just described bears a considerable resemblance to *Morus*, and might easily be mistaken for a member of that

genus, but it will be seen that the structure of the female plant differs essentially from that of *Morus*.

The ovule in this plant, which at first merely causes a slight protuberance on one side of the ovary (as seen in fig. 3), during its development forces itself out of it, as it were, and at last occupies the summit of the flower (fig. 5), having pushed the upper part of the ovary with the stigmas on one side. It then has the appearance of a naked seed seated upon an enlarged receptacle.

The *Pradenia* Herbarium contains another species of the genus, allied to the above, but differing in its more rigid habit; the branches, which are of a pale ash-colour, all terminating in spines. The young male inflorescence differs too in being enclosed in rather large brown scaly bracts; and, in the only specimen of the female plant I have seen, the sepals are large and leaf-like, completely covering the fruit. (It is probably *Trophis spinosa*, Roxb.—*Epicarp'urus Timorensis*, Dene.) *Thwaites*.

We are indebted to Dr. Arnott for the following notes on the genus *Bpicarpurus* and its allies :—

Blume, in his *Bijdr.*, p. 488, has established the genus *Epicarpurus* for a plant he calls *E. orientalis*, and for which he cites Rheedé, Hort. Mai., vol. i. t. 43 ; this last is universally allowed to be *Trophis aspera*. Blume, in the edition I possess; and the only one I ever heard of, gives us no information as to the relative size of the two cotyledons; but M. Decaisne, in his 'Herb. Timorensis Descriptio,'¹ p. 171, says, "M. Blume indique, dans son *Bijdragen*, les cotylédons de son *Epicarpurus* comme étant inégaux." In the *E. Timoremis*, which Decaisne describes and figures in that memoir, the cotyledons are represented unequal, but he adds that in "*Trophis aspera** Wall. L. n. 4640," the cotyledons are foliaceous and equal.

I do not know precisely what plant M. Decaisne had before him, but in all that I have examined under the name or similitude of *T. aspera*, the cotyledons are nearly as described by Roxburgh in his *Flor. Ind.* vol. iii. p. 761, and represented in a drawing in the E. I. C. Museum, tab. 118, viz., "cotyledons two, very unequal, the largest being nineteen-twentieths of the whole embryo, and one side divided *half-way through into two lobes*: the small cotyledon is hid between the lobes of the larger one." If M. Decaisne has, from its smallness, overlooked the one cotyledon, and mistaken the two lobes

of the greater one for two equal cotyledons, the difference between his, Eoxburgh's, and my observations will be accounted for. At all events, I consider that *T. aspera* (and so marked is that species that I have seen no other confounded with it) must be held as the type of *Epicarpurus* of Blume.

In his 'Bijdragen,' p. 507, Blume suggests that his *Urtica spinosa* is another species of *Epicarpurus*: Decaisne adds *E. Timorensis*, and says that *Albrandia* of Gaudichaud also belongs to it. Gaudichaud's character of *Albrandia*, in Freycinet's Voy. p. 709, is too imperfect to permit me either to affirm or deny this, and I have seen no specimens; but all the species with which I am acquainted, either by specimens or figures, are furnished with thorns and smooth leaves, except the original species (*Trophis aspera*): in all, except it, the **ovary** undergoes an unequal development, the side to which the ovule is attached enlarging more rapidly than the opposite one; so that the style, which at first is at the apparent as well as real apex of the ovary, appears at length lateral, and the ovule becomes more elevated than the base of the style.

The original and genuine species of *Epicarpurus* scarcely exhibits any tendency to this kind of resupination, and has no spines. To the spinous section I refer *Trophis spinosa*^ Eoxb. PL Ind. vol. iii. p. 762 (*T. taxiformis*, Hook, et Am. in Bot. Beech. Voy. p. 215, or *T. taxoides*, Roxb. in E.I.C. Mus. tab. 120, and in Roth, Nov. Sp. p. 368), *Epicarpurus Timorensis*, Dene., which scarcely differs as a species*, unless characters not alluded to in the description and figure can be derived from the specimens, and a Ceylon species, from Mr. Thwaites, lately submitted to my inspection, in which the perianth of the female flower does not seem to enlarge with and at length conceal the fruit, in that respect resembling more the genuine *Epicarpurus* while the foliage and fruit are those of the spurious groupe. All these have the female flowers solitary or nearly so, and the males in globular heads or very short nearly globular racemes; but if there be no mistake in Blume's work, his *Trophis spinosa* has the flowers spicate (at least his generic character indicates this), and his short description of *Urtica spinosa* seems to indicate the same structure.

Epicarpurus microphyllus, Raoul in Ann. Sc. Nat. ser.3. vol.ii. p. 117, and Choix de PL Nouv. Zélande, p. 14. t. 8, has the male flowers in bracteated spikes or rather catkins, and the female as in *Epicarpurus*

orientalis, but the embryo is described "cotyledonibus conduplicatis aequalibus plicatis foliaceis." Eaoul adds, "Notre *Epicarpurus microphyllus* appartient bien au genre où je l'ai classé* par forme de ses cotylédons: les *Trophis* ont les cotylédons charnus et très inégaux, tandis que dans la plante qui nous occupe ils sont chiffonnés et foliacés." "Were the only difference between *Trophis* and *Epicarpurus* to consist in the proportion of the cotyledons, I fear that they must be again united: in *Epicarpurus* the cotyledons are often thick, but they are constantly folded and crumpled. Of the *Trophis Americana*? which is the type of the genus *Trophis*, I have not examined the seed, nor does M. Trecul (Ann. Sc. Nat. ser. 3. vol. viii. p. 147) describe it; but there are abundant marks of distinction in the spicate inflorescence and tubular perianth.

Trophis and *Epicarpurus* both belong to the *Morea* as characterized by Trecul, the stamens being inflexed during aestivation.

In Trecul's memoir alluded to, an error occurs as to *Trophis spinosa*, Eoxb. This I have said is one of the thorny species of *Epicarpurus*, and almost identical with *E. Timorensis* of Decaisne, as every one must acknowledge who reads attentively Roxburgh's description (Flor. Ind. vol. iii. p.* 762); but Trecul refers it (p. 123) to *Gudrania Javanensis*, a plant belonging to his *Artocarpea*, having the female flowers in dense capitula, arranged in umbels, and with a simple style. In this he has been, perhaps, misled by Blume, who, in his 'Bijdragen,' p. 489, appears to have described a species of *Cudrania* (probably *C. obovata*, Tree.) under the name of *Trophis spinosa*, Eoxb. Indeed Roxburgh himself may have led others astray, the plant to which he gave the manuscript name of *Trophis spinosa* at an early period of his botanical career, and under which he deposited a drawing in the E. I. C. Museum (tab. 119), and which name was adopted by Willdenow, never having been published by him as such: in fact, his manuscript *T. spinosa*, and consequently the *T. spinosa* of Willd. Sp. PL vol. iv. p. 735, is the *Batis spinosa* of the 'Flora Indica' (vol. iii. p. 762); nor is *T. aculeata*, Roth, Sp. Nov. p. 368, at all distinct: this, although belonging to the *Morea*, has the habit of *Cudrania*, and is the *Pkcospermum spinosum*,

* *Trophis Ramon* from Mexico (Linnæa, vol. vi. p. 357) is scarcely distinct. The specific name, too, is unfortunate, being obviously the same as *Ramoon*, by which *T. Americana* is known in Jamaica. *Ramon* is a Spanish expression for small boughs or twigs, which, when broken off, are suitable as fodder for cattle, and it does not indicate the species of plant.

Tree. (l. c. p. 124). So far as I can ascertain, the *Cudrania Javanensis*, Tree, was unknown to Roxburgh, although I feel satisfied that the other species placed by Roxburgh in *Batis* (*B. fruticosa*) is referable to *Cudrania*.

M. Trecul states that the specimens received by M. Delessert, and at the Paris Museum, from Dr. Wallich, under No. 4641 of his list, belong to two different genera; M. Trecul adds, however, that these specimens were from Nepal. Now herein, I believe, is some error; for, although *Cudrania Javanensis* be found in Nepal, I have reason to suppose that *Plecosperrum* is not, and consequently that there must have been some mixture of labels; indeed, from the rapidity with which Dr. Wallich distributed the large collection under his charge, he could not overlook every specimen, but was obliged to leave much to those friends who assisted him. As M. Trecul does not state the letter attached to the specimens, I have no means of checking the error, but shall here state in detail the result of my own examination of most of the suite of specimens reserved for the India House, and now belonging to the Linnean Society of London.

- . 4641 A, Herb. Hey lie, from the Peninsula, is *Plecosperrum spinosum*, with some specimens accidentally mixed of *Pisonia aculeata**
- B, from Nepal, appears to be *Cudrania Javanensis*, but the specimens are bad; this species, however, is to be seen in various herbaria from Nepal, collected by Dr. Wallich in 1822.
- C, Rohilcund. (On this I have no notes.)
- D, from the Hort. Bot. Calc, is *Cudrania Javanensis*, with one piece of *Plecosperrum spinosum*. The former was introduced from Nepal into the garden by Dr. Wallich, and the latter from Coromandel by Dr. Roxburgh, in 1802; consequently both, being cultivated there, may have got mixed by those who dried them; but it rather appears to me that the specimens of *Plecosperrum* belonged to the letter E, from which packet they had dropped out, and that they were not derived from the garden at all; at the same time I may state that in some herbaria specimens of *Plecosperrum* only are to be found under the letter D: it

* In the Linnsean herbarium are two specimens, one marked by Linneus *P. aculeata*, the other, with smaller leaves, is unnamed by him but marked by Sir J. E. Smith *P. mitis*, L. This last agrees with the specimen mixed with Wall. L. 4641 A, but not with Linneus's description of *F. mitis*, of which, however, he had no specimen.

is readily recognized by the paler^ almost livid and obovate leaves.

E, from the Peninsula (Herb. Wight), is *Plecosperrnum spinosum*.

F, from Taondong. On this I have no notes; but if my recollection be correct, both C and F are species of *Cudrania*.

I may here add that of Wallich's List,

No. 4642, or *Trophis Heyneana*, is *T. spinosa*, Eoxb. Fl. Ind., or *T. taxouks*, Heyne and Roth, and is therefore a species of *Epicarpurus*.

4643 A, or *Batis frutkosa*, is *Batia fruticosa*, Eoxb., but is a species of *Oudrania*.

B seems somewhat different.

Morus? scandens, Wall. L. n. 4652, is the same as *M. Javanica*, Blume, Bijdr. p. 488, and *Trophis scandens*, Hook, et Am. Bot. Beech. Voy. p. 214, and is a species of *Malaisia*, a genus of *Morea*, closely allied to *Trophis*, but perhaps sufficiently distinct by the number of stamens.

To sum up these remarks.—*Trophis spinosa*, Eoxb. Fl. Ind. (and the only plant intended by him under this name in his published Works), is an *Epwmyrm*. *T. spinosa*, Eoxb. MSS., and of his earlier collections, as well as of Willdenow, or *Bath tpinosa*, Eoxb. Fl. Ind., is *Plecosperrmum spinosum* of Trecul, to which also *T. acuUata* of Eoth must be referred, which is truly a Covomandel plant, and not from Nepal. *T. spinosa*, Wall, from Nepal, is *Cudrania Javanica*; to which genus *Batis fruticosa*, Eoxb., and several species from the islands to the east of India, belong.

I have only to add that in the fifteenth volume of the Linneea Spanoghe, in his Catalogue of Timor plants, enumerates, at p. 335, "*Jropli** ^ 05 «, Eoxb.,» and « *T. coccinea*, Zp.:" notwithstanding that he strangely refers these to the *ThymUacea*, leaving doubts even as to their affinities, I am inclined to think that both are species of *Cudrania*, and probably both described by Trecul.

Tab. XL of Vol. III. (to be transferred to this volume). Fig. 1. Portion of a female plant:—*not. size.* 2. Flower of ditto. 3. Pistil. 4. Vertical section of ditto. 5. Fruit. 6. Section of ditto. 7. Embryo. 8. Transvers(?) section of ditto.—*magnified.* 9. Portion of a male branch:—*at. size.* 10. Unexpanded male flower. 11. Fully expanded ditto:—*magnified.*

DOONA ZEYLANICA, TJIW. (Tab. XII.)

Nat. Ord. DIPTEROCARPEA.

CHAR. GEN.—DOONA, nobis.—*Arbor* ingens, resinifera, versus apicem ramosissima. *Folia* alterna, stipulata, vernatione conduplicata, nee plicata; *stipulis* binis deciduis. *Calyx* persistens, 5-partitus, in aestivatione contortus; *sepalls* duobus interioribus minimis, tribus exterioribus majoribus crescentibusque. *Corolla* 5-petala; *petalit* ad basin connatis. *Stamina* 16, bi-seriata; *filamentis* dilatatis ad medium connatis; *antheris* subquadratis introrsis, longitudinaliter dehiscentibus, singula claviculo dorsali instructa. *Ovarium* superum, 3-loculare, loculis 2-spermis; *ovulis* semianatropis pendentibus. *Stylus* simplex, curvatus. *Stigma* simplex. Inflorescentia ad apices ramorum, paniculata; paniculis axillaribus terminalibusque.

Doona Zeylanica.

A tree, sixty feet in height and upwards, with a single trunk, much branched towards the upper part. Bark rough and cracked. Branches terete, smooth. Leaves petiolated, flat, penniveined with very numerous intermediate reticulations, lanceolate, 2-2½ inches long and 1 of an inch wide, dark green above, paler beneath, rounded at the base, tapering towards the apex into a rather long acumen with an abrupt point. Petioles ½ an inch in length, grooved along the upper surface. Branches of the panicles pale, jointed, with small brown deciduous bracts. Calyx pale green, tinged with red, the three enlarged leaves becoming of a deeper red colour. Petals pale rose-colour, darker at the tips. Stamens with white dilated filaments, which are united more than half-way up. Anthers yellow, with a dark red dorsal claviculus. Ovary, style, and stigma pale green.

This fine forest-tree is very abundant in some parts of the Central Province of Ceylon, especially on the crests of the hills; the timber is much esteemed for building purposes, and the resin which exudes in considerable quantity from any wounded part of the tree is sometimes used by the natives for burning, in their houses, being first mixed with the husks of paddy. The resin is soluble in spirits of wine or turpentine, and makes an excellent varnish.

The tree is called by the Cinghalese "*Doon*," or *Boon-gala* \ anglicè, *Boon*, or *Doon-tree*; whence our generic name *Doona*. (The genus is nearly allied to *Hopea*.—ED.)

Tab. XII. of Vol. III. Eg. 1. Flower-bud. 2. Expanded flower.
 3. Petal. 4. Stamens. 5. Stamens separated. 6. Pistil. 7. Transverse section of ovary. 8. Vertical section of ditto. 9. Ovule.
 10. Fruit :—*aU* but fig. 10 magnified.

Second Report on MR. SPRUCE'S *Collections of Dried Plants from*
 NORTH BRAZIL ; *by* GEORGE BENTHAM, ESQ.

{Continued from vol. iii. p. 373.}

The *Hippocrateacea*, three species, are all, as far as I have been able to ascertain, hitherto undescribed, but in the confusion which prevails in the nomenclature of this small order, it is a matter of some difficulty to determine the generic names which should be given to them. One species, with two distinct adnate anther-cells, belongs to the group established by Dupetit-Thouars, and afterwards by Cambessèdes, under the name of *Calypso*. If this genus is correctly made to include all the species with two-celled adnate anthers, of many of which the fruit is unknown, and which vary much in inflorescence, in the point of insertion of the stamens on the disc, and even in the anther-cells themselves, either entirely distinct and parallel, or diverging and more or less confluent at the apex; it would then comprise not only the original *Salacia Chinensis*, Linn., and *Johnia*, Roxb., but also *Raddisia* of Leandro da Sacramento, and even *Tontelea*, Aubl., or *Tonsetta*, Schreb., which Aublet distinctly describes as having two-celled anthers, although Gambessèdes, apparently from examination of specimens, refers it to the one-celled genus. If a better acquaintance with all the species should confirm the above view, the Linnsean name of *Salacia* must be adopted, as proposed by Wight and Arnott and now generally confirmed.

Our two other species (to one of which, misled by Cambessèdes, I had on the distributed labels given the name of *Salacia*) have, in common with many other South American species, the anthers of *Hippocrater* transverse, with the two cells confluent into a single one, at any rate after opening; but judging from their inflorescence, they probably both belong to the genus distinguished from *Hippocratea*

by the baccate fruit. To this genus Cambessèdes unfortunately misapplied the Linnsean name of *Solatia*. This error having been corrected by Wight and Arnott, Endlicher has taken up, on the authority of Cambessèdes, Aublet's name of *Tonlelea*, but this course can hardly be justified until Aublet's character shall have been shown to be erroneous from the examination of authentic specimens. In the meantime, it would appear better to follow Martius in taking up the name of *Anthodon* (not *Antkodus*, as written, apparently by mistake, in Schultes' 'Systema'), proposed by Euiz and Pavon for a Peruvian species, generally supposed to have baccate fruit. This fruit, however, has not been seen, either by Euiz or Pavon, or by Kunth, who both have described in detail and figured the original species; and as a Guiana plant closely allied to it in foliage and inflorescence (n. 710 of Schomburgk's first collection) is certainly a *Hippocrates* it is probable that Euiz and Pavon's *Antlwdon decussa* Uis must also be reduced to that genus. But even should this prove to be the case, the name of *Anlkodon* becomes otherwise unoccupied and may be applied as proposed by Martius. Among the other synonyms enumerated by Endlicher, *Baddisia*, described as having two-celled anthers, would be transferred to *Salacia*; *Sicelium* has evidently found its way here from a clerical or typographical error of Poiret's writing *Tontelea* for *Tontanea*; *Antjiodiscus* is another clerical error for *Antfiodus* or *Anthodon*. *Clercia*, Yell., is the only one of the long list free from doubt, but at the same time it is the most recent, and only made known by a rude figure. A careful revision of the whole Order, and a determination of the real limits of the genera, is much wanted. The following are the three new species above mentioned:—

1. *Salacia dulcis*, sp. n.; foliis oblongis sublanceolatisve obtusis grosse pauciserratis, cymis petiolo paulo longioribus, petalis oblongis subintegris calyce triplo longioribus, staminibus intra discum insertis, ovibus geminis collateralibus, bacca depressa 4-6-sperma.— Affinis videtur *S. campestris* (*Calypso campestris*, Gamb. in St. Hil. Fl. Bras. Mer. vol. ii. p. 110.1.104), sed elatior, folia majora, saepius 4-5-pollicaria, paniculae breviores, potius cymoso-corymbosae quam oblongae, calyces breviores, petala angustiora et integriora. *Bacca* depresso-globosa, 1-H P°U. diametro. *Semina* omnia v. rarius 4-5 tantum perfecta, pendula, subglobosa, testa brevi Crustacea, cotyledo-

nibus in massam duram conferruminatis, radícula minuta mammiformi hilum superum spectante.

This species, from the Barra do Eio Negro, is a shrub of about seven feet in height, with very small yellowish flowers. The fruit is yellowish-glaucous, juicy, and sweet. The Indians are very fond of it, and call it *Uaiatumã*.

2. *Anthodon grandijloms*, sp. n.; glaber, foliis crassis late oblongis acuminatis integerrimis basi rotundatis, floribus pro genere magnis axillaribus lateralibusque aggregatis, pedicellis flore longioribus, petalis late obovatis integerrimis.—*Frutex* alte scandens. *Folia* petiolata, pleraque semipedalia v. longiora, crasse coriacea, acumine brevi obtuso, costa prominente, venis arcuatis parum conspicuis. *Pedicelli* in axillis 4-6, per anthesin semipollicem longi. *Calyx* apertis, lobis vix lineam longis orbiculatis, exterioribus paulo minoribus. *Petala* lutea, basi fusca, obovatis, 4 lin. longa, expansa, 2 exteriora paulo latiora et basi minus angustata. *Discus* fuscus, conicus, crassus. *Stamina* ad marginem disci inserta, filamentis lineam longis. *Anthem* transverse, veniformes per anthesin confluentim uniloculares, juniores in loculos 2 obliquos subdivisi. *Ovarium* disco immersum, loculis 3 biserialiter quadriovulatis. *Stylus* nullus. *Ovarii apex* triangularis, medio stigmatosus.—Near Barra, along streams.
3. *Anthodon* ? *laxiflorus*, sp. n.; glaberrimus, foliis oblongis breviter acuminatis integerrimis pauciserratisve, paniculis axillaribus sessilibus laxe dichotomis, segmentis calycinis latissimis, petalis calyce duplo longioribus orbiculatis integerrimis, ovarii loculis biovulatis.—*Frutex* scandens. *Folia* breviter petiolata, semipedalia et longiora, tenuiter coriacea, nitidula. *Panicula* bipollicares, a basi ramosae, ramis gracilibus fere filiformibus paucifloris, pedicellis ultimis 3-6 lin. longis. *Flores* expansi vix 2 lin. diametro. *Filamenta* intra discum inserta, libera, petalis breviora. *Anthem* juniores distincte biloculares sed transversae loculis divaricatis, nee ut in *Salavia* Americanis erectae loculis parallelis, et loculi demum in unum confluent. *Fructus* ignotus.

This climber, with small yellow flowers, was gathered near Obidos, and distributed under the name of *Salacia laxiflora* and may in some measure be considered as intermediate between the two genera. It is probable that a better acquaintance with the Order may point out some

modifications in the generic groupes, so as to make them more conformable to habit and inflorescence. In the meantime the present plant appears to come nearer in character to *Anthodon* than to *Salacia*.

The South American *Aquifoliaceae* are very numerous, although but few are as yet described, nor has any successful attempt been made as yet to groupe them into genera and sections. The species of *Ilex* are generally much alike, and distinguished by differences of form, size, and consistence, which, although constant within certain limits, are yet very difficult to describe. The present collection contains two, both so distinct from any that I am acquainted with, that notwithstanding these drawbacks I venture here to characterize them.

1. *Ilex parviflora*; glaberrima, foliis longiuscule petiolatis oblongis ellipticisve obtusis v. obtuse acuminatis integerrimis coriaceis basi rotundato-subacutis, pedunculis fasciculatis cum cymis 5-9-floris petiolo brevioribus, floribus minimis tetrapetalis.—*Arbor* 25-pedalis, forma *Ilicis aquifolii*. *Folia* coriacea, nitidula, 2|-3℥ poll, longa, 1 \ poll, lata, petiolo 6-8 lin. longo. *Nodi fioriferi* axillares, in ramulum haud evoluti. *Pedunculi* plurimi, interdum ultra 12, vix 3 lin. longi, apice cymulam v. umbellulam ferunt 5-9-floram, pedicellis lineam longis. *Flores* abortu submasculi. *Sejpalae* orbicularia. *Petala* latiuscula, semilineam longa, alba, separatim secedentia. *Stamina* petalis longiora et iis basi vix coherentia. *Ovarium* pyramidato-globosum, carnosum, loculis 4 minimis minute uniovulatis v. cassis, stigmatē sessili obsolete 4-lobo. *Flores* fertiles non vidi.—From the forest near Barra.

2. *Ilex petiolarisy* sp. n.; glaberrima, foliis longe petiolatis ovatis breviter acuminatis integerrimis coriaceis basi cuneatis, pedunculis fasciculatis brevissimis paucifloris, baccis globosis glomeratis.—*Arbor* irregulariter ramosissima. *Folia* pleraque 2 poll, longa, fere H poll, lata, basi breviter acutata, petiolo 7-9 lin. longo. *Flores* non vidi. *Pedunculi* fructiferi alii monocarpi 2 lin. longi medio cicatrices ostendunt pedicellorum abortientium, alii ibidem in pedicellos 2-3 divisi. *Calyx* sub fructu persistens, minimus, 4-lobus. *Bacca* 2 lin. diametro, coccinese, 4-spermse, in fasciculos densos petiolo multo breviores confertse.—From the Capoeiras near Barra.

A variety of *Goupia glabra*, Aubl., with the leaves and young shoots occasionally, but not always, covered with appressed hairs, was gathered on the Igarapé d'Irurá, near Santarem. The Natural Order

of this plant, is as yet very uncertain. With the habit and petals of *-a Byttneria*, it has been placed in the neighbourhood of *Celastracea*, on account of the position of the stamens, alternating with the petals, whilst the ovary again brings it nearer to *Byttneria*. These specimens are in good flower and young fruit, but I have as yet seen none ripe enough to ascertain the structure of the seed; that of the flowers is as follows :—

Calyx persistens, profunde bifidus, laciniis breviter triangularibus sestivatione imbricatis. *Petala* 5, hypogyna, sestivatione valvata, apicibus linearibus introflexis. *Stamina* 5; *filamenta* in tubum (seu discum) hypogynum cupulseformem margine sinuatum connata; *antherae* ad marginem cupulae sessilia, cum petalis alternantia, connectivo crasso pilis paucis reflexis hispido, loculis subglobosis, apice discretis, ad basin connectivi lateraliter insertis, rima brevi dehiscentibus. *Ovarium* sessile, depresso-globosum, stylis 5 brevibus, stellatim divaricatis coronatum, 5-loculare; *ovula* in quoque loculo plurima, e basi axeos centralis erecta v. horizontalia, anatropa. *Bacca* parva, globosa, abortu 2-3-locularis, oligosperma. *Semina* erecta, ovoidea, in specimine adhuc immatura.

The only *Rhamnea* is the following species of *Gouania* from Barra, which does not agree with any published description, short and unsatisfactory as the characters of most of the described species are. The ripe fruit is known but of very few species of the genus, but, as far as known, seems to indicate its division into two groups, one with the fruit more or less 3-winged, the other with a globose pyriform fruit scarcely even angled. The present species belongs to the former: one set of specimens from a climber covering the top of a large tree, with what appeared to be clusters of purple blossoms, proved, when Mr. Spruce had cut down the tree to obtain them, to be in ripe fruit only, with broad thick wings; a few specimens from another plant, evidently the same species, have younger fruit, scarcely winged at all, or with narrow and very thick wings, although the seeds are fully formed and nearly ripe. The degree of development of the wing is probably, therefore, in this genus as in *Dodonaea*, a character of very secondary importance and liable to vary in the same species.

Gouania discolor, sp. n.; foliis ovatis obtusis glanduloso-pauciserratis basi subcordatis supra glabriusculis nitidis subtus albidis minute toinentellis, capsulis tripartitis.—*Frutex* alte scandens, caule angulato.

Ramuli subteretes, minute tomentelli, laterales in cirrhos simplicis saepe abeuntes. *Stipula* parvae, caducæ. *Petioles* -J—1-pollicares. *Folia* 3-4-pollicaria, serraturis remotis obtusis, subcoriacea, supra viridia et glabra v. pilis raris conspersa, subtus tomento minuto albida et ad venas pilosula, peuninervia et transverse venulosa, venis supra immersis subtus prominulis, primariis ad marginem folii glandula sessili terminatis. Cirrhi pauci ramulos foliatis v. rarius racemos terminant. *Ilacemi* axillares, simplices v. subramosi, superiores subpaniculati. *Flores* non vidi. *Pedicelli* fructiferi fasciculati, 1-2 lin. longi. *Capsula* tomentellæ, mature axi 3-4 lin. longo, alis latiusculis ante dehiscenciam crassis, carpella singula cum ala margine fere membranacea 6 lin. lata. *Semm* omnino ut in char. gen. Endlicheri. In altero specimine capsule juniores vix obtusis-
* sime alatg.

Among nine *Terebinthaceæ* (two *Anacardiaceæ* and seven *Bursereæ*), three only are referable to published species, the *Trattinnickia rJtoifolia*, Willd. (with a trifold calyx, trifold corolla, and six, not five, stamens), from Barra, and two, or perhaps three *Idea*, from Santarem, closely allied to numerous specimens from Guiana and Brazil, which constitute, most probably, the *L. Girianensis*, Aubl., and *l. heterophylla*, DC, but which it is difficult to identify with certainty, without comparison with authentic specimens. The following are the new species :—

1. *Cyrtospermum gumtmiferum*, gen. nov.—*Char. gen.* CYRTOSPERMUM. *Calyx* parvus, 5-partitus. *Corolla* . . . *Stamina* 10, sub disco hypogyno inserta. *Ovarium* . . . *Drupa* ovoidea, cræcta, acutiuscula, pericarpio tenui. *Endocarpium* osseum, dissepimento duro curvato separatum in loculos 2, altero parvo laterali vacuo, altero hunc fere circumdante, sectione transversa hippocrepico. *Semen* unicum, loculo conforme et pariter curvatum, ex apice pendulum; *testa* tenuis; *albumen* nullum; *radicula* brevis, supera; *cotyledones* latae, carnosule, dissepimento incumbentes.—Species unica *C. gumtmiferum*.—*Arbor* 40-pedalis, ramulis crassis. *Folia* simplicia (fere *Semecarpi*), ad apices ramorum approximata, semipedalia v. paulo longiora, rarius fere pedalia, cuneato-oblonga, obtusissima v. retusa, basi angustata et in pctiolum brevem decurrentia, rigidula, glabra, parallele penninervia et tenuiter reticulato-veuosa. *Paniculæ* axillares, parum ramosa, 8—i-pollicares. *Flores* ex reliquiis suppetentibus parvi videntur, fasciculati. *Drupa* semipollicares, purpur ascentes.

These specimens remind one of some of the Asiatic *Semecarp*i, and, although not in flower, cannot be referred to any published genus, on account of the curious form of the seed. The fruit had probably its origin in a compound ovary with one fertile and several empty cells, which, with the habit, induce me to place the plant among *Anacardiea*. It formed a straight tree of forty feet or more, with a trunk of about a foot in thickness, in the forest near Barra, distilling a reddish gum.

2. Mauria? (Tapirioides) *multiflora*, Mart. Herb. EL Bras. n. 1274 (nomen absque descr.) ; abortu dioica, ramulis petiolis paniculisque minute ferrugineo-tomentellis, foliolis 5-11 oblongis obtuse acuminatis basi obliquis glabris, paniculis masculis ramosissimis floribundis minutiflovis, fajmineis oblongis paucifloris, styHs 4-5 brevissimis distinctis.—*Arbor* ramosissima, 18-20-pedalis. *Folia* saepe pcdalia; *foliola* opposita, breviter petiolulata, maxima 5 poll, longa, saepius 3 poll. v. paulo minora, acumine longiusculo obtuso, supra glaberrima nitidula, subtus pallida v. ferruginea, glabra v. ad venas pilis minutis puberula. *Panicula mascula* semipedales et longiores. *Bractea* minutse, squamaeformes. *Flores* secus ramos ultimos fasciculato-cymulosi, breviter pedicellati, expansi vix linea latiores. *Calyx* apertus, laciniis 5 orbiculatis obtusis. *Petala* ovata, calyce duplo longiora, demum reflexa, aestivatione leviter imbricata. *Stamina* 10, petala superantia, sub disco integro inserta, alterna breviora. *Ovarii* rudimentum hirsutum, disco impositum, in stylos breves 4r-5 divisum. *Panicula feminea* multo breviores et minus ramosse. *Mores* paulo majores. *Calyx*, petala et stamina marium, ha;c tamen tenuiora anthcris effctis. *Ovarium* glabrum, ovoideum, carnosum, obtusum, coronatum, stylis 4-5 brevissimis crasse capitato-stigmatosis; intus uniloculare. *Ovulum* unicum e funiculo paricti cavitatis adnato suspensum. *Brupa* ovoidca, fere 6 lin. lon^ra, obtusa, stylomm vestigiis vix* umbilicata, nigra, pericarpio pulposo dulci, endocarpio crustaceo. *Semen* pendulum, fructu conforme; *testa* tenuis; *cotyledons* crasso-carnosae, plano-convexa?, apice (quoad fmctum infera) in acumen radriculaBforme accumbenti-inflexum productse. *Radicula* supera brevissima.

This tree; found by Mr. Spruce equally abundantly in wet and dry situations on the Amazon, appears to be very common in various parts of Guiana and Brazil, and can hardly have escaped the notice of earlier botanists; yet I am unable to identify it with certainty with any but Martius's plant, distributed in the * Herbarium Florae Brasiliensis,'

under the number 1274, but named only in his Catalogue without any description. It agrees precisely with Aublet's principal figure of his *Tapiriria* (or *Tapiria*) *Ouianetisis*, and is very much like the apparently male specimen of that plant preserved in the British Museum; but Aublet's description and figure of the ovary and fruit (which I have no means of verifying) are at total variance with our plant. It is, however, very probably Kunth's *Comocladia* ? *Tapaculo*, but certainly, as suspected by Kunth, does not belong to that genus. From *Mauria*, to which Martius refers it, it differs in the aestivation of the *corolla*, which is slightly imbricate, not strictly valvate, and in some respects in the style. The embryo is also different from that of *Mauria simplicifolia* (the only one of which I have seen ripe fruit), yet we can hardly venture to establish it as a distinct genus, unless both sexes as well as the fruit of the several other published *Maurice*, especially the small-flowered species described by Tulasne, shall, on comparison with the present species and some others allied to it, confirm these distinctions. In the mean time we may consider it as a section of *Mauria*, under the name of *Tapirioides*, which, if it be proved that Aublet had by mistake described the fruit of some different plant, may be exchanged for his name of *Tapiria*.

Mr. Spruce's specimens were first distributed to a few subscribers under the name of *Tapiria*, sp.- n. ? from Caripi, and afterwards more generally from Santarem, under the name of *Mauria multiflora*, Mart. I have also examined from other collections male specimens—from Guiana, Sir Robt. Schomburgk, 1st coll. n. 174, 2nd coll. n. 721, 789, 793, 915 and 916 (Rich. Schomburgk, n. 1052, 1350, 1406, 1483, 1482); from Surinam, Hostmann, n. 368 and 853; from Brazil, Martius, Sello, Salzmann, and Spruce; female specimens from Guiana, Sir Robt. Schomburgk, n. 1010 (Rich. Schomburgk, n. 1706), and from Brazil, Spruce; the fruit I have only seen in Spruce's specimens. To the same section appear to belong the two following species, of which, however, I have only seen male specimens:—*Mauria* (*Tapirioides*) *subbijuga*, Mart. Herb. PL Bras. n. 1275; foliolis brevissimè petiolulatis 3-5 v. inferioribus solitariis oblongo-ellipticis obtuse acuminatis basi angustatis glaberrimis nitidis, paniculis masculis ramosissimis floribundis minutifloris.—*Petioli* communes 1-2-pollicares. *Foliola* 3-5 poll, longa, subcoriacej. *Panicula* mascula *M. multiflora*. *Petala* calycis laciniis ovatis duplo longiora.—Minas Geraes (Claussen); and

Mauria (Tapirioides) *obtusa*; foliis amplis, foliolis 7-9 obovato-ellipticis obtusis supra praeter costam glabris, subtus petiolis inflorescentiaque ferrugineo-pubescentibus, panicula mascula ampliramosissima floribunda minutiflora.—*folia* sesquipedalia, abortu folioli terminalis saepe abrupte pinnata. *Foliola* opposita, 3-6-pollicaria. *Panicula* quam in *M. multiflora* ampliores, floribus crebrioribus. *Pedicelli* brevissimi. *Petala* calycis laciniis orbiculatis triplo longiora.—British Guiana; Sir Eobt. Schomburgk, n. 892 (Eich. Schomb. n. 14.42).

3. *Icica Spruceana*, sp. n.; ramulis glabris, foliolis 7-9 oblongis longe cuspidatis integerrimis impunctatis, costa subtus petiolisque puberulis, paniculis brevibus a basi ramosis, fructu oblique ovoideo-triquetro 1-2-pyreno.—*Arbor* 30-40-pedalis, l. *Jieptaphylla* ut videtur affinis, pube petiolorum et costarum facile distincta. *Folia* ampin, foliolis petiolulatis 4-5-pollicaribus basi saepe obliquis. *Mores* non vidi. *Panicula* fructiferae vix pollicares, a basi ramosae. *Drupa* 8-9 lin. longae, rubrae vel albse (Spruce). *Pericarpium* tenue, durum. *Pyrena* saepius 2. *Semen* paulo infra apicem affixum, maturum haud inveni, sed in embryone juniore cotyledones vix plicatae erant.—From the forest near Barra.

4. *Icica pubescens*, sp. n.; ramulis novellis petiolisque pubescentibus, foliolis 1-3 ovali-oblongis cuspidatis paucidentatis glabris puberulisve minute pellucido-punctatis, floribus 4-nerviis 8-andris, stylo ovario longiore.—*Arbor* parva. *Folia* alterna v. hinc inde opposita, valde irregularia, pleraque pinnatim trifoliolata, impari a lateralibus oppositis distante nunc iis multo majore, nunc rarius sequali; alia simplicia, petiolo brevissimo fulco; maxima semipedalia v. paulo majora, pleraque multo minora; omnia rigide membranacea, penninervia, supra medium plus minus obtuse serrata, apice abrupte cuspidata, acumine obtuso angusto. *Petioluli* villosi, apice intumescentes. *Florum* fasciculi densi, axillares v. supra-axillares. *Pedicelli* lineam longi. *Calyx* parvus, lobis 4 orbiculatis. *Petala* lanceolata, 1½ lin. longa, erecta, apice breviter patentia, acumine inflexo, aestivatione valvata. *Stamina* petalis dimidio breviora, antheris anguste oblongis. *Ovarium* disco orbiculato insidens, stylo petalis paulo breviora, loculis 4 biovulatis. *Brupa* carnosula, coccinea, nunc late ovata acuta bisulca basi subcordata disperma, nunc oblique ovoidea acuta monosperma. *Pyrena* Crustacea?. *Semen* pendulum, testa membranacea. *Embryo* exalbuminosus, radícula

supera, cotyledonibus subfoliaceis crassiusculis plus minus plicatis.—
From sandy soils in the forest near Barra, differing considerably in
habit from other *Idea*.

5. *Hedwigia rftoifolia*, sp. n.; foliolis 9-13 oblique ovali-ellipticis acuminatis pauciserratis rigide membranaceis ad costam petiolis inflorescentiaque puberulis, panicillis axillaribus brevibus, drupis tomentosis 1-2-pyrenis.—*Arbor* 25-pedalis, resinoso-aromatata. *Pubes* ramulorum petiolorum et inflorescentiae rufescens. *Folia* majora sesquipedalia, foliolis ultimis interdum semipedalibus; *foliola* inferiora minora, opposita, penninervia et reticulato-venosa. *Panicula* in axillis superioribus 4-5-pollicares. *Flores* non vidi, sed reliquiae ad basin fructus calycem indicant parvum B-lobum. *Stamina* 10, sub disco orbiculari inserta. *Drupa* 6-8 lin. longae, tomento ferrugineo vestitae, nunc late ovoideo-globosae acutiusculae dipyrenae, nunc oblique ovoideae dorso convexae, Linea obtusangulae, apice acutiusculae, monoppyrenae. *Pyrena* osseae, pulpa alba obtectae. *Semen* pendulum, obovoideum, rectum, testa membranacea. *Cotyledones* 8 crasso-carnosae, plano-convexae, rectae, apice (infera) productae in acumen breve radicaeforme tenue incurvum, in dorsum alterius cotyledonis incumbens (nec ut in *Mauria muUiflora* accumbens). *Radicula* vera brevis, supera, intra emarginaturam cotyledonum inclusa.—From the vicinity of Barra.
6. *Thyrsodium Spruceanum*, gen. nov. — *CJar. gen.* THYRSODIUM (Salzm. MS.). *Flores* abortu dioici (v. polygami?). FL. MASC. *Calyx* campanulatus, semi-5-fidus, laciniis acutis, aestivatione valvatis. *Petala* 5, laciniis calycinis alternantia, ad apicem tubi inserta, aestivatione valvata. • *Stamina* 5, petalis alterna et cum iis inserta, brevia, antheris medifixis introrsis bilocularibus loculis parallelis longitudinaliter dehiscentibus. *Ovarii* rudimentum cum stylo continuum, lineare, corolla paulo brevius, apice in stigma bilobum dilatatum. *Fl. form.* et *fructus* ignoti.—*Arbores austro-Americana*. *Folia* alterna, impari-pinnata, foliolis suboppositis. *Paniculae* masculae terminales, ampla, floribunda. *Bractesae* parvae, lanceolatae, squamiformes. *Flores* in ordine majusculi, fere Garugse.

Of this genus, closely allied to the East Indian *Garuga*, I have the three following species :—

1. *T. Spruceanum*; panicula mascula laxa petiolisque minute tomentellis, foliolis 11-13 oblongis acuminatis supra nitidis reticulatis

subtus vix sub lente tomentellis, basi acutis, pedicellis bracteas superantibus calycem subaequantibus.—*Arbor* 16-pedalis. *Folia* 1-1½-pedalia. *Foliola* pleraque opposita, 3-6 poll, longa, 1-H poll, lata, abrupte et acutiuscule acuminata, basi acuta et breviter petiolulata, penninervia et reticulato-venulosa, venis primariis subtus prominulis et minute tomentellis, rete venularum utrinque conspicuo. *Panicula* anguste pyramidata, foliis subbrevior, bis terve ramosa, floribus secus ramulos ultimos racemulosis. *Bractea* lanceolatae, acutae, deciduae, majores linea paulo longiores; ultimae lineares, minimae. *Pedicelli* 1-2 lin. longi, uti calyces et petala cxtus tomentelli. *Calycis* tubus lineam longus, laciniae tubo sequilongae. *Tetala* paulo longiora, lanceolata, acumine inflexo. *Stamina* petalis dimidio breviora.—From the campos near Santarem. Flowers yellowish-green, honey-scented. (R. Spruce.)

2. *T. Salzmannianum*; panicula mascula thytsoidea fasciculiflora petiolisque ferrugineo-tomentosis, foliolis (11-13) late oblongis breviter acuminatis coriaceis supra nitidis reticulatis subtus vix tomentellis basi obtusis, pedicellis bracteas vix aequantibus calyce brevioribus.—*Foliola* quam in *T. Spruceano* latiora, rigidiora. *Flores* secus ramos breves paniculae dense glomerati.—Ad Bahiam in collibus. (Salzmann.)
3. *T. Schomburgkianum*; panicula mascula ampla ramosissima petiolisque ferrugineo-tomentellis, foliolis (11-13) amplis elliptico-oblongis acuminatis supra ad costam subtusque ferrugineo-pubescentibus, pedicellis bracteam vix aequantibus calyce brevioribus.—*Folia* bipedalia. *Foliola* 6-8 poll, longa, 2-3 poll, lata, vix coriacea, supra scabriuscula, subtus undique pubescentia. *Panicula* bipedalis. *Flores* in ramulos ultimos fasciculati, quam in praecedentibus paulo minores.—[^]British Guiana; Sir Kobt. Schomburgk, 1st coll. n. 892.

(2b be continued!)

Abstract of a Journal kept during the voyage of KM.8. Herald;
by BEETHOLD SEEMANN.

On the 30th of October, 1850, the Herald fairly commenced her" homeward voyage by bidding adieu to the Hawaiian Islands, and shaping her course towards China. Wafted along by the north-west

trade-wind, she arrived, on the 19th of November, in sight of the island of Assumption, passed Formosa and the Bashee groupe, and, after experiencing in the neighbourhood of the latter a series of severe gales from the N.N.W., reached, on the last of November (or rather on the 1st of December, for she had lost a day), the harbour of Victoria, Hong-Kong.

The island of Hong-Kong, as seen from the anchorage, appears, especially during the winter, the time of our visit, a barren and uninviting country. Huge masses of trap, granite, and hornblende are piled upon each other, till they reach their highest summit in Victoria, a peak nearly 2,000 feet above the sea. But however unfavourable may be the aspect, on a closer inspection the botanist discovers a rich flora, full of new genera and species, although the labours of Hinds, Fortune, Hance, and Champion have already brought forward such treasures. Indeed, it is estimated that Hong-Kong, small as it is, produces about a thousand species, and probably many more: an estimate which I am by no means inclined to call into question; for nearly every nook and valley has its peculiar vegetation, and on the whole but few plants, which may be called common, are to be found. True, *Pinna Chinensis*, *Myrtus tomentosa*, *Callicarpa tomentosa*, and a species of *Pandanus* are frequent, but only in the lower parts; at an elevation of 400 feet they disappear, and are replaced by rarer productions.

I ascended Mount Victoria and the other peaks, explored various valleys, and went, once to Gowloon, on the mainland, in the Chinese territory. At Cowloon a great portion of the vegetables—Sweet Potatoes, Cabbages, Onions, Spinach, Turneps, Egg-apples—consumed in Victoria, are grown; I also observed several acres planted with *Berberis nivea*, for making grass-cloth. Botanical novelties I did not obtain, but found *Panax aculeatus*, a species of *Ficus*, two Ferns, and several almost dried-up specimens of *Clerodendron fragrans*, which grew abundantly on the road-sides, and were about four feet high. It is now universally regretted that the little peninsula of Cowloon was not selected for the British settlement, in preference to the unhealthy locality in which the present town of Victoria is built; for after all the enormous expenses to which the Government has been subjected in order to carry out the great public works, drainage, canals, bridges, &c, the salubrity of Hong-Kong is but slightly improved, and the annual mortality among the whites continues to be very great.

On the slopes of the hills forming the Happy Valley, just above the burial-ground, a number of rare plants are to be found. I gathered several species of Oak, the *Synadrys ossea*, Lindl., the nuts of which are eaten, a beautiful Chestnut (*Castanea*, sp.), *Memecyhn nigrescens*, H. et Am., *Camellia euryoides*, and *C. Japonica*. The latter was about twenty-four feet high, but this is by no means its greatest size: in some parts of the island it attains a height of fifty feet, and a stem more than a foot in diameter. To discover new species is highly gratifying, yet I think it is equally so to meet again with plants which, like the *Camellia Japonica*, were favourites in our native land, and have been familiar to us from our infancy.

The view from Victoria Peak is beautiful, and amply repays the exertions even of him who ascends the mountain merely for the sake of the surrounding scenery. The spectator may discover more than thirty islands, and a vast number of Chinese and European ships: he has a complete panorama of the town of Victoria, its magnificent edifices, roads, bridges, canals, and other public works which have been constructed since the occupation. The peak itself, as well as the whole ridge of the Hong-Kong mountains, is destitute of woody plants; but on the slopes, in the little groves and valleys, a mass of shrubs, chiefly evergreens, and a luxuriant herbage, are met with. I noticed *Gardenias*, *Rubi*, *Azaleas*, *Ardisias*, *Gordonias*, *Bcekeafrutescens*, *Anthemis Clunetisis* with small yellow flowers, *Limonia citrifolia*, *Strychnos cohbrina*, *Smilaces*, *OrcliidetB*, and *Ferns*. Among the latter is the curious *Nephrolepia tuberosa*, Don, having large tuberous roots like Potatoes. In some of the rivulets of the mountain I found a number of gold-fishes (*Cyprinus auratus*, Linn.). Several of them were safely carried down to the town and deposited in a jar.

There are at present in Hong-Kong two gentlemen, Dr. H. F. Hance and Lieut.-Colonel Eyre, who take great interest in botany. They made several excursions with me to the most profitable localities, and pointed out some of the rarest productions of the flora. Dr. Hance was unfortunately suffering from intermittent fever, which has shaken him so much during the last four months that he will be compelled to return to England before the commencement of the rainy season. He was, therefore, unable to accompany me very frequently. Lieut.-Colonel Eyre makes almost daily excursions. He possesses, besides a considerable herbarium, a beautiful set of coloured drawings

of Hong-Kong plants, chiefly executed by himself. Many of the figures represent species new to science; there is especially one, a *Camellia*, allied apparently to *C. caudata*, Wall. It has been called by Captain Champion *C. eurygides*. I do not, however, observe that name in the enumeration of Chinese plants given in the 'Journal of Botany*' by him and the late Dr. Gardner.

In the evening of the 2nd of December I attended a meeting of the China branch of the Royal Asiatic Society, when the secretary read a paper by Dr. H. J. Hance, advocating the establishment of a botanical garden. It appears to be the general wish that such an institution should effect a twofold object—be useful to science, and serve as a public promenade. Yet such is the peculiarity of the ground and climate that great difficulty will be experienced in choosing an appropriate place. If a situation unprotected from the wind is selected, a single typhoon may destroy within a few hours the most valuable collection; and a sheltered position adapted for a botanical garden is hardly to be found in the vicinity of the town. Little hope remains, therefore, of seeing both objects accomplished, but, as has been observed, the advancement of science should be the primary, and promenading the secondary, aim of the institution.

' Being desirous of visiting Canton, I started, accompanied by Mr. John Anderson, one of my fellow-voyagers, on the morning of the 11th of December, in a river-steamer. Our voyage was first through a groupe of islands, and then up the river, passing the town of Whampoa. The high state of cultivation, the number of villages, the tall pagodas, the gorgeous temples, the great mass of ships, and the thousands of boats loaded with human beings, are truly worth seeing, and only to be met with in China. If a thoroughfare in the city of London is called crowded, I am actually at a loss what term to apply to the mass of boats and people seen at Canton. It is almost beyond belief. We reached our destination towards the evening, and were kindly received by Mr. W. Pastau, a German merchant, whose establishment at Victoria had already been placed at my disposal, and who here gave another proof of his hospitality.

You are probably aware how peculiarly foreigners are situated at Canton. They are only allowed to enter the suburbs: the actual city is not open to them; and as the streets of the former are very narrow and filthy, the sole place for walking is a small garden in front of the

factories on the banks of the river. Formerly this garden was divided by a wall into two portions, the smaller of which—containing a neat church raised by general subscription of the Protestants—belonged to the English, the larger to the other foreign merchants ; but now, after years of deliberation and many a warm discussion, the division has been pulled down, and the grounds are united. The garden contains several fine trees, *Bauhinias*, Pig-trees, Palms, &c, and is kept very neat and clean, but considering the great annual expense of maintaining it, one can but regret that it has been laid out by a person who possessed neither taste nor judgment.

It is generally the ambition of those who visit Canton to go to the so-called heights of the city.. As this expedition, if undertaken by single individuals, is not considered safe—some Europeans having occasionally been murdered, others beaten or pelted with stones—a party was formed. After about two hours of uninterrupted walking through the crowded streets of the suburbs we reached the outside of the walls, without being subjected to any insult except that offered by a lot of boys and girls, sometimes amounting to more than a hundred, • who constantly followed us with the annoying cry of " Foreign devils ! foreign devils!" From the hills we obtained a full view of the city—a mass of buildings so closely crammed together that it was almost impossible to detect either streets, squares, or any other division; the whole presenting, if not a beautiful, at least a grand and curious spectacle.

The flora of the surrounding country was very scanty. A few isolated Pine-trees (*Pinus C/inensis*, Lamb.) grew on the heights; near the water, *Ficus nitida* and some Bamboos; on the great city walls, *Boshneria nivea* and *Ficits stipulata*; while spreading over hedges was seen a Hop which differs so much in aspect and size from *Humulus Lupulus*, that on a closer comparison it may possibly prove a new species. Among the cultivated plants, except the *Sagittaria Chinensis*, which was grown in great quantities in swamps, I observed nothing peculiar. The Eice and most vegetables had not yet been sown, for it was still winter, which, though not to be compared with ours, is sufficiently severe to convert sometimes during the night the surface of the stagnant water into a crust of ice.

In approaching one of the twelve gates a number of soldiers came towards us, who, with the greatest politeness, told us that we had

better return whence we came. But I had made up my mind that I would go inside the walls of Canton, so, stepping boldly through the gate, I walked a few steps forward, followed by the rest of my companions, and then turned back. The soldiers understood perfectly well for what the odd manoeuvre was intended. They Laughed heartily, and we all parted as friends.—We now returned, and retracing our steps through the suburbs reached the factories in safety.

The people of Canton seem to attach great value to the virtues of plants. In the principal streets are stalls where medicinal herbs, roots, barks, and other vegetable substances are sold. At one of these places I counted more than fifty different drugs. There is generally, especially if a cure is performed, a man puffing up and extolling the extraordinary properties of his wares, in doing which he indulges now and then in a piece of witticism, which occasions among his gaping audience great merriment. I have never regretted so much being ignorant of the vernacular tongue as here, for whatever may be the quackery connected with the Chinese practice of medicine, a great deal, no doubt, is sound science, dearly purchased by experience. In this respect we have yet much to learn from them. The great work of Li-shi-chin, called the 'Pun-tsau-kang-muh,' or *Materia Medica*, is a valuable compilation, of which Europeans know but little, and which has never been translated into any language. It consists of no less than forty closely-printed octavo volumes, and contains several hundred figures of minerals, plants, and animals. True, the representations are imperfect, but they are in most instances not inferior to those woodcuts adorning the pages of the old "Krauterbücher" and Herbal⁹ published in Europe shortly after the invention of printing. To identify the names and figures given by Li-shi-chin with scientific appellations, will be an interesting study to those who occupy themselves with Chinese Natural History, and, judging from the few extracts which have lately been published, the labour of translating the whole would be amply repaid by a vast amount of curious and useful information.*

In the *Manual of Scientific Inquiry' you ask whether, in the northern provinces of China, Indigo or any other vegetable dye is used in colouring green tea. Whether different processes of dyeing are

* The work in question is to be had of all the principal booksellers in Canton. Price 3 dollars, 50 cents, Spanish.

pursued in the north from those of the south I cannot say, but it is certain that around Canton, whence great quantities are annually exported, the green tea is dyed with Prussian blue, turmeric, and gypsum, all reduced into fine powder. The process is well described by Sir John F. Davis (< *The Chinese*, vol. iii. p. 244 *et seq.*), who, however, falls into the strange mistake of supposing the whole proceeding of colouring to be an adulteration, and leaves his readers to infer that it is only occasionally done in order to meet the urgency of the demand, while it is now very well known that all the green tea of Canton has assumed that colour by artificial dyeing. I had heard so much about tea—copper-plates, picking of the leaves, rolling them up with the fingers, boiling them in hot water, &c. &c.,—that I became anxious to see with my own eyes the process of manufacture, of which the various books had given me such a confused idea. One of the great merchants conducted me not only to his own but also to another establishment, where the preparation of the different sorts was going forward. There was no concealment or mysterious proceeding; everything was conducted openly, and exhibited with great civility; indeed, from all I saw in the country I am almost inclined to conclude that either the Chinese have greatly altered, or their wish to conceal and mystify everything, of which so much has been said, never existed.

The tea is brought to Canton unprepared. After its arrival it is first subjected to cleaning. Women and children are employed to pick out the pieces of twigs, seeds, and other impurities with which it happens to be intermixed. The only sorts which may be called natural are those gathered at different seasons: the rest are prepared by artificial means. Without entering into a description of all these processes, it may suffice to take one as an example. A quantity of *BoUa Samhung* was thrown into a spherical iron pan kept hot by means of a fire beneath. These leaves were constantly stirred about until they became thoroughly heated, when the dyes above mentioned were added, viz., to about twenty pounds of tea, one spoonfull of gypsum, one of turmeric, and two or even three of Prussian blue. The leaves instantly changed into a bluish-green, and, having been stirred for a few minutes, were taken out. They, of course, had shrivelled and assumed different shapes from the heat. The different kinds were produced by sifting. The small longish leaves fell through the first

sieve and formed Young Hyson, while those which had a roundish granular shape fell through last, and constituted Choo-cha, or Gunpowder.

It was my particular desire to obtain the plant of which the Rice-paper is made. On my arrival, all I could learn was that the paper was manufactured from vegetable pith: respecting the name of the plant, its vegetation, and native province, the most contradictory statements prevailed. My first aim was to discover the vernacular name of the plant; after I had succeeded in obtaining this, through the aid of an intelligent missionary, Mr. Vogel, I experienced no further difficulty in collecting information, and in finding a Chinaman willing to procure specimens. The plant grows abundantly in the province of Yunnan, and in the work of Li-shi-chin there is a figure and description of it. Mr. Williams, the well-known author of 'The Middle Kingdom' has kindly rendered that account into English for me, and the following is a transcript of his version:—"The Tung-toh-muh, or, as it sometimes is called, Tung-tsau (*i. e.* hollow plant), grows on the sides of hills. Its leaves resemble the Castor Oil plant (*Ricinus communis*, Linn.); the stem is hollow, and has in its heart a white pithy which is prized for its lightness and whiteness, and collected in order to make ornaments for women.—Kuoh-poh says: 'It grows in Kiangnan, is about twelve or fourteen feet high, and has leaves which are large and fleshy, like those of the *Nelumbium*. In the stem is a very white pith. Gardeners now sow the seed, and also transplant the plant. If the stem is cooked with honey, and mixed with preserved fruit, the taste is sweet and pleasant.'—Li-shi-chin says: 'The stalks of those plants which grow in the hills are large, several inches in circumference. The taste and virtues of this plant are sweet, cooling, and innocuous. It aids the secretions, stops diarrhoea and excess of urine, and helps the expectorations. A tincture of the burnt stalks reduced to powder is good for lockjaw.'"

Such is the account given by the Chinese of the Rice-paper plant, and, judging from this description, the woodcut annexed to it, and a quantity of pith which I obtained at Canton, it would appear that the Tung-toh-muh belongs to the Natural Order of *Malvacea*.* It is also

* The Chinese represent and describe anything they choose as the "Rice-paper plant:" probably because few are acquainted with it themselves. Our present volume of the Miscellany will contain a figure and description which will show the plant to be an *Araliaceae*.—ED.

stated that the fibre of the plant is made into paper, and some even contend that all the Rice-paper is made of -fibre. This, however, cannot be the case, as the best sheets, • when examined, will be found to consist entirely of raedullary tissue. I send you an exact tracing of the figure. It may prove useful in identifying the plant. I have only to remark that I believe the bend does not denote that it is a creeping or winding plant, but is a liberty taken by the artist; and that the various appendages are intended for hair, though their coarseness may induce any one, at first sight, to consider them as spines or thorns.

The afternoon of the 13th of December I devoted to visiting some Chinese gardens. One of them, being the establishment of a rich nurseryman, and entirely devoted to his private amusement, was kept in beautiful order. It was adorned with summer-houses, and artificial ponds filled with numerous plants of *Nelumbium speciosum*, bridges, rock-work, and thousands of dwarf shrubs and trees, cultivated in glazed pots. The whole was on so grand a scale that it must have cost a great sum : if the old nurseryman made all the money by his trade, gardening must be a more profitable employment in China than it is in more civilized countries.—In the different nurseries there existed very little variety among the potted plants. Rows and rows contained nothing save Oranges, Roses, *Celosia cristata*, and Chinese *Anthemū* of many different sorts, but inferior, I thought, to those cultivated in European gardens. *Ser'ma fcetida* was also plentiful, and generally trimmed into various figures,—pagodas, junks, animals, &c. I observed several imitations of the deer: the antlers and every part of the animal so nicely grown that I could not help admiring them.

After a few days' stay at Canton I returned to Hong-Kong. On the 22nd of December the * Herald^f took her departure from Victoria, and, calling on the 29th at the island of Aor, she reached on the following day the harbour of Singapore.

(To be continued.)

BOTANICAL INFORMATION.

The following neat and just tribute to poor Douglas is translated from the German edition (published in the past year under the imme-

diate direction of the author) of '*Earth, Plants, and Man,*' by J. F. Schouw, who, we regret to say, is grievously afflicted by a long-continued illness:—

" The introduction of ornamental plants from abroad was effected in former days by diplomatic persons, merchants, or travellers, who interested themselves about such *things*, and *forwarded or took them* home. Afterwards, travelling botanists, especially those accompanied by skilful gardeners, were the chief promoters of such importations. More recently our shrubberies and pleasure-grounds have been enriched by scientifically-educated gardeners, sent abroad expressly for that purpose. Among the latter class no one deserves greater credit than *David Douglas*? Being sent out by the Horticultural Society of London to the Northern States of America and its north-west coast, especially the banks of the river Columbia, he introduced into England a greater number of hardy trees, shrubs, and animals than any one had done, before him, namely 53 woody and 145 herbaceous plants, making altogether 198 species, for the most part quite new. These plants, being hardy enough to bear the climate of Europe, have multiplied to an incredible extent in England, as well as on the Continent, so that one scarcely ever sees a garden, however humble, that is without some of these great ornaments. We may particularize the many new species of *PenUtemon*, *Lpinus*, (*Enotliera*, *Gilia*, *Collomia*, several beautiful species of *Ribes*, and many sorts of Pines.

" Having done so much in America, Douglas went to the Sandwich Islands, where he fell a sacrifice to his ardent zeal, being gored to death by a wild bull, caught in a pit dug by the natives, and into which the unfortunate traveller fell. He was only thirty-six years old. If we consider the powerful moral influence which floriculture exerts on mankind, we may assuredly rank that young man among those who have honourably sacrificed their lives in the performance of their duty—not less than the soldier who dies in the field of battle. Gardening pursuits not only tend to the preservation of health, but they soften and subdue passions, and elevate the mind above commonplace things. The cottage, from which we can peep into a pretty flower-garden attached to it, is sure to be neat and well-regulated within; and if there is a flower-stand outside, we shall mostly find a well-stored book-shelf within. He, therefore, who sacrifices his life in promoting these desirable results among his fellow-creatures, does more good, generally,

than he who is carried off by a bullet, not rarely to serve the schemes of ambition and covetousness."

No less just is a tribute paid to the merits of N. B. Ward, Esq., for the important services he has rendered to botany and horticulture. We find it in a letter from Professor Mirbel to Dr. Wallich :—

"La *aerre de voyage* que vous avez bien voulu nous adresser, m'a été remise, et j'ai vu avec autant d'admiration que de plaisir, que les quinze espèces qu'elle coirtenait, étaient aussi saines que nos plautes de serre, quand, à la belle saison, nous les retirons de leur prison pour les exposer à la bienfaisante influence de l'air libre. On devait élever une statue à l'inventeur de ce procédé. On en élève à des gens qui font plus de bruit, mai's moins de bien."

Sale of Nees von Esenbeck's Library and Herbarium,

Professor Nees von Esenbeck has lately published a catalogue of his Library, from the preface of which the following is an extract:—"I am," says the author, "without property: my Library and my Herbarium are all I possess, all I am able to leave to my family. In my career as a medical man, I have always considered the interests of the suffering poor as of primary, my own of secondary importance; and, being devoted to scientific pursuits, I did not obtain a lucrative, certainly never an extensive, practice. A small estate, inherited from a relation, afforded for some years the means and leisure for cultivating science successfully ; but, during the French wars, my property became untenable, and I was induced to accept a professorship at Erlangen and the Presidency of the Imperial Academy of Naturalists. Having exchanged Erlangen for Bonn, and thus settled in Prussia, it became a question whether the Academy should have its seat in Bavaria, because my predecessor resided in Erlangen when the German Empire was dissolved, or whether it should retain its position as a national institution for the whole of Germany. The negotiations which followed ended by the Academy retaining its independence, and, as far as circumstances would permit, its position in regard to the Confederation. By my exertions the institution obtained a confirmation of its old statutes, and, during its stay in Prussia, an annual grant of 1,200 thalers. Since 1818 I have constantly laboured in restoring this ancient institution, and discharging my duties as professor in the University; indeed, my

academical duties required my whole attention, and prevented me from accepting any of the more lucrative places which from time to time became vacant. Thus it happens that, since Government has 'deprived me of the Professorship, my circumstances are such as compel me to part with my Library and Herbarium. Having no prospect of a pension, and no desire to solicit favours in high places, I address myself to the Members of the Academy and to my friends and contemporaries, requesting their aid in trying to dispose of my collections. If my Library and Herbarium could be sold as a whole, I should be able to realize their value, and should consider the amount as an acknowledgment of thirty years of academical services. The Herbarium consists of 297 volumes in folio and 42 volumes in quarto, and contains 80,000 sheets. It is valuable on account of its consisting chiefly of exotic specimens, including plants collected by Sieber, Preiss, Wallich, Wight, Ecklon, Zeyher, Drège, Pappe, Wied, and others, and representing most fully the Floras of Mexico, New Holland, North America, Brazil, Southern Africa, the East Indies, and Europe. It is rendered still more important by its containing the original specimens on which my monographic labours, the dissertations on the *Laurinea*, *fhlanea*, *AcantMcetB%*, *Eepaiicce*, *dsteracea*, *Oyperacea*, *Graminea*, and *Bestiacee*, are founded. The Library is composed of 3,000 volumes, embracing the standard works on Natural History and Natural Philosophy. It is to be sold in Breslau on the first of May, 1852, by public auction, and commissions will be received by the Schletter'sche Buchhandlung in Breslau, or any other great bookseller on the Continent.

" The Herbarium, if it cannot be sold entire, is to be disposed of in sets. It has been valued at 12,000 thalers;—the *Laurinea* at 280 thalers, the *Acanthacea* at 600, and the *Glumacea* at 3,000."

Since the appearance of the above letter, we learn with satisfaction that Professor Nees von Esenbeck has been requested to continue as President of the Academy Naturae Curiosorum by his adjuncts, in whom the nomination exclusively rests; and that he has assented. This mark of respect towards one of the most distinguished and classical botanists of our age, who during a long series of years has contributed vastly to the celebrity of the Academy, will be hailed, not only by its own members, but by every lover of Natural Science.

Dr. Lehmann, of Hamburg, writes on this subject as follows:—•
 "When Nees tendered his resignation of the Presidentship of the Acad. Nat. Curiosor., he summoned his *adjuncts* to meet at Schweinfurt (the birth-place of the Academy), in order to exercise the right inherent in their appointment, to nominate a successor; and likewise to arrange for the due celebration in 1852 of the two-hundredth anniversary of the Academy. In order to 'frustrate the many intrigues that are at work,' it had been resolved beforehand, at a meeting at Erlangen, that Nees should be requested to continue President, and at the same time to form, if possible, a union between the Academy and the Annual Association of Naturalists; further, that the adjuncts had nothing whatever to do with the affair between the *Prussian Professor and the Prussian Minister of Public Instruction and Church Affairs.* This resolution was unanimous at Erlangen, and at Schweinfurt it was earned without difficulty. Nees consented to the proposed arrangement; and Lehmann and Jüger, high in medical practice at Stuttgart, were desired to take the needful steps on the occasion, including a proposition to* secure to the Academy greater independence from all Government influence or control. The two hundred years' Jubilee, which happens on the 8th of January next, is to be celebrated at Wiesbaden on the 18th of September, at the meeting there of the Association of Naturalists. Our friend is writing a Programme to that effect. At Berlin, where he was deputed to gain the concurrence of Humboldt, he was most successful: the latter promised his best exertions."

HERBARIUM of *the late* GEORGE GARDNER, ESQ., *Director of the lioyal Botanic Garden, Ceylon.*

Allusion has been already made to the Herbarium of the late Mr. Gardner, of Ceylon. It was hoped a purchaser would have come forward willing to take the collection entire, arranged as it is, and fastened on stout white demy folio paper, in covers of the same, according to the numbers in Endlicher's 'Genera.' Such, however, has not been the case, and, with the consent of the family, the collection has been broken up according to countries (the Cryptogamia, however, separated from them): and the collections now to be disposed of are those of
 CEYLON. about 2000 papers.

SOUTH AMERICA, excluding Brazil, including Mexico and a few from the Pacific Islands		about 1800 papers.
NORTH AMERICA	„	1000 „
SOUTH AFRICA	„	800 „
AUSTRALIA AND NEW ZEALAND	„	400 „
EUROPE, including NORTH AFRICA, MADEIRA, CANARY ISLANDS, &C.		about 4000 ^{v*}

Any of the above sets are offered for sale. They are, as already observed, in excellent condition, all having been poisoned, and are as fully and correctly named as in any extensive general herbarium.*

Applications may be made to the Editor of this Journal, and the collections may be seen at Kew.

Plants of MOUNT OLYMPUS.

Le Professeur dementi a l'honneur de prévenir les Botanistes qu'il peut mettre à la disposition des amateurs la collection des plantes recueillies par lui dans son dernier voyage sur TOlympe Bythinique et en d'autres contrées de l'Orient. Le prix de la centurie est de 35 francs, y compris un exemplaire du 'Sertulum Olympicum,' contenant la description de quelques espèces nouvelles et des observations sur les plus remarquables. La collection tout entière a été soigneusement étudiée, et les espèces qui la composent, au nombre d'environ 125 à 150, ont été nommées avec autant d'exactitude que possible, avec le concours des savants botanistes MM. Gay, Spach, et Webb. MM. les Souscripteurs sont priés de s'adresser—à Paris, à M. B. Webb, Avenue de Marbeuf, 15 ; à Gênes, à M. le Professeur de Notaris; en Angleterre, chez Mr. R. Heward, 5, Young Street, Kensington.

NOTICES OF BOOKS.

Beitrdge zur Kenntnîs des inneren Baues der ausgewachsenen Moos' kapsel, insbesondere des Peritomes. Von S. LANZIUS-BENINGA, Ph.D.

Much as has been written about Mosses, little is known of their

* Since the above notice was written, all have been disposed of with the exception of the North American, South African, Australian, and European collections (amounting to about 6,200 papers), for which the family is willing to accept an extremely small sum.

internal organization, and the various attempts to classify them in natural sub-tribes and genera are but so many artificial arrangements. Dr. Lanzius-Beninga, in the publication above quoted (which, we believe, is a reprint of his article contained in vol. xxii. of the *Nova Acta Acad. Leop. Carol. Nat. Cur.*), has tried to establish a more philosophical system, and shown, in a series of interesting observations, that the internal structure of the capsule (*tUca*) and the peristome offers the best means of classifying the Mosses. He finds that the genus *Sphagnum* presents the most simple, *Tolytrichum* the most complicated structure. He also proves that a knowledge of the internal structure of the capsule is most useful in determining species. "Ail good species," says Dr. Lanzius-Beninga, " present sufficient marks to distinguish them from their allies. In 1846, I found near Göttingen a Moss which seemed to be an intermediate form between *Bicranum varium* and *D. Skreberianum*: in analyzing the capsules of the latter two microscopically, the identity of the two species was at once apparent." The work contains forty-six pages and forty-one figures.—*(B. Suemann.)*

BericM üher die Lektungen in der geographischen mid Mj&temaikciien Botanik während des Jahres 1848. Von DR. A. GRISEBACH. 8VO. Berlin. 1851.

This work is a continuation of Professor Grisebach's former labours, an annual report of all that has been done in the field of systematical and geographical botany. It gives an account of every new work, notices its place of publication, and furnishes occasionally extracts of considerable length. It also points out the smaller articles contained in periodicals, and arranges them under different heads. At present, when it is expected that every one knows thoroughly, or at least the best part of, the literature of other countries, a compilation of this nature must be to every working botanist an acceptable acquisition; and, indeed, the large sale Professor Grisebach's work enjoys on the Continent is a sufficient proof of its usefulness. *(B. Seemann.)*

On the Camphor-tree of Sumatra (Dryobalanops Camphora, Cylebr.);
by DR. W. H. DE VRIESE, Professor of Botany at the Royal University of Leyden. {Kindly translated from the Dutch by Miss MARY ANNE DE VRIESE, /O/- this Journal.)

For many years past a distinction has been made between the Camphor-tree of Sumatra and Borneo, and that of Japan and China. • The Japan or Chinese Camphor-tree is *Laurus Camphora*, L., belonging to the Laurels. It is a large and sometimes very thick tree, and may be recognized at first sight by its shining triple-nerved leaves. The camphor is partly obtained from this tree by incisions in the trunk, the juice that streams out of it being gathered in bowls. This method produces the purest camphor. Another kind is obtained by decoction and distillation of the wood in an iron pot, furnished with a cover, or covered with another oblong iron pot, filled with straw or reeds. The camphor is sublimated by an elevated temperature, adheres to the straw, and is exported to Europe in slice 3. Formerly the camphor was only refined in Holland; the process is now known elsewhere also. This is the camphor commonly sold in Europe, and is generally of a low price. Several other plants, chiefly of the Order *Labiates*—*Mentha*, *Salvia*, &c.—contain camphor, but in a small quantity. The camphor of Sumatra and Borneo, as well as the tree producing it, was always supposed to differ from that of Japan and China. At a remote period it was thought to be more precious and more medicinal than that of Japan, and at the present day the camphor of Sumatra is sold at a very high price, particularly to the Chinese; that of Japan and China, on the contrary, may be purchased at a low price.

The most varying accounts of the history of the Camphor-tree of Sumatra are given both by earlier and more recent authors. Some of these notices may be considered as entirely contrary to the truth, others are inaccurate, and very few are exact. The examination of them all would occupy too much time.

The Camphor-trees of Sumatra and Borneo were mentioned in the latter part of the sixteenth century. The first mention of it occurs in the "Eerste Scheepvaart der Hollandsche natie naar Oost*Indië, 1595-7," to be found in "Begin en Voortgangh van de Vereenigde Nederlandsche Geocroijeerde 0.1. Compagnie; gedrukt in den jare 1646."

What is told us of this tree by Valentyn, in the year 1680, is in many respects remarkable, and proves at the same time how much the tree was already considered worthy of attention. Mich. Bernh. Valentyn gives the following statement on this subject, which was in 1680 communicated to him by Arerit Sylvius:—

"The Camphor-tree is found in several forests. Without any culture or human aid, it grows luxuriantly like other forest-trees, and elevates its lofty, heavy, unbranched, and straight trunk, and forms a crown of moderate extension, but which may be called small in proportion to the trunk, and which is furnished with few and not heavy branches.

"The leaves are oblong ovate, with a strong lengthened point ('apice proluxe extenso'). In a dry state they are of a dark green colour. They are hard, tough, and smell like camphor. This is said of the tree of Baros, for in that of Java (that is, of Japan) the leaves are differently formed and much larger than those of the tree first mentioned, as may be seen by the seventh plate of Valentyn.

"The bark is fine and reddish; when the tree becomes old and thick, it falls off in large pieces: by this property the tree may be partly distinguished from others. Boots several feet in length are also often to be seen above the ground.

"The fruit, which is obtained with difficulty^ consequence of the height of the tree, resembles more a flower than a fruit, as it has more or less oblong and thick variously-coloured leaves, which are generally red, violet, yellow, or greenish, and enclose the fruit like a hazelnut. The fruit has a hard shell; the enveloping leaves are elevated above it, and are not pointed, but have red tips, spread out above like the petals of a tulip. The fruit, which, like the leaves, has a taste of camphor, is not only useful for medicinal purposes, but may be employed as food, and, like many other fruits, makes a good confection. The fruit is not easily obtained, as it is dangerous to penetrate the woods.

"When the tree has attained some size, the resin does not stream out like benzoin; but near the pith, or heart, are natural fissures, in which the juice accumulates, which, gradually coagulating, sticks to the wood in the form of small pieces of camphor.

"If those who have the care of the Camphor-trees perceive that in some of the trees there is camphor (which they pretend to discover by some signs known to them), they order the trees to be cut down, strip

them of their leaves and bark, and cut away the outer wood to the marrow or heart, in which are the apertures or fissures; they cut that* wood into small pieces, and therein the camphor is found, beautifully brilliant. They have a method of scraping it from the wood with small instruments; and after purifying the scraped-off camphor (*campJwra abrasa*) they seldom obtain more than from two to three pounds. Of that, one-twentieth is generally paid as a tribute; the rest remains in their possession.

" Camphor-oil, the peculiar juice of the tree, exudes from its fissures and cavities, and is carefully collected. The oil is so fine, that a paper penetrated by it and held near a flame, catches fire immediately and burns till all the oil is consumed.—*Oct. 2, 1680.*"*

We must not omit to mention that Valentynf has given a drawing of the leaves of a Camphor-tree of Baros, which agrees very well with the objects before us, so that we do not doubt that Arent Sylvius, from whose accounts this chapter is written by Valentyn, really knew the tree, and in what respects it differs from that of Japan.

I would recommend further the notices given of this tree by Breyne,t Grimm, f Rumphius,|| Charles Miller,** Adolph Eschelskroon,t{ Houttuyn,§§ Gaertner,||| Colebrooke,*** Roxburgh,tft and William Jack.ftt

I will here repeat the diagnostic description given of this tree

* VALENTINI, *India Literata*, seu dissertationes epistolice de plantis, &c, p. 488. Francof. 1716, fol.

f MICH. PERN. VALENTINI *Hist. Simpl. Reformat.*, lib. ii. sect. iv. p. 250.

% Prodr. fasc. PL rar., 1680.

§ Obs. de Arb. Camphorse, in *Miscell. Cur. sive Ephem. Nat. Curios.* 1683, p. 371. tab. c. f. 33.

|| *Herb. Amb. Auct. cap.* lxxxii. p. 67. 1755.

** Extracts from several Letters from Mr. Charles Miller, giving some account of the interior parts of Sumatra.—*Phil. Trans*, vol. lxxviii. p. 161,170. 1778.

ft *Beschr. van Sumatra, insonderheid van desselfs. Koophandel. Door Ad. Eschelskroon*, p. 61-3. 1783.

XX *Vcrhand; van het Bataviaasch Genootschap*, vol. iii. p. 27. 1785. vii. Batavia. 1814.

§§ *Verh. der Holl. Maatsch. van Wetensch.*, pi. viii. 1784.

||| *Suppl. Carpol.* vol. iii. 49.

• *Asiatic Researches*, vol. iii. p. 537. 1818.

t t t *Hor. Ind.* vol. ii. p. 617. 1832.

XX *Hooker's Companion*, vol. i. p. 253. 1835.

elsewhere, founded upon specimens from Sumatra collected by Dr. Junghuhn.

DRYOBALANOPS, *Gartn., Colebr., Jack.*

Calyx inferus, monophyllus, cupulatus, limbo demum 5-alato, alis patentibus. *Corolla* infera, 5-partita (vel 5-petala, petalis basi junctis), laciniis ovato-lanceolatis. *Stamina* hypogyna, plurima, monadelphica, annulo in basi corollae inserta; antherae subsessiles, biloculares, elongatae, liricae, loculis membranaceis, mucronatis. *Ovarium* superum, ovatum, stylo post anthesin saepe persistente acuminatum, triloculare, loculis biovulatis. *Stylus* filiformis, staminibus vix longior. *Stigma* vix distinctum (nec capitatum). *Capsula* unilocularis, trivalvis, monosperma, calyci aucto partim insidens, partim ejus laciniis auctis alaeformibus cincta. *Seminis embryo* exalbuminosus, inversus, cotyledonibus inaequalibus caraeoideis. —Arbores exaeque Sumatram incolam habitantes, foliis alternis coriaceis; stipulis caducis; floribus paniculatis, terminalibus et axillaribus.

Dryobalanops Camphora, Colebr.; foliis ovatis obtuse acuminatis basi acutis superne nitidis dorso opacis parallele venosis carinatis.

HAB. Region. 0-1000⁷; prope Tapanuli et Huraba.

SYNONYMIA.

Be arbore Camptora litera Wilhelmi ten Rhyne ad Jacob Breynium: Prodr. ej. fasc. rar. plant. Gledani, 1683.

Arbor Camphora, Grimm, Observ. in Miscell. Cur. sive Ephem. Nat. Curios. 1683, p. 371, cum tab. fig. 33 (mala).

Arbor Campfiortfera, Valentini, Ind. lit. p. 488, 1716, ex auctoritate Arent Sylvii.

Arbor Camp7ionfera, Mich. Bernh. Valentini Hist. Simpl. Reformat. lib. ii. sect. vi. p. 250. Ilumphii Herb. Amb. Auct. cap. lxxxii. p. 67. 1755. Ch. Miller, in Phil. Trans, vol. lxxviii. p. 1. pp. 161, 170, 188.

Laurm foliis ovalibus acuminatis lineatis, floribus magnis tulipaceis, Houttuyn, Nat. Hist. ii. 2. pp. 318, 319; Verh. Holl. Maatsch. van Wet. xxi. 272.

Dryobalanops aromatica, Grertn. ? Suppl. Carpol. vol. iii. 49

Dryobalanops Camphora, Colebr., Asiatic Researches vol. xii D 537 1818.

Bryobalanops Camphora, Colubr., in Jack's Descr. of Malayan Plants, Hook. Comp. vol. i. p. 253. 1835.

Shorea camphorifera, Roxb. ? Fl. Ind. vol. ii. p. 617. 1832.

Pterygium, teres, Correa? Ann. du Mus. vol. x. p. 159. t. 8. f. 1.

Lryobalanops_m Camphora, Colebr. in Hayne's Arzn. Gew. xii. 17.

Dryobalanops Camphora, Colebr., Korthals, Verh. over de Nat. Gesch. der Oost-Ind. Bezitt. (Kruidk.) p. 45.

ADUMBRATIO.

Arbor 100'; trunco valido, stricto, columnseformi, 60'-70' alto, 11' crasso, ad basin expansionibus laminaribus radiantibus instructo; cortice exteriori ibidem fissi, scabro, strato resinoso, splendente, partim albo partim flavescente, saepe crasso, pellucidoque instructo; sursum fusco, demum in ramis ramulisque e griseo-fuscescente obtecto. Lignum ipsum fuscum.

Folia alterna (nee opposita), petiolata; petiolis dorso rotundatis, superne sulcatis, saepe curvatis vel inflexis et ramis accumbentibus, 0,01-0,02 longis, immo longioribus; ovatis, basi acutis, apice subito angustatis, obtuse acuminatis, margine integerrimis, versus apicem subundulatis, utrinque glabris, coriaceis, superne nitentibus, medio sulcatis, dorsum opacis carinatis, parallele venosis, demum petiolo 0,06-0,07 longis, et 0,03 fere latis.

Stipula geminatae, subulatae, caducae (Cojebr.); ovatae, acutae (Korth.); in speciminibus Junghuhnianis nullae. An forsitan omnes Lapsae?

Fedunculi axillares et terminales, breves, incrassati.

•*Calyx* (junior non visus) adultus auctus, hemisphaericus, campanulatus, basi lignosus, admodum crassus; interna structura magnum referens numerum lacunarum aërearum, in quinque excrescens alas foliaceas, coriaceas, rigidas, erectas, patentes, reflexas, sinu exciso rotundato amplo a se invicem distinctas. Alarum forma? et diametri diversae sunt pro diverso evolutionis stadio; in fructibus immaturis magis sunt elongatae, et versus medium et apicem dilatatae, 0,07 longae et fere 0,01 latae (spec. Houtt. et Jungh.) et in illo stadio quoque erectae; in maturis (Colebr.) contra magis dilatatae, vere spathulatae, reflexae. Structura alarum est parallela nexosa et inter nervos reticulata. Calyx totus terebinthinam redolet.

Corolla (secundum specimen lectum a Millero fil. et nobiscum communicatum ab Ill. Sob. Br. ex Mus. Brit. Lond.), caduca, monopetala,

>

5-partita, laciniis ima basi inter se coalitis membranaceis, 0,015 longis, 0,004 latis, lanceolatis.

Stamina in fundo corollae annulo proprio dentibus triangularibus acutis erectis instructo insidentia, numerosa. In specim. Mill. 15 numeramus, sed plura lapsa sunt. Filamenta brevissima; antherae bilocularae, introrsae, in dorso linea media (connectivo) in mucronem ultra loculos elongata notatae; loculi membranacei, tota longitudine dehiscentes, marginibus loculorum involutis.

Capula glandem quercinam simulans, supera, ovata, stylo coronata, lignosa, fusca, externe striis longitudinalibus tenuibus praedita, basi cupula rotundato-gibba hemisphaerica excepta, eique firmiter adhaerens, unilocularis, trivalvis, valvis sequalibus crassis, monosperma, 0,035 longa, 0,015 lata (Colebr.), 0,03 longa, 0,015 lata (Gaertn. si eadem est ejus species quae Colbrookii, quod incertum).

Semen solitarium, magnum, cavitati capsulae respondens, ovato-oblongum, antice sulcatum, integumento fusco ad sulcum intus flexum, et cum columna centrali colliquescens. Columna centralis e fundo cupulae calycinae oriunda, ad verticem ascendens, semen in illa directione in duos dividens lobos dorso connatos, inde aucta; loricis longitudinalibus, mollibus, columna brevioribus, intra cotyledonum plicis sese demergentibus; duobus majoribus lateralibus ad ventrem recurvis; duobus minoribus dorsalibus citra axem productis divergentibus (Gaertn.).

Albumen nullum.

Embryo constans 2 cotyledonibus, carnosus, imparibus. Externus maximus, seminis formam constituentibus; interior multo minor, lateralis, subcylindricus. Plumula simplex, conica, diphylla. Eadicula longa, sursum directa, in sulco cotyledonis externi contenta, apice conico obtusiusculo terminata, ascendens, supera. (Juxta spec. Marsdeni Mus. Brit. Londinensis et descript. Cel. Gaertn.)

The tree here described belongs to the Natural Order *Dipterocarpeae* (BL, Lindl). All the trees belonging to this family are gigantic and of a majestic appearance, and are chiefly remarkable for the beautifully coloured and winged fruits. All of them contain more or less of a balsamic resin. *Shorea robusta* produces a resinous substance, which is used at the religious solemnities of the Indians. *Vateria bidica* yields a resin which in India is used as copal, and is known in Europe

as *anime-Teśm*. The Javanese species of *Dipterocarpus* are all resinous, and the resin is said to be used as copaiva-balsam.

The Camphor-tree is one of the loftiest trees of the Indian Archipelago. In its dimensions it surpasses even the Rasamala-tree (*Altingia excelsa*) of Java. It is the giant among the trees of the East Indies. Its trunk rises vertically, and divides into branches only at the top, forming a somewhat convex crown. A person looking over the tops of the trees from an elevated place, for instance, from the mountains behind Loemoet, at a height of from three to four hundred feet, can without difficulty count the full-grown Camphor-trees that are scattered in the forest; for, while the *Anonaceae*, *Acacias*, *Fagraa*, and Figs, which compose the chief mass of trees in those forests, are eighty to a hundred feet high, the Camphor-tree, with its gigantic crown, is seen rising fifty or even a hundred feet above them, as the steeples of churches appear above the roofs of the houses in a town. The following are its dimensions, compared with those of the Rasamala (*Liquidambar Albigüana*):—

	Thickness of the trunk.		Length of the trunk.	Diameter of the crown.
	Beneath.	Above.		
Camphor-tree .	7-10 ft.	5-8 ft.	100-130 ft.	50-70 ft.
Rasamala . .	5-7	3-5	70-90	40-50

Near the ground the Camphor-tree gives out radiating extensions of the trunk and root, such as several travellers have represented in their descriptions. At the lower part of the tree the bark is rugged, with fissures, and often covered with a resinous and glittering, sometimes yellowish substance, which is transparent, and consists either of camphor or of camphor and its peculiar resin. Higher up, the bark is of a dark grey colour, here and there covered with lichens, but not with *Lianes*, like so many other trees.

The position of the leaves is alternate, as shown in the drawing of Houttuyn. Colebrooke describes a branch without fruits, *with opposite leaves*. Has *Dryobalanops Camphora* sometimes a position of leaves such as Colebrooke describes? We can scarcely doubt the accuracy of his descriptions—they have too much the appearance of truth about them; and all that he has communicated of the tree and of the sub-

stances which it produces, gives us the conviction that Mr. Colebrooke must have had specimens of this tree; we are not, however, certain of the correctness of his figure.

The leaves seen by us differ from those of Miller's specimens, which we saw in 1850 in the British Museum (which are much larger), and from those of Colebrooke's drawing and description; the largest leaves, of the latter being 0,175 long and 0,05 broad. But this difference is perhaps explained by ours being smaller, because they are on flower-bearing branches. They most resemble the description given by Houttuyn.

Most authors speak of stipules (Colebr., Korth.). We have not seen them, and suppose that our specimens have lost them; we must therefore refer our readers to what the two last-mentioned botanists have written on the subject.

The calyx has many modifications in the form of its base and wings, as well as in the direction of those wings, which are sometimes nearer to each other, or more modified or reflexed. The great diversity which we have observed in our specimens persuades us that there is no reason for accepting more species. Colebrooke has seen and drawn objects in full growth. In the different states of development in which we saw this calyx, we always found natural cavities in its tissue, chiefly in the woody part. In the interior it is resinous, and emits a smell of turpentine.

We have not space for further descriptions of the crown, the stamens, and the fruit. The albumen seen by us was in some of Marsden's specimens in the British Museum, preserved there in spirits: it agrees entirely with the figure and description given by Gaertner. In the specimens at our disposal, which were not preserved in spirits, the albumen was consumed. For these specimens we are much indebted to the liberality of Mr. Robert Brown. Through lack of young specimens, the structure of the ovary has been till now but imperfectly known. The reason is that naturalists have not had the opportunity of getting specimens at the time of the development of the flowers.

Lryobalanops Camphora, Colebr., must be the plant mentioned by Grimm, ten Rhyne, Valentyn, and Rumphius. It is the same as that mentioned by Miller, and which M. Radermacher presented to Houttuyn. It belongs, undoubtedly, to the same genus as Gaertner has represented as *Dryobalanops*, but it is doubtful what he means by his

D. aromatica, which, he says, occurs in Ceylon, and yields the best cinnamon. Here may be an error. The uncertainty is increased by his not giving characters of the species; and the identity with the species of Colebrooke cannot be decided. There seems to be some mistake in the account of Gaertner, for no *Dn/obalanops* has ever been found in Ceylon, and it is impossible that a *Dryobalanops* should produce cinnamon, and that even the best in Ceylon. Perhaps he was misled by inaccurate statements on the labels of some of Sir Joseph Banks's specimens. Hitherto our efforts to arrive at some certainty in this case have been unsuccessful. If it be decided that the plant mentioned by Gaertner is the same as that of Colebrooke, then, according to the opinion of some botanists, there would be a reason for adopting the name *B. aromatica* of Gaertner, instead of that of Colebrooke. But, first, that reason does not yet exist; and we think that we should maintain the system established among botanists, that no priority can be given in science to a name of a plant unaccompanied by a description. It is possible that Gaertner had the description of his species in manuscript, but he did not publish it. *SJwrea*, Roxb., and *Pterygium*, Con*, have been described later than Gaertner's *Dryobalanops*, and must therefore be represented here as synonymous.

(7b be continued.)



FLORULA HONGKONGENSIS : *an Enumeration of the Plants collected in the Island of Hong-Kong, by Capt. J. G. Champion, Shth Jieg., the determinations revised and the new species described by* GEORGE BENTHAM, ESQ.

{Continued from vol. ill. p. 334.}

BHAMNEJE.

1. *Paliurus Aubletii*, Schult. Syst. vol. v. p. 343.

A moderate-sized unarmed tree, with the appearance of the Jujube, cultivated in, if not indigenous to, Hong-Kong. It is certainly a *Paliurus*. The leaves are glaucescent. The fruit is nearly smooth, with the wing coarsely crenated, three-celled, three-seeded; the seeds erect, pretty large, surrounded by a slight fleshy coating; testa bony, hard. (*J. G. Champ.*)

2. *Ventilago Maderayatana*, Gaertn.—Wight et Am. Prod. vol. i. p. 163.

Ravines, Hong-Kong.

3. *Berchemia lineata*, DC. Prod. vol. ii. p. 23.

Eavines, Hong-Kong.

4. *Sageretia thiezans*, Brongn.

Ravines, Hong-Kong, with the two preceding.

This appears to be the same plant as *Berchemia hamosa*, Wall. Cat. n. 4253, a species closely allied to, if not a mere variety of, the more common *Berchemia parviflora*, Wall., all having so exactly the habit of the *Sageretia*, and not of *Berchemia*, that if a more perfect knowledge of them proves them really to belong to the latter genus, the separation of the two genera is rendered most unnatural.

5. *Ehamnus virgatus*, Eoxb. *YL Ind. ed. Car. et Wall. vol. ii. p. 351.*

Victoria Peak, flowering in April. The leaves are rather smaller and the crenatures fewer than in the common Himalayan form, but I can find no other difference.

6. ? *Androglossum reticulatum*, Champ., gen. nov. *Rhamneis* affine.

Gen. Char. ANDROGLOSSUM. *Calyx* 5-partitus, laciniis scstivatione valvatis? mox apertis persistentibus. *Petala* 5, toro dilatato (v. disco calycis tubo parvo hemisphserico adnato) inserta, laciniis calycinis alterna et sublongiora, lata, concava, scstivatione imbricata, 2 exteriora. *Stamina* 5, petalis opposita et cum iis inserta. *Fllamenta* complanata, ima basi petalis subconnata, apice inflexa. *Anthem* ovatae, loculis parallels longitudinaliter dehiscentibus. *Ovarium* sessile, basi disco membranaceo 5-dentato cinctum, bipartibile, carpellis fere liberis, unilocularibus. *Styli* 2, vix coaliti, breves, summo apice tenuiter et obtuse stigmatosi. *Omda* in loculis (v. carpellis) ovarii gemina, angulo centrali affixa, collateralia, horizontalia, obovoideo-subpeltata, amphitropa. *Iructm* (carpello uno abortiente) simplex, oblique depresso-globosus, subdrupaccus, pericarpio tenuiter carnosus, endocarpio crastaceo. *Semen* fructui confonne, prope basin affixum, ut videtur albuminosum, sed in speciraine omnia iramatura et embryo nondum accretum.—Species unica, *A. reticulatum*, frutex videtur, ramulis teretibus glabris, novellis compressiusculis. *Folia* exstipulata, alterna, pctiolata, elliptico-oblonga, obtusa vel acuminata, integerrima, basi acuta, 3-5 poll, longa, 1-1* poll, lata, coriacei, gla-

bra, reticulato-venosa, venis primariis a costa divergentibus paucis longe ante marginem anastomosantibus. *Racemi* foliis breviores, puberuli. *Pedicelli alterni*, dissiti, breves, 1-2-flori. *Bractea* Kneares, breves, r. lanceolato-subfoliaceae acutae, basi in petiolum angustatae, 3-5 lin. longae. *Flores* circa lineam diametro. *Calyx* puberulus, laciniis lanceolato-triangularibus acutis. *Petala* glaberrima, f lin. longa, vix longitudine angustiora. *Filamenta* crassiuscula, plana, ima basi tenuia, summo apice contracta, petalis paulo breviora. *Fructm* immaturus semipollicem diametro.

This plant, gathered in October 1848, differs from all *RJutmnea* known to me in the structure of the ovary, the carpels being almost if not quite distinct, and the ovules two in each carpel horizontally attached to the axis instead of being solitary and erect from the base. The arrangement of the stamens and petals is precisely the same as in *Rhamnea*.

TEBEBINTHACEÆ.

1. *Ehus succedaneum*, Linn.—Wight, Ic. t. 560.

A common tree in the Happy Valley. Flowers and fruit in summer.

2. *Rhus* (Sumac) *hypoleuca*, Champ., sp. n.; foliolis 11-17 ovato-lanceolatis acutiusculis basi inaequalibus supra ad venas vix tomentellis subtus ramulis petiolisque albo-tomentosis petiblo tereti, panicula terminali sessili foliis multp • breviora, drupis rubro-villosis.—*Folia* pedalia, foliolis 14*-3-pollicaribus brevissime petiolulatis. *Panicula* pyramidatae, ramosissimas, tomentosae, multiflora?. *Bractea* minutae. *Pedicelli* calyce breviores. *Mores* fere 2 lin. diametro. *Petala* ovata, obtusa, calyce plus duplo longiora. *Discus* 10-crenatus. *Stamina* florum fertilium ovaiio villosa breviora.

A common shrub on Mount Gough, flowering in autumn.

CONNAHACEJÈ.

1. *Rourea mierqphylla*, Planch. Linnsea, vol. xxiii. p. 4*21.

Rather abundant in ravines. There are two very distinct varieties in Hong-Kong; one bearing the leaflets much fewer and smaller, the inflorescence more lax, the flowers fewer and perhaps rather smaller than in the other, but I can find no essential differences, and I have seen several intermediate forms in other collections.

LEGUMINOSIÆ.

1. *Crotalaria calycina*, Schrank.—Benth. in Loud. Journ. Bot. vol. ii. p. 564.

Near Chek-chow. (*Col Eyre*) The colour of the flowers is in the above-quoted paper given as blue, whereas it is of a pale sulphur-yellow. The mistake arose from the confusion by several authors of this species with the *ft sessiliflora*.

2. *Crotalaria* (*Calycinae*) *brevipes*, Champ., sp. n.; erecta, a basi ramosa, stipulis minutis, foliis linearibus supra glabris v. rariter pilosis subtus cauleque adpresse pilosis, racemis terminalibus brevibus, floribus subsessilibus, bracteolis sub calyce bracteisque lanceolatis linearibusve, calycis barbato-villosi laciniis superioribus late oblongis corollam superantibus, ovario multiovulato, legumine glabro calyce i brevior.

Gathered in August 1849, on the borders of an old estuary at East Point, in sandy soil.

Very near to the common *ft sessiliflora*, but differs at first sight by the large calyxes, nearly those of *ft calycina*. It is a plant of about a foot high, branching from the base, covered all over with sericeous hairs except the upper side of the leaves. These are as much as 3½ inches long by 2 to 2½ lines broad. Inflorescence of *ft sessiliflora*, but flowers usually fewer. Upper segments of the calyx half an inch long when the flower opens, full 9 lines when in fruit. Corolla light blue; standard with dark streaks; keel white, with the extremity blue. Pod black when ripe, about half an inch long.

3. *Crotalaria albida*, Heyne.—Benth. in Lond. Journ. Bot. vol. ii. p. 567.

Victoria Peak and other localities, flowering in summer.

4. *Crotalaria elliptica*, Eoxb.—Benth. 1. c. p. 580.

Common all round Chek-chow. (*Col. Byre.*)

5. *Indigofera Mrsuta*, Linn. •

On the Race-course, flowering in autumn.

6. *Indigofera* *obovata*, Champ., sp. n.; suffruticosa glabra/foliolis ovatis orbiculatisve obtusissimis v. mucronatis utrinque viridibus reticulato-venosis subtus vix pilosulis, racemis laxis folio brevioribus, calycis glabri dentibus brevibus, corolla puberula, ovario deflorato glabro.—*Suffrutex* pedalis. *Caulis* erecti, tenues, glabri, vix

ramosi. *Stipuke* minutse, setacese. *Foliorum* petiolus communis 4-pollicaris, tenuis, glaber, prope basin sepe glandulam fert plus minus distinctain. *Stipella* setacae. *Foliola* petiolulata, ultima pollicem saepe excedentia, caetera minora, pleraque late ovata et obtusissima v. retusa, interdum plus minus acutata et mucronata, omnia quam in speciebus affinibus rigidiora, et utrinque insigniter reticulato-venulosa. *Racemi* folio paulo breviores, vix infra medium floriferi, pedunculo tenui glabro. *Bractea* minutissimae. *Pedlicelli* li lin. longi. *Calyx* pedicello brevior, late cyathiformis, dentibus acutis tubo brevioribus. *Corolla* 7 lin. longa, petalis extus pubescentibus roseo-lilacinis. *Vexillium* sessile, obovali-oblongum; *aUs* vexillo aequilongae, angusta³, obtusiusculae, ungue brevissimo vix conspicuo; *carina* alis paulo brevior, submucronulata, unguibus fere lineam longis. *Stamen* vexillare a basi liberum, caetera alte connata; *antlierce* more generis connectivo mucronatae. *Ovarium* glaberrimum, multiovulatum. *Stylus* glaber, imberbe, apice subcapitato-stigmatosus.

Victoria Peak, Hong-Kong; April or May. (*J. G. Champion*.) Gathered also by Fortune, on Silver Island (n. 43). The fruit has not been seen. The species is allied to *J. macrostachya*, Vent., and *J. decora*, Lindl., both from China; it differs from the former by its smoothness, from the latter by the smaller and rounder leaflets and smaller flowers, from both by its low stature and by the venation of the leaflets.

7. *Tephrosia purpurea*, Pers.

8. *Zornia diphyllo*, Pers., var. *angustifolia*, impunctata.

The two species into which the *Z. diphyllo* has been divided, the American *Z. reticulata* and the Eastern *Z. angustifolia*, are usually distinguished by the pellucid dots of the bracts present in the latter, absent in the former; and our Hong-Kong plant, as well as several specimens from the Indian Archipelago, would thus be referable to *Z. reticulata*, though with the habit of *Z. angustifolia*, and unless some better character be found to distinguish them, we must re-unite them under Persoon's name as suggested by Vogel.

9. *Eschynomene Indica*, Linn.

The three last common East Indian species are from the estuary at East Point.

10. *Uraria crinila*, Desv., *IB*, *niacrostachya*; racemis primariis ultra-

pedalibus, bracteis 8-10 lin. longis insigniter comosis, legumroee glabro.

Common near the Albany Barracks, flowering in summer.

11. *Pteroloma triquetrum*, Desv.—Benth. in Plant. Jungh. p.
—*Demodium triquetrum*, DC.

Victoria Peak.

12. *Phyllodium puMellum*, Desv.—Benth. in Plant. Jungh.—*Bicerma pulchellum*, DC.

This common East Indian plant is rare in Hong-Kong; found only at the estuary at East Point.

13. *Phyllodium elegans*, Benth. in PL Jungh.—*Dicerma elegans*, DC.
Common in Hong-Kong on low ground.

14. *Desmodium (Nicolsonia) polycarpum*, DC.—*D. nervosum*, Vog. Pl. Meyen., p. 28.

Victoria Park. Vogel's description of his *D. nervosum* from China appears to me to answer exactly to this species, which is one of the widest spread of the Eastern *Desmodia*.

15. *Desmodium (Heteroloma) reticulatum*, Champ., sp. n.; foliolis ovali-cllipticis oblongisve utrinque obtusis supra glabris subtus pallidis cauleque pilis raris conspersis, stipulis lanceolatis acuminatis, racemo gracili, bracteis deciduis basi latis setaceo-acuminatis summis comantibus, pedicellis brevibus geminis, alis carina paulo brevioribus.—*Bamns* adest unicus tres, pilis perpaucis adpressis conspersus. *Slipula* brunnes, striatae, erect®, cum acumine setaceo 4 lin. longis. *Petiulus* communis gracilis, 6-10 lin. longus. *Foliolum* terrainale pollicem longum, semipollicem latum, apice basique obtusum v. retusum, supra viride et nitidulum, subtus pallidum v. glaucum, venis primariis arcuatis reteque venularum utrinque conspicuis; lateralibus minora. *Stipella* setacese. *Racemus* semipedalis, in specimine simplex, a basi florifer, rachi pubescente, floribus per paria dissitis. *Bractea* ad apicem racemi 2-3 lin. longae, late lanceolatae, striatae, glabriusculae, alabastra longe superantes, at non imbricatae. *Pedicelli* tenues, vix ? lin. longi. *Calyx* lineam longus, tenuiter membranaceus, glaber, laciniis 5 lanceolatis acutis tubo squilongis, inferiore paulo longiore. *Fexilhim* fere 3 lin. longum, obovali-

orbiculatum, emarginatum, subsessile, glabrum. *Ala* dimidiatse, late obovatse, ungue brevi. *Carina* incurva, obtusa. *Stamen* vexillare a basi liberum. *Ovarium* pilis paucis ciliolatum, sessile.

A single specimen gathered in Hong-Kong, without any note of the precise locality. It appears to be allied to the East Indian *D. concinnum*, but is much smoother than any species I am acquainted with of the same groupe.

16. *Lespedeza* (*Eulespedeza*) *cuneata* (Gr. Don, Gard. Diet. vol. ii. p. 307); ramis virgatis, petioiis brevibus, foliolis cuneato-linearibus obtusissimis retusisve mucronatis subtus strigoso-pubescentibus, floribus axillaribus fasciculatis subsessilibus, legumine orbiculato calycis laciniis subaequante.—*Hedysarum junceum*, Eoxb. PL Ind. vol. iii. p. 362, non Linn.—*Lespedeza juncea*, DC. Prod. vol. ii. p. 348 (excl. syn. Linn., Pers., et Thunb.), et eo teste *Anthyllis cuneata*, Dum. Cours.

Eare in Hong-Kong; found on the side of a hill at the estuary, East Point, flowering in August.

This species, although it does not appear to be anywhere very common, has an extensive geographical range. I have it from various parts of the Himalayan range, from Fortune's Chinese collection, and from tropical Australia gathered by Bauer; and it is quoted in the Botany of Beechey's voyage from the island of Bonin. The East Siberian and Dahurian *L. juncea*, confounded with it by Roxburgh and De Candolle, is, however, a very different species, with the habit of *L. trichocarpa*, but with narrower though still pointed leaflets, and different calyces; so also the *Hedysarum serkeum*, Thunb., proves to be a distinct species, published by Siebold and Zuccarini under the name of *Z. argyrea*. In the *L. cuneata*, as in most of the allied species, the greater number of the flowers, although complete and perfect, are sterile, whilst the numerous pods proceed chiefly from minute flowers without any petals, and reduced to a small calyx, two or three very small imperfect stamens, and an ovary large in proportion to the calyx, covered with hairs, and terminating in a recurved style scarcely so long as the ovary.

17. *Lespedeza* (*Campylotropis*) *viatorum*, Champ., sp: n.; erecta? foliolis obovatis retusis glabris vel subtus canescenti-pilosulis, racemis folia aequantibus longioribusvc, calycis breviter pedicellati puberuli laciniis lanceolatis tubum sequantibus; alis carina breviter acu-

minata duplo brevioribus, legumine stipitato ovato undique puberulo. —*Kami* tenues, juniores angulati et cano-puberuli, adulti subteretes et glabriusculi. *Petiololi* i-1-pollicares. *Foliolum* terminate ssepius 1-H-pollicare, lateralia breviora latissima, omnia obtusissima, v. retusa, mucrone minimo vel nullo, costa subtus prominente, venis primariis parallelis supra conspicuis. *Racemi* nunc densiflori 1-2-pollicares, nunc longiores laxi. *Bractea* minutae. *Pedicelli* vix semilineam longi. *Flores* omnes completi et fertiles videntur, majusculi (4-4i lin. longi). *Calyx* 14- lin. longus, laciniis 2 superioribus plus minus per anthesin connatis, demum saepe solutis. *Vexillum* late obovatum. *Carina* vexillum sequans, multo brevius rostrata quam in caeteris speciebus hujus sectionis. *Ala* parvae et angustae, basi carinae adhaerentes. *Genitalia* omnino ut in affinibus. *Legumen* stipite lineam longo fultum, 4 lin. longum, plano-compressum, rete venularum inconspicuo, undique pilis brevibus adpressis conspersum, vix ad margines pilosius.

Common about Little Hong-Kong, flowering in August or September, but not found on the Victoria side of the island. It is also in Parkes's Chinese collection, and in Vachell's collection from Macao and the adjacent islands. Fortune gathered another new species,* which at first sight closely resembles this one, but has the pedicels three or four times the length of the calyx, and very different keel-petals, wings, and pod.

18. *Neustanthus phaseoloides* (Benth. in Pl. Jungh.); foliolis ovato-rhombeis acutiusculis saepe trilobis, bracteolis tubum calycis subsequantibus, calycis de'nte infimo setaceo-acuminato tubi longiore ceteris brevioribus acutis, alis carinam breviter rostratam superantibus.—*Dolichos phaseoloide* Sy Eoxb., Fl. Ind. vol. iii. p. 316.—*Phaseolus decurrens* Grah. in Wall. Cat. n. 5612.—*Dolichos viridis*, Ham. in Wall. Cat. n. 5559.

Hong-Kong ; a single specimen, without the precise locality.

This species, originally published by Eoxburgh, from plants raised in the Calcutta Garden from Chinese seeds, is found either wild (or cultivated ?) in several of the eastern districts of India; it was gathered

• *Lespedeza* (*Campylotropis*) *clivata*; foliolis obovatis retusis glabris v. subtus cancellatis-pilosis, racemis foUo longioribus, calycibus longe pedicellatis parvis laciniis
 ESSSEr ^ t. ^ ? ? ^ IIMtillui, alis carina a n SS ^ longe mtrata paulo
 S. r. & ^ S. T. r. K. ^ T. * 0 membranacco reticulato glabro sculo ad thar-
 gincis ciliato.—HAB. China, Vortunc, n. 31 and 42.

at Goalpara by Hamilton, in Silhet and in the island of Penang by Wallich's collectors. A full description of the genus and of a Javanese species will be found in the 'Plantae Junghuhnianae'. The present species is rather more hairy than the *N. Javanicus*, the flowers are rather smaller with a different calyx. The pod is that of *N. Javanicus*, but usually rather more curved, more or less hairy, or nearly smooth.

19. *Mucuna* (Citta) *Championi*, Benth., sp. n.; foliis novellis ntrinque, adultis subtus, ferrugineo-sericeis, racemis brevibus subramosis, calycis pedicello brevioris dentibus superioribus abbreviatis infimo acuminato tubo brevioris, legumine oblongo-lineari oblique plicato pleio-(4-)spenno adulto glabro.

Above the Buddhist temple at East Point, climbing over rocks and trees.

Nearly allied to *M. monosperma*, DC, and to *M. anguina*, Wall., it has the flowers very like those of the former species, with the foliage nearer to that of the latter; the inflorescence is, as it were, intermediate between the two. The pod is very different from either, the one on my specimen being four-seeded, about 7 inches long by 2 inches wide, and perfectly free from the stinging hairs of the two other species. The two longitudinal wings along each suture, and the numerous oblique ones across the pod, are 2 to 3 lines broad, stiffly membranous, reticulated, and, like the rest of the pod, black in the dried state.

20. *Pycnospora* sp., apparently new, and belonging to the section *Strophostyles* \ but the single specimen, of which the precise locality was not recorded, is not sufficient to describe accurately in so difficult and confused a genus.

21. *Atylosia scarabaoides*, Benth. Plant. Jungh.—*Cantharospermum paucijlorum*, Wall, et Arn. Prod. vol. i. p. 255.

On road-sides in the autumn.

22. *Pycnospora hedysaroides*, Br.—*P. neroo&a*. Wall, et Arn. vol. i. p. 197.

Hong-Kong, a single specimen.

23. *Ehynchosia volubilis*, Lour. ?—Hook, et Arn. Bot. Beech, p. 181. Hong-Kong, a single specimen, without the precise locality.

Although this species, a native of China and the Moluccas, is now generally considered to be Loureiro's plant, it is impossible not to entertain some doubts on the subject, as it has not the rostrate keel upon which Loureiro founded his name and his principal generic character.

It is on this account that Ernst Meyer changed the name of De Candolle's genus to *Copisma*. Yet De Candolle himself saw Loureiro's plant, and considered it without doubt as a congener, and places it next to *JR. plmeoloides*, which our plant much resembles.

24. *Eriosema Chinense*, Yog. Leg. Meyen. p. 81.

Victoria Peak, common, flowering in May.

{To be continued.}

Oti. the Cidneae UICE PAPER; by SIR W. J. HOOKER, D.C.L.,
P.E.A. and L.S.

(TAB. I., II.)

At page 27 of our Second Volume of the * Kew Garden Miscellany,¹ we expressed our obligations to Captain Wm. Loring, E.N., of Portreth House, Southampton, as well as to J. H. Layton, Esq., then H. B. M. Consul at Amoy, for several particulars relative to the "Bice-paper," or "Bok-shung" of the Chinese, and we stated that the latter gentleman, so well located for the purpose, on account of the vicinity of Amoy to the island of Formosa, was using his best endeavours to procure the plant which yields this substance. Again, at p. 250 of the same-volume, we laid before our readers an account, accompanied by two plates, copied from a well-executed series of drawings by a Chinese artist, kindly given us by C. J. Braine, Esq., late of Hong-Kong, representing the selecting of the seed, the sowing, the full-grown plant, and the various operations in preparing the "paper," to the packing the bales for commerce; and we observed that, well as the drawings were executed, the plant was represented of so strange a character, that no botanist to whom we had shown it could conjecture to what family it belonged. We could only wait patiently for further information. Mr. Layton was unfortunately removed by death from his consulship of Amoy, but his accomplished lady was indefatigable in endeavouring to procure a living rooted plant, and in this she was successful. It was full of healthy foliage when it was put on board for England, but it perished during the voyage. The stem (nearly an inch in thickness and a foot high), with its root, and the fallen and partly decayed leaves, have been sent to me. And here we have made another and important advance towards a correct knowledge of the plant:—a section of the stem shows that it is really

and truly that of the Eice-paper plant: it shows that the drawings above alluded to are a hoax upon Europeans (one of many which these rogues have to account for); and it proves that the drawing referred to at p. 29 of Vol. II., in the possession of John Reeves, Esq., is a faithful one, as far as it goes, of the true plant.

The researches of Mrs. Layton and others all tend to show, that the plant is exclusively a native of the island of Formosa. "As far as I could learn," this lady says, "it is only really known to grow in the deep swampy forests of the north of Formosa, though said in books to be found, in these later years, in one other part of China and formerly in many. One thing is certain, that all the *Rice-paper* met with in Fokien and the south is pith from the island Hu-nan, or Ho-nan (as the Amoy people call it),—Formosa. The tree must grow there to a good size, for I was again and again informed I could not well have a 'tree' brought over, as it would be too large to manage on the way. Great danger and risk attend the men who go into the forests to procure the stems, where the aborigines come suddenly upon them and take away their lives: so that it is customary to have a guard of soldiers on the occasion. At one time it seemed quite certain that my efforts to procure a plant would have been supported by all the mandarin force on that part of the island, for the late brave old Chinese admiral at Amoy took the matter in hand for me, and sent orders for one to be obtained, and sent back in one of the imperial junks employed to take troops to Formosa; but before it could reach me he was dead. I did not, myself, bring home with me the dead and withered specimen you received, for it did not reach Amoy in time: but I had arranged with a friend to take charge of it, who unfortunately forwarded it to me by way of the Cape instead of sending it overland: for, indeed, it had already been several months in the case in China. One of the two Chinamen, whom I had long before sent over in a junk for the purpose, returned with a small root when I was too ill to take care of it; but it had several green leaves when I took it with me on board ship for England, and this was I think entirely killed by the brown ants. The man who obtained this, assured me that the 'large tree' he procured had died while he waited for a junk, and then after putting out to sea, and being driven back by pirates, he threw the plant overboard, reserving a portion of the stem and some leaves, which I have now in my possession. The second messenger returned soon after my departure,

bringing a fine strong plant, thriving beautifully when it was put on board the ship *Bentinck*, but which died on its passage, and reached your hands without any signs of life."

The fate of this plant is further narrated in a letter dated Hong-Kong, September 1st, 1850, addressed by J. O. Bowring, Esq., to his friend Major Champion, who favoured me with a sight of it.

"Hong-Kong, September 1st, 1851.

"I must write a line to let you know that specimens of the '*Bicepaper* plant,' root, leaf, and stems, are going home by this mail to Sir W. J. Hooker. They were procured by Mr. C. S. Compton, the brother of our Compton, from the crew of a Formosa junk (which was wrecked) who were picked up by the vessel in which he was a passenger,—at least, I believe so. Compton showed me a leaf of the plant. It seemed like a good-sized Sycamore leaf, very downy on the underside; but it was so shrivelled up, that it was scarcely possible to say what it was; and being the only one he had left, Compton would not let me steep it in hot water. I saw a small root also, a curious-looking thing, apparently of a marsh or water-loving plant, the pith running down to the very end. It seemed to be jointed and was furnished with fibres at certain distances. Compton has magnificent specimens of the pith, as long as my arm and as thick as my wrist. . . . It is quite certain now that it is a production of Formosa, whence large quantities are brought over in native craft to Chinchew, where it is cut into thin sheets for the manufacture of artificial flowers, its principal use. It must occur in great plenty, as it is a *very* cheap article there. Compton has given me a beautiful piece of the pith, cleaned and prepared for cutting into sheets. It is as white as snow, about 3 J inches long, and a solid cylinder of rather more than an inch in diameter. An incision has been made down to the centre, or nearly so, through the whole length; so that this piece would furnish several sheets 3i inches square. From the size of some of the sheets we see, it is evident that the pith, after being cleaned and prepared; must sometimes measure more than 2 or even 2£ inches in diameter: so that the gigantic size of the plant, as represented in the Chinese drawing which Sir W. Hooker copied in his Journal, may not be out of nature. As we have an opium vessel stationed in the Chinchew River, I shall make a strong effort to get some living plants through our schroffs. The name of the place from which the wrecked men said it came, is Chick-Cham-fan, in the district of Cheong-fa, in

Formosa, according to the Cauton pronunciation, or Chuh-tseen-fun in Chang-hwa in the Mandarin dialect."

We have further been favoured with a sight of the specimens of the stem and leaves* above alluded to, as brought from Formosa by the first messenger sent by Mrs. Lay ton; and these differ in no respect from our plant, except that the leaves are more carefully preserved, and that the stem is three feet two inches long, and not an entire stem (possibly a branch), filled from beginning to end with the beautifully white medullary substance, from which the *rice-paper* is cut, and which occupies a very **much** larger portion **than** the pith of our common Elder does.

The principal of our figures (Tab. I. II.) is copied from the drawing, before alluded to, in the possession of John Reeves, Esq., of Clapham, (verified by our own dry specimens) and was made many years ago from a living plant then in his garden in China; which plant was sent (and arrived alive) to Dr. Lindley at the Horticultural Society: but it soon died. Mr. Eecves further received, and they are now before us, the knife, a tile, and two squared pieces of wood, used, as was understood, in the several processes of preparing the paper and cutting it into particular sizes.

We are now, thanks to Mrs. Layton, so far advanced in our knowledge of this plant, as to be able to form a correct notion of its affinities. We believe that Dr. Lindley has already expressed an opinion, from the imperfect specimen he had seen, that it was either Umbelliferous or Araliaceous. We have little hesitation in deciding in favour of the latter family, nor do we think we can be far wrong in referring it to *Aralia* itself. The species of that genus possess the same habit or external characteristics: a more less woody stem, bearing its leaves at the apex, or at that of the branches, similar large leaves, not unfrequently palinated, and sometimes, especially while young, clothed with the same dense stellated pubescence as in our plant: the petioles are often very long, and furnished near the base with two large, more or less adnate, subulate stipules. I would suggest for it the name of

ARALIA? PAPYRIFERA, *Hook.*

Caule inermi erecto suffruticoso striato annulato intus copiose albissimo-medullosa, foliis terminalibus longè petiolatis amplis palmatis

* These were brought home by Mrs. Layton for Captain Wm. Loring, and that gentleman has kindly desired that they should be deposited in the Museum of the Royal Gardens of Kew.

5-lobis subtus praecipue (junioribus totis) stellato-subferrugineo-tomentosis, lobis lateralibus bilobis terminali trilobo, omnibus acutis serratis, petiolo basi stipulis 2 magnis subulatis. (TAB. I., II.)

HAB. Swampy ground in the northern parts of the island of Formosa.

The flowers and fruit are yet unknown to us. And with regard to the plant itself, we know very little more than what the figures exhibit. Our principal figure is copied from Mr. Eeeves's Chinese drawing, the fidelity of which we have tested by comparison with our dried specimens. The root is thick and fusiform, slightly divided, equally woody with the stem. Our representation of that is taken from the lower part of our dead plant, cut through transversely end vertically. Our larger stem above mentioned exhibits exactly the same characters: it is striated or furrowed, and marked with numerous rings, the scars whence leaves have fallen. A section exhibits a moderately thick bark, a thicker circle of pale wood, within the tube is occupied by the white pith descending almost into the root. In the thicker stems, the pith easily separates from the wood, but with a rather rusty-coloured furrowed coat, which seems to take this latter character from so many ridges on the inside of the wood. It is this pith, freed from the external surface, which a Chinaman is represented in the act of cutting into paper, in our Vol. II. Tab. IX. Among our numerous samples of the pith (thus prepared and cut into perfect cylinders) some are uniform (or solid, if I may use the term), while others are furnished with cavities divided into compartments by entire, or more or less ragged septa. These cavities, when present, must diminish the size of the paper in a given cylinder of pith. Fig. 2 shows a septum in the transverse section; and fig. 3, cavities and septa in a longitudinal section. Fig. 4 and 5 are magnified, 4 being a transverse section, and 5 a longitudinal section, of this delicate cellular substance.

Notice of a new species of DEPABIA, discovered by MR. CHARLES MOORE, in New Caledonia.

(TAB. III.)

Captain Erskine, of H.M.S. Havana, was so kind as to invite Mr. Moore, the active Curator of the Government Botanical Garden at Sydney, to accompany him on a voyage to New Caledonia, and to give him every facility for collecting plants, - and we know how much is in

the power of naval officers on these occasions;—and well has Mr. Moore rewarded Captain Erskine's generosity, by the discovery of several perfectly new and very interesting plants in that and some of the adjacent islands. Besides the magnificent *Araucaria Cookii* (Brown, MSS.), of which a figure will soon appear in the 'Botanical Magazine,' three apparently new species of *Damtnara*, and some new Ferns, have been the result of this voyage. We have reason to believe that Mr. Moore is preparing some account of the voyage in reference to the plants he detected; but we trust to have his permission on the present occasion to dedicate one of the most remarkable of his Ferns to him, which he so well merits. It is a *Beparia* with *reticulated* fronds. I am well aware that this is a character that in the minds of some very able botanists would entitle the plant to constitute a new genus: but this is not, we have already had occasion to declare, our view of the importance of such a structure, if it be not accompanied by any other confirmatory character in the plant. As a subgenus or section it may conveniently be employed; and as the original species, *D. prolifera*, Hook., and *Mathewsii*, Hook., with their free veins, may be called *Eudeparia*, the section with reticulated fronds may be called *Trichiocarpa*, from the resemblance the stipitate sori bear to some species of *Trichia*.

Deparia (§ *Trichiocarpa*) *Moorii*; fronde deltoideo-cordata reticulata bipinnata, pinnis lanceolatis acuminatis pinnatifidis laciniis acuminatis margine utrinque copiose soriferis, involucris stipitatis.

HAB. On the ground in a dense wood, south side, Copenhagen River, New Caledonia. *Mr. Charles Moore*, n. 14.

Trond stipitate (*stipes* slender, dark purple, glossy), 1 foot to 1½ foot long, in outline between cordate and triangular, divided in our finest specimen into seven primary *pinna*, which are rather distant; the two lower pinnae are again, near the rachis, pinnated; the next pair can scarcely be said to be more than pinnatifid; and the terminal pinna, equalling one-half the length of the frond, is broadly ovate-lanceolate, decurrent at the base, deeply pinnatifid, cut in its lower half into long lanceolate pinnatifid segments, the upper segments gradually become shorter till they disappear in the acuminate point: segments always acuminate. All the lowermost pinnae and segments are lanceolate and pinnatifid; the pinnae bearing the closely-placed sori on very narrow teeth (*pedicels* they may be called) on both margins. The *texture*

is membranous, the *colour* dark olive, the veins everywhere reticulated with oblong areolae, the *areola* next the costa, or principal midrib, being the longer and largest, and bounded by an arcuate veinlet. *Involucre* forming a shallow cup at the apex of small stalks, stipitate, and opening outwardly, filled with long-pedicellated capsules, exactly as in *2. proliferata*. These stipitate involucre filled with capsules have much the appearance of some species of *Trichia* among the *Fungi*.

Fig. 1. Portion of a frond with sori:—*magnified*.

BOTANICAL INFORMATION.

Letter from PROFESSOR PARLATORE *to* Mr. P. B. WEBB,
on his Journey in Scandinavia and Lapland.

Florence, November 25, 1851.

I left Florence on the 3rd of May, and remained a few days at Milan: from thence on the fourth day I reached Berlin. I was desirous of consulting Humboldt and Von Buch on my projected voyage, and I cannot express to you the extreme kindness I experienced, particularly from the former of these eminent men. Humboldt gave me a magnificent introduction to the King of Sweden, which secured me not only a special reception from His Majesty, but likewise most useful letters in his name to all the authorities throughout Sweden and Norway.

From Berlin I continued my journey to Hamburg, where, as at Berlin, I made a few botanical excursions; and then proceeded by land through Holstein and Schleswig, and so through the islands of Fionia and Zealand to Copenhagen. Here I saw Schouw, suffering unluckily from headaches, and Liebmann, with whom I likewise made several excursions. I now embarked for Gothenburg, where I made the acquaintance of Lindeberg, and thence passing across the Venern and Vettern Lakes and through the Gotha Canal I reached Stockholm. Here, as at Copenhagen, I remained a whole week, and explored the environs botanically. I became acquainted with Andersen, Wahlberg, Wickström, and Thedenius. The first of these has sailed in a Swedish corvette for a voyage round the world. From Stockholm I reached Upsal, where it was a great pleasure to me to meet with Fries and Areschoug, who received me, as wherever I went I was received, most

cordially. I herborized at Upsal, and thence betook myself to Dan-nemora, where are the celebrated iron mines, and then went on to Gefle, botanizing everywhere as I went. The district between Upsal and Gefle presents unusual interest, as, besides the Oak, many other plants of the middle regions of Europe have here their northern limit.

Beyond Gefle there are vast marshes filled with *Betula nana*, *Ledum palustre* (found likewise at Berlin), several *Carices*, *Andromeda pollifolia*, &c, and clothed with interminable forests of *Pinus sylvestris* and *Abies excelsa*, which cover the plains of Gestricia, Elsingia, Angermannia, Western Bothnia, and Northern Bothnia, countries which I traversed by land, everywhere making excursions, and collecting every plant I saw, from *Capsella Bursa-pastoris* upwards. I mounted the Sculaberg, where, like Linnaeus, I nearly lost my life in climbing up to the caverns near its summit. My principal halts were at Umeö and at Skeleftiö, of which the temperatures are known, or at least I shall be able to make them known. At Skeleftiö I gathered for the first time the *Ranunculus Lapponicus*, and the rare and lovely *Calypso horeali* *Sy Splachnum luteuni* and *rubrum*, &c. During my journey from Gefle to Umeö I was overturned and thrown off the road, together with the horse and the horrid cart without springs, in which I travelled. The lacerations and contusions I received from this fall I could have borne, but I was sorely grieved when I found that both my barometers were broken.

At length, by Pitco, Luleo, and Hoita, I reached Stapnranda and Torneo, where I remained two days to investigate the botany of the neighbourhood. From Torneo I now penetrated into the interior of Lapland, navigating the rivers in a boat or more frequently travelling on foot, on account of the continual rapids and falls with which they are beset, and worked my way as I could through pestiferous marshes infested by millions of most insupportable and ravenous insects, which, throughout the whole of my journey in Lapland, caused the most indescribable torment, and which, notwithstanding gloves, a veil, and a handkerchief round my head, put me into a fever of desperation.

I now crossed the polar circle, collecting with undiminished zeal every plant that fell in my way. At Pajala, near Kengis, I visited the curate Lestadius, for whom our excellent friend Mr. Gay had given me a letter. He received me obligingly, and showed me some of his plants.

From the river Torneo I passed into the province of Muonio, and found myself in Russian Lapland, passing by Muonioniska, Karesuando, and Tubateky. Thence I penetrated into the midst of the deserts, suffering greatly from the cold, and deprived of food, or nearly so, for the plentiful supplies which I had brought with me from Stockholm had been entirely spoilt by the continual and copious rains and storms. I was in want even of bread,—exposed too, as I was, day and night to the open air without a bed, without a roof. Ah! my good friend, it is impossible for you to imagine the wretched plight I was in, the cruel privations I suffered!

Not being able to continue my journey by this route, on account of the vast and deep marshes which extend towards Alten, I determined to find my way thither by the Alps. This, however, was still worse, for I had to wade across wide and impetuous torrents, often at the peril of my life. How I survived all this I know not. At last, after a dreadful journey, I descended into Finmark, and reached Hatten, on the Gulf of Lyngen. I was in a shocking state, fatigued beyond description, attenuated from the want of food, and my strength entirely gone. I had walked and walked, and botanized, with my cold and wet clothes continually upon me day and night, without either shelter or fire; for these inclement Alps produce neither trees nor even brushwood, to make a fire.

At Lyngen I found a merchant who most hospitably received both myself and my suite. Oh! how delightful is hot soup and a roof overhead, after such sufferings! But I had no time to lose; I visited the lofty Alps covered with snow and ice which rise above town. Thence I followed the shores of the gulf, where I met with whales for the first time, and arrived at Haonees and Maursund, whose Alps I likewise visited. Thence I wended my way to Löppcn, to Talvig, Kaafiord, Bossekop, and finally to Hammerfest. Here I embarked for the North Cape; but though I passed the extreme point of Europe, the winds and the waves were so high and so contrary, that notwithstanding the few miles that remained before me, it was impossible for me to reach it.

With rest I sailed back to Hammerfest, where I remained seventeen days, in order to explore thoroughly the vegetation of the island of X f r C WWcl. the t0Wa is built I found U P o * ^ 400 species, of 200 were Phanerogamous and 200 Cryptogamous; and of these

latter, 110 were Mosses. I shall likewise be able to give the temperature of Hammerfest, and details respecting its climate—thanks to an intelligent merchant residing there, who communicated to me his meteorological observations made regularly during five years.

Prom thence I returned to Alten, and from Alton to Tromsoe, to visit the lofty Alps of Tromsdeltia. I then went over to the islands of Loffoden, passing the dreaded Westfiord. After stopping at Bodoe I followed the western coast of Norway till I reached Tron[^]jem. I herborized around Trondjem as I had done round Bodoe, and visited the Dovrefield, where I stayed several days, and made an ample harvest of plants. Thence I had just descended into the plain of Nissen, when I was seized with paralysis. Fortunately all my excursions were finished; I was no longer amongst the wilds of Lapland, but where medicines and medical aid were at hand. I will not stop to tell you all my sufferings during forty miserable days of illness, nor afflict you by complaining. What I most dreaded was the obstruction of the Gulf of Christiania by frost, and the impossibility of getting away. However, by the blessing of God, I was well enough to embark on the 4th of October, and reached thiiis on the 4th of November.

[We are happy to be able to add that Professor Parlatore's health is daily improving. He is finishing his interesting memoir, begun before, his departure, on the Egyptian (or rather Nubian) and the Sicilian Papyrus, which he finds to be two distinct species, and he will shortly recommence the publication of the 'Flora Italiana.']

Notes on the Botany of the CAPE DE VEKD ISLANDS ; extracted from a letter of Dn. C. BOLLE to William Willson Saunders, Esq., dated

Santa Cruz de Te'nériffe, Nov. 10, 1851.

The Cape de Verd Islands, on one of which I established my headquarters, are singularly cut off from communication with the continents of either world, and from one another. There is no regular post to this groupe, and but little intercourse is carried on among them. From the island of St. Nicholas, where my time was chiefly spent, to St. Vincent, at which the steamer touches, the distance, as to time, is as great as to England! I lived in a most sequestered way for several months, and chiefly regretted it because of the difficulty of sending plants to you, for I could have made many valuable additions to your garden and

greenhouse if I had been able to transmit the cases so as to suit the arrival of the steam-ship. Certainly the Gorgades of the ancients are among the most picturesque spots in the world, and their deep and closely-shut valleys, watered by narrow streams, presented to my delighted eyes all the riches of a tropical vegetation.. But everywhere the sea-coast is one sandy desert, partially and scantily decked, during the few weeks of rainy season, with transient verdure, chiefly consisting of Grasses and a few Leguminous plants of small dimensions. The more elevated situations assume somewhat of the character of the Canary Islands in their flora; but the species are neither numerous nor showy. Many of the natural families have but one representative : such is the case with the *Geraniacea*, *Amaryllideæ*, and *Lycopodiaceæ*. A single *Allium*, which, growing near gardens, was probably introduced, is the only bulbous plant which I discovered. There are no forests: either they never existed, or the imprudence of the inhabitants or the ravages caused by goats have destroyed them. The *Euphorbia Tuckeyana* grows by thousands, to the exclusion of almost every other shrub on the mountains, which it covers with a dwarfed coppice; while here and there some Gum Dragon-trees adorn the crest of a lofty rock; and the sea-beach, near the mouths of torrents, produces the *Tamarix Senegalensis*. Add to these the *Jatropha Curcas* and the Wild Fig-tree (*Ficus Iachtenstelrdis*) and you have the entire catalogue of the *Dendrologia* of the Cape de Verd Islands. *Acacia Arabica* and *DicArostachys nutam* are nothing better than bushes.

I might go on in the same strain, and prove to you how hard a step-mother Dame Nature has been to this Archipelago; but I will only say that if my voyage had been connected with any views of pecuniary remuneration, it would have been an utter failure; but as this was not the case, I do not regret the time I spent at St. Nicholas and St. Vincent. I was cheered by much kindness received at the hands of excellent people, and I enjoyed perfect health. The herbarium which I collected will enable me to add many species to those previously known. Still, considering the paucity of the flora, the extreme drought of the year, the short-lived character of the vegetation, and the scourges of fever and famine, which are perennial visitants of the Cape de Verd Islands, I determined on shortening my visit to them. Ten years would be required to investigate thoroughly the natural history of the group; for the brief brasm of tho annual rains is but too little to

enable the botanist to explore each island; and there are ten! It is highly probable that there is little variety in their productions. St. Nicholas, which was the chief scene of my labours, is the largest, loftiest, and most fertile in the groupe: no opportunity of going to Fayo was ever presented, and St. Jago and St. Antonio were then suffering from pestilence; while, at St. Vincent, where a flourishing town will probably soon arise, at one of the finest ports of the Atlantic, there was hardly the possibility of remaining, for want of accommodation and provisions. Mr. Kendall, the British consul, was occupying a miserable hut, his own house having been destroyed by a hurricane; and I was compelled to pay a dollar a night, for permission to shelter myself in the cottage of a negro, where there was no bed.

And now to refer to the plants which I sent you: the most interesting is the *Sarcostemma Daltoni* (Decaisne) which is a long-stalked, pendent, leafless *Asclepiadea*, graced, in the months of August and September, with innumerable branches of pale yellow flowers. It is a rooting species, easy of culture and increase, and it requires much sun and heat and almost no moisture. It forms the chief characteristic of the littoral vegetation, where the coast is dry, burning, and African in aspect, and adorns the rocks with its thick garlands. Then comes a Crassulaceous plant, with rosettes of large glaucous leaves and yellow blossoms: it is a native of the mountainous region, and consequently must receive less warmth and rather more water than the *Sarcostemma*. A *Nephrodium*, with tuberous roots, is pretty and certainly new; *Asplenium Canariense*, *Notocladana Maranta*, *Bavallia Canariensis*, and an *Aspidium* (I think *odoratum*) with large silky rhizomes, must be kept rather dry. There is a scrap of the wild *Aloe* of the Islands, some roots of a little-known Umbelliferous plant, which seems to be the *Tetrapleura insularis* of Parlatore, and four small specimens of *Euphorbia Tuckeyana* which have little chance, it is to be feared, of surviving the voyage; bulbs of an *Umbilicus*, probably *horizontalis*; and seeds of *Poinciana pulcherrima*, and of a lovely *Cassia*; last, not least, tubers of the only *Orchidea* of St. Nicholas, which I could never detect in flower or seed, its season of inflorescence being perhaps the spring; it requires shade and moderate warmth, and is doubtless new: I shall enjoy to see it bloom with you.

In order to gratify you, I have charged my conscience with the murder of some of the few Dryads of the Cape de Verds:—they are so small in stature that you will pronounce them quite elfin! The next

steamer shall convey to you samples of the woods of *Dracana Draco*, *Euphorbia Tuckeyana*, *Tamarix Senegalensis*, *Acacia Arabica*, *Dichrostachys nut cms*, *Ficus Lichtensteinii*, &c, also some packets of seeds. The whole, however, is so trifling, that I am almost ashamed to offer it.

From the Cape de Verd Islands I came to this place, and hoped to spend part of the winter amid its southern scenery, where noble woods and your favourite succulents abound. M. Berthelot, one of the kindest of men, promises to direct my excursions, and assures me that I shall visit valleys hitherto untrodden by the foot of any naturalist. Armed with your saw and accompanied by one man, I shall explore the Laurel groves of Ténériffe. I can hardly suppose that all the succulent plants which grow here have found their way into European gardens; and this island is also rich in *Liliacea*, in species of *Scilla* and *AspJiodelus*. There are also several kinds of land shells, of which I could see but three species in the Cape de Yerd Islands, and a single fluviatile shell.

On the increase of temperature in the Flowers of VICTORIA REGIA.
Translated from the 'Neue allgemeine deutsche Garten- und Blumenzeitung' (New German Garden and Mower Gazette, by EDWARD OTTO, Curator of the Botanic Garden at Hamburg). Part II. of 7th year, 1851.

At the request of Professor Lehmann, who thought he had formerly noticed an increase of temperature in the flowers of *Nymphaea alba* at the moment of opening, as compared with that of the surrounding atmosphere, we made experiments in this garden (the Hamburg Botanical Garden) with the *Victoria regia* on the 24th of September last (1851), which produced the following striking results..

The temperature in the hothouse being 17° Réaumur., and that of the tank being 16° Réaumur., the thermometer on being plunged into the flower at the moment of expanding its anthers, at 7h. 11miu. p. m., rose to 21° Réaumur., the bulb being placed among the anthers. On being sunk into the blossom below the anthers, a decrease of temperature took place gradually.

In thus preliminarily noticing the above fact, we deem it proper to say, that owing to the number of visitors who crowded to see the plant in flower, it was impracticable to pursue the experiment any further. It was made on the fourth flower that had opened. On a subsequent

occasion, another flower produced the following result:—Temperature of the surrounding air 18° Réaum., of the water $16\frac{1}{2}^{\circ}$ Réaum.; at the time the thermometer was sunk into the flower, it showed exactly $16\frac{1}{2}^{\circ}$, and in the course of fifteen minutes it rose in the flower to 32° Réaum.

One of the largest leaves (5i feet in diameter, with an erect margin of two inches) has confirmed the test of not only supporting a strong boy, five years and four months old, but on another trial it sustained a weight of one hundred pounds, a thin piece of wood three feet broad being previously placed across the leaf.

[Kindly communicated by Professor Lehmann at our request.—*N. IFallich.*]

NOTICES OF BOOKS.

Popular History of BRITISH FERNS and the allied Plants, comprising the Club-mosses Peppercorts, and Horsetails; by THOMAS MOORE, F.L.S., &c. London: Reeve and Benham.

We have spoken favourably in our Journal of Mr. Moore's ^e Handbook of British Ferns/ intended as a guide and companion in Fern-culture; a work, as its title expressly indicates, more immediately bearing on the cultivation of British Ferns, with neat woodcuts. The present is a popular, yet not unscientific, history of all known British Ferns, using the word *Ferns* in the ordinary acceptance of the term, *Filices* of Linnaeus; and certainly we have rarely, if ever, seen a publication relating to plants where the object aimed at is more fully accomplished than in the elegant volume now before us. It is quite true that much * of its charm may arise from the well-arranged and well-executed and coloured plates, fresh from the hands of Mr. Fitch. But we are equally bound to say that the descriptive matter is got up with good taste and good feeling too. There is not that desire to multiply species upon the slightest variation in form, or excess or diminution of pubescence, or scales, colour, &c, which is characteristic of the writings of so many authors who confine their studies to a partial view of any particular kingdom of nature, a single family, for example, and especially of the family of one particular district of country. He does not go the whole length of species-making, nor does he quarrel with others who differ from him; and it is easy to foresee that such a line of conduct is eminently calculated to recommend the already, we believe, popular subject of *British Ferns*.

We do not approve of the author's arrangement of the descriptive matter, or diagnoses, in *alphabetic* order: the genera according to the letters of the alphabet, and the species also. We do not see why all these should not have come under their respective generic and specific *character** at page 43 and following pages, and at page 49. If* indeed, they were arranged under any very familiar or popular names, it might be of some advantage thus to be referred to a good description and the scientific name : but as this is not the case, and as a student must know the modern scientific name before he can find the description, we see no reason for such an arrangement. The same objection holds good in the figures; for though we have spoken favourably of their disposition on the plates, that alludes to the artistic effect, and the clever manner in which a great deal is introduced into a small compass, even of the larger genera and species. *Pihilaria* and *Pteris* appear on the same plate because they begin with P; and, consequently, in the descriptive matter there is the same unscientific arrangement, which might easily have been avoided. We trust this arrangement will be changed in a new edition, which cannot fail to be soon called for.

SEEMANN, BEBTHOID : *Die in Eurqpa eingeführten ACACIEN, mit BeriicksicMujimg der gärtnerischen, Namen.* 8vo, with two plates. Hanover, 1852.

This well got-up little work is unfortunately written entirely in the German language, and, therefore, only intended for German cultivators. It distinguishes 148 species of *Acacia* that are known in European gardens, of which 109 belong to § PHYLLODINEJB, 9 to BOTRYCEPHALAS, 10 to PULCHELLIE, 12 to GUMMIFEIUE, 7 to VULGARES, and 1 to FiLiciNiE. The beauty and fragrance of many of the species of the genus, the gracefulness of the foliage, or the peculiar forms of the phyllodia, and the ease with which they are cultivated in a temperate house, and especially the early period of the appearance of the blossoms, all conspire to render these plants eminently deserving of the attention of horticulturists. The work is appropriately dedicated to Mr. Wendland, the able Inspector of the Royal Gardens at Herrenhausen, who was himself one of the first to direct attention to these plants, and to publish excellent figures and descriptions of New Holland species. The two plates, not particularly well executed, are coloured, and consist of *A. bossiaoides*, All. Cunn., and *A. rostellifera*, Benth.

Professor C. F. P. VON MARTIUS'S Eloge on Ledebour, delivered at the public meeting of the Royal Academy of Sciences at Munich, held on the 6th November, 1851. Translated from Gclehrte Anzeigen of that Academy of January 2, 1852, by N. WALLICH, M.D., F.R.S., V.P.L.S.

Charles Frederick von Ledebour, Russian Councillor of State, and Professor Emeritus at the University of Dorpat, was many years domiciled in Munich, participating in the labours of the mathematical and physical class of this academy as foreign member. He was descended from an ancient Pomeranian family, and was born on the 8th of July, 1785, at Stralsund, in which garrison his father was stationed in the capacity of Swedish Judge-Advocate-General, but died a few weeks before that event took place. As a young man Ledebour devoted himself to the natural bent of his mind, pursuing mathematical studies with such zeal, that he was enabled, so early as his fifteenth year, to enter the University of Grifswald, where the celebrated physiologist Charles Asmund Rudolphi became his paternal instructor and guide. His juridical studies soon yielded to his natural propensity towards those of mathematics and natural sciences. In the course of some years he went to the Swedish metropolis, in order to undergo the public examination in mathematics and practical geometry; and it was there, that his intercourse with the two celebrated disciples of Linneus, Thunberg and Olaf Swartz, and a journey to the northern Norwegian frontier mountains, undertaken in company with some mining officers, determined the choice of his future career. He returned to Grifswald with a commission as an officer, and with prospects of employment in practical geometry; but yielding to his patron Rudolphi's urgent recommendation, to apply for the post he was about to vacate at the University, Ledebour presented himself on the third day of his arrival for medical examination; wrote his inaugural treatise, *Thertatio botanica, sistens Plantarum Lomingensi^m Decadem*; and thus he became demonstrator on botany, and director of the Botanic Garden at Grifswald, at the early age of twenty years?

Being called to the University of Dorpat, as professor of natural history, and especially botany, Ledebour proceeded for some time to Berlin in 1811, where Willdenow and Pallas, the greatest naturalist who ever entered Russia from Germany, kindled in him extensive plans for elucidating the natural history of that mighty empire. It was not,

however, without personal danger, that he reached the place of his destination, as Prussia was preparing for a bloody contest; and he was therefore compelled, in order to avoid the hostile armies, to brave a stormy sea in an open fishing boat, from Danzig to Königsberg.

At Dorpat our colleague began his multifarious and eventful activity as teacher, observer, and author. He made the phytography of Russia the scientific problem of his existence; and with such successful energy, that the literary history of our times must always consider him as the great leader in the flora of that empire. Through him and his colleague in the Imperial Garden at St. Petersburg, the Councillor of State von Fischer, the botanists of the West owe their chief acquaintance with the botany of those eastern regions; by his intense and critical zeal the Dorpat garden became the depository for their widely scattered plants; and from thence, as well as the garden at St. Petersburg, the novel forms of the Caucasian and Siberian vegetation were distributed among similar institutions in other parts of Europe, in order to be more closely examined.

In 1826 Ledebour made a scientific voyage to the Altai; and a journey in winter, of five weeks' duration, brought him to the distant Barnaul, the chief town in the great district of Siberian foundries, where the widely-spread treasures of native gold attract vast numbers of adventurers, as do those of California and Australia. On the approach of spring he extended his researches from thence into the mountains, as far as the Chinese frontiers, while his zealous pupil, the Councillor of State and Academician, Charles Anton Meyer, examined the Kirgisian wilds west of Altai, and von Bunge, now his successor in the chair of Dorpat, visited its eastern parts. The harvest derived from these expeditions, and the iconographical and descriptive works which Ledebour published, partly at the charge of the Imperial Russian Government*, form an epoch in the descriptive systematic and geographical botany of the Russian Flora, for which the two Gmelins, Messerschmid, Marschall von Bieberstein, Fischer, and others, as well as many among the

* *Icones Plantarum novarum vel imperfecte cognitarum, Floram Rossicam imprimis Altaicam illustrantes*; 5 vols. fol., Riga, 1829-34. Next, *Flora Altaica* 4 vols. 8vo, Berlin, 1829-33; and finally, *Flora Rossica, rive Enumeratio Plantarum in totius imperii Rossici provinciis Europæis, Asiaticis et Americanis, Aucusque observatarum*, Stuttgart, 1842-51.

t Ledebour has added a copious commentary to J. G. Gmelin's 'Flora Sibirica' in memoirs of the Royal Botanic Society of Ratisbon, vol. iii, 1841, pp. 43-138.

pupils of our colleague, had prepared the materials. The last production of his comprehensive mind was a general critical flora of the Russian dominions, arranged according to phytq-geographical provinces, and with such a degree of devotion did he pursue this arduous undertaking, that his ebbing life only yielded to his manly energies of mind, until the completion of his manuscript enabled him to lay down his weary pen; but the monument thus reared to him, as a botanist and plant-geographer, will secure to Ledebour a grateful place in the history of the science.

Becoming Emeritus in 1836, he took to a milder climate, first at Odessa, and next at Heidelberg. Thence he removed eight years ago to Munich, where he settled, and brought his noble labours to a conclusion a few days only before his death, which happened on the 4th July, 1851, in consequence of a lengthened attack of disease in the heart.

His 'Journey to the Altai' (Berlin, 1829, 2 vols. 8vo) demonstrates, among his other works, how very amply his mind was stored; it is a treasury of valuable information in matters of geography, geognosy, botany, ethnography, and statistics. As regards botany, he belonged to the reformed Linnean school, which, by its penetrating, systematic inquiries, and the precision of its description of natural objects, appears, as it were, to possess a geometrical character. To attain a classical skill in exhibiting an object by this method, requires an unconditional devotion to that object in all its systematical connection. It may therefore be said, in praise of our distinguished systematist, that he has always remained steady in one direction of a science, which has of late diverged into many paths, having once chosen that direction for his pursuit. And this was in harmony with his clear, considerate, and steady views in all relations of life, which, with the eminently strict rectitude of his honourable character, and his affability in private life, endeared Ledebour indelibly in the memory of those who enjoyed the privilege of coming within his sphere of activity.

On the Camphor-tree of Sumatra (Dryobalanops Camphora, Colebr.);
by DR. W. H. DE VRIESE, Professor of Botany at the Royal Univer-
sity of Leyden. {Kindly translated from tU Dutch by Miss MAEY
ANNE DE VEIIESE, /or this Journal)

{Continued from p. 41.)

Geographical Distribution.—The region in which the Camphor-tree is found extends, in latitude, from Ajer Bangis to Singkel, or nearly from 1° 10' to 2° 20' N. It is not met with more southward than Ajer Bangis; whether it grows further north than Singkel is unknown (Jungh.). Within these parallels it extends along the south-western side of Sumatra, from the coast to a considerable distance in the interior, and is found on the mountains as high as from a thousand to twelve hundred feet. As those mountain-chains which are near the coast, and most of the central valleys of the mountains which extend parallel to the coast, that is, in a direction from S. W. to N. E., are much higher than 1000 feet, it is clear that this tree has a very limited region, occupying but a small part of south-western Sumatra: it is also confined to the outer slope of the mountains, whence it descends into the alluvial plains, though it approaches the sea only in those parts where the ground is not swampy. It is found most abundantly, and in the best state, on the outlying hills of the mountain-chain and on the lower slopes of the mountains themselves, at a height of from three to five hundred feet; and here the camphor is collected in the greatest quantity.

The Camphor-tree was seen by Dr. Junghuhn on the promontory of Caracara, near Telo; on the alluvial plain of Loemoet; on the mountains of Hocraba, behind Sibogha; and on the ridges of hills in the south of Loemoet, &c. He found it growing on weather-beaten granitic and trachytic hills, on yellow-red clayey soil, abundantly furnished with oxide of iron, and also on a rich alluvial soil abounding with humus.

Climate and Temperature of the region of the Camphor-tree.—On the coasts the mean annual temperature is but 80° (on the island of Java 82°) and nearly 78° Fahr. at 1000 feet, the most elevated limits where the tree is still found, thus much lower than in Java.

There are two causes particularly, that bring about this depression of temperature: first, the narrowness of the level shore of the coast, im-

mediately at the foot of high mountains; secondly, the uninterrupted dense forests, with which not only the mountain-chain itself, but the coast-plain, is covered. These circumstances produce a greater humidity, and at the same time a greater coolness of the air, at an inferior elevation than in Java.

At the eastern foot of the Sumatra mountain-chain, there are extensive arid and barren plains, only overgrown with Alang-alang (*e. g.* at Pertibi). Over the heated soil of these plains the air becomes extraordinarily rarefied and the cooler sea-air rushes in, coming from the ocean on the western side of Sumatra, where the sea is deep, and where no land exists for a great distance; and a west wind arises, which, partly kept back by the obliquely situated mountain-chains, changes into a north-western one. This wind carries the humidity of the sea towards the mountains, by the summits of which the moisture is soon condensed and changed into clouds. These, during the whole year, at intervals almost daily, at regular hours, but chiefly in the afternoon, shed heavy showers over the land, while the thunder roars in the mountains. The dampness of the air is then so great, that mist and clouds are for many days seen hanging immoveably even over the woods of the lower coast-lands. Frequently, too, the wind blows by reverberation, in an opposite direction, like a hurricane, from the mountains to the coast.

Thus the Camphor-tree grows in a very changeable and generally moist climate, where extreme states of heat and coolness by storm quickly follow each other. About eleven in the morning, in the serenest weather, there is frequently an oppressive warmth, while at noon heavy showers, driven on by a north-west wind and accompanied by thunder and lightning, seem to cover the land.

Surrounding Vegetation.—One consequence of the unsettled character of the climate, of the low elevation of the clouds, and of the cooler temperature in general, is the occurrence of some trees and plants near the sea-coast, which in Java are met with only at a greater height. Thus the Camphor-tree grows often in company, not only with species of *Acacia*, *Anona*, *Michelia*, and *Dipterocarpea*, but also with Oaks; and it is found with marsh *Casuarina*, with the Nipong Palm (*Oncosperma filamentosum*), and with Benzoin-trees. Amidst the underwood of the forest are seen species of *Melastoma*, *Elettaria*, and other *Scitamineae*, with *Vitex irifoliata* (which occurs most frequently), and several

species of *Riibus*. These plants are seldom found in Java below 3000 feet.

Signs of the presence of Camphor in the tree.—According to the observations of Dr. Junghuhn, the young trees do not contain camphor. The inhabitants of the Batta-lands are accustomed to cut down the oldest and heaviest ones, although the age of the trees is not known; and in reference to a large Camphor-tree, which he saw near Tapanuli, the Rajah Ngabing told him, that his ancestors, as far back as the history of his family went, had known it of the same size. It was probably at least two hundred years old.

Camphor-oil and Camphor.—Camphor-oil, that is to say liquid camphor, occurs in all the trees, even in young ones, and exists in all parts of the tree, but most in the younger branches and leaves. The solid camphor is, however, found only between the woody fibres, and, therefore, only in the trunk. The natives do not know beforehand whether a trunk contains much or little camphor. If, however, there is a large quantity of camphor in the splinters or fibres of the wood, they decide that the fissures of the inner part contain a great abundance. When much gluey, half-solid young camphor shows itself on the radiating extensions, or in the fissures at the lower part of the trunk, they come to the same conclusion. However, the results are frequently fallacious, and they often uselessly cut down trees which produce but very little.

Collection of the Camphor.—The process of collecting the oil and camphor from *Dryobalanops Camphora*, was witnessed by Dr. Junghuhn, near Loemoet (Tapanuli), in Sumatra, at an elevation of 300 feet. The greatest quantity of camphor, in a solid as well as in a young and liquid state, is brought from a height of 1000 feet. The solid camphor is obtained by cutting down the trees, in the inner part of which fissures are found between the woody fibres, which extend longitudinally and are filled with camphor. The young trees do not contain that substance, while the thickest and oldest, that are most filled with it, rarely contain more than two ounces. The natives who are occupied in collecting the precious product, go in a number of twenty or thirty men into those parts of the woods where the Camphor-tree is most often found. They commence constructing cottages, intending to encamp upon the spot for some months. One-half of the company is occupied with severing the trunk near the root, and not, as many others have

said, at from fourteen to eighteen feet above the ground. The others are engaged in gathering the camphor from the trees which have been cut down. From the extraordinary thickness of the trunks, it often happens that a whole day is employed in felling a single tree.

On his second expedition from Loemoet to Fertibi, in the year 1841, Dr. Junghuhn visited the bivouac of such a company in the neighbourhood of Hoeraba, and by this means became acquainted with the method by which the natives obtain camphor or camphor-oil from the tree.

The oil is collected in the following manner:—

1. Incisions are made through the outer and inner bark, at the lower part of the trunk close to the root, chiefly where the tree produces the before-mentioned woody radiations, which alternate with vertical cavities, which are also observed in other trees growing between the tropics. The clear, yellow, balsamic, oily juice, which is discharged very slowly, is collected in a half-cylinder of very thin bamboo, cut longitudinally. According to the observation of Junghuhn, who witnessed it, half a day was scarcely sufficient to half-fill a small tea-cup with this liquid, and even this small quantity was mixed with fragments of bark and other impurities. The collected juice is purified by pouring it through a kind of sieve, made from the fibrous tissue of the sheathing footstalk of a palm-leaf (*hindoe*).

The camphor is found as a varnished, gluey, and clammy covering, resembling turpentine, or in a solid grainy state, in the fissures of the bark, and in the laminary prominences. The surface near the root has chiefly a white covering, which is rarely thicker than one or two millimetres. This substance is highly estimated by the Battas, and fetches a high price.

Colebrooke, and many other authors who have written on this subject, have said that the camphor is obtained from the middle of the trunk, and that every tree should produce a quantity of eleven pounds; the camphor being found in the heart of the tree in such a quantity as to fill a cavity of the thickness of an arm. This is quite exaggerated, and must be founded on an error. If it were true, the price of camphor would be lower than it is now. At Fadang and at Tapanuli the price of a hundred pounds of camphor is nearly £250. Such a quantity would in that case be obtained from nine trees. That proportion is highly improbable, and suffices to show the inaccuracy of the account. On the contrary, the camphor only occurs in fissures of the

wood, and the native of the Battas scrapes it off with small splinters or with his nails.

2. By maceration and decoction of the branches and pieces of bark and wood, another liquor containing camphor is obtained, but still in small quantities, and much mixed with water. The wood is cut into small fragments, and the leaves are bruised and boiled with water in an iron kettle, at the time that the trunk is being cut down, in order to use the pieces in their fresh* state. In boiling, an oily substance rises to the surface, which is taken off with the shell of a cocoa-nut cut in nail and provided with a handle. The liquor is poured into a bambflo, and closed in with a stopple formed of *Mndoe* fibres, and at the return of the expedition after many months it is poured into bottles. Dr. Junghuhn has two bottles filled with the liquid at the place itself.

After a long stay in the woods (frequently of three months) the company, consisting of thirty persons, departs. It frequently happens that during that period they fell more than a hundred trees, and yet they rarely take with them above fifteen to twenty pounds of solid camphor, worth £4-0 to £50.

Use and price of the Camphor in Sumatra.—Camphor is here collected in a comparatively small quantity. While some thousands of quintals of benzoin are yearly sent into the European markets (*e. g.*, in 1837 three thousand), but ten to fifteen quintals, and often less, are sent of Sumatra camphor. The price is £2.10s. a pound. It generally comes from Baros, whence the name of Baros camphor. From that place several caravans set out yearly to collect this substance in the woods. The same product comes from Tapanuli, Natal, and Ajer Bangis. It is not exported, for it is collected for the use of the natives wherever the tree grows.

Besides the small quantity which is employed as a remedy against various diseases, we must mention here a particular use, by which a great deal of camphor is wasted, and its rarity and price much increased; and this lavish application of it, together with the slaughter of hundreds of buffaloes sometimes in one day, is one of the principal causes of the poverty of the Batta royal families (Rajahs).

A very ancient custom prescribes, that at the death of a considerable person among the Battas, who, during his life, had a claim to the title of Rajah (sovereign prince), rice be sowed in a sacred place, and that the corpse be kept above ground among the living till the rice has

sprung up, grown, and borne fruit. Not before the rice is ripe and gathered in do they think it right to bury the corpse, and it is actually interred with the ears of the rice that was sown on the day of the decease. Thus the burial takes place after five or six months. (The remarkable ceremonies of such a funeral are elsewhere described by Dr. Junghuhn.) The corpse, like the rice-grain six months before, is then committed to the earth; and thus the hope is emblematically expressed, that, as a new life arises from the seed, another life shall begin for man after his death.

During the period previous to interment, the corpses are preserved in wooden coffins within the houses, the women wailing day and night. Trunks of *Durio Zibethinus* (the Durian) are hollowed out to contain the bodies. They are carved with much art, and have at the under part small apertures, through which the fluids may escape. The corpses contained in these coffins are not only spread over with pounded camphor, but entirely covered with it, in such a manner that' all the space between the coffin and the body is filled with it. This is the only means known to the inhabitants of the Batta-lands of preserving the bodies of their kings, without smell or corruption, during so many months, in the humid air of such a hot climate. Dr. Junghuhn saw a corpse which had been preserved in this manner during four months, and which was shrunk up like a mummy, and emitted no smell but the penetrating odour of the camphor.

In this way an immense quantity of camphor (a quarter to half a quintal) is consumed, for the purchase of which the family of the deceased king must make the greatest sacrifice, and often sell all their cattle. Every village has such a rajah.

FLOEULA HONGKONGENSIS : *an Enumeration of the Plants collected in the Island of Hong-Kong, by Major J. G.* Champion, 95th Reg., the determinations revised and the neto species described by* GEORGE BENTHAM, ESQ.

{Continued from p. 50.)

LEGUMINOSJE {continued).

25. *Millettia sjpeciosa*, Champ., sp. n.; scandens, ramulis petiolis inflorescentiaque cano-tomentosis, foliolis 9-13 oblongis puberulis
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demum glabratis, racemis densifloris, calycibus breviter pedicellatis sericeo-tomentosis dentibus latis rotundatis, vexillo amplo glabro v. vix glauco-pulveraceo.—*Frutex* scandens. *Tomentum* breve, densum, demum deciduum. *Stipules* subulatae, basi dilatatae, vix 2 lin. longae; stipellae parvae, setosae. *Foliola* 2-3-pollicaria, obtusa v. vix acuminata, basi rotundata, siccitate complicata, supra pallentia, subtus fuscescentia, tenuiter venosa, praeter costam tomentellam pilis paucis conspersa. *Racemi* semipedales, longe infra medium floridi. *Bractea* lanceolata, acuta, sericeo-tomentosa, racemum juniorem subcomantes, per anthesin deciduae. *Pedicelli* floridi 3-4 lin. longi, recurvi. *Bractea* late ovatae, calycis dimidio breviores. *Calyx* late campanulatus, 5 lin. longus, labio superiore latissimo emarginato, laciniis seu dentibus lateralibus lineam longis rotundatis, infima paulo longiore pariter obtusissimo. *Vexillum* carnosulum, pollicem latum et vix brevius, leviter emarginatum, exauriculatum, supra unguem brevem leviter callosum. *Ala* oblongae, obtusae, leviter falcatae. *Carina* alas superans, vexillum subsequans, apice arcuata obtusa. *Stamen* vexillare liberum. *Andræus* cupularis brevis. *Ovarium* breviter stipitatum, dense tomentosum, ovulis circa 12. *Stylus* glaber.

On Victoria Peak, equally common with *M. nitida*, but not found elsewhere in Hong-Kong. It is also in the Hookerian Herbarium from Millett's collection, but without the precise station. It is chiefly distinguished, when growing, from *M. nitida*, by its larger flowers, white intermixed with a primrose-yellow.

26. *Millettia nitida*, Benth. in Lond. Journ. Bot. vol. i. p. 484.

A trailing shrub, with purple flowers, very common in Hong-Kong, from the level of the sea to the summit of Victoria Peak.

27. *Millettia Championi*, Benth., sp. n.; scandens, praeter inflorescentiam puberulam glabra, foliolis 5-7 ovatis oblongisve obtuse acuminatis reticulato-venosis, panícula brevi densiflora, pedicellis calycem glabriusculum subaequantibus, vexillo ecalloso ovarioque glabris.—*Frutex* scandens, laetevirens. *Stipulae* stipellaeque setosae. *Foliola* 1-2-pollicaria v. interdum longiora, tenuiter chartacea, utrinque viridia et lucidula. *Racemi* in axillis summis simplices et ad apices ramorum in paniculam brevem dispositi, 1-2-pollicares, fere a basi florentes. *Bractea* minutae, deciduae, bracteolae parvae, ovatae, diutius persistentes. *Pedicelli* 1 lin. longi. *Calyx* late campanulatus, dentibus brevissimis latis obtusis. *Corolla* 5 lin. longa, alba, vexillo

basi macula viridi notato. *Alee* oblongre, obtusae, leviter falcatae. *Carina* petala paulo latiora. *Stamen* vexillare a basi liber urn. *Discus* brevissimus.

Trailing over rocks on Mount Gough. and in the Happy Valley woods, but rare. It flowers in autumn; the fruit has not been seen. In many respects it is allied to the *M. reticulata*, Benth., from China, but that species has the leaves never acuminate, the inflorescence much more developed, the flowers considerably larger and apparently purple, besides other minor differences.

28. *^uXhtxgvdLpolyphylla*, Benth. in PI. Jungh.; senndens, foliolis 25-50 parvis lineari-oblongis glabris v. parea pilosulis, cymis axillaribus terminalibus usque brevibus subsessilibus pubescentibus, calycis ovati lentibus tubo pluries brevioribus, petalis longe unguiculatis, staminibus 10 mouadelphis, ovario glabro.

On the summit of Mount Gough. The specimens are in young fruit only, but agree perfectly well with the flowering specimens gathered by Mr. Cuming in the Philippine Islands. The species is nearly allied to the common Eastern *D. tarnarindifolia*, but the leaflets are much smaller (4-5 or rarely near 6 lines long), less unequal at the base, and smooth or nearly so; and I have always found 10 instead of 9 stamens, but the presence or absence of the vexillary stamen in the monadelphous *Dalbergyce* may not be always constant in the same species.

29. *Bowringia callicarpa*, Champ., gen. nov. *Sqpkorearum*, affine *Baphia*.

Gen. Char. BOWRINGIA*. *Calyx* membranaceus, laxe cyathiformi-campanulatus, ore truncato minute 5-dentato. *Vexillum* orbiculatum. *Ala* vexillo subyequilongae, falcato-oblongae. *Carinm* petala alis subsimilia nisi majora, dorso vix connata. *Stamina* 10, liberav. ima basi hinc hide connata, omnia fertilia, antheris oblongis. *Legumen* stipitatum, inflation, ovoideum v. subglobosum, acuminatum, scariosum. *Semina* pauca, oblonga v. globosa, strophiolata. *Cotyledonea* crassae.* *Radicula* brevissima, recta.—Species imica *B. callicarpa*.—*Frutex* scandens, glaberrimus, habitu *BapJiue* v. *Leucomphalo*

* Named by Major Champion in honour of his friend John O. Bowring, Esq., who has been for some time investigating the flora of Hong-Kong with much zeal, and has formed large collections there, and to whom are due many of the stations given in the present Florida.

similis. *Stipula minutae*. *Folia* unifoliolata, exstipellata. *Petiolus* i - 1 poll, longus. *Foliolum* ovatum v. ovali-oblongum, acuminatum, basi rotundatum, 2-3 poll, longum, 1-1½ poll, latum, rigide chartaceum, utrinque viride, penninerve et reticulato-venosum. *Racemi* axillares v. subterminales, 2-5-flori, folio multo breviores. *Pedunculus* communis 2-6 lin., pedicelli 3 lin. longi. *Bractete* minuta?, caducissimae; bracteolae sub calyce parvae, diutius persistentes. *Calyx* ½ lin. longus, laxus, per anthesin saepe reflexus. *Petala* alba, brevissime unguiculata. *Fexillum* et *OUB* 5 *Ym. petala carinalia* 6 lin. longa.

Abundant in ravines of Victoria Peak and elsewhere. The genus is closely allied in habit and character to *Baphia*, *Bracteolaria*, and *Leucomphthdus*, all from tropical Africa, but the calyx is neither divided nor spathaceous, and the fruit (which I have not myself seen) is peculiar. It is described and represented in Major Champion's MS. notes and sketches as above an inch long, inflated, green, scariose, reticulate, and smooth, varying in shape from ovate to globose, narrowed into a stipes at the base and into a point at the apex, with one or two perfect seeds [(the remaining ovules being usually abortive). These seeds (of which I have examined one) are large, scarlet, oblong-globose, with a carunculus at the hilum, the cotyledons thick and fleshy, with a very short almost papilliform straight radicle.

30. *Ormosia?* (*Marquartia* ?) *paciuycarpa*, Champ., sp. n.; foliolis 7 obovali-oblongis breviter et abrupte acuminatis supra glabris viridibus, subtus petiolisque tomentoso-lanatis, calycibus subsessilibus tomentosis, legumine lignoso turgido densissime tomentoso lanato intus non septato.—*Tomentum* petiolorum, foliolorum paginse inferioris et leguminum densum implexum. *Foliola* majora semipedalia. *Legumen* monospermum pollicare, v. dispersumbipollicare, fete pollicem latum, sessile, obtusum, crassissime coriaceo-lignosum, ex ovario circa 6-ovulato accretum. *Semen* ei *Tamarindi Indici* paulo majus, irregulariter rhomboideo-quadratum v. orbiculare, crassum, testa nitida rubro-fusca. *Cotyledone** crassi, basi profunde et inaequaliter cordati, radícula brevissima recta.

A tree not uncommon in the Happy Valley woods and elsewhere, but never found in flower, and only once (January, 1850) in fruit. I have been much in doubt as to its affinities without having seen the flowers, but the remains of stamens at the base of one of the pods show them to have been free, and [have now little hesitation in referring it to *Ormosia*,

a genus represented by several species in East India. It is probable that the *Marquartia* of Vogel, a Chinese plant, evidently very near to the present species, is likewise an *Ormosia*. It is true that the stamens are described and figured as diadelphous, but Vogel could only examine a single young bud already much injured, and the connection of the stamens as figured is very short and no more than often occurs in *Sophorece* in the very young state. Another species, allied to these two, but scarcely identical with either, is figured in the Chinese drawings in the possession of the Horticultural Society, and is represented in Dr. Lindley's herbarium by a specimen in fruit.

31. *Ormosia* (*Layia*) *emarginata*, Benth.—*Layia emarginata*, Hook, et Arn. Bot. Beech, p. 183. t. 38.

A neat erect shrub, very common in the Happy Valley woods and elsewhere. I can find no character to distinguish *Layia* from *Ormosia*, but the transverse septa in the pod, which exist also in some of the American species.

32. *Guilandina Bonduc*, L.

Frequently observed growing wild in Hong-Kong, but no specimens were collected.

33. *Caesalpinia Cjdenm*, Eoxb. Fl. Ind. vol. ii. p. 361.

Common in ravines, especially towards West Point, flowering in autumn.

34. *Caesalpinia vernalis*, Champ., sp. n.; scandens, petiolo communi partialibusque aculeatis, pinnis circa 12-jugis, foliolis 4-6-jugis ovatis acutis coriaceis glabris supra nitidis subtus pallidis, panicula terminali rufo-tomentosa, pedicellis calyci subsequilongis.

On the banks of a stream running towards Little Hong-Kong, flowering in spring. Of this I have only seen a single leaf and panicle. It is evidently allied to *G. Nuga*, but at once distinguished by the reddish down clothing the inflorescence, pedicels, and even the calyx, the shorter pedicels and larger calyces, and much smaller and more pointed leaflets. The leaf in my* specimen is above a foot long, the pinns 2-2½ inches, the leaflets 8-10 lines long.

35. *Cassia* (*Chamaecrista*) *angustissima*, Lam.—*C. mimosoides*, Linn, var. *ft* Vog. Syn. Cass. p. 69.

Victoria Peak and other localities.

36. *Phanera corymbosa*, Benth. PL Jungh.—*Bauhinia corymbosa*, Roxb.—DC. Leg. Mem. t. 70.

About East Point, covering the banks in April with its fragrant white flowers, and exceedingly attractive to *Coleoptera*. A similar species with smaller leaves and flowers, in Mr. Cay's garden, was said to grow upon 'Victoria Peak, but there are no specimens in the collection. This may probably have been the *Ph. glauca*, not uncommon in the Moluccas.

37. *Phanera Championi*, Benth. sp. n.; scandens, folio basi late cordato 5-7-nervio, foliolis ad 4 connatis semiovatis obtusis supra glabris nitidis subtus ramulisque novellis tomentellis mox glabratis, racemis elongatis subsimplicibus multifloris, calycis tubo brevissimo laciniis herbaceis lanceolatis acutis, petalis parvis unguiculatis pilosulis, ovario tomentoso.—*Frutex* alte scandens, prater canescentiam inflorescentiae et partium juniorum glaber. *Cirrhi* simplices, circinati, oppositifolii, solitarii v. gemini. *Stipuke* minutae. *Petioli* i-1-pollicares. *Folia* 2℥-4 poll, longa, 2-2i poll. lata. *Racemi* oppositifolii, simplices v. ad apices ramorum subramosi, 4-8-pollicares, fere a basi florihundi. *Bracteae* minutae, setaceae. *Pedicelli* 6-8 lin. longi, versus medium bracteolis 2 minutis alternis instructi. *Calyx* viridis, tubo linea brevior turbinato, laciniis 2 lin. longis. *Petala* vix longiora, tenuia, alba. *Stamina* 3 duplo longiora, sterilium rudimenta inconspicua. *Discus* carnosus, calycis tubum omnino implens, vix tamen exsertus. *Ovarium* brevissime stipitatum, oblongum, bisulcatum, tomentosum, in stylumbrevem attenuatum. *Ovula* 6-8. *Legumen* compressum, glabrum, inter semina contractum, circa 3 poll, longum, 1 poll, latum, 3-5-spermum.

Common in ravines of Victoria Peak, at East Point, etc.

This very remarkable species approaches in some respects in habit the *Lasiobema anguina* (*Bauhinia anguina*, Boxb.), and I had at first thought it might be referable to that genus, if circumscribed as Korthals originally proposed, but a careful examination shows that, like the *B. retusa*, Boxb., it belongs to the largest of the Asiatic Bauhinoid genera, *Phanera*, as characterized in the 'Plantae Junghuhnianae.' In *Ph. Cliampioni*, as in *PL retusa*, the tube of the calyx is evident, though very short and entirely filled by the fleshy disc, whilst in *Lasiobema anguina* the calyx is open and the disc is exserted, pulviniform, and though unilateral, rather hypogynous than perigynous.

The plant gathered by Mr. Hinds in Hong-Kong, and referred by me formerly to *Bauhinia scandens*, Linn, (a very doubtful species), is

not in flower, but is probably a *Pkanera*, different from either of the two above enumerated.

38. *Gleditschia Slnensis*, Lam. ?

Victoria Peak, rare in Hong-Kong, more abundant on the China coast. Of this I have only seen fragments, and am not certain as to the species. Major Champion never saw it in flower.

39. *Acacia concinna*, DC. ?

Happy Valley. A flowering specimen precisely similar to the common form of *A. concinna*; with it, however, are loose pods (perhaps from a different tree) of either an *Albizzia*, or some very different species of *Acacia*.

40. *Albizzia Milletti*, Benth. in Hook. Journ. Bot. vol. iii. p. 89.

Happy Valley.

41. *Albizzia P Championi*, Benth., sp. n.; ramulis petiolisque minute puberulis, pinnis 1-2-jugis, foliolis ultimarum 4-5-jugis oblique ovatis obtuse acuminatis glabris supra nitidis, glandula parva in medio petiolo jugalibusque paucis, paniculis racemiformibus pedunculisque solitariis tomentellis, floribus sessilibus in capitulo pluribus, calyce dimidio corolla; brevior, ovario glabro.—*Arbor* elata. *Petioli* communes 2-3-pollicares. *Pinna* terminales 4-6-pollicares, inferiores breves v. nullae. *Glandula* (prseter pctiolarem) adsunt etiam sub pinnis et hinc inde sub foliolis. *Follola* terminalia opposita bipollicaria, inferiora ssepe alterna et minora, omnia in acumen breve obtusum plus minus producta, basi inaequaliter angustata et petiolulata, venosa, supra nitidissima, subtus pallidiora. *Panicula* racemiformes, folio subbreiores. *Pedunculi* 3-6 lin. longi, inferiores distantes, superiores conferti. *Capitula* globosa, minute sericeo-puberula. *Braetia* angustae, calyce breviores. *Calyx* lineam longus, breviter 5-dentatus. *Corolla* 2 lin. v. paulo longior, subinfundibularis. *Stamina* duplo longiora, tubo incluso. *Ovarium* brevissime stipitatum.

A large tree; woods, Hong-Kong. The fruit is not known, therefore its place in *Albizzia* is not absolutely certain; but the inflorescence is nearer that of the large-leaved *Albizzia*, than of the corresponding groupe of *Pit.Jtecolobium*.

Besides the above, Major Champion has observed *Crotalaria retusa* and *Abrus precatorius* growing wild in Hong-Kong, but neglected to gather specimens. The *Arachis hypogaea* and one or two *Cassia* are also cultivated there.

ROSACES.

1. *Eriobotrya* *ra0T0*w*, Champ., sp. n.; foliis longe petiolatis oblongo-ellipticis obtusis vix dentatis glabris nitidis, thyrsis laxis ferrugineo-tomentosis.—*Frutex*, ramulis glabris v. apice leviter tomentellis. *Folia* laurina, 4-6-pollicaria, ssepe integerrima, angustata, petiolo ultrapollicari, venis lateralibus multo minus conspicuis et paucioribus quam in *E. Japonica* et in *E. elliptica*. Thyrsi in corymbum terminalem sessilem foliis brevioris dispositi, tomento multo brevioris quam in *E. Japonica*. *Flores* nunc pedicello 2-3-linearis fulti, nunc ad apicem ramuli 2-4-linearis gemini v. terni subsessiles, iis *E. Japonica* paulo minores, fragrantissimi. *Calyx* ferrugineo-tomentosus, basi turbinatus, limbo explanato, lobis brevibus rotundatis. *Petala* late ovata, glabra. *Stamina* 30-40. *Styli* 5, villosi, basi subcoaliti. *Ovarium* 5-loculare, ovulis in quoque loculo geminis adscendentibus. *Fructus* £ poll, diametro.

Very scarce, in a ravine on Mount Victoria. The very fragrant flowers are the abode of a remarkable new genus of *Longiconies*, at first sight resembling an ant, and approaching to the curious Mexican *Ephopjorus spinicornk*. The *Eriobotrya Japonica* is commonly cultivated in Hong-Kong, but not indigenous.

2. *¥iotm\&prunifolia*, Lindl. Bot. Reg, 1.1956.

Common in the Happy Valley woods; flowers in April.

3. *Raphiolepis rubra*, Lindl. Collect, t. 3.—*R.p.Jiaostemon*, Lindl. I.e.?

A common shrub, all over the island, flowering in winter, varying in size and number of the flowers. Young plants on bare hills and flowering early, usually produce a very scanty inflorescence; about March the spring fogs bring them forward in great luxuriance. There does not appear to be any good specific difference to distinguish the *R. phaostemon*; at any rate, but one species has been observed in Hong-Kong.

4. *Rosa multiflora* Thunb.—DC. Prod. vol. ii. p. 598.

Observed by Major Champion only on the opposite China coast, but Mr. Hinds gathered it wild in the island itself.

5. *Rubus reflexus*, DC. Prodr. vol. ii. p. 566.

6. *Rubus parvifolius*, Linn.

7. *Rubus gUberrimm*, Champ., sp. n.; fruticosus, sarmentosus, aculeatus, glaberrimus, foliis trisectis v. summis integris, segmentis

ovatis acuminatis serratis, lateralibus brevissime petiolulatis, pedunculis folio brevioribus 1-3-floris, sepalis ovatis imbricatis laevibus fructum vestientibus, petalis oblongis.—*Foliorum* segmenta 2-3-pollicaria, lateralia a terminali distantia. *Pedunculi* axillares v. terminales, £-1 poll, longi, nunc simplices uniflori, nunc versus medium in pedicellos 2-3 uniflores divisi. *Sepala* 4-5 lin. longa, breviter acuminata. *Fructus* 4 lin. diametro, calyce obtectus. *Carpella* numerosa, drupacea, semi-ovoidea, stylo filiformi subpersistente terminata.

The above three *Rubi* are all found in ravines of the hills, and are all in flower about June or often much earlier.

RHIZOPHOREA:.

1. *Kandelia Rheedii*, Wight et Arn.—Arn. in Ann. Nat. Hist. vol. i. p. 365.

In an estuary at Little Hong-Kong.

2. *Carallia Sinensis*, Arn. in Nov. Act. Nat. Cur. vol. xviii. p. 335.

Very rare, in a ravine on Mount Victoria; found in flower on December 26th, 1849.

ONAGRARIEE.

1. *Jussisea villosa*, Lam.—Wight et Arn. Prod. vol. i. p. 336.—*J. fruticosa*, DC. Prod. vol. iii. p. 57.

2. *Ludwigia parviflora*, Roxb.—Wight et Arn. Prod. vol. i. p. 336.

There being but little pasturage in Hong-Kong, these two common Indian species are rather scarce in the island.

3. *Goniocarpus scaber*, Koen.—DC. Prod. vol. iii. p. 66.

Common on grassy slopes, Victoria Peak, etc.

LYTHRARIEE.

1. *Ameletia subspicata*, Benth. in Lond. Journ. Bot. vol. i. p. 484.

Common in ditches, flowering about February.

2. *Lagerstroemia Indica*, Linn., var. *pallida*.

Wild in the woods near the Buddhist Temple. Shrubby, with the flowers much paler in colour than in the ordinary cultivated variety, which is also to be met with in gardens in Hong-Kong.

{To be continued.}

Abstract of a Journal kept during the voyage of H.M.S. Herald;
 by BERTHOLD SEEMANN.

{Continued from p. 26.)

December, 1850.—We had hardly taken up our position in Singapore roads when the ship was surrounded by a number of shore-boats loaded with crockery, clothing, parrots, monkeys, different articles of Gutta Taban, and a variety of eatables. Among the latter were 'Bananas, Mangoes, Pine-apples, Limes, Jacks, Oranges, Pompelmoose, etc., but on the whole, no great diversity of plants; nor indeed, have I ever visited a place which in this respect could equal either Panama or Guayaquil, where the fruits of both the Old and the New World seem to be collected.

One of the finest productions of Singapore, the Mangosteen, was nearly out of season, and could only be procured in small quantities; but neither these samples, nor those afterwards obtained off Sumatra, came up to the high expectation which I had formed as to their taste. I am glad, however, to have met with the fruit. It enables me to compare it with its two rivals, and I may now say that I have tasted "the three finest fruits in the world," in those localities in which they are supposed to attain their highest perfection: the Pine-apple in Guayaquil, the Chirimoya on the slopes of the Andes, and the Mangosteen in the Indian Archipelago. Perplexing as always must be the office of a Paris, when on either side such high claims are advanced, yet, I think, in this case we may, without offence to the advocates of the other, assign «the apple" to the Chirimoya. Its taste surpasses that of all other fruits, and Hamke was quite right when calling it a masterpiece of nature.

Singapore makes a favourable impression on the voyager. A mass of stately buildings, half-concealed by groves of Bamboos, Fig-trees, Pucurus, Catechu and Cocoa-nut Palms, encircled a bay, over which the busy operations of shipping diffuse animation and life. On a hill, the slopes of which are clothed with numerous Nutmeg-trees, and a turf of brilliant green, stands the Government-house, while the background, as if to make up for the want of elevated mountains to complete the picture, is generally hid from view by the dense vapour, fog, or rain, hanging over the almost impenetrable jungle with which the greater portion of the island is still covered. The aspect of the whole, how-

ever, is destitute of that grandeur by which Hong-Kong is «o eminently distinguished; but Singapore, from its geographical position, its salubrious, though hot climate, the great capacities of its soil, and the incalculable advantage arising from its being a free port, is of far greater importance than Hong-Kong ever has been 'or ever will be. While the latter is merely a place carrying on a limited trade with a certain portion of the Chinese empire, the former concentrates all the rich commerce of the Indian Archipelago, and will continue increasing in proportion as the resources of these regions are developed.

I have said that the greater portion of Singapore is still covered with jungle, but this does not seem destined to remain long. Every year immigrants arrive from almost e'very part of Asia,—China, Bengal, Cochin China, Siain, etc. The forests, which so long remained undisturbed, are fast disappearing, substantial roads intersect the colony in different directions, and extensive plantations are everywhere springing up. The cultivation of the Nutmeg has lately been prosecuted here with great zeal. When the settlement was established, much prejudice existed with respect to it. A general belief then prevailed, that, with so great an investment of capital which such plantations require, and without protecting laws, much risk was incurred. Now, however, the fallacy of these views has been demonstrated. Several far-sighted individuals, who early commenced the cultivation of the spice, are now reaping a golden harvest from their enterprise. Others have been induced to follow their example; for it has been found that the Singapore planters, with free labour, and without protecting laws, are enabled to produce their nuts and mace at a cheaper rate than the Dutch, with all their antiquated institutions. Another decisive proof, if any indeed was wanting, that industry only desires to be free and unfettered, in order to be productive of the best results.

The perseverance, care, and foresight which are required in order to cultivate the Nutmeg successfully, are truly astonishing. The preparation of the soil, manuring, shading of the young plants, etc., are very laborious operations; and how often do they meet with disappointment! After years of attention and the expenditure of great sums, the trees begin to blossom, when, alas! not unfrequently more than one-half turn out to be either male or monoecious plants, only to be felled by the axe. This circumstance is of great importance; in order to remedy the evil various experiments have been made to propagate the

female plants by grafting or by layers; and, although these processes have been successful, it remains yet to be ascertained whether trees multiplied in this way are as productive as those raised from seeds*.

Besides the Nutmeg, extensive plantations of the Cassava (*Manihot utilissima*, Pohl) have been established; and it is stated that they pay exceedingly well. The farinaceous substance, prepared from the plant, is exported partly raw, partly in the form of pearl sago; and so well has the latter preparation been imitated, that it has actually been mistaken for real sago. The *Manihot* is naturalized—not indigenous, as some think—in many parts of Singapore. The white residents call it *Tapioca*; the Malays, *TJbi caju*. The Mexican appellation is *Quauhcamote*; the West-Indian, *Cassava*, *Cazabi*, and *Mandioc*; and the New-Granadian, Ecuadorian, and Peruvian, *Yuca*. It is a curious coincidence, that both the Mexican and Malayan names of this shrub signify precisely the same, viz., "woody tuber," as its roots, or properly speaking, its tubers, when remaining too long in the ground, become as hard as wood, and unfit for usef.

The Cocoa-nut Palm is another production cultivated to a considerable extent, principally for the sake of its oil and fibre. The Toddy, which the natives extract from the leaves, is here of no commercial importance. It has a sweet and pleasant taste, but is much inferior in flavour to the Palm wine which the inhabitants of tropical America know so well how to prepare, and which, if good, is equal, if not superior, to the best champagne. Unfortunately, in order to extract the latter, the mere tapping of the leaves, as with the Toddy, is not sufficient; the whole Palm has to be felled, which, even in

* See an excellent account of the Nutmeg and its cultivation by Dr. T. Oxley, in the 'Journal of the Indian Archipelago/ vol. ii. p. 641-661.

f It seems to be little known that it is from this plant, and through the following mistake, that Yucatan derives its name. *Yuca*, in the language of that country, is the term applied to *Manihot utilissima*; *Tal*, that to the field on which the shrub grows. "When, in 1517, the plant was shown to the prisoners brought to Cuba by Hernandez de Cordoba and his followers, they immediately recognized it, exclaiming " *Tuca-tal*," which was supposed to signify their country; and this expression having been corrupted into Yucatan, have ever since been applied to that part of America still bearing the name. See Bernal Diaz del Castillo's 'True History of the Conquest of Mexico/ for further particulars. The edition of that work, consulted by me, contains several typographical errors. *Yuca* is written both *Yuca* and *Yucu*; *Tal*, *tale* as well as *tal*: which is the most correct, I am unable to say. *Tal* is probably the same as the Aztec *tlan* or *tlalli*, which signifies country, territory, soil, earth; and appears in the composition of several Mexican names, for instance, Mazatlan, Meztlan, etc.

places where those plants- are common, is done, I thought, with some reluctance. For who likes, merely for the sake of a few gallons of wine, to cut down trees which may be turned to such manifold uses?

The *Areca Catechu* has not yet received the attention of capitalists, and consequently no plantations of any extent are to be met with. The Malays in Singapore chew its nut, together with Gambir, Tobacco, lime, and the leaves of the Siri (*Piper Siriboa*, Linn.); while the Chinese practise the same filthy habit, with the only difference, that they use the foliage of the Black Pepper (*Piper nigrum*, Linn.) instead of that of the Siri. This statement, however, applies only to the colonists in the island: in the southern parts of China the people avail themselves of the leaves of *Piper Belle*, Linn. Though the quantity of tannin contained in the Betel-nut must exercise an injurious influence, yet it is a mistake to suppose that the mere chewing of it gives to the mouth an offensive appearance; unless the other ingredients are added, the saliva hardly changes its natural colour.

Black Pepper (*Piper nigrum*, Linn.) and Gambir (*Uncaria Gambir*, Roxb.) are grown in great quantities, and exclusively by the Chinese, for both these articles are so exceedingly cheap that Europeans have not deemed it worth their while to engage in the speculation. Pepper and Gambir plantations are always combined, because the refuse of the Gambir-leaves serve as an excellent manure for the Pepper; and moreover, what is of equal, if not of still greater, importance, kills the Lalang (*Andropogon caricosus*, Linn.), a plant which, like the couch-grass (*Triticum repens*, Linn.), spreads with astonishing rapidity over the fields, growing so close together and so high, that within a short space of time valuable plantations are rendered useless, and many have to be given up from the utter impossibility of freeing the ground from this weed.

The process by which Gambir is extracted and prepared is simple. The leaves are boiled in water until all their astringent property is extracted. The decoction is then poured into another vessel, in which it becomes inspissated, and, when nearly dry, is cut in small square pieces, and thus brought into the market. M'Culloch states that sago is used in thickening it. This, however, at least in Singapore, is not the case; but, instead of sago, a piece of wood is dipped into the vessel, by which the desired effect is produced. It must, indeed, be an extra-

ordinary substance, the mere dipping of which into the fluid can cause it to become a thickened mass. I was very eager to obtain a piece of this wood; unluckily, the Chinaman, whose laboratory I visited, could not be persuaded to part with his, and a friend of mine, who was exerting himself to procure a sample, had not succeeded at the time of the Herald's departure: he promised, however, to send it to England, accompanied by the Malayan name, and specimens of the tree.

The Arrow-root is different from that of the Sandwich Islands, being made from the tubers of *Maranta arundinacea*, Linn. The cultivation of the plant commenced only a few years ago, and is at present not very extensive, but is said to be annually increasing. Cloves, Cinnamon, Cocoa, Siri, and Rice, being as yet only grown in small quantities, do not constitute articles of export; indeed, it is stated that all the Rice produced in the island is hardly sufficient to feed its population for a single week. Sago is not an indigenous production; it is brought from Cochin China, Borneo, Java, Sumatra, Malacca, Penang, and Celebes, and is only prepared in Singapore by the Chinese to be afterwards exported to other countries. The cultivation of the Sugar-cane, and the manufacturing of the different extracts from it, have hitherto, in a pecuniary point of view, proved abortive, and several large estates have had to be given up in consequence. It is difficult to account for this failure, as climate, soil, the low price of labour, and the facilities for shipping the produce, would argue in favour of success. Similar disappointments have been experienced in rearing Cotton and Coffee, though in this case there were several physical obstacles that proved insurmountable.

Indigenous productions of any great commercial value, Singapore has none. Eattan is common. From an Acanthaceous plant the Chinese extract, merely for their own immediate use, a blue dye, which is probably the same as that called "*Room*" in the 'Vegetable Kingdom.' Dr. Lindley states that it is obtained from a *Ruellia*, but as he does not particularize the species producing it, and none of the specimens collected by me were in flower, I had no means of arriving at the solution of the question.

The Taban (*Isonandra Gutta*, Hook.), which was formerly so plentiful, has long since been extinct. A few isolated trees may here and there occur, but they are very scarce, and I have not been able to obtain even the sight of one. Several of the white residents keep in their

dens, as a curiosity, a plant or two, but they grow very slowly. It must ever be an object of regret, that on the first introduction of the Taban Gum its proper name was not promulgated. Now everybody in Europe and America speaks of Gutta Percha, when, in fact, all the time they mean the Gutta Taban. The substance termed by the Malays "Gutta Percha" is not the produce of the *Isonandra Gutta*, Hook., but that of a botanically unknown tree, a species of *Ficus*, I am told. The confusion of these two names has become a popular error—an error which science will have to rectify.

The exportation of the indigenous Gutta Taban from Singapore commenced in 1844, but as early as the end of 1847 all, or at least most, of the trees had been exterminated. That at present shipped from the place is brought in coasting vessels from the different ports of Borneo, Sumatra, the Malayan peninsula, and Jahore Archipelago*. The difference existing in its appearance and property is owing to the intermixture of Gutta Percha, Jelotong, Gegrek, Litchu, and other inferior Guttas, made by the natives in order to increase the weight. Though far from being extinct in the Indian Archipelago, Gutta Taban will every year be more difficult to obtain, as the coast region is said to be pretty well cleared, and a long transport from the interior must, by augmenting the labour, increase the value of the article.

A few months after the publication of your first account of the plant, in January, 1847, an article on the same subject appeared in the 'Journal of the Indian Archipelago/ by one of its most able contributors, Dr. T. Oxley. As that article contains many statements not contained in yours, and as it may possibly have escaped your notice, I shall make a few extracts from it.

* "The total export of Gutta Taban from Singapore has been:—

In 1844.	picul.
In 1845.	169
In 1846.	5,364 »
In 1847.	9,296 »
In 1848 to the 1st of July.	6,768 »

Total. 21,598 piculs, valued at 274,190 Spanish dollars. About 270,000 trees have probably been felled during the three and a half years that the trade has existed, and the value of each tree has thus on an average been about a dollar."—*J. R. Logan*, 'On the Range of the Gutta Taban Collectors, and present Amount of Import into Singapore.'—Mr. Logan has promised an article on the various substances intermixed with the Taban, a subject of the highest interest; but he has hitherto disappointed his readers.

"The GuttaTaban tree belongs to the Natural Order *Sapotacea*, but differs so much from all described genera that I am inclined to consider it a new one. I shall, therefore, endeavour to give its general character, leaving the honour of naming it to a more competent botanist, especially as, from want of complete specimens, I have not quite satisfied myself regarding the stamens and fruit.

"The tree is from sixty to seventy feet high, from two to three feet in diameter. In its general aspect it resembles the Durian (*Durio Zibethinus*, Linn.), so much so as to strike the most superficial observer. The leaves are alternate, obovate-lanceolate, entire, coriaceous, their upper surface is of a pale green, and their under surface covered with a close, short, reddish-brown hair. The flowers are axillary, from one to three in the axils, supported on short curved pedicels, and numerous along the extremities of the branches. The calyx is inferior, persistent, coriaceous, divided into six sepals, which are arranged in double series. The corolla is monopetalous, hypogynous, and divided, like the calyx, into six acuminate segments. The stamens, inserted into the throat of the corolla, are in a single series, and variable in number, but to the best of my observation, their normal number is twelve; they are most generally all fertile. The anthers are supported on slender bent filaments, and open by two lateral pores. The ovary is superior, terminated by a long single style, and six-celled; the cells are monospermous. The fruit is unknown to me.

"Only a short time ago the Taban-tree was tolerably abundant on the island of Singapore, but already (middle of 1847) all the large timber has been felled. Its geographical range, however, appears to be considerable, it being found all up the Malayan peninsula, as far as Penang, where I have ascertained it to be plentiful. Its favourite localities are the alluvial tracts on the foot of hills, where it forms the principal portion of the jungle.

"The quantity of solid Gutta obtained from each tree, varies from five to twenty catties, so that, taking the average of ten catties, which is a tolerably liberal one, it will require the destruction of ten trees to produce one picul. Now, the quantity exported from Singapore to Europe, from the first of January, 1845, to the middle of 1847, amounted to 6918 piculs, to obtain which 69,180 trees must have been sacrificed! How much better would it be to adopt the method of tapping

the tree practised by the Burmese in obtaining the caoutchouc, than to continue the present process of extermination*."

A mercantile house in Singapore lately received from Manilla a gum which was supposed, by those who sent it, to be Gutta Taban, but proved a different substance. It was accompanied by specimens of the tree producing it, and a note stating that the gum abounded in the Philippine Islands. As it will probably make its appearance in England, and perhaps become of some importance, I may add that those specimens presented to me by the merchant belong to the genus *Ficus*; but whether to a new or an already described species, want of books prevented me from determining.

Our short stay did not enable me to become so intimate with the flora, as to attempt a generalization; I can only offer some isolated remarks. *Rubus reflexus*, *Myrtus tomentosa*, and *Pandanus fœtidus* are here as common as in the southern parts of China. Ferns, *Melastomacea*, and *Orchidea* of course abound in so damp a locality. The genus *Clerodendron* is represented by several species, the most common of which is *C. viscosum*; another, which I collected on the slopes of a hill, has a purple calyx, a yellow corolla, and a black drupe, and is allied to, if not identical with, *C. lavifolium*, Blume. *Cassia alata*, *Solatum nigrum*, *Asclepias cnrassavica*, and *Curcas purgans* are, as in most tropical countries, to be met with. *Jasminum Lesser tianum*, Alph. DC, an inhabitant of the jungle, is an elegant shrub, bearing pure white, though inodorous flowers. *Dilivaria ilicifolia*, with pale flesh-coloured corollas, grows in company with *Acrostichum aureum* in swamps and on the muddy bank of rivulets. The genera *Vitex*, *Psychotria*, *Emilia*, *Mussaenda*, *Calamus*, *Morinda*, *Andropogon*, *Ficus*, *Croton*, etc., have one or more representatives. The Fucuru (*Casuarina equisetifolia*, Linn.) is a noble tree, resembling our Fir. It is cultivated in avenues and around dwellings, where it displays its beauties to the greatest advantage; combining the regular growth and pyramidical shape of *Conifera*, with an entire absence of the stiff and uncouth appearance for which so many of that tribe are noted.

The Fauna of the island seems to be very varied. Of quadrupeds, a deer, a tiger, and a pig (*Su* babyrussa*, Buff.), may be enumerated. The depredations of the tigers are so frequent, that hardly a week passes without two or three persons being carried off. The daring of these

* T. Oxley, in the 'Journal of the Indian Archipelago/ vol. i. p. 22-30.

beasts is indeed great. In one of my excursions I came to a Gambir plantation, which, being situated rather far in the jungle, is very often subject to their visits. Only the night previous to my arrival, a large tiger had come close to a hut in which ten of the Chinese labourers were lodged, commencing there a most terrible howling. The people tried, by hissing, clapping their hands, and beating of metallic vessels, to frighten it away. But the animal, nevertheless, continued its howling, and already prepared for an attack on the slight cane-hut, when the ten, now almost driven to despair, gave such a yell that made the woods resound, and the tiger abandoned the prey.

Some contend that tigers show a predilection for coloured men, as, ever since the establishment of the colony, no European has been killed; but I think we may ascribe it to the circumstance that white men do not expose themselves so much as the coloured races, nor enter the forest without being armed and in parties together. It is also stated, that the tigers recruit their declining numbers by swimming across the narrow strait which separates Singapore from the mainland of Asia. This, however, is disputed by others, who maintain that all the tigers are bred in the island; be this as it may, it is certain that they are very numerous, and that the Government, in order to lessen the accidents resulting from their depredations, has been compelled to offer a reward of fifty Spanish dollars for every tiger killed. The hunters are, therefore, well paid for their trouble. Besides the prize, they obtain eight or ten dollars for the skin of the animal, and realize about an equal sum from the flesh, which is eagerly bought by the Chinese, who eat it with the hope that it will make them strong.

Elephants are not now indigenous; only a few domesticated ones are kept in the plantations for working; on the adjacent mainland, however, both elephants and tapirs (*Tapirus Indicus*) abound. One of the latter—in comparison with which the American species, the *Macho de monte*, or *Gran bedia*, of the Panamians, is a mere dwarf—was, during our visit, offered for the sum of 150 Spanish dollars. It certainly would have been an excellent specimen for any zoological collection.

The feathered tribe is numerous and brilliant; and fish, I think, exist almost in as great a variety as in China. Of snakes, mosquitoes, centipedes, scorpions, and similar tormentors of mankind, Singapore has its due share. The scorpions are larger than I have ever seen elsewhere. One I caught in the jungle was nearly seven inches

in length, and of a dark brown, almost black, colour. I find that the Malays know, as well as the Mexicans, that the best remedy for scorpion-bites is the scorpion itself, though they differ somewhat in its application. The Mexicans plunge the animal in spirits, and then apply the infusion to the wound, while the Malays make a direct use of its pounded body.

My excursions extended in different directions; but as no mountains exist, there is not much choice. One day I intended to explore a small river which runs through an estate belonging to Mr. Montgomerie, whose father, the well-known Dr. W. Montgomerie, rendered such eminent services to science by the first introduction of the Gutta Taban. This river had been ascended by both Mcyen and Mrs. Ida Pfeiffer, who expressed themselves very much pleased with the locality; but as no rain had fallen for several days, the shallowness of the water prevented me from following their traces. Mrs. Pfeiffer is a German lady, who has excited great interest in those parts which she visited; and, indeed, a lady who, unaccompanied by any male protector, makes a voyage round the world merely for the sake of enriching natural history, must ever be an object of admiration. Mrs. Pfeiffer's expenses are chiefly defrayed, I understand, by a wealthy bookseller in Vienna, who thus encourages her in these pursuits with the view of publishing the result*.

While staying at Singapore I experienced great kindness from several of the residents, especially the house of Rautenberg and Schmidt. The attention which I received at almost every place, even the most remote, I am far from ascribing to any personal merit or advantage, but rather to the daily extending spread of education, and the consequent favour which people are inclined to bestow upon science and even its most humble promoters; and I think that such acts should always be duly acknowledged whenever place and opportunity present themselves.

On the 9th of January, 1851, we continued our voyage, and, passing between the numerous islands of the Indian Archipelago, reached the Straits of Sunda, where a series of calms and light winds detained us a few days. The sight of these Straits is indeed beautiful. On one side Java, on the other Sumatra, both teeming with vegetation, and presenting a variety of tints, a freshness, a luxuriance truly wonderful, rendered still more imposing by the elevated mountains which charmingly

* The narrative of this remarkable voyage has since been published in various languages.

contrast with the primeval forest, and, like light blue clouds, confine the view on the distant horizon.

We approached Sumatra very closely, and cast anchor in the afternoon of the 15th of January. Captain Kellett was kind enough to cause me to be landed; and, although it was rather late when reaching the shore, I nevertheless succeeded in making a small collection. The forests extended close to the water's edge, and the trees were very high and close together. Battan, a spiny *Mimosea*, and numerous other creepers, were climbing from tree to tree, and often obstructed the passage; *Nephrodium Nidus-avis*, and several of the same tribe, grew on the trunks and branches; while *Aroidea*, *Acanthacea*, *Mikes*, *Scitaminea*, *Ixoras*, *Piperacea*, *Chloranthi*, and many other shade-loving plants, covered the soil, or constituted the underwood. On the whole, however, but few were in flower. *Premna cordifolia*, Roxb., stood on the beach in considerable quantities, bearing whitish blossoms and black drupes, and emitting a most disagreeable odour. Its old name, "Folium hircinum," probably derived from this peculiarity, was certainly too misapprehension. Of *Orchidea* not one was to be seen. The most common trees were a *Laurinea*, and the *Qycas circinalis*, Linn. The latter attained a considerable size, being about sixty feet high, three feet in circumference, and diverging towards the top into three, four, and even six branches. *Cycadea*, similarly formed, are very frequent, but I have never seen one, either in America or Asia, which had other than simple branches; a subdivision of them does not seem to take place.

That part of Sumatra at which we landed appeared to be but thinly peopled. We only found a single hut occupied by a few Malays. The inhabitants were employed in cooking some fish, and eating a large jack just taken from a neighbouring tree. A few fowls were running about the place, but the whole looked wretched and uncomfortable, and a single glance at the scene would have cured many a European of his romantic notions of Indians and savage life. Mosquitoes, also, were very numerous, and I was glad to find a path which led some distance in the forest, and took me, in a considerable measure, out of their range.

On the next morning, January 16th, the Herald proceeded on her course, and sighting, on the 28th of the same month, the island of Keeling, she entered, on the 6th of March, Simon's Bay, Cape of Good Hope.

{To be continued.}

NOTICES OF BOOKS.

GRIFFITH, W., ESQ. : PALMS OF BRITISH EAST INDIA ; *in continuation of the "Posthumous papers bequeathed to the Honourable the East India Company, and printed by order of the Government of Bengal"* Calcutta, folio, 1850: arranged by JOHN M'LELLAND, F.L.S., etc.

We have here a further proof of the late Mr. Griffith's untiring zeal in the cause of Botany, and no less of the liberal views of the Bengal Government in aiding the publication of these papers. The work now before us is a rather large folio of nearly 200 pages, accompanied by nearly 150 boldly executed outline plates. There are some elaborate analyses among the figures: but in this family of plants, the author appears to have swerved from his former views of the importance of minute analysis, when he says (p. viii., preface)," Practically I am satisfied that the great end of systematic science, determination or identification, is much more easily attained by bold synthesis, than by minute analysis." The MS., as upon former occasions, seems to be given almost entirely as it proceeded from the pen of the author, except that most of the Latin is translated, and published in the English dress. We lament again to see retained, and printed, some of the hostile and bitter feelings which have so much tended to injure the good fame of Mr. Griffith, and which the editor would have done well, both for his own credit and that of his friend, whom he has in other respects so praise worthily served, to have consigned to oblivion.

After the characters of the Order *Palmacea*, Mr. Griffith has the following suborders:—

- I. CALAMINE/E.—1. *Zalacca*. 2. *Sagus*. 3. *Calamosagus*. 4. *Calamus*. 5. *Plectocomia*. 6. *Eugeissonia*. 7. *Mauritia*.
- II. CORYPHINJE.—1. *Corypha*. 2. *Livistoná*. 3. *Chamaerops*. 4. *Licuala*.
- III. ARECINJE.—5. *Áreca*. 2. *Bentinckia*. 3. *Slackia*. 4. *Caryota*. 5. *Arenga*. 6. *Harina* (including *JTallichia*, previously adopted by Griffith, but not here even *alluded* to*).—A genus *Macrocladus* is

* There is, indeed, at p. 29, a description of "*Calamosagus harinafolius*" and a figure of "*C. Wallichiafolius*," with the remark in a note, "The species has been inadvertently named on the plate '*Wallichiafolius*' under which name it was first described by the author, Cal. Journ. Nat. Hist. Both names occur indiscriminately in the MSS., and of the two we prefer *harinafolius*."—ED.

added, not included in the synoptical tables, and a supplement gives *Coco8 flexuosa* and *Ptychosperma appendiculatum*.

Figures are given of 6 species of *Zalacca*, of which 4 are considered new. *Sagus*, 6 species, all but one of Griffith. *Calamus*, 37 species, nearly all new, according to Griffith's views. *Plectocomia*, 1 of Martius, 3 of Griffith. *Eugeissonia*, 1 of Griff. *Corypha*, 2 of Roxburgh. *Licuala* 6, 4 of Griff. *Livistona* 3, 2 of Griff. *Chanueros*, 1 of Griff. *Phamix* 3. *Jreca*, 9 sp.; 2 of Griff. *Slackia*, 1 of Griff. *Arenga* 3, 2 of Griff. *Caryota* 2, 1 of Griff. *Harina* 3, 2 of Griff. *Macrocladus*, 1 of Griff.

Our readers will be glad to know what have appeared of Mr. Griffith's posthumous works. They are as follows, according to an advertisement printed at Calcutta, at the end of the work we have now been noticing.

1. Private Journals and Travels in India. 1 vol. 8vo. Price Rs. 16.
2. Itinerary Notes (with a map). 1 vol. 8vo. Price Rs. 12.
3. Palms of British India. 1 vol. folio. Price Rs. 50.
4. Icones Plant. Asiaticarum, 4to; and Notulae ad Plantas Asiaticas. Part I. Showing development of organs in Phanerogamous plants. Price Rs. 16, uncoloured, including the corresponding part of the Notulse, amounting to 256 pages, 8vo.
Part II. On the higher Acotyledonous Plants, Notulse and Icones. Price Rs. 20, coloured; uncoloured, Rs. 16. Part II. of the Notulse amounts to 380 pages. 8vo.
Part III. Monocotyledonous Plants. This was announced as to have been published in January 1851. Price Rs. 20, uncoloured.

Messrs. Smith and Elder, and Mr. Pamplin, are announced as the agents in London for this work.

ANTONII BEBTOLONII *Miscellanea Botanica*, VIII-X, Bononiae, 1849-1851.

These three new parts of Professor Bertoloni's 'Miscellanea' have recently reached this country, and contain a continuation of his descriptions and figures of some Alabama plants presented by Dr. Gaves (Gates?) to Prince Canino, and by him handed over, to Professor Bertoloni. The most interesting portion, however, of Parts VIII. and IX. consists of illustrations of two or three of the vegetable productions of the Mozambique. The materials in the Professor's hands were received from the Cavaliere Fornasini, a Bolognese, established for some years

at Inhambane, in the Mozambique, and carrying on a considerable trade with the Caffres of the interior in elephants' teeth and gold dust. From them he obtained, amongst others, specimens of ebony-wood and of *Mafura*, together with flowering and fruit specimens of the trees which produce them, each of which forms the subject of a dissertation in the work before us. After a lengthened inquiry into the various opinions hitherto entertained of the Ebony-tree of the ancients, Professor Bertoloni proceeds to a detailed botanical description of the tree now ascertained to produce it, as a new genus of *Leguminosa*, appropriately named *Fornasinia ebenifera*, after the Cavaliere who procured the specimens. Two coloured plates illustrate the botanical characters, and represent a portion of the wood. The genus, one of those which would formerly have been classed under *Robinia* of Linnaeus, is, as suggested by the Professor, very closely allied to *Sphinctolobium* of Vogel, and *NeuroscapJia* of Tulasne; but a careful study of the figure and description shows that it is still nearer to, and, to our minds, identical with, *Millettia* of Arnott, of which two African species are already published by Hochstetter under the name of *Berebera* and by Meissner under that of *Millettia*.

The vegetable fat known to the natives by the name of *Mafura*, and the oil called by them *Mutiana*, are extracted from the seeds of a tree named by them *Mafuri*, and by the Portuguese settlers *Mafureiro*. From this name Professor Bertoloni has derived that of *Mafureira oleifera*, which he gives to the tree. He describes it as a new genus of *Sapindacea*, allied to *Cupania*. We should rather refer it to *Trichilia*, among *Meliaceae*; nor can we easily distinguish it as a species from the *Elkaja* of Forskahl, or *Trichilia emetica*, Yahl.

Illustrazioni di Pi ANTE MOZAMBIGESI ; dal PROFESSORE GIUSEPPE BERTOLONI. Dissertazione I.

This Memoir, read before the Academy of Sciences of Bologna in 1850, but probably printed in 1851, by the younger Bertoloni, is a continuation of his father's interesting illustrations of the vegetable productions of the Mozambique, transmitted by the Cavaliere Fornasini. The subjects treated of are—1. The root *Guibotana*, supplying the principal ingredient of the poison in which the Caffres steep their arrows and lances. The plant is a *Plumbago*, which the Professor thinks may possibly be the *Plumbago Zeylanica*, *β glaucescens*, of Boissier, but certainly specifically distinct from the Linnsean species; he therefore

describes and figures it under the name *Plumbago toxicaria*. 2. The mucilaginous* fruit *Chirangabua*, much used by the Caffres medicinally, and which is that of the *Pedaliium Murex*. 3. *Erythrina hastcefolia*, Bertol. fil., a new species transmitted by the Cavaliere Fornasini on account of its great beauty; it was also gathered by Forbes at Delagoa Bay, on the same coast. 4. The *Mavi* of the Caffres, the poisonous bark of which is used by them as a test in judicial trials. The Cavaliere was himself present on one of these occasions, when both parties died within an hour after taking the poison. Professor Bertoloni describes it (from a pod and leaf only) as a new genus, under the name of *Mavia judicialis*, but it is probably not distinct from the *Cassa*, or judicial plant of the natives of Congo, alluded to by Brown (App. to Tach. Congo) as a species of *Erythrophleum*. 5. The *Guiguetto* of the Caffres, a vegetable butter, not produced on the Mozambique coast, but imported from the interior, from whence also were received the flowering specimens and fruit sent by the Cavaliere Fornasini. Professor Bertoloni, after a detailed discussion, comes to the conclusion that it is identical with the Shea-tree of Park, and thence gives it the name of *Sheadendron butyromm*. Owing, apparently, to some mistake as to the ovary, which the Professor does not appear to have dissected, he could not refer his plant to any known Natural Order. We should, however, have no hesitation in referring it to *Combretacea*, differing only from *Combretum*, itself in the absence of any wings to the fruit. Brown has shown that the *Micadania*, or Butter-tree of Soudan, which he considers as identical with the Shea-tree of Park, is undoubtedly a Sapotaceous plant, which G. Don has published as *Bassia Parkii*. There must be, therefore, some error either as to the specimens given by the Caffres to Fornasini, being really those of their Butter-tree, or in the conclusions of Bertoloni-as to its identity with the *Shea*.

The materials collected by so zealous an observer as the Cavaliere Fornasini, in the hands of the two active and intelligent Professors of Bologna, may lead to many important results in regard to the numerous little-known vegetable products of the interior of Africa. It is to be hoped, however, that Messrs. Bertoloni will have the means of consulting several of the recently-published works on the subject, to which they do not appear to have had access, and the want of an extensive general herbarium at Bologna renders the identification of plants from tropical countries a matter of great difficulty.

DECADES OF FUNGI; by the REV. M. J. BERKELEY, M.A., F.L.S.

Decades XXXVII, XXXVIII.

Sikkim and Khassya Fungi.

{Continued from vol. iii. p. 206.}

The four decades now described consist of two sets of Indian Fungi, illustrated, except in one or two instances, by drawings made on the spot. The set marked No. 2 is from Sikkim, No. 3 from Khassya. With scarcely an exception, they are all such species as preserve their characters imperfectly when dried, and of which accurate figures are therefore most desirable. Many, as in the Darjeeling collection, are closely allied to European species; but there is a large proportion of the most splendid productions, with which few of our European Fungi can vie. The present collection contains several species of *Lactarius* and *Cortinarius*, genera which were altogether absent in the first. Figures of a few of the species published in the early portion of this century, which were intended to accompany the text, were by accident obliged to be omitted, and will appear in Sir W. J. Hooker's 'Icones.'

* *Agaricus casarius*, Scop. Hook, fil., Ser. 3, No. 30.

HAB. Khassya mountains. 1850.

Rather more graceful than the European form, and with a narrower, but equally thick volva, which, as well as the stem, is yellowish; the gills and ring are white, broadly shaded with yellow. The stem is at first stuffed, then hollow. This, like many other Himalayan Fungi, differs slightly from the European species; but where there are no essential differences, I think it best always to consider them as forms.

* *A. vaginatus*, Bull. Hook, fil., Ser. 3, No. 25, 17.

HAB. Below Nunklow. Khassya, 4000 feet. July 12, 1850.

Pileus dark brown, umbonate. Stem and volva yellowish-brown, paler than the pileus.

A fine variety, but merely a variety of *A. vaginatus*. No. 17 is a paler form, though still with something of the colouring of No. 25.

361. *A. (Amanita) fritillarius*, n. s.; pileo piano sicco nitente, maculis nigris variegato; stipite deorsum incrassato griseo virgato; annulo amplo deflexo; lamellis albis postice attenuatis subliberis. Hook, fil., Ser. 3, No. 35.

HAB. Khassya. 1850.

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Inodorous. Pileus more than 3 inches across, plane, slightly depressed in the centre, dry, shining, pale grey, variegated with square, black, flat scales, subcarnose. Stem 3| inches high, \ an inch thick in the centre, gradually incrassated downwards, bulbous at the base, grey, streaked with darker lines, solid. Ring broad, deflexed, pruinose grey. Gills white, nearly equal, fleshy, brittle, slightly attenuated behind, nearly free.

There is some doubt whether this should be placed in *Lepiota* or *Armilkria*; the gills, however, are not sufficiently attenuated to warrant its being included in the latter section, neither is the habit consonant with that of the former. Its real affinities appear to be with the species of the groupe commencing with *A. magnifies*. It is a very »^{ne} and well-marked species.

362. *A. (Lepiota) anax*, n. s.; pileo carnosio carapanulato Iatis⁹ime umbonato j epidermidē contiguo squamulis minutis exasperato; stipite elato bulboso sursum attenuate cavo, initio fibroso-farcto; lamelbs pailidis antice latis postice attenuato-atingentibus pallidis. Hook, fil., Ser. 3, No. 23.

HAB. On clay banks, and amongst grass. Nunklow. Khassya. July 10, 1850.

Pileus at first obtusely conical, smooth, springing from a turnep-shaped bulb, which is white, with a little red at the base, and bordered by the swollen edge of the ring j then campanulate, and gradually acquiring a reddish-grey tinge, nearly £• of an inch broad, J- of an inch high. Stem above 4 inches high, f of an inch thick in the middle, bulbous below, nearly smooth, tinged with very pale pink, stuffed with cottony fibres, clothed at the base for more than half an inch with a thick volva-like coat, which is perfectly distinct from the rest of the stem, and passes completely under it, and is stained with red patches, both externally and internally. Ring still unbroken, and attached to the margin, where it is thick and swollen. Gills pale, pinkish-yellow, quite free, ventricose, regular. As the pileus increases, it assumes an ovate form, and when the ring is ruptured, becomes shortly campanulate, with a very broad umbo, attaining 5 inches or more in diameter, and 3| in height; the colour is now darker, and the cuticle, though continuous, rough with minute warts and a few scales towards the edge, as is the back of the large apical ring. Stem 12 inches high, about f of an inch thick in the centre, 2 inches at the base, pinkish-

grey, fibrillose, not sunk into the substance of the pileus. Gills pale, broad in front, attenuated behind, free, but scarcely remote. Substance extremely delicate and spongy. Odour sweet.

One of the most splendid of Agarics, allied to *A. procerus*, but differing in the stem not being sunk into the pileus, its smooth, not scaly surface, the continuous cuticle, which is very minutely warty, and more broadly umbonate, the thick volva-like coat at the base, and other points. In its early stage of growth it resembles very closely some *Amanita*.

363. *A. (Lepiota) implanus*, n. s.; pileo amplo carnosio convexo floccoso tuberculis gossypinis exasperato; stipite valido clavato; annulo amplo fugaci; lamellis latis ventricosus liberis. Hook, fil., Ser. 3, No. 33.

HAB. On dry stony hills. Moflong. Khassya. Aug. 3, 1850.

Odour sweet. Pileus 5 inches across, dry, convex, subcampanulate, extremely fleshy in the centre, soft, floccose, rough, except towards the margin, with cottony tubercles. Stem 4 inches high, 1-1/2 inch thick, obese, but not truly bulbous, even, not warty. Veil very broad, attached to the top of the stem, fugacious. Gills broad, ventricose, free.

A magnificent species, allied to *A. Fittadin* L. I once found a single specimen of a very similar Agaric on a bank of earth in Northamptonshire, but, unfortunately, neither drawing nor description was secured.

* *A. laccatus*, Scop. Hook, fil., Ser. 2, No. 22.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

The specimens are evidently young. They are inodorous, dry, firm, and pulverulent, and the stem has a few rigid fibres, or fascicles of threads, which separate from it. The gills are adnato-decurrent. The colour is exactly that of *A. laccatus*, with which species I believe the plant is clearly identical. In fact, the figure resembles very strongly Schaeff. t. 223.

* *A. maculatus*, Alb. and Sch. Consp. p. 186. Hook, fil., Ser. 2, No. 1.

HAB. In pine-woods. On *Abies Smithiana*. Lachen, 9,000 feet. May 30, 1849.

There is a slight difference between the Himalaya specimens and the European. In both the stem is white, attenuated at the base, hollow, and spotted with red when nibbed or injured; in both the pileus is very fleshy, and the gills narrow, crowded, and free; but in the former

the tint of the pileus is of a more uniform ochraceous tinge, as is also the flesh of the pileus, as far as the origin of the gills, and beyond the point to which the cavity of the stem extends; the gills have a pale pinkish tinge here and there, and the stem itself is nearly equal, except at the base, where it is smooth, and not cottony. These differences indicate a distinct variety, but are not sufficient to justify the proposition of a new species.

• *A. velutipes*, Curt. Hook, fil., Ser. 2, No. 25.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

364. *A. (Collybia) hlandidus*, n. s.; pileo hemisphserico carnosulo siccd, margine striato stipiteque solido flexuoso pruinato-tomentosis; lamellis distantibus latis postice fotundato-adnexus. Hook, fil., Ser. 2, No. 8.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

Pileus about \ an inch broad, hemispherical, obtuse, dry, white with a pinkish tinge, pulverulent, slightly fleshy, rather firm. Stem 1J inch high, flexuous, sometimes remarkably so, not a line thick, of the same colour as the pileus, and, like that, pruinat-tomentose, solid. Gills distant, rather broad, rounded behind, adnexed, scarcely truly adnate, white. Inodorous.

Evidently allied to *A. alumnus*, and certainly undescribed.

365. *A. (Collybia) dryophilus*, Bull. Hook, fil., Ser. 2, No. 34. Var. *caspitis*.

HAB. Amongst grass, moss, etc. Lachen, 14-16,000 feet. July 18, 1849.

The specimens have exactly the habit of *A. xanthopm* or *A. suedneus*, but with the narrow gills and characters of *A. dryophilm*. There is not the slightest trace of any umbo, but the pileus is plane, or slightly depressed.

366. *A. (Collybia) macer*, n. s.; pileo primitus subcampanulato obtusissimo demum expanso late conico-umbonato rufescente viscidulo; stipite macro flexuoso procero glabro; lamellis pallidis subadnatis postice rotundatis, interstitiis rugosis. Hook fil., Ser. 2, No. 5.

HAB. In pine-woods, on the ground. Sikkim, 11,000 feet. 1849.

Pileus at first shortly subcampanulate, obtuse, at length expanded with a broad, obtusely conical umbo, about 1 inch across, subcarnose, slightly viscid, light rufous, rather carnose; margin thin; substance pale rufous. Stem 4[^]-5 inches high, J-1 J line thick, rufous like the pileus,

smooth, fistulose, rooting at the base. Gills pale, moderately broad, slightly ventricose, rounded behind, subadnate. Odour faint, sweet.

Allied to *A. dryophilus*; but with a very different habit. A section of the pileus, when expanded, represents a very short, obtuse cone.

* *A. purus*, Pers. Hook, fil, Ser. 2, No. 28.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

Dr. Hooker describes his plant as inodorous, in which character alone it recedes from the European species.

* *A. galericulatus*, Scop. Hook, fil., Ser. 2, No. 6.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

" Stem firm, odour faint." The figure and notes agree exactly with *A. galericulatus*. The interstices of the gills are connected by veins towards the margin only, especially in the larger specimens.

367. *A. (Mycena) colligatus*, n. s.; caespitosus; pileo hemisphaerico striato carnosulo sicco; stipitibus deorsum tomento jcolligatis; lamellis angustis arcuatis decurrentibus venoso-connexis albidis. Hook, fil., Ser. 2, No. 7.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

Pileus f-1 inch broad, hemispherical, obtuse, deeply striate, dry, pale pinkish-grey. Stems 3 inches or more high, not a line thick, flexuous, darker than the pileus, connected into a compact mass below by downy fibres, smooth, fistulose. Gills rather narrow, arcuate, decurrent, nearly white, connected by veins. Odour faint, sweet. Substance brittle.

Allied to *A. myriadeus*, but differently shaped, without any trace of an umbo, and with few narrow and truly arcuate decurrent gills; like that, it has a dry pileus, which at once distinguishes it from *A. tintinnabulum*.

• 368. *A. (Mycena) discordis*, n. s.; albidus; pileo profunde umbilicato carnosu glabro, margine striato; stipite subaequali fistuloso; lamellis latiusculis adnato-decurrentibus postice obtusis; interstitiis venosis. Hook, fil., Ser. 2, No. 4.

HAB. In pine-woods, on wood. Sikkim, 11,000 feet. June 16, 1849.

Pirty white. Pileus nearly 2 inches broad, deeply umbilicate, with the margin nearly plane, subcarnose, except at the extreme edge; dry, smooth, strongly striate. Stem 2½ inches high, ½ of an inch thick, slightly thickened at the tomentose base, otherwise nearly equal, flexuous, smooth, fistulose. Gills rather broad, adnate, decurrent, but rounded at the extreme base; interstices venose. Odour faint.

This is evidently a *Mycena*, but the pileus is strongly umbilicate. The peculiar form of the gills will not allow of its being placed in *Omphalia*, and the nature of the stem excludes it from *Pleurotus* and *Gitocybe*, from the latter of which it is removed by its ligneous habitat.

369. *A. (Mycena) incommhucibilis*, n. s.; pileo conico subcarnoso lsevi; carne fuliginea; stipite elongato deorsum incrassato; lamellis ventricosis postice attenuatis adnatis pallido-flavis. Hook. fil., No. 11.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

Dry, inodorous, brittle. Pileus scarcely | of an inch broad, ochraceous, scarcely striate, subcarnose. Stem 4 inches high, thick, incrassated below, where there are a few rooting fibres, fistulose, nearly white. Gills ventricose, attenuated behind, adnate, shaded with yellow.

This clearly belongs to the same section with *A. metatus*, but inodorous. I cannot point out any species to which it bears a very close affinity.

370. *A. (Mycena) dentotus*, n. s.; pileo sicco campanulato umbonato pulverulento sericellove, margine striato laeiniato dentato; stipite elongato deorsum incrassato; lamellis latis adnatis incarnatis acie can undulata. Hook, fil., Ser. 3, No. 29.

HAB. In pine-woods. Sikkim, 11,000 feet.

Dry, brittle; odour faint. Pileus £ of an inch broad, campanulate, umbonate or subacute, greyish-green, pulverulent or slightly sens striate. Stem 3-4 inches high, scarce a line thick, more or less curved, dirty white, incrassated below and tomentose, fistulose. Gills broad, ventricose, adnate, flesh-coloured, with a broad white margin, which is undulated.

A well marked species, to which I can point out no very near ally. It is intermediate between the groupes *Fragilipedes* and *Mlopedes* of Fries's • *Epicrasis*.

371. *A. (Mycena) puberulus*, n. s.; pileo late campanulato obtuso griseo sericello; stipite gracili deorsum incrassato; lamellis latiusculis postice rotundatis subliberis. Hook, fil., Ser. 2, No. 19.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

Dry, inodorous; delicate. Pileus | an inch broad, campanulate, obtuse, grey, minutely silky. Stem 2 inches high, scarce a line thick, m-incrassated below, downy at the base, fistulose. Gills rather broad,

nearly equal, slightly rounded behind, nearly free, or only adnexed, of a delicate pink. Spores subelliptic, about $\frac{1}{36}$ of an inch long.

This is undoubtedly allied to *A. filopes*, but the silky appearance of the pileus forbids its being united to it. The gills too are very peculiar, being nearly equal throughout.

372. *A. (Mycena) Jlavo-miniatus*, n. s.; pileo e campanulato subhemispherico pulcherrime miniato subpulverulento; stipite filiformi longissimo flexuoso luteo; lamellis ventricosis adnexis alutaceis. Hook, fil., Ser. 2, No. 26. .

HAB. In pine-woods, on sticks. Sikkim, 11,000 feet. 1849.

Pileus *i* an inch broad, at first campanulate, then nearly hemispherical, not the least umbonate, dry, subpulverulent, flesh thin, of the colour of the pileus, vermilion, sometimes yellow at the apex; flesh thin, of the colour of the pileus. Stem filiform, yellow, flexuous, 5 inches high, fistulose, brittle, downy at the base. Gills ventricose, attenuated at the base and adnexed, pale tan.

This species is much larger than *A. acicula*, which it strongly resembles, and of which it can scarcely be considered a gigantic form, though I scarcely know how to point out any distinctive characters. The pulverulent surface of the pileus, and the long, very flexuous stem, are perhaps the most important. It does not retain its beautiful tints when dry.

* *A. epipterygins*, Scop. Hook, fil., Ser. 2, No. 9.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

The figure represents exactly *A. epipterygiw*, but the note appended to the solitary specimen indicates that it is dry and inodorous. The species is, however, extremely variable, and I have, therefore, no hesitation about the correctness of the name.

A form also from pine-woods at the same altitude, is represented in *fi*[^]. 10 of the same collection, which is very viscid, and varies with a yellow and red stem, and a dark pileus, the flesh of which is reddish.

No. 17 is apparently a small form of the same species.

All agree exactly in the shape and sculpture of the pileus, and the gills differ very little.

373. *A. (Mycena) macrothelm*, n. s.; pileo campanulato umbonato, centro carnosio, margine sulcato; stipite luteo flexuoso fistuloso; lamellis adscendentibus adnexis incarnatis. Hook, fil., Ser. 3, No. 19.

HAB. Amongst moss. Myrong woods, Khassya. July, 1850.

Moist, brittle. Pileus £ an inch across, 5 lines high, campanulate, very strongly umbonate, flesh-coloured; border sulcate; flesh very thick in the centre, of the same colour as the pileus. Stem nearly 2 inches high, scarce a line thick, flexuous, fistulose, nearly equal, yellow. Gills ascending, very narrow, but slightly ventricose, attenuated behind, adnexed, flesh*coloured.

A very pretty species, allied to *A. epipterygius*.

* *A. umbelliferw*, L. Hook, fil., Ser. 2, No. 18.

HAB. In pine-woods. Sikkim, 11,000 feet. 1849.

An ivory-white form.

374. *A. (Omphalia) ranunculinus*, n. s.; luteus; pileo hemisphserico; stipite incurvo deorsum velutino; lamellis planis adnatis. Hook, fil., Ser. 2, No. 35.

HAB. On turf, etc. Lachen, 14-16,000 feet. July 19, 1849.

Egg-yellow, dry, rather tough. Pileus J of an inch across, subhemispherical, convex, obtuse, even, thin. Stem 1 inch high, 1 line thick, curved, solid, velvety below. Gills adnate, subdecurrent, plane, distant; interstices nearly even.

This is undoubtedly very nearly allied to the yellow form of *A. «*belliferus*, but the pileus is hemispherical, and by no means plane or turbinate, with the habit of some small *Mammula*.

375. *A. (Omphalia) radiatilk*, n. s.; stramineus; pileo subcarnoso depresso pulverulento; stipite solido sequali flexuoso elongato; lamellis triquetris, apicibus radiantibus. Hook, fil., Ser. 2, No. 24.

HAB. In pine-woods. Sikkim, 11,000 feet.

Inodorous, rather tough, straw-coloured. Pileus 1 inch broad, dry, subcarnose, depressed or rather umbilicate, pulverulent; margin strongly striate. Stem 2£ inches high, flexuous, nearly equal, solid. Gills broadly adnate, decurrent, sending off little radiating processes from their extremities.

This resembles the yellow form of *A. umbellif&rm*, but is a larger species and the radiating appearance at the tips of the gills is remarkable. This, however, is present only in older specimens.

376. *A. (Pleurotus) placentodes*, n. s.; pileo orbiculari sublobato obovato glabro hygrophano pallide ochraceo; stipite fere obsoleto; lamellis latiusculis utrinque attenuatis. Hook, fil., Ser. 2, No. 16.

HAB. On birch-wood. Sikkim, 11,000 feet.

Pileus orbicular or obovate, slightly lobed, 2-2\$ inches across, convex,

moist, pale ochraceous, darker when dry; flesh moderately thick. Stem nearly obsolete, though the margin of the pileus is visible all round. Gills attenuated at either end, dirty white, here and there branched or anastomosing.

This species has the habit of *A. salignus*, but is smaller. It resembles *A. ninguidus*, but has not the same snow-white pileus, and is not imbricated. The gills as well as the pileus, in some specimens, assume a tawny tinge when dry.

377. *A. (Pluteus) cuspidatm*, n. s.; pileo campanulato cuspidato-umbonato longitudinaliter rugoso carnosio, stipiteque elongato deorsum incrassato e farcto cavo fuligineis; lamellis albis ventricosis. Hook. fil., Ser. 3, No. 27.

HAB. On the ground. Khassya mountains.

Pileus $\frac{1}{2}$ of an inch broad, 1 inch high, campanulate, with a long pointed umbo, deeply and repeatedly rugose, but not striated, dark fuliginous; flesh very thick in the centre, nearly $\frac{1}{2}$ of an inch, moderately so towards the margin, which is not at all involute. Stem above 3 inches high, $\frac{1}{2}$ of an inch thick, at first stuffed, then hollow, dark like the pileus, much paler within. Gills white, ventricose, rounded behind, free.

This singular species has somewhat the habit of *A. dstopus*. The pileus is rugose, like that of *A. pJilebophorus*. I have seen no specimen of this, but the drawing is exceedingly characteristic.

378. *A. (Entoloma) euthelm*, n. s. ; pileo e conico "expanso fortissime umbonato fuligineo, margine tenui; stipite subsequali clongato flexuoso fistuloso pallide violaceo; lamellis adnexis." Hook, til., Ser. 2, No. 15 (pro parte).

HAB. In pine-woods. Sikkim, 11,000 feet.

Moist, brittle, inodorous. Pileus about two inches across, expanded, with a very prominent mammiform umbo, round which it is rather depressed, dark fuliginous-brown; margin abruptly thin. Stem 3 inches high, $\frac{1}{2}$ of an inch thick, pale violet, hollow. Gills ascending, rather attenuated behind, adnexed. Spores irregular, strongly toothed, about $\frac{1}{66}$ of an inch long.

Allied to *A. rkodopolius*, but amply distinguished by its more delicate habit, slender, hollow, violet stem, and other points. The stem is by no means distinct from the dark flesh of the pileus, nor are the gills at all ventricose.

* *A. Lazulinus*, Fries, Ep. p. 153. Hook, til., Ser. 2, No. 8.

HAB. In pine-woods. Sikkim, 11,000 feet.

I cannot quite satisfy myself about this species, of which only a single specimen has been preserved. The drawing represents it as hemispherical, very slightly umbilicate, even, moderately fleshy, of a lilac-blue, stem shining, darker than the pileus, fistulose, with a darker-coloured cartilaginous coat. Gills pale lilac, inclining to pink, broad and ventricose in front, attenuated behind, and adnexed, but scarcely adnate. Pores z^*W of an inch in length, obovate, nearly regular, with a large nucleus. Smell scarcely any.

It certainly comes nearer to *A. Lazulinus* than any other species, but in the absence of information as to the primitive colour of the gills, I can neither be quite certain as to its identity nor warranted in proposing it as new.

879. *A. (Flammula) phlegmatic*TM, n. s.; fragilis; pileo carioso expanso pallide umbrino viscosissimo, carne umbrina; stipite incurvo concolore sursum pallidiore cavo; lamellis pallide alutaceis adnatis postice attenuatis. Hook, fil., Ser. 2, No. 21.

HAB. In pine-woods. Sikkim, 11,000 feet.

Inodorous. Pileus two inches across, extremely viscid, shining, omite, carnese, plane, sometimes depressed without any trace of an umbo, sometimes broadly umbonate; flesh of the same colour as the pileus. stem incurved, 2 inches or more high, darker below, slightly fibrillose, not scaly, hollow, yellow within. Gills moderately broad, adnate, slightly rounded behind and ending in a little point or slightly attenuated. Spores subelliptic, about \wedge of an inch long.

This is a Dearly allied $\circ J$ *lentm*, but differs in many characters from *Uat* and the species which Mow it in the 'Epicrisis.' It is not tough, and has not a scaly stem like *A. lentm*, in which latter character it differs from *A. mixtu**. The flesh is not white as in *A. Mrieus* and *A. lupimm*, and other characters might be adduced of more or less importance. As to its affinities there is no doubt

• *AJMd* $\circ Sd$
 , Sdueff. Hook, fil., Ser. 2, No. 12.

HAB. In pine-woods. Sikkim, 11,000 feet.

The specimens accord in colour, in the nature of the gills, and in general habit, though somewhat smaller than Schieffer's figure; at any rate, it is very dry, inodorous, rather fine. Pileus like the *P* $\circ W$ a tawny tinge near the cuticle. Stem at length hollow, then brownish, with

traces of a veil at first. Gills broad, pale, adnate. Spores $6\frac{1}{2}$ - $6\frac{1}{2}$ - $8\frac{1}{2}$ - $6\frac{1}{2}$ of an inch long.

The lower portion of the stem was not preserved.

380. *A. (Naucoria) micromegas*, n. s.; pileo convexo subcampanulato valde carnosus; stipite incurvo e mycelio orbiculari oriundo; lamellis latis postice rotundatis liberis alutaceis. Hook, fil., Ser. 3, No. 15.

HAB. On dead wood. Myrong. Khassya. July 6, 1850.

Inodorous. Pileus dry, rather tough, of an inch across, convex, subcampanulate, very fleshy, dull tawny ochre; margin incurved. Stem 1 inch high, 1 line thick, of the same colour as the pileus, solid, springing from an orbicular mycelium. Gills very broad, tan-coloured, rounded behind, affixed.

This curious species is closely allied to *A. horizontalis**. It is singularly fleshy for so small a species.

{To be continued.}

Contributions to the Botany of WESTERN INDIA :

by N. A. DALZELL, ESQ., M.A.

{Continued from vol. iii. p. 346.}

Nat. Ord. SAMTDE^E.

CASEARIA (Anavinga).

1. *C. graveolens*; arborea, glabra, foliis breve petiolatis late ellipticis breve acuminatis leviter obtuseque serratis planis, adultis coriaceis duris, junioribus herbaceis utrinque nitentibus, stipulis lanceolatis acuminatis glabris, floribus numerosis axillaribus glomeratis, pedicellis supra basin articulatis floriferis brevissimis fructiferis elongatis. *Calyx* 5-partitus, foliolis rotundatis concavis viridibus extus puberulis. *Stamina* 8, calycem aequantia, squamis alternantibus acutis penicillatis. *Stylus* longiusculus, staminum longitudine. *Filamenta* glabra. *Stigma* capitatum. *Folia* cum petiolo semipollicari 6-8 poll, longa, 3-4 lata. *Siipula* 4 lin. longse. *Fructus* oblongus, subteres, glaber, nitidus, pollicaris. *Semina* circiter 12, ovata, acuta. *Embryo* inversus, albuminis totam longitudinem occupans; radícula elongata, cylindrica; cotyledones ovaes, foliaceae, planae.—Crescit in collibus apertis Concani australioris; fl. temp, pluviali.

This is a small tree, with a stem not more than six inches in diameter : the young shoots are obtusely angular, and the flowers have a heavy and disagreeable odour.

2 *C. lavigata*; fruticosa, 4-pedalis, glabra, foliis breve petiolatis oblongis acuminatis obscure serratis vel subintegris subconiplicatis coriaceis margine revolutis utrinque nitentibus, stipulis acuminatis glabris, floribus numerosis axillaribus glomeratis, pedicellis supra basin articulatis.

Calyx 5-partitus, foliolis rotundatis concavis viridibus extus glabris. *Stamina* 8, squamis alteruantibus subaequilongis acutis penicillatis. *Stylus nullus*, filamenta glabra. *Stigma* capitatum, in ovario conico sessile. *Folia* cum petiolo (4-5 lin.) 5-8 poll, longa, 2-3 poll. lata. *Stipulae* 2 lin. longae, margine laceratae.—Crescit prope mare in Cancano australiore; fl. Junio et Julio.

The bark on the young branches of this shrub is white, and highly polished. The smell of the flower is not disagreeable. The fruit has not yet been seen.

3. *C. rubescens*; fruticosa, 4-6-pedalis, tota glabra, foliis petiolatis ovato-oblongis integerrimis basi rotundatis apice subito obtuseque acuminatis coriaceis marginibus recurvis, petiolis foliisque junioribus coarctatis.

Calyx 5-partitus, foliolis rotundatis concavis luteo-albis margine ciliolatis. *Stamina* 8, calyce breviora, squamis crassis truncatis alternantibus longiora; squamae filamentaque pilosa. *Ovarium* conicum. *Stigma* sessile, discoideum. *Fructus* oblongus, glaber, annulo insidens. *Semina* pauca, 6-8. *Folia* cum petiolo semiplicata 4-4½ poll, longa, 2 poll, lata, subcomplicata. *Stipulae* minutae, rufae, glabrae, squamiformes.—Crescit in montibus Syhadree, lat. 15°; fl. Feb.

The only species of this genus which Roxburgh has described with entire leaves is his *C. esculenta*, which is also a hill species, but the description is so meagre that I am unable to say whether it differs from that now under consideration. There is a great uniformity throughout the Indian species of this genus. Roxburgh mentions the position of the embryo as very variable, but I have not found it so in the species I have examined, and in two, at least, it occupies the whole length of the seed. Endlicher has described the embryo as orthotropous, but in *C. ovata*, Willd., and *C. graveolens* (nobis), I find it just the contrary, or antitropal. I may add, that I believe *C. ovata*, and *C. tomeuloides*, Roxb.,

to be but one species. The perigonium, instead of being caducous, as stated by the founder of this genus, often increases with the fruit.

Nat. Ord. LABIATE.

MARRUBIUM.

M. Malcolmianum; herbaceum, ramis elongatis simplicibus gracilibus villosis, foliis parvis breve petiolatis ovatis obtusis crenatis utrinque pubescentibus, floralibus conformibus minoribus acutioribus, verticillastris bifariis distantibus dichotomo-cymosis subumbellatim contractis pedunculatis paucifloris (8-10) folia floralia sequantibus vel superantibus, pedicellis pedunculo (3 lin.) brevioribus, bracteis linearibus acutis ciliatis calycem sequantibus.

liami pedales. *Folia* distantia, majora, cum petiolo bilineari 8-9 lin. loriga, 5 lin. lata, grosse crenata, utrinque pilis articulatis complauatis subtus glandulis conspersa. *Calyx* obscure bilabiatus, 1 lin. longus, hispidus, 10-nerviis, fauce pilosus, 5-dentatus, dentibus subulatis rigidis erectis ciliatis tubo duplo brevioribus. *Corolla* tubus exannulatus, cylindricus, calycis longitudine; limbi bilabiati labium superius planum, breviter bifidum, lobis truncatis, inferius 3-plo longius, tubum aequans, 3-lobatum, lobis rotundatis, interuodiodio majore emarginato. *Semina* ovali-oblonga, glabra, minute reticulata. *Anthera* ovales, perfectae, loculi subdivaricati; *filamenta* brevia, glabra. *Stylus* brevis; stigmatibus lobis brevissimis, aequales, obtusiusculi.—Crescit in ripa fluminis "Yena," prope sanatorium Malcolmianum, in montibus Syhadree, alt. 4000 ped.; fl. Martio et Aprili.

This is entitled to be called East Indian Peppermint, being possessed of all the aromatic and carminative qualities of the *Mentha piperita*. The inside of the lips of the corolla are velutino-papillose, and there are two rows of singular hairs, like collapsed tubes, down the palate and throat, as in the corolla of several *Asckpiadece*.

Nat. Ord. EBENACEAE.

DIOSPYROS.

1. *D. paniculata*; arborea, ramis glabris, foliis lanceolate-oblongis apice obtuse acuminatis basi rotundatis breve petiolatis coriaceis glabris, floribus masculis in foliorum delapsorum axillis paniculatis numerosis, paniculis folio brevioribus cum pedicellis gemmisque

fuliginoso-velutinis, calycis 5-partiti ventricosi laciniis foliaceis reticulato-venosis late ovalibus obtusis intus calloso-carinatis marginibus alatum reflexis, corolla tota extus fuliginoso-velutina calyce duplo longiore tubo 5-gono apice constricto, limbi 5-partiti laciniis oblongis obtusis intus glabris sestivatione contortis sub anthesi reflexis tubum sequantibus, floribus femineis lateralibus solitariis, pedicellis petiolum semipollicarem sequantibus, calyce femineo ut in masc. cum fructu valde incremente, fructu ovato styli vestigiis coronato densissime fuliginoso-tomentoso calyce ampliato incluso.

Folia arboris masc. multo minora, 4 poll, longa, 15-18 lin. lata. *Folia* arboris fem. 9-10 poll, longa, 3 poll, lata, utrinque minute reticulata. *Flores* masc. 10 lin. longi. *Stamina* 20, per paria unita, corollae tubo paulo breviora; *antherae* lineares, apice mucronatae.—Crescit in montibus Syhadree, prope Chorla-ghât; fl. temp, frigido.

2. *D.p-ruriens*; ramulis molliter hirsutis, foliis anguste oblongis acuminatis basi obtusis brevissime (1 lin.) petiolatis utrinque hirsutis, floribus masculis in pedunculo axillari petiolo 3-plo longiore geminis, pedicellis basi articulatis, floribus femineis axillaribus et lateralibus approximatis solitariis brevissime (1 lin.) pedicellatis.

Calyx masc. 4-partitus, laciniis lineari-oblongis obtusis utrinque pilosis corollae tubo sequantibus. *Corolla* masc. extus tomentosa, 9 lin. longa, limbi 4-partiti lacinae tubi longitudine. *Stamina* 14, omnia basi connata, ovarii rudimentum pilosum cingentia. *Calycis* fructiferi lacinae reflexae, non incremente. *Fructus* 4-ocularis, ovato-conicus, pilis fulvis prurientibus densissime vestitus, cerasi majoris magnitudine. *Folia* 3-3 i poll, longa, 12-15 lin. lata. *Stylus* ex vestigiis bifidus videtur, ramis apice bilobis? An potius *Gunisanthi* species? —Crescit cum praecedente.

3. 1). *nigricana* Sy nob. (non Wall. list. 6351) i floribus 4-meris, stam. 26, foliis oblongis vel lanceolatis acuminatis membranaceis glabris cum petiolo bilineari 4 poll, longis 1 j- poll, latis, floribus masculis ternis in apice pedunculi brevissimi sessilibus, calycis villosi 3-linearis tubo turbinato, limbi 4-partiti laciniis ovatis acutis ciliatis planis patentibus tubo sublongioribus, corollae glabrae tubo brevi (1 lin.), laciniis angustis linearibus tubo 3-4-plo longioribus.

Stamina 26, glabra; filamenta inaequalia, gemina vel terna vel quaterna, medio ovarii rudimentum glabrum, apice 4-divisum. Fl. fructum, et fructum non vidi.—Crescit cum praecedente.

The whole plant turns black in drying.

4. *D. Goindu*; floribus tetrameris, stam. 16, foliis ovato-oblongis basi truncatorotundatis apice obtusiusculis glabris breve (2 lin.) petiolatis, floribus masculis ternis in pedunculo axillari petiolum aequante, floribus foemineis axillaribus solitariis.

Calyx masc. 4-partitus, foliolis rotundatis glabris corollas tubo duplo brevioribus. *Corolla* 5 lin. longa, glabra, urceolata, limbi segmentis 4 rotundatis tubo ventricoso paulo brevioribus. *Stamina* 16, filamentis brevissimis geminatis, antheris subulato-acuminatis. *Ovarii* rudimentum carnosum, apice 4-fidum, lobis acutis dentiformibus. *Calyx* foem. basi bibracteolatus. *Stylus* brevissimus; stigmata 4, apice leviter bifida. *Fructus* globosus, cerasi magnitudine.—Crescit in montibus Syhadree; fl. Aprili—Junio.

- 1). *montana*, Eoxb., affinis, sed differt calycis lobis obtusis, racemis petiolum nuquam superantibus, paucifloris.

Nat. Ord. OECHIDEAE.

EHIA.

E. uniflora; pseudo-bulbis sphaericis depressis apice diphyllis, foliis oblongis planis basi angustatis complicatis, scapo gracili foliorum longitudine apice unifloro, sepalis lateralibus falcatis acutis, sepalo supremo petalisque subsequialibus linearibus acutis, labello petalis brevioribus, lobis lateralibus abbreviatis lunatis purpureo-marginatis lobo intemedio lineari obtuso intus longitudinaliter bicristato.—Fl. temp. pluviali.

This pretty species grows in clusters on the bark of the Mango and other trees; the flower is white and very large for the size of the plant, viz., two inches across. The pollinia are eight in number, wedge-shaped, and united by threads at their narrow end; the leaves are one and a half to two inches long, and the scape about the same length, and furnished at its base with a keeled obtuse linear sheath.

DENDBOBIUM. (Sp. *Pseudo-bulbosa*.)

D. crispum (nobis); foliis serotinis paucis lineari-lanceolatis subcomplicatis, floribus racemosis 6-10, ovario sequente basi bractea parva scariosa suffulto, sepalis petalis brevioribus supremo lineari-lanceolato obtusiusculo lateralibus subfalcatis, petalis spathulatis, labello sepalis brevioribus 3-lobato, lobis 2 erectis acutis, intemedio

truncato margine irregulariter crenato albo roseo-maculato basi cornubus 2 erectis acutis praedito, columna utriusque apice breviter cornuta.

Tota 4-5 poll, alta, floribus albis, labio excepto.—Crescit in arboribus ubique; fl. temp, frigidus.

The pseudo-bulbs of this very common plant, are small, button-shaped, and green, with a white network over them; the peduncle is delicate, filiform, purple, two and a half to three inches long, glabrous and smooth, with tubular sheaths. The fruit is oval, shining, four lines long. Lindley has sixteen species of this section in his "genera and species," but not one from Continental India, where they are plentiful.

Since writing the above I have received vol. v. part i. of Wight's 'Icones,' which is just published, and I find the two Orchids just described figured in it; the former as *Eria reticosa*, E. W., no. 1637, and the latter as *Beridrobium humile*, E. W., no. 1643. Wight's *Dendrobium filiforme*, no. 1642, was published in this Journal in vol. iii. p. 345, as *D. microchilos* (nobis). Several Orchids, to which Wight has given new names, have been already named and figured, both in the 'Botanical Magazine' and in the *Annales des Sciences Naturelles,' 2nd series, vol. xv., by Richard. *Habenaria peristyloides*, E. W., no. 1702, does not belong to the genus, but is a most characteristic species of *Coeloglossum*, *C. luteum*, nobis, in this Journal, preceding volume. *Habenaria Jerdoniana*, E. Wight, no. 1715, has been named and described by me as *H. diphylla* in the same place. *Chtiroztylnflahellata* R. W., no. 1727 of the 'Icones,' is the *Goodyera flabellata* of Richard, in the work already mentioned. *Sarcanthus pauciflorus*, E. W., no. 1747, is a very poor drawing of the plant described by me last year as *S. peninsularis*, and of which I sent you a coloured drawing.

Nat. Ord. LEGUMINOSAE.

CASSIA (Chamaecassia).

C. Goensis; arborea, inermis, fulvo-tomentosa, ramulis angulatis, foliis pinnatis, foliolis oblongis-obtusis 10-12-jugis, petiolo eglanduloso, stipulis acuminatis adnatis et uno latere irregulariter productis, racemis axillaribus solitariis folio brevioribus, pedicellis fructiferis pollicaribus, legumine complanato lineari mucronato multiloculari

basi (ovulis abortivis) angustato, seminibus perfectis 6-12 ad hilum angustatis.

Folia 4 poll, longa; foliola pollicaria, 4-5 lin. lata; petiolus infra foliola brevissimus. *Legumen* 2-3 poll, longum, 6 lin. latum; ovula 18-20, quorum semper 8-12 basin versus abortiva. *Mores* non vidi.—Crescit rarissime in provincia Goensi, ad pedem jugi Syhadrensis. Fructum maturum reperi mense Aprili.

This is a small tree not unlike the *Ayati*; it is called by the few natives who are acquainted with it "*Looratee*" At the time of discovery the leaves were all young, and covered on both sides, but particularly the underside, with yellow and fulvous hair.

Nat. Ord. **AROIDEÆ.**

TYPHONIUM.

T. bulbiferum; 5-6-unciale, foliis 2 cordato-hastatis inuicronilatis multinerviis subtus nitentibus longe petiolatis, petiolis folio triplo longioribus striatis apice bulbiferis.

Scapus ex folii basi vaginante petiolo triplo brevior, solitarius. *Spatlia* anguste linearis, apicem versus alternata, hyalina, pallide rosea, inferne tumida, convoluta, superne plana, patens. *Spadix* spatlise sequilongus, filiformis, attenuate, pallide flava, 5 poll, longa, folia sequans. *Antherarum* sessilium loculi subsphserici, poro simplici terminali dehiscentes. *Pollen* hispidus, roseus. *Stylus* nullus; stigma annulatum, papillosum, ovarii apicem cavum cingens; ovaria pauca, 15-20, biserialia, obconica, unilocularia, ovulum unicum erectum stipitatum fundo affixum. Genitalia rudimentaria supra ovaria carnosae colorata (flava), uniserialia, acinaciformia, patentia. *Tuber* pisi magni magnitudine, cylindricus, basi truncatus.—Crescit in Concano australiore; fl. Junio.

The bulb, or more properly tuber, produced on the apex of the petiole, sufficiently distinguishes this species from all hitherto described. This tuber is about two lines in diameter, dark-coloured outside, solid, and white internally, and no doubt capable of reproducing the species, like those on the leaf of *Ledebouria hyacinthina*. The genus *Pinellia* also produces bulbs on the petioles.

Nat. Ord. **LYCOPODIACEÆ.**

LYCOPODIUM.

1. L. (Selago) *empetrtfolium*; caule tereti pendulo dichotomo, foliis

- unclique insertis omnibus similibus confertis lingusefortnibus obtusis carnosis rigidis glabris 6-7 lin. longis 1-H lin. latis petiolatis, petiolo brevissimo contorto, capsulis axillaiibus solitariis reniformibus glabris.—Crescit in arboribus rupibusque Concani australioris; raTa.
2. *L. miniatosporum*; caule erecto dichotomo ramoso, foliis distichis patentibus oblique ovatis obtusis inaequilateris integris, stipulis alternis lanceolatis setaceo-acuminatis, spicis terminalibus compressis secundis squamosis solitariis vel geminis, capsulis squamisque dimorphis, capsulis lateralibus cylindricis minutisporis, intermediis obtuse triangularibus 4-sporis, squamis marginalibus distichis imbricatis carinato-falcatis acutis, intermediis adpressis biserialibus imbricatis alternis orbiculatis setaceo-acuminatis.—Crescit ubique in umbrosis, tempore pluviali.
3. *L. cespitosum*; caule tereti radicante dichotomo-ramoso, ramis adscendentibus, foliis distichis patentibus oblique ovatis acutiusculis integris, stipulis oppositifoliis ovato-acuminatis basi leviter cordatis adpressis, spicis terminalibus compressis secundis solitariis vel geminis, squamis capsulisque dimorphis, capsulis lateralibus minutissimis *cupuliformibus* abortivis? intermediis multo majoribus obtuse triangularibus 4-sporis, squamis marginalibus imbricatis distichis carinato-falcatis complicatis inaequilateris margine inferiore ciliatis, squamis intermediis biserialibus alternis adpressis imbricatis ex ovato triangularibus acuti9 ciliatis.—Crescit in umbrosis provincire Malwan.—1-2-uncialis, prsecedente multo minor.
4. *L. curvatum*; caule erecto sulcato diaphano semipedali ramoso, fob'is distichis in caule distantibus ovatis acutiusculis insequilateris pateutibus in ramis ramulisque approximatis oblongis vel ellipticis mucronulatis apicem versus minute serrulatis, stipulis semiovatis mucronatis alternifoliis adpressis, spicis terminalibus solitariis *tetragonis* 5-6 lin. longis curvatis squamis conformibus ovatis setaceo-acuminatis dorso leviter carinatis imbricatis, capsulis dimorphis inferioribus parvis orbiculatis minutisporis supremis multo majoribus obtuse triangularibus 4-sporis.—Crescit cum prsecedente.

These three last species are very delicate, and much more like species of *Jungermannia* than *Lycopodium*.

Notice of a new species, O' DAMMAEA, detected by MR. CHARLES MOORE in La Peyrouse's Island; by SIR W. J. HOOKER, D.C.L., F.R. A. & L.S.

(TAB. IV.)

In a late number of our Miscellany we figured a new and interesting Fern from New Caledonia, discovered by Mr. Charles Moore, and we have now the pleasure of representing a much more remarkable plant, discovered by him on the same expedition (voyage of H.M.S. Havanah, Capt. Erskine, E.N.), a new species *oiBammara*; and since it was found on the island where the ill-fated but very distinguished navigator, La Peyrouse, lost his ship and his life, we had intended that it should bear the name of 2). *Peyrousil*: but since the name was inscribed on our plate, we find it published in the last part of the sixth volume of the Journal of the Horticultural Society, under the appellation, which we consequently adopt, of

DAMMARA MACEOPHYLLA, *Lindl.*

Foliis ovato-lanceolatis sensim acuminatis membranaceo-coriaceis basi in petiolum brevem tortum attenuatis, strobilis globoso-ellipticis (magnis), squamis arete adpressis quintuplo latioribus quam longis apice rotundatis. (TAB. IV. sub nom. *D. Perouii*.)

Dammara macrophylla, *Lindl. in Journ. Hort. Soc. v. 6. p. 271.*

HAB. Discovered by *Mr. C. Moore*, while on a voyage with Captain Erskine, E.N., in H.M.S. Havanah, in the island of Vanicolla, or La Peyrouse's Island, in the Pacific Ocean, Int. 11° 40' S., long. 167° E.

Our portion of the branch of this tree is about 15 to 16 inches long, straight, terete, glabrous, and quite smooth, nearly as thick as the little finger, very medullose within, bearing six or seven pair of nearly opposite distichous leaves, between membranaceous and coriaceous, glossy, olive-brown when dry, from 5-7 inches long, ovate-lanceolate, from 2-2[^] inches wide below the middle, then gradually acuminate towards the apex: at the very base rather suddenly tapering into a broad, short petiole, if it can be so called, for it is of the same texture and substance as the leaf itself, about 2 lines long, slightly twisted, so as to make all the leaves with their edges vertical and distichous; there is no oosta or nerve; the whole surface is very minutely and longitudinally striated. Cone separate from the branch, almost exactly and broadly elliptical,—upon a petiole or stalk, about 1 % inch long and as thick

as the middle finger, woody,—4℥ inches long, and 3i or 3℥ inches broad, very obtuse. The numerous scales are closely compacted, large, almost exactly resembling those of the cone of *Bammara orientalis*; the portions of the scales visible in the cone are narrow, much depressed, rhomboid, round at the upper and lower edge, and presenting no point or tooth whatever. There is a transverse depression in the centre, and a very indistinct umbo.

The Plate (IV.) exhibits a portion of a branch, with two leaves, and a cone, all of the natural size.

FLOBULA HONGKONGENSIS : *an Enumeration of the Plants collected in the Island of Hong-Kong, by Major J. G. Champion, 95th Eeg., the determinations revised and the new species described by* GEORGE BENTHAM, ESQ.

{Continued from p. 81.}

MELASTOMACETE.

1. *Melastoma repens*, Lam.—Naud. in Ann. Sc. Nat. Par. ser. iii. vol. xiii. p. 274.

In some measure an alpine plant, being found on the summits of most of the Chinese and Hong-Kong hills, rarely at their bases. The fruit, which is pleasant to the taste, is the only edible species of *Melastoma* in Hong-Kong; the plant flowers and fruits during the greater part of summer.

2. *Melastoma candidum*, D. Don.—DC. Prodr. vol. iii. p. 145.—*M. calycinum*, Benth. in Hook. Lond. Journ. Bot. vol. i. p. 485.

Growing in similar localities to the *M. macrocarpum*, from which it is readily distinguished by the dense and much softer setse, which are appressed on every part of the plant except a few on the petioles, generally rusty or reddish on the branches, whitish and silky on the young leaves, very long, soft, and silky, and very densely appressed on the calyx. The bractee and calycine lobes are also much larger. I have it from the collections of Hinds, Champion, Vachell, and Fortune (n. 64).

3. *Melastoma ntaerocarpum*, Don.—Naud. in Ann. Sc. Nat. ser. iii. vol. xiii. p. 281.

Hong-Kong hills, flowering from June to August.

4. *Melastoma sanguhneum*, Sims, Bot. Mag. t. 2241.—Naud. 1. c. ?

Hong-Kong, with the two preceding, and shrubby like them; in woods, however, this species becomes a straggling under-tree, seventeen to eighteen feet high. Major Champion measured one of its flowers during rainy weather upwards of four inches in diameter. I have no doubt that this is the species figured by Sims from a plant raised from Chinese seeds. Naudin's character is taken from Javanese and Penang specimens, and does not mention, any more than Sims's description, the broad, smooth dilatation of the base of the calycine lobes, in the form of lateral appendages to the hispid portion, which is lanceolate. Should it prove, however, as conjectured by Naudin, that the *M. sanguineum* and *M. decemfidum* are but varieties of one species, the present form, without doubt, belongs to the same one.

B. Osbeckia Chinensis, Linn. Spec. p. 490, excl. syn. Pluk., non Auct. plur.—*O. linearis*, Blume.—Naud. 1. c. vol. xiv. p. 70.

Common on grassy sides of Victoria Peak. Annual, or at any rate usually so, although the hard dry bases of the stems in the dried specimens give it the appearance of an almost suffrutescent perennial.

There can be little doubt that this plant, not uncommon about Canton, is Linnæus's original *Osbeckia*, gathered by Osbeck in South China; but the figure he quotes of Plukenet's, representing a Madras plant, is evidently the *O. serialis*, Naud., or *O. Zeylanka*, Wight et Arn. The garden plant, figured as *O. Chinensis* in the 'Botanical Magazine/t. 4026, is a very different species, and there is no evidence of its being of Chinese origin. Blume's *O. linearis*, a common species in the Philippines and Moluccas, well described by Naudin, agrees precisely with our Chinese one, and we should be well disposed to concur with his suggestion, that the common Himalayan *O. angustifolia* is a mere variety of the same.

The *Allomorpha pauciflora*, described in my enumeration of Hinds's Hong-Kong plants, has not been found by Major Champion.

6. *Memecylon ligustrifolium*, Champ., sp. n.; ramulis teretiusculis, foliis ellipticis basi acutis breviter petiolatis apice vix acuminatis coriaceis uninerviis, pedunculis petiolo paulo longioribus paucifloris, alabastris globosis obtusis, ovulis 8-10 annulatis.—*Frutex* glaberrimus, ramulis tenuibus. *Folia* 2-3 poll, longa, circa pollicem lata, petiolo bilineari, basi apiceque plus minus angustata, apice obtusiuscula v. rarius in acumen obtusum contracta, adulta crassiuscula et in sicco flavicantia, costa prominente venis lateralibus inconspicuis

v. rarius paucis obscuris. *Peduncululi* 2-3 lin. longi, 3-5-flori. *Bractea* minuta³, squamaeformes, caduca. *Pedkelli* vix lineam longi. *Alabastra* fere 2 lin. diametro, depresso-globosa. *Qalycis* limbus latissime et brevissime 4-dentatus. *Discus* epigynus calycem intus vestiens, carnosulus, in alveolas 8 antheras ante anthesin recipientes divisus. *Petah.* late orbiculata, calycis tubo subbreviora. *Ovarium* intus nee divisum nee costatum, ovula circa placentam brevem centralem verticillata. *Bacca* 4-5 lin. diametro. *Semen* unicum, cavitatem implens, cotyledonibus carnosius insigniter plicatis.

* Hong-Kong, gathered in flower and fruit in January, 1850. The foliage is not unlike that of some varieties of *Memecylon edule*, but the flowers are much fewer in each peduncle, and twice their size. Our plant agrees in many respects with Hooker and Arnott's description of their *M. scutellata*, but much less with Loureiro's *Scutula scutellata* (from which the name is taken up), a Cochin-Chinese, not a Canton species; nor can I find any traces of ribs or divisions within of the ovarium.

MYRTACEAE.

1. *B&ckea frutescens*, Linn.

Gregarious, on bare hills. Mount Gough, etc. Many of the Chinese hills look as if heath-clad with this species, and such localities afford good cover for partridges and pheasants.

2. *Syzygium buxifolium*, Hook, et Arn. Bot. Beech, p. 187.

A small, much branched, leafy shrub, growing principally on bare hills, and flowering in summer. *Flowers* small, scentless, in a short terminal panicle. *Calyx* minutely 4-toothed. *Petals* 4, united by pairs in a calyptra falling off as the flower opens. *Ovary* 2-celled, with several pendulous ovules in each cell. *Fruit* globose, 4-6 lines in diameter, purplish-black, with one large seed.

3. *Syzygium odoratum*, Hook, et Arn. Bot. Beech, p. 187.

Happy Valley woods, where it grows to be a large tree.

4. *Syzygium nervoswn*, DC. Prodr. vol. iii. p. 260.

Near the Albany barracks, arboreous.

5. *Acmena Cltampionii*, Benth., sp. n.; arborea, foliis ovali-ellipticis oblongisve obtusis v. obtuse acuminatis basi angustatis coriaceis nitidis, venulis tenuibus obscure punctatis, racemis brevibus paucifloris, pedicellis brevissimis, calyce glabro elongato-clavato repando-4-den-

tato, fructu oblongo ovoideo 1-2-spermo.—Tota glaberrima. *Ramuli* tenues. *Folia* li-2J poll, longa, pleraque in acumen obtusum plus minus producta, basi longe contracta in petiolum brevem, costa subtus prominente, venulis supra inconspicuis subtus tenuibus. *Mores* desunt. *Pedunculi* fructiferi in axillis superioribus petiolo vix longiores, 1-3-carpici, ad apices ramorum pollicares, fructibus 5-7. *Calyx* defloratus 4 lin. longus, anguste clavatus, margine ultra ovarium producto, brevissime lateque 4-dentato. *Ovarium* biloculare, ovulis in quoque loculo pluribus. *Bacca* subdrupacea, 5-6 lin. longa, calycis limbo coronata. *Pericardium* tenuiter carnosum, endocarpium crustaceum. *Semen* nunc solitarium fructu conforme, nunc gemina cavitatem implentia collateralia v. superposita, testa tenui, cotyledonibus crassis conferruminatis.

Near the waterfall in the Happy Valley. This species is evidently allied to *Acmena WigUiana*^ figured in Wight 1c. t. 529. The leaves are smaller, more blunt, with less conspicuous veins, the calyx rather shorter. The flowers not having been yet seen, it remains to be proved whether there is the same curious multiplication of petals as in Wight's species. Of three fruits opened, one had a single seed, taking the shape of the fruit, the two others had two seeds each, forming together a mass of the same shape as the single seed ;• in one case they were superposed, and consequently each seed was horizontally truncated, in the other they were collateral and separated by a vertical plane.

6. *Jambosa vulgaris*, DC.

Cultivated in Hong-Kong, but also occasionally appearing to grow wild.

7. *V&idium pomtferum*, Linn.

Of this, the common Indian Guava, there are no specimens, but in Major Champion's notes it is said to be found wild in the island.

8. *Rhodomyrtus tomentosa*, DC.

Abundant on all low hills. The fruits ripens well and is pleasant to the taste.

HoMALINEiE.

1. BlackweDia *fagifolia*, Lindl., in Hort. Trans, vol. vi. p. 269.—*B. padjflora*, Lindl. Bot Reg. t. 1308.—*B. Loureiri*, Benth. in Lond. Journ. Bot. vol. i. p. 482.

A beautiful shrub, abundant in Hon^Kong, and growing almost to

a tree in the Happy Valley woods. It blossoms at least twice in a year. It appears also to be frequent about Macao and Canton, from whence we know of no other species, and fully agree with Hooker and Arnott, in considering the two published by Lindley as one and the same. It differs, however, in several essential points from Loureiro's character of *Pythagorea*, but coincides exactly with that of *Astranthm* of the same author, and on this account I had given to the plant the name of *B. Loureiri*, thinking that Lindley's plant might be different. Loureiro's plants are, however, both Cochin-Chinese, they are both probably *Homalinea*, but without seeing original specimens, or at any rate specimens from the same country, it would be difficult to identify them satisfactorily. The confusion of synonymy has been, unfortunately, much increased by errors in copying or printing, for I can trace no other origia to the names of *B. Chinensis*, *grandiflora** and *padi/olia* attributed to Lindley by Steudel, and that *ofjn&biflora*, Lindl., inserted in Walpers¹ Repertorium.

The flowers of this species have the perfume of our hawthorn. After they wither the perianth remains some time attached to the ovary, and the lobes become slightly enlarged. They vary in number from six to nine pair. The styles and placenta? are two, three, or four, with three ovules to each placenta. The fruit has not been observed.

PASSIFLOBEJE.

1. *Passiflora/ttlu&i*, Cav.

Found wild in a ditch near a bungalow in the Happy Valley, but evidently introduced, as it is an American species.

BEGONIACE^E.

1. *Begonia* (*Diplochonium*) *Bowringiana*, Champ., sp. n.; caule herbaceo erecto ramoso, foliis late inaequaliter cordatis irregulariter 5-7-lobis, lobis latis brevibus acutis dentatis lobatisvc supra hispidulis subtus ramulisque novellis rufo-lunatis, pedunculis folio brevioribus paucifloris, capsulae alis 2 angustis tertia elongata.—*Rhizoma* crassum. *CaulU* ad axillam squamae stipulaeformis sesquipedalis, parce ramosus, carnosulus, ad nodos subincrassatus. *S&ipula* membranaceae, ovatse, 4-6 lin. longae, obtusiusculse et tenuissime aristulatse. *Folia* longiuscule petiolata, majora 6-8 poll, longa, 4-6 poll, lata, lobis valde inaequalibus ssepius longitudine sua latioribus. *Pili* paginse

superiores vix oculo nudo conspicui, lana paginae inferioris, ramulorum et petiolorum laxissima, demum saepe derasa. *Pedunculi* in axillis superioribus subbipollicares apice flores ferunt 3-4 masculo cum unico femineo, idsequaliter pedicellatos, nutantes. *Flores masculi*.- petala exteriora (v. sepala) 2 suborbiculata semipollicaria, interiora 2 oblonga concava 3 lin. longa; columna staminifera brevis; filamenta singula anthera oblonga sublongiora. *Flores foeminei*: petala 4 subaequalia, oblique ovata, 3-4 lin. longa, addito interdum quinto interiore angusto. *Stylus* brevissimus, crassus, trifidus, stigmatibus crassis flexuosis. *Capsula* 5-7 lin. longa, minute hirtella, alis 2 angustis, tertia horizontaliter extensa, 7-8 lin. longa; placenta in loculis duplicatae, locus unus saepe abortu vacuus.

Hong-Kong, flowering in October. The flowers are light pink, the fruit a dark green.

CEASSULACEAE.

The *Bryophyllum calycinum*, gathered in the island by Mr. Hinds, is not in Major Champion's collection.

SAXIFRAGACEAE.

1. *Adamia versicolor*, Fortune, in Journ. Hort. Soc. vol. i. p. 298.—Lindl. et Paxt. El. Gard. t. 5.—A. *Cjdnensis*, Gardn. et Champ, in Kew Journ. Bot. vol. i. p. 311.

Ravines of Mount Victoria, also Mount Parker. Flowers in June. The fruit, which ripens in January, is at first green, but assumes eventually a bright blue colour.

2. *Itea Chinensis*, Hook, et Arn. Bot. Beech, p. 189. t. 39.

Happy Valley, on the outskirts of the woods at the top of the ridge, where several shrubs of it were found in July, 1848, but in fruit only. They did not flower at all in 1849.

UMBELLIFERAE.

1. *Hydrocotyle rotundifolia*, Linn.

Common in rice-fields.

2. *Hydrocotyle Asiatica*, Linn.

With the preceding species, but not so common.

ARALIACEAE.

L. *Aralia Chinensis*, Linn.

Scarce in Hong-Kong.

2. *Paratropia Cantonienis*, Hook, et Arn. Bot. Beech, p. 189.

This fine species is common in Hong-Kong as well as in China. It grows to a moderate-sized tree, flowering in December and fruiting in the course of the winter.

3. *Hedera samflora*, Champ., sp. n.; inermis, foliis integris ovali-ellipticis oblongisve acuminatis trinerviis divaricato-penniveniis nitidis, pedunculo petiolis longioribus brevioribus, umbella simplici globosa, floribus parvis, stylis concretis, fructu globoso.—*Frutex* glaberrimus. *Folia* versus apices ramorum saepe subopposita v. in verticillos spurios approximata, nunc brevissime nunc longe petiolata, majora 5 poll, longa, 2 poll, lata, apice breviter acuminata, basi obtusiuscula, consistentia laurina, supra nitidula, costa media subtus valde prominente, lateralibus minus conspicuis margini approximatis; venae a costa divergentes paucae, tenues. *Pedunculi* in specimine solitarii, terminales, semipollicares v. paulo longiores, apice in receptaculum disciformem dilatati. *Umbella* florens 5 lin. diametro. *Pedicelli* numerosissimi, 2 lin. longi. *Flores* vix linea longiores. *Calycis* margo brevis, minute 5-dentatus. *Petala* 5, apice leviter inflexo-incrassata. *Stamina* petiolis alterna, filamenta iis paulo breviora. *Styli* in unum petalis brevioribus coaliti. *Bacca* globosa, 5-locularis, ea // *lie* *Ucis* paulo minor.

Hong-Kong, the precise station not recorded.

4. *Hedera pro tea*, Champ., sp. n.; fruticosa, inermis, foliis integris uninerviis v. profunde 2-3-fidis 2-3-nerviis, divaricato-penniveniis ellipticis oblongis lanceolatisve coriaceis, pedunculis petiolo longioribus brevioribus, umbella simplici globosa multiflora, stylis concretis, fructu globoso.—*Frutex* erectus, glaberrimus. *Folia* valde variabilia. *Petiolus* nunc brevissimus, nunc fere bipollicaris; lamina integra ovali-oblonga sesquipollicaris, v. lanceolata 4-5-pollicaris, v. fere 2-3-partita lobis lanceolatis; costa media folii v. lorum valde prominens, margo anguste revoluta, venae a costa angulo fere recto divergentes tenues, consistentia coriacea. *Pedunculi* terminales, solitarii v. 2-3-ni, 6-9 lin. longi. *Umbella* et flores fere *H. parviflora*, nisi flores pauciores et dimidio majores. *Petala* evidentius inflexo-mucronata. *Stylus* brevior. *Bacca* globosa, 5-locularis, magnitudine fere *H. helich.*

A handsome shrub, in ravines of Mount Gough and Mount Victoria.

LORANTHACEJE.

1. *Viscum orientate*, Willd.—DC. Prod. vol. iv. p. 278*.

Upon trees in the Happy Valley.

2. *Viscum moniliforme*, Blume.—Wight et Arn. Prod. vol. i. p. 380.

Only once found in the Happy Valley.

3. *Loranthus Scurrula*, Linn. Spec. Pl. p. 472? non Eoxb.—*L. Chinenak*, DC. Coll. Mem. 6. Loranth. t. 7. Prodr. vol. iv. p. 301.

Upon trees, Hong-Kong. The specimens agree well with De Candolle's figure, as well as with Linnaeus's description, as far as they go. The full-grown leaves are smooth, the young shoots and leaves are clothed with a ferruginous or whitish, chaffy or farinaceous down, as in *L. pulveruleivtm* or *L. graciliflorus*, and can scarcely be said to be *ferrugineo'villosa*, as in De Candolle's character. The flowers are 7 to 8 lines long, slightly farinaceous when young, nearly smooth when expanded.

{To be continued.}

Note on the Spines of Cactuses; by BEETHOLD SEEMANN.

It has been mentioned as something remarkable, that one of M. Ehrenberg's *Echinocacti* had upwards of 2000 spines. By counting first the number, of spines, then that of the bundles of each rib, and ultimately that of the ribs of every individual, I arrived at the following result:—An *Echinocactus Wi&lazanii*, Engelm., in the possession of Frederick Scheer, Esq., was found to have 8360 spines, and the *E. Visnaga-f*, Hook. (*E. platyceras*, Lem.), in the Royal Gardens, 17,600. There was formerly at Kew a specimen of the latter, which was at least three times larger than the present, and which cannot have had less

* I am well aware that recent investigations have induced several botanists to propose the generic separation of several if not the whole of the tropical *Visca* from our European species, and that Mr. Miers, from a very careful examination and comparison of their structure, has been led to consider *Viscum* and its allies as totally disconnected with the true *Loranthacee*. But the entering into this question would lead me too far from our present purpose; nor is it necessary on this occasion, as I have no new species to propose, and consequently no new names to add, which by being recorded under wrong genera, might increase the number of useless synonyms.

t The specific name, "*Visnaga*" is the native appellation of the plant in Mexico, and means "*toothpick*," from the use made of these spines. If these could sell at only one penny each, a nursery of such Cactuses would be a great treasure.—ED.

than 51,000. Those Cacti, whose bundles consist of a greater number of spines, present results still more surprising. The tallest *Pilocereus senilis*, Lem., at Kew, having thirty in each bundle, has a total number of 7 £000. Yet these plants, giants as they appear in European conservatories, are but pigmies amongst their kindred at home. And if these small specimens have such a number, how many may a full-grown plant possess, and how great may be the number of spines produced in Mexico, a country where a man may travel for days without seeing any other vegetation save vast groves of Cactuses !

BOTANICAL INFORMATION.

DR. A. BLANCO.

We are glad to find that the South Americans are at last turning their attention to the great treasures which nature has scattered around them. M. Gay, a citizen of Chili, is still engaged in the publication of the Flora of his native country; and the Republic of Peru, we are happy to add, has just appointed M. Antonio Blanco, M.D., to be Professor of Botany in Lima. M. Blanco has done a great deal in exploring Andalusia. He departed from Europe in March.

M. BOURGEAU'S *Spanish Plants*.

L'Association Botanique Française d'Exploration est sur le point de terminer le partage des Collections recueillies, en 1851, par son voyageur en Espagne, M. Bourgeau, dans la première partie du voyage annoncé dans la circulaire du 4 Février dernier. Les collections, sous peu de jours*, pourront être envoyées à tous les souscripteurs; elles contiendront environ 400 à 500 espèces, nombre plus considérable que celui qui avait été annoncé: M. Bourgeau ayant été forcé de revenir à Paris, vers la fin du mois de Novembre, par des circonstances indépendantes de sa volonté, a cru devoir achever la distribution de toute sa récolte, avant de repartir de Paris, dans la crainte que les échantillons ne pussent s'altérer s'ils avaient dû être gardés encore pendant une année.

Aucune modification n'est, du reste, apportée aux engagements pris

* This collection is now (March, 1852) distributed, and fully equals all the former ones of M. Bourgeau in the rarity and beauty of the specimens.—ED.

par M. Bourgeau, et il réalisera cette année la seconde partie du voyage; telle qu'elle a été annoncée. Les 50 francs versés à l'avance par les souscripteurs aux collections les plus complètes Te seront déduits, ainsi que cela a été convenu, que sur le prix du complément de la collection dont la livraison aura lieu vers la fin de 1852.

Nous profitons de cette occasion pour informer les souscripteurs qu'il ne reste qu'un petit nombre des collections suivantes:—Deux centuries (à 20 fr. chaque) recueillies aux environs de Mostaganem, en 1850, par M. Balansa, qui explore cette année la province d'Oran et doit visiter les environs de Tlemcen;—120 espèces de choix recueillies aux environs d'Alger, en 1850, par M. P. Jamin (les collections de 1851, également composées de plantes intéressantes des environs d'Alger, contiennent environ 123 espèces); M. P. Jamin, actuellement fixé à Biskara, à la limite du désert ou Sahara Algérien, continuera à adresser à la Société une ou deux centuries par an:—une centurie de plantes de choix recueillies dans le Val Sassina (Lombardie) par M. Dačnen;—quelques centuries de plantes de Corse provenant de l'herbier de M. Soleirol.

Les souscripteurs qui n'ont pas encore fait la demande des collections ci-dessus indiquées sont priés de la faire le plus tôt possible, afin que, s'il y a lieu, on soit à même d'éviter des frais de transport en ne faisant qu'un seul envoi.—Les lettres doivent être adressées à M. Ernest Cosson, à Paris, rue du Grand-Chantier, no. 12, ou à M. Bourgeau, rue St. Claude, no. 14, (au Marais.)

Mr. Drummond's Plants of Western Australia.

The indefatigable, and we may now say venerable, Mr. James Drummond, writes us word, from his residence, Hawthornden Farm, Swan River, in a letter dated Dec. 28th, 1851, that he and his son have just returned from a long and interesting journey of eighteen months' duration, to the north of that settlement. They had several narrow escapes with their lives from the hostility of the natives; and nowhere could they move without being armed themselves with double-barrelled guns and accompanied by a party equally well provided with weapons of defence. Mr. Drummond was happily rewarded by a considerable collection of plants, containing many novelties and even some new genera. Among the *Proteacea* is a genus with the habit of *Persoonia*., with the seeds an inch long, shaped like the keys of the Ash, and the

seed-vessel, which opens at the top, contains but one seed. A plant, with the habit of *Bryandra Fraseri*, growing to the height of twelve or fifteen feet, has seed-vessels of the size and shape of a musket-ball, each bearing two seeds. There is a remarkable plant of the family *Crucifera*, which, after flowering, buries its pods underground. A new Dilleniaceous plant has the habit and appearance of *Daviesia juncea*, and is equally leafless. Seven new *Banksias* are in the collection. But we need not enumerate any more, as it was Mr. Drummond's intention to despatch the collections to England by the earliest opportunity, and we presume they will be consigned to our friend Mr. Heward, Young-street, Kensington, for distribution among the subscribers.

Superstitions with regard to Glastonbury Thorn.

"It is handed down that when Joseph of Arimathea, during his mission to England, arrived at Wearyall-hill, near Glastonbury, he struck his travelling staff into the earth, which immediately took root, and ever after put forth its leaves and blossoms on Christmas Day, being converted into a miraculous thorn. This tree, which has two trunks, was preserved until the time of Queen Elizabeth, when one of the trunks was destroyed by a Puritan; and the other met with the same fate during the Great Rebellion. Throughout the reign of Henry VIII. its blossoms were esteemed such great curiosities and sovereign specifics, as to become an object of gain to the merchants of Bristol, who not only disposed of them to the inhabitants of their own city, but *exported* these blossoms to different parts of Europe. There were, in addition to these, relics for rain, for avoiding the evil eye, for rooting out charlock and all weeds in corn, with similar specifics, which were considered at this time *the best of all property.*"—*Notes and Queries.*

NOTICES OF BOOKS.

HARVEY, WILLIAM HENRY, M.D., *etc.*: NEREIS BOREALI-AMERICANA; *or, Contributions towards a History of the Marine Alga of the Atlantic and Pacific Coasts of North America.* Part I., Melanospermese. Royal 4to, 144 pp., twelve coloured plates, representing thirty-two species.

We have not a more industrious botanist in Europe than Dr. Harvey,

and none whose qualifications better lit him for the various works he has undertaken, not only as a naturalist, but as an artist; for Dr. Harvey does not confine his manual labours to the use of the pen in describing faithfully from nature, all the illustrations are from his own accurate pencil, and not drawn only, but lithographed by him.

The *Nereis Boreali-Americana* owes its origin to the Smithsonian Institution in North America, and W. J. M. Bailey, Esq., Professor of Chemistry, U. S. Military Academy, West Point, who, by the encouragement they give to the publication of the vegetation of their own territories, in this case free the author from loss. A brief advertisement attached to this part informs us that the work will appear in three portions.

1. MELANOSPERMEJE ; with twelve plates (now published, November, 1851).

2. RHODOSPERMEJS ; twenty-four plates, to appear during 1852.

3. CHLOROSPERMEZE ; twenty-four plates, to appear during 1853.

There will be about 450 pages of letterpress, and full indexes of species and synonyms, and descriptions of the plates will be furnished at the conclusion of the work. The "Introduction" occupies forty-three closely-printed pages, and is full of sound, interesting, and useful matter, bearing upon the structure of the *Alga* generally, under the several heads of *Root, Frond, Colour, Fructification, Movements of Alga, Habitat, Geographical Distribution* (more especially of the American species), *Collecting and Preserving*, and last, though not least in interest, the *Uses of the Alga*, concluding with an acknowledgment to those who have contributed to the collections described in the work, and all written in language as attractive as it is scientific. The compliment paid to the character of the "venerable" Menzies is all our space will allow us to quote as a specimen of the introductory pages -

^c But I should not, in speaking of the North-west Coast, omit to mention a name which will ever be associated in my mind with that interesting botanical region, the venerable Archibald Menzies, who accompanied Vancouver, and whom I remember as one of the finest specimens of green old age that it has been my lot to meet. He was the first naturalist to explore the Cryptogamic treasures of the north-west, and to the last could recall with vividness the scenes he had witnessed, and loved to speak of the plants he had discovered. His plants, the companions of his early hardships, seemed to stir up recollections of every

circumstance that had attended their collection, at a distance of more than half a century back from the time I speak of* He it was who first possessed me with a desire to explore the American shores, a desire which has followed me through life, though as yet it has been but very imperfectly gratified. With this small tribute to his memory I may appropriately close this general expression of my thanks to those who have aided me in the present undertaking." The rest of the pages are devoted to the botanical history of the genera and species.

The author's admirable 'Phycologia Britannica,' in three volumes, royal 8vo, each volume containing 120 plates, with full synopses and indexes, is completed; but, valuable as the contribution to our knowledge of the *Alga* the 'Nereis Borcali-Americana' is, we trust that the continuation and completion of the 'Nereis Australis' a work of equal value with the present, will not thereby be delayed, and of which we have as yet only one of four fasciculi (to which the work is to extend) on our shelves.

JAUBERT *et* SPACH : ILLUSTRATIONES PLANTAKUM ORIENTALIUM ;
ou, Choix de Plantes Nouvelles ou pen counties de VAsie Occident ale.
 Imp. 4to. Paris.

We are happy to find this important work continued with unabated zeal and talent. It has extended now to three volumes complete, each with 100 plates, and we have now before us three numbers with thirty-nine plates of vol. iv. Vol. ii. is rich in *Polygonea*, *Composite*, and *Genista* among *Leguminosa*;—Vol. iii., scarcely less so in *Composite*, including some very remarkable genera and species; and several new species of *Amygdalus*, of *Menus*, *Haplophyllum*, *Nitraria*, *Beaumuria*, etc., are admirably illustrated. The three numbers of the third volume have many plates devoted to Grasses, others to new Thymelaceous plants. In no work that we are acquainted with, is more labour bestowed on careful diagnosis and admirable analysis of figures.

Description of a new Species of AMOMUM, from Tropical West Africa;
 by J. D. HOOKER, M.D., F.B.S. With a Plate.

(TAB. V.)

Beautiful specimens of the flowers of this plant, preserved in spirits, together with a dried leaf, and the fruit, have been presented to the Kew Museum by Dr. Daniell, with the name *A. Afzelii* ? or Bastard Melligetia, attached. The true *A. Afzelii* of Roscoe, however, has been identified with the *A. Granum-Paradisi* of Linnaeus, *A. grandiflorum* of Smith (Exot. Flora, vol. i. t. III), and *A. exscapum* of Sims (Ann. Bot. vol. i. p. 248. t. 13) ; and has been lately figured in the ^e Botanical Magazine/ t. 4603, from specimens which flowered at Kew. A full description of that plant will be found there, together with its intricate synonymy. The present differs widely from it; and I propose that it should bear the name of its zealous discoverer, to whom we feel extremely indebted for the light he has thrown upon the difficult subject of African *Amoma*.

Amomum Danielli, Hook. fil.; glaberrimum, caule elongato folioso, foliis lineari-lanceolatis (1½ ped. longis, 3 unc. latis) longe acuminatis striato-venosis, scapis radicalibus floriferis 2 unc. fructiferis 4-6 unc. longis 3-5-floris, bracteis oblongo-cymbiformibus obtusis, floribus flavis, corollae lobis lateralibus patentibus subulato-acuminatis dorsali amplo obovato-oblongo caeteris longiore, labello late lineari-oblongo planiusculo rigido margine subundulato, filamento basi utrinque appendicula subulata aucto, fructu lineari-ampullaceo rostrato. (TAB. VI. sub nom. *A. Afzelii*.)

HAB. Gold and Slave Coasts, and Clarence Town, Fernando Po; abundant, *Dr. Daniell*. Fl. June and July.

A tall, handsome species, growing, according to Dr. Daniell, 8-9 feet high, and the stem an inch and more thick. The flowers are described as of a beautiful yellow colour, in this respect differing widely from those of the true Melligetia, as also in the acid pulp surrounding the seeds, that of *A. Granum-Paradisi* being quite tasteless. No West African species has been described hitherto with yellow flowers, or with the parts of the flowers at all of the same shape as this. The natives call it "Barsalo," to distinguish it from a smaller alpine variety (species ?), named "Tokoloni promah," which may, according to Dr.

Daniell, be the same as, or closely allied to, the true *Melligetta*, judging from the pungency of its seeds.

Dr. Pereira has published an excellent figure of the fruit of this plant from Dr. Daniell's specimens, and suggests the possibility of its proving the same & *sA. Clusii* of Smith, in 'Rees' Cyclopaedia,' a point it is impossible to determine from the description given in that work. The specimens I have examined of Dr. Daniell's plant are not like Pereira's figure of *A. Clusii* (Mat. Med. vol. ii. fig- 249), but exactly resemble the figure given of the Bastard *Melligetta*, fig. 251, 253, taken from fruits communicated by its discoverer.

The subject of African *Amoma* is an extremely difficult one, and except good specimens of the flowers be preserved in spirits, and of the leaves and fruit dried to accompany them, and so ticketed on the spot as to preclude the possibility of any of these three parts being confounded with those of similar species, it is quite hopeless to attempt to elucidate the species. Hitherto specific characters have been too much drawn up from very insufficient specimens of the fruit only. It is very much to be desired that this difficult matter should be cleared up, and that Dr. Daniell will renew the study with his wonted zeal in the native country of the *Melligettas*, and will collect all the species he encounters, in various states of flower, leaf, and seed, ticket them on the spot, and remit them to England, with such valuable notes and observations as he has been in the habit of collecting.

The Plate V. represents the flower and fruit.

DECADES OF FUNGI; *by the* REV. M. J. BERKELEY, M.A., F.L.S.

Decades XXXIX., XL.

SUchm and Khassya "Fungi.

{Continued from p. 107.)

381. *A. (Naucoria) descendens*, n.s.; pileo heraisphaerico exurabonato sicco glabro sublateritio expallente; stipite obliquo annulato fistuloso basi incrassato; lamellis pileo subconcoloribus adnatis albomarginatis. Hook, fil., Ser. 2, No. 14.

HAB. In pine-woods; amongst moss. Sikkim, 11,000 feet.

Inodorous. Pileus 1-1½ inch or more across, hemispherical, per-

fectly obtuse or very slightly conical, dry, smooth, dark red-brown, almost lateritious, becoming tan-coloured as it dries, thin, but not membranaceous; margin slightly striate, sometimes reflected. Stem 1½ inch high, 1| line thick, rather incrassated at the base, reddish-brown, furnished with a short spongy ring above the middle, which is at length evanescent. Gills cinnamon, ascending, adnate, rather distant; margin white. Spores subelliptic, $\frac{1}{2}$ of an inch long.

Not so slender a species as *A. temulentus*, with which it is nearly allied, and distinguished by its ring and other marks. The specific name has the same import as that of *Allium descendens*.

382. *A. (Galera) vinolentus*, n. s.; pileo campanulato vinoso-fulvo expallente, margine striato; stipite elongato deorsum incrassato lamellis adscendentibus vinosis. Hook, fil, Ser. 2, No. 13.

HAB. Amongst mosses, and on decayed wood in pine-forests. Sikkim, 11,000 feet.

Pileus ½ an inch across, campanulate, membranaceous, at first of a dull vinous-tawny, then pallid; margin striate; flesh dark vinous-red, distinct from the stem. Stem 2½ inches high, not a line thick, slightly incrassated below, fistulose, vinous-red. Gills ascending, ventricose, paler than the stem. Spores tawny, $T \wedge W \text{ of } f^{an} \wedge nc \wedge l^{on} \&$ -

Allied to *A. tener*, but distinguished from all neighbouring species by the vinous tint of every part.

383. *A. (Psalliota) latipes*, n. s.; pileo expanso convexo umbonato sicco stipitcque marginato-bulboso sursum attenuato cavo squamosis; lamellis postice attenuatis. Hook, fil., Ser. 3, No. 24.

HAB. On the ground. Nunklow. Khassya, 4000 feet. July 11, 1850.

Pileus 4J inches broad, convex, expanded, with an obtuse well-marked umbo, fleshy, clothed with shaggy scales, dry, of a pale, dull tawny. Stem 5| inches high, about \ an inch thick in the centre, attenuated upward, swelling into a broad abrupt bulb below, 2 inches or more thick, tawny and scaly like the pileus, with some vinous blotches at the base, hollow. Gills attenuated behind, nearly free, at length dark purple-brown. Odour sweet; whole plant brittle.

An evident ally of *A. campestris*, and distinguished from all other neighbouring forms by the broad bulbous base. The hollow of the stem reaches only to the top of the bulb.

* *A. smiglobatiis*, Batsch. Hook, fil., Ser. 3, No. 14.

HAB. On the ground. Myrung, Khassya, 6000 feet. July 8, 1850.

* *A. papilionaceus*, Bxdl. Hook, fil., Ser. 3, No. 1.

HAB. On the ground. Plains of Eastern Bengal; Jheels. June 4, 1850.

This form is rather more campanulate than usual, and the pileus is minutely floccose. The stem, as in European specimens, is pale, like the pileus, without any rufous tinge; and the gills are broad, adnate, with a white margin.

384. *Cortinarius* (*Myxacium*) *Emodensis*, n. s.; pileo convexo latis*, sime umhonato carnosio medio flocculoso, margine sulcato; stipite valido obeso subeequali laevi solido, annulo deflexo ainplo; lamellis e violaceis umbrinis. Hook, fil., Ser. 2, No. 2.

HAB. In pine-woods, on *Abies Webbiana*. Lachen, 10,000 feet. May 31, 1849.

Inodorous. Pileus 4 inches across, convex, subcampanulate, very obtuse or with a very broad umbo, tawny, flocculent in the middle, extremely fleshy; margin sulcate. Flesh white, umber beneath the cuticle. Stem 6 inches high, slightly curved above, 1 inch thick, slightly incrassated downwards, blunt, solid, even, paler than the pileus, within violet towards the outer surface; ring broad, deflexed, striate. Gills nearly equal, rounded behind, free or only adnexed, violet, shaded at the base with umber. Spores about $\frac{2}{100}$ of an inch long, slightly granulated, exactly like those of *C. elatior*. The gills vary from free to adnexed and subdecurrent.

Nearly allied to *C. elatior*, but with a much thicker pileus and a brownish stem, and, above all, differing in its deflexed ring like that of *C. caper at us*. Eaten by the Bhotas under the name of Onglau, or Yungla-tschaino, the latter word meaning Agaric. The Bhotas, according to Dr. Hooker, distinguish several species of Tschamo, as Kyalee (white); Khow (snow); Nakku (black); Temo (yellow); Darchi (small); Jugga (dung).

385. *C.* (*Myxacium*) *vinosus*, n. s.; pileo discoideo viscoso glabro vinoso-fusco; stipite clavato viscoso floccoso vinoso farcto; lamellis subhorizontalibus adnatis fuscis. Hook, fil., Ser. 2, No. 30.

HAB. In pine-woods. Sikkim, 11,000 feet.

Brittle. Odour faint. Pileus scarcely 2 inches across, convex, regular, smooth, carnose, slightly viscid, of a dark vinous-brown, paler towards the margin. Flesh dark, like the pileus. Stem $\frac{2}{10}$ inches

high, $\frac{1}{2}$ an inch thick in the centre, clavate, but not bulbous, vinous, clothed with scattered flocci, slightly viscid, stuffed, paler within. Gills horizontal, broad, adnate, with a very slight emargination.

This species has somewhat the appearance of *C. purpurascens*. It is placed in *Myxacium* on account of the viscid stem, but does not associate very well with any described species.

* *C. violaceus*, Fries, Ep. p. 279. Hook, fil., Ser. 3, No. 13.

HAB. In woods. Myrung, Khassya. July, 1850.

The specimens are slightly umbilicate, and very tall.

386. *C.* (Dermocybe) *Jlammeus*, n. s.; pileo e globoso subhemispherico subcarnoso flocculoso stipiteque deorsum incrassato cavo sanguineo-lateritiis; lamellis adnatis subdistantibus aurantiis variegatis. Hook, fil., Ser. 2, No. 20.

HAB. In pine-woods. Sikkim, 11,000 feet.

Inodorous. Cespitose. Fileus at first nearly globose, then irregularly hemispherical, $\frac{1}{2}$ inch broad, rather fleshy, dry, sprinkled with flocci. Stem 3 inches high, about $\frac{1}{2}$ an inch* thick in the centre, incrassated downward, almost bulbous at the base, like the pileus, of a rich blood-colour, hollow, orange within; veil blood-coloured. Gills broad, ascending, adnate', orange, variegated with green. Spores sub-elliptic, about $\frac{3}{4}$ of an inch long.

This species differs from *C. sanguineus* in its less graceful habit, from *C. miltinuB* in its hollow elongated stem, and from both in the absence of any marked odour. Many other differences might be pointed out, especially that of the variegated gills, which, even when dry, have a greenish tinge. I find no difference in the spores.

* *C. mniomisy* Fries, Ep. p. 313. Hook, fil., Ser. 2, No. 15 (pro parte).

HAB. In pine-woods. • Sikkim, 11,000 feet.

This is figured with an *Entoloma*, probably as the young state, agreeing as it does in form. The spores, however, are totally different: in this obliquely elliptic, about $\frac{1}{2}$ of an inch long; in the other angular, and very strongly toothed, about $\frac{1}{4}$ of an inch long.

As the specimen is young from whence the figure is taken, it is impossible to say very positively whether it is the plant of Fries or no. It is at any rate very closely allied.

* *Hygrophorus miniatus*, Fr. Ep. p. 330.

HAB. In pine-woods. Lachn, 10,000 feet. July 9, 1849. Larger

than the usual form, but exactly agreeing with Bull. tab. 570. 2. E. F.

Brittle, inodorous. Stem hollow; pileus squamulose; colour of the pileus and stem brilliant orange-red. Gills adnate, decurrent. There is no figure, and the colour of the gills is not noted.

387. *If. Pomona*, n. s.; pileo hemispherico subfloccoso fulvo flavoque variegato; stipite incurvo fistuloso; lamellis pallidis decurrentibus acie undulata. Hook, fil., Ser. 3, No. 10.

HAB. On clay banks. Moflong, Khassya. July 1, 1850.

Inodorous, brittle. Pileus H inch across, hemispherical, sometimes slightly umbonate, dry, fleshy, tawny, shaded here and there with yellow, obscurely floccose, surface glistening; flesh yellow; margin even. Stem incurved, 1-1-J- inch high, tawny or yellow, truly fistulose. Gills flesh-coloured or pale yellow, truly decurrent, thick, fleshy, brittle.

A pretty species, allied to *H. fulvus*. Like many other species from Khassya, growing on clay-banks, the stem is more or less horizontal.

388. *H. fulvus*, n. s.; pileo campanulato obtuso subcarnoso lsetc fulvo pulverulenti-squamoso, margine striato; stipite tenui sequali colore; lamellis luteis adnatis postice attenuatis. Hook, fil., Ser. 2, No. 23.

HAB. In pine-woods. Sikkim, 11,000 feet.

Brittle. Pileus scarcely half an inch broad, campanulate, obtuse, not viscid, rather fleshy, bright tawny, sprinkled in the centre with little dust-like scales; margin striate. Stem 2 inches high, 1£ line thick, nearly equal, smooth, tawny like the pileus, but paler and yellow lower below, fistulose. Gills broad, ventricose, yellow, adnate, attenuated behind.

A pretty little species, with the habit of *H. psittacinus*-

* *Lactarius vellereus*, Fr. Ep. p. 340. Hook, fil., Ser. 3, No. 34.

HAB. Fir-woods, 10,000 feet. Sikkim and Khassya. Oct. 24.

Thinner and more delicate than European specimens, but exactly agreeing in the peculiar clothing of the pileus and stem.

* *L. delidosus*, Fr. Ep. p. 341. Hook, fil., Ser. 2, No. 33.

HAB. Lachen, 11,000 feet.

It is curious that only one of the species of *Lactarius*, which are comparatively rare in the collection, seems to have been found in a milky state. This is probably owing to the very moist climate. "*Lac aquosum* nunquam est normalis status, sed e loco humido depravatus,"

Fr. Ep. p. 833. The dried specimens are far thinner than those of our own country.

389. *L. princeps*, n. s.; pileo inrundibuliformi sicco opaco subfarinaceo sanguineo-rubro; stipite obeso subconcolori deorsum attenuato solido; lamellis pallidis. Hook. fil. Ser. 3, No. 16.

HAB. In woods. Kullung, Khassya, 6000 feet. July 9, 1850.

Inodorous, milky. Pileus 4 inches across, irregular infundibuliform, dry, opaque, subfarinaceous, of a deep rich blood-red. Stem 3½ inches high, more than an-inch thick, straight, attenuated downwards, blunt, more tawny than the pileus, solid, white within, except towards the edges. Gills moderately broad, very pale, but partaking of the same tint as the stem, decurrent.

Allied to *Ladarius Folemus*, but a still more handsome species, remarkable for its very rich colour.

No. 12 is probably the old state of this, as the odour is putrid. The substance fleshy and brittle, not firm, as in No. 16; pileus moist, but not viscid, glistening; surface of stem opaque, almost pubescent. The colour of every part is much darker. Gathered at Myrung, 6000 feet, July, 1850.

* *L. subdulcis*, Fr. Ep. p. 345. Hook, fil., Ser. 3, No. 28.

As I have seen no specimens of this species, and the drawings are unaccompanied by any notes, I cannot speak positively about it. The pileus is of a more or less dark reddish-brown, deeply umbilicate, and slightly carnose. The stem of the same colour as the pileus, and nearly equal, yellowish within, and solid when drawn. Gills at first yellowish, then reddish-brown. Another species, or possibly a *Russula*, from dry clay, was gathered at Nunklow, July 11, 1850, of a much paler colour, not at all umbilicate, and with a hollow stem, evidently at first stuffed. This is No. 26 of the same collection.

* *Russula sanguinea*, Fr. Ep. p. 351. Hook, fil., Ser. 2, No. 32.

HAB. In pine-woods. Lachen, 11,000 feet.

* *B. emetica*, Fries, Ep. p. 357. Hook, fil., Ser. 3, No. 31.

HAB. Khassya mountains, 1850.

* *Cantharellus infundibuliformis*, Fr. Ep. p. 366. Hook, fil., Ser. 3, No. 20.

HAB. On the ground. Myrung, Khassya. July 7, 1850.

The colour is duller than usual, but I have found very similar specimens in England, approaching somewhat to *C. clnereus*.

390. *Maramius hcematodes*, n. s.; pileo cum lamellis ex hemispkaerico turbinato umbilicato sulcato purpureo; stipite brevi glabro solido insititio obscuriore; lamellis paucis adnatis saepe triquetris. Hook, fil., Ser. 2, No. 31.

HAB. On pine-twigs. Sikkim, 11,000 feet.

Coriaceous, tough, scattered, inodorous. Pileus \bar{i} an inch broad, at first hemispherical, then taller, with the gills turbinate, umbilicate; margin arched, deeply sulcate, vinous-purple. Stem scarce an inch high, not 1 line thick, solid, incurved, far deeper in colour than the pileus. Gills thick, broadly adnate, of the same colour as the pileus; interstices even.

Analogous to *A. hcematopm*. It will come near *A. ramealis*, but the stem is by no means velvety. I do not know of any very nearly allied species.

391. *Maramius Hookeri*, n. s.; pileo amplo hemisphserico viridi c disco centrali orbiculari umbilicato, profundissime et latissime sulcato; stipite elongato fistuloso deorsum incrassato fulvo; lamellis distantibus paucis pallido-flavis postice rotundatis adnexis. Hook, fil., Ser. 3, No. 5. TAB. VI.

HAB. In copse-wood, on moss. Khassya mountains, 5000 feet. June 26, 1850.

Inodorous, dry, leathery. Pileus hemispherical, 2 inches across, very thin, yellowish-green, smooth, umbilicate in the centre, so as to form a yellow disc corresponding with the top of the stem, from which proceed about twelve deep and broad furrows, with as many shorter ones at the margin, where all are marked with transverse wrinkles. Stem 6 inches high, 2 lines thick above, 5 at the base, gradually incrassated downwards, and ending in a little rather abrupt bulb, firm, tawny, fistulose, yellow within. Gills nearly equal, rounded behind, and slightly adnexed, pale yellow; interstices even, except at the margin.

This is one of the finest fungi with which I am acquainted, and the prince of the genus *Marasmius*. I know of no species with which it can be compared. *A. prasius* is analogous in colour and sculpture.

* *M. rotula*, Fr. Ep. p. 385. Hook, fil., Ser. 2, No. 27, forma lamellis adnatis nee collariatis.

HAB. On leaves of maple, etc., in pine-woods. Sikkim, 11,000 feet.

The pileus is darker than usual, and the stem much elongated, but it appears to be the same with the European species, though the gills,

which are few in number, and distant, are certainly adnate, as far as I can judge from the dried specimens and figures; at any rate, it is not *M. aiidrosaceus*.

392. *Boletus furfuraceus*, n. s.; pileo convexo furfuraceo-squamuloso; stipite breviter annulato deorsum furfuraceo sursum nudo; tubulis minoribus adnatis. Hook, fil., Ser. 3, No. 9.

HAB. On clay-banks. Moflong, Khassya, 5500 feet. June 29, 1850.

Inodorous. Pileus 2½ inches across, moist, but not viscid, convex, margin thin, acute, reddish-grey, rufous in the centre, sprinkled with little bran-like, flocculent scales. Stem oblique, solid, nearly equal, 1½ inch high, ½ of an inch thick, clothed below with a reddish furfuraceous coat, which ends in an irregular ring; yellowish above and naked. Tubes short, subadnate, yellowish, slightly tinged with red. Substance of stem and pileus pale, unchangeable, reddish beneath the cuticle.

This pretty little species resembles, somewhat a *Zepiota*. Its nearest ally is *B. squamulidm*.

393. *B. squamatus*, n. s.; pileo convexo aequaliter carnosio compacto squamis magnis luridis ornato, margine veli fragmentis amplis appendiculato; stipite incurvo rubido; hymenio sordide luteo tubulis amplis. Hook, fil., Ser. 3, No. 11.

HAB. Woods. Myrung, Khassya, 6000 feet. July 9, 1850.

Odour rather sweet. Pileus 2 inches across, convex, very fleshy, dry, floccose, clothed with broad blackish scales, variegated with red and dirty white; margin appendiculate with the large broad triangular fragments of the veil, which are externally scaly like the pileus. Stem 3½ inches high, not half an inch thick, incrassated at the base, subbulbous, darker than the pileus, and, like that, shaded with red, white variegated with red and blue within when cut; striate at the top with the descending pores, which are rather long, dirty yellow externally, easily stained, olive within.

This species is allied to *B. subtomentosus* and *B. chrysenteron*, but at once distinguished by its scaly pileus and veil. Like most of the Indian *Boleti*, it is a very fine species.

394. *B. fragicolor*, n. s.; pileo turbinato obtusissimo purpureo, carne pallida in cute rubra; stipite obliquo bulboso laevi pileo concolore aed saturatiore; tubulis majusculis brevibus decurrentibus. Hook, fil., Ser. 3, No. 29.

HAP. Kḥassya mountains.

Pileus 6 inches across, nearly 3 inches thick in the centre, turbinate, broadly and very obtusely umbonate, purple; margin slightly lobed; flesh pale red beneath the cuticle. Stem oblique, 3 inches high, 1 inch thick in the centre, bulbous at the base, of a rich purple, much darker than the pileus. Tubes short, greenish-yellow, rather large, decurrent.

The substance of the stem and pileus is of a uniform, very pale yellowish tint, except beneath the cuticle, where, in either case, it is red.

This is a fine species, evidently allied to *B. subtomentosus* and *B. chrymderon*, but abundantly distinct. It has the habit of such species as *B. cestivalls*. The stem is not reticulate, and therefore the species, though agreeing in the form of the stem* will not come in the section *Calopodes*.

395. *B. glgas*, n. s.; pileo convexo sicco fulvo squamulis superficialibus fasciculato-pilosis adperso; carne pallida incarnata; stipite valido reticulato bulboso; tubulis argillaceis adnatis liberisve. Hook, fil., Scr. 2, No. 36.

H.A.J.B. In copses of *Andromeda* and Birch. Lachen river, 1200 feet. July 17, 1849.

Inodorous. Pileus 6 inches across, regularly convex, subhemispherical without the slightest umbo, tawny, dry, clothed with superficial fasciculate pilose scales; margin thin; flesh pale pink, tawny beneath the cuticle. Stem 6 inches high, 1½ inch thick in the centre, 2½ at the base, bulbous, attenuated upwards, curved, pale umber, lighter above and coarsely reticulated, solid, pink within, shaded towards the base with blue. Hymenium pale yellow. Tubes rather deep clay-coloured, either rounded behind and almost free, or slightly emarginate and adnate. Spores -oVσ of a*¹ i^{QC}h l^{on}g*

Allied to *B. edulis*, or at any rate belonging to the same group. A most magnificent species, whose pileus exactly resembles that of *B. variegatus*.

396. *B. areolatus*, n. s.; pileo amplo leviter depresso alutaceo fulvo verrucis hexagonis areolato; carne pallide flava; stipite deorsum attenuate; tubulis carnis decurrentibus. Hook, fil., Scr. 3, No. 6.

H.A.B. Open pastures. Kala-Panec, Kḥassya, 5500 feet. June 27, 1850.

Pileus 5 inches across, convex, slightly depressed in the centre, dry, covered (except the extreme margin) with hexagonal crowded warts, tawny, tan-coloured, sometimes very deeply fissured. Stem 4 inches high, or more, varying much in thickness, attenuated downwards, brownish. Tubes rose-coloured, decurrent. Substance rather tough.

I am unable to speak positively of the affinities of this species, but it appears to be allied to *B. alutarius* and *B. elleus*.

397. *B. scrobiculatus*, n. s.; pileo convexo fusco-purpureo subglaucopruinoso; stipite incurvo grosse reticulato fusco; tubulis brevibus pallide fusco-purpureis. Hook, fil., Ser. 3, No. 8.

'HAB. On soil in open places. Moflong, Khassya. June 29, 1850.

Inodorous. Pileus convex, very fleshy, rather tough, 2[^]-3 inches across, dry, deep purple-brown, with a somewhat glaucous bloom; flesh white, shaded with patches of purple-brown, very dark immediately beneath the cuticle. Stem 3 inches high, f-1 inch thick, attenuated below or clavate, dark brown, very coarsely reticulated. Tubes pale purple-brown, short, decurrent.

This is very nearly allied to *B. ustalis*, Berk., but differs in its more convex pileus, incurved stem, but especially in the purplish, not ochraceous pores. That, moreover, grows on the trunks of trees, and is tomentose rather than pruinose.

398. *Strobilomyces niyricans*, n. s.; minor; pileo convexo expanso obtusissimo, centro verrucis hexagonis exasperato, margine floccoso squamoso; contextu subsuberoso; stipite solido subaequali flexuoso floccoso-squamoso. Hook, fil., Ser. 3, No. 4. TAB. VI.

HAB. In woods. Kala-Panee, Khassya, 5000 feet. June 27, 1850.

Inodorous. Pileus 2½ inches across, convex, without any umbo, dry, of a dark purple-brown, as is the whole plant, inclining more or less to black, rough in the centre, with small hexagonal warts; the margin, which is thin, shaggy with floccose scales. Stem flexuous, scarcely 2 inches high, \ an inch thick, shaggy like the margin of the pileus, solid, nearly equal. Pores adnate, middle-sized, tough, rather long.

This is a smaller species than the others, and tough like a *Polyporus*.

* *Hydnum aurmalpium*, L. Hook, fil., Ser. 3, No. 21.

HAB. On fir-cones. Myrung, Khassya, 6000 feet. July, 1850.

The specimens differ from the European in being "subtranslucent," but I cannot doubt that it is the same species.

399. *Laclmocladium Hookeri*, n. s.; mycelio tuberoso; stipite crasso rubente sursum diviso in ramos crassos; raulis brevibus irregularibus apice emarginatis. Hook, fil., Ser. 3, No. 36.

HAB. Khassya mountains.

Inodorous, dry, opjike, velvety. Mycelium tuberous, several inches thick. Stem H inch high, nearly an inch thick, tinged with red, dilated above and divided into two or three coarse, ochraceous or dirty-yellow branches, which give off short, irregular branehlets of the same colour, and are sometimes trifid above. All the ultimate ramuli are emarginate.

Distinguished from all other described species by its very thick main branches. The mycelium too is very remarkable.

* *Clavaria Botrytu*, P. Hook, fil., Ser. 3, No. 37. Var. *concolor*.

HAB. Khassya mountains. 1850.

This agrees with *C. Botrytis*, except that the tips of the branches are not darker. It is a true *Clavaria*, being fleshy and brittle when fresh.

* *C. formosa*, ?. Hook, fil., Ser. 3, No. 38.

HAB. Khassya mountains. 1850.

Exactly agreeing in colour with the plant of Holmskiold.

* *C. stricta*, P. Hook, fil., Ser. 3, No. 39.

HAB. Khassya mountains. 1850.

400. *Clavaria miltina*, n. s.; gregaria, fragilis; clavis cavis simplicibus acutissimis coccineis. Hook, fil., Ser. 3, No. 3.

HAB. On rotten timber in wet woods. Kala-Panee. Khassya mountains, 5000 feet. June 27, 1850.

Inodorous, dry, opake, smooth, brittle, Gregarious, 3 inches high, 2-3 lines thick, erect, undulated and rugose, sometimes a little incrassated at the base, extremely acute, simple at the apex, or slightly divided, hollow, bright scarlet.

This very curious species has somewhat the habit of *Calocera*, but its dry, opake, brittle substance at once removes it from that genus. It cannot be confounded with any published species.

Fungi described in the fourth Century now completed.

- Agaricus Anax, B.**
 » *blandulus, ib.*
 „ *calvescens, ib.*
 » *discolor, ib.*
 (dryophilus, Bull.,
 » 1 var. *ccespitis.*
 » *colligatm, B.*
 „ *cnspidatus, ib.*
 „ *dentosm, ib.*
 „ *descendenS) ib.*
 „ *discordis, ib.*
 „ *euthelus, ib.*
 „ *Jlavo-miniatuSy ib.*
 „ *fritillarius, ib.*
 „ *implanus, ib.*
 „ *incommUcibilia, ib.*
 „ *latipes, ib.*
 „ *macer, ib.*
 „ *macrotheluSy ib.*
 „ *micromegas, ib.*
 „ *phlegmaticus, ib.*
 „ *placentodes, ib.*
 „ *puberulus, ib.*
 „ *radiatilis, ib.*
 „ *ranunculinus, ib.*
 „ *Sprucei, ib.*
 „ *vinolentus, ib.*
- Boletus areolatus, ib.**
 „ *delphinusy Hook. fil.*
 „ *JEmodensis, B.*
 „ *fragicolor, ib.*
 „ *furfuracem, ib.*
 „ *gigas, ib.*
 „ *scrobiculatm, ib.*
 „ *squamatus, ib.*
 „ *ttstalis, ib.*
- Calocera sphaerobasis, B.**
Clavaria miltina, ib.
Coprinus Hookeri, ib.
 „ *vellereus, ib.*
Cortinarius Emddensis, ib.
 „ *flammeus, ib.*
 „ *vinosus, ib.*
Depazea mappa, ib.
Exidia bursceformis, ib.
 „ *straminea, ib.*
Favolus intestinalU, ib.
 „ *tenerrimus, ib.*
Hydnum gilvum, ib.
 „ *Pomona, ib.*
Hypocrea grossa, ib.
Lachnocladium Hookeri, ib.
Lactarius princeps, ib.
Laschia subvelutina, ib.
Lentinus coadunatus, Hook, fil.
 „ *hepaticus, B.*
 „ *Hookerianns, ib.*
 „ *subdulcis; ib.*
Lenzites rugulosa, ib.
Lycoperdoh microspermum, ib.
 „ *sericellum, ib.*
Marasmius caperatus, ib.
 „ *consocius, ib.*
 „ *hamatodes, ib.*
 „ *Hookeri, ib.*
 „ *inoderma, ib.*
 „ *iridescens, ib.*
Mitremyces viridis, ib.
Panus monticolor, ib.
PaxilJus chrysites, ib.
 „ *pinguk, ib.*

<i>Faxillus sulphurous</i> , B.	<i>Reticularia enteroxantha</i> , B.
<i>Peziza Darjeelensis</i> , <i>ib.</i>	<i>Aussula cinnabarina</i> , Hook. fil.
„ <i>geneospora</i> , <i>ib.</i>	„ <i>grossa</i> , B.
„ <i>herpeticata</i> , <i>ib.</i>	<i>Schizophyllum umbrinum</i> , <i>ib.</i>
„ <i>macroty</i> <i>ib.</i>	<i>Sjinh&na, parmularia</i> , <i>ib.</i>
„ <i>stilboidea</i> , <i>ib.</i>	<i>Stereum Galeotti</i> , <i>ib.</i>
„ <i>turbinella</i> <i>ib.</i>	„ <i>rimosum</i> , <i>ib.</i>
<i>Phlebia reflexa</i> , <i>ib.</i>	<i>Strobilomyces montosus</i> , <i>ib.</i>
<i>Physarum iridescens</i> , <i>ib.</i>	„ <i>nigricans</i> , <i>ib.</i>
<i>Polyporus cremoricolor</i> , <i>ib.</i>	„ <i>polypyramis</i> , H.fil.
„ <i>maculatus</i> , <i>ib.</i>	<i>Trametes lobata</i> , B.
„ <i>ozonioides</i> , <i>ib.</i>	<i>Trichocoma paradoxum</i> , Jungli.
„ <i>platyporus</i> , <i>ib.</i>	<i>Ustilago Emodensis</i> , B.
„ <i>rubricus</i> , <i>ib.</i>	<i>Xerotus cantharelloides</i> , <i>ib.</i>
„ <i>umbellatus</i> , <i>ib.</i>	

*Notes on BELOOCHISTAN PLANTS; by J. E. STOCKS, M.D., F.L.S.,
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PAPAVERACEÆS.

1. *Papaver cornigerum*, J. E. S.; caule ramoso raultifloro cum foliis plus minus piloso, foliis bipinnatisectis lobulis seta terminatis, pedunculis adpresse setosis, sepalis densissime setosis ad apicem in cornua abrupte productis, petalis cuneatis phoenicis basi atro-maculatis, capsula ellipsoidea quinque-angulata, angulis serie setarum erecto-patentium echinatis, stigmatate pileato fungiformi 4-6-radiato.
HAB. Doobund, in the hills between Kelat and Nooshky. No. 944.

CARYOPHYLLEÆ.

2. *Acanthophyllum grandiflorum*, J. E. S.; suffruticosum, humile, ramis dense intriflatis cespilosum, pube brevi rasa densa griseo-canescens, foliis persistentibus brevibus patulis confertis subulatis planis vel plano-triquetris apice spinosomucronatis nervo medio crasso subtus prominulo percursis, bracteis 8-12 ovalibus explanatis albo-marginatis mucronatis calyce multo brevioribus vacuis florem termhiale

imbricatim stipantibii⁹, calyce pubescente striato elongato obconico-campanulato ad medium in lacinia⁹ linearis mucronatas everso-patentes trinerves fisso, corollae ample petalis obtusis cum stylo et staminibus miniato-rubris.

HAB. The Berg Hills, near Quetta. No. 1041.

Very conspicuous from the fine large red flowers produced in profusion on the low tufts, and remarkable in its solitary terminal flower surrounded by empty bracts.—*Leaves* 4-5 lines long. *Calyx* 4 lines. *Petals* 7-8 lines long.

ZYGOPHYLLACEAE.

3. *Seetzenia orientata*, Dene.

It may be noticed that the stamens, in this species at least, are not opposite, but alternate with the calyx-segments, as has been remarked previously by Major Vicary.

TEREBINTHACEAE.

4. *Fistachia Khinjuk*, J. E. S.; arbor 10-20-pedalis, cortice levi, partibus junioribus pubescentibus adultis glabratis, foliis 5-7-9-foliolatis, petiolo tereti, foliolis basi inaequilatris subfalcatis breviter petiolatis lanceolatis (basi attenuata) vel ovatis (basi plus minus rotundata) apice in caudam setaceam attenuatis vel rarius abrupte productis, fructu obovato subcompresso.—*Folia* 2 pollices longa, 10-12 lineas lata.

Pistachia Khinjuk, J. E. S. in *Herb. n.* 719. *Pistachia Terebinthus*, L., varietas?

HAB. Common in the mountains of Beloochistan from 4000 to 8000 feet, and known under the name of Gwun and Gulungoor. It is found in Afghanistan, and called Khinjuk and Shurumna.

Its fruit is eaten, and from its seeds an oil is extracted.

• *Pistachia Cabulica*, J. E. S.; arbor 10-20-pedalis, cortice tuberculato, minute pubescens, foliis 5-7-9-foliolatis, petiolo ad apicem inconspicue subalato, foliolis subsessilibus angustis lanceolato-oblongis muticis, fructu rotundato compresso.—*Folia* 2 pollices longa, 5 lineas lata.

Machia Cabulica, J. K. S. in *Herb. w.* 1072. *P. mutica*, F. Uch. et Ley. ? *P. Atlantica*, Besf. ?

IAB. Beloochistan hills and throughout Afghanistan.

It is called Kussoor, and its fruits and seeds used as those of the preceding species.

Both these *Pistachias* yield a resin which is used as a succedaneum for Mastic in Beloochistan, Afghanistan, Scinde, and I believe in Persia also. It is called in Scinde *Saht-i-kundiroo*, and in Afghanistan is known to the druggists as *Sakiz Khinjuk*. These trees are noticed by Griffith in his * 'Affghan Journal' under the name of *Khinjuk*, and appear to have been regarded by Ldm as species of *Xanthoxybn* (vide pp. 351,412). *Pistachia Khinjuk* has large yellow galls, like an old worm-eaten tamarind-pod, and these are generally full of the resin. These Dr. Boyle mentions (Himal. Botany, p. 178) as *Gool-i-Pista*, and the resin as *Aluk-ool-UnbaL* *Pistachia Cabulica* also has red excrescences like the comb of a cock, growing from the midrib on the underside of the leaf. Kaempfer (Amcenitates, p. 414) mentions these trees as growing on the mountain Bunna, seven days' journey north of Bunder Abbas, and also about Sliiraz, especially on a mountain near Majin one stage from Shiraz. The names he assigns to the trees are the same as those used in Beloochistan, allowing for dialect and pronunciation; one being called *Bun* or *Wun* (in Beloochistan, *Gwuri*), and one *Kussooddn* (in Beloochistan, *Kussoor*). He mentions also the galls, and the resin, which is called *Kundiroon* by the Persians, or sometimes *Sakiz Sheereen* (*Masticha dulcis*), to distinguish it from *OH-banum*, which is called *Kundir* or *Sakiz Tulkh* (*Masticha amara*); and from Mastic itself, which is called *Kundir Roomee*, or *Sakiz Roomee* (*Masticha Turcica*). The *Khinjuk*, by which the tree is known in Afghanistan, is a slight alteration of *Wun-juk* or *Gwun-juk*. Forskal mentions this resin in his 'Materia Medica Kahirensis' (n. 23 among the Gums), as "Kuteerah Ajimee, Humrah, or Kusrooe, è Persia."

I cannot say absolutely that Ksempfer's trees are identical with the ones just described from Beloochistan, but it is probable, from the similarity of the names, and the great resemblance which the Beloochistan flora has to that of South Persia. *Eremurns Persicus*, *Cow^{ranus} sinia palmatUoba* and *tenella*, *Trichodesma Aucheri*, *Daphne acuminata^{oens}*, *Tulipa chrysantha*, *Amygdalus furcatus*, *Sisymbrium ScJiimperii*, *Ono^{* vel} brychis cornuta*, *Scabiosa Oliverii*, *Bchinosperrum semlijlorum^{anab tus,}* others, *Dufremia orientalis*, *Outreya carduiformis*, *Diarthron^{carinata}*, *Gentiana Oliverii*, *Juniperus Plumicea*, *Cheiranthus crassicaulis*, *minale^{mar-}*, *meria rhaadiflora*, *Brassica Kotschyi*, *Pycnocycla Aucheri*, *Otost*

Auckeri, *Moraa Sisyrinchium*; with species of *Scorzonera*, *Phagnalon*, *Haplophyllum*, *Ferula*, *Dorema*, *Caragana*, *Bongardia*, *Tetracme*, *Heterocaryum*, *Paracaryum*, *Iris*, *Berberia*, *Acant7iolimon*, *Acant7wphyllum*, *Rheum*, and many others, may be mentioned as common to both countries.

Finally, it may be remarked, that most of the species of *Pistachio*. produce galls, which have been used in dying in various countries; and all of them secrete spontaneously a scanty resinous exudation, and yield to incisions a more fluid product which afterwards inspissates.

LEGUMINOS^E.

6. *Dorycnium calycinum*, J. E. S.; annuum, pusillum, pilis patentibus albo-villosum, foliis petiolatis, foliolis oblongis, stipulis subulato-setaceis, pedunculis 6-8-floris folio longioribus, bracteolis setaceis pedicellos breves bis superantibus, calycis tubo decolori extus villosissimo, laciniis linearibus elongatis tubum bis superantibus ad apicem herbaceis utrinque pilosis, corolla parvula alba calycein vix sequante, ovario biovulato, legumine plerumque monospermo stipitato rostrato ambitu rotundato lana gossypina tecto calycis ampliati lacinias medias attingente.

HAB. Near Khanuk, at the base of the mountain Chehel Tun. May, 1850. No. 1021.

7. *Caragana ambigua*, J. E. S.; sufruticosa, pubescens, foliis 2-3-jugis ellipticis mucronatis adpresse canescentibus, petiolis stipulisque spinescentibus, floribus solitariis, calycibus pubescentibus campanulatis dentibus tubo vix brevioribus, legumine pubescente oblongo breviter mucronato leviter curvato.

HAB. Upper Beloochistan, from 5000 to 9000 feet. No. 6196.

It is called *SJnnaluk*.—Its flowers, which are large and conspicuous, are eaten by the Brahm̄s. *Legume* 1 inch long by 3£ lines wide.

8. *Caragana ulicina*, J. E. S. ; sufruticosa, pubescens, foliis 2-3-jugis obovatis saepe retusis mucrone inconspicuo vel omnino nullo adpresse et minute pubescentibus, petiolis stipulisque demum spinescentibus, floribus solitariis vel ex apice pedunculi binis, calycibus pubescentibus, dentibus tubo paulo brevioribus, legumine recto pubescente lineari acuminato.

HAB. Lower Beloochistan. No. 619 a.

Flowers much smaller than in the last species, and the legume quite straight, with a prolonged attenuated apex, 1 inch long, by *H* lines wide.

9. *Onobrychis dealbata*, J. E. S.; cespitosa, caulibus ex eadem radice plurimis abbreviatis, foliis 3-4-jugis approximatis, petioli basi expansa cum stipulis adnata densissime et molliter gossypino-sericea, foliolis rotundatis vel ovatis submucronatis margine subcallosis cum petiolo scapoque pilis adpressis candescens pagina superiore glanduloso-punctata, scapo folia multo superante, racemo denso ovoideo, floribus breviter pedunculatis, calycis dense albo-villosi dentibus subulatis plumoso-villosis tubo longioribus, legumine biloculari (loculo inferiore aspermo stipitifirmi) disco lacunoso-rugoso gossypino margine anguste denticulato-cristato.

HAB. Upper Beloochistan, 6000 to 9000 feet. No. 1035.

10. *Onobrychis nummularia* J. E. S.; annua, diffusa, caule abbreviate, stipulis petiolo adnatis, foliis radicalibus simplicibus vel 3-5-foliolatis, foliolis rotundatis a basi cuneata vel rotundata obovatis vel ovatis apice mucronatis supra pubescentibus velutinis (nervis ob glabritiem conspicuis) subtus canescenti-tomentosis, racemis plurifloris folia plus minus superantibus, calycis laciniis subulato-acuminatis plumosis, ovario biloculari uniloculari falcato-lunato, legumine orbiculari biloculari pubescente ad discum foveolato interstitiis plus minus prominulis aliquando in aculeolos productis ad marginem duplici serie setarum innocuarum radiatim cincto, setis diametrum leguminis aequantibus araneose gossypinis.

a. Calycis segmentis corolla brevioribus, alis postice auriculatis, legumine pubescente. No. 843.

b. Calycis segmentis corollam dimidio supereminentibus, alis integris, legumine gossypino. No. 1165.

HAB. Pasht Khana in the Gundara Pass at 4000 feet, and over Upper Beloochistan above the passes.

Vexillum cream-coloured, netted with purple veins; *carina* cream-coloured. *Ala* very small, hardly reaching above the claw of the *carina*.—The ovary of this plant is crescent-shaped, one-celled, and two-ovuled. As it ripens the two ends get bent on each other and it becomes horseshoe-shaped, and when quite mature it is so curved as to present a circular outline, with a false dissepiment separating the two seeds and making it bilocular.

11. *Astragalus sericostachyus*, J. E. S.; perennis, caulescens, erectus, caulibus albo-tomentosis, foliis 10-13-jugis, stipulis subulato-setaceis plumosis, foliolis ovatis vel ellipticis superne nisi ad marginem

glabris inferne pilis elongatis densissime et molliter tomentosovillosis, pedunculis axillaribus foliorum dimidium attingentibus, capitulo gossypino ovoideo confertifloro pedunculum fere aequante, floribus subsessilibus, bracteis setaceis calycis tubum paulo superantibus, calycis densissime gossypini dentibus setaceis plumosis tubum excedentibus corolla paulo brevioribus.

HAB. Doobund, between Kelat and Nooshky. No. 873.

Flowers cream-coloured with a yellowish tinge (*ochroleucons*), and green veins. *Fexillum* and *carina* equal in height. *Wings* shorter than the *carina*.

Among "*Alopecuroidei*" this species may be known from *A. speciosits*, Boiss., by the long setaceous bracts and calyx-teeth, and by the densely cottony calyx. From *A. obcordatus*, Boiss., it is distinct in the ovate (not globose) capitulum, in the cottony pubescence, shape of leaflets, etc.

12. *Ehynchosia pulverulenta*, J. E. S.; diffusa, volubilis seu prostrata, pube brevi velutina tomentoso-canescens, foliis trifoliolatis, foliolis rhomboideo-rotundatis basi cuneatis subtus albo-glandulosis, racemis abbreviatis 5-10-floris, floribus breviter pedunculatis, bracteis pedunculum vix sequantibus, calycis segmento inferiore caeteris longiore et latiore, vexillo egibboso, legumine falcato basi attenuato dispermo seminum caruncula inconspicua.

HAB. Hills of Scinde and Lower Beloochistan. No. 658.

Flowers light yellow, with inconspicuous veins of the same colour.—The white glands on the underside of the leaf, the vexillum without a gibbous projection, and other marks, will distinguish this species.

13. *Sophora Griffithii*, J. E. S.; suffruticosa, ramis et calyce tomento raso candicantibus, foliolis 21-41 ovalibus vel obovatis plerumque retusis tomentoso-sericeis subtusque argenteo-velutinis, racemis terminalibus et lateralibus 10-20-floris, legumine moniliformi albo-pubescente levi vel crista tuberculata (alam prsenunciante) ad utramque suturam utrinque instructa.

HAB. Over Upper Beloochistan, and in Lower Beloochistan, as low down as 3000 feet in the Gundava Pass. No. 720.

It is called "Shampusteer" by the Brahuis, and many a desolate place is made gay in spring by the golden flowers and silvery leaves of this beautiful shrub. It belongs to the section *Eusophora*, and the alae of the corolla have an additional and posterior auricle.

CuCURBITACEIE.

14. *Cucumis cicatrisatus*, J. E. S.; caule scabro, foliis plus minus angulato-lobatis lobo terminali elongato, petiolis et limbo aequilongis, ovario pubescente striato subclavato truncato, collo inter ovarium et calycem nullo calyce scilicet e basi lata ad faucem contractam subconico tubo dentibusque sequilongis, peponida obovoidea turbinata vel pyriformi (sæpe obliqua uno nempe carpello sterili) glaberrima striis 10-12 viridibus impressis notata ad verticemque qjcatricula calycis circurascissi conspicue annulata.

HAB. Cultivated in Scinde under the name of Wuiigo.

Its young fruits, when about 2J inches long and 2 inches in diameter, are eaten like the common Cucumber, and also when they are further advanced. When at the full size, they vary from 4£ to 6 inches in length, and from 3^ to 5£ inches in diameter, and are then kept for seed, Tor they never turn aromatic b'ke the Melon (*Cucumis Melo*), or like the *Cucumis utilissimus* and *Cucumis Chate*, In the broad base of the calyx, which, falling off, leaves a mark on the fruit, this species resembles the Melon, but is known by the elongated terminal lobe of the leaf, by the petioles never being longer than the leaf, by the sessile flowers, by the short and linear (not very long and filiform) teeth of the calyx, and by the insipid pyriform or inversely egg-shaped fruit, which, when mature, is dead white in colour, with strise of a darker hue. It may be near *Cucumis Dudaim*.

15. ZEHNEEIA.—*Bryonia Garcini* (Willd.), as Dr. Wight long ago observed (' Illustrations/ vol. ii. p. 30), comes within or near the limits of *Tilogyne*, Schrader, which Endlicher includes in his genus *Zehneria*. Garcin's plant, however, and a nearly allied species, *Bryonia fimbnti''pula*, Fenzl, will form, at least, a distinct section, agreeing with *Zehneria* in the disposition of the male and female flowers, the straight anther-cells, and the general habit, but differing in the presence of a peculiar and conspicuous bract, and in the ovary having only two cells, which each mature a seed, an undivided style, and an obscurely bilamellate stigma. However, the only materials I have for comparison are specimens of *Zehneria Mysorenim* (Wight in Ulust. vol. ii. p. 30), and the figure iii Wight's • Icones,' t. 758.

ZEHNERIA, § Bractearia.—*Bractea florifera atnpla, plerumgue cordata, ciliata. Mores monoid. Corolla rotata. Genitalia exserta.*

Ovarium biloculare. Stylus indivisus. Stigma pileatum, obscure bilamellare, Fructus baccatus. Semina 1-2.

- (1.) *Zehneria Garcini*, J. E. S.; caule scabro demum glabrato, foliis palmato-3-5-lobis, lobis dentatis, dentibus piligeris, pagina utraque setis brevissimis hamatis scabra, bractea florifera cordata ciliata, fructu inverse reniformi seu malleiformi dispermo, seminibus contorto-obliquis hinc subconvexis inde canaliculato-sulcatis margine obtuso.

Bryonia Garcini (Willd.), *Wight et Arnott*, p. 344.' *Momordica? Seringe. Pilogyne? Wight.*

HAB. Tropical India, Ceylon.

Seeds narrow, 3ℓ lines by 1ℓ, twisted, with one of the faces channelled, and with the margin straight and thick and rounded. *Fruit* orange-red, hammer-shaped.

- (2.) *Zehneria cerasiformis*, J. E. S.; caule foliis et bractea ut in *Zehn. Garcini*, fructu globoso dispermo, seminibus scutelliformibus hinc convexis inde concavis margine acuto tenui incurvato.

Bryonia fimbristipula, *Fend, inedit.*

HAB. Nubia (*Kotschy*, No. 205). Northern Guzerat and Scinde. No. 29.

Seeds broad, 4 lines by 2, with a very sharp thin margin, turned up so as to make the seeds cupped, like clotted blood in a bleeding-basin. *Fruit* like a cherry in shape and colour. I think Fenzl's specific name should be passed over, because it points to a structure not peculiar to the species. If, however, his name had been published in a book with a diagnosis, this change could not have been allowed; but any one is at liberty to reject the inedited names of Hochstetter, Steudel, and others, which are merely printed on labels, because they are unpublished, and not in a shape which renders them accessible to the student. At the same time it is courtesy to adopt them when applicable.

UMBELLIFERJE.

16. *Dorema aureum*, J. E. S.; caule procero striata subaphyllo, foliis radicalibus pube brevi conspersis demum glabratis ternato-tripinnatisectis, segmentis ultimis lanceolatis decursivis paralleliveniis plus minus lobulatis, paniculis ramosissimis pubescentibus, mericarpiis ellipticis glabris jugis Uliformibus integris.

HAB. Doobund, and elsewhere in Upper Beloochistan, yielding a bitter white gum, much like the Ammoniacum of the shops. No. 985.

The plant often stands six feet high, very conspicuous from the golden hue of the loose and much-branched panicles. As far as I can judge from an indifferent specimen, the mericarps of *Dorema Auckeri* Boiss., seem to differ in the juga not being continuous elevated lines, but interrupted and tuberculate.

{To be continued.}

Kew Gardens Museum: TALLOW-TREE, and INSECT WAX of China.

Time was, and not many years ago, when animal fat and animal wax were exclusively employed in the manufacture of candles; now, thanks to our increased and daily increasing knowledge of the properties of plants, by far the majority of our candle-makers employ vegetable tallow and vegetable wax. Many of our readers are old enough to remember the surprise that was occasioned by the discovery of Humboldt, of the Wax Palm (*Ceroxylon Andicola*, now cultivated in the Royal Gardens), whose trunk is coated with fine wax, which exudes to the surface. Other Palms of South America yield a ceraceous substance in the same way, and the produce is an extensive article of commerce. One has only to read the highly interesting lecture delivered at the Society of Arts, on the 5th of February, 1852, by G. F. Wilson, Esq., (afterwards printed by Lewis and Son, Finch Lane,) 'On the Stearic Candle Manufacture,' where nine hundred hands are employed in their works at Vauxhall alone, and where they have lately been making one hundred tons (£7000 worth) of candles weekly, from wax and tallow of *vegetable origin*, to be satisfied of the vast commercial importance of these two comparatively new substances. This Company has done us the favour to present our Museum of Vegetable Products with a full series of the vegetable waxes and tallows employed by them. At p. 29 of the above-mentioned pamphlet, Mr. Wilson directs attention to two of these substances. "On the table," he says, "are specimens of crystalline wax, I believe *Rhus succedaneum*, from China, and of the vegetable tallow of the *Stillingia sebifera*, also from China." These are what are here noticed as the "Insect-wax of China," and the Tallow-tree of China; and being anxious to obtain all the information in our power respecting them, Dr. Wallich has kindly directed our attention to the seventh volume of the *Journal of the Agricultural and Horti-*

cultural Society of India' (Calcutta, 1850) for an extremely interesting account of them, and respecting both of which very little had been previously known, beyond the boundaries of the Celestial Empire. The memoir is entitled "Uses of the *Stillingia sebifera*, or *Tallow-tree*, with a notice of the *Pe-la* or Insect-wax of China; by D. J. Macgowan, M.D." From this we collect that the *Stillingia sebifera* is cultivated in the provinces of Kiangsi, Kongnain and Chehkiang,—so extensively near Hangchan, where some of the trees are several hundred years old, that all the taxes are paid with its produce. It grows alike on low alluvial plains, on the rich mould of canals, and on the sandy beach, and the trunks are sometimes made to fall over rivulets, forming convenient bridges. Its wood is hard, durable, and may be easily used for printing-blocks and various other articles; its leaves are employed as a black dye. But it is chiefly from the two proximate principles which are the constituents of *animal tallow*, the "*stearitie*" and "*elaine*" contained in the fruit, the plant is so much valued; and, finally, the refuse of the fruit, after extracting the tallow, is employed as fuel and manure. The "nuts," or capsules, when ripe, are gently pounded in a mortar to loosen the seeds from their shells, from which they are separated by sifting. To facilitate the separation of the white sebaceous matter enveloping the seeds, they are steamed in tubs with convex open wicker bottoms, placed over cauldrons of boiling water; when thoroughly heated, they are reduced to a mash in a mortar, and thence transferred to bamboo sieves, kept at a uniform temperature over hot ashes. This operation of steaming and sifting is repeated, as the first does not deprive the seeds of all their tallow. The article thus obtained becomes a solid mass on falling through the sieve, and, to purify it, it is melted and formed into cakes for the press; these receive their form from bamboo hoops, a foot in diameter and three inches deep, which are laid on the ground over a little straw. On being filled with the hot liquid, the ends of the straw beneath are drawn up and spread over the top, and, when of sufficient consistence, are placed with their rings in the press. This apparatus is of the rudest description, constructed of two large beams placed horizontally so as to form a trough capable of containing about fifty of the rings with their sebaceous cakes; at one end it is closed, and at the other adapted for receiving wedges, which are successively driven into it by ponderous sledge-hammers wielded by athletic men. The tallow oozes in a melted state into a receptacle below, where it

cools. It is again melted and poured into tubs, smeared with mud, to prevent its adhering. It is now marketable, in masses of about eighty pounds each, hard, brittle, white, opaque, tasteless, and without the odour of animal tallow; under high pressure it scarcely stains bibulous paper; melts at 104° Fahr. It may be regarded as nearly pure stearine; the slight difference is doubtless owing to the admixture of oil expressed from the seed in the process just described. The seeds yield about eight per cent, of tallow, which sells for about five cents per pound.

The process for pressing the oil (*elaine*), which is carried on at the same time, is as follows. This is contained in the *kernel* of the nut, the sebaceous matter which lies between the shell and the husk having been removed in the manner described. The kernel, and the husk covering it, is ground between two stones, which are heated, to prevent clogging from the sebaceous matter still adhering. The mass is then placed in a winnowing machine, when the chaff being separated, the white oleaginous kernels, after being steamed, are placed in a mill, to be mashed. This machine is formed of a circular stone groove, in which a solid stone wheel revolves perpendicularly by the aid of an ox. Under this ponderous weight the seeds are reduced to a mealy state, steamed in the tubs, formed into cakes, and pressed by wedges in the manner already described; the process of mashing, steaming, and pressing being repeated with the kernels likewise. The kernels yield about thirty per cent, of the oil, which is called "*Iting-yu?*" and sells for about three cents per pound, and answers well for lamps, though inferior for this purpose to some other vegetable oils in use. The cakes which remain after the oil has been pressed out, are much valued as a manure, particularly for tobacco-fields, the soil of which is rapidly impoverished by the Virginian weed.

The consumption of candles in China is very great, in their religious ceremonies, etc., as the gods cannot be worshiped acceptably without candles, and no one ventures out after dark without a lantern. With trifling exceptions, these candles are made, and by dipping, of the tallow or stearine of the *Stillingia sebifera*. The wicks are made of rush coiled round a stem of a coarse grass; when of the required diameter they receive a final dip into a mixture of the same material and "*Insect-wax,*" by which their consistence is preserved in the hottest weather. They are generally coloured red by a minute quantity of Akanet-root

(*Lachnæ tinctoria*, brought from Shangtung). Verdigris is employed to dye them green. Stearine candles cost about 8 cents the pound.

Pa-lay or Insect-wax.

Prior to the thirteenth century bees'-wax was employed as a coating for candles in China; but about that period the white *wax-insect* was discovered, since which time that article has been wholly superseded by the more costly but incomparably superior product of this little creature, respecting the nature and characters of which, however, authors are at variance. From Abbé Grossier's description of it, it has been suspected to be a species of *Coccus*, but Sir George Staunton has described it as of the *Cicada* family in Entomology (*Flata Umbatn*). Chinese writers speak of it as an apterous insect. From the "Puntznu" and the "Kiang-fangpu," herbals of high authority in China, Dr. Macgowan has extracted the following information respecting the waxy substance, *Pe-la*, either yielded by this animal or exuded by the plant in consequence of the insect-puncture. Authors are not agreed on this point.

The insect feeds upon an evergreen shrub, the *Ligntrum lucidum**, found throughout Central China, from the Pacific to Thibet; but the insect chiefly abounds in the province of Sychuen. Much attention is paid to the cultivation of this tree; extensive districts of country are covered with it, and it forms an important branch of agricultural industry. In the third or fourth year of the planting it is *stocked* with the insect by man. In a few days after being tied to the branches, the nests swell, and innumerable white insects, the size of nits, emerge and spread themselves over the plant, but soon descend to the ground, where, if they find any grass, they take up their quarters. If they find no congenial resting-place below, they reascend, and fix themselves to the lower surface of the leaves, where they remain several days, when they repair to the branches, perforating the bark to

* figured in 'Botanical Magazine,' tab. 2565, by Dr Sims, twenty-seven years since where it is said "a vegetable wax is procured from the berries in China." Mr. Fortune, however, tells us that after careful inquiry on the matter, in districts where this shrub abounds, he could not learn that any such substance is yielded by it. On the contrary, he has brought home with him a deciduous tree as the true plant which yields the wax in question. It is now living at the garden of the Horticultural Society, but is not in a condition to enable the genus or family of the plant to be determined.

feed on the fluid within. They soon attain a somewhat large size. Early in June they give to the trees the appearance of being covered with hoar-frost, being "*changed into wax*;" soon after, they are sprinkled with water (probably that they may be the more easily detached) and scraped off. If this gathering be deferred till August, they adhere too firmly to be easily removed. Those which are suffered to remain stock the trees the ensuing season, secrete a purplish envelope about the end of August, which at first is no larger than a grain of rice, but as incubation proceeds it expands and becomes as large as a fowl's head. This takes place in spring, when the nests are transferred to other trees, one or more to each, according to their size and vigour, in the manner already alluded to. On being scraped from the trees the crude material is freed from impurities by spreading it on a strainer covering a cylindrical vessel, which is placed in a cauldron of boiling water. The wax is received into the former vessel, and, on congealing, is ready for market.

This *Pe-la*, or white wax, in its chemical properties is analogous to purified bees'-wax, and also spermaceti, but differing from both in the opinion of Dr. Macgowan. It is perfectly white, translucent, shining, not unctuous to the touch, crumbles into a dry inadhesive powder between the teeth, with a fibrous texture, resembling fibrous felspar; melts at 100° Fahr., is insoluble in water, dissolves in essential oil, and is scarcely affected by boiling alcohol, the acids, or alkalies. This wax costs at Ningpo from 22 to 25 cents per pound. The annual product of this humble creature in China cannot be far from 400,000 pounds, worth more than 1,000,000 Spanish dollars. For particulars of the chemical properties of this wax, see the volume of Philosophical Transactions for 1848, where Mr. C. Brodie has a valuable analysis, "On the chemical nature of a Wax from China." In the 'Comptes Rendus' for 1840, torn. 10, p. 618, M. Stanislaus Julien considers this wax to be derived from three species of plants: 1, *Nlu-tching* (*Rhus mucedaneum*); 2, *Tong-lsing* (*Ligwtrum glabrum*, *L. lucidum* ?); and the *Clioui-kin*, supposed to be a species of *Hibiscus*.

BOTANICAL INFORMATION.

Voyage of CAPTAIN DENHAM, it.N.

We have occasion in our present Number to speak of the return of H.M. Surveying-ship *Herald*, from the North Pacific, in 1851. She has already been refitted, and has sailed under the command of Captain Denham, E.N. (accompanied by a small steam-ship as tender), on a surveying voyage to the South Pacific Ocean, having especially in view the survey of the Fijee Islands, New Caledonia, etc. This may be considered as a continuation of the survey of the late Captain Owen Stanley, R.N., in H.M.S. *Rattlesnake*. In that survey, chiefly among the Papuan Islands, Mr. Macgillivray (who lately published the account of the voyage) was appointed Naturalist, and he brought home a beautiful collection of plants, and most extensive collections in Zoology. The same gentleman is transferred, with the same duties, to the *Herald*; and, thanks to the Admiralty, and to Captain Denham, the scientific staff is increased by the appointment of Mr. Milne as Botanist and Assistant Naturalist, from the Royal Gardens of Kew. We know from what the Naturalists of the United States Exploring Expedition are reported to have done in the Fijee Islands, and from what was done more recently by Mr. Moore, of the Botanic Gardens, Sydney, during the short visit he paid to New Caledonia in H.M.S. *Havana* (Captain Erskine), that a rich field for Botany is open to the Naturalists of the *Herald* on the present occasion. We are sure that nothing will be wanting on the part of the commander of the expedition that can contribute to its success in all departments of science.

MR. WM. GARDINER, *of Dundee*.

Few of our readers but are acquainted with the botanical writings and the beautifully-prepared specimens of Scottish plants by Mr. Wm. Gardiner, of Dundee. Like his predecessors in the same career, Don and Drummond, his mind has been more set on studying the works of nature than on laying by a provision against a time of sickness and old age; and now it has pleased Providence to prostrate him with severe illness, at a time when, we have reason to know, he is wholly dependent for support on what a few personal friends and others have

done for him. Should this notice induce any one to contribute to the wants of this most deserving person, donations will be thankfully received on his behalf by James Scrymgeour, Esq., 11, I&forni-strect, Dundee.

Death of PROFESSOR SCHOUW.

"Denmark has again lost one of her eminent men of science. Professor Joakim Frederick Schouw died yesterday forenoon, in his 64th year. His activity as regards science in general was very extensive; although natural history was his proper sphere, and highly is it indebted to him. Professor Schouw took an active part in all political questions; and the high value which his country placed on his views, and appreciation of them, is sufficiently manifest by his being selected as President both for the National Assemblies and the Legislative Councils of his country. His high public worth was equally acknowledged in foreign countries, and he died universally beloved and honoured."— *Bertingzke Gazette* for Thursday, the 29th April

NOTICES OF BOOKS.

SEEMANN, BERTHOLD : *The BOTANY of the Voyage of H.M.S. HERALD, under the command of Captain Henry Kellett, K.N., C.B., during the years 1845-51. Parti. 4to. Reeve and Co. (Published under the Authority of the Lords Commissioners of the Admiralty.) With 10 Plates.*

We have here, thanks to the liberal views of the Lords Commissioners of the Admiralty, a portion of the scientific results of one of the many surveying voyages undertaken by our Government. Since 1825 three of her Majesty's ships have been successively employed in surveying the West Coasts of America, and other countries in the Pacific; and each ship was supplied with Naturalists. 1. H.M.S. «Blossom» commanded by Captain Beechey; Messrs. Lay and Collie, Naturalists. The botanical results of this voyage were published by Messrs. Hooker and Arnott in 1841. 2. H.M.S. «Sulphur», Captain Sir Edward B. D. S. I. Naturalist, assisted by Mr. Barclay (sent out from Kew) and Dr. Sin-

clair. Mr. Bentham published the 'Botany of the Voyage of the Sulphur' in 1844. The third and last voyage, to which we now allude, is that of H.M.S. *Herald,' under the command of Captain Kellett, a gentleman who has singularly promoted every department of science, during a peculiarly interesting voyage of six years' duration, and extending to very high arctic regions. Mr. Thomas Edmonston, a zealous botanist, native of one of the Shetland Islands, of which he has published a Flora, *in part* from materials collected at a very early age, embarked as Naturalist. The duties of the survey in the Pacific had scarcely commenced, when this promising young man was killed at the mouth of the river Sua, coast of Ecuador, by the accidental discharge of a gun. His place was ably filled, at the recommendation of the Director of the Royal Gardens of Kew, by Mr. Berthold Seemann, who joined the Herald at Panama, in January, 1847, having crossed the isthmus to that city.

On the return of the Herald in 1851, Captain Kellett obtained the sanction of the Admiralty for the publication of the Natural History of the voyage, and Mr. Seemann undertook the botany, of which the present is the first of ten parts to which the work will extend. It will be divided into five distinct Floras. 1. The Flora of Western Eskimaux-land. 2. The Flora of North-western Mexico. 3. The Flora of the Isthmus of Panama. 4. The Flora of Southern China (to include the collection of Dr. H. Hauce). 5. Plants collected in the Hawaiian Islands, Peru, Ecuador, and Kamtchatka.

The present number commences with a "Summary of the Voyage;"¹ "An Historical Notice" and an "Introduction" to the Flora of Eskimaux-land follow. Then a "Synopsis," or rather catalogue of the species, with synonyms, station, and occasional observations, together with the specific character of the very few little known or ill-defined species; the whole amounting to 315 species. And lastly, there is a list of the plants brought home from recent Arctic Voyages by Captain Mullen (a very extensive collection, 174 species of pteridogamic plants), Captain Penny (collected by Dr. Sutherland, 45 species), and Mr. Ede (26 species). The "Introduction" will be read with much interest, especially the account of the ice-cliffs in Kotzebue Sound, and which is farther illustrated by a beautifully coloured plate. So completely have these Arctic regions been now explored by our navigators and travellers, that neither in Mr. Seemann's Catalogue of Western Eskimaux-land

plants, nor in the lists of Captains Pulleu and Penny and Mr. Ede, is there *one* newly discovered plant! The present number is accompanied by a neat map of the country described, including the adjacent lands and seas. The Botanical Plates are, first, the curious *Tetrapma pyTM-fortne*, Seem, (more properly *Tetrapoma barbaresefolium*, Turcz), *Stellaria dicranoides*, Fenzl, *Dianthus repens*, Willd., *Claytonia sarmentosa*, C. A. Mey., *Artemisia androsacea*, Seem. (*A. glomerata*, Hook, et Jrn.) > *Saussurea subsinuata*, Ledeb., *Eritrichium aretioides*, Alph. De Cand., *Dodecatheon frigidum*, Cham., and *Salix speciosa*, Hook, et Am.

The next portion, in a state of great forwardness, by Mr. Seemann, viz., "The Flora of North-western Mexico, including the States of Chihuahua, Durango, Sinaloa, and Talisco," will contain many new and curious plants. The readers of our Journal are already familiar with Mr. Seemann's clever notices of his travels, in these and other regions, given in our pages.

Class-book of Botany; being an Introduction to the Study of the Vegetable Kingdom; by DR. BALFOUR, M.D., etc. Edinburgh. 8vo. 1852.

In Dr. Balfour's 'Class-book of Botany,' the author seems to have exhausted every attainable source of information. Few, if any, works on the subject contain such a mass of carefully-collected and condensed matter, and certainly none are more copiously, or, on the whole, better illustrated, upwards of 1050 woodcuts adorning 350 octavo pages. The subjects of structural and morphological botany are treated, in Dr. Balfour's usual manner, with the greatest care and pains; each point is conscientiously studied, and the results placed before the student include a mass of research, generally speaking, exceedingly well combined and arranged.

As a class-book it appears overdone, however; the details are much too numerous, and interfere with that simplicity and lucidity which should form the chief recommendations of a volume for the use of the student. The medical student, especially, has generally but four months in which to acquire a knowledge of botany; in that time he can fix the outlines only of the science in his mind, except, indeed, he be possessed of extraordinary powers of memory; however advantageous, therefore, it may be, that all the details in question be placed

before him, it is very requisite that he should be able to know which of them are most important, and to select the essentials in the first place.

Were the elementary education of a medical man what it ought to be, Dr. Balfour's Class-book would fill the office it should during the student's subsequent medical education. It is quite clear that the rudiments of botany and chemistry, at least, should be acquired by the youth intended for the medical profession, long before he commences his finishing education. This is as obvious as that the first books of Euclid and the rules of Algebra must be learned before the severe studies of a civil engineer are commenced. But it is unfortunately wholly neglected. The youth, fresh from school or college, with a competent or indifferent knowledge of Latin, Greek, and, perhaps, of the modern languages, enters upon a four or five years' course of medical, anatomical, surgical, obstetrical, etc., studies, besides a cramming of natural history, chemistry, botany, and animal physiology, of the very existence of which, as studies, he had hardly a conception, and for which his previous education has often rather unfitted him than otherwise. These studies are consequently discarded as soon as the compulsory examination is passed. Having been attained under every disadvantage as to time and opportunity, the smattering acquired is only retained as long as necessary, and very grudgingly for so long. The consequence is, that out of certainly not less than 500 young men of education, who are annually instructed in botany in our universities, schools, and hospitals, not five retain any knowledge of the subject in after-life, or even show any disposition to return to it, let their opportunities be ever so great.

This implies no reflection on our professors, least of all on Dr. Balfour, one of the most popular, pains-taking, and successful of all our teachers of botany; but it shows that a class-book, the best adapted to the medical student of the present day, should not be too comprehensive, or, if it is so very far from some power of discriminating the essential from the accessory should be added to it, as is done in the Cambridge Mathematical class-books. Dr. Balfour's would also gain much in clearness by judicious condensation, and a terser, less complex phraseology when treating of individual points, which are often discussed in a rambling manner and are loaded with technical terms, the excellent details requiring to be grouped in many cases. In this respect Dr.

Balfour's Class-book contrasts unfavourably with Dr. Lindley's elementary works, which are models of conciseness, precision, and clearness. Lastly, a little more decided tone in points of doubt or difficulty, and an expression of Dr. Balfour's own views, would have been more satisfactory to most readers. In the course of so many years' experience as teacher and observer, some facts, as worthy of record as many, quotes, must have come under the author's own notice; but there is, lack of original observation throughout. Dr. Balfour's students, we know, have the benefit of his great experience, and we should like to enjoy the same advantages through a work which is so full of admirable matter, agreeable and instructive.

We have purposely abstained from indicating the comparatively trifling drawbacks in the text of the work, and for the same reasons shall speak of the woodcuts as a whole also, and give them unqualified praise: most of them are beautiful, some of them (not a few) exquisite, and we hardly know whether to admire most the industry and zeal of the author, or the spirit and liberality of the publisher. We wish them both heartily success, and take leave of the work with less regret from knowing that a Part II. is to follow.

DR. J. D. HOOKER: *Flora of New Zealand.*

We have the pleasure of assuring our readers that the above-mentioned Flora is in a very advanced state, as to plates and manuscript and the printing of the first of the five parts announced by Messrs. Reeve as destined to complete the work. Each number (in quarto) will contain twenty plates (coloured or plain), and eighty pages of letterpress. It is generally known that this publication forms part of the Botany of the "Antarctic Voyage," under the command of Captain Sir James Ross, and will be followed by the Flora of Van Diemen's Land.

The "New Zealand Flora" will contain descriptions in English and Latin, with copious observations, botanical, geographical, and economical (in English) of the genera and species of plants inhabiting the country. Besides the collections formed by Dr. Hooker himself, materials for this important work are derived from the British Museum and the Herbarium of Sir W. J. Hooker, and various other sources. The *Mosses* will be described by W. Wilson, Esq.; the *Heptastichia* by W. Mitten, Esq.; the *Alga* by Dr. Harvey; the *Fungi* by the Rev. M. J. Berkeley; and the *Lichens* by the Rev. C. Babington.

Enumeration of a small Collection of Fungi from BORNEO ; by the
REV. M. J. BERKELEY, M.A., F.L.S.

The Fungi which are named in the present notice were placed in the hands of Sir W. J. Hooker by Dr. Livesay. They had, unfortunately, suffered very much from the attacks of insects, but the greater part were still sufficiently entire to admit of being ascertained. The species, with only a single exception—as far, at least, as they are capable of recognition—have already been described, but it has been thought advisable to publish the list, as they are the only fungi which have at present been received from Borneo, and they will afford some materials for the consideration of the geographical distribution of species.

The species identified are thirty-four in number. Of these, no. 1 is undescribed; no. 2 has been found in New Ireland; no. 3, 14, 15, 16, 20, 21, 22, are Ceylon species; no. 25, 27, 30, occur in the Philippines; no. 12, 13, 23, 31, are Indian island species, no. 28, Mauritius, no. 10, if really identical, Bahia, and the remaining fifteen either cosmopolites or universal inhabitants of tropical countries. With the single exception then of no. 10, which is somewhat doubtful, as the only specimen preserved is old and in very bad condition, the collection presents no anomaly, but is made up of species which more complete researches will probably prove to be common to most of the Indian islands. Some of the species, such as *Polyporm zortalis*, occur in Sikkim, but this species is also found in Cuba. No. 19, originally described from Swan River and Van Diemen's Land, may possibly be only a form of *P. igniarius*, but supposing it a good species, I am inclined to think it has a wide geographical distribution.

I- *Agarlem* (*Crepidotus*) *columellifer*, n. s.; pileo resupinato crispo
VHIOSO, lamellis umbrinis e columella centrali villosa radiantibus.

HAB. On bark.

Pileus -J of an inch broad, entirely resupinate; margin free all around, Pilous, white, crisped. " Gills radiating from a short white villous columella, the remains of the infant stem, pale umber, somewhat forked, distant, narrow; interstices nearly even.

This species belongs to that groupe which has the pileus, when young, in the normal position, but in which it soon becomes inverted, resupinate, firmly attached to the matrix, the stem meanwhile breaking off and in general becoming wholly obsolete, but in the present case stained in the form of a little columella.

2. *Cantkarellus partitus*, Berk, in Lond. Journ. of Bot. vol. i. p- 453. tab. 15.

There is but a single specimen in a very bad state, just twice the size of the New Ireland fungus. Better materials might possibly afford ground for its proposition as a new species, since the veins are scarcely at all marked, though the upper surface is striate, exactly as in *P. ffrangmocephalm*. The species belongs rather to *Crateretvs*, as proposed by Fries in the • *Epicrisis*/ than to *CantUarellus*.

3. *Lentinus pergainenens*, Lev. Ann. d. Sc. Nat. 1846, p. H^m.

Two other species are in the collection, but too decayed to admit of their determination.

4. *Lenzites repanda*, Fr. Ep. p. 404.

5. *L. striata*, Fr. Ep. p. 406.

There is also a single specimen of a whitish or pale wood-colouric species, resembling somewhat *L. aspera*, but too much injured by w^{sects} to exhibit all its characters.

6. *Polyporus Boucheanus*, Fr. Ep. p. 438.

7. *P. lucidus*, Fr. Ep. p. 442.

8. *P. Amboinenm*, Fr. Ep. p. 442.

9. *P. auriscalpium*, Pers. in Freyc. Voy. t. 1. fig. 5.

As I have no type of this species, which is very imperfectly describe^d and have no opportunity of referring to the original specimen, I subjointh a description of what is before me, and which agrees very well with Persoon's figure.

Pileus 1-2 inches across, reniform or elliptic, but always truly lateral, though sometimes apparently central from the confluence of the margin, at first opake, as in the following species, and most minutely pulverulent or velvety, whence it has a somewhat ferruginous aspect, at length smooth and deep brown, rugose, zoned, generally convex, but varying greatly in sculpture; margin often contracted; cuticle hard, thin, brittle, scarcely truly laccate; substance ferruginous. Stem several inches high, H line thick, annotinous, or at least appearing as if increasing in length at irregular intervals, at first opake and pulverulent, and then smooth like the pileus, dark brown externally, extremely hard and brittle, but furnished within with a soft pitb. Hymenium concave, white, then pale brown. Pores extremely minute, punctiform, all^{tu*} invisible to the naked eye. •

The shape of the pileus is just like that of *Hydnum auriscalpium*. It

is fur smaller than any form of *P. Amboinensis*, and not truly laccaic or ut any rate resinous.

10. *P. opacus*, Berk, et Mont, in Ann. d. Sc. Nat. 18-49.

11. *P. sanguineii* Sy Fr. Ep. p. 444.

12. *P. Jlabelliformis*, Kl. in Linn. vol. viii. p. 483.

13. *P. affinis*, Nees, Nov. Act. vol. xviii. t. 4. f. 1.

14. *P. discipes*, Berk, in Hook. Lond. Journ. of Bot. vol. vi. p. 499.

A sterile state in which only very imperfect pores have been formed, so as to resemble greatly *Stereum crocatum*, Fr., but more rigid.

15. *P. rubidus*, Berk, in Lond. Journ. of Bot. vol. vi. p. 500.

The specimens are in an old state, and have not only entirely lost their downy coat, but are shining and prettily zoned, and of a delicate fawn shaded with darker tints. The hymenium too in some cases has become brown. Still I have no doubt about the species: the spores are perfectly alike, as is also the colour of the corky tissue. The same change in fact has taken place which occurs in *P. anebus*.

16. *P. anebus*, Berk, in Lond. Journ. of Bot. vol. vi. p. 504.

*7. *P. australis*, Fr. Ep. p. 464.

!8. *P. appknatus*, Fr. Ep. p. 465.

*9. *P. rimosus*, Berk, in Lond. Journ. of Bot. vol. iv. p. 54.

20. *P. holosckrw*, Berk, in Lond. Journ. of Bot. vol. vi. p. 501.

21. *P. zonalis*, König (sub *Boleto*) Ann. of Nat. Hist. vol. x. p. 375.

22. *p. ferreus* Berk, in Lond. Journ. of Bot. vol. vi. p. 502.

23. *P. Per8oonii*, Mont, in Bel. Voy. p. 147- *P. scabrosus*, Fr. Ep. P. 469.

24. *P. iürsutus*, Fr. Ep. p. 477.

25. *Trametes badia*, Berk, in Lond. Journ. of Bot. vol. i. p. 151.

More distinctly zoned than in the Philippine Island plant, and with rather smaller pores; in fact, making a closer approach to *T. hydroides*, but without any fibres on the pileus, unless indeed their absence is due to extreme age.

26. *T. occidentals*, Fr. Ep. p. 491.

27. *T. vmatilw*, Berk, in Lond. Journ. of Bot. vol. i. p. 150.

28. *Stereum involution*, Klotzsch, in Linn. vol. vii. p. 499.

Two forms occur, one exactly like the plant of Klotzsch, the other

29. *8. rubiginosum* Fr. Ep. p. 550.

30. *Cladodejyitdendritica*, Pers. in Freyc. Voy. 1.1. f. 4.

31. *Irpexjavus*, Klotzsch, in Linn. vol. viii. p. 488.
32. *JExidla Auricula- Juda*, Fr. Ep. p. 590.
33. *Hypoxylon concentricum=8. concentrica*, Bolt.
34. *If. polymorphum=8. polymorpha*, Ehr.

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FLOBULA HONGKONGENSIS: *an Enumeration of ike Plants collected in the Island of Hong-Kong, by Major J. G. Champion, 95*7* m[^] the determinations revised and the new species described by wV^{OB} BENTHAM, ESQ.*

(Continued from p. 123.)

HAMAMELIDEJE.

1. *Rhodoleia Championi*, Hook., Bot. Mag. t. 4509.
Happy Valley woods. At each of the ovaries within the head flowers a pearl-like drop of moisture forms, which increases the goig^e appearance of this fine plant.
2. *Liquidambar Chin en se*, Champ., sp. n.; foliis ovali-oblongis acuminatis calloso-serratis in petiolum brevem angustatis racemis terminalibus, amentis superioribus masculis ovoideis in femineo longius pedicellato globoso.—*Arbor* excelsa, inflorescens excepta, glabra. *Ramulorum* floriferorum *gemma* obtectae numerosis imbricatis, exterioribus brevis siccis, interioribus pollicaribus extus tomentellis. *Folia* alterna, 3-4 poll, longa, poll, lata, obtusa v. breviter et obtuse acuminata, margine et obtuse serrata, serraturis minute glanduliferis, nitidula, sup^{ra} kete-virentia, subtus pallida (Champ.), costa media sub¹⁻tus uentis, venis in rete venularum intra marginem confluentibus, pe¹⁻ 3-4-lineari. *Racemi* floridi 2-3-pollicares, terminales, basi cicutibus squamarum notati, infra flores folia pauca caulinis multo mino¹⁻ gerentes. *Amenta* 8-10 mascula, 3-5 lin. longa, obtusa, summa sessilia, inferiora pedicellata; bracteis 3 (v. 4?) caducissimis, uua¹⁻ majore subtendente 4-6 lin. longa membranacea extus puberula, 2 lateralibus (et quarta postica?) multo minoribus. *Stamina* numerosissima (100 ad 200), receptaculo oblongo-conico carnosissime inserta; filamenta brevissima; antherae | lin. longae, oblongo-quadratae, apice truncatae, longitudinaliter 4-sulcatae et in valvas

2 dorso oppositas dehiscentes. *Amentum* infimuni subcemeum, longius pedicellatum (pedicello per anthesin 3-4 lin. fructifero 1-11 poll, longo), bracteis 4 caducissimis fultum, globosum, sub anthesi 3-4 lin. diametro, flores continens 20 ad 50. *Perianthia* (?) margine irregulariter crenulata et puberula, cum basibus ovariorum iu massam duram concreta. *Stamina* pauca v. plurima, circa ovarium marginibus perianthii inserta, fertilibus similia sed minora et ut videtur effoeta. *Ovarium* perianthio semi-immersum, biloculare, parte cxserta divisa in lobos 2 conicos puberulos. *Styli* recurvi, intus papillosi. *Ovulain* loculis singulis circa 12, biseriata, partem superiorem dissepimenti occupantia. *Amentum* fructiferum 9-10 lin. diametro, perianthiis accretis rugosum, sublignosum, puberulum. *Capsuke* haud exsertse, apice hiantes, et in valvulas 2 bifidas breviter fissae. *Semina* non vidi.

A tall tree, very common in the Wongnychung Valley woods, readily distinguished from *L. Altingia* by its coriaceous leaves, narrowed at the base into a very short petiole*.

3. *Eustigma oblongifolium*, Gardn. et Champ. Kew Journ. Bot. vol. i. p. 312.

Happy Valley woods, Mount Gough, Mount Victoria, and Black Mountain. Major Champion found abundance of this shrub in fruit in the Happy Valley woods; but almost invariably the seeds were destroyed by a worm before coming to maturity. The seeds are two in a capsule, obovate, and marked by an elevated annular raphe. In the only embryo seen, the cotyledons were small, with a conical radicle. The yellow flowers have a peculiar fragrance, in which the smell of chalk predominates.

CORNER.

*• *Benthamia Japonica*, Sieb. et Zucc. Fl. Jap. vol. i. p. 38. t. 16, var. ~~*oblongifolia*~~, foliis ovali-oblongis glabris v. vix minutissime puberulis.

* In a memorandum on *Rhodoleia* in the 'Botanical Magazine' misled by imperfect specimens and vague descriptions, I suggested that *Liquidambar Altingia* and *Sedgwickia* might yet be generically distinct. It appears, however, from specimens in Sir W. J. Hooker's herbarium, that *L. Altingia* and *Sedgwickia cerasifolia* are identical as species, and that all are certainly congeners of the American *Liquidambar*. All have mucous flowers in terminal racemes, the upper amenta male, several in number; and falling off early, the lowest one borne on a longer stalk, persistent and female, or more or less hermaphrodite. Each amentum is subtended by three or four very deciduous bracts, scarcely numerous or persistent enough to constitute what is usually termed an *involucrum*.

Extremely rare in the Happy Valley woods, growing in very thick underwood. It forms a tree, thickly covered with flowers, the white bracts of which are very conspicuous at a distance. The flowers are green, with purple stamina. The calyx is entire and truncate, as in the Japanese specimens, and the leaves are still smoother and shining above; but in form they approach nearer to those of *B. fragifera*, from which this species is readily distinguished by the calyx, as well as by the absence of all whiteness on the leaves and young shoots.

2. *Marlea begoniaefolia*, Koxb.—DC. Prodr. vol. iv. p. 267.

Happy Valley woods, flowering in May and June. Arboreous. In young plants the leaf is extremely variable in shape. The flowers are at first white and rather fragrant, ultimately turning yellow, as in the Honeysuckle. For the close affinity of *Alangiece* with *Cornus*, see Clarke in Kew Journ. Bot. vol. ii. p. 129.

CAPRIFOLIACEJE.

1. *Viburnum nervosum*, Hook, et Arn. Bot. Beech, p. 190.

Common on Mount Victoria and Mount Gough, flowering in May. The ovidc, according to Major Champion's observations on fresh specimens, is slightly excentric, and only becomes central as the fruit is forming. The fruit has also a tendency to increase more on one side, which becomes convex, than on the other, which remains flatter; and although the seed is central, the umbilicus is often slightly lateral.

2. *Viburnum odoratimum*, Ker. ?—DC. ?—Hook, et Am. Bot. Beech, p. 190.

Arboreous. Common on the mainland of China, but found also in Hong-Kong.

3. *Lonicera longiflora*, DC. Prodr. vol. iv. p. 333.

Largely distributed over the island, but of less frequent occurrence than *L. hirtiflora* flowering in March and April.

4. *Lonicera Jdrtilora*, Champ., sp. n.; ramis volubilibus apice hispidis, foliis oblongis v. ovato-lanceolatis acutis basi subcordatis supra nitidis prater costam hispidam glabris subtus hirtellis villosisve, pedunculis ramisve thyrsiferis, florum sessilium paribus brevissime pedicellatis summis subcapitatis, corolla limbo tubo elongato hispido multo breviorc.—*Folia* breviter petiolata, 2-3-pollicaria. *Pedunculi* v. rami floriferi axiUares, pilis longis patelitis hispidi. *Florum* paria opposita, in parte inferiore thyrsi pedicellata, bracteis sub-

tendentibus saspe foliosis, paria superiora subsessilia in capitulum contracta, bracteU parvis. *Bractea* sub floribus ovaria non excedentes; bracteolse orbiculata;, ciliatffi, ovario dimidio breviores. *Calyci** dentea lanceolati, hispidi, tubo glabro breviores. *Corolla* tubus tenuis, 15-16 lin. longus, pilis patentibus hirtus, pube brevi intermuta; limbus 6-8 lin. longus, ut in affinibus bilabiatus, labiis revolutw, altero integro astivatione intimo, altero apice breviter 4-dentato, lobis festivatione contorto-imbricatis. *Stylus* basi bulboso-incrassatus. *Ovarium* triloculare, ovulis in loeulis 3-4 ab apice anguuh intend pendulis. *Sacca* alba, ovoidea, glabra, 4-5 lm. longa, tnlocularis, seminibus in locnls 2-4.

This is the most common Honeysuckle in Hong-Kong, and, as wen as the Azaleas, adorns its hills and ravines in March.

5. *Lonicera retkulata*, Champ., sp. n.; rami* volubilibus tomentosovelutinis, foliis ovatis obtusis crassiusculis supra glabns reticidatorugosissimis subtus dense incano-v. flavescenti-tomentosis, peduncutis corymbiferis, floram sessilium paribus longiuscule pedicellatis, corollas limbo tubo tomentoso parum brevior.—*Folia* plerumque bipollicaria, apice basique rotundata, margine recum, rugositate Paginte superioris et indumenta inferioris insignia, costa media venisque obliquis paucis subtus prominentibus, petiolo 4-6-hnean tomentoso. *Ped^nculi* in axillis superioribus folia subtequant. *Fhrurn* paria 6-8 in corymbum brevem disposita. *Fedtcelh* oppositi, biflori, inferiores 3 lin. longi bracteis petiolatis foliaceis 4-6 lm. longis subtensi, c«teri breviores bracteis linearibus. *Bractea* sirt) floribus Uneares, tomentosa3, calycem subasquant; bracteote ovano dimidio breviores. *Calyci** limbus tomentosus, tubo glabro paulo longior. *Corolla* tubus tennis, 8-9 lin. longus. *Ovarium*, tnlocukre, loeulis 2-3-ovulatis.

On the summit of hills, in grass or amongst rocks, flowering rather kter than the two last. The rugose leaves, downy underneath, are something like those of the Indian Peninsular *L. Lescheuaultu*; but fteir shape is different, as well as the inflorescence andflowers.

- 6- *Lonicera muUiflora*, Champ., sp. n.; ramis volubilibus pubescenhbns, foliis ovatis obtusis mucronulatis supra sparse puberuhb subtus molli-ter pubescentibus, pedunculis ramisve thyrsiferis, florum sess,lum Paribus subsessilibus summis capitatis, coroll* limbo tubum tenuen. Pubescentem sub«quante.-Jb & q«a^{TM TM L.} *Jn P^mUa* obtuslora, P^{ube}

molli, in pagina inferiore pallescente. *Bractea* sub pedicellis foliaceae, petiolatae, 2-4 lin. longae, sub floribus ovario breviores, bracteolas paulo excedentes. *Calycis* laciniae angustae, villosulae, tubo suo pariter villosa sequilongae. *Corolla* tubus 8-9 lin. longus.

'From Mr. Cay's garden at Victoria, and according to him indigenous to the island. This species comes the nearest to the true *L. Japonica*, to which Zuccarini has with reason reunited the *L. confusa* and *L. Chinenim* of De Candolle, or *L. flexuosa* of our gardens. In that plant, however, the peduncles in cultivated as well as wild specimens are constantly short and simple, bearing only one pair of flowers; whilst in *L. multijlora*, besides differences in the shape of the leaves and in pubescence, the axillary peduncles are from 1-1 inch long, bearing at their summit a head or short thyrus of from six to eight, or even more, pairs of flowers.

EUBIACEAE.

1. *Adina globijlora*, Salisb.—DC. Prodr. vol. iv. p. 349.

Ravines towards West Point; at the waterfall in the Happy Valley, and other localities; an erect shrub.

2. *Thysanospermum diffustum*, Champ., gen. nov. e tribu *Cinchoneamm*. *Oen. Char.* THYSANOSPERMUM. *Calycis* limbus 5-lobus, persistens.

Corolla hypocraterimorpha, laciniis 5 aestivatione imbricatis. *Stamina* ad faucem inserta, filamentis brevibus, antheris linearibus. *Stigma* exsertum, oblongo-clavatum, integrum. *Ovarium* biloculare. *Placenta* in loculis solitariae, ovatae, peltatim dissepimento affixae. *Ovula* plurima, peltata, sursum imbricata. *Capsula* subglobosa, bisulca, laevis, calycis dentibus coronata, loculicide bivalvis, valvulis septicide bifidis, placentis integris. *Semina* ala lata fimbriato-lacera cincta.

Species unica *T. diffusum*. *Fruticulus* ramosissimus, super saxa diffusus, ramulis tennibus, novellis strigoso-pilosis. *Stipula* utrinque integre, lanceolato-subulatro, 1-2 lin. long®. *Folia* breviter petiolata, 1-H-pollicaria, ovato-lanceolata v. ovata, acute acuminata, subcoriacea, nitidula, supra glabra, subtus ad costam margineque ciliata. *Pedunculi* axillares, solitarii, uniflori, 2-3 lin. long®, *niruti, supra medium bracteolis 2 minutis caducis intracti. **Calyx* vix lineam longus, lobis ovatis virentibus tubo globoso subbrevioribus. *Corolla* albid* tubus 5 lin. longus, rectus, sequalis, extus pubescens, intus basi glaber, apice breviter puberulus; lacinia 3 ovatae, fere 2 lin.

longae, obtusiusculae, intus pubescentes. *Anthera* vix corollae laciniis aequantes, basi breviter sagittatae; filamenta iis multo breviora, pilosa. *Stylus* glaberrimus, disco epigyno crassiusculo umbilicato insertus. *Capsula* fere *Hedyotis*, axi vix bilineari, subdidyma, glabra, laevis, valvulis crustaceis. *Semina* in quaque placenta circa 10> ipsa minuta, ala cincta undique 1/2 lin. lata profunde et inaequaliter lacero-fimbriata. Embryo parvus, radícula brevi.

A trailing shrub upon rocks in ravines, abundant on Mount Victoria and some other places in Hong-Kong, flowering in June, fruiting in December. The globose capsule and fringed seeds had at first induced me to refer it genetically to *Coptosapelta* of Korthals, a Borneo plant, described as having a similar trailing habit and leaves of the same shape. As however the flowers of the latter genus are unknown, the fructification is terminal, racemose, and bracteate, and the capsule woody, it is probable that the flowers will show still more marked generic differences. Besides, I do not understand the dehiscence of the capsule described as "in mericarpiis duobus loculicida," unless it be that each valve of the capsule carries with it the half of each placenta, which is not the case in our plant. Among older genera, *Thysanopyrum* comes nearest to the American genus *Manettia*, in which the wing of the seeds is also sometimes toothed, but the habit, the corolla, and capsule show abundant points of generic distinction.

• *Uphiorrhiza puuula*, Champ., sp. n.; caule herbaceo basi radicante ascendente pubescente, foliis ovatis ellipticisve minute scabro-puberulis, cymis breviter pedunculatis binis paucifloris, corollae (vix 3 lin. longae) tubo subsquali laciniis ovatis obtusis.—Habitus *U. rugosa*, Wall., sed minor. *Caulis* nunc 1-2-pollicaris, nunc semipedalis. *Folia* petiolata, minora semipollicaria late ovata et obtusa, majora 1-pollicaria acuta v. acuminata et basi in petiolum longe angustata, pagina supra viridia, subtus pallida, utrinque pilis minutis conspersa. • *Pufa* venarum paginae inferioris uti petioli et caulis brevissima, densa. *Stipula* parva, subulata, caducis. *Pedunculus* brevissimus; rarius fere 2 lin. longus. *Bractea* minuta. *Pedicellus* calyce breviores. (*Klych* tubus 1/2 lin. longus, subglobosus, breviter et dense tomentosus, laciniis obtusis tubo subbrevioribus. *Corolla* tubus fere 2 lin. longus, tenuissime tomentellus, supra basin leviter ampliatus et tenuiter costatus, apice paululum contractus, intus infra faucem a) uulo pilorum erectorum instructus, ciliis glaber, limbi lacini-

nise vix lineam longae, glabrae. *Stamina* medio tubo inserta, antheris linearibus vix e tubo prominulis. *Discus* epigynus crassus, bilobus. *Stylus* apice leviter pilosulus, lamellis stigmatosis ovatis. *Capsula* generis, 3 lin. lata.

Among the numerous species of *Ophiorrhiza*, this comes nearest to *O. rugosa*, Wall., which it much resembles at first sight, but the plant is smaller and more slender, the peduncle shorter, and especially the corolla smaller and differently shaped. From ravines of Mount Victoria, but not very common.

4. *Ophiorrhiza Eyrii*, Champ., sp. n.; caule herbaceo glabriusculo, folijs ovatis obtusiusculis v. obtuse acuminatis subglabris, pedunculo folia subaequante, cyma puberula trifida laxe pauciflora, calycis dentibus tubo tomentello duplo brevioribus, corollae (7 lin. longae) extus glabra tubo infundibulari, laciniis acutis supra puberulis.—*Caulis* in specimine seimpedalis, adscendens. *Stipula* desunt. *Folia* 1-2-pollicaria, basi rotundata, supra scabriuscula, subtus rubentia. *Pedunculus* ultrapollicaris, cyma 7-flora. *Bractea* parvae, subulatae. *Pedicelli* calyce breviores. *Calycis* tubus late turbinato-globosus, 7 lin. longus, obtuse 10-costatus, dentibus triangularibus parvis patentibus. *Corolla* tubus tenuiter costatus, 6 lin. longus, a medio ad faucem dilatatus, intus fere a basi usque ad medium pilosus, superne glaber, laciniis recurvo-patentibus, linea paulo longioribus, supra minute puberulis. *Discus* epigynus bilobus, dentes calycinos fere duplo superans. *Stylus* medio hispidus, lamellis stigmatosis oblongis.

Found by Colonel Eyre in sheltered ravines, near water. The species does not come very near to any that I am acquainted with; the whole plant assumes a remarkable red hue when dry.

5. *Hedyotis (Macrandria) recurva*, Benth. in Lond. Journ. Bot. vol. i. p. 486.—*Zosterifolia* glabra, etsi tactu scabriuscula. *Bamuli* teretes v. leviter tetragoni. *Stipulae* breviter vaginantes, setis usque ad 3-4 lin. longis. *Folia* 2-2i-pollicaria, acuminata, basi rotundata v. cuneata, veins obliquis supra impressis. *Umbellae* multiflorae, in axillis superionibus pedunculate, ad apicem caulis paniculam oblongam conshientes. *Pedunculus* s^{om} longiore⁹ in umbella 10-20, breviter pedicelli^H ni • * ff t^Ub¹,S turbmatuS, lineam longus; limbus basi m e S

sectis. *Corolla* tubus calycis t^Ub¹ obtusis minute *~*
 * licuu^y brevior, laciniis fere 2 lin. longis,

apice recurvsB, intu9 basi uti faux corollae pilosae. *Stamina* nunc corolla breviora stylo longe exserto, nunc corollam subsuperautia stylo incluso. *Discus* epigynus concavus, circa stylum hispidus. *Placenta* medio dissepimento peltatim affixae. *Capsula* intra dentes calycinos breviter 4-valvis, in coccus 2 facile bipartibilis.

Abundant in ravines, gathered also by Fortune, n. 53.

5. *Hedyotis* (*Diplophragma*) *acutangula*, Champ., sp. n.; suffruticosa? glabra, caule erecto acute tetragono v. alato, stipulis triangularibus, foliis ovato-lanceolatis subsessilibus crassiusculis paucivcniis, cymis 2-3-chotomis paniculatis, calycibus sessilibus, dentibus brevibus obtusis, corollae tubo exserto lobis longiore, capsuloe coccis intus hiantibus.—*H. Lawsonia*? Benth. in Lond. Journ. Bot. vol. i. p. 496, non Wight et Am.—*Caules* ultrapedales, basi crassi, sublignosi. *Slipula* herbaceae, breviter vaginantes, obtusae v. acutas, integrge v. apice denticidat83. *Folia* 2-3-pollicaria, basi rotundata v. longe angustata, venis valde obliquis sajpe inconspicuis. *Cyma* coi-ymbiformes, multiflorae, in paniculam oblongam v. subcorymbosam disposita; ramis angulatis alatisve, bracteis parvis patentibus. *Calycis* tubus turbinatus, semilineam longus; lacinise ovatse, tubo breviores. *Corolla* tiibus lineam longus, intus supra medium villosus, limbi lacinae ovato-lanceolataa. *Stamina* inclusa. *Stylus* vix exsertus. *Discus* epigynus tenuis, glaber. *Placenta* supra medium dissepimenti peltatim affixje. *Cap&ula* vix linea longiores. *Semina* pauca, orbiculata, i^tiis angulata, peltatim affixa.

Common in ravines, flowering in summer. It is Fortune's no. 75.

From the older descriptions I had formerly thought this might be the •#• *lawtonia*, taken up from Itheede aud Lamarck, but it is certainly widely different from that species as now figured in Wight's * Icones.'

- 7- *Hedyotis* (*Euhedyotis*) *borrerioides*, Champ., sp. n.; glabra, caule adscendente acutangula, stipulis triangularibus laciniatis, foliis subsessilibus oblongo-lanceolatis basi angustatis, capitulis multifloris sessilibus, calycis laciniis oblongo-linearibus obtusis corollam sequantibus.—*Caules* virgati, ultrapedales. *Slipula* brevissime vaginantes, laciniis lineari-subulatis rigidulis. *Folia* bipollicaria, laevia, venis paucis valde obliquis subtus prominentibus lineata. *Florum* cymaj densissimae, more *Borreriarum* in capitula duo globosa collecta, altero ~~terminali~~ 6-8 lin. diametro, foliis 3 fuito, altero a ~~terminali~~ distantc, axillari, verticilliformi. *Calycis* tubus subglobosus, vix lineam longus;

lacinae longiores, apice fere spathulatre et convexiuscule, sinubus acutis, dente accessorio linearirarius interjecto. *Corolla* purpuroscensis laciniarum calycein sequantes, tubo suo paulo longiores. *Capsula* dicoccae, coccis tandem intus rima dehiscentibus.

Common in the neighbourhood of Chuckchow, but not on the victoriana side of Hong-Kong. In flower in August.

Korthals is perfectly correct in reducing to this, which must be regarded as the typical section of *Hedyotis*, the greater number of Blume's species of *Metabolos*, but I cannot agree with him in considering as distinct genera the sections *Dimeia*, *Macrandria*, and *Diplophragma* of Wight and Arnott, in all of which the fruit readily splits into two cocci. On the other hand, adopting the sectional groupings so well characterized by Wight and Arnott, these writers appear to me to have gone too far in uniting them all into one genus. *Oldenlandia*, *Anotis*, and *Houstoma*, with their purely loculicidal dehiscence, appear to me to constitute a natural genus, which is the *Hedyotis* of Torrey and Gray's Flora; and *Scleromitron* with its peculiar Spermacocceous habit and characters, as defined by Wight and Arnott, may be allowed to remain as a genus distinct from either, answering to *Hedyotis* as defined by De Candolle. *Kohautia* likewise is too well marked in habit and character to be merged into *Hedyotis*.

8. *Scleromitron angustifolium*.—*Hedyotis angustifolia*, Cham, et Schlecht.—DC. Prodr. vol. iv. p. 419.

Ravines, Hong-Kong. I have it also from Java, and it may possibly not be distinct from *S. tenelliflorum* Ko Yth., or *Hed. tenelliflora* Vime.

9. *Oldenlandia corymbosa*, Linn.

With the preceding species.

(To be continued.)

Notes on BISLOOCHISTAN PLANTS ; by J. E. STOCKS, M.D., T.L.S.,
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{Continued from p. 150.}

CONVOLVULACEAE.

17. *Convolvulus tenellus*, J. E. S.; annuus, caule erecto cum foliis lineari-lanceolatis utrinque acuminatis pilis ut plurimum adpressis

vestito, partibus novellis sericeis, floribus ad apicem ramulorum soitariis vel binis, sepalis glabris ovali-acutis margine pellucidis saepe irregulariter dentatis, ovario glabro globoso.

HAB. Shah Bilawul, in Lower Beloochistan. No. 598.

- ¹8. *Convolvulus Scindicus*, J. E. S.; caule suffruticoso patule et perplexe ramoso, ramis rigidis velutino-rufescentibus, ramulis abruptis cum foliis dense velutino-tomentosis cinereis, foliis parvis spathulatis margine integris plicatis nervis subtus prominulis, floribus ad apicem ramulorum congesto-capitatis, ramulis floriferis 1-8 pollices longis capitulis hirsutissimis, bracteis ovalibus sericeo-hirsutis, sepalis lineari-lanceolatis exclus dense sericeo-hirsutis intus glabris, capsula glabra.

HAB. Lower hills of Scinde and Beloochistan. No. 433.—Very near *Conv. Fonkalii*.

A scraggy plant, which may be recognized at a distance by its grey ashy hue, with stiff, close-set, entangled branches, spreading from the root, and forming a compact round-headed bushlet, seldom more than a foot high. *Leaves* small, on the flower-branches almost sessile, 3 lines by 2, and on the young leafy shoots 6 lines by 4, with a petiole 2 lines long.

19. *Cuscuta Boissieri*, J. E. S.; caule filiformi aurantiaco, floribus racemoso-corymbosis, flore singulo pedicellato bracteato, pedicello infra calycem incrassato, calyce lineam longo 4-5-partito laciniis acutis, corolla calycem dimidio superante 4-5-fida laciniis acutissimis reflexis, squamis nullis, staminibus exsertis, filamentis ad sinus corollae insertis, stylis distantibus, stigmatibus capitatis, capsulae globosee calyce persistente et corolla marcescente cinctae stylisque divergentibus coronatae, loculis irregulariter ruptilibus. *Cuscuta Arabica*, *JFigJit's Icon. 1.1371. non Fres.*

HAB. Lower Beloochistan and Scinde Hills, spreading over *Trianwenia pentandrum*, *Tribulus*, *AmarantJim*, etc. No. 478.

BORAGINACEAE.

- ²0. *Heliotropium (Catimas) Brahuicum*, J. E. S.; radice perenni, caulibus erectis rigidis cum foliis pilis plerumque adpressis crebre subincanis, foliis raris petiolatis inferioribus ovatis superioribus lanceolatis saepe inaequilateris obliquis margine leviter revolutis subnatis, spicis paucifloris, calyce extus piloso corollae tubum vix aequante, corolla extus pilosa, antheris ad medium corollae insertis,

stylo elongato inconspicue retrorsum piloso stigma conicum apice bilobum parce pilosum longitudine sequante, nuculis glabris.

• H A B. Upper Beloochistan, above 4000 feet. A very rigid species, with scattered leaves and distant flowers. No. 865.

21. *Heliotropium* (*Euheliotropium*) *calcareum*, J. E. S.; erectum, pube brevi densa strigoso-incanum, foliis ovatis acuminatis subtus prominule reticulatis, spicis solitariis vel conjungatis ebracteatis junioribus scorpoideis senioribus elongatis (6-8 pollices), calycis laciniis lanceolatis strigosis, corollas tubo piloso sepala aequante limbi lobis pestivatione quincunciali, antheris ad medium corollas insertis apice acuminato inflexo, stylo brevissimo retrorsum piloso, stigmati a basi incrassata subulato-conico sursum piloso apice subbilobo, calycibus fructiferis distantibus clausis nuculas strigoso-pilosas includentibus.

H A B. Hills of Scinde and Lower Beloochistan. No. 630.

22. *Heliotropium* (*Orthostachys*) *rari/lorum*, J. E. S.; radice perenni, caulibus erectis rigidis cum foliis pilis adpressis canescentibus, foliis linearibus margine incrassato subrevoluto, spicis bracteatis, floribus parvis extra-axillaribus sessilibus, calyce corollae tubum aequante, corollae tubularis extus pilosae limbi segmentis erectis approximatis cochleari-fornicatis fauce pilosa, antheris supra medium corollae insertis, stylo elongato glabro, stigmati parvo piloso, nuculis hispido-pilosis calyce patente longioribus.

- H A B. Hills of Scinde and Lower Beloochistan. No. 492.

A stiff under-shrub, with adpressed hairs, linear leaves, and short spikes. Stigma inconspicuous.

23. *Arnebia jimbriopelala*, J. E. S.; annua, pusilla, caule nisi ad apicem glabro, foliorum margine pilis basi bulbosis ciliato paginis adpresse setosis, racemis densis secundifloris, bractea sepalisque conformibus floriferis lanceolato-subulatis (semiuncialibus) fructiferis foliaceis (sesquiuncialibus), corollae flavae hypocrateriformis tubo gracili (unciali) limbo amplo (8-10 lineas diametro) ad marginem inciso-fimbriato sinibus intruso-plicatis erectis, nuculis verrucosis.—

Am. fimbriopetala, l. 13. *Stocks in Keu's Gard. Misc. v. Z.p.* 180. t. vi.

H A B. Upper Beloochistan, on rocky ground at Doobund, Chehel Tun, etc. No. 977.

Remarkable for the size and beauty of its fimbriate corolla, and its sepals much enlarged in fruit. Figured in *Hooker's Journal,' June, 1851, p. 180. t. 6. I may remark that the style and stigma do not

differ from the other species, the style being twice bifid. The drawing is hence to be corrected in this point.

24. *Echinosperrum calat?iica?yum*, J. E. S.; caulibus pube adpressa incanis, foliis radicalibus spathulatis caulinis lanceolatis margine sub-undulatis ssepe insequilateraliter obliquis paginarum setis adpressis, racemis elongatis, floribus ebracteatis breviter pedunculatis, calyce peduncultm floriferum sequante fructiferuin superante, nuculis distantibus rachidi adpressis tribus anterioribus conformibus scil. cinctis membrana bullato-calathifornii ruguloso-tuberculata demum scariosa ad marginem aculeorum brevium simplici serie armata aperture centrali parva disco intus parce aculeolato, nucula axili parva nuda plana ad discum et marginem breviter glochidiato-aculeolato.

HAB. Upper Beloochistan. No. 1003.

Seems to approach *Echinosperrum Biploloma* of Schrenck, but has more numerous acidei on the margin of the inflated membrane.

25* *Paracaryum (Mattiastrum) a^erum*, J. E. S.; pilis rigidis patulis e tuberculo ortis hispido-asperum, caulibus erectis foliosis, foliis lanceolatis acutis margine erosis undulatp-crispis radicalibus in petiolum longum e basi amplexicauli attenuatis caulinis linearibus sessihbus, panicula3 demum elongatse floribus distantibus pedicellis erectis calycem floriferum aequantibus fructiferum superantibus nucu-
las daturas haud sequantibus, calycis corolla? dimidium haud attingentis laciniis angustis lanceolatis, corollae elongatae tubo in faucem amplissimam infundibuliformem plicatam transeunte limbi laciniis rotundatis sinibus intrusis fornicibus bilpbis ad corollaj medium msertis, stylo et antheris insertis, nuculis planis vel leviter concavis o'ibiculari-ovatis disco aculeatis ala lata grosse dentata cinctis aculeis dentibusque glochidiatis.

HAB. Upper Beloochistan. No. 906.

A fine species, with large flowers of a violet hue. Plant 1-2 feet high - Radical leaves (including the petiole) 3-6 inches long and 5-6 lines wide. Calyx 1-2 lines high. Corolla 4-5 lines long.
26 *Paracaryum (Euparacaryum) rubriflorum*, J. E. S.; pilis patulis e tuberculo ortis hispidum, foliis lineari-lanceolatis acutis radicalibus longe petiolatis caulinis subsessilibus, pedunculis floriferis calycem aequantibus fructiferis calycem et nuculas plus minus superantibus, calycis corollae tubum paulo superantis laciniis late lanceolatis, corollae fornicibus iutegris, stylo et antheris insertis, micularum

disco ad lineam mediam acuiēis 4-5 simplicibus vel glochidiatū instructo membrana bullato-calathiformi ad marginem inflexum minute dentata intra marginem levi vel rarius tuberculata.

HAB. Upper Beloochistan. No. 933.

Calyx 1½-2 lines long. *Corolla* 2½ lines long. *Nuts* 4 lines across. *Flowers* purple-red.—Comes very near *P. rugulosum*, Boiss., and seems to differ in its more harsh and spreading pubescence, its larger nuts and flowers, and the aculei on the face of the nuts.

27. *Rochelia rectipes*, J. E. S. •, annua, seabro-hispida, foliis e basi semiamplexicauli lineari-acuminatis, racemis elongatis, floribus extra-axillaribus, pedunculo florifero sepala bracteasque sequante fructifero elongato recto sepala valde aucta erecto-patentia lanceolata in unguem attenuata nervo medio percursa plus minus superante, nuculis rectis glochidiato-saccharatis.

IIAB. Gurghina, in Upper Beloochistan. No. 978.

Keadily known by its straight peduncles and sepals. *Sepals* broad. *Corolla* pale blue; with a white throat.

LABIATE.

28. *Perowskia abroianoides*, Kar.; et *atriplicifolia*, Benth.

Both these species grow common in Beloochistan, and the flowers and tops are collected and sold in the bazaars, under the name of the plant, *Tirk*, or *Gwdree Durnoo*. They are supposed to be cooling and useful in fever and ague. It may be noted that Karelin, in his description of the genus, has reversed the position of the lips of the corolla, though strangely enough he has kept the perfect or larger stamens in their right position, viz., anteriorly. This may be ascertained by a reference to the relation between the odd or posterior segment of the calyx and the lips of the corolla, and by the line of origin of the perfect stamens, which it will be seen is between the anterior and posterior lips. The anterior lip is long, narrow, and undivided, and the fissure between it and the posterior lip is very deep. The posterior lip is made up of the four posterior segments of the corolla, the axile sinus being the shallowest. The stamens become finally declinate. The posterior stamens are also present, but so very small and imperfect as to deserve the name of staminodia only. They are to be seen on the upper lip. We may alter the generic character thus:—"Corolke . . • limbo bilubiato labio superiore 4-lobo labio inferiore elongato integro.

Stamina postica brevissima castrata, antica fertilia demum declinata," etc. The genus seems allied to *Hoslundia* among the *Ocimoidece*, next to which it should probably stand, and not among the *Monardea*.

ACANTHACEJE.

29. *Lepidagathis strobilifera*, J. E. S.; suffruticosa, depressa, ramis ligneis, ramulis quadrangulis, pilis brevibus ad cacumina adpressis infra patulis, foliis petiolatis lanceolatis vel ovato-lanceolatis basi saepe inaequilateris apice obliquis junioribus sub lente pubescentibus adpressis senioribus denudatis, spicis confertis strobiliformibus, bracteis trinerviis saepe vacuis apiculo rigido patenti-reflexo cum calycis laciniis majoribus laete-viridibus demum scariosis obovato-acutis margine ciliatis ad nervos strigoso-pubescentibus, bracteolis subulatis ciliatis, sepalo anteriore prope ad basin bifido binervi, sepalo posteriore trinervi, sepalis lateralibus multo minoribus subulatis ciliatis, corolla bracteas et calycem vix dimidio supereminente, staminum anteriorum loculis obliquis (uno altius posito), staminum posteriorum loculo uno castrato vel penitus abortivo.

HAB. Shah Bilawul, in Lower Beloochistan. No. 613.

Leaves 7-10 lines by 3-5, and petiole 3-4. *Spikes* f-J of an inch height. *Corolla* 7-8 lines, dingy white, with the middle of the lower lip marked by purple spots. *Anterior bracts* and larger sepals 4-5 lines by 3. *Bracteoles* 2 lines, and smaller *sepals* 2½-3 lines long.

^{ou} - *Uipteracanthus longifolius*, J. E. S.; basi suffruticosus, viscoso-puberulus, caulibus erectis subteretibus, partibus novellis apice sericeo-lanatis, foliis elongatis linearibus utrinque acuminatis internodiis superantibus pilis tenuissimis dense et molliter pubescentibus, floribus axillaribus solitariis vel binis, bracteis foliaceis florem aequantibus, calycis segmentis subulatis ciliatis corollae dimidium tequantibus, corollae tubo brevi in faucem amplissimam infundibuliformem punctatam transeunte limbi lobis brevibus obtusis, ovarii loculis 6-ovulatis, capsulae pubescentis calycem duplo supereminentis basi orevis asperma.

HAB. Shah Bilawul, in Lower Beloochistan. No. 537.

Leaves 2-3 inches long by 2-3 lines wide. *Corolla* 9-10 lines long, dusky lilac, the throat marked externally by longitudinal furrows caused by plaits which project into the throat.

SOLANACEÆ.

81. *Hyoscyamus insanns*, J. E. S.; pilis patentibus apice furcato-stellatis viscoso-tomentosus, foliis subrhomboides crassis succidis grosse sinuato-dentatis inferioribus amplis, petiolo bi-tri-pollicari, spicis plurifloris, bracteis inferioribus foliaceis superioribus integris, pedunculis variac longitudinis, calyce obconico demum campanulato prominente reticulato dentibus triangularibus vel obtusiusculis, corolla* calyce duplo longioris limbi segmentis obtusis duobus minoribus, stylo et staminibus infra pilosis exsertis inclinatis, ovario piloso.

HAB. Growing from chinks of rocks or in soft soil in rocky ground throughout Beloochistan. No. 623.

This is known by the name of Kohee Bhung, or Mountain Hemp. « is said to be smoked in small quantities by debauched Fakeers, and to be used by evil-disposed persons to injure those with whom they are at enmity. It is described as causing dryness and constriction of the throat, and furious delirium, and as it is known to every native, it probably may be sometimes used, though I never could hear of one who had smoked it either by design or accident. It seems to approach very nearly to *Ryosc. muticus* and *Datura*, nor can I suggest certain distinctive marks; I add a fuller description for those who may have the opportunity of seeing living plants of these two species.

Boot in loose ground creeping extensively, and emitting stems which are procumbent at the base and cover a large extent of surface. *Brandies* and branchlets clothed with soft, clammy, woolly hairs, which are branched or stellate at the tip. *Leaves* very thick and brittle, rhomboid in outline, with coarse teeth and wide intermediate sinuses, the lower ones sometimes 9 inches by 6, with a petiole 3 inches long. *Spikes* 10-30-flowered, when young scorpoidal, when old much elongated (6-12 inches), with flowers turned to one side, the lower flowers having a stalk as long as the calyx, the upper stalk not exceeding a line. Lower floral bracts leaf-like, upper ones linear and half as long as the calyx. *Calyx* with sharp triangular teeth, or obscurely bluntly and irregularly lobed. *Corolla* as long again as the calyx, with a greenish-white tube, gradually enlarging into a capacious throat; limb generally oblique, with a fissure between the two smaller segments, pale pink with purple veins and dark purple spots, looking like the corolla of some *Pelargonium*. *Stamens* free from the upper half of the corolla, with hairs on the lower (or attached) part and some way up the free

part. *Ovary* hairy. *Style* hairy below, and with the stamens projecting from out of the mouth of the corolla and turned down towards the cleft. *Stigma* minute.

32. *Lycium foliosum*, J. E. S.; suffruticosum, depressum, ramis rigidis intricatis ramulisque spinescentibus, foliis parvis fasciculatis crassis subcarnosis anguste linearibus ssepe cylindricis basi attenuatis apice clavatis, floribus fasciculatis, pedicello calycem aequante, calycis glabri margine irregulari subbilabiato, corollae tubo glabro calycem duplo supereminente limbo lilacino, staminibus e media corolla liberis plus minus exsertis, filamentis ad apicem pilosis, ovario glabro, stylo longe exserto, stigmate viridi obscure bilamellato.

HAB. Rocky ground near Kelat. No. 1117.

A low, intricately branched shrublet, growing in stiff tufts. *Segments* of the corolla and stamens varying from four to five. *Leaves* 4-5 lines long by | a line thick, fleshy, often cylindrical.

33. *Lycium depressum*, J. E. S.; frutex vel arbuscula, ramis validis patentibus (nee dependentibus), ramulis parce spinosis, partibus novellis parce glanduloso-pubescentibus adultis glabris, foliis petiolatis lanceolatis saepe obliquis subfalcato-inaequilateris, floribus fasciculatis longe pedunculatis, pedunculo calycem ter quaterve excedente, calyce glabro 4-6-dentato fructifero fisso, corollae tubo glabro calycem duplo supereminente limbi laciniis 4-6 amplis lilacinis, staminibus supra medium corollas liberis omnino glabris cum stylo exsertis, stigmate distincte bilamellato.

HAB. Various stations in Upper Beloochistan, where it grows from three to ten feet in height, with strong self-supporting branches, and soft vigorous young shoots. No. 995.

PLANTAGINEJE.

34. *Plantago remotiflora*, J. E. S.; tota sericeo-lanata, foliis anguste lanceolatis 3-5-nerviis integerrimis, spicis 10-30-floris demum elongatis (3-8 pollices, floribus i-1 pollicem, distantibus), bracteis explanatis apice glabris acutis basi amplexicaulibus margine membranaceis calycem sequantibus, corollae laciniis angustis acutis parce ciliatis.

HAB. Hills of Scinde and Lower Beloochistan up to 5000 feet, with *Plantago amplexicaulis* (Cav.), and *P. petioidtata* (EndL), which last ^{sc}cms to come very near *P. ciliata*, Desfont. t. 39. No. 594.

THYMELE, E.

35. *Daphne acuminata* Boiss. et Hohenack. *inedti.*; fruticosa, ramulis ad apicem pubescentibus, ramis foliisque glabris, foliis anguste ari-lanceolatis basi et apice attenuatis pungenti-mucronatis sessilibus vel vix petiolatis, floribus 5-15 ad apicem ramulorum glomeratis breviter pedunculatis, calyce albo-tomentoso, ovario villosa, fructu pubescente.

HAB. Persia and Kurdistan, *Kotschy*, 189,551. Upper Beloochistan from 4500 feet, where it is called Peepul, and known as very poisonous to camels. No. 859.

A shrub 4-8 feet high. *Learn* 1J-2 inches by 2-3 lines. &k/* externally woolly, with the segments of the limb of a pure white. *Flowers* sweet-smelling. *Fruit* orange-red.—Comes near *D.papyracea*, Wall., but differs in its much narrower and mucronate leaves, and the silky ovary.

LILIACEA.

36. *Fritillaria ptwocarpa*, J. E. S.; caule pubescente uni-pluri-floro, foliis duobus infimis approximatis pseudo-oppositis lanceolatis caulinis linearibus floralibus binis, pedunculis floriferis horizontalibus post anthesin apice deflexis fructiferis erectis, perigonii sepalis breviter calcarato-gibbosis sordide purpurascensibus venis saturatioribus calcaribus atro-fuscis, staminibus basi pilosis, stylo integro, ovario turbinato 6-sulcato 6-angulato vertice truncato cornubus sex, coronato, capsula depressa 6-sulcata (sulcis alternis srepissime profundioribus) 6-angulata angulis obtusis vel acutis vel alatis sursum in cornua productis.

HAB. Upper Beloochistan. No. 918.—Flowers inconspicuous, dull-coloured.

ASPHODELE, E.

37. *Uropetalura unicolor*, J. E. S.; foliis linearibus canaliculatis glauciscescentibus glabris scapum subaequantibus, racemo nutante 4-6-floro, bracteis striatis ovato-acuininatis pedunculum floriferum dimidio superantibus, pedunculis floriferis horizontalibus vel nutantibus fructiferis erectis, perigonii foliaceo-viridis cylindrico-campanulati sepalis linearibus obtusis exterioribus ad dimidium interioribus ad tertiam partem et leviter recurvatis stylo ovarium tequantibus, stigmate

inconspicuo obtuso trilobo, capsula polysperma depressa profunde trigastra vix stipitata vertice truncata basi nunc attenuata nunc truncata.

HAB. Hills of Scinde and Lower Beloochistan; after rain. It is called Junglee Bussur, or Wild Onion, and its bulbs are eaten. No. 634.

Leaves 6-8 inches. *Scape* 8-12 inches. *Peduncles* in flower $\frac{1}{2}$ lines, in fruit 3-4 lines. *Bracts* 2| lines long. *Fruit* 4 lines by 3.—It is very near *U. serotinum*, but differs in its flowers, which are the colour of the leaves, and in its few-flowered not many-flowered raceme.

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4 List of the PROTEACEAE collected in South-western Australia by MR. JAMES DRUMMOND ; by DR. and PROFESSOR C. F. MEISNER.

[Previous to this list being printed, it was submitted to our friend Mr. Kippist, Librarian of the Linnean Society, who returned it with the accompanying remarks, which cannot fail to be acceptable to the possessors of Mr. Drummond's Swan River plants. "I have carefully compared it with the list kept by myself of Mr. Saunders's set, and find the numbers in general very correctly given, with the exception of two distinct series having been confounded under Collection IV., an error which Mr. Meisner evidently suspected, but had not the means of correcting. Of those marked IV. in his list, the higher Nos. (between 600 and 700) all belong to the earliest of the *numbered* collections, the only one of which the numbers are quoted in the first volume of 'Plantae Preissianae.' The remaining Nos. (about 250-320) are all that really belong to the fourth set. As a further means of distinguishing these, in case you should think it desirable to do so, I have taken the liberty of prefixing the date (1848) to those which I found marked in my list as belonging to the fourth collection. The remaining IV.'s may therefore be altered to I., and the sequence of the different series will then be correct. Should you think it worth while, before printing the list, to make this alteration, it will be necessary to distinguish by the addition of an asterisk, or in some other way, the unnumbered series, Meisner's Collection I."—The date (1818) is here added, as suggested by Mr. Meisner.]

The Roman numbers are those of the collections or series as they have successively been received in Europe. The species and *var. inedita* are marked *MSS.*, and will be found characterized in the forthcoming volume of De Candolle's 'Prodr.' For the rest see B. Brown, *Prodr.*, and 'Plantae Preissianse.'

	IV. 260.	<i>Petrophila crassifolia</i> , <i>R. Br. suppl.</i>
	I.	» <i>brevifolia</i> , <i>IdndU</i> (Gilbert, sine no.)
11.293; III. 241.	»	» <i>media</i> , <i>R. Br. suppl.</i> /
(1848) IV. 259.	»	» <i>teretifolia</i> , <i>R. Br.</i> /
II. 241.	»	» <i>longifolia</i> , <i>R. Br.!</i> <i>suppl.</i> *
L; III. 240; IV. 556.	»	» <i>juncifolia</i> , <i>Undl.!</i> (Gilbert, n. 62.)
III. 242.	»	» <i>acicularis</i> , <i>R. Br.!</i>
IV. 557.	»	» <i>scabriuscula</i> , <i>Meisn.</i>
IV.261.;V.(1850)394.	»	» <i>anceps</i> , <i>R. Br. I suppl.</i>
I.; IV. 558.	»	» <i>lincarar</i> , <i>R. Br.!</i> <i>suppl.</i>
I.; IV. 561, 562, 572.	»	» <i>seminuda</i> , <i>Lindl.</i> /
I.; IV. 570.	»	» <i>Dmmmondii</i> , <i>Meisn.</i>
III. 248.	»	» <i>crispata</i> , <i>R. Br.!</i> <i>suppl.</i>
I.	»	» <i>rigida</i> , <i>R. Br.!</i>
I.	»	» <i>Scmirise</i> , <i>R. Br.!</i> <i>suppl.</i> (Gilbert, n. 185.)
I.; IV. 569.	»	» <i>glanduligera</i> , <i>Lindl.!</i>
IV. 568.	»	» <i>divaricata</i> , <i>R. Br.!</i> <i>suppl.</i> (<i>P. intricate</i> , <i>Lindl.</i>)
	»	» <i>colorata</i> , <i>Meisn.</i> (Gilbert, n. 155.)
II. 297.	»	» <i>diversifolia</i> , <i>72. ^r/</i> (Gilbert, n. 139)
IV. 262.	»	» <i>carduacea</i> , <i>Meisn. MSS.</i>
I.; IV. 566.	»	» <i>biloba</i> , <i>R. Br.</i> / <i>suppl.</i>
1.; III. 244; IV. 571.	»	» <i>heterophylla</i> , <i>Lindl.</i>
IV. 567.	»	» <i>propinqua</i> , <i>R. Br.</i> / <i>suppl.</i>
IV. 576.	»	» <i>trifida</i> , <i>R. Br.</i> /
	a	» <i>squamata</i> , <i>R. Br.</i> / (<i>P. Cumiinghammil</i> , a, <i>Meisn.</i>)
IV. 565.	»	» <i>striata</i> , <i>R. Br. I suppl.</i> (Gilbert, sine no.)
I.; IV. 575.	»	» <i>macrostachya</i> , <i>R. Br.</i> / <i>suppl.</i>
II. 298.	a	» <i>Shuttleworthiana</i> , <i>Meisn.</i>
IV. 263.		» <i>Isopogou scabriusculus</i> , <i>Meisn. MSS.</i>

- I. *Isopogon petrophiloides*, *R. Br.!* *suppl.*
 I. „ *teretifolius*, *R. Br.!* *p. cornigerus*, *Ldl.*
 (Gilbert, n. 300.)
 T.; IV. 560, 573. „ *divergens*, *R. Br.!* *suppl.* (Gilbert,
 n. 306.)
 I.; IV. 574. „ *asper*, *R. Br.!* *suppl.* (*I. ecaber*, *Ldl.!*
 non Meisn.)
 T.; II. 295; III. 247. „ *formosus*, *R. Br.!* (Gilbert, n. 61.)
 IV. 563, 564. „ *roseus*, *Lindl.!* *Bol. Reg.* 1842. Misc.
 n. 37. (*P. scatter*, *Meisn. Bot. Mag.*
 t. 4037. non *Lindl.*)
 V. 399. „ *villosus*, *Meisn. MSS.*
 III. 246. „ *tripartitus*, *R. Br.!* *suppl.*
 III. 245. „ *Baxteri*, *R. Br.!* *suppl.*
 V. 397. „ *latifolius*, *R. Br.!* *suppl.*
 V. 398. „ *Protea*, *Meisn. MSS.*
 II. 294. „ *attenuatus*, *R. Br.!*
 I.; IV. 559. „ *spherocephalus*, *Lindl.!* (Gilbert.)
 III. 243. „ *uncinatus*, *R. Br.!* *suppl.*
 a. HI. 249; /3. V. 395. „ *spathulatus*, *R. Br.!* *var. a et /3.*
 V. 396. „ *buxifolius*, *R. Br.*
 IV. 265. *Adenanthos linearis*, *Meisn. MSS.*
 I.; IV. 591. „ *barbigera*, *Lindl.!*
 IV. 592. „ *obovata*, *Labill.!*
 IV. 264. „ *venosa*, *Meisn. MSS.*
 III. 245, 254. „ *cuneata*, *Labill.*
 II. 301. „ *Meisneri*, *Leim.*
 III. 253. „ *procumbens*, *Meisn.*
 III. 255. „ *sericea*, *Labill.*
 IV. 266. „ *velutina*, *Meisn. MSS.*
 IV. 593. „ *Drummondii*, *Meisn.*
 I. „ *apiculata*, *R. Br.!* *suppl.* (Gilbert,
 n. 7.)
 III. 256. „ *pungens*, *Meisn.*, *p. simplicifolia.*
 V. 400. „ *armata*, *Meisn. MSS.*
 III. 258. *Synaphea favosa*, *R. Br.*
 11.303. „ *dilatata*, *R. Br.* (Gilbert, n. 179.)
 HI. 259. „ *Drummondii*, *Meisn. MSS.*

- I*. *Synaphea decorticans*, *Lindl.!*
 I.; IV. 588. „ *gracillima*, *Lindl.!*
 11.302. „ *petiolaris*, *B. Br.!*
 IV. 589. „ *acutiloba*, *Meisn.* (Gilbert, n.178 ?)
 III. 257. „ *Preissii*, *Meisn.*
 I.; IV. 590. „ *brachystachya*, *IAndl.!* (Gilbert, n. 269.)
 IV. 267. *Stirlingia teretifolia*, *Meim.*
 IV. 268. „ *intricata*, *Meim. MSS.*
 I.; IV. 586. „ *simplex*, *Lindl.!*
 IV. 587. „ *abrotanoides*, *Meim.*
 (1848) IV. 269. „ *anethifolia*, *Endl.*
- I. *Conospermum glumaceum*, *IAndl.!* (Gilbert, n. U4i. = *C. lupulinum*; *Endl.*)
 III. 252. „ *bracteosum*, *Meim.*
 I.; IV. 577. „ *triplinervium*, *R. Br. suppl*
 (1848) IV. 270. „ *crassinervium*, *Meim. MSS.*
 I.; p. V. 401. „ *undulatum*, *IAndl.!* et var. *P-minus.*
 II. 304. „ *Brownii*, *Meim.*
 II. 306. „ *marginatum*, *Meim.*
 TV. 684. „ *Kiigellii*, *R. Br.*
 II. 305. „ *polycephalum*, *Meim.*
 I.; IV. 582. „ *densiflorum*, *Lindl.!*
 I. „ *acerosum*, *IAndl.!*
 IV. 583. „ *amoenum*, *Meisn.*
 IV. 580. „ *distichum*, *R. Br.*
 IV. 578. „ *filifolium*, *Meim.*
 II. 308; IV. 679. „ *incurvum*, *Lindl.!* (Gilbert, n. 70.)
 I. „ *brachyphyllum*, *IAndl.!*
 I.; IV. 581. „ *Steechadis*, *Endl.*
 II. 307. „ *canaliculatum*, *Meim.*
 II. 311. „ *teretifolium*, *R. Br.!*
 III. 250. „ *petiolare*, *R. Br. suppl.*
 III. 251. „ *capitatum*, *R. Br.*
 II. b09, 310; V. 402. „ *flexuosum*, *R. Br. suppl.*
 (1848) IV. 271. *Frandandia fucifolia*, *R. Br.!*

- (1848) IV. 275. *Persoonia hakeaeformis*, *Meim. MSS.*
 I.; IV. 598. „ *macrostachya*, *Lindl. f*
 (1848) IV. 276. „ *scoparia*, *Meisn. MSS.*
 III. 260. „ *microcarpa*, *R. Br. !*
 IV. 597. „ *Fraseri*, *R. Br. I suppl.*
 „ *juniperina*, *Labill I* (Gunn, n. 869,
 537, 1238.)
 (1848) IV. 274. „ *sulcata*, *Meisn. MSS.*
 I.; IV. 596. „ *quinquenervis*, *Hook.*
 (1848) IV. 272. „ *tortifolia*, *Meim. MSS.*
 (1848) IV. 273. „ *rudis*, *Meim. MSS.*
 „ *Gunnii*, *Hook. fil. Gunn, n. 870,*
 „ [%]1237. *Milligan, n. 738.*
 I.; (1848) IV. 277. „ *Laureola*, *Lindl.*
 I. „ *longifolia*, *R. Br. (P. Drummondii,*
Lindl.!) Gilbert, n. 1.
 V. Suppl. n. 5. „ *trinervis*, *Meisn. MSS.*
 V. 403. „ *dillwynioides*, *Meisn. MSS.*
 GBEYILLEA (indus. *Anadenia* et *Conogyne*, *R. Br.*, et *Man-*
glesia, *Endl. ?*)
 I. *Grevillea* (*Anad.*) *tenuiflora*, *Lindl.*
 „ (*Anad.*) *pulchella*, *R. Br. !* (Gilbert,
sine no.)
 I.; IV. 613. „ (*Anad.*) *flexuosa*, *Lindl. !*
 I.; II. 313. „ (*Anad.*) *Synapheae*, *R. Br. Meim.*
{Anad. gracilis, Lindl.!)
 I.; IV. 619. „ (*Anad.*) *quercifolia*, *R. Br. suppl.*
Meim. {An. brackleyana, Lindl.!)
Gilbert sine no.
 I. „ (*Anad.*) *monticola*, *Meisn. PI. Preiss.*
v. %p. 259. {An. Aquifolia, J&L.)
 n- 315, 323; IV. 624. „ (*Conog.*) *biternata*, *Meisn.*
 II. 321. „ (*Conog.*) *brevicuspis*, *Meisn.*
 H. 299 ; III. 266. „ (*Conog.*) *Shuttleworthiana*, *Meim.*
 III. 265. „ (*Conog.*) *biformis*, *Meisn.*
 III. 268. „ (*Conog.*) *leptobotrys*, *Meim.*
 III. 300; V. Suppl. n. 8. „ (*Conog.*) *petrophiloides*, *Meisn.*
 (1848) IV. 279. „ (*Conog.*) *polybotrya*, *Meim. MSS.*

- (1848) IV. 280. *Grevillca* (Conog.) *didymobotrya*, *Meim. MSS.*
 IV, 623. „ (*Mangl.*) *tridentifera*, *Endl. 0.*
 L; IV. 621. „ (*Mangl.*) (*cuneata*, *Endl.*) *gUfaata*,
 Lindl.
 II. 314. „ (*Mangl.*) *ornithopoda*, *Mem.*
 I.; IV. 622, 620. „ (*Mangl.*) *vestita*, *Endl.*
 II. 320. „ (*Mangl.*) *0. subbiternata*, *Meisn.*
 II. 317, 318. „ *manglesioides*, *Meim.*
 I.; (1848) IV. 286. „ *diversifolia*, *Meim.*
 II. 316. „ „ • /3 *lobata*, *Meisn.*
 IV. 633. „ *Hookeriana*, *Meim.* (Drum. n. 72,
 in Herb. Arnott.)
 III. 271. „ *teretifolia*, *Meim.*
 (1848) IV. 282. „ *tetragonoloba*, *Meisn. MSS.*
 (1848) IV. 284. „ *armigera*, *Meisn. MSS.*
 (1848) IV. 283. „ *asparagoides*, *Meisn. MSS.*
 I.; II. 328 ; IV. 636. „ *eristachya*, *Lindl. I*
 V. Suppl. n. 10. „ *sericostachya*, *Meisn. MSS.*
 V. 404. „ *Hewardiana*, *Meim. MSS.*
 II. 319. „ *brachystachya*, *Meisn.*
 III. 269. „ *bracteosa*, *Meisn.*
 V. 406. „ *nudiflora*, *Meisn. MSS.*
 IV. 625. „ *crithmifolia*, *R. Br.!*
 IV. 637. „ *Preissii*, *Meisn.*
 V. 407. „ *chenophylla*, *Meisn. MSS.*
 IV. 634. „ *Hügelii*, *Meim.*
 III. 267. „ *cirsiifolia*, *Meisn.*
 I.; IV. 631. „ *Lindleyana*, *Meim.* (*G. Wilsonii*, A.
 Gunn.!)
 (1848) IV. 285. „ *tripartita*, *Meim. MSS.*
 I. „ *bipinnatifida*, *R. Br.*
 IV. 627. „ *scabra*, *Meisn.*
 I.; IV. 628. „ *Candolleana*, *Meisn.*
 (1848) IV. 281. „ *pinifolia*, *Meisn. MSS.*
 I.; IV. 629. „ *oxystigma*, *Meisn.* (*Eakea pilulifer***
 Lindl.!)
 II. 324. „ *umbellulata*, *Meisn.*
 II. 270. „ *occidentalis*, *R. Br.!*

- II. 322. *Grevillea brachystylis*, *Meim.*
 II. 327; IV. 335. „ *Drummondii*, *Meim.*
 „ *australis*, *R. Br. Gunn. n. 534, 730,*
1260, 199, 535, 1240.
 II. 325, 326. „ *hakeoides*, *Meisn.*
 (1848) IV. 278. „ *obtusifolia*, *Meim. MSS.*
 „ *tenuifolia*, *R. Br. ! Gunn, n. 534.*
 „ *scabrella*, *Meim. MSS. M^e Arthur, 134.*
 „ *lanigera*, *A. Cunn. ! a et j8, M^e Arthur,*
n. 135, 136, 137, 139, 140, hb.
IdndL 1
 „ *glabella*, *R. Br. suppl. Mitchell, Exped.*
1836, n. 199, hb. Lindl. I
 „ *nutans*, *Meisn. MSS. Mitchell, Exped.*
1836, n. 219 ! hb. Lindl.!
 „ *capitellata*, *Meisn. MSS. (G. diffusa,*
A. Cunn. ! non Sieb.)
 „ *Seymourise*, *Sweet. M^e Arthur, n. 214,*
Jib. Lindl. I
 „ *arenaria*, *R. Br. I M^e Arthur, n. 133.*
 „ *alpestris*, *Meisn. MSS. Mitchell,*
Exped. 1836.
 „ *helianthemifolia*, *Meim. Port*
Philip, Latrobe.
 „ *Aquifolium*, *Lindl. ! Mitchell's Exped.*
1835, 7i. 194, 233, 232. 0, ib. n.
244, Jib. Lindl. I
 „ *dumetorum*, *Meisn. MSS. MitchelVs*
Exped. 1835. R. Cunningham, n.
210! Jib. Heicard.
 V. 405. „ *Lemanniana*, *Meisn. MSS.*
 „ *callipteris*, *Meisn. MSS. (G. BryandH,*
A. Cunn. ! non E. Br.)
 „ *Wickhamii*, *Meim. MSS. (Captain*
Wickham, Exped. of the Beagle,
1839. Herb. A. Cunningham !—
Aff. G. angulata, E. Br.)

(To be continued.)

BOTANICAL INFORMATION.

Extract of a Letter from Ma. JAMES DRUMMOND.

"Hawtbornden Farm, Swao River, Dec. 28, 1851.

"I received your kind letter lately on the very day of my return from a long journey to the north of this place, of eighteen months duration. Endlicher's 'Genera' has been of great use to me on this occasion. I have discovered several plants on this tour which evidently belong to new genera, and as soon as my collections arrive, which I expect in about a fortnight, I will make them up in sets and forward them to England without delay. Among the genera which I suppose new, there are two belonging to the *Proteacea*: one has the habit of *Persoonia*, but the seeds are nearly an inch long, and shaped like those of the ash; each follicle contains only one seed, and opens at the side. The other Proteaceous genus resembles *Dryandra Fraseri* in its foliage* The shrub grows to the height of 12. or 15 feet. Its seed-vessels are of the size and shape of a musket-ball, and contain each two seeds. A curious Cruciferous plant of my collection buries its seed-vessels in the earth, like the *Arachis hypogea*. I have several new Eutaceous genera, and a very fine plant of the family of *Asperifoliacea*. This latter grows 8 or 10 feet high, having a soft yet somewhat woody stem, like some of the large species of *Echium*. It has showy light blue flowers, and the mouth of the corolla is closed by a remarkable calyptra-like covering, rising from the back of the anthers, consisting of five pieces spirally twisted; the lower portions of these pieces are connected by closely interlaced fibres or cilia. Eventually the style and stigma rise above the spiral calyptra, forcing a passage through it. But among the most remarkable of my plants is a new leafless genus, belonging to *Dilleniaceae*, having the general habits and appearance of *Daviesia juncea*, while the blossoms themselves are like those of *Candollea*, and have seven stamens; the filaments free, but the anthers united into a tube. Two climbing plants struck me as being curious: one has brownish-green flowers, shaped like a small *Clematis*; there are eight stamens, the four sepals are permanent, forming a kind of wings to aid the dispersion of the seeds. It probably belongs to *Sapindaceae*. But to me the most remarkable of all the plants I found is a small dci-

duous tree, with a compact rounded top, the branches spreading in all directions, having a trunk a foot in diameter : it perhaps belongs to the *Acerinea*. Its peculiarity consists in the varied states of the foliage in different individuals. In some the plants were in full foliage, and just beginning to blossom ; in some they were just bursting into leaf; while others were quite destitute of leaves, the foliage having fallen on the ground beneath. All these were within a short distance of each other, and I could see no cause for so striking a difference among them. My collection contains seven new *Banksias*, but the allied genus *Dryandra* is by no means so plentiful in the north. I reckon, however, three new *Dryandras* ; all small species, but of the *Banksias* two form trees, with a trunk from 12 to 18 inches in diameter. One of these arborescent species has globose heads of flowers of a metallic green colour, and its follicles clothed with white waxy warts; the other has leaves like a pine.

" I could have procured many more plants in the north, but for the character of the natives, who were so troublesome that I could only make excursions armed with a double-barrelled gun, and in company with mounted police. Both myself and my son John, who is at the head of the police here, had several narrow escapes with our lives. At one time there were two hundred natives invited to the feast they intended to make on our bodies after they should-have killed him and me; but providentially they did not succeed in their murderous designs upon either of us."

NOTICES OF BOOKS.

HOOKEU, JOSEPH DALTON : FLORA OF NEW ZEALAND ; *be'my the second Portion of the 'BOTANY OF THE ANTARCTIC VOYAGE.'* Published under the Authority of the Lords Commissioners of the Admiralty. Part I., 4to. 20 Plates. London : Reeve and Co.

In bringing out the present valuable work, Dr. Hooker is only fulfilling a pledge given to Government and to the public on his return from the Antarctic Discovery Voyage, viz., that he would publish the Flora of three respective regions visited during that circumnavigation,

viz.,—I. The ANTARCTIC FLORA. II. The FLORA OP NEW ZEALAND. III. The FLORA OP VAN DIEMEN'S LAND, or the TASMANIAN FLORA. The first portion was completed in a surprisingly short space of time, considering the care and pains bestowed upon it and the number of new plants, in 2 vols. 4 to, with 198 plates, and a map of the Polar regions. The second portion has been delayed in consequence of the author's mission to Eastern Himalaya, but it is now commenced with great spirit; and when we think of the rapidly increasing population of our colony of New Zealand, and that there is no distinct work giving any account of the vegetable products of a British territory extending through thirteen degrees of longitude (and, alas! the same may be said of all our colonies—there is no "Flora" of any one of them) it must be conceded that such a work has been a great desideratum; and it is intended for the settler as well as for the professed botanist. It is accompanied by admirable plates (coloured or uncoloured), and the author dwells much on the useful properties of the New Zealand plants. The *Cowdie*, or New Zealand Pine, for example, is pre-eminent among timbers in the construction of masts for the navy; and the consumption of New Zealand Flax is very great. The present Part, occupying eighty pages, extends as far as *Saxifrages*. Of the plates, twenty in number, we need say no more than that they are in Mr. Fitch's best style.

WIGHT: *Icones Plantarum India Orientalis*. 4 thick 4to volumes, and 1 Fasc. of Vol. V. 1762 plates. Madras.

In 1840, in the second volume of the 'Journal of Botany,' p. I?⁵» we noticed the first five numbers of this work, and at the same time detailed at length the great difficulties attending the preparing the plates, and especially lithographing them in India. We then said, "It is no small merit of this work, that the labour of printing the greater proportion of these plates has been undertaken by Dr. Wight himself. These plates are really excellent, especially those of the latter numbers." Excellent indeed they were, but far inferior to those that have since appeared; in fact, those in the last two vols. may claim to rank along with those put forth by most European artists; and when we consider their extreme cheapness (about 2|rf. for each quarto plate is their price in India), we know not any work that can vie with it in execution.

The first part of Vol. V. is before us, terminating with tab. 1762! and containing 139 plates of *Orchidacea*; so that in the course of the eleven or twelve years in which Dr. Wight has been engaged in its publication, he has brought out scarcely fewer than 150 plates annually. These sometimes are copied from Roxburgh's unpublished drawings, and occasionally from dried specimens, but generally from the living wild plant; on their accuracy, therefore, we place every reliance, and indeed so anxious is Dr. Wight himself on this point, that he has in most cases, perhaps in every case, detected the error and corrected it in the accompanying short descriptions. From the artist not understanding English, far less Latin, we have frequently the names on the plates at variance with those in the letterpress; this however is a venial error, which any one may correct for himself.

It may not be uninteresting here to notice the principal families illustrated by Dr. Wight. To *Balsaminacea* 24 plates are devoted; to *Leguminoſa*, 3; to *Myrtaea*, 73; *Rubiacea*, 80; *Composita*, 83; to the genus *Ulricularia*, 23, and of the Indian species there is a monograph in his 'Illustrations of Indian Botany,' vol. ii. p. 134. To the *Apocynacea* 64 plates are given; to the curious but *difficult Asclepiadacea* no less than 72; to *Convolvulacea*, 44. In *Scrophulariaceae* we find 26; *Labiates*, 40; *Verbenacea*, 32; in the difficult *Acanthacea*, no fewer than 111; *Amaranthacea* are illustrated by 21 plates; *Urticacea*, including *Morea*, by 61; the *Araceae*, by 42; and the *Orchidacea*, an order quite unintelligible to the great majority of botanists without accurate plates, by the great number of 171, almost one-tenth of the whole work hitherto published.

Thus by the labours of one man, more plates illustrative of the flora of India have been published, than by all preceding writers taken conjointly. It is true Echee and Eumphius both published works of plates, and that many East Indian plants have been noticed by Plukenet; but none of these can be depended on; the drawings are often so distorted that they—witness the plates, or even the order to which they belong, of Rumphius—can only be made the subject of unfruitful guesses; while the dissections, on which botanists chiefly rely, tend only to deceive. We therefore again congratulate the public on the appearance of this work, which we learn is to be completed by the fifth volume.

We expected that the author himself might have been amongst us in

this country by the beginning of the present year (1852); but circumstances, with which the public have no concern, induce him, we learn* to remain in the East till the spring of 1853. No member of the Imp. Soc. Nat. Cur. ever merited better the appellation of "nunquam otiosus" than this modern Roxburgh, Dr. Wight; and we sincerely trust, that although for the next year other duties must interfere with his botanical ones, he may return to his native country, with health unimpaired, to distribute with princely liberality the enormous collection he has now amassed, no portion of which has been sent to Europe, we believe, since 1837.

WIGHT : *Illustrations of Indian Botany*. 2 vols., 4to, with numerous Plates. Madras.

While noticing the * *Icones Plantarum*,¹ we must not omit all mention of the no less well-executed^f *Illustrations* * of the same author, now extended to 2 vols. 4to, with 182 plates, coloured; many of these plates containing each an analysis of a considerable number of Genera, so that the work contains a great deal more than it promises, viz.,— "Figures illustrative of each of the Natural Orders of Indian plants described in the author's^c *Prodromus Florae Indiae Orientalis*,¹ with observations on their botanical relations, economical uses, and medicinal properties; including descriptions of recently discovered or imperfectly known plants." With such a mass of information, pictorial and descriptive, it is quite clear that the '*Illustrations*' of Dr. Wight are as indispensable as the '*Icones*' and its publication adds fresh laurels to his name. Already, following the arrangement of De Candolle, the author has reached to the 124th Order, *Salvadoraeae*.

DE CANDOLLE : *Prodromus Systematis Naturalis Begni Vegetabilium*—Part I. of Vol. XIII.

We are glad to learn that the first part of the 13th volume of this invaluable work, containing the *Solanaceae* by Dunal, and the *Plantagineae*, by Decaisne, has at length appeared. The *second* part of Vol. XIII. (including five orders of *Monochlamydeae*), our readers are aware, was published in 1849.

FLORULA HONGKONGENSIS : *an Enumeration of the Plants collected in the Island of Hong-Kong, by Major J. G. Champion, 95th Reg., the determinations revised and the new species described by GEORGE BENTHAM, ESQ.*

{Continued from p. 172.}

RUBIACEÆ (continued).

10. *Mussaenda pubescens*, Ait.—DC. Prodr. vol. iv. p. 371.

Common in ravines, flowering in April and May.

11. *Mussaenda erosa*, Champ., sp. n.; foliis ovatis acuminatis glabris, stipulis profunde bifidis, corymbo laxe multifloro, lobis calycinis linearibus tubo vix sequalibus uno hinc inde maximo petiolato, corollas pilosule tubo elongato lobis latis acuminatis.—*Caules et folia* glabra; hæc fere *M. pubescentis*, raargine tamen sæpe eroso-crispula. *Stipuhe* latiores et sæpius minus divisae, caducae. *Corymbi* ampli, trichotomi, terminales, ramis primariis elongatis, ultimis abbreviatis, floribus sessilibus. *Calyx* glaber, lobis vix linea longioribus; lobi bracteaeformes (v. bractese adnatae) in corymbo pauci, ovato-orbiculares, 2-3-pollicares. *Corolla* tubus 9-10 lin. longus, basi glaber et tenuis, superne dilatatus et pilis paucis adpresse pubescens, intus superne parce pilosus, fauce villis fere clausa; lobi 2 lin. lati, breviter acuminati, supra papilloso. *Stamina* supra medium tubi inserta, inclusa, filamentis brevibus, antheris linearibus. *Placenta* stipitata, ovulis numerosissimis.

Happy Valley. Readily distinguished from *M. pubescens* by the size of the corolla and the shape of its divisions.

12. *Gardenia* [^]orwfo, Linn.

Abundant in a ravine on Mount Gough, also Mount Victoria, and other localities.

13. *Randia dumetorum*, Lam.—DC. Prodr. vol. iv. p. 385.—var. ? *Parviflora*.

A. single specimen from Little Hong-Kong.

14. *Randia Sinensis*, Rcem. et Schult. ?—Hook, et Arn. Bot. Beech. P. 191.

Little Hong-Kong. The specimen is a small one, with the flowers scarcely open, and is most probably the same species as the one, considered by Hooker and Arnott to be the *Oxyceros Sinensis* of Loureiro,

although neither our materials nor Loureiro's description admit of positive identification. It belongs to the same species as the *R. laevis*, but is certainly not identical with that species.

15. *Rjmdia*.p.? A species of *Rjmdia*, but certainly distinct from the preceding.

16. *ftaadia?* *leucocarpa*, Champ., ip. n.; inermis, fruticosa, *W. oblongis acuminatis subt...* ad *co*Uai remulwjo* etrigoaii, flrihn terminalibus axill...* *itrbar* 1-MH *bitriaaine pwliodlatit, calycis limbo campanulato birrfef S-JcnUto, n»roUr tubo brrri, bare* 2-3-sperma.—Frutes pedalis, ramissimae. Rami juniores dense strigoso-pilosi, vetusti glabrati, vaginis stipularibus nodosi. Stipulae utrinque solitariae, triangulares, acuminatae, ctdocv, axilla barbata. Folia breviter fwtiobta, 1 | -t- | ioUkwia, aagaato r. late ofakmga, ph» auaua acouinaU, baai ingwafafa v. rottndaU, maigne rmina. prwter cuttam venawjur pauca» wbiiu •Uifloaaa glabra. *Florum akabwn junioni tantun. vidi: hie panra »unt ci ns Gr&ttof /twfrmmi** haud *dtaalmflia, peatancn, onrio faOoadari, loeult* pi' oTtlati«, tlj\o apioB btfUla. JbfIM pedierllo l-J-hnrari fuliir, »ub-gWxjMt. 4-4 lin. dianirtpi, albas, ffwiaii 9 T. 5, nrina 4, paip* wdakatia, auJTiamla. oroidca, t«tU cruttaora albida, allmraiae r. lila^iofla. Umbryo pamu, mdicula trprti ontylatlonibiu ovatw**

Found on the top of Victoria Peak. Allied to the one found on the *Dipylon mri-fyhra*, on the other to ('tuaio's D. 15U, roas the *Uitir labnda, whirl, u an vadimUed B***a*. Another specimen is from Lajar fhairana't on Macaafun, from the Happy Valley woods, also with **hii« fruu, Uil with kmger, mombraiiott*, acuminato leaves, aiay a v n to be a aMavet apacwa.*

17. *Haodia* *r—>iina<n, Cfaaay, «p, a.; pjbUna, luermw, folib oblongis acuminatis, cymis subsessilibus axillaribus 5-7-floris, pedicell...* *oatti ttaytc paawi uagwnboa aar/ak bavho aawpaamhUo breviter S-dVniUio Ubg oomU* dimidio brevioribus, corollae laciniis oblongis aaatia » ftaaw f b o mo paaV) brevioribus.—Rami novelli compressiusculi, demum ... Stipulae Uta?, aata\ Uaaa paulo longiores, deciduae. Petioli 5 lin. longi. Folia 3-4-pollicari, basi acutiuscula. Pedunculi communes vix lineam longi, ramis r»ro t Ua longis. Bractea squamiformes, in cupulam parvam connatae. Pedicelli 3-4 lin. longi. Calyx campanulatus, glaber, parte adnata vix lineam*

longa, limbo I Httaari, riwntihna iturcjualiba*, omniinu umea part*
 Integra plurict brevioribu». OofU* tabus 4 lm lingua, rntMra**
 eohu, rxtut gfober, iutu» »nb faucr)>Uo#im; ltbl»i laani* gUbrv,
 **tivfttiane oontorta?. Stamina ad fonccm inierta. Sifttu c i sertus,
 •pice cUviitD<, Jobis cn-ctj* (v,demujn }v»Ui atibus? >, Discus epigynus
 pulviniformis. ~~Owmm~~ ~~erw~~MUDI, bilocilan*. plncrntu l«otitlus,
 ov ib» jtlurimw, nonttolUf rtiaw *ub antbtti miniisti abort
 S-i Un. (iiometro. Smuia in quoque loculo 1-4, utgokta* pulpa
 *eoui intermixU.

Abundant in mvioe* of Victoris Peak, nowrring abom April. TW
 ^ i v l v WKXI are more tike thote of tome tjtrcie* of *Siyfacoty**, and
 in my cporimen the lobet of the it>le are war |*r>U*J, but ihry
 «« in fa, distinct and cooakferably ililalMl, and the inflorwosnift

UteT tW of *Bmrnim* (b* of *St*//«wyw.

ioapota nnd^or rrodr. t< ?7,
 •uawi •hrub ott Victoria Peak. Vark nxldwh-brown or
 laves venr vwiaba* in atar« from 2 to 4 or 5 tucbok H« ^ r r»
 ">louml. Fmtl, ripe in October, raktinb, tbr nae of a jiea. *
 " «U m «krh rt-r \pril, l«4», alW br«,t^mow M
 «B|»on found *knib» wiih ata to ta« 4owrr» in aueb cjmc or
 vni e*rfc eomUa 4| hnr» w .tiiwrtw, at«
 fewer in munb«r, and *mnuwlj* S| li»r» in

>ttt> wpaUar*iuiaiad apariaw arc pgataatry nkadar toaa
 °f ^-tlimm *I fin liacfl. f rfcaYiMfii &nat lir
 •icirty*. Garden I And, howewr, IW owiea in aaek oatt of tW ovary
 •*ry fnnn two lo *Ouna* or fear, with the fttUnta, *otruuomrih*, of
 »«orUir.#«inaUahoitiw«ni. Major Uauapian i» tke Iran «pea-
 feeaa ob»ti»nd about ui ia tact coil- in »men* u no»er» I
 o** mrigpi of JrenaUg, »of wbirb it kaa much of lft« habit, and
 awl IW atTMtm* af (be o»»»

19. *Styllocoryne Welera*, K, Rir4.—W%ct H An. Prodr. vol. i.
 p. 401.

Happy Vall I \, +r»re**
 »•• Utttamyw *mollissima*, Walp., F.>p. v. ii. p. 517.—To U (>Unu
molliter pubescens. Stipule lanceolata, 2-3 lin. longae. *Folia*
ovata v. oblongo-lanceolata, acuminata. J-i-wiil»r-ria. Corymbus

densus. Caijcti tubot gtobomt; Umboi vix tubo *hrt* lor, dentibus
 bmribda latis obttuit. *Corolla* esltu pabaiBana, tubo 11 tin., limbi
 bcuiit obloogU S| Ho longia, atpmm glabria, fane* *ili« <*. usa.
StfUu losge ttuwtua. cUvatu. OMTUW bflo«l«re, pUocatis peliaUa
 carooeulii, OTUIW in quoque loato circa tO. *tiaeca* gkboaa, t lin.
 diamelro, calycU limbo demam aa^a oblitatato ooronato. *Semina*
 aogulata, in qaoqne loculo 13-U

8eam in Iloix^Kong; in 1KB Happy VaUq woods, on Mount
 Victoria, awl at the Butldhist Temple.

ii. *Morinda tmMUTw*, linn, var.f *fatua* brwdbua obovali-oblongis
 brevissime acuminaUs, fldribtu paolo majoribua. — *M. varicolor*,
 Hortul.

Aa oonmon in Hong-Kong at ibe true *M. awMfiia* (with long
 uarrow leara) H in Ceylon. It vaf formerly edtivated in tbr *XiorU*-
 cultural Society's Garden undet DM oam* of *M. vcrmcvtr*, ra ised, we
 baHrtr, fn.m Orineae ««eda, and may poaitibly prore tpactfieallj distinct
 from the curommi Eait liwiium form.

22. *Menbititia fLaiaaa^kM^ fliawtii* Cbaam., at». n.; fruticosus, ra-
 nub* terrtbiu apice compressis tomentellis, stipulis latis breviter
 acuminatis, foliis petiolatis elongatis acuminatis basi acutis supra
 glabris •uUvu in—tntdBa, floribus aggregatis subsessilibus, bracteis
 minntif, ealydboa oroidei* minute dealatia, coroik extus hirsuta
 orarioqw 4-6-meria.—*Hammlt* juitioraa ad aooda wide compressi,
 drinum tcretct. f «Art brerittima, aape rufescens. *Stipulae* cum
 acomJM) lalkndine rami bnriorat. *Petiole* 3-5-lineares. *Folia*
 «-10pofl. longa, 1½-2½ poll. lata, subcoriacea, supra nitidula, venis
 utriouque conspicuis. *Florus* ffctrimil axillares, subsessiles, 3-5-
 flori, petiolis breviores. *Calyx* longus, parte adnata brevis-
 sima, limbo superne contracto, dentibus brevibus i»» evatia recurvis
 marginibus n n n v- Anfli aspia B -4-mera intra calycem tetra-
 merum, rarissime (« «ha. «L Cfcaaipkwii » vho) cum calyce iso-
 men* tabo S Ua. longo intuit aa^acM pitoao; laciniae tubo equi-
 longae, lanceolatae, extus TUKMthfHbt HHH BHHk acumine inflexo
 crasso, aestivatione valvata. *Ovarium* saepius 5-6-loculare, rarius
 4-loculare, ovalis erectis. *Discus* epigynus crassus. *Styli* lobi tot
 quot ovarii locali, lineares, breves. *Drupa* recens globosa, pubescens,
 caerulea, (-4 lts. itiaaaitiiw aJya« limbo coronata, in sicco sulcato-
 lobata; pyrenis 3-6, rarius 4, ovoideo-triquetris, duris, rugosis.

Wong-ny-Chnag Valley, Victoria Peak, etc. Flowers in May and
 ripe u^* in the middle of July. A* a •peae it com* near
 •hancter to that of *if. lomg^im* from Malacca, and to some of the
 Javaae one* my eaortly described by Blume, but is quite distinct
 from any with which I am acquainted.

U. UuctardeUa Cawnwi. Champ., gen. no*.

*QutUard** et *Ckomeii**.

Char. Qtm. GUTTABJ>M.L.A. Cb^fd. Umbu. profunde *k>btta, per-
 •ittcui. *Corvih* tubulo^ Umbi ladni« 4 brevibus wb|»l

Mtimkute leriter imbricata. *Stami**m »ub fauce in^erta, filament*
 brenNiinu. *O-rmm* 4-4-loculare, ondi. in quoque UwuU> wUtariw
 ab ,pi« |xmduli. oWoogia. «3r*a« api« 4-6-lobu*. lobi. Unearibw.
Drupe pyrau. « (hint m««|)mi».-iMia- folii. oppwrt^
 A^«te ntrinqtte aoUlaroe, latogiw, acomi»te. doddt»

axi liana api« triflori. floribm parrw bibfaetoolatu aoHiUbus, in
 medio alari. laicralibni rtmot purbretea tomintntibttfl bnelea ittb-
 Uis s. *drolU* extui lomentom—G. *Ckmtm*

laucrolatis acuminatis florbti tubwncco-pub< tCMtibw. «1 vcu Uci
 nits mbequaUbu tubo MO brevibus* v-i vifer. r»intia nondl
 pube adpnaaa ea&Mcattibu rufceewtibutra. *BUfmU* laU* amte.
 vix |mcam kmgB, eito decittaw. A f a US-poilicatia, k»fc et ftr<
 •^iminata. baM acuU, evpfa pare* *huUBm* f. glabn, awfatae pii«

Mlprraaii w |H f c i , p p
 p.c.mineaubiu, weiuwliariu inmibu*, il^»nfr
 ne laterales lineares,

cmlyitro »ub«(uant*», braoleoi* bwriofw, 0i^» til ttMM lon^us,
 toaxstaius, lobii birribui ob»tv»i». Cbrotta S Uo. kn«S k»bii bmria-
 «mi» obtiuii. £ny* orwdet, pabeaeem, S Us, long*, telfapyrw.

OB Mount Qough and Mount Victoria; flonmiig in J«nc. The
 gem • a crertainly nearly albni to *Gmtttunk*. bat 0* adyv Uirm».
 rous flmn, and iaionagenea ait »ther UM» of Oo-rfi* fim whfa*
 it difft in the number of carp* of U» «»» n a»d fraH bc«f fair
 five instead of two otly.

* Cuming's n. 1837, from the Philippine Islands, is a second species, which may
 be thus characterized:—*G. Philippinensis*; foliis ovali-ellipticis oblongive breviter
 acuminatis subtus ramulisque laxo hirtellis, calycis laciniis inaequalibus linearibus
 tubo longioribus.—Foliis venis secundariis reticulatis, ultimae tantum transverse.
Pedunculis gracilibus, foliis interdum subsuavis. Ovarium vili 5-merum in flore
 4-merum.

24. *Canthiajn mmdnUimm*, Champ., ip a.; fnirinoanffl, iaenae, f«
louguribulc pctioUtie ovali-oblongia acumiiwU* margin* uodu
eoriaecie glabri* supra nitidiamimi« tubui* ad axillae veoanun gfcft-
duloeu, cymi» axillaribiu brevitrr peduaouUUi prtolum paulo tu-
pexantibus, floriboa pentanieris-

Uappy Valley woods; ran Verr near (o the Eut Indivi *C. dily-*
man, and Mill more to to Arnott'i *C. Ui*f*ol<ttm* (torn (VyIon, and
perhaps with fomc oihen should be ooaaidtnd a* » mefe rarie*) of
GicftDcr't •peooa. The petiole* an, however, much longer (about
half an inch); ibe W*T« narrower, more aeuttinato, and tnuauv
uduUte on the margin*, and the tlipulc* murb tbortcr. The fruit iu*
young Mate u ovoid, without the lateral furrow*, which however, in
nuwt *CtuUMia*, are only to be aeen in an adTanoed utagft.

*5. *Itorn itneta*, var. wwwfci, Rod. Fl. Ind. fl. l. i. p. 379, cjo»&
ed. Wall. p. 389.

Woc KI. nev the BuddhUt Temple, Eart Point. Flowers pale pink.
Not distigauhable in the dried state fro tn the whitto-Aow«ml / *blmM*,
or *L>l6m*, Roxb. (non Linn.), which, as tuggetUd by Roxburgh, ap-
pean to IK a mere variety of *l. Uriel* a.

S6. *Partita* /MKM, Linn—IK'. Prod. vol. iv. p. 490.

Happy Valley and We»t Point.

«7. P>rbotri» *tUipiica*, Kfr.—IK¹. Prod. v>l. iv. p. 4JO.—*P.*
Mm ii*, Wall. DC. l. e. p. *sn^Gnmilm Rerttm*, Hook. et Arn. Bot.
Bewh. p. 193.

Ve 7 otuunoo in Hong-Kong. Benia* retl when ripe. Certainty
a congener witii the BMBIIHIM aprdea of the tactkm *Mapmri** of
Psychotria, aad very aaarty «UKI to ha eaatora SooUi Amrrir.
*alb**. It it nxked w y dowhlfcl whttWr any portion of 6VWSM/M can
be mahilaifrf aa a geaae diataaet frooa *Ptgdatri**.

28. *PtTrhotha* « T W, Lim.—DC. Prod. vol. iv. p. 7-1tt.—*P. scen-*
dens, Hook, a Am. BoL Beer p. 193.

Common in Hong-Kong. Brrrie* wMle, Then appear to be two
varieties, one with the infloaoence lava divided and the berries more
succulent than tba other, but poatihW feathctad in differenl atatad, m
I atitxH, from the ayutimiaa before «e, either from Hong-K «*»
fin>i the tain land, detect MV «^*oa> ditfrreim.

29. *Padleria fetida*, I' —DC. Prod. vol. iv. p. 471.

Mount Victoria. Corolla 6 li

nge of

pink and c«riou»ly faMted; the throat hairy with a <«ep pink spot in the dtape of a star, the rays or whi«h extend 1 between the icgmenta.

30. *Ltorrcia dUeobr*, Hnrtl.—DC. Prod. vol. iv. p. 545?

31. *Spermaooc kiipida*, lann.—DC. Prod, TOL iv. p. 555.

S3. *Knuxia corymb*TM, Willd.—W. «t Am. Prod. vol. L p. 499.

O! the *abort* three last specie* there are ringle cpeiiBeni only, without the precise localitiet.

In the recent number* of Walpen* 'Annalc* BoUnicw Systematic*—Mr. 11.HIM ba« d«#ril«-il two tidtlitinnal *Rubioc**** from Hon^Kong. *Gan*k*ia tUpJkmflittm*, Ilanrr, whirh *Men* in inflonaoenw a and in its ^nunwwit ~~flouen from all *Cardenita* known to me, and *Godium* «or»-rius, Hance, evidently very near to if not identical with some of the forms of the oomm *G. tparime.* » hich ii now found in almost every part of the ^lobe Tinted by Europeans.~~

(To be continued.)

No U o* Trout HECA by DR. ASA GNAV.

In *n article of MOM intemt on the * Orpaogeaftt de la Claaw dea NygaUnA*/ m UM» 'Annalm dea Scwoce* NaturcUca,' no. 6 for 1851, M. Payax state*, that Mr. Brown ebaracteriied Uw two genera on which t* <bund«d hia Order *Trrmamln+* (hut:—*Tnwunufm*, by the «, uinary symmetry of the flower, Uw uniorulate ooQa of Uw ovary, and the dehiscence af the aotbert at Uw summit by a pore; *TrfnttA*** b\ its quaternary •trametry, btorulato oalla of Uw orary, and Uw •UroeiM opening at the cit iv mi Cr of the tube. And be procnndi to nrruark, tbal the firit and third of the*e chanctcn art of no value, and that the second " repose sur une effort."

That Mr. Brown abould oommtt a miike of tbii *Vxui* i* M unlikely that it naturally rail* •ttonUon to Uie ttatanott, e«p«WJy m tb* authority .,f Mr. S_{f<v}u. «ho bu attmutclv *tod**i thu WTUJ rn«.n, t«

* The preceding numbers of vol. II. of Walpers' 'Annales' reached this country after the publication of the previous portions of the present Florida. They contain diagnoses of several Hong-Kong plants considered by Mr. Hance as new. Some, however, appear to be old species, which the want of means of comparison in herbaria has prevented him from recognizing; others will be found **totetanataalwftt** some of the new species described in this Florida under other names. TWrt* an • \$tm W*m
ever, which, judging from the characters given, I do not at all recognize in the collections before me.

•ddueed to confirm it. A cursory examination shows, bowwtwr—l that (ho orulet tre not always solitary in this family, M M. Payer Wppo** j », that Mr. Brown did not distinguish the two gCMra in the roan**¹ OKrtcd.

In hit character of *Trmamdrm* (Appendix to *Vfiadsn' Voyage*, P 1 * > we find the phraae •• orarmin 8-locuUre, iooolU l-Mpennk." Among the few tpeoM examined, I found two (tupwpoaad) ovuW* in e«A eefl of the onrf of *THnOeca jwncm* and *T. tkymtfyliia*. and thrw <the two upper coUatCTai) in r.<j^ni». It is si ngoitf tkat 8i«eU (PUutv *Preis-suur*, vol. i. p. tIS) fehoold tar« «en only ioliUnr ovule* in these and in alt tb» *tptam* bo wpeai*dly eu»i&id j rtx» Endlwhet (Ft. Hng.-I. p. 7) had dMeribad the celU at tnonOate in hU *T. affimi** and T «r/h?*f». Mr. Itniwn't charaetrT of tha Order, therefore* » ««* erroneous in tku respect.

As to the dtagnoait of the two genera, thoe who an familiar with Mr. Brown's writing* will not IK-surprised •., find that be bat ei tively rWrained from mentioning their dbtinctive ebaracten, either directly or indindy. It was H» CandoUr, and sot Mr. Brown, who a»au»ed that *Teirtttktca* wa* always tetrameron, and *Trrmwtdra* pmtamerout; and 1 it wa* Eadlicher, in hb 'Genera FlanUnim,' who •aramed that the evils of the ovary were always hionilate in 7Wr«Jf«M, he hvtfaiif previously found them so in two speciw which be had prerioo»K ex- amineti. In *T. rrwqfi?i**, and aotue other tpectea, the ovnlaa are un- doubtedly toltarty.

Cambridge rotf., UwMea. *VJB JL*. Kqr. *l*lt*

Om (he i' %Mpiion-Tmn ol Bonxo and Sumatra, DRYOBALANOPS CAM-
n o u , *QoUbr.*; Ay Sim V». J. HOOKER, D.C.L., F.R.A. and L.S.

(TAB. VII. udV111.)

"Borneo here expands her ample breast,
By Nature's hand to woods of Camphire drest:
TV precious liquid weeping from the trees,
Glowe wwm «*rt AMUA, taa Wlssa of disease."

Camorus' Lusiad, transl. by Mickle.

After the admirable account of the IVyaUfiiai, given b
Eiofaasni Be Vriot in the 'NederWaeh 1 Kruidkundig Arehtff,' TO!
iii. p. 1, (most kindly traulated into KngUsh ad condensed by the

accomplished daughter of that gentleman, Mademoiselle Be Vrkm. for the *Journal*; sen p. 83 of our present volume,) my first notice might seem superfluous; but, while the memoir now alluded to was printing for this *Journal*, we had the great satisfaction of receiving from James Motley, Esq., of Borneo specimens of the ran plant (though only in fruit) and a noble sample of the trunk, laid open, with the crystal, together with camphor and oil in its natural state, and Memoires on the locality and commercial value of law camphor. This specimen of preparation it deposited in the Museum of Economic Botany of the Royal Garden of Kew. and I am desirous now of laying before the public in the pages of our *Minxliaty*, as a little supplement to the very full memoir abated in.

"I have the pleasure of sending you," writes Mr. Motley from Jibuan, Kay IS, 1851, "I hope will be a novelty for your museum, a specimen of the 'Araucaria' or Camphor of the *Dryobalanops* in the wood. The specimen is part of a tree cut down here the other day, in the ground for the purpose of my collection; it exhibits well the way in which the camphor is deposited from the hollow of the tree, which is called camphor-oil. We obtained about five gallons of it and much water. I enclosed a bottle of it in the same small phial of the white resin, yielded by the wounded bark of the tree in small quantities only; unlike the *Agave* and other allied trees, which are, when old, frequently covered for some feet from the ground with a crust of resin. The little purk of seed of an *Araucaria*, or something of the sort, it always used by the natives to preserve the camphor, a few being placed in every packet; their supposed influence is of a preservative nature, preventing the spirit of the camphor from flying away; it is usually packed in quantities of about a quarter of a pound to the weight of some form of paper, which I have not yet seen growing, and of which I must at some moment procure a sample. The specimen is now at the Aman Weng site, (or at the UM drug store) protruded on the high mountains in the interior of Borneo, which is the best place to obtain a sample of (the *MM* which is the most common) commerce, being just now, when asainad and pick, worth about thirty dollars per catty, or about 41 cents per lb. The cheapest is about 25 cents of *** ka rali. It is only to China, where it is valued,

being used in medicine tiuitonic and aphrodisiac, rw^{tly} the opposite
 qualititti to those which we ai^{tribute} to the Z««wt-eainphor. It is
 al*o much UM for inflamed eyes, to ^hich the CcfottiaW are very anb-
 ject, a small grain bring from time to time plaood under the lid. I *n
 »ntell ii plesaanter than that of the ordinary camphor, ami it <oft* not
 become mbtioMd »o rapidly ia the air. The oil *eeme to cons* of a
 very volatile eaaential OH holding in solut HI a wain, which on a few
 day*' exposure to UM >» is left in a syrupy state. It al» yielded me
 a small quantity of crystattbtd camphor, on distillation with a very rough
 ext • nipore apparatoa. I am* found it, by roanj trial* on *)«elf •' »
 others, to act powerfully and deriM* rly u a diuretic in tiresome nr-
 phnttc patna, to which we sojovrnen in the * boweb of UK> land * arc
 very subje d, and it doea not n*««eaU> m turpentinr frw|umUy foe*^{OB}
 repetition. It ;* abo kcre a popokr remedy far rivamatiam, being
 rubbed into the afceied part, It » alao a fragraut, quickly-drying*
 ami « ell-bodied v»rut*h, lur which p«rpoaa I hate u*ed it largtly¹
 require* r abbing until dry, like Fre od» poli»h. China is as yet tie aok
 market, when.' it it us-d principally for emb nhtung; it* value here
 ia abo<t 20. ce ill (1W.) per botUe, iu Chiuu about half a dollar.
 The reain it of no uae aa far as I know, except that the natirect art
 fond of applying it, a» in fact they do almott every gum they pick op*
 to all sort* of cuta and wound*, which, as way be expected, hardly evtf
 heal without a tediou* tore. The timber of the *DryvUlum*] i* Wjf
 hard, deutA and difficult to wock with a plane, ia of a ceddbh ha*
 when firat cut and very fragrant, but changing to a light brown; it
 bnda readily, and U preferred by the Malays to all other wuod» for
 planking their boata. Upon aome of the hill in Labuan, Camphor-
 tree* form at lentt half the juu^rle; but the trug ia rarely met with
 on th» ialand, and, where mott commoi, not <u tree i> twenty yields
 any; hardly a tree of any *t. t. * however, is t be K<D, which ha*
 not been trinl Iy culti iig a hole in the aide of the trunk. They are
 the noblest trees, Hot merely of our jungle. but t, e hanfli/M''* .t I
 ever uw; the trunk bring v«t> Uill, round, ud straight, furn'nbed
 with huge liottreaaas at il»r bate, and cover d with t A u^ft brown,
 smooth, tcnimg bark; the brad deoa, well forme!, and ' large Car •
 jungle trrr, IUe IM es very rigid ami bright, and of a good dark
 green, and the fragrancr of the beautiful white flowrra most drliciaoa.
 71 e fruit, t Mjugh uurUing mo»t powufaij of tpmu of turpentine,

is greedily eaten by a small p#mK|urt, of which I have »mt home a specimen to Mr. Lewis Dillwyn of Swansea. I have obtained that the leaves imiurr»e<l tu water very wdn tinge it blue. The largest tree I have yet seen here waa & *DryobaUmopt*. The following were its dimensions :—

Height from the ground to the top of the buttI resaea ..	25 St.
Girth at the root, following the butt trette* in and out ..	388
(i»nli dlw»v.' ili.- Ijiitlreaaet.	8½
From ground to first 4 branch	92
From ground to highest twig>	LtQ

I have seen several higher trees, but not one looking *o huge a* this, from the mormon* «xe of its buttress structure, which is here like a great wall."

Again, Jane Lath. 1855 M it M ao good at to write furl Ier from Lahuan.—“Since, by the last opportunity, I wrote you an account of the • *Kituur* ... I have visited Borneo and have obtained some further information on the subject, and I would not trouble you with a separate letter for *nek a trifle, I set it through my friend Mr. Lewis Dillwyn. The • *tampk m the boi* «r&t, you may observe, is only j.ru, ,1 M high U m I theu • utcrf «b«i ckasad awl picked. Very like *Ue would rather the high W<t ralar. t how. h it is a V«f] profitable kind to buy, banug very UUC im|Hintv mh«l witfc it. It is bought from the natives by Uw Ckiaew wmtiati in thi* • ut«\ and it requires much judgment to buy it fairly and to rvtUatt* by the eye the quantity of adulteration. To such an extent is this carried, that a Malay Nacoda of Borneo has the reputation of being able to out of our catty good camphor to manufacture slitteaj cattles which will pass ton-ter|, with the unwiprienced. When it comes to ihr hatui* i of the mere hanu it is carefully waabed, trt •ah titmn * ater to float the camphor of ft**? from the ianpttritva. tWa with a«f» and **'ly with lime-juice and water; tk# *o«f dnUming *tui dte arid n-*toniu? its lustre and trattfp*m ey. It is tkm «vW into tkrm abf», «Acf whk* every crystal « rwtfully pkked e*er ami aowped if fMceaar, to clean off every particle of iWfc awtlav. Tk#a» qvalfiira are t«>nn, respectively, about 33, r1, aad f^l <J«Uar per catty; the d«rk coloured and nearly opaque • await, *WHk arr *1 separated, and \$ t%i ly pounded and then • BIB inn. I to g>t out all that it is possible to procure, and the

residue is worth about 6 dollar*. The quantity exported from Borneo is about seven pecuU per annum; it come* from Pelawaw, Uie northern part of Borneo Sooloo, but about five-eighth of it from Bamm; Singapore and the large quantity from Acheen and other parts* <* Sumatra, and a good deal is earned direct to China from Sooloo and Magurdano, and the eastern coast of Borneo. It is chiefly in China. but a good deal is also sent to Cochin-China, Japan, Cambodia, and Siam, and a small quantity to Birmab. Sino I will to you I have had another and better opportunity of seeing it in though in small quantity, and I think that it is not deposited in the oil, but that it is sublimed and crystallized in the upper part of the entities, which are only partially filled with oil; it may be an exception however, but it was the only one in the only two trees I have seen while yet standing. The other specimens east in the box were put in to you, and they are their own etopia to for a I know. Should I have an opportunity of a further examination, and should it lie in your power to receive it, it will be a favour of km to me; for, with unfortunately very little knowledge. I know of an unquenchable fire, all branches of natural history.

I have little to add to the early history or discovery of this camphor given by De Vriam. That author (p. 33 of the present volume) answers that the first mention of Uocuw in the ^M Kerete Baiwpwt der Hoi-landsche Natie naar Ooet-Iodin, IW5-7,"—but it will be sufficient to see the quotation which heads this article, it was evidently known in the time of the great poet and traveller Camor as, who lived in 1572 * * * * * whose Land was perished in 1572.

Ourriyrmnteliunof the appmmnee of the crystals of resin of the •au.n.1 will Tat M U If I take from a portion of the block sent by Mr Motley (the entire piece of wood with crystals in the clefts is \ foot long by 10 inches broad); and a portion slightly •etnHnl it will be observed that these are only intended to exhibit what they appear to the eye of the artist. Staple* of crystals* some sent for information, through the kindness of Dr. Percy, *o H. J. Brock, Ksq., who writes to me* "I have sent you from some crystals and fragments of a yellowish gum or resin, which I examined and measured and then transmitted to Cavendish" T ruK-ssorMaU; I have (now enclosed a figure or projection of the crystals) for you, M u vonJd Bppeej to you, I have enclosed a figure of the crystals.

My down upon it, if the face* were perfect and tymmétrical*. Btt the orystals are very far from being aymmétricaly formed, and from this cir-umstanc the true form is not apparent, and it has been ascertained by measurement of the angle*/*

"The crystals* of mellite are modifications of a *quart prittn*, while those of this our gum ore a modification of a *rectangular prittu*."

"I think that crystals of a red gum have been found in Brazil wood* but I do not know *thevt* form.—Professor Miller remembers having seen the name of *Borneo camphor* in Frankenhcim's **8y>t< in der Krystalle.*—I think it right to communicate to you all I can relative to this interesting subject." *It. J. S.*

For the description of the genus and species of this tree I have only to refer back to p. 8< ti <y.: the original paper is accompanied by >0 excellent figure (though there also *j*rfoct* flowers* are wanting), on folio MM, and I should hardly have* deatred to publish one from our own specimens could I have flattered myself that the valuable scientific journal in which *l>c Vii>a*'s paper has appeared had the circulation in our country which it* merit* deserves. Our fruit, not quite mature, but well preserved in alcohol, exhibits* some alixfat differences from that of De Vriese. We find a nut, rather than a "three-tired oapeule;" at least none of the pericarp* of our specimen exhibits* utuir* or *Itca* indicating di-hwernee. In the forward %\ate of our fruit we find *one* perfect large seed and five nutritive ovules* near its umttuit, all *in* Hukn*. Mr. Lentham, who kindly examined a fruit and minjianvl it with *thr* drawing, would detnc it thus:—"From an examination of the fruit it would appear to me evident that the ovary via thre-crllrd, with two ovules* in each cell roUatenly affixed to the *nter*l axis and peadeiam. At the fruit awellt one ovule akme is enlarged so as to occupy the whole of the cavity, the diaafpimanat dHa^ themaeivea from the ode*, and, *ithout growing, rentsia with the uia endoaed wihii the veraal |(rone of the seed, so as Marchy to be diatingutablr from the t <u, and the seed. a* in many Ufe-

* This figure or projection is copied at our Tab. VIII. fig. 3. It was accompanied by the following notes:—"The primary form a right rectangular prism. TW actual figure corresponds to the right rhombic prism of Hally. There are other faces not yet investigated.—Angles between normals to the faces: $m m' 77 46$; $m r 52 40$; $m s 42 27$; $r r' 44 45$; $r r'' 56 20$; $s s' 102$; $s s'' 37 28$. These are supplements to the angles usually given." ("The figure has been drawn and the angles computed by Professor Miller."—*H. J. Brooke*.)

cincta, although pendukmi from the up. He eentnd «* appears to be erect from the hue of the cavity, and the fire aborptive ovules apptn to be attached to the tide of the «*d.' All lhi» will be btat underrtood by lhe

REFERENCt» TO Till PLAT»..

TAB. VII. B. 4Kb with have* and •carccly nurture froit : - ' ' ' - * T Fig. 1, vertu-al trrtion of a fhiit contained in the thick ^0**1 b M e o*, calyx; t, t n a m m Motion of the top of the frail, cut thro» fh-j •pei of the perfect teed and near Ike aiddie of the i« d wrtft»««» 3, an abortive ovulemaofedi 4, *ml with «hor ol» «U»d removed from the pphcarp; ft, toed ml tnan«nc^r through the pi cotylcdow of the embryo; «, mroUlc ewbiyo, «««»»ed fhwtt« seed : 7, the noae laid open, to ibow the two T«y unequal ootyWotti and the ndicie i—maynijUd.

TAB. Mil. R| 1, |Hjtwo of » bmneh of On Tkf*d**°PJ** crystals chiefly in a cavity; to be mathematic»lly corwet); 8, diagram of a cry»tal « d p. MSinf tote.

BEGONIA ffm&oau* IACA, Mart.*

At one of thr Utt meeting* of the Boyal Bavarian Academy of Sci- flaeaa at Munich, a very remarkable tpecie* of Ayoota wa» «*»* by Profewor von Martin*, having thii sitmoi dinary peculiarity, that it produces from the stem, Itnachttt, and pct»oir»_a iwnanrrabk leaflets, which, on befog dtachxl and placed on BMiat arouml, prodno roots and perfa t planti. In order :> nuui this tngolar prupert), the Pro- trmnr call* Ow «peeie» B. pkjUomamuu*, -tw-ing |iyininH by phyllo- —if. It itandi neaiwt to 3./^piflnw and rMvnw^ . %wX the fol- lowing detailed di<igaoaU onbracea tta camtkl pmtta: ities:—

% P««»> ptyttmmimi (in lerie • Wu. •fmvrwdrtia vd inaequaliter cor- dat is"); cauleaena, «recU j eaok rami^ne leviter scabriusculis pas- stmA lia succedanea parvula innumera prominentibus; foliis (ultra 5-6 unc.) oblique diraidiato-ctirdatu ovato-oblongis acuminatis (preter nexvM TCttfttqae mbtiu pane albo-pilosos) glabris crassiusculis du- plioato-buBqualitr dtnt.v is piloso-ciliatis, ptiolis t tatibst scabrius-

* We are unable to name its native country.—Ed.

cnlit pataim looge pilotia; ttipulu internodia noralla auperanUbus
 oblongo lanceolatis cuspidatis marocacentibua; paniculn \$ »ubeo-
 rymt*o«a, cJ pmviore; pedunculo oomuni ct partialibus primariit
 camneulis (iliformibiu uregubiritcr scnbri», aceundariu gUbrit roaco*
 purpureift, bntcteis oratii nbtuiiuvrilit brevibut (opposi-ii); »i ylis
 longjuscultit flaTU, itigmftibus aurcis; alii cap-ui. naeo-purpmoai
 omnibus unequal. bus rotun!ato-obtu»i.% intisAtinllntdUni Intitudine
 duplo exceder ite; petaUs obJongia; antheris (quas vidij cattit, i.e.
 poltine dcilitutu.

Tin- tli'vrlopmc&t of th« looficU, vvhich Bometixncs cover the plant to
 the attttuolofa ihouMud, u analogous to that <of the aealea on UM
 petioles of a Fern. On the margin arid a*^ (these leaflet*, v ! ich at
 first arr hair dk*ixd, erlla arc produerd, iugtc or auitod into groapM
 (*-•), often glaii<l-like, ami d w fili a yello with, juicoe. One oonunon
 l often • v. ••op | «i DM of then little groupet, ami aftOTvdi p «li of
 The whole proccw leoma to bar* th« grestagt analogy with the furma-
 tion of leave* on tltr petiotet of Ferns (e. g. *Japtoumm fecundum* or
Polypodium effusum).

A List of the P lortACX* coUtckd M Somtk'ttfttrm Ju*troHa *y MI
 JAMES DM:MMUNI | Ar Da. and Paorsiao* C. F. MEISS m.

- II. 320),; (1S4B)IV.387. *Hakea platyiperma*, Hook. I
 (1H49) IV. 288. „ *recurva*, Aftiut. AfSS.
 „ »i *pingiomformis*, Qtr. G*«k*, n. 731.
 III. 273.; V. Suppl. u. 17. * *Ix-bnmuniana*, jVnnt.
 (1848) IV. *»0. „ *rogota*, /T. Jir. t
 „ *epiglottis*, Labill. / Gunn, 12351 et? 739.
 „ *Milligani*, /Vrim. MSS. MiUigm, m. 737.
 V. 412. „ *nodosa*, R. Br. Gilbert, sine no.
 V. Suppl. n- IB, „ *ubmkata*, Meism.
 am „ *flexilis*, R. Br. ?
 V. Suppl a. IB. „ *leucoptera*, R. Br. ?
 V. Suppl. n. 14. „ *tephrosperma*, R. Br. suppl. ?
 II 388,330. „ *obliqua*, R. Br. ?
 „ *lissosperma*, R. Br. Gunn, n. 356 et? 210.

- (1*48) IV. 89. Hake* UnoHi, *Mtim. MSS.*
 IV. 60<). i> •copra. *Mtim.*
- III. 272. IV. 81<. *
 V. HI; Suppl.n. 16. f " iokata, A. ^r.
 ***** B. flr G<*«. • *0<21'09).
 L; IV. SSI. " irifurcsU, ^. -fir. (tf. *mimU* «4 **n*»»»
 Ltndl.)
 III. 392; IV. 601. " nrinanra *Mtim.*
 " MitchelUi, AMM. J&S9. (Mitchell's
 Ex ^ .ISS ^ n - tOSI M.ii»*)
 (1848) IV. 991. " ..—:—*— |/_n - n I.S'i?
 (iMi)ir.m, 997?101 " uiwajpl/Bift, *mmmw** ««»•
 IV. 617 ii Iwocwpa, *B.Br.mfjl.*
 (1348) IV. 999. w Uwoc* rpa, A £r./ « « ^ '
 tobaretikU, *B.Br.m/fl.*
 (= H.bctcwphylU, // ^ k.)
 L; IV. 615. M •Ucuu* t*. *. 3r.
 II 335, " Uimm, £.<*. 1
 IV.« 4. " eraUU, Jt. flr. wjgpJ.
 (1148) IV. 998. " nitida, *R. Br.*
 (1848) IV. 995. " Baxteri, *R. Br. suppl. ?*
 (1848) IV. 99A. • Brownii, *Meiss.* (Gilbert, 118? steril.)
 L; IV. 610. " 1 i !.....»• /? //r. (H. trtf**"
 Lindl. ?)
 " gUbcIU, (T. /?r.) JMM. Y55
 L " •HkbrU*. *. /Jr. • « / .
 Li IV. 619. " 0. dratkukii, A. J9r. ••/f'
 III. 2 ;a. " prostrata, *R. Br.*
 II. \$14* " ct rutuj-hNlb, *ft. lit*
 L; IV. 613. " ttwluKU, A. *Br. jAnmimin h*k<***><*
 UMUI)
 I11.9T7. .1 ••Hgm, *Mfitm.*
 111.979. M repftiuU, ff. Ar. n ^ / .
 II (.990. " coculUu, «. //r. Mffrf.
 iv on. n ootwhitolU, *ffook.*
 IV. 800. It Victoriae, *Drum.*
 OMS) iv. m . M *ttnfak>M*>*
 V. 413. N H*****. M«m MMM.
 IV. 104. " loranthifolia, *Meiss.*

- V. 40.*. *Hakea obtuta*, *Meisn.* *MSB*.
- V. 410. „ *oleifolia*, *R. E*
- (1848)IV.294; III.274. „ *eucalyptoides*, *Mfiscn.*
- I.j IV. 609. „ *cyclocarpa*, *Alw.* / (Gilbert, sine no.)
- [[.888. „ *falcata*, /?. #r. «[^]p/. [Gilbert, sine no.)
- IV. 305. „ *Candollei*, *M<im.*
- W. 608. „ *Leucadendron*, *Meisn.*
- I. 408. „ *trinitatis*, *Mr is**. *MSS.*
- f „ *stenocarpa*, *R. fr.*uppi.*
- W. 604. „ *ninripinata*, *R. Mr.*
111. 332. „ *costata*, *MdmL* (OilU-rt, *B.H.*)
- f. 111. 21 ft. M *ruscifolia*, *Laift.*
- IV. 60\$. „ *myrtoidea*, *Alw.*
- IV. 607. „ *petiolaris*, *Meisn.*
- MI. 275.; V. Suppl. n. 18. „ *multilincata*, *JAt'jw.*
- V. Suppl. it. 7. „ *n. tp.* (nil nisi fmct. ridi in lit *rb. Lem.*)
- IH. M1. **Lambert*** *uniflora*, /- *Br.!*
- II. 31. „ *reticulata*, *Meisn.*
- W. 594. „ *inermis*, *R.Br.f* (*L. Dntmmondii*, *Gardn.*)
- III. Mi. „ *ericifolia*, *R. Br.!* *mqpl.*
- I.; IV. 69ft. „ *multiflora*, *Umd.* /
- 111 168. „ *echinata*, /• *Br.!*
- III. 2*. „ *ilicifolia*, *Hook.*
- W. 616. \\l<midu«f>-occidentale, *R. Rr.ut)pl.*
- V. S(y)A.w.l. „ *Unguifolium*, *Kipp.et al. yfeun.MSS.*
- Oritei Milli-nni, ifeuui. MS3. In*. Dimm occid.** *Mr. Milligan, jr. 739!* *III.*. Soc. Linn. Lond.)*
- „ *reticulata*, *R. Br.* (*imm. n. 986.*)
- „ *inermis*, *R. Br. Gmmm, I. 285.*
- Teleopea tamaritica**, *R. Br. Gmm. «». ».* 175.
- II. 338. **Buickii** *nilch. IU, £, Ar*
- I.; It. 33A, 887. „ *nilch. IU, £, Ar*
- III. e-31. „ «uUiiv A" *Wr*
- f|I. 282. „ *M<>tf ri, Lal'.*
111. 283. „ *ocadrnulis*, *R. Mr.*

- I.; IV. 647. *Banksia littoralis*, R. Br.
 L. „ *cylindrostachya*, Lindl. !
 „ Gmwii. Mdm MSS. G. <*> n. 1233.
 „ QCpnw, n. or, F (i. *tubintegrata*, Meisn.
 MSS. <Jann, n. 1334.
 (1848) IV. 304. „ *virtilUta*, R. Be.
 III. K 4. „ *coccinea*, R. Br.
 III. 196. „ *marcescens*, R. Br.
 O8+») IV. 301. „ *r*lyri*. R. Br, *mtfflJ* β. *siemana*,
 U«tu. USS.
 (1 M8) IV. i6f. „ *Levoanniiiui*, Meisn. MSS.
 II. 286. „ •MmtkaU, X. Br.
 (1848) IV. 303. „ IUurri, X. Ar. «W»'.
 1 „ suppl.
 L.; III. 288. „ *phonotn* > /<*«</l. /
 (1 M8) IV. 90S. „ Sobndri, /?. Br. *suppl.*
 V. 114. „ Uwigita, JW». MSS.
 111.990. „ *barbigera*, Meisn.
 (1848) IV. 306. „ Bate*ri*, R. Br.
 IU.389. „ *protnta*, JL Br. *mjpL*
 III. 291. „ *repens*, Labill.
 HI. 287. „ *dffwulroides*, Baxter.
 V. 41 & „ *Brownii*, AM*
 I . IV. 638, 639. *DrynkdffB floritnrod**, A. JSr
 II 344. „ β. *cordata*, Meisn.
 IK 339. „ *praemorsa*, Meisn.
 V. 422. „ β. *elongata*, A Urn MSS.
 (1848) IV. 307. M *quereifolia*, Meisn. MSS.
 III. 191. „ ntoRtU, R. A.
 I „
 III. 196. „ 8tm, A. A>.
 IV. MS. „ *stuppea*, Lindl. !
 V. 420. „ obtua, Jt. Br.
 II. MI , et? II 895. „ *concinna*, R. Br. *suppl.*
 I.; 11.340. „ *carduacea*, Lindl. !
 (1»48) IV. 315. „ *Hewardiana*, Meisn. MSS.
 (1848) IV. 318. „ *runcinata*, j/^m
 II. 343. „ *foliolata*, R. Br. *suppl.*

- (1! is) IV. 312. *Dryawlra pulcbella*, *Metm. MSS.*
 (1848) IV. 317. „ *rli?gau*, MOM. At 88.
 I 11.293. „ *formosa*, *It. Br. >*ppl*
 If 342. „ *VftUTMB*, *H. Br. 4Kpf*l.
 (1848) IV. 30'». „ *uiutioa*, *M'ci***. MSS.
 I.; IV. 646. „ *nul illis*, *Lindl. l*
 (1848) IV. 310, 3 11. „ *pltunooa*, *Jt. Br.*
 V. 418. „ *Arctotidia*, *R. br. wftj*l.
 I.I! 346.; IV. 640-1-5, „ *niv m*, *B.Br. {ci\ 313 ex parte.)*
 IV.313(cxpart e). „ *IUuwuii*, *Mei***.
 L.; IV. «4t. „ *Fraseri*, *R. Br. suppl.*
 (1848) IV. 308. „ *cir ioides*, *Mei M* MSS.
 (1848) IV. 314. „ *bomda*, *Mft*n*. MSS.
 11.345. „ *carlinoides*, *Mat**.
 V. Suppi. D. 19. „ *speciosa*, *MUM. ,VAS*
 in 297-8; (1848) IV. 316. „ *cryptocephala*, *Meism*.
 „ 317. „ *twuifolia*, *H. fir.*
 (1848) IV. 318. „ *mine*!*, *Mrim. ySS*
 L „ *pfotfloidea*, *bi*Jt.*
 L.; IV. 6 u „ *hiptntialitiUa*, *A. fr. suppl.*
 III. ;K>1. „ *Preissii*, *Mnm.*
 IV. 320. „ *OffYO***, *A, /r,*
 II 1.9'!9; V. 418? 4 19> „ *Dmninondii*. *1 Meism.*
 (1848) IV. 319. „ *ralophylla*, *A. flr. suppl.*
 III. 3*30. „ (9. aeautit, *Mru*». MSS.
 V. 423. „ *pte ridifoliii*, *A. Br. ft Mrchnifolia.*
 I „ *pterid t folia*, *R. Br.*
 (1848) IV. cil. *Hu.urlida UaxUffi*, *A Ar. suppl.*

The above list I draw up chiefly from the collection of I. J. Shuttleworth, frq. who, as one of the candidates to Dromaeoil's plants, was one of the winners of the award. In his inventory only the plants of this set are referred to as being different from the same species in Dr. Lemann's collection, which I carefully compared in 1850. I am confident that my determination of the several collections is quite correct. What I have named Collection I, was received about 1842 or 1843, and had numbers to the specimens. In 1844 we received Collection II, containing Nos. from 390 to

400; in 1845-46, Col. **itcUou li L**, with **It Not. 350-400.** in 1848, Collection IV., Nos. 160-400 and 600-700. In 1848 <*o <*U • arrived, the former of which brkmg* pcrhept to ihe Collects 1 III.; in 1850, Collection V., N.». **S94-4S8.** Thw it the but MM in Mr. Shuttleworth's T« CoUeetion; but Dr. Le **naon** ha. l, in 1850, a " tnpil ement to Collection V.," and Mr. NippUt infonu me of itdl another **aef** itct! about the cu> S SO, • hirh **I have not aeon.** Meim.

Abstract of A Sotrval ktpi rtmnmy tk Mf<f# of U M B. Herald;*
by BERTHOLD SEEMANN.

(Continued from p. 92.)

The passage from liulw to the (type of Good Ho|ie b*»! been so short that the minI ctflf reuiocd a lively imunaaiob of the former. What a contrast WH thus proUticcdi liutead if thr daw* jungle t. . M appeared a ridge oi mnnuUii but thinly covered with verdure; instead large Coliaav of the i r* < ju<*. low, haul hannl baabea; IB- stead of the noble timber, no trees except those taken by man under his particular **cafe. aad nataad of the elefiirt featooaa of an?** Rattans, the lea **tlaii \ roQVcnhaaf (Cmmjtm JU>for*,*, Kmn.j. wh>rh< •• 'f to humble the |pride f thai tnbe from vhaah |KKU UV won' to select their wreath, hangv tloveuly orer the braoehea of UM BJ>** glabra. Nevertheless, to A European the Cap« flora pteaeata a nxitt |bW>>>>'** aspect. He is no longer prq>lr< r*L at in the forr»u of equinoctial Arncric or A*bv b> the e jriowa habiU and rtt+mr foliage ef the vegeUUon. but nwwU at every t**p lbraa* vhrh ha*r for «utun** , not only been cultivated ia a botaair garden*, b<t have become naturalized in every cottage of his native soil; the lioalW, the lea plaK» ^ Geranium, thr (ail<, ml many others are welcome sights, recalling to mind many a happy scene; and even the botanist, if on one hand he must regret that he fails to discover additional genera and species, a ott the u*her. »ati»4 but rejoice that his favourite science ha* •*»!»' made »urh profrtM a» to render «Q mnotr t pofitiott of thr globe, in aspect at least, familiar.**

The neighbourhood of >u non's Town, noniati of a r*|f* of rugged mountains which are chiefly oiMafxvcd of sandstone, and present, especially during the til y season, the time of our visit, a barren and un-

inviting appearance. Like many similar luulitica, however, it is very productive, and, on account of its climate, by far richer than the vicinity of Cape Town. *ProUwse** are particularly abundant. The *Protm cymanidrt*, Linn., may be seen in the greatest perfection, producing beads frequently more than eight inches in diameter. It is, however, less fertile than its congener, the *Protm grand flora*, Thunb., which indeed is so common that it imparts a bluish hue to some places, and thus forms a peculiar feature in the landscape. The colonists call it Wagenboom, and employ its wood to make fuel, a purpose for which, on account of its toughness, it is admirably adapted. The Wagenboom is from eight to fourteen feet high, and supplies, like several other *Proteec**, the principal fuel for the Town. We can hardly reconcile ourselves with the idea that any one should be so industrious as to cut down plants which we esteem so highly, and on whose structure and cultivation so many learned treatises have been written. I must confess that when witnessing the proceeding for the first time my feelings were almost akin to those of the soldier in a certain country, who, on entering France, testified to his surprise that even the children speak French, a language which hitherto he had considered merely as the amusement of adults.

I was much struck with the *Africa cynfybtm*, Linn., which covers whole tracts of the downs, and appears at first sight to be about two or three feet high; on a closer inspection, however, it becomes evident that what seems to be little bushes are oaks (be they of *abterra-Man* trees! I succeeded in freeing several from the saint, — not a very difficult operation, — and found regular items orreptig a few inches below the surface, with attaining, in some instances, as much as sixty feet in length. The plant performs, therefore, the same office at the Cape as several *Qaricn* in Northern Europe — that of keeping down the loose shifting sand. The plant, which is called *liont* in the nature have been applied to the saint's journey. is the Paarde Vygen (*Mesembryanthemum duir*, Linn.). On the bank between Situn's Town and Wyburg whole acres are planted with it. The botanical name of Use latter, I may add, has usually been confounded with that of an allied species, the *M. acisaeiformis*, Linn. The plant called Hottentots' Vygen or Paarde Vygen (Figs' Fig or Horse-fig) is the *M. edule*, Linn., while that termed Zyre Vygen (Fig) is the *M. acisaeiformis*, Linn., and not vice versa, as some authors have it.

The ravine as proved at this ataaon the most uiufcahli loeabtiet, abound ing in XoMmt, JfyMmm vitomm, The BK, • opposed variety of *E. ktfutum*, Linn., *Gvmpkofrjm fnUicmu*, I. Br., *Po-ralia pmmtta*. Linn., *P, apkgllh*, Linn., *Richard** *Ethiopica*, Kunth, *Fcus*, £ n« SMOSU, Linn., *Ama** *Strminmt*, *Branias*, *Lycopodia*, *Ptyficat*, *Jutyerwutmnia**, and the K week-grass (*Cynodon Dactylon*, Pers.). The latter forma an ncellt-m turf, and seem* to stand a remarkable degree of draught without changing it* natural colour. The *Mckardin Mkiopic** is called *FmthmMadm* (Tigs'-leaf). The eolonuU tell an anecdote of it which stows what a mere name may inuriimeas do. A lady of the Cape, who visited Holland, was i invited to *v a most beautiful plaut from her native eountry. She »» con- ducted to a greenhouse* and the proprietor was just on the point of deliver mg an eloquent panegyric when the visitor exclaimed, " V by, these are nothing but pig-leaves!" Tbe Pntrhman vm» truite shoebw tnat any one should have such bad taste a* to apply to so fine a pro- ductio ii men an nnpoetical nanv. Yet it b a «{uation whirh of tn« two, *Uiekardia s&kiopie** or *Varkensbladen*, is the mo* expressive; the ooc indicates the native country, tbe other denotes the use of the plout. Swine arc very food of the leaves of this at of several tropical American *ArovUm*. Why a tribe of plants which, on account of its acidity, is rejected at fodder by all other animal* should be preferred by pigs, i* a fart that iiiokajisu will have yet to explain.

On th• morning of tar 10th of March I took a place n the o»»»• i- bna, and passing through a sandy, dusty cuuptry, and the villages of IULkhay, Wynberg, an» »p«, am ml aftcf about three hours* ride M Cape Town. On un|utn I sanreatUd in andiag the residence of my fiaond I r. C. Zefbar, who TO o^onnytng a bosn* which had formerly bann innaratwl by anotbar botaniat of soaw lapntatka^ 1 Dr. L. Krauss. Mr. Z-vacr** waighlnnir, also, | r. H. tMede van Ostnoum, wa» a gentle- man of initial to me, be being a liniaaiiaail uf the culebnsted author of th» 'Horttu MaUbanruj / and I may mention that on the follow- ing day I was introduced to Mr. Van Itseaca, a •cphnr of Persoon. I became subsequently acquainted with Dr. C. F. I m, Hr. Zeyher's fimer partner, and Dr. L. Pa ppt, the author of tV 'Fleav Capensis tledian Prodronuts.' Dr. Pappt mfttids, I uadsfitan< to follow up bis laic wuvk by an caiimnralioa of the ecwniasiv patau of tna South African Klora. In cu anting init task at encounters, however, many

difficulties;—the want of assistance on the part of those from whom he had reason to expect it, the retrograding movement* of the Botanic Garden, and various other obstacles; but it is to be hoped that these impediments will not induce Dr. Pappe to abandon his design. At a time when the arts have arrived at such a state of perfection, and are ready to seize upon any new substance presented to them, wonders on economic botany cannot be valued too highly. The least hint on the part of the Government could not have been anticipated.

During my stay at Cape Town I paid several visits to the Botanic Garden. This institution occupies a space of ground formerly known as the "Government Garden." Considering that it was only established a few years ago, and possesses limited pecuniary means, it has already made some progress, containing a good nursery plants, two herbaria, a hothouse, and a library. It is now, however, chiefly through the arrangement of the Commissioners, a body of men who, with a few exceptions, seem to be quite incapable of giving the supreme direction, and who, by a series of mixtures, have brought not only the garden into a state of confusion, but the whole into a state of disorder. Those who could fully understand the nature and object of a Botanic Garden were desirous that their power should be restricted like that of the Commissioners of Woods and Forests in England, to the mere management and a general control over the whole; and that Mr. Zeyher should be charged with the chief direction. That would have been by far the wisest plan, and that no one was better qualified to fill the post than he who has devoted twenty-eight years of his life to the study of Southern Africa, require no demonstration. But although Mr. Zeyher was attached, until lately, as botanist to the Government, yet he was so situated that he could not attempt any alteration or improvement without meeting an opposition both from the head-gardener and the commission. At present, to crown all their mismanagement, the majority of the governing body passed a resolution that they should do without a botanist. Dr. Pappe, a member of the board, thus so much affected that he entered a protest and intimated all over the world the state of the institution. The Garden has also lost two of its finest ornaments; and as the number of subscribers is rapidly decreasing, and the want of funds is every day more pressing, it is to be feared that the future of the institution is at present in a very precarious state.

a scientific pcnov, and Tenting in him the chief direction, this establish-
ment, which, if conducted property, might hare been productive of
much good both to the colony und botany in general, must aoon f* l to
the ground, or at taut fail to accomplish the object for whkh it wa»
originally designed.

On Thursday, March 13th, Mean*. Zeyber, Btur, and Jarili and *my*
•elf ascended fable Mountain . Di Ecklou would have joined the party*
hut Iwiog far advanced in yean, and debilitated by a prolonged reei-
deice in a hot country, he feared that be iboukl not be able to rearch
the top. We started at dawn, and took the usual road, up the kloof,
Never have I enjoyed an excursion so much. 'IV day was beautifullly
clear, the company delightful, and Mr A >her made to many interest-
ing remarks on the different plants, thai time stoned to Uy with B0H
than iU usual speed. At an elevation of loon fact we found a po*
of the *Lmt#U*drom* «ymkmm, R. Br., which produce* it* branc'••• in
whorli, and with the regularity of a pfol. It is the only indigenous
tree I saw in the Cape Town district, for the *VirfUm Castmus*, Lam.,
which is frequent, has barn brought, according to Mr. Zryher, from
•one distant part of the eolony, and the othen from Europe, Asia,
Aaaerica, Australia,—in fine, from every part of the glob*. A -traaft*
mature, indeed, u thus produced. Here stands a toll JhdjfraV¹''
near the *Populus alba*, there the *NicvtimM gtmmta* io cmapaury with t*''
Cypress of the Ijcrant and the OsrarmM of the Indian Archipelago;
all apparently growing aa rigorously at in their native soil,

It was nearly ten o'clock wham we iwatatd the surosnit. Moat places
generally fall short of the nperutions fumed of tam, but never was
I more disappointed than with T able MnwtftJi. During my travels
I ham visited •ewral avimstatne far morr ditarvlfllf of renown than
thk, the Moataaa, or Oaiara 4a Chorcta, in Vet««M is certainly
wore ragttlar, larger, and baMer in ootbne. The *rum* «f lac to**, the
hay, and the island, however, and the wrrwuwfcag leva, *rnmk* *P *
soiae meaaore (or the Oiiappoilit. H ann* tai» oaf breakfast
near a little bantam, we commenced ransacking the platform nr¹ be
Daa/yerr in Swarta, waa paaHi&l. Uit of the *Ihrmk*** <-*»**
K. Br., one of the rarcat photo of ike cwnitn. ooly a few •pniw''''>
conkl he found, at «o»e pmiou vmton, proltabtt attrvetod by its
knHy eoiouT, had gaihetcd a whole huoch. *hirw they bad **
behind.

On descending a few hundred feet we came to a nival region. Then the *Di*« prvmf/hra, him., proba**ly the finest of all terrestrial *Or*«iA*e*, grew in great perfection on the side* of the mountain, places which during the wet season are entirely under water. We collected a sufficient number of specimens, and with our nimble, met with the *Eric- Imim*, Linn., *E. vntufa*, Roil., *E. *;t*tmom*, Berv., *Har*yo taint*, Hook., a species of *Omtterre*, and many other interesting plants. Towards dusk our attention was attracted by a number of Ibaboons, which were jumping with great dexterity from rock to rock, and chattering so loudly that their voices could be heard at a great distance. We descended on the opposite side to that we had come, in order to make a circuit, and arrived at nine o'clock in the afternoon, but highly pleased with our excursion.

(To be continued.)

BOTANICAL INFORMATION.

The Linnean Herbarium.

[The following general remarks are abridged from "*Anteckningar vid de Skandinaviska Växternas ic. /i»*s Herb., r J W* by C. L. Artman." (Notes on the Scandinavian plants in the Berberhofli of Linnæus.) Transactions of the Uppsala Society of Science for 1849 (published 1850) p. 107.]

The Linnean herbarium is not only the most valuable of the herbaria, but also the most complete. It contains the most valuable botanical collections, and the most valuable botanical literature. The herbarium is the property of the Uppsala University, and is open to all who wish to study the plants. The herbarium is the most valuable of the herbaria, and the most complete. It contains the most valuable botanical collections, and the most valuable botanical literature. The herbarium is the property of the Uppsala University, and is open to all who wish to study the plants.

Linnet*; ctpaemUy as Me pentmv at
 different editioaa, uailmid it often a
 matter of doubt and conjecture what tpectftc pUat be actually had
 before him or meant to name. The embamiimmit anting fr«* *
 source would be eDtttdcrabW even if the wear* of botany *
 remained stationary; bu it is much more felt in our ti •*«• *hen the
 progress which is cons'antly <itada renderf it pc uliarly important to
 know with certainty the plant* deemb. by the older bol.
 sapeefctty Lmncvis; for tnanoe, wb«\ a tpeciea require* t* be l>n#ka
 up aad it is ooocaaary that we abould know the typical form fixed
 by ihat great autlarity; not to apeak of the polemical disputes
 which hare arieen on such occasions, attended with toe* of time aad
 lempor, and retarding the program of knowledge, muliiplyriwg oa#
 difficulties, aad dealing with the eokmoe, not at an wm, l>ui at a
 means only.

AU tham diaadvantafte* have more or kas been feU from our wast
 of a doae or intimate acquaintance with the Liuoean eoUectioo*; aad
 not 01ly in fo rMga eountnee, but in tUi% hi* own native land, whose
 flora, in ooneeqoenee, stall numben many unwilled epnetea. If Swedea
 hn l not, unfortunately for beraeir, loat thoe tnaaura*, their doal
 ttudy would have tu;plied moat of what wai wanting iu thi* rr*
 •past i and il wat to remedy this state of things, that 1 applied for
 and obtained last year the means of going to Kngwndt on purpose
 to examine the herbarium in question; ami I now proceed to lay
 before the public the result* of my journey. Long ago my sit* av
 mented father had etpfanui an aationa wish that such an i nvestigation
 sho »ld Uk* pUce; to him would 1 therefore ascribe the enterprise—
 while all that i« 4ss>tive iui iu eaecatkm mast fail on my owa
 •bowUefB* I am eoaaeioas that a bdtaMiet of hia *kill and esf^aaas
 would have performed the duty fer better than U o i b l c, and all
 I did tutt resultt^l in the following «uirmr nt of Ho actual ettaat
 form of the collect ion. and, as mr as possible, accurate secoui t of that
 part of it relaUng to the northern flora.

The Linncan collections and library of books and nunumiptfl,«
 were p irehased in Sweden and brought to England by the late Str • J. E.
 Smith, h«t since hw death come into the p -sasaakai of the Linncan
 Society of London, where they are preserved in their aot» in So*o
 Square; the tmunil and aotisogicel portkie* h***. placed respectively

with the corresponding portions of the Society's other collection*, and
 •uti of the book* in the general library. Only a small number of the
 books, consisting entirely of his own work« and enriched by his manu*
 script annotations (not including however, botanical drawings),
 together with all the Liurian manuscripts, are kept separately in
 the room, and placed in the same room which contains his* herbarium,
 together with Sir J. M. Smith's and the grand herbarium presented by
 the East India Company*. Kew's Unnean Herbarium is the
 least pretentious among these collections. It still continues in the
 same three plain, green painted packets in which our great collector
 had originally placed the specimens as they poured in from his grate-
 ful disciples from all parts of the world. They are five to ten (Swed.) in height,
 exclusive of their stands each having two vertical
 rows or partitions. The only alteration that has been made, was per-
 emptorily called for by the change of locality from Uppsala to London.
 In order to protect the specimens from dust and damp, everything that
 could be thought of has been done, and with a degree of care which
 is rare, while it is a great advantage of their great value, has been
 to keep them in a perfect state of preservation; and this is the only
 point on which the herbarium differs from the state in which it is in
 Linnaeus's time. The doors of the packets have been made to fit so
 tightly by means of wax, and the packets heretofore have been divided
 into about 700 packets, not above half an inch in diameter each en-
 closed in a wrapper made of brown paper lined with wax, and usually
 opened so as to admit of the air. Each packet is provided with a label
 Near the corner of each packet is placed a label with the name and
 number of the genus or genera it contains written on it; and two,
 sometimes three, inch packets are bound together with wax tape into
 one, of about an inch thick. On opening the packets, these packets
 are found in two upright rows, and here and there a small fragment
 is seen other by thin wax threads. When it happens that a packet
 contains numerous specimens of the same plant, the packets are
 heretofore arranged in alphabetical order, and the packets are
 heretofore arranged in alphabetical order, and the packets are

* Dr. Herbarium
 awaasv in iw it t iLai >w MMI^M <^b>iv.^< #• tfeMriMi is IW Ijui^ia» HW
 •*»'» MssasM. TV nd atats rf IW w a >> ••!! IUWWB M UU» <n>tn IU<
 It is unnecessary to give the note in extenso.—Ed.
 † The exact height is 7 inches high.—Ed.

sexual *y»tem iii the* Specie* PUnUurtua.' • nhthc • acceptis * of an or*
 occasional genus, for which (here ww not luffinrut ape *tcftn* class.
 The specimen I aw altA ched to hitf^bei its of white puprr by means
 of, n arrow ittpt of paprr, the bottom o: the ttca behu/ often orna-
 mented " y artificial devices representing a flower-pot, or the like. All
 the spe: •w» are placed within oe*, or if uumma* two or mar* »»eet*
 paper; OB vUcfc t» BMrkrd, tn targe kitten and in U me Wc own bat
 -me. «t tbe kft coraer helow. the naae of the genwi tad iU •umber,
 pointing oat lu (Jaec, the tmatbrr n..u g to betwo n 1100 aw! 1300.
 The half-sheets tart in fn*t, o* one aide, Ike twmr of the species,
 genus, class and orojer, with a idbmMe to the Spec. PtanUr ., in * large
 hand, differing from tW ILUA! writittf of Ltnnra*, but below the
 specimen, about th* middle of thr thevt. 0 If name is again re-
 peated in ! inncus's -iual amall hand, moatl y with the generic name
 also, and ^CMatberoft be species in the first editio u of Spec Plantar.
 This number, writen m pf»-il. deaignaies tbc place «f thr tpcctM
 in the herbarium, or with ink, denoting the corre jwaMfinaT number in t
 work quoted. . b •'a <b afatr, that is in Linneus's own copy, it is under-
 lined, to ins Hcsta that the piam euaU in the hmbnriuaj It <Aro hap-
 pen* that i apaciae hai a munber «»nW, without my name, m i
 caae Unnaw hae plaoad it near the tpceitnen to mheh ihr specific
 nane bat bea« aftxad; **d in c*ae Drtih«r namt nor uuinU» «•
 Added, the pawl » t«npormn)jr placrJ Dean* the vpedaa I to which it
 u uwat allied, for the **kr of aoapafiaoa) or More daten*u)t*»
 FrMjomtly one or more paper* taring •pedaaM of Die MW: species,
 are stuck by a pit t to the ne&ttd ipmn, fffftmtjiiatt a uumbet
 ftad eperiwina art aL- frthar at the cod a< their respec-
 tive genera; and where UeM* Uttrf have 1101 brru avx rtained, they are
 put up in separate thick bundles without any sort of notice, except of
 the hicafa ty in very few instances, or with an i irrairM^J attan pt on the
 part of Sir James to name the genus.

(To be continued.)

Vancouver's Island.

A survey of the "Victoria district," and the eeuiad \»t\ oi iiv
 "Puget Sound district," having been recently made by the Hudson's

Bey Company, we are permitted to publish the following notes on the *Fag. HaUo** t premising, however, that the survivor is no botanist, that in defining the entire dependence cannot be placed on them, and that by the comparison of the *Q. laevis* with that of Britain it is merely intended to speak of the general aspect, such as might be expected in somewhat similar latitude in the northern hemisphere, both of these two countries commended by sea.

"Saying generally," the writer says, "as might be reported from the *Q. laevis* l.t.'mh*, the *Q. laevis* in the *Q. laevis* t Uttdl t v« r» similar. In timber, the (*Q. laevis*, which is abundant here, is nearly the *Q. laevis* variety of the English Oak " is more probably the *Q. laevis* *Oarryama*, Dougl., of which some of our timber are from Pofti Sound). "I may perhaps mention that where the forest appears the most dense, pretty little prairie t are constantly met with i—owe generally passes through a thick belt of *Q. laevis* into a rich lawn or glade when Oaks are scattered with *Q. laevis*-like regularity, and the deer tame quietly away on your *Q. laevis* ch.— *Q. laevis* I *Q. laevis* "— (more likely *Q. laevis* sater. Nutt., and Hook. Fl. Bor. Am. W. ii. p. 165, *Q. laevis*, IJU.b.), " *Q. laevis* by the Americans *Q. laevis*, is also plentiful here. It grows, to a large size, two to twelve feet in diameter, and is particularly valuable for building purposes. It splits the shingles with which houses are roofed.

"*Q. laevis* /W there are three kinds in these districts. Of (*Q. laevis*, No. 1, the *Q. laevis* (Abst*) *Q. laevis* S. Hook. Fl. Bor. Am. vol. ii. p. US t. 183), is by far the most abundant. The timber is red, and very valuable in *Q. laevis* span, as well as for *Q. laevis* building purpose* generally. The properties of the *Q. laevis* are very similar to those of *Q. laevis* of Memph or Dantzic. Compared with the North American *Q. laevis* sold as *Q. laevis* in the English market, it is used at most in *Q. laevis* with *Q. laevis* or *Q. laevis*. The *Q. laevis* will. I think, have found to possess advantages which the other *Q. laevis* not. for *Q. laevis* does not taper much, unless kaotty. east *Q. laevis* have *Q. laevis* saasty yaen in the *Q. laevis* indicate equal durability. I *Q. laevis* add that, *Q. laevis* it is *Q. laevis* distinguishable from *Q. laevis*

Q. laevis. Fl. Bor. Am. vol. ii. p. 181. i. *Q. laevis* n. trt^1, the *Q. laevis* Pine of the United States and Canada, and also found in Oregon by Douglas). "so highly spoken of, almost exclusively used

in the bwUtiigt of Union Tom, Trialed, and other towns on the On-gon oast, and largely imported into the 8tn FrawMCO market. The limber of this ire (P. re u*o~), though brgw than ibat of *** Itayfoi />iW, ii nol nearly to tough. The largest-cited Dofto «•* a* >et introduced here, n teamed thiry-iii feet in circumf<rreo«.

"No. 2. fttfi (AUM) y*W; (Hook. Fl. Bor. Aa. vol. ii. p. 1 65). —A white timber, in iu growth and uropmiee irerj clo*4y resamb btog fir.

"No. 3. Pim« mte " (that i« • />»» m!a_t >!ich., P. variabilis, Pur *K ia tbc United Stain, bat it hM Rat baeo neerded a* found in No rffc-wcat America; — *' A f*d wood. 6nrr k the grain than the Sec** Fir, w nidi the U t ini< tfM a good deal luatihlna.

"V 4rirt»«qf M«pk» ainl .^hrr txrrt are wmnon aU. The valuable Hemp, Urtu* mnalimt if>n>b. bly U. GBMAMI*, or «m»c yet un-deaenhed tpaciae), g m n wild in abundamv in tht ***ls. Good GraaM, and suited to the wil, aw much wanted. WiM IVa» (probably ZWafriH ai*i/bnui or LJtvmfkipfim. or l>th>*re muUntly v prrh. ps indi aiiag that Vetehe* and other to-edkd artittcial Grasses would thnvn remarkably »ell here."

PLANTS or MATERIAL.

•HIT botanical friend* wUMw glad to be informed, that a ***** artanfat and aUe ooUeclor, U r. R. W. Plant, «nilcd a year and •' ago far Port Naul, with a view to make waarrliiii ia the i»Urv * of tWittle-knotrnoKtotry.udchillitireduUoiW boU:r IU had lb r intention of viaitimj tl e Zoo' a . » an J i t«4^tfa to ilpe metwanl, and nlaio the various settlements on the east coast of Afrir% and the (onoro 1 Saunders, E*1.kn tady, aupphrd him with a map, and b*e »' edated to him the nonth Eloty to be the moat, prodtct<*e m «V Mr. Bentham has tadertakf to wontf aixl name and dwindle the eoUeitiow after their arrival, awl we need not tctt w leaiirn bo* SMoh thii wiD add to the mfcc oT the specimens.

\ mull «oBaetimi ha* am W «M la plmd k Mr Bentham's hands; but phethnr them ie a tuAnent ojnjt to distribute at once, or whether it «•/ be it.airiU> to wot fa a further consignment, we have

yet to k. rra. otanuU who derire to aubimbft mar aJtdrew their letters either to W. Wilson SaunnVrs, K«(., East Hill, Waodaworth, or to G. Bcnlhajn, EM).« Pontrilas, Hereford,

DR CANDOLLE'S VUST.

We are reminded by what we read of Rembrt Dodo&ta' boat (1 Ml. p. 7SS), that the plate filled (tenetae hare li) ewise placed a brown bust of the celebrated botanist in the Botanic Garden at Genet*. Unfortunately it is not like; which caused Profesaor Parlators to «t-claim (*Vista all' OtUma del Monte Bianco*, p. 164), " Huolini il *!<'<*> dire che quel boato son ricorda punto la em cAgie di *juH celebre imlureliiU!"—JSW. *Zeitung*, January, 1852, p. 103.

NOTICES OF BOOKS.

WATSON, HENRIETT COMPTON: CYBELE ANNICA; >r, *British Plants and their Distribution of Species (concluded)*. 8 Folioc*,—88 Pteridioidei (with additions to the former volumes). London, 1851. *>vo.

We noticed the first Tohnwi of UM 'Cybek' in On 'London Journal of Botany' for JN47, p. 260, and we give a table of contents, and a synopsis of the distribution of some of the species (*Elatine Acnandra*) in the history of the nature of UK work. Vol. 11 appeared in 1849; and UM Ulnriou* and talented antiwr lua now issued % UaW and nmiiariiaa; roj«aj«, a* fat UM d*«riUrtk» of species at oajManMd. K tnrtrk Wame u in wwtwuilwtini. n wUeli * f » i proposed •• to urmi tW autnbuttott of platto wdcr • different aspect; tW i»to my, aot cadu <xw aiisfly awi aswV bwt tKe whole taken in rnaaiartw, m onkr tUt tkr (individually) ••wbaritai of 4% trib"tin may appear in waMrium aad oontraat, M raoproaal illuM-tions of each other." TW pi—m toiiun* to acaoHpasavd by a Map of Britain, divided into 11 [KHH«Maa, Si rnhgwikm*, md 112 counties and vice-counties. Mr W«IM» turn* critic, more so, in his "Intro-

dietary KipawMtiocM," and foretell* that "Hooker's 'British Flora'
 will soon fall into disuse, like the Horn of Hndaoa, of Wuhenag. of
 So, ml while he take* Mr. Babnghm'a * British Manual' under
 hit fettering wing, be doe* not feel to blame that gentleman severely
 "for his eagerly adopting the apttrion* and donbtful apeete* of other
 botanists, but also for adding to their number himself, together with a
 proneness to adopt and make unrequired changes in nomenclature;
 wiDutaadiag U*I Mr. Waiioa " iwtttod aew»»l of these ill-judged inno-
 Tatioaa both by ridioul and by ttaaem," aad. ha iattaw himself, "not
 *boU|u*efcctially:^M—«itbai''lie anUwr of the⁴ Cybele' therefore
 ttt iX would be no *itc count to taa Uaweir to the rirwa and ooav»-
 olaiuir of the author of the * Maaool/ which lh«« thiaatawrt m be aa
 capricious and changeable."

"True," *rite» Mr. Wuaon. "Hooker's 'British Flora' has re-
 «e»Uy been re-edited in tU sixth edition by a botanist of merited re-
 puUtioo, who has bestowed considerable pains upon it, and haadaW-
 leaa made many unimportant in it. But the Attention of IVofraor
 ArnoU, equally with that of Kr William Hooker, had been be* given
 to exotic botany, and atmoH mitrtif wilkJHum from Bni*k *•* *«^m
 Mmtptm aariai. And thna W too cajoe U> in* taak aii|aai>artd ^
 the apacial kind of knowledge requir'd for tta proper puinaar
 Aa an old friend and not vary diataot aaighonr, the writer of thU i
 willuiK to let all pat* that Mr. Ialoon may have atkl on thia or «•
 farmer oesaaiana anuvounbie of him* if; but ha onuwt admit that
 - hii able consular in the editing of the fttt edition *: 'Brit*h Ktoim,
 Profraor Anwtt. ha* " *lmo»t miirdy withdrawn from British and
 wn European •?*** of plat, a."—We hm m4at4 yi* to learn that
 A knowledge of etotM bouwy (««kaa unduly •iiarbail a y it) d' &P*'
 WUa a man from being a good Brita* wnlaaail,—tmt thia w» » ill say
 without mar of eootradictio, that no ona has ever come to a taak of
 the kind thoroughly prepared by * tbomrtfaai and p r w ^ kao*-
 ledge of tint** and Awjaaaan pwnt«, a knowledge gttacd in th* i* ^
 aa wril aa in the ciowl. during a period of thirty year, to w>teh »»»>
 be 4dd«l thr loibrmaios obtained by a ten yrm¹ com- of instruction
 to his students,—than Iroacaioor Amott.

Characters of some South-west Australian COMPOSITÆ, principally of the Subtribe GNAPHALIÆ; by DR. ASA GRAY.

SCYF BOCO1OMS, liov. #:1.

Capitulum 8-12-florum, homogamum; floribus * oranibnt brmaphroditis tubulosis, centr ill «Mpe rtrrtli I*voi*tr*m \miseriale, 5-phyl-lum; squamis limnlti», hcrbaceit, carinato-ttmoint, flora vqaan-tilm». *RectpUfMfmm* |*anriitii, qtakaceom. *Orolt** tubo ifranli, limbo cyathi forun, 5-lobo. *Anther** brevet, bait b revider caudatæ. *Styli* ramiapici: subdilatai, extus hirtelli, aeotistculi. *Ackmim* limwia, cyli iwlnm, gtabriuftruU, calk) hwilari raaximo inwrta, p«ppo rjn-thiformi contiauo permittente ooraaeo inUv riuaculo coronata.— He <ba puilla annua, >iscoo-pul-caccnai ca«Kbtn •c*qQuiacialiba» diffusis, apice monocephalis; foliis subspathulato-linearibus, oppositis ci nUcrtiu. Corolla flavida, tubo cum iniuffinr repando pappi coronæ, giandulu pnlicrllati* eooapcno.

S. mmajt, A. Gr. in Hook. Ic. Plant. tab. 854.

Sonlh trateiu Aurtralia, *Drwmmomi*—From tbt style, this little plant abodd perhapi tip referred to tbr *Aaitrvidf**; bat BOM of the *Tarchantheæ* air homogimoo*, and ta« *lhfktnimm* have a palna-cous iininiliili, It is evidently reUUtI to tbr lullowmf, viz., />/io-cerates, nInch ha« a nearly similar *vl<". and the aspect of some small *Gnaphalica* or *Tarchantheæ*.

ANTHOCERASTES, nov. gen.

Capitulum S-floruro, •o anynw. /im/iiriii nMoay, • tqumis S •>—htinrii uhfm mrdim maliu icinnpli)Hum. r&ttu lanngino-Mm. /twptomlmm panny, rpaleiawim. P'am aenupkrod ti, cen-trab we* iafr lili. 'hanmm gracilr, M B M RMtnOo-prudurtuni in lubum tttaMal nwrlicuhtutn taHaVi ipfee cyaUufemit 5-<lrii-tatæ. *AsUrr** but NMntUUr, eCHMkUK %4 rami Ulfonti, complanati, apice breviter puberali acutiusculi. *Achenium* aabohlo-orniformr • cmUb basilari maximo, gatknor, loatntoaw, iqatio lani-gero, am ttto corollæ continuo persistente! ex involuero exserto, longe rrcurrto. *Pappus* nullus.— Ilcrfaa minima, anuuo, < uscapa, capitulo is «lrr f>U« radicalia MibnlaU h. si dilr <t*la *«baraail, nunc flagellis t>|if,.m.il«j« I - 2-cephalis j.rolitr.i. Mail fl>^fil«»nim »it< vel sub capitulo oppositis.

A. Drummondii.

Swan River, *Drummondii*.—Plant two or three H>e* high, or the radical leave* longer, often proliferous with no or two runners which are an inch long. Learn glabrai* \ minutely baby and glandular, tboa* undrr the head opnoairl, with tKcir diktod teta subconnate, Ihow of tW tagflffifonn br«w*« ateanBtfr. Head very woolly, the remwkabk penutent ft urved fMrollaa mtica encrted from iu Mimi nit. There i» no artiouktaon between Ink to be of (Se corolla and the beak of the singular oornifofB adir>ium! Tw antbo* tn •ngittaU¹. with their lobei barely apfnuV.s, but not cludatr. IV style *»» rather the character of thr *Attnid*—, to whkK perbapa toi* garni and the preceding fbould be referred.

ACTINOPAPPUS, *Umk, JiL* ined.

Capitulum pauci-pluriflorum homogamum, floribus omnibus tubulosis, hermaphroditis, vel 1-2 ce>lnltb«* abort* sterilibus. *Intolacrum* laxum, 1-2-seriale; s|ttatn» S^N lattMW* vtajttt hyalinis, costa viridula eamoeaia, huq pendiculatis, floribus aequalibus. *Receptaculum* parvum, epaleaceum, Bipffliwui, *QrrviU* parra. cylindrica, apice 4-dentata. *Athra* iwaAila. %/« rtm aptot ffWMh. *Aclenia* obc^nica, iadlnatu »d auraU, ralde obliqiu. grata* glandulosa, humecaate araeota, m o b lateratt Utiawa*; arntui insana. *Pappus* paleaceus, conspicuus; palaaia 7-11, dMUtaco*. Ulr obo«a< is, integerrimis, obtusissimis, exaristatis, corollam persistentem (viridibun) ittdodcsiUbu*.—Herbæ annuæ pusillæ, glabræ; caulibus tenuibus; foliis linearibus oppositis carnosulis; capitulis parvis terminalibus solitariis vel glomeratis, basi parce arenosis, singulis interfolia 4 bracteantia sessilibus. Pappi paleæ radiantes, ratione capituli maxime.—"Genus *Quinetia* affine." (Char. ex MSS. Hook. fil. pmlulnm mnphfiratu*)

1. *A. pttpmiilt us* (Hook. fil. ined.): caul* «anplia semipollicari erecto; capitulis 1-7-fl«»rit: pappt pfthtt 7-8 tenuiter mucronato-apiculatis.

O««fB Town, Tatmanbi. Oa«n

2. *A. Dr* (): caulibus ramosis bipollicaribus diffusis; capitulis 10-20-floris; pappi 8-12 paleis latissimis vix aut ne vix spiculatis.

Swan River, *Drummondii*.—Ti* «»»• it two 4«nW «wlr flowers, in

both species, have an inane ovary, and the papus much shorter than the corolla. **ReoepUcle convex**

PODOTHUEA pygmaea (n. sp.): foliis linearibus; capitulis caule æquilongif (aanipolUcaribni); inrotucris nqnatuu utarioribiu oratia foluuxia, omnibui obtuiis; pappi jwlci* 5, bail nudii dittiocit*.

Swan Hirer, *Drmmatomd.*—Whole plant acareelj »bove au inch high.

D IIFUKPHOLEFIFI, i ov. genl.

Capitulum t multiflorum. heterogamum; floribus omnibus tubulosis, paucis laciniis wtiaaii^K f corolla tenaiure anjuatitcr 3-dettULA, cæteris hermaphroditis; corolla 4-dentata. *Receptaculum* planum, nudum. *ImmUermm bcmiMpLmncsiux*, uobricatum, diaeo m, quilonum, biforme; *tUtam* yaoriatralt, e tqvunit aoriwii o» ato-Ui» rixiUt» marginibus dcoae »rtuwm-6mbri»li». tDlinua bfvrrter i tipitatis; interius imiwnaiu, c K|ounis ihcraiiilo fwriiayirti Uucn>Ut:» acaalibus, marginibus subciliatis apice tenui fimbriato-laccris. *Athære* basi bicaudata. *Styli* mni apice truncati. *Atkmm* anyuaU oblonga, crustaria, subcompressa. (tUura. *lapf*** fi 6rw. aimilo, (#) tuloso-coroniformis, il hcnMfh. e j»: is 3 (raro 1-2) setiformis aibM !, t. ' i taa9M> affMCv MM^MMMi w dM oofdlaik arattan • tibus.—Her4«)Miititla twinm wm hwdw, taMiiler rttloaa, an fU* hnt»; rswJiUi 1-3-aiartaliboa> «ottr>-cJiyocftpf^alis, nunc proliferans, fulu» liuranbu*. «Jt*-rui4. -uuimu Ofejxtul IIIJ WtA bracteantibus. Involucris ext. TIOfu ayiamr a. bid. flore* fü) idi.

D. Australis, A. Gr. in Hook. Ic. Plant. tab. 856.

South-western Australia, *Drmmatomd* — *Mm* in the interior of Eastern Australia, at fWtWst f*lawu, /War/, ami Niafm» rv. *M'Arthur*. — *Stem* end nr rfaywamil i|irwJiay, limit 2-4 k«c* i of OoniU slender, W awp mm it inuiuteiy (ov4uuU«nl m (hr ptf4 t, and three-toothed », i^ f.«uk flowrr*, m UK Utur man *k*Am. but otherwise similar, and iltirtnr of tujiirut. ^iofaaHS »a»*-w **i narrowed *i tW apei, Uti -narrowed, 4A aiatlvr iwrt«« mmnOdy w w - late, scabrous under a lm», UUMTVW gU rous, or wnrij •. Dri«« mould' • ipwfw M mUrK tamtommd. the stems barely an inch high. H»ai ftvuu CapiHK M'Arthur is erect, proliferously branched, and also * t*nr • Hte hafk with * foliose-bracteate head, sessile in each fork () the genus is evidently allied to *Poa*, Cass., -»;! *Corymbium*, Ste.

lucre and J>pp<M; tWIattrf in the hermaphrodite flowers consists of narrow pake nber than tat*.

GNAPHALOD>>, nm.gcn.

Opitefm nrahtflorvm booMgumm. fenibw oaawftna tubulosis herma- phroditi*. Rmptw*l>m enninim niutum. imotmef* cyliudraceum pluriseriale; •qoanu scarioMt obba^b a<n obo *aii» dorso lanigeris,* •pproilice brevi concava terminatis, disco longioribus. Corollae gra- ciles, apice brevis *inir l-ckotatae. Anthera bicaudate. Styli rami apice ttrinra. Achensia obovata, erostris, glabra. Pappus 5-pala- ceus, corolla sublongior; paiaarifidii anguste linearibus basi sub- coalitis pectinato-ciliatis apice attenuato-barbellatis vel penicillatis.— Herbae annuae depressae, lanosae, Micropi seu Gnaphalii uliginosi facie (unde nomen Tournefortianum Micropi, Linn., huc transtuli); foliis alternis spatulatis, summis confertis capitula sessilibus basi lanatis quasi involucriantibus. Iscolacrus albidum, apice lateolum.

1. G. uliginosum (n. sp.): caulis diffusis; fctta summis obovatis riria IMJUIC.I ha'jif v.iMar.i wii'.uin n nitiKnn r<<jur . ^ superan- tibus; inv>b>cn HjMiii apier Uio-ortto fu iWtoideo superatis; pappi paleis apice subaequaliter barbellatis.

\$*nm Biver, Dnmmd.—Simu CM* or two rndbwi long, branched, depressed or diffuac; ib* krg<r apaebMM of tbr pltat arc not u nlike Gnaphalii in ulfimomu* in a*)* et.

2. (i. nonrfiaifwi i a ip.) mbamvle; a p t foliis glomeratis foliis elon- gato-spatulatis multo brevioribus; involucri squamis exterioribus appendice angusta acutissima, interioribus appendice oblonga obtusa, setam brevem inferne nudam apice penic 11A • TJaIESittt fittMM iwl Ila4o.pl imosam subito productis!

Swan ver, Dracuncul.—Heads larger than in the preceding, three or four lines long, several together in « dma* gknienle «V ach is sessile is the etrtter of app<n<Uy ndioil kswa. IV^MS U-3 Uitr loog* ^ial<M in berth •peofaft >><ty >>bort. glafanmt, ootrml vtlli * «U' ish odbaw pe&ieb. wUeli in traier t> roolrabl* ittto oblong mucilaginous flataaracti a* in Blensopera.

ACHRYSUM, BOY. gen.

Cepitula 10-12-flora, homogama, dense glomerato-congesta; floribus omnibus tubulosis hermaphroditis fertilibus. Iscolacrus cradatum

duplex; ext«naa ^tiiaiaHiu, e tqaamk l obovatis exappendicalatis, float* linrari-^pathul.tta l herbacea, marginibus late scariosis; interius e rjniaiti (circ. 1") paucuerialibiu oruli\ hyaiino-scariosis, appendice «U minima latrob tuperati*, cam fl>ribus deciduis. *Receptaculum* pwtuD tabffbotum uutiutn. *Corolla* infundibuliformes 5-dentatae. A*O*r« b«M bicaiKUt». %ti IUU apice capitellato-truncati. *Achenium* obovatum plabnim. *Popjm** CMIOOU, e aatia tenuibus 5-8 corollam asquaatihui lue plfmoaia poiiutve pinitalo-TsaMMia* basi in coronam hraljtuim rooerri*—Herlw aoaoa bmfia, multicaulis, floccoso-lanata; foliU *lu*mi« bncshboa tnucroiatis; capitulis parvis subpedicellatis, bracteolatis, dense hulis, in pliiinrrultuu densum subglobosum vel depressum bracteis hnmribut ftuftultuoi, ad »|n caulis •rrte eot^uatar Fiona lai idi.

A. glomerata afaax.

Swan River* *Druwmcmtt*.—l'Uut from or to four irirbn high, *ith somewhat lke b*btt of *Amtrnmarta dpi***, lite bead*, aJthoughb pedicellate in « compoii'nd cymose cluster, 4n* w Until'y glomerate, and also mlalUtl tofrth-r *ith intricate wool, that it mmkl b« tho«fht at first view to bakMf to the , <tywfU, «ad kdced it fa Moat **rU allied to the species which 1 hare raCenr l to IMHUP<4 «*d IrA m that div *M>n. Tb* paypf ia a good deal lik* thai of *PmiAfmrmt* nUfrwrti, its sparse piBWa* are u *Urge* •» Ow datteai* wta from which they arise.

MONENCYANTHES, BOV. pa.

Capitula inlhn glomerato-congesta; floribus benuphnMlito conformibus, trd doohiw owio umn sterilibus. *Involucrum* cylindricum, imbricatum, fl«ribu» paulo brevius; squamis hyalinis ovatis, exterioribus brevioribus, interioribus inferne costa viridibus. *Stylus* da l'f—MW nli aoUtw uiifni knUati*. uDffuibu* Una kmjta simplex instructa. *Receptaculum* parvum nudum. CbajMi infundibuliformes, limbo 5-fido, lobis revolutis. *Athere* basi bise-tose. *Styli* rami complanati, apice truncato-capitellati. *Achenium* obovato-fusiforme, tnatm. ««« subpedicellatum, leve. *Pappus* calvus, e setis paucis (6-10) tenuissimis barbellatis corolla brevioribus interlanam intricatam squamarum abscondita.—Herba annua erecta, pedalis, arachnideo-lanata; foliis alternis spathulato-linearibus; capitulis fusco-albidis parvis glomerato-fasciculatis sessilibus, singulis

bractea parva scariosa stipatis, glomeratilia Mii; corymbosis.; coniuU lota*. (Nomea tt

II. ^aayfafi>iafai.-^fii/ortyJMfB> /aapfrfoi'aW, Huoi. in Mitel. Jour. 2iid Expc4. (1848), p. 378.

Interior of subtropical New Holland, Mitchell.—This plant has more points t,f resemblance «ith UmotptyM LU*n mlb tklortpUi*, but it is abundant i dialiact from both, aaid atridlv btkmg* u* th« iliriaiM Helichryse, next to Stenocline. No having been incorporated into the Hookerian herbarium, u racapnl my «ttenlion wkwn elaborating the Angiothoe. tut otherwise it would have been mentioned, along * ith the preceding genus. M riittluuisig iutoU)<r ctWictil timnailnn fru» the Angiothoe to >r Helichryse*.

Bttimi UM, DC.

T^ tabptKra hen prepoted migfct be ahogetferr separated from HelicUrtmy with utot ly or quite a u g«od maaoo u HfAkqin-m*, Stoeetz, Rhodanthe, Lindl., Ifrutmtke, LHMJI, and perhaps even Schœnia, Stoeetz. The follow jf hat ctuctl) ilx aapeet of Hyalosperma†, but the acaaaaM a&e &aithcr riahMm nor nliiwi nrMnwi^it «ml ihr more numerous «et» 0/ the paffXM air battJy l»xbcthle: inm ScAmm> is it is principally y distinguished by the few merely infertile central flowers (as in many of the allied genera) havistg the uunft btfij style i« the fertile tarn, rs.

1. GEN.'oa PERMA. RwcpcCaniltfa pUnum, onniuo mulura. Inv^{oii} lucri campanulati squamæ scarioræ pauciseriales glaberrimæ, exte-noes iaacai mapptmfifmUua^, laAmona .ppamHoe otali patal uida aurea radiantæ. Flores hermaphroditi conformes, sed pauci cen-trales ovario infertili. Achenia oblonga, subtrigona, setulis brevibus rigidis appressis e basi glandulosa ortis hirta. Pappus uniserialis, e setis 16-18 rigidiusculis dense et breviter barbellatis ima basi con-cretis corollam subsequantibus.

* The *Entolasia arachnoides*, Hook., briefly characterized in the same work (p. 341), is far from belonging to the genus *BMtwtmt*, m i b . . «t the pappus and heterogamous flowers, a few of the marginal ones being female, but with a corolla like flowers, except thai the limb consists of four instead of five *Ukm*. It will probably become the type of a new genus.

† The hyaline pellicle of the achenia of *Hyalosperma* (which, like *Geniosperma*, should form merely a section in *Helipterum*) swells with pririMtaW, thick gelatious mass, just as in *Blennospora*, etc.

H. tmtUwm (n. «p.): antnK, tpithanM; ondiNtt simplwibu erectis apice undo monocephali* foliiv|ti< filiformibit it gkbratu; ratlis involucri patciitibti* uniBcrialibiu ni tude citrini a,

Swan River, *Drummo***.— Involucrum about 30-flowered, 8 lines in diameter, exclusive of the radiant appi-adagea, which are of nwtrty the same length. The bristly, thort hain of the adienium are just like tboae hi *UwnmniU*, Ltodl., winch m improperiv callrd *gland**. They *f« the «ame M Iboae of *Sektnim*, <uly very much shorter.

f 2. *SvnACHrvrM*. Reoqrftl eculum planum, n.*lum. Involucrum oboratuin, mtUUvruW, aqoami* omuib** onti no tenuiter scariosis albis. Ac iimia aCTioeo-nUfwigiTTW. Pappot c pakm anyit* is 7-8 sericeo-pubescentibus usque ad th^dmrn tubuloso-concretis superne attenuatis breviter plumosis corollam quasi vaginatam subaequantibus.

*H. toribmdm** DC. «Ir. v. l. vi. p. 217.

In thfl pappns, etc., u much aa in habit, different from // . ^ B K ^ *latam anil* // *MBtAemoidp*, DC., <*hich alone nu&aitt to represent ihe section *San COPHORUM*, DC., if Btdttt has correctly referred i (he *H. Ommimm* an« *H. fum^idimmm* to hit ^ genus *Schasia*. Tbe pappus ocmaMli of uol »nrr than cighl thickuh »toui ^W which b are concreted for half (heir Im^h or BIOIV, Uii aootrwhat irregularly, intci a tube, wbfcc i« aitntftHy bairy ovtaide w inside; and the short free portiont are *» ttoili a* the aata in *Xyr.<Lt*ta*, As th.» nHMff»> tion Ukm pbuv, more or lew ettcnatr<ly, in many true *Heliptera*, it should not be aavumed here aa « geoatio ebam; er, to separate a single species.

f 3. *HELIPTERIDIUM*. Receptaculum convexiusculu Bi, alrf<4atQin, alveolis integris. Involucrum depresso-hemisphaericum, y«Giserialale, vix radians; squamis glabcmmi« obbqp* basi chartaceo-herbaceis apice marginibusque tenue scariosis discum haud superantibus. Flores hermaphroditi conformes, centrales onuio tnaaf steriles. Achena turbinata sericeo-villosissima. Pappus 0 «tja d e. 20 rigidis plumosis corollam aequantibus.

4. *H. discoideum* (n. sp.): caulibus e radice annua plurimis gracilibus erectis (spithamris) foliisque spathulatis et lanceolatis viscoso-pubescentibus apice longe nudo pedunculiformi monocephalis; involucri patentis squamis appendice brevi scariosa deltoideo-ovata superatis.—Variat a, involucre pallido; β , involucre sanguineo.

Swan River (β , Swan River to King George's Sound), *Drummond*.

Plant «iH» «©rae»bai tbe hibi of *Bellis* or *Br*r*y* one; the heads from one-third to half an inch in diameter.

FLORULA HONGKONGENSIS: an Enumeration of the Plants collected in the Island of Hong-Kong, by Major J. G. Champion, 95th Reg., the determinations revised and the new species described by GEORGE BENTHAM, ESQ.

(Continued from p.

COMPOSITE.

1. *Cyanopsis pubescens*, BlUMr- DC. Prodr. vol. v. p. 69.
Hong-Kong, a single apedowa.
2. *Vernonia* (*Teplitodoi*) mrrwr, lifaa.-DC. Prodr. vol. v. p. 24.
Hong-Kong.
3. *Vernonia* (*Strobocalyx*) _____ in Lond. Journ. Bot.
vol. i. p. 456.

A beautiful species, abundant on the hills. Flowers purple, highly perfumed. Thta« iprrianwi aod tbo«» filaf t4 bj Ki*nmi (n. 175) are nrrrh faHaer advanced Chan tboi« of \UwU inmm[\$ described. Tm laivea an •wnetimu alinoft poiotr d. T^» kfaanwal acalai a^ abort awl bfont, almtat mndad. tit pappaa morr than twice the length of the ne »u*ol«<w_f tbe onter aatn> anort aad ratnar WIUHWM; the •Bhanta anwotli cv *ila oat/ a mr; fev aaort Ju

4. *Vernonia* (*I^cpiuaptoa*) MnjpnAi, llmüi l. c. p. 487.
Very abundant at Hong-Kong. Flowers yellow, sweetly perfumed.
5. *Vernonia* (*Lepidaploa*) *Cumingiana*, Benth., sp. n.; fruticosa, subscandens? ramulis ferrugineo-tomentosis teretibus, foliis breviter petiolatis ovali-oblongis acuminatis supra puberulis subtus rufo-tomentosis, paniculis terminalibus oligocephalis, eayfrJia f iiiinllatia circa 20-floris, involucri ovato-globosi squamis ovatis interioribus oblongis acutiusculis, achenio vix puberulo, pappi setis exterioribus paucis.—Afttfe «t Miia I' *extense*, DC., subsimilis, differt tomento ferrugineo denwotr, eapiioik majoribus, squamis acutioribus. Achenia 10- trtaU, nt compressiuscula, glabra v. minute puberula. Pappus rufus, involucri duplo longior; setae exteriores quam interiores plerumque paulo breviores, nonnullae tamen triplo breviores.
Victoria Peak and elsewhere; gathered also by Mr. Cuming in the

two, and in some caeca 1 bare been unable to dated any. If this very unsatisfactory character of the double perianth be observed, this species may be ranked with the *Orthocentrus* of A. V. but in a TOY U:ferret form of the leaf; the terobciw being torbii ea^MMfaas, end infanested » aercn) atria*. The eyyuudagw of the style are broadly lanceolate

12. *Erigeron* (Cejaotoc) *ti^/Mm* Willd. *I Spec id* iii. p. 1958.—
Conyza ambigua, DC. *P. tindr* vol. L. T. p. S? L.

A taot eovmoci annual on the foot-hills and in the IOTB of 1 torn.

13. *Laffenopora* /WWatori Cat*—DC. *Prodr.* vol. 4. p. 50?.

A xngle «maU apetanen, agneinf toy *eU with ibe «m*U entire-leaved Sydney plant counted by De Candolle as a variety of his *Laffenopora fitUardmi*, u w c l l u with two Keet Indian ipidBifn. Dr. Aaa Gray has «K» a Mertensian that the */jwwtirwm tfratu**, Ce** i is the atneplaii.

14. *Amphirapb* Imemyi, IWnth. hi Load. Journ. Hort. vol. i pucjM.

Abundant in ravines.

1ft. Oraagee JttfeVrwfclen, Poir.—DC. *Prodr.* vol. v. p. 373.

Common the Happy VaUn (Col. Eyre).

10. *Blumea Jmntcv*, Zoll. *Flora*, 1847, p. 531.

Victoria Teak. This agrees with the *ZoUor*'s Japanese specimens ft. 25, named to by him as the type of *ihik* tpeekm. It will probably be found to be truly distinct from the widely «eprt«d *ioenr* in *B. Jtmkm* an cneidanMy latyar, Ibe anale» of the involucres, Huek more uabrieete and breeder, eaperiaUy the outer ones, which are »hort, Wien, and dm*ely pubescent. Fortuor'* L 172 from China appear* to be the monimon *B. l*cm*, which may * cry likely be til*. f^Ur. in M. Hf K of,

17. *Imnaen AeAjeeriat*, DC. *Prodr.* vol. v. p. 411.

A emgb apeeimea » a young late, agnne; wtU with my East twbaa oor. which u aUo younff. TW epeita tbovM p»»4ieUy ba refartad a* a aert vnriev to *B. leMrw*.

18. *B. Igjejm ff iciaii*, DC. *Prodr.* vol. v. p. 444.

Tolerably Doameev Irailiae; m ratinn, Hoekar and Aw (Bot. Beech. p. 195) published a different plant as *Blumea Chinensis*, which

name Steudel altered to *B. Arnottiana*, overlooking the reference sub-
 MqaoiUy made by Hooker and Arnou themv Ucs (Bot Beech> p. 265)
 of their plant to the *DukaUtm Okinmti**. DC. Again, Wnlprra I Pl.
 Meyen. p. 294) has sin«* given the aam* najob of *Bhmtm Okimn** to
 a third plant, which unpNirt to be near *B. larera*, but to differ ctepe-
 ci»Uy in the very hairr ich* nia.

19. *Siaguabectja oritmtalu*. Liun.— t C. Prodr. vol. 1, v. p. 49ft.

Gathered in Hoag-Koag by Mr. Himt% and ubwned aln by Major
 Champion, though not oolWctod by him,

20. *Uoitutonia mxU,riuK*I**, DC. Trxnlr. vol. v. p. 547.

Al MA rodu and hedge* etaae to the «eii-aide.

21. *Iddetu Chnmn*, W iti-l., and && Bidena ^ptwicia, Li un.

23. *Anisopappus Ckumm*, Uook. et An. Boi. Beech, p. 196.
 Victoria Peak.

24. *Pyr rthnun AHMMV*, Ub.—DC. Trodr. vol. vi. v. 3.

Vict ark P«*k and dtcwhere.

25. *P><iogyne canko*perm*M*, fldg. in Traiu. Soc. Linn. Lond.
 vol. xx. p. 71.

In i«-fi«-ld», abuadant.

26. *Artemisi i y«/*»»r»*, Tkuob—J DC. Prodr. vol. vi. p. 100.—
A. irWmte, WaiL—DC. l. c.

jajmaaa awl aom* other pUocv, Iut not eoma>' an.

27. *G mplmliom mmiikwf** Wall.—DC. Prodr. vol. vi. p. 2 M.

Coauuofi in ne»4eUiL The *G. fo»/«r»»*, llrnlnh., galb«rr d in H n ^.
 Kong by Mr. HUMI- may prove to be a men variety of tbi* species,
 wit ki Bmeh Ugrrr ittvolncrc* ami a dman eoai(Jtoct tnAoraaeMii e.

t*. *Gynufft p*uh<kii**, DC Prodr. voi vi. p. £99. w. *pu-
 lacca*.

Victoria Peak and elsewhere.

29. *Senecio Huidaii*, Benth. m Lwul. J..uru. Itot, vol. i. p. 488.

Ravines of Viloru h«k

30. *Saussurea linearis* *linearibus basi angustatis angustissimè decurrentibus, corymbo late
 ramoso, involucri ovato-cylindracei squamis imbricatis interioribus in
 appendicem scariosam subrotundam desinentibus.—Gaulis ultrape-
 dalis, erectus, strictus, angulato-striatus, superne corymboso-ramo-
 sus, ramis longiusculis divergentibus apice subdense plicocaphalis.*

Folia ima desunt, intermedia 2-3 poll. longa, vix 1½ lin. lata, margine revoluta, infra medium longe angustata, utrinque viridia et scabriuscula, superiora decreescentia, summa distantia, parva, bracteoformia. *Involucra* 5 lin. longa, extus leviter arachnoideo-villosa, squamis striatis, extimis perpancis apice subnudis, intermediis appendice parva, intimis appendice majuscula lata scariosa colorata terminatis. *Receptaculi* paleae numerosae, angustae, fere setiformes, caducae, **Ubens r. urmnuUir** basi brevissime connatae. *Anthracium* caudae sublanatae. *Pappi* interioris setae plumosae basi in anulum connatae, exterioris setae paucae (interdum 2-3 tantum) integre caducissimae, interioribus duplo breviores.

Victoria Peak.

31. *Cirsium Chiosense*, Gardn. et Champ. Kew Journ. Bot. vol. i. p. 323.—My specimens, communicated by Major Champion as the species sent to Dr. Gardner, have not the foliaceous bracts described by him, which were probably accidental in his specimen. The *C. scythales*, Hance in Walp. Ann. vol. ii. p. 244, appears from his character to be the same species.

Vic trui IVak anil other hills.

32. *Ainsliea fragrans*, Champ., sp. n.; foliorum radicalium petiolo non alato, lamina ovata obtusa cordata integerrima v. vix callosodenticulata subtus villosa, capitulis secus caulem subsessilibus.—*Caules* et **petiolt baa** laxa rufa vestiti. *Folia* omnia subradicalia, supra scabra **n pare** pilosa, subtus pilis longis rufa plus minus vestita, ad marginem remotis saepe notata, basi auriculis rotundis **l>L|-p«akik_t a nmlin ait** profunde cordata. *Scapus* **l>L|-p«akik_t a nmlin ait** apicem interrupte florifer. *Capitula* fere *A. aptera* v. paulo minora, glabra, sessilibus **ft T.** pedicello lineam longo fulta, squamis angustis acutissimis **ni K&it rivmttfrmHm*** *A. aptera*.

Scan* on Victoria Vc*k. tmtnm purpiak-p in *Thamnoch* rubita with a most delicious perfume of almonds. Stamens purple.

33. *Gerbera caajibfa'w*, DC. **FVodr, vol VII. p. 17.**

On hills, Victoria Peak, Mount **trW.tte. II** *G. amabilis*, Hance in Walp. Ann. vol. ii. p. 247, **fofIDt**** same localities, must, from his character, be **ctoae^aUwd to** the above, and only appears to differ in the scales of _____, smooth, coloured, and scariosus at the tips and margins. On _____ **l^afci VaAAk tka>** _____ herbaceous and pa-

bescent oo tae back, and *gnt* in every mprrt with my luut Indian specimens.

34. UcUtM *Vwi*w//w, Cbai sp., sp. n.; glahra, caule terete crwto apice paniculatn, folii* Untnri-si blanccolat it clottgati* aruiuiuw! is baai ami (lexican)li-<LiUuiit auriculi» rotundali* dentaiU qrtermn integer-rimis, pedicellis bracteolatis, involucri squamis exterioribus breviter interioribu9 Lunge UnctxilitU obtoatuaealU» roatra achcuio tp*o %- 3-plo brevior.

HOUK-Kong. At first sight it >aca naaiaWr the *L. htgifblw*, \S all., but thtt 1M VM arc dilated and aanefed, aot aaiuwtrf at the baa*, and the beak of (be acfania ia mnH> abortcr. Tan abaaw^pf the h<radh of flowers i* oTate n» ia /. JM^i/ktim^ aot aamrn cylindrical as in the section .1/cella, to rbth our j.Uot i* aHad h\ thr adhewa.

55. T m u n a rfnu-Z^ -u. *Prodr. vol. vii. p. US.*

Vbauhl aawna; tae ndhu of an old b*«;

M, Yoangiaf <p, allied /'. maf^m, DC., per<pa a nwr« van but tW*r are w acbcnu far raou^b advanced to determine tta character.

Hong-Kong, a ftingle specimen.

Tta tiro (ihiciU of Mr HindI »hi« I de bribed a* *BufiUmm tenella* aw) *Broekyrmtpk** nmo\$imm§* are not amona; Major Cbaaa-pfm'» IV j ar* bolb allir^ to J «af^ aad, a* obwrrd hy Wajbt, ta« difmwi bataaam *Brwr*irAmmpk*9* tad tboae luwyi* of wfefa* the uchenia are narrowed «t tb* aon oa tb» out aaad^ and auaw £*t-tuce of t br aeotmi *Mftit** oa tae otaer, i* b<t ryn tligai. The maM in mjr •pemmm of *ItarUatum tnteiU i* \err j'niryr.* bat IUM rirrvWly too loaf a bmk to bf (4ac<d in *Hrtrtymwpi** or *Youmpt.* IV ivf« *ck-----s ramosissimus* • ccertamlr a eoagvajar of aad omrl ally allied to *Drtrlyr*wpk*t Hrymmttu.* in waat«w yoiua that fpcoaa definitively iaaaaii>; it :. • ^aallv entain that it bat no rrlaitoo io Da4f<t in habit or duractcf, to »hui bowvw Mr. Haws* baa n w n d H.

To :b* ab*ve C<f*mU aiaat be adiM a *XamlMmm^* protwa *X. Indicus* •, Roxb., *Gy <irm >f^* is, DC., *F«afa ioactjfrtfa*, Caai, and *Sowhus olerv* avw, ialt of • tura fcatr b«aa obacr ed in the island • WaaiiaJ bj Mr. Hinds, but are not in Major Champion's collection.

(To be continued.)

Abstract of a Journal kept during /JU Mfatv e/ I.M.S. lietaid
iff BE<THOJLD SEEM i NS.

73

On (he l<th of M<mh 1 relumed to Si>>on'a Ton n. Mr. Zeyher
•ecompe&icd me to Wynberg, whm <<t paid a ti sit to Mr Jaaiea
Bowit. He was living in | nice little cottage •urruunded by a 0o<<er-
enflen, in which he cultinte* many valuable tttCMMW. •Ve remained
several hours, and were entertained by him with . Hi account of some of
hi> tftTtU, (^ m m ! tntefeetiiig anecdote* of hi<< former companion,
Una i M i fc* na . Wb ^ rial OF*JI <<^cb imrn) 1 Look m* Irjt^ of
Mr. Zr%hrr, but a lew dep later I had the pleamte of peeing him
at fiaai'i Bay, wheooe we nude vnothef eueonio* togethat m the
adjacent monati. ina. Huing hi> »t y I dirtflad tW attention of Mr.
Zeyher te the Xaafiawai yfrgaam, Linn., a herb which Ua> WoonM
perfectly natwnrftawl. abosadjng on thai na iami ami among rubbish
near dwellings. He had never before observed it in •a/port of the
coioiyy. ami U of opinion thai it a n t hate been but lately introduced.
I bate alvaj* made it ft point to aotiea the im plants which 1 could
v<<nch \$htt bmBag at a place, aad 1 have fonad that m most instances
the; irtvt forrtgn. not mdiggwema; the Xtmtkmm spinosa,
one of these.

t eakr Mr. /rthrr neputing the Caps AhM and Bokaa, m <<0* I
gated by Sir (PTDate) Hooker in Sir John Herschel's ' Manual of Scien-
tific Inquiry.' He laJhtiawl aa> thai ta Ahol firoa, Lam., formerly
supplied the dntf <>Wd Aleea; h<<t tha* at this species has become
scarce, it is sym ettneted from the A. if*** as, Mill., and that from
the hnter Oat mwd at Belhrlidwra, near Alg<> Bay, is pvotfAeal.
(onrrrning the Kuku* be etato that the arttefe • IMMIMU* oh>
UtiKtl from tb<< M<weae onaek, IM', and th<< Euplexurus serratifolius,
9oL; he hinwelf having vean the nati* <<e | at hiring it.

H.M.S. Her Idlrft SinKm'>tWyo*thet7thof March, and anchored
on the Hh of Apr ff a Jan> Tow> St. Helena. Next day I walked
to Longwood, whkih ia now Htmhftng to mi ns; Napoleon's tomb also,
since the nttotnl of the lid, no laager pntortod ftoam the ia*>>rtk> of
the weather, is sharing the same fate, and in a few
will probably rt 1 mn nothing save the recollection of havia# **<< 'le

and European ()»k« tod Fir» TV THur l'alm »ailurat<<din tbt td
 several avaMM Dear tba Wnr*««aaaiat of tba A * » fafyiiat, U»'
 and other »pooiojofFig; in #hort» m tb* k>ww grotad* tk# rye meet*
 ewiywban pkmt to originally derM frnai otbar part*, and evto on
 tkr btgkfst wmaiiia I aoticrd ahaafly a gnat ataaa of *be /WA«*
 cines, Andr., and other intruders.

la aasaajdiag l>t«om l'TM. the country aa«nmc« a Hifreai and
 peculiar aspect. Enmbka (M t t ^ajia^, Willd.) become more
 plentiful, and gradually uatV vtck hhruhhy ' *mp*Kmlac** aod
 r, with Moaaai, / J l ftrfw. Twa-feim, a* l the C abbt«Mr«r (/W-
 rolobium arborum, R. Br.), with -MT afbotaaaaat OiaymYr IV
 latter are ckaraccrnatie of moiat aod detated aMairtaJwa, and I do a«t
 remember to have net with them in aax otarr looUiUn. TV Tree-
 ferns (*Dicksonia arborescens*, Linn.) are gradually becoming high;
 here and *kwr, ko«?rcT, apaonaosa ate accn aiuiiaing aa ntirk aa tow-
 teen *feti*. TI^ loo of lke mmtalain »» foatsjoil wHboaA diAct) 'ly by a
 feotpatb, aad pntiuta a aoad ihifiag vfev of tk« »urrounding
 country. OM can hardly imagine more lovely scenery, or that the
 fbot reata upon an uUtxi *akk from tk« aaa appears to be merely a*
 banrti rdck. Wbat oold bar« Mdttfed (W people lo delicate tk*
 paak tr Diana is difficult to ex plant. That goddess has certainly little
 here to uiwida omr. tkc ntrr-Ur d, * indigenous species, some pheas-
 ants, ionscrh btiodMrd fnun rh»»». a frv ptrthdfM a«4 wild
 faWnt.. Mdnaiw, a«d pactafi «ov aai UKB a bant of totftbv that
 have strayed, arr tW only latfe aaiajala wem on tkc awaalaaa.

On the 12th of Ajic'i w ft^povtcQ frnak «x. HalaiM» aiMI MI five days
 reached Ascension. Ne trt kr t a^ fbai in a ajotv daaali
 The neighbourhood of lkr arn»"a. aad iwbrd ike |i—>rr aarttoa of
 the island, looks like nn*m aal adkr*; tW tmU gmm •pd i* tk#
 1aaB>B4«wi flytaX ML^JUL BisiA «*u*«l ...—an •lartMit Ji la^aaH named "Green
 Mountain." On O«o4 Prtda^ I. •r»niyii d by V*mn Maguire,
 Pavaaaa, abd AMhno», a#omU« IV ditu. see is seven m W». hnl
 appears considerably
 aspect r>f tW dwlhart ikfnoH wk>ck lbr tnad k*U 1l »»»» ITIUT"***
 to .otiar Wow at every strp tk* ngetatioa ian«Mad !H ik* iana«4«tf«
 vicinity of ibr laodiag aawr 1 fouwl <mlj « fe« Uobtttd tafka of
 aad tkrat V+* or-oil plants; ;kr |aU or much dwarfed. On
 advancing "» aMajv tbry baajuNF OMMT fivaimt, aad w*w inavd bt the

the *Vinca rosea*, *Argemone Mexicana*, *Nicotiana Tabacum*, an herbaceous *Composita*, an *Jmaranthnt*, and the *Lycopersicum esculentum*. A little further as a *Cnteifen*, a *l'amieum*, and a *Sida* made their appearance; and thus by degree* the soil became more and more clothed with verdure, till at last, when approaching the actual summit, a total change took place, and we found Curacrea in a comparatively fertile region.

Ascension was formerly uninhabited, and, excepting a few Mosses, Lichens, and Ferns, destitute of any vegetation. About sixteen years ago, however, the British Government ordered trees to be planted, and the land of (irregularly) to be cultivated. Collectors were sent to St. Helew and the Gape of Good Hope, to gather the products of those regions. The newly introduced plants, and by their attraction the moisture has increased. ¹ It is therefore progress already made, it is not unreasonable to expect that in time the whole of Ascension will be capable of supporting vegetation. This is undoubtedly the case if the cultivation were extended to the lower parts. However, the want of (fresh) water has been the great obstacle, but I think this might be remedied (if plants were selected which can be watered by art water) so that, after they have attained a sufficient growth for their own support, the irrigation with water ought to be without injury to them. I only know two species of this nature, the *Overall* (*Farrusia rotundifolia*, Alph. DC.) and the Algarrobo (*Prosopis juliflora* (Alnoth)); these are found in the West Indies on the coast of the ocean, and also in the next arid places of the Peruvian Andes. When I was in the year ago we were known to fall. They are *manmtt* highly useful. The berries of the Overall are an excellent food for poultry, and the Akjanoho produces a bean which is also the support of the *Wrochia horeea*, *Mfaa*, *donkryt*, and other plants of the arid region. It would be difficult to feed the whole kingdom two plants, viz. *noatilalina* and *battar* adapted for the same purpose, or whose introduction would be attended with a great deal of trouble. Both dirt and water are the two elements.

In the Gorge we met a species of *M...* one of the party that planted the nursery in the...

¹ a... in the West Indies, at a little or no expense.

rather intelligent person, and, as the head-gardener was absent, conducted us over the whole establishment. We soon after fell in with two naval officers, and, guided by them, went through the various **tinm-U. Tftcy** explained to us the way in which the water is collected, and conducted to the coast; a contrivance so nicely regulated that hardly a drop of rain is lost. We were also shown what may be considered the Lion of Ascension, the great "Pride of India" (*Melia Azodrach, Linn.*) **m.)f thekrge* tm in 4he Uaad** it stands in a creek, is fifty fad high **ami ha* A •tent from ntn* to twAn** inches in diameter. After having mack the fcuit of tha mountain, we ascended to its summit **i—the •• m§ Pmkr n fa t*oo r<t** above the sea, and **taoat** entirely over **thrown with F<rw and Bmmhfc** (*Rubus pinnatus, WOH*). the kttar being OM of the pUnU brought from St. Helena. **i** several •<t* and a table have bean put up **cm the hfekei** point. **Hi** view M quite plmMng; all avoaad aw **Aeldt raHkatal** with Sweet Potatoes, Vegetable Marrow, **I'umpkmt, and Baaaaaa. whih>** at a distance nothing save desolation prevails. **HOW J'Y'Y'Y' I'U'U'U' 'IT3>T I'AA'h I.** labour, perseverance, and forest **tjm* thai wwllil pftMluoc Moa** an effect, and rhaagr, u it wvm, a <braij daaeit into a **fattfla and inhabitable*** region!

OQ the ftOth of April **t.* Herald left A<eaMkn,tad** crossing the equator on (he f 6<a of the **auM aooUi. the peani** in latitude 30° aorth **tkwuajh •••• HUM aW of A^eaiiaai weed, lighted on (W** 20th •nd list of May thr **ia^ajo% of Fl m<< «ul Oontt. two of thr A<*<».** od armed oa the r,th <* **Joae. 1851, A Bprtkaari; «httt» >bt on>** cteded io (**katham to be paid off**.

Thus, a **Ocr a bow of Daariv kn jmn 1 had OBOT awn the** happiness of **HBBIatofthetotti** of Europe. I had during that time circumnavigated **ear dob*, ajade thim mvafm towanfa tka Nortk rota.** landed on twenty islands, visited thirty-three cities **«, pMaad Ikroagh **<<*** vil-lages, travelled. **** least 8000 miles by land, and sailed more than 100,000 miles by sea.** Whether due advantage has been taken of the opportunities **oirml, and Ike leaall of m>** mission equal to its magnitude, **1 aHHt have olkanj to** decide.

LICHENES HIMALAYEN »r 5 fewy am Ammrruium *>J tk* Lichens col-
mountains by Captain R. Strachey, of the
/N-/»/ Ijyimtrt, <*««! J. E. Winterbottom, Esq., F.L.S., d*ri*j O,
J*rr. 1847 and 1848; by the REV. CHURCHILL BARINGTON, M.A.,
Fellow of St. John's College, Cambridge.

The *Li* d*rn* 4narffjharf below were kjiMJv pjatad in tuv hands by
Gaaftata Mr»fb«y and Mr Winterbottom; ibcv arc of considerable
interest, as being among the feat apoik of (be Ltcktmjbrn of the
Himalaya Moun t.11- : among taaw an aaftnl whiob appaar to U
new; the gre 4ct proportion, however; an tbe same as the European
species. Valuable ooUortioaf of Liabcrat. from olarr part* *i the
mountains, have been laatk by Dr. T. Ti liwaiana aad by Dr. S
Hooker, a considerable portioai of whicb laey ban beam ao good S
show me: among them ara away vbieh bo wA occur in the following
catalogue. It seems best, however, to enumerate the present Lichens
separately, both banmie tbty b«v« been rollaoUri at mm itirtaam feaai
the places rmU*i by tbe olarr two birfairiatB, and am capenatty aa-
cause some time »ay cfaiwe bafoga tar vaok of the Himala) «u Ltea«M
can be properly examined.

1. *Usnea longissima*, Ach.

HAB. Chinar, Kumaon, alt. above the sea 9700 feet; hinw.
(Coll. n. 23.)

2. *Usnea*, Ach.

HAB. On wood; the mme babitwt »mt alitua!« a« tbc prtoaditig
(Coll. n. 24.)

Apothecia very pruinose; the denuded d«o im'hninff < * ' »r»nV
<4 tbr thilhi* aajootb, aonxfiatad , vitirilbr microos, (Um), di-
var oatal

3. *Usnea Himalayana*, Rab. r 1 hallo piano B>oUiu*rulo pmdulo Inafia-
simo j.....: aaaaaaaaa &H Qpajai H laaaaaaaaaa ajiaaai »»«!•'
albida »*l>rr*o daoraai ankulata, r » » Imwi^aiiili try* ttm
ramosis, fibrillarum apicibus eucoloribus; spotheciis (imperfectis)
planimaculis carneis subsessilibus demum obscurioribus immarginatis,
margine subfibrilloso.

* I am indebted to the kindness of Messrs. Strachey and Winterbottom, and to
that of the Hon. the Court of Directors of the East India Company, for the privilege
of selecting specimens for my own herbarium from their collection of Lichens.—C. B.

HAB. Binsur, alt. 7500 feet; on oaks. May. (Coll. n. 235a.)

A very different species from any *Uva* with which I am acquainted, but probably allied to *U. dichotoma*, Fries, Syst. Orb. Veg. p. 282, from Nepal. The similarity to *Alectoria sargentosa*, Ach., is very great, from which lichen the central thread at once distinguishes it.

Main stems diverging from a central point, eight to twelve inches long, occasionally beset with short horizontal fibres: ultimate fibres and branches often more or less rufous. The apothecia are very few, and so imperfect, that they had better be called *cephalodia*: they show an inclination to the fibrillose margin which is found in other species of the genus. This lichen is accompanied by *Parmelia leucomeia* and *P. varia*?

4. *Evernia Stracheyi*, Bab.; thallo ochroleuco cartilagineo rigido sublucoso compresso subcanaliculato nitidiusculo ramoso, ramis sublinearibus irregulariter palmatis et laciniatis, apicibus plus minus truncatis bi- seu tri-fidis, marginibus denticulos ramulosque coralloideos nigro-terminatos passim proferentibus, pagina inferiore versus basin subsanguinolento, apothecia . . .

HAB. Gori River, Kumaon, (on the ground?) among moss and dead leaves; alt. 4700 feet. Pindari, Kumaon, mixed with roots; alt. 12,000 feet. Bompras Garhwál, with *Cetraria ambigua*, Bab.; alt. 16,000 feet. (Coll. n. 41.)

Allied to *E. prunastri*, Ach., with which it agrees in the mode of ramification (though our lichen is more irregular), and in the inner texture of the thallus; but the upper surface of *E. Stracheyi* is far less lacunose and more rigid above, and very differently coloured below. *Parmelia* (*Evernia*) *decurata*, Hampe (in Linnæus, 1843, p. 121), appears from the description to have some points in common with our plant, but it can hardly be the same species.

5. *Ramalina farinacea*? Ach.

HAB. Barren fragments, from Chinar, Kumaon, alt. 8700 feet; and from Gori River, Kumaon.

6. *Cetraria ambigua*, Bab.; thallo foliaceo depresso submembranaceo ochroleuco laciniato, laciniis linearibus lobatis apice bi- seu tri-fidis subconcavia marginibus nigro-denticulatis, pagina superiore lævi (non lacunosa), inferiore corrugata pallida nuda, apothecia . . .

HAB. Bompras, Garhwál, growing on wood and over roots, alt. 16,000 feet; barren. (Coll. n. 6.)

and on some of the ridges are minute snow-white sorodia, much resembling the cyphellae of some *Sticta* (of *Sticta Wallichiana*, Bab. MSS. more especbfy). TW microscope showed the apothecia to be of acicular shape; the sides became darker at the extremities; I failed to discover the HCS; only one sporidium, which was obovate and biseptate. This very remarkable plant connects the genus *Cetraria* with *Nephroma*.

8. *Solorina saccata*, Ach. *pruinosa*, Fries.

IUn. kitki 1W. u««r iHtali^ north side; Kumaon; »U. **> 90 feet; fertile.

The form *a vulgaris*, Fries, *thallo nudo*, is unknown in UK. Mougret's and Schæerer's specimens are pruinose; so is every specimen more or less which I have seen on the Continent of Europe, and to «ba «m these. So fctariw it the Abyssinian *Solorina Siamensis*, Hochst. (in *Linnaea*, 1843, p. 17); which is said to differ from the present species in having the under side white, variegated with ferruginous veins; the Indian specimens are more ferruginous below than is commonly the case in the European specimens (though some from the Tyrol scarcely differ); the veins «n awrk the same colour as the rest, but rather darker; the thallus is whitish below at the edges. So far as I can judge from a minute specimen of *Solorina Siamensis* (Schimper! 1393), it is only a slight variety of *S. saccata*.

9. *Peltidea koricoentalis*, Ach.?

HAB. Barren; growing on micaceous rocks. Dwall; Kumaon, 9000 feet above the sea.

TUIM ft inches broad; it appears to be fetg lo th» species, but being barren the determination is rather uncertain.

10. *Peltidea coccinea*, Ach.

HAB. Chinar, Kumaon, ftU. 9700 Ut «U»« iii* • ces; Dugli, Kumaon, alt. 9000 feet above sea level. (Coll. n. 8.)

The thallus is more membranaceous than usual; decidedly brown at the margins, hmuiifutiy reticulated with i vein* bek>v, v I M u****; the margins are pale (reddish when wet), towards the centre. Apothecia growing from elongated lobes of the thallus.

P. polydactyla. TWookwr of the thalli be U M Md ilrr it lh- same as in *P. coccinea*. A brgor specimen (Coll. n. 7) is barren; it has the thallus somewhat thicker, more crisped, lobes ample, la-

cuneae, <Urk, rufrenit, and ttx- fibre* on tice wbnk dark er, margins decidedly tonmtto*; it nppear* to belong to the prcarnt apeoca rmtlcr Dun to P. r^MPA*«, ifimV. d the litier) e distinct.

11. *Sticta putmomifto%* Ach. Var. «ypom*U% Deli*, Stict. p. 144.

Aft. 6:

Ha. I. Cbinar, Kunaon. aV. 87teat j growing orer stick*; frrtH* (Coll. n. 10.)

Topimuifr below; down l>uish-black towards © edgea (if tin lobea, paler in ntott oilier jwt* | a(totbooa nifou», b«eonditg tUritr by r ge. It. ttieu rvfa/wv, VI-

Har. Dugh, kaaMo% alt. 10,500 fat; gmaring upon atieks, and over mosses (thallus very deeply scrobiculated, becoming dark, some- «bal putiatcd. tittafc lmitated bate*, down mmlj of a moull e deep vMaUdaek); abo «t Chttur, Kumaon, STQO feet (tftaJht* IMCII ka» scrobiculated, scrobiculated on the ridges, paler, less bullated below; <*>n for tlv nma j^rt of a mtgk km daa*» bbck -, alwvt iW rrtttt «fa Hull blarkwh-btmiti); bamn n botk lonalibea. ((*A\ n. 9 »

» TW form from Chitur enajaaHi tKi» apatac* ao taJlad »ith tkn var. well-marked ex-
* . > ^.....VI) MHa, HKI wi^pBv^ WWW appear distinct enough, but otbcr uriansaifata aMaiHa pvova tferw to ba aMaa of one polymorphous species. *S. retigera* m * . mvaal inr. ^ . r. aa~ .pp«r U» .Ah.lrT fw from Uw tntjiw of tW oU »or id; being four 4, laHI* north of ahaa i» U b , aad * Uttle within tWai ia Baawbcai and dark below that it might almost be called *S. retigera*.

13. *Sticta lwdaw.QaUt* (Parmelia h., Ach.)

Ha. . (;kinar, KaMara, Ut. S700 (.et; Kurim Pass, Kumaon, alt. 7500 feet; Kathi Pass, Kunaon. alt. »000 frrt; tm bark; fertile in each locality. (Coll. n. 20, and Coll. n. 15 pr. p.)

14. *Parmelia (Imbricaria) tiatrn**, A^k

Ha. ¹ Cklav. Kumaon, alt. 8700 feet; fertile and large. Madhari ' * . . KuBAaeit it. 8200 feet; M met, fcrt*(tawodi fc«i - P. acur- ta, Ach. (Coil H iv. am) M> U p p.)

15. P «nwi»a /*«?***. Ac*

Har. Ckiur, KUIIKM), dI 8700 feet; «« batt; far ile (adult spothecia per (w «u awl iNtM*1<it W«MM«a«ciattf)t Goi River, Kumaon, alt. 4700 feet; (Coll. n. 16.)

1«. Pare* eiuaw4apj, Arh.

MAI. (M w a l; «ibarc; f«rtilriiaaikt•aaoortU-tti*ed, ample). KariwPan, Ktwummall.. 7500 feet; fertile (edges of thallus pulverulent; habit that oC CXrww ^ » f » , Arh).

Parm. a pert*tm, w. ••rmtffiii. Bab IISR. P. ••confiloba, Tayl. in lib. Hoo* («»da); ct P.ffitVWi,tj* ed. l. c. (sorodis marginalibus insignis — P. ftriala, f. fri itfi, l^ur ! it !<••—, 1837, p. 45.)

HAB. •fca«r. k«m*.m, alt »7«0 M_t Ood Bimr, Kumaon. * 4700 feet ; banr» m both l«»Utic».

Differs from ? . *vte«t, Ack.. ut aolbtog b«l it* amfilaaiae; t** specimens w 1U11 aaw «m an from Uopial and » btraoaml«««U rics, ami Imrir^ 1 1 > mahyan paasl M wilbnit «««««! Th ***** listed form (P. trutt/m», TafL!) bMn gtamemU a» aopoM4y.U»^ th r af- pearance rf the pkat w w h t o tWt of «Kijliw>i|fc

17. Para^fctil%af, Ach.

HAB. <L'kuiM. kuawnn. alt ^7«K> feet. Urtile. (Coll. n. 4.)

These specimens are a little diff, ffnt fffH IIK? atH mon form: tliM appraaf hat morr itMmblat P. pimmim<

18. Parm. teia aaraat, A<*

HAB. Cfcinar. Kutuwm, ah. MOO feat; «• tooi ; b•rrrn, («»J a*aa* sorodiated. (• 41. «.:.)

19. Parm. »tia (Ptinm) raraafa. Frkft* ^ jst. O.*» v «* p. 253.

Habit. CUMT, Kamano, ah «700 itn . am »t». frjik.

Habit "• iawaTap furfuracea, Fries. The same * * r been gal bawd ia Nqial by WaOiefc. F n » Ia* «Wfi>4 Hag* «C Ff* aaara) aixl Ma laaaaAa (tic*. Ear© p. p. 76) there is little doubt that hiflaVI (ftwu K«eal) H tkr MOT aa oo». (Cott. « 22.)

to. Pan melia leucocela, Ach.

H. KB. niWpfaaadhifi tw a«a fafttta, fiovia, u,j*rrnt ly, among leaves (of Rhododendra?) and fragments of a Ge- (C. perfoliata? Florke — C. perfolata, Hook.).

M t l. Pamatti awn in, Af»

!Ua. Gori Uinr, Kumaon. alt. 4700 fert; r« n*k (Aa**.

EMM , alt. 8700 fett; on hart. Prrtik in MI Iniaiiil^- (Coll. n. 17.)

tt. Par ttatatiat atMa^UaW^L J«4«W

IUa Haa1oaa» Kimana, ale II^ooo frti. teti. (Coll. n. 32 pr. p.)

23. *Parmelia mm*, Arh.

HAB. B. Jtarrn fr>gTO<U aoeouipm^ the (manling (CoU. a Si
• ' I ')

V *4. *Parmelia pmlicfMlemta*, Adi., var. *watnyw*, Fhoa (/* aMMcym,
Ach.)

HAB. Gori lircr, Kumaon, *• 4700 feet; barre<u 8UImg, k<<
m*oc, ak< 13,000 feet; fertile. (Coll II 32 AM anil u. ft |ir) .)

25. *Parmelia (Placodium) chrysolenca*, Ach.

RAI, On t. ack, at Acho in Astore; aborcBunil; mwi ai Shelong,
3,000 feet.

kamac*. <Jt 1.

uk in ill ikr locmJit^ Two ipesBdw from Acbo Mr W

<< ; l W> tHOJ u> i> ttry t hiek, UM tiy pit hallo * iJmort U<tru>

tlw apoihoeii <<onr aimo<i vnry pvtide oT tbe upper

nttiwr darter than Ua MOBBI form wWa ilw tit rf,,

Uwy beotti I, of vshoot hue*,

Th<< QUHV tpnuorIM tn too and iwrn

by aoitti*, <f a pok, but tomewftut bn<>i inaay n J

** l^nnrlia .^rn.,

va. WhiJmai, kunmem., f<t, (Cdl

latfWhvAak

•• 8hakwt^ KnaaoB, oo alalj roci, ait. 13,000 f<rt, frtaJr

29. *Parmelia (IV>f>) mfaaayii*, W*hl. (fonna a >><< S d>> r. l u.
330.)

HAB. 1. SWr*K, kumaon, alt. U.I00 fart; ftti ile.

30. *Pamdb (Ltnanom) Mh<< ?* Ach.

HAB. Fiaf—iti occur upon the tank upoa »hti4i /' >><< Hima-
layan gr

31. P vB d hi>ilM/ Aak

HAB. << aWott, KttBMan. ait 1300 feet; had specimens; granules
scattered, chrome-yellow.

32. *Parmelia (Urceolaria) enlowes ?* Fries.

HAB. Shelong, Kumaon, alt. 13,000 feet: (File:) be-
longing t> this species, but in • poor condition. AasChar afr
specimen (same locality) of this subgenus resembles *Urc. acroposa*, Ach.
(Coll. n. 34 and 35 pr. p.)

33. *Uterwlou Umtmtnm*, Fries.

H. K. B. Gori Hirer, Rtuaaon, ah. 4700 feet; fertile. (Coll. n. 27.)

34. *StCTcorauion (w*li...)*, Schreb.

H. A. B. Pindari gfcmr, Kumaou, .It 1J.000 feet; fert. (Coll. n. 13.)

35. *Streocaaloo rnmlomm*, Ach., nr. afriffaw, Bab. Mf~; ramis
striat* »uUimpliribtti, de w fibriUoata; apotheciie nugn" ten
libr. u pflr.-is.

041. \Udhvi, Konaon. ait 8700 feet; bgtfe dao Piw», < Jarhwil,
alt. U.500 t- et.

I Braehaa epringiag from the baa*, very stiff, erert, about three
inebea biglt, wvrrljr bnuwbed, *except* Unrard* the »ummit, whri
arc forked, and ometimea twice or more subdivided • ith very short
•tiff brancnirU. BranrKo and brancnleta danaely eovered « ith fibe"•
Ap Ibccia large, terminal on the brancea and fork*, at flrtt flat,
strongly margined, at length rafteud, aobinunargintf e. *S. subimplex*.
Mont.! M88. (In*. Maacnren.) arofwdfatg to an authentic *specimen*,
which I owe t« Dr. Montague, haa vary »mall lateral apotbecsa, but
aormm, *m* far as cap be jutlgnl from a fragment, to be in other iwapaeta
very Mtnilar.

H. A. B. P. odah gla. maoo, alt. 12,000 feet.

ip* very •bort, f^raular, tkallua ralbrl largr, brown. TVia

37. (vi. Bomnma, Ciarh» var. *laurica*, Ach.

11M preaant apeeimana are probably daatbaaad forma of
var. •ynfi#4, rriea*

38. *Cladocia perfeitat** ? ¥m\

va Fragmento of ikit ipiain (aa it appear*), which WaUieh 1
wiae eoUeel pal. accompany *P*rm. fiwBBiifa*, Ad I-ⁿ

39. *Umbilicaria dtjrm* f Schew

IUn Piumri glacirr, Komaoa, 11,000 fort above *the ee*, accom-
panic, l by fr«gmonta of moaa, graaa, and aand; barren, (Colin 2.)

The • thailua agrees a&actiy with fhrim apadaiens, bni aa *ihrte* are
<Tfect apothaoia tae drtermination of the tpeiaa ia vary dovbtf' l.
Tballu* iu theac •wim*im at ftrat "iVmtaalninawnm flexibfe, 'pul-

verulent, *ai* InigUi hotrautif ttaedagfr thick ami then papillated; colour that of *Endocarpus* — . < — p w M ? . **>> »he» i et and dry; undenidr bbrk, wuft or IPM acabrid and *baggr_t with w*y ahori anA black Itair*. which at Uagth hvoome thick and bnachad, about onMavtk of an inch long at*! ifftgularij *ttdlrtU* Utinng parta of tht wadwaiifa ban>, especially about lac uiulnlinii, anJ thM aosawhat re*n>l»liim a minute black moss clothing the u- <kr twfac* J4itcrruit*ily. tIM alipitive apothecia wa h laanaitik the frectj&otfiua of *Endocarpus minutum*, and inciitir to be tuui ia tbr UwUa* , tauw ou a Si* is specimen of *U. dep.* Mat pi«M»l a prmfe(y *mnUr apfiomahtt. The few specimens in IHT herbariwa of *I' t*U***, Ach., and *U. Dillenii*, Tuc kcrm,, *gnt teat «cli «iU Uw lmlian ptant, lhati *iho* of *U. drprmm* d.

49. *Blatora Jimtlmj^ua*, Bab.; thL<t< effigurato squamato crassissimo opaeo rdb-hniuao, a^iMau« bibaria pulposis granulatis flexuosis albo-marginatis, N U « nwnjgnaia palbAia tpaffun t t m IV o a u. apothecis squamarum rri4n» HMMIBBI&MM riofrfiit ttiajTM subimarginatis subconfluentibus disco intus pallido hypothecio albido, margine obscuro tenuissimo evanescente.

HAB. Goei River, Kt earth; alt. 4700 feet. (Coll. n. 5.) Allied i) ** jiofymx *j*\ It, lurida*, but very distinct. Young scales orbicular, appressed, margined with white, resembling the apothecia of a lirk<a_t b m n whn dn. pak fcrmgiiMMi whin moistened, bearing, even in a very early state, a central apothecium. Thallus more or less (fwrti, tUrkr in afn «ad (wmftxxi* , aalai niMJaol_t very opaque, pulpy, rauulaM and ctajdtiHl, iim^ia* f)*t, «Mr* or less daatiactK adgvd *i ih » white; ladcntdr .poa^v, paa? «a ruginous, passing into thr eoki«r of tkr oiU pakr manpo, aaked or «i h a few minute fibres. ApoUwda irnvular. mot* or *Um* glnboar, ||i«aBjM «W « moistened and pellucid, scarcely margined even in a very young state; sometimes there are tnavo of • very thin margin. • Disc pale waxy within, becoming darker when moistened. |4aaed o* • thtfc • lut »i medullary stratum. The only ascus which presented itself was obovate pyriform, not very regular in shape (cf. ascus of *Endocarpus Madagasi*, Mont., figured in Sc. L. xx. (3de sér.) fig. 16 f.), enclosing eight oblong spores, alia, «kwh apfaatad 10 ba«* a septum. Paraphyses abundant, bearing ftoalaaaad *tmd* Al ahair .pparcitnaM: y. Probably the species spreads over the aar< in large p »lrhr#. 1H4 thr collection contains only one specimen about two inches in «hai«rli«, aiwl « fragment.

41. *Leckia Arvensis*, Ach.

HAB. A minute fertile specimen accompanies *Para. oreia*, Ach., from [^]bcfcng, K M H M ; ah. U.000 tot. II. n. 91 pr. p.)

42. *Lenrfra jvcyrapftic**, A rc,

¹¹* ** uMMMt lred w n ^Kin m, Mt. 13,000 feet.

i wo cROCT M n M mH us wntf KKIW and altitude occur in the collection: One species,

a good deal resembling *Para. glaucosum*, Ach., appears to be *L. glacialis*, Fries ; lb* < a l W » (m ^ My oar of tfee .trfiotU farm < * *L. subletarum*, Friw. tad RMMMm U« W ftmicf, whvh 1 brl ^ to be ide ntiral with / truAra, t ayl. 1 TV tpttttMl «A wmHufftt «» * l dark within.

42. Co

HAB. Chinar, Kumaon, alt. 5700 feet, fertile; growing on *Sida palmata*. (The usual farm, ftkamii. 0»» I, n. 10.) Madhari Pass, KttMMOt, » alt. 8200 feet «UM8l rocks l frrt lk (TUtiW becoming dark, with a rufous tinge. Coll. n. 18.)

43. *Collema nigrescens*, Ach.

HAB. A d West, Kumaon, alt. 5700 feet. (Coll. n. 19 pr. r)

44. Col ITIM »Wirfliiilli, Uh

Hc without fruit, belonging apparently to this species, accompany *Para. cirrhata* Chinar, Kumaon. (Coll. n. 20 pr. p.)

BOTANICAL INFORMATION.

Ta* *Linnaean Herbarium.*

(Continued from p. 250.)

Besides frequently added various remarks, twli ^ tVbm] ity, diagnoses, descriptions and quotations. The lomWy is commonly written close to and symmetrically under the brtt**ir ti tbr «p«ii*««. TV w*min*r*« e v H. U. ; hortus Upsalien- sis), C. B. S. (Cl., ned), k., An., Islandia, Siberia ; and among Swedish provinces, Gott., Scania, Lappa, this last not rarely followed by S. < Sol. (Solander). Of Botanists, K. (Kalm), Br. (Browne), occur most frequently; Osbeck and Boscú occasionally; seldom with locality added. To these indications of donors must be

added the very doubtful mark *Sjp.* invariably followed U a nun^{ber}, which does not refer to the pag[<] in the 'Species rtauturum/ •» *cmr* would tuppo^{*}, but iTrhapf mcaut Sparrow a. Very frequently one of the dgm H, D, E, tt adk^d to the specific aatur, or by itself; w, Q[^] baa been able to point out their meaning, for ibey indicwi^o :.. either locality, (koar, I for duration of the plant; (KHigh ;*) oidy occun on Siberian plant*. All Lcefling't Spaoiih pUnti arc marked *Uup. Utf*, followed by a number written on the back of the paper; when are also added the diagnose* and dW^{riptions} in Linna^u»» own hat^{ed}, occasionally the same as in *Spec. Plantar., Flora Suecica*, or his other work* i though IwnaaimtHy of alder date, and afterwardi abridged in b» ptthlwatioaa, There are ttkrwue offraatftnal quotatioM from the works of other author*, particularly Gnidin't. and abo Kay's, Scheuchzer's, »ad oihrn. Tbr «f%toal of the figura u* the * Flora I appnaia/ are often fc»nd trh[^]fy the apaasena; indrrd moct of the ptanta referring to it, eapadafly ibe *Sklien*, haw on the tide a number raiemnf to' thai work. Utbrr aotee, not Ijnoru»'t, may be reJerfwl to two different epoche; one of these eomprMei tlipt of paper emmipeByiag tbr specimens v hkb wr* atr to Lia^{ua}eea, with aaaaa* of older talhor*. or n^{ef}wauaca propqeed, or aooat o[^]weUoi propoauHkd; lotbeae I in^{neus} hn. aaaaajaaafly ewtyamed • mn*rk IV ataeft «p.[^]l b mm recent and originates almost ^ _ | *#w. 1 tat OK I (* • N Lkfe ^hvl case faey an daw%naud *J. M 5.*; ihry cpaairt of flftbofnabie n^{er}re^{tions}, Ibe addition of aaatat where thr* w«r* wawtinf, anac reference to _____ in England, or tae opaaJcai of other Maaieto, Mbntafly *Mvtotm*, i

Willⁱ raaarl t« thr aprcnanaa twaaatlrra, fbey hate generally not been •owrll iilad nd or fa taw mi aa ie *eaamtm*&y the caar aoi -a-days, though tbrv err ran ji to each bad npqdrUoO a* to bf en! -vely unfit to afford •erf«1 mforatttiau. lmt, with three rurptiett*, tbcsr is scarcely ouⁱ ajatj* iwaf aaoB to be faaad ia tW wboea herbariaai of ai injury from ag^{ew} candMa haadliaf, thoe unrr«*l Majwaa of •riorat. f in such collections. In fact, ao «anre% aad aMUdoary have thr* treasures been att^{ad}«l to, that ther* eaa he »odo«M lhat *thq* err at this present time primiiyj ia tbe tea** auaititkin a* thet were ia lbe possession of Linnaeus aad Sar J. E. S^{niiV} TVa flwrrwt «««t«|» sition, that only a small proportion fff tbr a m* aatfeMwd by Linnaeus himself, is fully corroborated by this recent examination.

It was v t l • »* expected that a) the plants described by Linnæus were to be found in ait htAarim l. Never Mfeaa on\y few genera, and the •epoor i« species, are wanting. Not so as regards species, particularly H wiy rxtmte £****»i Mid thia applir* ev«i to SwcoPB plant*. wttk lbc addit; v»l iimMTMMMt. that too* of UMM «« certainly of foreign local; ty, or at km* doubtfully of Swardj*b p»i. The consequence is, that it is sometimes impossible to decide with certainty from tho hcrUnum upo« a questionable geographical proposition. This, **fi»a** *adiformis* is mentioned in 'Flora Suecica' as having been ft-um! «l CkriatkMtad by Ro ** aiowi but ia U* pUki »# ^^ «ia« W awn Hierr. a pMdc* *aa *mvpmd* to kav« ocewm of either in the name or the locality. In Ibo WTbanum tbrfr ia a spe T'n«rf the plant fata abroad^ aod alao ax** Wr exactly corresponding in .iii reports as to species, but having unfortunately no sort of indication to prove that it *m *pibmrt* at Christianstad.

(To be continued.)

NOTICES OF BOOKS.

PLANTÆ JAVANICÆ BARIORÆ, *descriptæ et Iconibus illustratæ, quas in Insula Java annis 1802-1818 legit et investigavit* THOMAS HORSFIELD, M.D.; *et sicca Descriptiones et Characteres plurimarum elaboravit* JOHANNES J. BENNETT; *observationes structurarum et affinitates præsertim respicientis*: ROBERTUS BROWN. Fasc. 4.

The first three fasciculi of this learned and important work have long bcwbiferr tbepNb!ic, to the great advantage of the botanical world: Fasc. 1 having appeared in 1838, Fasc. 2 in 1840, Fasc. 3 in 1844; Fasc. 4, and we regret to say, u* iMt. «j»pkUa« a'»•4«* is now before us. Besides the Ubognirf ilawri Brow, M«d IV»IK't, Dr. Horsfield himself has given, » COMMCM thli, a M|> <* tW MIMwl a "Geographical Preface," •otkwir iW gee****! »nirtufv, iKe K»IL orwm of the rivers, etc., concluding with the "geographical divisions of Java, and localities visited." This ••fiihiiiHii • " r.....ji'in v. ' — ^ tailed the circumstances which lot U; iUi gentleman's is in Java, and to the formation of the herbarium consisting of i SIM v oes. Due acknowledgments are given to Messrs. Brown and Bennett for their in-

ntMijli and iBwitniwtei labour** k «Ubor»tug tW alatefiakof tW ywemt work. The preview porboo* ra all *^*j»H ft rty-five plates. TW ft S pUtr, tbr rir*t <4 the new ^-H IIM, is devoted to .4t*ntloph*r*fr*gram*. Wall TW gems w rcfrwd by Mr BmwH Uv fttiwMr rather than ID Bttmrmwm m nrifjaitly At&»d bf tbai •sthor; but tlii» diitingiuhrd bouakt obaema that I these two >HUM* bv» puM iuto each other.—Tab. 4?, Arruefyw ('Wight et Arn.) //orf- jeWi, Br.—Tab. 48, *Jodes oralis*, Bl., ken mfciwi bj Mr Browa to *Phytocressa*, Arn. (along with *Phytocressa*, Wall., *Nas* MwfMt, HwrK.t Ha Obi Mifatim, Mam-, Jmhmmr, Griff., and u " Pljtoownru cftae r W*/*, V. all (C. *Javanica*, Br., *Peripterygium quinquelobum*, Hassl.) .arrm*rt ible J trinm Himtwnif «ntia*i, with fmit at fint «gvt rceaik ling *Dioscorea*, w (rate natural iffiaittiet hat« bvn • tabject nock divma«od of) etc. Mr Bmvn cowaiden it "an iaobtd gtri«4 ur family, thobs ptawd at M l?re»t dktaan frnio *Plyioerr**."—Tab. 50, *Bessell* M JftOMtCtt, Br. TWrt &rw paw* of 5 fr. Br. WD bat been, with i is permission, adopted by Dr. E. Iw. i»i by r W«Uu h (Cbl of E. lad. Pl. >, who he* d trnl Hictil eh MaUyu iperm dwitoel 6Mw the {***•>»* •aw. It bears tW temr n-Ui*-m t *Asi* 4*«v. iW tW |«lypetalous genera in ftylweieiww beer to tW *mptom* o—cftaiihem y.

DE V KIKI, V. H., Dr. «ad PfafeeHT! fornptum* et *Figures des* nw4ii wewwHn #* T#fw tni J*™ U iHi*4nt%>^ #t *l'Université de* Le*d* ti dm mmaptmM Jmrdimt dm Jft jyw «fr* /*««# A M.) *ivr. 2.* Leyden. Large folio. Five highly-finished and coloured Plates.

This i* ft work of huary aad of eviewac. We had foi merly occasion to H(ke IW lr»t fatdculttt, and we bate bow t!e pleasure of MI* •ouiwinf • Neovd, rirattta^ if uot wirp—einjt. tbc fbrwj«r ia the W»titjr aad Wetity of tW j4*i« • TW two (rrf pk< es and description «• dero«r*| to <^mt K»mf *hil*, Miq. (C. *circinalis*, AM), ibi •JIUILI %Ved i« Eon}4i Ikrti Vr *ib*, vol. I. t. 2 f »ft*J I3_t awtl wluri) is thus i»»UL/U:-hi j — 'C. *truncatus* . *otipite* ! ! » *foliis lanceolato-* -A»^k_ t <.»^»',) *masculino cy-* tttdficn. ^^linHiln ; in—in ia |wrt« aatWnfct* c »ori *is*, spice u •le ***wjj»Jan br»»»»»»f* totwiat woxwxjmwi oMhmi mstmctj *is*, externe ft.i»>.m|||rt *is*, *foliis* ar;^ttafiU» 3-5-ovulatis, lamina rhombica

cristato-serrata, ovulis glabris (vel hic **Unit*, JWf**). One **iUte** represents **tkv plant mitieftl. with »*W «pk»;** • p«r' of the leaf, *nat. size*, etc. The second plate, the male cone, *nat. size*. Two other **pUfft, with uaplt** description, are **drroUd lo UM live** *C. cinalis*, Linn., Hook. Bot. Mag. (excl. syn. Rumph.), etc. The figures exhibit admirable analyses both of the male and female cones, flowers, and fruit, and **of the argsaiuUiuoufiUr** stem. The remaining plate represents *Hymenocallis Borschiana*, De Vriese, a new Amaryllidaceous plant.

TULASNE, LUDOV.-REXATI: MONOGRAPHIA PODOSTEMACEARUM; *accesserunt Tabulae tredecim, sculptibus Hug. W*4* *leli picta, et quod ad Icones analyticas attinet Carolo Tulasne, l) lf. adumbrata.* 4to. Paris.

We **httw* ulrrrij oMM** the **tWn««iH <f** **is** important volume. To **U** full generic and specific descriptions and remarks, as well as to justify the title of a "Monograph," **md lh« Otf»Mp«plkV ol the** Ctriqb** Vegetables is not the least **Tthibte portioft of thr tmhfartk***. "Podostemaceae," writes M. Tulasne, "nulla excepta, plantis herbaceis adhaerentibus, plurimum humillimae scules **ab aquis demersis dulcibus, saxis nt traacii irUni** ripariis inundatis haerentes; amant aliae rivulos **Wtii rur*tt HMTtef, 1** quorum in undis molliiter versantur, aliae nusquam **• U ID** aquis decurrentibus et fluviorum, cataractis, absque intermissione fluctu aestuante vel alternatim blandiori jactate occurrunt. Loca ideo **fcddtudiArtiKlut** etiamque incolunt, et si ad earum staturam vulgo mediocrem, habitura sepiissime bryaceum vel Lichenum formati usurpantem, necnon ad frequens florum indecus attendantur, minus ***^il tin?**, sedum *** . . . r T** tam qui **tabilium indagationali student, oculos effugerunt, adeoque paucis et MIS MUT** in botanicis servantur musaeis."—We **W -uUi** the **hr hftUt** of the fronds rather resembles the *Hepatica*, or the *Alga*, than either the Lichens or Mosses. Some are **qttiUI' U•j*d.** and there is as great a variety in the fructification **«» la IW W*U, All** this is beautifully represented in the accompanying plates, **«Ueb ut** models of botanical design and botanical analysis. Two new **jtcfwn an** given in the Supplement, *Loachostephas* and *Mosostylis*, making twenty-one in all.

made my first acquaintance with the monarch of the forests—a lion was crouching within a few yards of my path: with nothing but small shot in the gun, I knew that the least hesitation might prove serious. This intelligence rendered a move next day indispensable, or the loss of an ox or two would be the probable result. Consequently next morning we entered the Zala country. We about eighty miles before us entirely uninhabited, aid at lac oajaffta of my journey were not likely to bt art vita am the road-side, it became improbable that we should fell la -uk •_RT ptrt j of traders. Great care was necessary to keep an accurate account of our course and to guard against any waste of piwmoaa, f<f K>fr« «rr the most improvident people I ever met with. Taey *iU «ooiow atfiat »ai a morsel remains, though there was a certainty of starving the next day. They can however go without fotxi fur an IUUIII.: Vi.'-t>. >{ tune. UMI, unhkr tfK^i other savages, are not paainaalij faad of iaUnfaaUag difatU: » miserly cupidity is their ruli« powMa; thry vUdrifck •uytkiog^ea tl them, but they buy none. I aaro offtQ iae« taam driak vbcfar twl «i der under the name of « i Jualo” (Kaffir-grog), with all the gusto imaginable—it costs nothing.

On entering this range of country my intention was to proceed through it, as near to the sea as possible; and, from its general character and the fact that few if any had ever gone over it before, I had great expectations of meeting with new things. A few, very few nights' experience Acwed Ib* mil to U impracticable. The number of hyenas and tigers seemed to increase with each march, until « * grew so bold that our fires would not keep them off, and three or four volleys were often necessary la dnnlaam back. We therefore retraced our steps to the road, and the passage of two or three minor rivers brought us to the Umlilassi, a noble stream, and decidedly the largest I have yet seen. From its size and proximity to the sea, we supposed it to be a tidal river, but night approaching, and wood being scarce on our side, we determined to push over at once. My sumpter-ox refused to take the water; not ulllWt^ n or jabbering of tWr Kaffirs could induce him to enter. It came on a cold rain, and as the rest were across, there was nothing UftkaAta unload and lead him over in lfc.-^" of the stream. TV «iur wi breast high; the ox grew frightened, and with a plunge >>>baariacU leader off down the stream to the sea, •olaattaaloatofbotikMattaadM seemed inevitable, and to wade after them could not be done quick enough even if the depth of water

would allow it. I wai but a poor fwinnær bdbie 1 arrived in this colony, but my practice euwe proved of eaamrial benefit in thie m- stance; a few mpid itrokec brought roe befon them* and by dint of shouting we got the ox round. The poor fellow who took thr bad waa nearly ftTha»tcrf; being as often under water M Above it. in imaia- onenoe of the thong by which he had bold of the ox K~v™»foa; «*. taogled round hia writt. During thü time the rein had coaw on heavihr, wetting everything, and on ranting to drink our coffee we fix. and the water wet atlt;—eo that this waa the moat rhwriaw night (with oaa tingto ctception) I spent on the journey. Sleep wee out of the question: we wete oJbao to the river and the aae-eowe kept up a bet* lowlug all night. The pauagr of thia river we* indeed moat disaa- truoä, uul we bad two day»' jnumry before we ahonld arrive at the place appointed for toe wagon to leave our tint lot of pv»visions; luckily the neat il*y eforded ae a good wpply of meat, aut doj** el* two or thr at kin* being pletilifv; the largo*, or " Eiland," U oaruinly the aonet gneefcl w u m i 1 know r, this (art of the world, sod it* fleah ia the beat eating of ail in* wild meats.

The otmnt/y *hen* bajMi to aeatme a bolder appwraaoe, the Mb larger, backed i i ibe dietanoe by a rang" of moantaaa* wnkh we «ej« evia. Wiatly apaf n i ni iag, link or «w beah QQ the ldt hand, while towawla the eea the tcaat *wtsn* gatacfed into deaee fiMeata* Ott th* Uaw arottd aa, whole *menm* of blae, pink, white, and fettow ttowen oooamd emy nuk ol two. cilher ia detanked beda or minfted logetaer ia the most pteaatag ineJaaioa. The Fea-palma, which in Natal an bat au- scrabie stunted taSaji. art *Imv mm* in native augnineem, Of tae herbaceous ptanu. I may mention a Urge white *Atitr*, two or three bright yaHear geiaiafe-lihn dwarf planta, a wry putty little ptttrpla *PUy gala*, a *rvrj* dwnif deep bine and red *Cfmylam**** thr tfimii beta named, and a larger one, several species of *Asclepias*, *Gladiolus pitta-* ^ md a gnea varietjeof the auM, ike dwarf hispid *Thunbergia*, •Urgtwhiur /MMtri-,tw«cwthmlemMnelOrehida,^of tae eei*. ""•rfcabla for iu large *tk*ma*+4»tmmdyello*teema* fta^f* «paUto the majority of J^ieVaeVaant three or but <• yilafc'i ••, ead a v«ry fin* white *Hyocyanus*.

>a the aBenomi of the easowd day iroai the Umlflaaai, we CRMaed the Umsatense, and •iught«rriTMaia«rc«peetit«tde;pit; great indeed was our astonishment Z^A iliaannialairiil to lad the wagon had

passed on and left m nrthimji We bowt>-r procured mealies, milk,
 and a goat from the Zulu kraal, with which we poehed on, the country ^
 hereabouts offering bat little inducement to ft op. IVor eeding over
 comparatively level country, in the forenoon of the eecond day again
 we wen •omcirlul tUrtled by the found of • gong, apparent ly twc, f
 thrae mike off. tnd oo obeervntion noticed the Zdw code* (<* all
 wfee towvtbthe wond; e winding Uuk brought ttttdami ly in sight
 of in erection which in Uwt portion muted t little surprise—it was
 eridenUy of oomgited bon; to determine the nwi ter we advanced, and
 found it a Mission Station, and d m t t « r p r ise found it was
 Sunday morning (we had loet a whole day in on reckoning) and that
 service was just commencing. We unloaded and took our seats on the
 ground in the midst of eome two hundred Woe, who were here col-
 lected by M. BohroeoW. a mnhms mimionanr. who alone tn tun midst
 of thie fickle people, and for from the eufnort of n vilization, maintains
 a poeition tn the good-will of Ok* by wh<w W i« eorroni ded. We
 were boapiUy entertained by him in the afternoon, «nd after foreing
 upon us eome ueeujHum pneenta and ••ing us much valuable infor-
 mation at to our pfopomd route, we Wt him in thr »•• „ ^
 our way again toward* the ma As our t«on wnt BOW tor »* «
 us it waa thought inadvisabli to contmrt the pmtHit of H W^ ^
 present, bt •t mther toeltowoAaionerandtraetto-iiAeinif
 eooJd be drawn from the knelt »e«nd - Mofwreroor «" re-
 ottsred wet, and 1 longed to be getting my coUeetion toget r. A day
 and • half brought m into a thickly wooded diettn nearly mid-way
 between the Un,m*eam and the Un«ir». and here two own were soon
 loaded anddeeo» tched homewards.

fltrange aa it may seem, I could not tempt aeftto* to aemf me in
 any way towards gathering "ls, etc.; they would not or could
 not conceive any man eo mottah — i give »»»y ino h valuable l
 as beads, etc., for the mere trash O ri l wmm) In natural dispo^ ion
 there seems little differ enee between thee* people and the lanto : —ey
 arp«iuaDy wefl made, HgH. ««*»• ad T%oroae whrnnmca, but v ^
 turafly prone •o indolence; they eel no Tab* on time, and h.i
 nothing to oarelbr except their «^0e. <b not wiah to mil th.
 denenmmee far the I a whit* mna*« «ervtti> de. A sense of at
 favours I am pe md M b a n i ly exists mong them, nnd eithrt
 the pfotprH of an J»««i*»r •• tbr oaly motive to eMrtkm. I**r the

Kalira they are mean, overreaching, and avaricious, yet they are honest and temperate; the female* do all the work of the kraal, except attendance on the cattle; the young ones are many of them handsome, but in age they become wrinkled and abominably ugly. In person they are clean and fond of ornaments, but in many habits they are extremely dirty. They make extremely neat baskets, and earthen pots to cook in; but the latter are clumsy things. Their own ornaments for the person, such as collars of beads, snuff-boxes, &c., are also the work of their own hands; nor must I omit a three-legged stool for a pillow (cut out of solid wood), and the snuff-spoon, generally of bone; it has three long teeth like a fork, to serve as a handle, and to fasten it in their woolly hair; the opposite extremity (a small bowl like that of a salt-spoon, and with) it they abend up snuff by the handful, and perform all other necessary operations about the olfactory organ.

The district lying between the Umaateoae and the Umgoa on the coast is very thickly populated; large quantities of Indian corn, sweet potatoes, tobacco, and Kafir corn (a kind of millet) are grown for their own consumption. The Indian corn is broken in a kind of rough mortar, boiled and eaten with curdled sour milk. This is the staple food of the natives to a Kurujiran, it is, at least, the staple food, but «*nc-SiuriUtKr* it becomes palatable, and indeed grateful in the evening' beat in the middle of the day. Of the Kafir corn they make a basalt bread, by grinding it between two stones and boiling it on the *nihnOnt haHni*. a», l fmm thr wtur <>TU lirr* a -liary, MUU. nu4 intoxicating beverage called "jua-;" the Kafir corn, by distillation, yields a spirit very like the T* — -» brandy of the Capo. A sweet Kuah is also found on the banks of the atraama, and eaten raw or boiled to sweeten their meals, And a small Labiate plant is cultivated to make tobacco — this is probably a *PketrmUm*.

The trees here manifest a majestic stature, and many new forms are apparent. The *Miconia* and Stink wood are still prevalent in the Pan-pabna more frequent than before, and they attain a height of fifty or at sixty feet, bearing fruit in *****». two or three species of *fesw* occur at intervals, and are usually very grotesque in appearance; *Sirtiitei*** are scarce. But *UerUocou** is plentiful in every variety, and several new forms exist. I may mention the following genera as most prevalent in the district, *Jmtkm*, *Spnm* (among new ones *Tritomm* (through the aperture)

wherever there are many, Chiefael oecaawoalh. *Chironia, Campanula*, I«M«, AU i, f'tUANmM. OnaUlaaWaM, ^y r a j M (t«o beautiful kind*), <tym\$*tim it all the aawll KIWM. Q*d* (r*rrl>), *Scolia, Ozula* (frequent), *Hib* The ter-

raatrial Orchida dcaert« i o n than * | » u | rtotrfe: thqr •• numerous ami verj kwit* u; in ay opiaitt thrc an naay ha* bill liUl* in- fcruw to UK moat iho*? of the rpipecyton* kift<b. I dOl k - to farvud a pood paml of neta, aw! ta p«INf» euHi»»»-rs may bare an opportunity of Jidfinff fat tWmwl»r» la the meantime a tUaiptM, bowtfff Wai, nay i mi ^ wow to gin tkam ta. attention

they ao wr» awht. Faacy then a |>Unt w,th the general character- tie* of an *tr*ry*. pradftng a tpikc of flower* aa large and as thickly- set as those of *Saccolabium guttatum*; often indeed measuring two feet in length, of a bright salmon-colour intermixed with as bright a yellow. Another with plaited foliage and a nodding head of some twenty bright yellow blossoms, having a deep stain of crimson ou the cucullate lip, in the manner and of U« size oC a *Deadrobian*. Again, a species * with fleshy persistent leaves and an erect stem U about two feet, supporting from fifteen tothirv. large yellow flowers, the lip blotched and lined

with h pala parpla, bavi»f the aaaaat of some robust *Epidendrum*; and othara waow white am] pink bfaaaou at a tilth? distance are easily mistaken for 1 lyacratha. Mufkd wuh thaaa ia oftea found a plant not less curious or beautiful, which I imagine to be an *Oreocochilus* {Hmw^ C by n, Hook, la, Haul L 115): ia hah its agree exactly with ifr that puaito; it awdaae* * tomwt a*m of ato a foot in length, heariag ftw or au vrr bnav pura white dotm, atirafii, about three iachn la dKavaV; it « waa^f fauad wlhuMi to a thiatia.

With rayafd m the avbar* «f Afra» tamatnal Ufchid* I «« could observe that the Mil 1 iamej lha aajhaal ayaffi*uh I to their native me- dium will be found in the bk» k alux ^l aw«U of marshes or water- meadows, to tapctt. l with ,tii» i*nd, which enters largely into the com- position of all the aoik hara, whara wa haw Miihiw, like the peat-soil of Katfaad, aor b than mach daaqrtag vagauhla maUar praaaai whavi these Chnhida an nmaty baML AU thaaa ftvai the oaaat an aujaet toaluog period of drought; aad aalaat vpeoaUj amrkad a» th« iaha- bitanu of twawpa» thia fact will bat* to ba bona ia auad* Tat dry season o toiooulj tatroa. (mm April to Ortobar, aad for uo ana U- towards the aad of thia panod thay aMQr ba aaid to W Mriartjr dry.

•ad being in moat cam but just brneath the surface would be folded to extreme aridity were it not for the shelter afforded by the thick te-grUtinn of herbt and grease* h\ * hickan they in i rounded.

In October the rains begin at first but sparingly, dew* however are frequent and heavy, and in November mid Itasember the grot ad be-cotaea aatnratcd; January and part of February dry weather usually preraiis, to be succeeded by even more rain than before. Most of the terminal Orchid* bloom at the beginning of each of these rainy periods, aad by the as d of May the leaves of such at are dmduous wither and die off. The mean tmiprrtare need not be high ibr the u, u I frequently find the eoatt planta running back to an elevation of t #0 or even three (hooatad feet, and sji this height <barp frotha an very on m->aoa in our wintej tnim . I fancy that gftjenhouie treatment. *with the help of a eio«e firmax* •» the oommeoenir at of bair g>owth, will prove all that t« Mrdrd, and to keep then rather Um dry than U naaal with bulfaa, during the torpid teaaon.

After despatch asr the two oxen belbn aatiouad «r crm-ed the Umgoa aad fauad the eooajtry caore UicUy wooded Uwa bat are; tiocs of a gigantic s•a Wiaff ffi^ nat, aad the baaa of sevoat day's journey through. rhe BmUmmt Ar«M« u acre naanakM, asja a darker one, which I think (ItaVftt M N t e lly, is a to toirrahb jOr»Uful. Aftrr a few days ffcwadmt little difference in the u««ttfet ation, and therefore pushed on, crossing the Umpongo, whence three or four days' travelling made an immense difference in the aauetl of the ooaatr. It here becomes flat, so much ao that laajaem are freqaeat atvd the baah it scattered about in detached patcht. increase, and if we eaa aaah tow e fifty miles furdr 1 I think il probable some aew fara* m tb** Caauty mt>t result; but unMoaaUsy oar cam show unmistakable •rmptosjBt of wtariaa; out. We bare now a good load, quite as much a» they eaa fi t on mix h.

Leaving the cattle on the U ongo to rest and refresh themselves, with two Ka «rt to take cvr of <» effects, I eel of to determine if possible the «tta«t of tk»» flat cHifitry taking with me the rest of the Kaffirs to carry necessaries. Three days brought us to another considerable stream, and two more to t)M head of Bt Laeia** Hay. Al scartiac I promised myself to reach this place, as I had heard sae fpetrajaaj aaaaaaaai we scenery, etc., •ad cvftaialy it w'ani helird by the rmlity: the hey it • self is about the su * «f that at Natal; the aatnta ia almost apaaaaa] by a bar; ao ataeh ao that it u v

Th« ocNDriy mB» Ucfc fnAm&j to the highlands apparently some
 thirty or forty mil* drt ant; the intervening lands being either level
 or a very r |f*dttal akma. Tbif* » plenty of WINMI. b«l ft b • « •» * " "
 as near the Umgra: the herbage is very rank, and the weather ex-
 tremely i' ami t... »! TliIAanli u-m itt *nmf rJrtJ- ...
 district, a • .. frtijiictiUy Nff herd* of (Uctn* iWnr arc oa» W inha-
 bitants of this pert, which v | M but m W-fer in h« lthiness, although
 the Ki-b m n wcta lo temper la* a t n w hoi it in a very agreeable
 manner. Orchid •, M l eipntod, am o« UM bieroJM, »od I feel ex-
 tremely v« wd At hsTiag to atop •hart »t» re the objects of the journey
 seem U» be tMnmiac; but -> tU o»n» do act CUM* up, > « a only
 suspect U*7 an »ot iwprot in^ m eoaditioR, I M ! themVifr th» sooner
 we «rt lhrtn b*rk to rookr bf iudes the better. 5Sow» wtj MIO*IJ me
 •bclU hart rrWAT.M two iUj»" toil cm lhc PM«aw>t, «wd • with Lem
 we start back again tomorrow lor tkr o in. Soesvh I saw it seems im-
 possible to keep a correct reck poin« of the Mm I hm s^{wU} lost
 every idea of what day it is; hwt OJ tti Kaffirs te U v^w we have been
 out nearly three months lh» m u.t he ftbawt th» Uffittiw* of Sep-
 tember, and as the rains will shortly W «KUn« b it will be ifOOilr¹
 ment to nt ofv some of ¹ tW hvfor Wtm bJbrt tWy ". ^ . *
 swollen. Adl.-«. then, tothr IUVI^SM, Lacia.
 On > ov rnmtl M IW pmta wh«R tW ascctt •• rr !. ft. 1 •* grieved
 to ftnd me (Wd MI two olhm m are sickly than when we parted; it
 became the ndbn iiBwiiry to •twndaw the bmH «*h»bk of our collec-
 tions, and, •ciflctiBg Mich ea ooiud br prvtsnd smwwM vmw we loaded
 the r«nainni«(hmiti. Uw|wirhii^ two mar* hou* wards with direc-
 tions to l •A fef tW «efnw« t«d if tWy MI m with it to ^ve the
 luggage tad r*urn to » ifminumi appoiatd | or utWo use, to make
 the be« of lb*ir*tt to Natal; »hth with U irfmBomoWt followed the
 ro«U to the hBW. T%i+ we i nwnipilAl n • forwifj*, epd the
 relief from the oppressive heat of the coast was most reasonable both to
 men and beasts. - I was adawad to uk« thu «em?ef a* I wished if pos-
 sible to «wUh tb* aptiac eeaaca «* UM highm*-s, and w k thr sum-
 mer btfor* me t nwid nrtnni fradu^h lowaM* V.uJ ta « • * we
 had bom quktly at «wk in Katarr't Uliontorr. M i l l m tht
 occupation ofovamghboax ». We bead oa attaining the populated part
 of UM coonry that a laafharj w«r ww raging between Panda and
 MM of tW tnWi on hi* tfcmtkr ant the Drachenberg; we were un-
 consciously involved in theawmt of the contending parties before we

become aw an- of it; and now a tctfond ahaariontng of ibr rveioitkft subject* of no nni'li foil wai preasingty nooewvy; but « f do nut wuh to dwell on this subject, suffice it to say that by disil of much i-alking •ad «ome tact we gat through wi th the los» of another ox (which we had to kill ami cat), almost a* empty-handed at when we entered the country. Tbc fate of the two oxen previously tUrtd homeward* also rated tome alarm. The heafeiat IOM nt this unfortunate m»: I estimate to be the HUMU, for *i we had entered the Zulu country in the middle of wiud-r, it wa» only I tUc Utter end of the journey U»t I was •hie to make any additions of the haul amftttpKact; then&re all the best were with u* at tin* time we wore oU%ed to lkmk only of awing oof liven. We were . honrrvrr, no aooiwr faidj cjetr of the beUiprrriU than we tel to work «guD* »ud M uoihing eiae oftered T had KM* « goodly eoDectina of bulU. which «re hew both oaawrotH tod ben aiful*.

AJ »e bad enmed tin* rmpofo, *od, to get L» the •ao«i * m « ble way froa the eMMt to the hill*, were obtiged to double the head of St. Lucia i*i Bay, I compute our n*M dtataot point on the Drachalberg range to fejrtr bora about i7 ; and the aviffage altitude at which w« made eollortinaa about SOW fort : higher than thu it «w useless to go, far Marry all the lime wt apart ia U»is we c-spenoKtU ibarp frmU at night, and in tW day were often w tw|*i44y eamloped in clouds that it wat daajpnMM to vtrture fir from ceinp. tmiuVa whivli lions are btra to BUawoua a* to be a touroo of coi tional anxiety. I'unuing ov way a» rapidly at th« ruggedwet of the country would permit, we •t length fell in with asmc natives, and from them learned we were Haw the MHiree of the 1'uirlla aad within a bundled aulat of Pietermaritzburg. Th it lifhteatd o«r tpttiU, whicft were by thii tiaw boginning »ome bat to flag, aad a wtoaaMB tupply of nMoalea and i.ilk did 'Uitr a* much for ov bodtta. I continue*! with the ba^jrap- Ull w ; ojune utusc more upon a high road, aud U» it we made the baA of the wy/hnmeianla.

February S?th, |*«! —H««« beard of the party left on the htU* they mi itopped by the watan Of Ovm ia the Zulu country I ««a ar nothing.

* These have arrived in England, and have been assigned l» Mi Samuel Stevens, 24, Bloomsbury Square, London, for sale. 4 mi of them (variation at the Royal Gardens) warn it ml)

Characters of some South-west Australian COMPOSITÆ, principally of the Saltribe GNAPHALIEÆ; by DR. ASA GRAY.

(Continued from p. 232.)

PTEROPOGON, DC. Prodr. v. 6. p. 245. »N. — Nees!

Char. Gen. Reform.—*Capitulum* 3-12-florum (raro 15-40-florum), homogamum; nempe floribus omnibus tubulosis hermaphroditis, sed paucis centralibus ovario inani sterilibus. *Involacrum* cylindraceum vel oblongum, pauci-pluriseriale; squamis scariosis glabris conniventibus, inappendiculatis, seu intimis lamina petaloidea brevi superatis. *Receptaculum* angustum, planum, epaleaceum. *Corollæ* tubulosæ, 5-dentatæ, rarius 3-4-dentatæ. *Atheræ* basi caudatæ. *Stylî* rami apice truncati v. capitellati. *Achenia* turbinata vel oblonga, cruciata, sæpiissime sericeo-villosissima; sterilia inania. *Pappus* uniserialis, setis rigidiusculis distinctis vel ima basi concretis conferte plumosis.—Herbæ annuæ Novæ Hollandiæ austro-occidentales; foliis filiformibus vel linearibus, infimis oppositis, cæteris alternis; capitulis corymbosis vel subfasciculatis, sæpius fascis, parvis vel parvulis.

This genus, established by De Candolle on a single species, with very few-flowered capitula, to wfcjdi « second, in some respects different, fa» Utrh htm added by St*ru, rwpitod to aan lai character not only corrected, M le tar rtnaitv* U IW ftomfft, hit considerably widened, so that it may be ucbffi iranl MUHWWJ nunn < which I find in the Hookerian Herbarium. It will not retain however the Chilean plant, which C. A. Meyer and Nees von Esenbeck, misled by De Candolle's having erroneously described "femineis," have referred to *Pteropogon*, Nees von Esenbeck giving at the same time a revised generic character grounded on the take*. This Chilean plant w ^rWWütK tW IWWM •p+^mUf* Cass.; wkkkfmy I perceive that M. R«*y « in Ann. Sci. Nat. for Sept. 1841 i KM -«——• •« I the *Gnaphalione*, apparently with good reason. The plants of my third section prove that Steetz has correctly referred his *Pteropogon spicatus* to this genus, and likewise jwu/y me in appending the † IV. for a plant which has quite the habit of t> rffm*m, notwithstanding the more numerous flowers and glabrous achenia. TV Ma section tends to connect *Pteropogon* with *Xyrideside*, Lindl., which has larger heads

* *Pteropogon Chilensis*, Meyer, Ind. Sem. Hort. Mm ., l. vi. (1839); Nees in *Linnæa*, vol. xvi. p. 223. *P. Andicola*, Nees, Ind. Sem. Hort. Vrestid. 1841.

and a more rigid (and *not bitrrutl*) pappus, and which on the other hand teens to be scarcely more than a Motion of *Heiipkru*, as established by De Caodolle. But my *P. gracilis* is »urdy not generically distinct from *P. pygmaea* nor dbaii B habit; ami *P. rmmomt h wry* Hneely all it*! lo it, notwUhfrtiiiidiig iu larger AIM! radiaat inrolocral appradagw. I bare been obliged therefore to diipow: the species known to me at follow*.

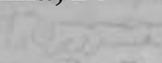
§ I. *F*tiMoJD**. *Capitulum 8-5-Uorum panuhau, intm folia in-Tolncnntia tetailia. Acbenk fertilu rillia aexfaeta confertissimis teota, »UH rvaribus achenio longiorib i« et pafrpum exterioran simulantib i»; fterilja giabra vel parcc rillota. Tappui eo rolla brevissime 5-slrUU iDtilto longior, alba*.- Name, capttuli* paueie corymbo*o> eoogoatia.*

I I* j\$jmmt (1HJ. 11.): involucri ftd «]iiaaui it timis append. lactea orata perspicua superatis; foliis filiformi-linearibus arenoso-pubescentibus drjnum yUbntii. Aoralibui cantulo dii'udio brevioritwa.*

P. australis, Nees in tinnam, raL in. |> SS9.

Interior of Eastern tuunh*, at KoUr« liaint, A. Cunningham, Bathurst Plaioa, *frwtr*—Ueadb a JiBce lo«a> *Wmm*, ibr ianrnooat scales of the torotaan *ti^ftd* viih * NMII but coapicwom petals appendage. Fertik *to+rt%* tw« or Uuv*. tka Umlr (*ram* «K to three; both hermaphrodite, and of UM aaaa «ln>ctarr, «uepl tkat U* style is perhaps rnorrr devdopad In the fcram asd the anthen *m* the lattar. As to «*ri*Uupw, in lbi» and «4kat wporitw, the bftrtife ftowm m u freqaeatly extarior aa ccutrm! Then are ooenonly two inirrtik lowtr* MM of than kaa tke abor *live on* in pcHrtJy (fUbrwu, U» other is usually sparse ly iiUou*. Tha*t have a f*p|M* of frwrr *ml smaller rays tlatt tka fatafe aWan, !'•«»»»• of th* frrtik achenia of twenty to thirty rather stout bristles, densely plumose throughout, twice the length of the corolla, tant* Uie kaa«tk of la* turbinate achenia.

2. *P. Drummondii* (n. sp.): involucri albido-viriduli vix fuscescentis squamis intimis appendice minima apiculatis; foliis glabratiss, floralibus capitulum subsequentibus.

Swan River, and interior of South-west Aaatnha, *Drummond*, 1849. —Plant two inches high, *nry mack* resembling ; the character given above expresses the only UMIU OI. \ fertile flowers «... or three; the sterile one or two.

§ II. HELICHRYSOIDES. Capitulum 5-7-florum, parvum, basi nudum.

Achenia fertilia pilis longis sericeo-villosissima, sterilia glabra vel hirsutula. Pappus corolla superne ampliata 5-dentata (dentibus majusculis reflexis) pl. m. brevior.—Caulis subpedales, capitulis multis subsessilibus glomeratis in spicam densam oblongam confertis.

- 3. *P. spicatus* (Steetz, Pl. Preiss. vol. i. p. 479): caulibus simplicibus erectis apice nudiusculis cum foliis filiformibus laxo cinereo-lanatis; involucri ovoidei squamis omnibus exappendiculatis, intimis flores vix aequantibus.—Var. α spica ovoidea vel clavata, basi capitulis infimis remotiusculis pl. m. interrupta, semipollicari vel pollicari.—Var. β , spica thyrsoidea 2-3-pollicari basi laxa composita, capitulis rufo-fuscis, caule ultrapedali.

Swan River, (*Preiss*) *Drummond*.—The *iiiumfw* W most of *Drummond's* specimens »rr «i*w-«Dbw, the cnroUai of the MM ha e; in others with short nib* they w redd wh-bnmft. tt«*rtj w «W» •> »* var. β , in M>hiff t he lobn of iht oofolk l> ave turned brownish or blackish, as described by *Steetz*. Heads barely two lines long. Pappus whitish or fliwi, •tmncty Mil equally ptonni, but vilfc ihortar b*ii» than in *P. fgmnn*; UM M4» W l|» fattilr f flowers sixt <a to twenty, a litt It thortcr thau tko ctmJW, in the Ornlr •faovl half its length.

KIII. ACHYROCLINUM. Capitulum 8-12-florum, parvum, basi nuda vel glabra, interdum omnia fertilia.

dujn. Acton p«w birwtuU Caulis ramosi, capitulis fere omnibus

uMluvtAtu ihffiTirn1»Hi in nMrmhniu oDtncMiluiii tiiiwiitif spicam sensim attenuatis planis cauleque corymbosi-ramoso laxo lanatis; ca-

- 4. *P. intjwliiiM* (u. »p.) (bliw MgMte tiiiMfitM a faatt ad capitulis breviter pedicellatis; involucri fastigii squamis intimis breviter alido-appendiculatis.

Swan River, *Drummond*.—Darling Range, South-west Australia. Fascicles of the compound

•orjwb t i -iphalum | tW cyliiMlnrfou* M 4 « I iIM* long, slightly conspicuous a uloU Upt of ti uvobrr as in *P. spicatus*; the pappus a io /*. M M M < CocoU*, oil strongly plumose.

- 5. *P. polyco* of twd»r u. fourtoea anguste linearibus planis a basi ad apicem attenuatis ramisque diffusis tenuiter araneosis demum glabratibus; capitulis fastigiato-corymbosis longiuscule pedicellatis; involucri straminei squamis omnibus exappendiculatis.

Swan River, *Drummond*.—Resembles the foregoing, but is less woolly.

the head *alt rowpicnoatlj* pedicellate, and the *in volaaral acaks* an all destitute of (*wialoid tip**).

6. *P. JWVM* (n. sp.): *falii** *anguatfsaii&c* *Knearibua deoraum attenuatis inferioribu* «*upalhulato-lincaribiia nftmitque limpliciiuculu glaberrimit; capital!* pedioellatU in oorymbia panria oonfertii; inrolocri ferrugini* •*quasi* omiibu* e xuppendiculatit.*

Svaa Ri «*r, Dnwmm*, 1843.—A *fpu* or *lm* in height, from a slender annual *roo**. *rttUrrlv* *glubroua*. *rappn**. *rtc*, *aa* in ike other species of this *fN-iion*. < *r lln* *deader*, not »*lila*«< above, *am!* *ininui*« *i*» five-toothed, *a** in *UM* *firat* *aectio*n of (*b*« *K*«*U*», *aboal* *ttw* *length* of the *pappus*. *lehaaal* *mmut. S; Imiri'*.

- § IV. ? *Pmorooosiopai*. *Capitulum* 20-40-florum, *parrani*, *folia bnca—ntia aeiaile, aabhatcrofununi; ae*«*spe* *Hot* *ibus extenon-* *baa ooroUa aagaatkm breviaajme ft-4-dentata, rt anUwnt tit vidHur* *cassis, mtmonbo* corolla brevtatiaw 4*5-deaUU, centri til»u» am»-* *sterilibus. Involucri aqaaaai aaaaa, ntiba?quafet, truaea* AoWaJa* *glabra. Pappus aovali sublongior.*

7. *drimm* (n. sp.) *Mm flaibnaibaa eaalOmaquc nuooataajaitt dt-* *quantibus; in vdaorj animaja laa|aaaiiuiih'.*

Swan River, iMummomJ.—*Hani atmmt aa* *inch htfh, fmiug a de-* *pressed tuft. Heads* •*abaoitory at tha and* of the tawrdad braoohMi.* *one liar* *long. Involucro* *tmmnooi* or *fcfTupaoiia*. *Exterior aWitra* *with an almost aliform raraUa and «tth th* antacn porhapa abortive,* *but always present. Pappaa* of about ten *aat*», *plunwwc a* in the *pre-* *ceding section.*

- § V. ? *HELIPTENOIDES*. *Capitulum* 10-15-florum majusculum basi folioso-bracteolatum. *Involucri squamæ pluriseriales, basi incrassatæ rigidae, intus appendice petaloidea breviuscula radiantes. Achenia sericeo-villosissima conformia, pauca centralia subinania. Pappus breviter plumosus quam in § 1, corolla 5-dentata paulo longior.*—*Caules erecti, ultra-spithamei, capitulis ad apicem ramorum solitariis vel ternis.*

8. *P. gracilis* (n. sp.): *glaberrimas, caule stricto superne parce ramoso oligocephalo; foliis filiformibus, summis capitulum bracteanibus; basi scarioso-dilatata appressa in squamis involucris ovali pluriseriali transcurrentibus; appendicibus petaloideis squamis intimis duplo brevioribus lanceolatis.*

Swan River, *fhummoni*, — Sterns low! to sit ioc^{baa} high, slender. Cauline leaves US inches long. Heads S lines long. Military or gemmate at the tuatnit of the stem or of the simpks^s filifurm branches.

Ex UW anafes of Iks KM a-flowered eylindraotoy in Toluera ferru-
ginao-nucous, nawiawio am mat, ovate, awniinata

h a abort and yellow radiant •ppmriaga. Ae^{benia} and \\\^{pus}
•mailer than in *V pffwutm* and *I' Drwmmemlu*. On ^{scle} not more
rigid, but with a snorter plume.

9. *Wnmom** (n, ap.): sohflaber; eaule fmiuaianinto traoto; ranmlis
apice % B osfiaalis fcHaMaa linaan*Altlnnibsjs Mibglntinosis; invo>
lucro demum campanulato extus foliis pluribus ^{tevinns aretr brae-}
tantai x aanmia isjftmua sn&andioe oblooca aosanii ma radjaatabtts.

Swan River, /Jn«a W.-Stems ft-10 inches big)i.Jrodr r Ilc«k
rather Mailer than in tnc last, it-aWand. The fanoteant leaves art
spreasrd, and imtlr*-r an external inrotorre; Us proper involwaml
scales an pale, in few series \ Ike inner bearing a yellow radiant ap*
pendage of its oI a length. I'appiu with a rather ihortrr plume than
in t be pfsjeedMC.

A«ROCLINIUM, nov. gan.

Capitulum multiflorum; floribus omnibus tubulosis hermaphroditis.

sMiginalibtn fertilibua aaituis plomqoe araborU ^{im}

r. • r Hm .[• nnuMiiniUtui n I .iri« ri.4i« - •*iu.'iin« ntmonbu. chr

taccis breviter scarioso-appendiculatis, interioribus

dra radiantibus. *R§€tf4»cmtwm* a baai Uas ncnta <woieuwvrlmee*
-
to subuWto-productuji, fsjsjsntws, tstowionjntasi, ambit u Mbalvaolatum. (*broiU* confurmes, infondibuIan-iutmioMk, S-dentatia. *J-Utrm* basi brwiter btsebr. % ^ rami 1 fertil. iipam iruncati bro-
vi<sime annkallati. fl. steriboai aijwles asd bravii>r»» trj l>r»u*»ⁱⁿ.

Achenia fertilia turbinata, pilis prolongis confertissimis niveis sericeo-

vi I I O M M U M, atarilta exteriora asrwaa, intariora sensim iwwia g*abm«*
eallo basUan obtiquo. fejysi prraklsus, a paleis sHiformibus rig*
10- iO bnsi wbeoncrstis, t. fertil. dansa pw«oiis; Latanttawi-
orihassppius paiioinribns («-11) minus plamosis npiat nudis ««l
pisji Pitts t « htnUas* band lanate j eanli bw • radie» aniHMi
tiluntnia • JnMflnbtfttM^ttiftta^aT^ntfn^naBtilftlM • fnlnfanj pic* inonoarpftaos.

Utrm basi brwiter btsebr. % ^ rami 1 fertil. iipam iruncati bro-
vi<sime annkallati. fl. steriboai aijwles asd bravii>r»» trj l>r»u*»ⁱⁿ.

Achenia fertilia turbinata, pilis prolongis confertissimis niveis sericeo-

vi I I O M M U M, atarilta exteriora asrwaa, intariora sensim iwwia g*abm«*
eallo basUan obtiquo. fejysi prraklsus, a paleis sHiformibus rig*
10- iO bnsi wbeoncrstis, t. fertil. dansa pw«oiis; Latanttawi-
orihassppius paiioinribns («-11) minus plamosis npiat nudis ««l
pisji Pitts t « htnUas* band lanate j eanli bw • radie» aniHMi
tiluntnia • JnMflnbtfttM^ttiftta^aT^ntfn^naBtilftlM • fnlnfanj pic* inonoarpftaos.

Utrm basi brwiter btsebr. % ^ rami 1 fertil. iipam iruncati bro-
vi<sime annkallati. fl. steriboai aijwles asd bravii>r»» trj l>r»u*»ⁱⁿ.

Achenia fertilia turbinata, pilis prolongis confertissimis niveis sericeo-

vi I I O M M U M, atarilta exteriora asrwaa, intariora sensim iwwia g*abm«*
eallo basUan obtiquo. fejysi prraklsus, a paleis sHiformibus rig*
10- iO bnsi wbeoncrstis, t. fertil. dansa pw«oiis; Latanttawi-
orihassppius paiioinribns («-11) minus plamosis npiat nudis ««l
pisji Pitts t « htnUas* band lanate j eanli bw • radie» aniHMi
tiluntnia • JnMflnbtfttM^ttiftta^aT^ntfn^naBtilftlM • fnlnfanj pic* inonoarpftaos.

Utrm basi brwiter btsebr. % ^ rami 1 fertil. iipam iruncati bro-
vi<sime annkallati. fl. steriboai aijwles asd bravii>r»» trj l>r»u*»ⁱⁿ.

Achenia fertilia turbinata, pilis prolongis confertissimis niveis sericeo-

vi I I O M M U M, atarilta exteriora asrwaa, intariora sensim iwwia g*abm«*
eallo basUan obtiquo. fejysi prraklsus, a paleis sHiformibus rig*
10- iO bnsi wbeoncrstis, t. fertil. dansa pw«oiis; Latanttawi-
orihassppius paiioinribns («-11) minus plamosis npiat nudis ««l
pisji Pitts t « htnUas* band lanate j eanli bw • radie» aniHMi
tiluntnia • JnMflnbtfttM^ttiftta^aT^ntfn^naBtilftlM • fnlnfanj pic* inonoarpftaos.

Utrm basi brwiter btsebr. % ^ rami 1 fertil. iipam iruncati bro-
vi<sime annkallati. fl. steriboai aijwles asd bravii>r»» trj l>r»u*»ⁱⁿ.

Achenia fertilia turbinata, pilis prolongis confertissimis niveis sericeo-

§ I. P. ppt palsv apias olgnMnlea, 1 fartiL ad afsMntMqMc dis»sr|4'»

moese; ll. ataril. a> pice penicillato-plumosa, inferne nudiuscula. In-
volucentia appropinquata ovalibus oblongis; Mvca a mir rmdiana,

- A. *mtdtieauU* (a sp.): flaberrimum; foliis brenbttB (2-4 lin. longit)
anguste linearibus vel tuberculatis; involucri
fau! scarioto iquairnMo; receptaculo * bad lata apiculato-conico.
—Variat a, nutui involucri laetri*; ATM*Ua involucri (Uirescentibus
et suberuginosis).

Si on Hirer, *Drummoni**—Stem apan or man in height 11. Heads
infructu, nearly as inch in diameter, including the spreading tubu-
lous rays, Pappus rather long rather than the involucri. The uppermost
the man of white hairs which to deoae/ clothe the achenium attain,
in the outer and truly fertile achenia, to more than half the length of the
pappus.

2. A. *rwitUtm* (n. sp.): folia h'tteari'lincwnliitti ar • is caulibusque
tenuibus guuKhdoao-puhenUa; receptaculo <i>uwi in oculo tubu-
lato-pedunculato; radiis i&Tolnari cam<<annulati roeaeia.

Between Swan Hirer and King George Sound, *Drummondii*.—Stems
3-5 inches high. Ur* or lolitan. Leaves* 4 to 6 long; the
uppermost smaller. Urculi more than in the pappus, Knit
achenia clothed with rather short silky hairs; the pappus of more
setiform slender hairs, much longer than the corolla.
The involucri of tubular into a turn and sharp-pointed
column; the achenia of tubular, achenia in the pappus species,
bear the MHtfa. in the tubular ovaries, while the truly
fertile flowers surround its base.

- ! I' appi palea modice plumosa apice setiformi-attenuate nudiuscula.
ruUr j, I. *tenl, conformes sed vix plumosa.

3. A. *pygmaea* (n. sp.): glabrum; caulibus simpliciusculis superne usque ad capitulum sessile foliosis; foliis lanceolatis, floralibus majoribus oblongis; involucri pauciserialis squamis intimis breviter scarioso-appendiculatis haud radiantibus; receptaculo conico tuberculato.

South-west Australia, *Drummondii* (received in 1850).—Prof. Lindley. I doubt not that this species should be associated with the foregoing, notwithstanding tk* differences indicated.

CEPHALIPPERUM, nov. gen.

Cephalipperm multiflorum heterogamum; floribus omnibus tubulosis, mar-

ginalibus hermaphroditis fertilibus, centralibus abortu masculis. *Involucrum* turbinatum multiseriale; squamis omnibus tenuiter scariosis, exterioribus appendice brevi late ovata seu orbiculata concolore (subhyalina fusca) abrupte patente squarrosis, interioribus appendice elliptica petaloidea (lactea vel flavescens) radiantibus. *Receptaculum* nudum planum. *Corollae* conformes, infundibulari-tubulosae, 5-dentatae. *Atherae* basi breviter bisetae. *Stylus* fl. fertil. bifidus, ramis apice truncatis brevissime penicillatis; fl. steril. indivisus v. bilobus, apice penicillatus. *Ovaria* lana longissima crispata intricata tecta, saepe extricanda, centralia omnino abortiva pedicelliformia. *Aclesis* MMgfatttl abort!*, longissime hmu. ?*&** fi fertil. duplex, nempe exterior constans palea unica parva auriculiformi ovata inferne setis piliformibus numerosis corolla dimidio breviorae praedita, interiori paleis setiformibus circ. 4 corollam sequantibus mox deciduis basi filiformi nudis superne sensim incrassatis barbellatis apice dense denticulatis apia barbato-plumosis, et palea exteriori minima, in centralibus ad coronulam cupuleformem nudam reducta.—Herba gracilis •dbpnUl, glataU, • radba •rila—Ih, erecta; foliis alternis linearilanceolatis, radicalibus subspathulatis; capitulis plurimis ad apicem caulis dense congestis glomerulum subglobosum nudum formantibus! Pappus apice nigrescens.

C *Drummondii*.—Variet a, appendicibus radiantibus involucri lacteis; ft fj, UTMift U siccis subserugiosis.

Swan *Went Drummondii*,—Tfcb remarkably distinct genus is allied, no doubt, *Heliopsis*, ttawgh *Acroclisium Schrenkii*; but is abundantly distinguished as well by its curious pappus w rt» yli—if i aapalaji. 1W Hkaaia sad aborliv ovaria are enlarged in ilTmrt Inirrirajali mass by the extremely long and crisped «o«i wilfc »aaA tary ata densely clothed. The short and stout bristly aa»« wakli fcmn la* pU»e or tuft *t the apex of the longer pappus are recurved or crisped »Bfn An Tbr heads are 3 lines in diameter, exclusive of the radiant petaloid appendages, which are of about the same length; «ul the fionnuk they f**m » un tork m diameter.

CONANTHODIUM, nov. gen.

Capitales multiflorum homogamum. *Involucrum* cylindraceo-turbinatum, pluriseriale; squamis coriaceis gradatim imbricatis, exterioribus

oblongis vix scarioso-marginatis appressis, intimis linearibus paucis, lamina parvula angusta petaloidea radiantibus discum paulo superantibus*. *HeepUu%lmm com* vexum arcuatum epaleaceum. *Flora* omnes benftapkitxltti; cotoUi* tnhnlmw 5-dentatis. *Anthere* basi caudatae. *Afcfff* IMU apra minute ifiiNikli. *Achenia* (immatura) oblonga, crostria, sessilia, glabra. *Pappus* uniserialis Si setosus; setis capillaribus rigidis denticulato-scabridis hut inter ae inequaliter concretis. —*Frutex* ramosissimus, Unogioc trwmof CHJUCO; fcln» alternis linearibus subpetiolatis scabrido-hirtellis, ramis monocephalis. (In volucnun nnduituu; Umitai tqaattuirurn itUnnarani htdem. (V>rolla lutea.)

C. *Drummondii*.

Bwrfh - mi AttfUmliA, Thmmmtoml* 1 Bft(L— A Bhntli ApfumiUy of «an-
melet.

bttls, whrl, arr »MH> •• inch in 1 onfflh LwrM teWom n inc i long. t«Q Ittm *i«kt, w m mi iimnih. ilw uppr #uHWr p p ly somewhat viscous; the midrib iwpiwwJ tlx>rr iwd ttnwyty prpiiamt beneath; the lateral veins obmnr, tW surface of ttr lorf. in the dried specimens, somewhat b«Lit*. TV rmptiib «n ranvtabk for Umr coriaceous ales, gnroufc, «it h wkiftidb tnnqpot, o^jf tW innermost, with their narrow f-^,ii;iut t,' «. (M »ll* At kll if.yi 'U< 1 he pappus consists of much more rijpd «ebe Uun U>n^ of IM**ijm~ TW MUC nllu«k» to IW (idt*rsely) xmtml »b«jie of tbr mpihitiMI, calM »»y Ehrhart All cathodius.

As rtftIPIA, AW/. Tfy. Ann W?. p 24.

Char. Om. mcL—Otfiimtrn muttiAanmi humipmam. ft. rsdii uni-wUilw lijr«Uti, futnincik, nuo tubulosis, limbo ampliato-diformi, antheris ut videtur cassis d >uiift; dud hermaphroditis. Involucrum hemisphaericum, post anthesin patentissimum; squamis numerosissimis pauciserialibus fere sequilongis, exteriori'«• subulato-setaceis viscoso-glandulosis, intimis angustissime linearibus margine scariosis apicem versus villosa-fimbriatis. Receptaculum epaleaceum, planum v. convexum, tuberculatum. Corolla disci tubo gracili elongato superne leviter ampliato, limbo 5-dentato vel 5-fido. Anthere basi caudatae. Styli rami apice conoideo-capitellati. Achenia oblonga, crostria, glabra. Pappus 3-10-setosus; setis capillaceis corolla sequilongis vel brevioribus basi nudis vel nudiusculis superne sut barbellulatis*

aut plumosa.—Herbæ forte annua, pl. m. viscoso-pubescentes i d
pilis mollibus ramentaceis pulverulentis, primum floccoso-lanate;
caulibus erectis, ramis ramulive monocephalis; foliis alternis linea-
ribus semisimplexicaulibus, imis subspathulatis. Ligule et corollæ
disci in siccis concolores, ochroleucæ.

Asteridea pulverulenta, Lindl., certainly belongs to the *Gnaphalio-*
Leguere r» ftftd Sto*i lift perhaps with foof reason uk* it fo' .

species of *Athrisia*, otherwise a South African genus. But on the
fltttCT Mftf], It OtMn iRMt t**< MMfMHv ft*** species of the same region

«wN inUw«Bto» of the pappus being barely *barbellulate* above (scarcely
toort »o tlwm in prnui»»r ./rtr* » m these they are truly plu-

mosæ. On the whole I prefer to associate the Australian species under
Lindley's name, to the alternative of reducing them all to sections of

Athrisia. 1 am obi.r^l to ftdmil ft d w n d »jwv» «W». IW deformed
marginal corollas of which, however, show a manifest tendency to

which I
b*»» not v r a Bat ikr • AI ^ B of Uw L< Irf MC M U to hl*» a lateral

Biaalf* 'nd tW «nfdb» to I* tmifara ««d b«rriy five-toothed, the mar-
ginal anthers.

§ 1. ArrtmiDtA, /< W Pftp p setæ 10, superne crassiores barbello-
latæ tantum. Corollæ disci 5-lobatæ dentibus brevissimis.

1. \ >fffcj>rMlfto, Undl. 1 c. *Athrisia australis*, Steetz in Pl. Preiss.
vol. i. p. 452.

11. PYDOTHRIXIA. Pappi ttlr 4-10, superne vere plumosæ albæ.
Corollæ disci limbo profunde 6-fido, tobb linearibus vel lanceolatis.

* Capitulum radiatum, ligulis elongatis. Squamæ involucri ex-
time itt setam longam attenuatæ. Pappus oonU> paulo bre-
vior.

2. *A. multiceps* (n. sp.): nana, lana floccosa mox decidua tecta; cauli-
bus plurimis e radice forte annua parce ramosis; foliis lanceolatis,
radicalibus oblongo-spathulatis; involucri lanato-villosissimo, ligulis
plurimis; pappi setis 5-10.

South-west Australia, *Diamond*.—Stems rather stout, IhfM inches
high. three-fourths of an inch »» diameter, not

including UM numerous linear-lanceolate ligules; the latter are nearly
toothed H lbr apex.

3. *A. fnafti* (n. •>): a caule gracili e radice annua simpliciunculo
ff*hf ii fa—nUi kftt tenui arancosa caduca primum indutis; in*1^

tori squamis exterioribus * L.ii. duloso-hirtis, intimis * apioic icUee- vil-
 loii»; liguliv 5-"; pti pi setis radii 3-4, tici 5,
 Swan River, *thrmowt*—Stems 6 inches high. Heads small; the
 mtolucrv only a quarter of an inch in diameter.

* * **Cujiitulum** dUoidflum; florihu* omoibiu hermaphroditis, sed
 pauci» iu nrabitu NL* pua corolla apice amplius u diffonni *-S-
 lobata a»ihem ctftiU clanota. V. ppus t*rUlir ditct «4-
 longus.

4. A. *i/rif/u* (ii. ftp.): tomento itppittao Uttliaft oooeoao*«ol&lo oano-U-
 nati; oaaliliuu c n<lice fus ifuruii erectis simplicibus culit; foliia eao-
 linia anguste linearibus; involucri squamis pauciserialibus glanduloso-
 villosis-barbatis, inlimu ulto medium
 paberafe, c&tefiarilnu «pMo
 villosis-limbriatis; pappi 4-5-actoso.

Swi. ... rly half
 an inch is diamter. Lobe* of ilw ooroQa lanceolate, or in Uw am-
 pliate marginal liiiv* r» mat*.

DIOTOSPEHM4. SOT. gen. Melampodinearum.

Capitulum pauciflorum, heteropetalum. Aoribus radiis 3-4, femininis,
 vix ligulatis; disci totis Lem, ittdmia, abocta maamlia W « M
 simplex, uniseriale, e wiu*mu S-^ mmi»*itih»< oyhvohkMMia. mm-
 caviusculis, membranaceo-herbaceis, margine anguste scarioso ciliato-
 limbriatis, per anthesin flores sex tantibus. *Receptaculum* parvum,
 planum, epaleaceum. *Corolla* 1 radii Utbo brevissimo oblique tran-
 «1o itt Ufukrn •liaiiMi »p*or I-lfiwiUfyhNiti vix ex ptuuio, itylo
 <uo brevior, prtwtmt. dim 4/5 at hiformi* pamcv t:Uml>di^ni, luutto
 3-4-loba. *Anthera* ov. Ir*. cooual*. ceittdit*. *Mflm* fl fan. bi-
 fidus, lona ttBcaf*4bi0awi i varicatis glabris; fl. masc. superne in-
 crasse lui, affilp affptiu iaaBqsali* et bilobus, lobis subulatis hispida.
Ovarium fl. masc. lineare, exovulatum; fl. f»»M, achenio simile sed
 multoties minus. *Aclensis* involucri superantia, *b eo
 prorsus discreta, obovato-subtrigona, apice bicornia, nempe explanata,
 obcompressa alata; ala suberosa, crassa, arcti (ut achenium
 subtrigonum ventre profunde sulcatum appwri). ad •(>»» late
 truncatum in auriculas hirsutas prelongas arcto-pat. ttlti producta.
Pappus nullus. *Cotyledones* obcompresso-planæ, leviter incurvæ.—
 Herba pusilla e nectce anuiu, Bu
 laticaulis, hirsutata; caulibus gracili-
 bus, diffusis, ramosis; foliis integerrimis, infimis

superioribus subalternis spathulatis vel sublinearibus; capitulis minimis, ad apicem ramorum solitariis paucisve aggregatis.

D. *Drummondii*, A. Gray (in Hook. Ic. Pl. tab. 855).

South-western Australia, *Drummond*.—Stems 3-5 inches long, weak. Capitulum less than a line long before fruiting; the scales of the involucre not at all complicate nor **iralnaf the** female flowers. Ligule, if the slightly expanate upper **put of iW** obliquely truncate corolla may be so called, shorter **much shorter than the**

suricles of the ovary. Ovary **ark* of tW** disc wholly sterile, bearing an **in *|w** . . . * singular ascidium becomes fully a

luw «K1 • lukf ta Wutjl», rrry »ttdi mnaiditf iW involucre; it is more or teat kmate, with bain wktHi *an mftoto* * **» apex; the stronger Uiw of lae wtfiet- are glinnaiifal r. TW

m aUfs; and MMaaU fruaji tW tin*, ba* they become thicker as the adMausai Rwt«R*. th~ ivo uiounnd atwudttM

into vkitb IWT an ntwkii ibmr, aiv aall •» kaag aa the ascidium itself.—T >ajr« as is • ^t—UynlnUfi to ffrUayw, HtoeO, *)

West Australia. a. MHI wyauiaij to lu» A/ir^aaiBaai, whu* m described as differing from

serial involucre. But n it aaid to Wave tat- iavt4ucnl « C ^ M pUf»«r »" * involving the female flowers; and the ascidia plano-compressed, not excised

«t IW apa or *ua anything like the singular **mr** scales of the present plant. Both genera should doubtless be referred to the *Melan-*

podinae-Partheniae.

Notice, by <<# Rrr. CHURCHILL BABINGTON, M.A., of the LICHENS collected by Dr. Sutherland, during the Arctic Expedition of Capt. Penny, in the "Lady Franklin."

No. 91. *Parmelia elegans*, a. *missata*, Schær.! n. 338; on limestone, line 4.1 UruU. accompanied by other lichens in an imperfect state, among which are, as it seems, *P. pulverulenta* or *opulea*. V. h. (barren), and *P. (Lecanora) vitellina*, Ach.: also the scattered apothecia of another *Lecanora*: likewise another lichen (without any crust) which I have also gathered in the Tyrol, which Dr. Montague (in list) considers a *Ferrugaria*, "belle et bonne espèce nouvelle," but which recedes so much in character, that it seems to me rather to belong to Fris's

genus *Limboria*, judging from the description. Collected near Assistance Bay

No. ♀ comprises the following lichens.—*Parmelia* «&£*»••, Sehf.! *UdSm* jsgywyawn, var. *comfy* w, Fries. *L. atroa*tU, Ach., Fries, (hypothibpntdomiiMniecraaaOfdeodriUoo). *L. lapicida* t Frir*, ex descr. *L. noys*Wm, Friaa et Auct pr. p. Abo another *Tridm*, which appears to have changed colour, seemingly allied to *L. layffltoaaltj*, Schar. Like other lichen* in an imperfect state, one 0/ which is perhaps *Urceolaria* acnpQM, Ach. *Ijtrutea* *coutipu**, rar. *cabmr*w, Fries. *Par-«Mlia* *aitramiata*, y M/**, Fries, Assistance Bay.

No. ♀. *P. trmfim* *afmiia*? Ach. (very imperfect and barren), mixed with *P. tApaae* (aa above), fertile. rrioee Alfred'i B^.

No. 107. On a piece of bone, oaed aa as hnpfatmoat by the Eaki* • a n, there are sojnt fragments of Lichen*. *P. oftuda* ? baifcn; and *y<iiwia of *P. wiitilmn*. Cornnaltit laltnd.

No. \$3. *Proiotocm* *mtmtk*. Asajftancw Bay.

No. ♀, ♀. *P. rmi4i*pu1*nl<mt**, Ach., w. Fries (*P. ptyrm*, Ach.), on mo*, barren. Also *P. Htgmt*, Aek, f<i ile. Al-o / ^ / ««w r»- *Mfaat, Hook, I lofpoae, but have seen DO specimens.

No. ♀. Very imperfect, possibly spoiled *Lecidea* *geographica*, Ach., in part.

No. 28. *U. M<earw* *jja«4sr«a, lloffu. *U. proboscidea*, a, Fries, two forms: one smooth below, and the other hairy below. *Parwuita* *stygia*, var. *lanata*, Fries (*Cornicularia* *lanata*, Auct.).

No. 48 *cosayriar** ihr sollowiaf Nnh—a, ooUectod near Cape ToHC *Gledonia* *resgiferina*, Hoffm. *C. pygidata*, Fries. *DqjkmM* *rwfaaa*, HOOIL* young state. These grow on the ground, •alted uskfwg ««ctj ntWr; aU barren. There is likewise a mere mortal of a n n w masvyw*, Fries. Also *Um* ^SMSPM «W^a, F m. Summ. Vtf. 8can I. (*U. - 4<M. a, ejund. Lieh. Eur.*) var. *faewftw*, Bab.: ayuls>w.M at Ant res—Ming* *Lecidea*, then tubercle. Iflted, DFTtr frv nt<l or much papUUM ia the prrwrt fine specimen >1 margin F>UMT thin, wtdrr «»!* pak. biarkkh atwtl thrum-bilicus, with bnaehed pale «hte«, wfckfc Uwaw darier ia age. AUo *Umbilicaria* *hyperborea*, iloffjM.. two aUtaa, tefik.

No. 9t. *UnJm* *rm*mtm*u*, *rmr*. flaaieaa, Fries, o* earth, IcrUk >Wu if 11 *lAwiwmlmiU. w fJrlrmJm*, Prk*, frfttk. Both from Asaaai-
! Bay.

Interesting fragments of other lichens accompany the specimens, which resemble *Paraselia fulgens* and *P. coarctata*; but the remains are too imperfect to determine with any certainty.

BOTANICAL INFORMATION

Intelligence of Mr. Spruce, in a letter to G. Bentham, Esq.

Barrá do Rio Negro, Nov. 7, 1841.

Two nights ago reached me your letter of July 22nd, and also the Indians I had been long expecting to take me up the Rio Negro. I am now hard at work packing up my collections for you, and arranging "negocios" for *Urn* « « m i.

It is no use taking Negro, and, except a little *WHM* I u» kyiftg cwt tn» ttkolc form- in prints and other fabrics of cotton, axes, cutlasses, fish-hooks, beads, looking-glasses, and a host of sundries. *Tha In A o k ^ of OHM UITQI** a serious t««a of iitoo, bui Iften » so ftUciMC^e.

We b«d flftd nein Uulj frwa I'm* i Siu*b>*ur>tft vmrl, Ue Princess river, of her cargo was recovered. Miller went out in a boat from Pará to see the wreck, caught a constipação, which excitement aggravated into brain-fever and speedily carried *Km off*. I W.« MI4 t word from the young men iu lift mnpbj. ftwl 1 kaav no* whether the business will be carried on of fertbtoitit wo«ft4 «p IM «iU of course learn Iron ^singlehurst .. .11 .. t., *. « . . . usual. I had reason to expect there would be on board for ftw a case containing drying and packing paper, jars for wocufent frntU. and several other things, sent by Sir W. Hooker. 1W((Mloarii fNftt, ftflfKCMII; «fUw fruit-jars.

Poor Millrr « . . ray IM jwng » » . HH! U» b«* to » » is irreparable, m W « . to m dly to io Milking 1 MH crca I o putting himself to inconvenience. He was a schoolfellow of Gardner, and was stationed •i Afsmti when Gardner visited that place, where he derved him great assistance.

I a li mmtk nVI^iil fi i Mm uripfi An; noufU «!»!» »Uk-b you favour « . on ft^y Blurt* viU • lways be thankfully received. WI U**

be kind enough to indicate the Natural Order* of any new genus you may propose, in future? I see you have made two previous remarks of the *impotacta* n. 92 fig: one of them, / new* *ialni/tor**, but of the other, / *fHtrriJtor**, of the *UrtaJUv**. I noticed slight differences when I gathered them. The Indian* any that not a single plant of the apt. M found in the Malo Virgnai da terra firrae (*CncaUI*), RW\ I am certain that there are indeed many more.

Since an Italian* I have travelled about more than at any time in the month of May, and I believe you will find absolutely nothing common. In May, the flowers of the wet Matoa, not # term was to be seen in flower in the forest, or *r*pmn**, but I found that at Uwt teaon particularly the twinning of «br Oaptt began to Aowor; at the mouth of the river and the inland wharf angle between the Rio NV^ro » «Km quite gay with *!*ty*mi+_t Atrtq* Solimões, etc. The flowers of the *««po* do not flower until the water begins to rise in them. In this month too I went down to the mouth of the Rio Nejrro (about eight miles below the Ram) and immediately there I found it a very good station that I had to visit in the morning. I then had an Indian earpaatu¹ vaaai 1 anaajmi to construct the cabin (*folde*) of my canoe, and in the month of July I took a barrow* there and waited until the cabin was completed. There were many small streams in the neighbourhood of the mouth of the Rio Negro, and the Uio Nefjo and Hnfraiofc. You will find in the neighbourhood of the mouth of the Rio Negro, and others "Month of SoliawMi¹" the fanner plant* «r la*ctl by *i~* wakr_p* and the Utter by *oUfr*. A day on the banks of the Rio Negro, from the mouth and direction of the *lanr* na% lantaaat a»an otaBpasv wn* the Solimões for depth of the *rain and rajiiLiy nf cuninv*. It may be long before any one exposes the *aanmaf afnW* to aathnr tht law ataata I got at the mouth of the Solimões—such a place for snakes and ants in the

must be taken care of, warn* thimiaaiti of anBaa of tmeatare inundated. Amooic afaatai Aval la* faajaa> at tan aonih of the Rio Negro, some of the *iliihialilil to* a «R Ihan la» Cn>** —T. a tmi I had heard spoken of the *liroanaout the Aauooa*, but could not see it with a previousity. It is apparently 4 times as high as the *mt« niaatf feat high'* It is the river of June I had an *csfUfwjoa* of the *hrbmik*, my daaU.

nation being Manaquiry—a small river and lake of the same name, lying to the south of the gnal river. It is accounted but three day** journey from the Barra, but it cost me a week, with foar mm, m atroag WM the eomnt in the «rry baigl of the wet sca- •oa, aad ao little wind waa than. Notwit' alaadiaj the slowness of the voyage, I bond collecting vary dataU. Although we crept along shore we wen rarely acor enough to pluck mny flower* I sometimes stood in the prow with a long booked pole, aad whan we came near enough to reach any twiner I * made a pomt' < it it: in this way were gathered a remarkably finr i^orymm, a l« rusa, and several others; bat, I need not add, in vary anall oaaati?y. It w • oary two of three tamaithr we were ' parado " long moagh daring daylight to enable ma to penetrate into the Gap with the moatari*; yet in this way I got the few oarioaa eqnatie* in my coflartinn, a egenod apaniM of your new grant mifrfafa, and MM othrr ihin p the by*, ou little VkyUMtkm*/mtatf wa* than in inaadaww: an yon *ore that the embryo of th» b *ra»laMaiai f—there ia awmirHnhi aaoiajy. * ^ the laMt, with Hfdrochmt is.

\ bad great difficulty ako in drying my paper, far. not to apa»k * the nun, daring the whole woak of the voyage m *w mm Im* •** the drying had to be done oa board. Bat when then WM win it was difficult to Mean the paper against being earned away, aad whav there WM none I oould *carorfy apnad it out » M not Ui be in tar way of the rowers.

At Manaqmry I paid a ri»H to a Saahor SSaaag (aoa of U* Colonel Zanni, who WM drpaud by the Bmthaa Ooweremaal to accompany Spix and Martian in the provmot of Pan) aad apest a night with him. He im BM 1^4 three aatanUeta pamwi Maw day* »* 'Mana- quiry; it is taamfcen B OMMU amy hmv got a«M of the same species as Martiqe gathand tharr TW whole ragtoa batwMa tar Madeira and the Poru* M a noted ooontry of Cacao*; fa the woods hahiad Zanni's house I BV two apaawa aew to mr, and got one of them in < wer. My ataj at Manaqoiry, aad the voyaga »Maat and b^k (the but or -eighteaa hoonI), ocampM ahova three waaka,tmt tl*wM*kar»»»» dreadful (Ming the mff^aad uf the WH MMOD). aad eo Ma**** mm both with ooOaatng aad pitoama, Besides I w *• q»*« <- T* for the ficeai ngfiattpa, aad I av maltitadM of treea whose mwap was aaw to me, bat which had not begm to show their flowers.

My tire lu> been i c<vx! deal interrupted of late, partly by illness and partly by nip rititcnriing the preparation of ray canoe. If I had foreseen all the trouble and expense attending (be latin-, t «) ould p^r- haps not have pur dbaaed it; Uut I hope to be repaid in the - grt*' facilit'et for woririi* on the voyage, which I have thereby secured. These fell owi Hill iv t work unless they are looked after, and notw but » akw Uiinkt of worki >g thrr > days togc<her: if«m>:penter can Htm »uf«irj enough in t* o days to keep "& u wirk, it hy should be work more than the two days?

I <ho*kl haw goac dim to f ari to grt ft nan to tup; ly Kin : '• pfe e but for 'he nan-licv of time. Then arc Kvrral frt* Unrk« aad anUattoa, accustomed to constant work; b<t i<>v ajoaa mcli an to be met with. The house-work has consequently l«0ea on mr ai«w, vK I think • y collection is superior to that of the <'>>nr>pot<lin5 awatha of bat te r, notwithstanding all drawbacks. The Indians do well enough in the field, when one ku... how to manage them. Humboldt, from some remarks in his 'Aspects of Nature,' «<nrtl ftrtt to h liia art. It doca n/t do to ask them to do uythtag «• * leal, hoarrar mac H moif-v. rtc , you may offrr for the pufcrwaatw of n . aiv waal invi ••Mwow-raa^yaoaii." ("Al baa aow ptomtnttr "); we get into our montaria, enter one of th >• tor«Wh. and when we reach the heart of the forest they are all alacrity to ch ab or «m down Uke ti m ; thr gathering g vi thr Iknren brina all tbu •»ile repres vkd a* a o o t vurt• te tif uBuanornt. As I fad no leMm fmui Parfc to lh« iMthor itics *•>« (no Ur&fth «ot><il kmvins **<> **>*) fat w*« taw tham a jr*t «'l a Half) I havr had to scid at far • Sa3 G-ilmW da Carho. ira for men—a month's distance , at k*at, ^ove the Barra. I e \ptv<Mt th«a several «ceb a|r , but I ltd arvi that all m are ill, nA I had abnurt given ip all rijactation of th<n_t wht a tliijiajiiTw! oa ihr aight of the 5th insuai. TWm an ftve gf thrm, ill rtnut fattoan, aa4 Ihaw-a-r-ranged" othrr two [MV« (oa« • Prttttttatt Iodias fm« Mope*****); m that, as my am goc* »d| water aaO. t hope to g * along mm; v 1 propose to BMt Sa3 (ralmrl n> Rrtt RvtJarpb . It is cartlf m. the «qaalor_t to tto midat of «aaraata a>d • wrmiii, ami fMight to produce aomelhug go-d. Th« Pidbrfwn thai grow im th« (alU :re a *^W artipjr ./wppoi t to the native • for IHHJUM of the ye v l

Copy of a Letter from MR. SPRUCE, addressed to Mr. John Smith, Royal
Gardens, Kew, dated,

Falls of S. Gabriel, Rio ... Dec. 28, 1851.

Dear Sir,—"TWi far ka t are advanced into the bowel land
without impediment," and before adventuring II* bib (where I may
possibly get a ducking) I seize an opportunity of sending you (Waal*
of I baaotifol Lythracous tree, *hka I collected oa t»y way up. H
grows OQ • sandy shore about twenty duka abfftv tbe Ban
gathered flowers of H « UM 1st of October. It I baWt is almost that
t4 faannauwia imJum, batt tba lawn» are still more showy, and as »
saw no tiw abet* twmtj-fivr feet high, a»I all we m rU l with flowers
almost to tbr gnwiiiU, 1 Uve BD dovbt Jtm wiU be able to *"
fear or fn fcet high, It aanaa to fa* a ?kfmmtfm»*. a aja
nuy traat to l'«\u») ar in ca 4nmu.»«- Uy iftnnuM give no idra
of t« batotj of tba plaat, aa l %aa takn 01 afcrr ; ai arhng them, and
t hej were m«rtt aaoMad bduta l rouW «• t them into paper.

I kit tbe Ham m NvraanUr I a, BM! reached here on December

Haant^.tnade flrtqaeat •Uypagi*. 11u«« dh«t •owe \$000 specimens
OK tbe »o) age —* couch gralar numW thm l iriad aft *ny pre-
nova voyage; and I an nov ocea|ieil m arnngjaaj lb«aa Car p*⁰king
ink. a «* »hid» I tbaU lrate bm tu he fcmmnW to IV. It was
«U otmer of tbia ntio (Soabor Maaaal iadvlo da la**« 8a«tea*»» of
potiee) who ant a*e It* <wl of tba tii BMB that aaayoagd my crew.
They were under DO obbgatka) to aaaaaj tagbcr tba) Uanaucer, I*It
they have agreed _____ I only let
them have a fortaigbi to anorb in ibetr ma>- It «a» no slight trouble

tbern* and tbea %• ba«r to pay tbaaa for the voy «^ ftwa, a«rf ^ he
tune tbay in e waiti <» RM> in tW Barm • (for they came on no quite
«janpaetatUy) aa »«U aa tor tba voyagv ap,)H «ra on those terms
I ««• gUr! lo gH tbrm. So it ;imrt»» i» |h* diftmtlj of procuring men
here lo do aartbtg, lbat l ihmknT fwoona* •ltogrtl er to Venezuela.

If 1 and pbajtj of fate Oicaiam b&, I pre <ow to load OM <* ^
canoes with them, take th— myself to Paris (a voyage down and u,
five w ati aaoata* t), aad tbaa aak theai Jut KaajaaH I colkld also
in farl praoyv aa aaaiial. wbUi ban to iiawiaihl' vi ly boat is

larger than most that ascend to *\$no Gabriel*, yet in the cabin my baggage and paper took up no much room a that then was only space for one person to work comfortably and had 1 maid with me a companion I could not see, but in Jimt p'rhiipi tttlf the Qmaber of apado MBii baton Uii i, • Ian Lban ii pint) trf nan lo u.rV. an active fearless fellow would be a great acquisition.

I should like to ascend the Rio Negro again, became 1 was obliged to kavo BO many fine things on its bank*. After passing farcettoa ahntt everything was new, And 10 many things were in flower that I *a» obliged to oblige my *elf to those which presented the greatest variety of atrurfuiv. Nothing like ihU ha* ever happened to me before: I was obliged, for instance, to shut my eyes to Myrtle*, Laurels, lagmt, iiiul wvrrnl olhon. Between the Barm and l'anauw-a t counted no fewer than 100 species of *Lenfku* in flower, and all but one new to me I. Yet of tin tc I only got a stock of four or five, for (to say nothing of the difficulty of preserving 10 many things) t found my Imliatu very difficult to set going again when stopped in the middle of tWr work. And when you consider the time that is lost in collecting trees—for your tm ia raitiy cm tbr *cr river's brink, but you have to «»* your way to its base with cvtlaMc*. and it has then to be cut in ai or cut down—you will UNIXIVUMI *by 1 gvti«raBy contrived to make mjr mlUviion. M hrti wr stofaml to cook o«r nisaU.

1 caeioae you two flow cm of a Lqpmiaoa* tne «hiek waa in Sown all the way up the river, and fanaol a great ornament to its bank it ts a *jeirro*trmo** (a moat remarkable guutt), but whether a ikacrifaesl •paeia I caoat say. The petah ait a Ana Uae tightly tinged with pwpf% and the ctluain of sUaHaa la mi; drre arc no pod* ripe %t t. but I ml] tr\ and arskl yov sonw. A» it uAca) Howui at Uu ftset high UeeOpforttllT an u&ducnlml feaua)with whuried Issnea •ttt A |.n.f(t,,,,, of pLk fasten thr MIC uf thae of la* (utgkwe i it gttm • aincty fret h%h I



In *ypt<y*mia* alone am 1 «l*»j»poii in the Rio Negro, I following is my Cryptogamic •Iwayi had my eyes open (or them. TJ •vsnmary tLu« far;—Kcmn 0, Moasca 0, Hepatic* 1(Uehaaa 3 or 4 *Wai lojaj apaalali o Negro? I certainly hoped something dd you hare ekpavtad this of th« Hi however, Utter of it In ;fan- of ihrae tribe* there arc, U

pkajtjr of JfaaW*aoaj on tW gm*r mfo vkkh pa* oat << *.* river (and, by il<< tor, IMIM |fc n*tv>tH<< very dangerous), but all, all dead and b

stences <<o<<r juU M iW m rr l a m ihc<<. tfcrt U. wrty << <<w' dry season, i>d an ncrtrt oTUR lbo S<<*ro <<< >>*irio<<>>*U t the close of the dry (<<MD>t Hi if J i,rr tk << UuW fellows shall not escape me. .. Ow ftwl is exposed to a burning sun six months or more in the

to* o not see why they should not travel safely to England to* letter, and I accordingly enclose capsules of oa* ,(iW hnjbBrf species. They ought to vegetate on stones (especially granite) barely emersed from the water of a tank; though here tWt never grow in still water; always in rapids or cataracts where water rushes over them.

I had wi itff* two <ay . ft* inun oy nwaja Wallace: he is at Saõ Joaquim, at the mouth of the Uaupés, a little above S. Gabriel, wit" vritai MI ay aootaar taaJ la* W fc>> aaml at IW pate* . death, ftjoai . auli<iMt k m , vakai bat m W d Wiai W> mA >> >>> of weak- a— that W> cawwt w> frow kw fcwairnfc m* <*****' himself. The jpmmm >H> Moaftl r. tU km* tall aW ta<t W had taUm no nourishment for some days, except the juice of oranges and

JMMr 1 r>mc to IV* lbr fn . W K* Negro have proved ill. twooftae panoM BH4ioa<<4 bi R<<<>r de's V. <.*.. Bradley and iu< lawJiriak, un ftnc yqaaf ano botb Wallace's younger brother, w<< (MM out froat Unrpoul <<kwi wtti aa> <!wd laal lf ay in Paris; he had gone there, poor fellow, to embark for England—took the yellow fe-

The Rio Negro might be called the Dead River: I never saw such a deserted region; in S. Isabel and Castanheiro there was not a soul a came up, and three towns marked on the most modern map I poss hate alUjftber dm^ymt+i fnw>> tk* lam <<C tW rniv We had

so attributed that I and all aqr p*oo*B . ntvttJ fcn nnt ir good health. The region of malaria ends <<t r7rf1B^fc ai*\ but tW poison is said to remain in the system some- times thirty days before it shows itself, so that I am told to consider myself not yet out of danger. I do not however let this in the least annoy me: I

m aot oar of UM farttirlnat to (an j> - i i<<i once em- barked I think no more of consequences. Mr. Wallace came up from the Barra more than a month before me, escaped the Seroens on his way, but the day he set foot in Saõ Joaquim he was attacked.

What « twauLifil iittl.' Palm is *Ma-iritm armala* of Humboldt! It » raiurkabl: for growing in (*tft**; and as I sit writ og I can .distinguish a cluster of perhaps fifty *teou on the opposite ihnrr. It is abundant on all the upper Kio Negro; it would fruit beautifully wiith you.

Ktc iua.fi Scat* E.

Obi tk Omrieil CbrnptotioM tf CrytiaU of Hortm Camphw*

The tw\ following ne<tc i «M fi.uc h«en jfivrn nith the account of the Borneo Camphor-tree, which a [tjM-<n<d at page Sou W *»y. of our present vohnne.—E. o.

19. HtiAtm HIM, April *, 1»'2.

.MY dc ar Sir,— I hare receivml tllir Urge <TjMnl M> the large frag- ment from Professor Miller, and will tn a few day • leave them with Dr. PONCJ for y<a. PiHsawr Miller lian rrfm d to Frankenber<'• paper, wording to win ch the crystalline form of Borneo I amphor i «a rhombohedron, which your crystal undoubtedly is not. He has there- fore either mistaken tbr fonn or taken it **n tm<t from wi else, or has described some other resin under the name of Borneo Camphor. The chem ual flnaapoawiON gircat nj ki n la

10 Carbon = 754.15; 9 Hydrogen — 112.3; 1 Oxygen — 100, according to the equivalents given in Rammelsberg's fourth Supplement. IWrt »brl her this is the composition of your resin ta uncertain.

To Sir W. J. Hc<Ar.

II. J. BROOKE.

Museum of Practical Geology, April 14, 1852.

Dear Sir,— 1 h^' t)x> phanut to atnj «m tag aoa)^W of tti Cry- talline Resin sent by you to Dr. Percy. Its composition is as follows:—

Carbon, 64.72; Hydrogen, 11.87; Ox 41.

I the quantity we have remaining, though sufficient to make out a few facts (of little value by themselves), is not enough to ren UT a dwtattftj cMuafatatHin poaahlBt aiwl Ian more so, that it appear poamawJ of may pw|wrtiw aUogrtfcer dissimilar to ti of its class.

r>v Sir W. J. I bate

T. T. PHILLIPS.

Ckrtn (p. SU), Rfemd to *f)#yr*r*+_t* i» a tpeeia* of *Symplocos!* and M Tr fti we can judge from the description *fntywmmi* (p. at 1), referred to .Vrtwrjr&w, u another *Symplon**; but on thii point we can- aot apeak with certai liuty, u we do not poaacu Heifer's pUnU.

Corynostigma <p. 21H) is A true *Jumew*, closely *Hir<| to *J. nervosa*.

Botryoropia (p. 220) it Ike well-known *BmrmgUma* amfrafajfr.

*8tr*h*>* (p. SSI) is ft *hrayt>ia%* clowl.v allied m, if sot absolutely identical with, ft. *cotymfnma_t* GriffT, and if liUltngttklublc from *Bra-* *graw** M |ffopo<d Iy Griffith, it shoulI Uie hi» name of *Asiphonia*.

*Hqntntittmf** (p. »4i), *QtamotXtj* ilrtwffiihid from *Mystropetalum* H bei<f IIWOTW, k iko *m plant npon wbidt *Mystropetalum* was founded. ————— figures and descriptions quoted by Phstt, wludi be «Mot Uf »r «*o.

Cardiostegw (p. S49) w A awe nriHy of »«tow *bn cleosa*, Guillem. et Per. .t or at uy r»tr • spedet my rkwrIt allied to it; ami Wobb has shown, ia tKe' Spiok«k GoigQ*«' (N>tr Flora, p. 111), thai *Brolera* cannot be lininpüU**! gmmclU from *MAkonia*.

TV ebafoi of rnae* aawog *Pip***** will ptobablj, when they are wottfc atfaftug, bare booa »nticked by MM|«dV valnabb Uboan on lb*t diflw^U thbr. TW *Mtidtmwtm* dwaibrii p, tW-tU will be bmd to be Okaattaed in a far anpanor *mmmm m* TdawrV adaafeabb i*MiDpapbuitWAwMlanb»8ai^eai *Naturelles*, third* «. ^ • ol. xv, p. U0(whidb ou^bi in poiul of fad to hare |inaajiiajpp omr the 'Epimelia.'

GRAY, DR. ASA: PLANTS WRIGHTIANÆ TEXANO-NEO-MEXICANÆ, *m eccomri tfa aUUctiem *{f Plnti* maik hg< iniaKt Wai* GRAY, A.M., - i X+mtMm frrm Trmi U> *New Mexico*, m Ut mmmtr md *astana of 1849. with critoat mix** <W cA*#i<r* tf otter «r» or interesting fU»U Jhm *Jj<nU nyww. ale. Part !.. Urge 4iu Washi on City.*

This is <*,,, df tboas fanportaal BMfliotn, wMob. Uke our friend Dr. H. fry*. • Nnw» Bot«aU> AaMrioaaa,' oww k» appavawo to tha^MSaaatk- •mm imCttoUoiu" aa<l eotnts twdar Uw Rr«ena b«ad of^M Borithavttai On wledR*.¹ It L-.vcialialof all* He ^prcw detected

by Dr. Wright, introduced to the Travellers, with synony-
 mous literature, in the form of a monograph, and many of the
 most interesting plants, together with beautiful specimens of twelve
 of the most valuable of them, of the PCMA of Mr. Spence. Mr.
 Charles Wright left Galveston for the Antelope spring of 1849,
 and there joined the United States army, which he accompanied to El Paso
 in southern New Mexico, as an amateur man of science, for the purpose
 of investigating the Natural History, especially the Botany, of that pre-
 viously unexplored region. His journey from San Antonio occupied
 three months, nearly the whole of September was spent in exploring
 the interesting mountains of El Paso. Mr. Wright visited Antonio
 in November, having added many new plants to his collection,
 which he had carried with him on the outward journey, as well as a
 large collection of seeds of various plants. Specimens
 of the latter were placed in Dr. Engelmann's hands for examination.
 The seeds were divided between the Botanic Garden of Harvard Uni-
 versity, U.S.A., and the Royal Gardens of Kew.

The entire collection, Dr. Gray's preface, will give a
 good idea of the vegetation, and consequently of the climate, general
 character, of the region. The author has appended notices and characters of plants gathered by other
 collectors in adjacent regions, especially by Dr. Wislizenus in the
 valley of the Rio Grande and by the indefatigable
 Dr. Gregg (since his death) in the northern pro-
 vinces of Mexico, chiefly from materials furnished by Dr. Engelmann.

The volume contains 146 large plates, and
 includes the following new genera: *Philactis* (to which
 of *Caryophyllaceae*. The new plants are: *Omphalodes* (*Caryophyllaceae*),
Philactis refracta, Engelm. (*Capparidaceae*), *Zaluzopsis frutescens*
 (*Portulacaceae*), *Amorimia Scheidiana*, *liancfc.* (*Ochlospereae*), *Mor-*
tonia sempervirens (*Celastrineae*), *Foulicera rupicola* (a new genus, con-
 firming the union of *vpf*Mod* *rirw**. that *Philadelphus*
 should be united with *Saxifragaceae*), *Santivellia Flaveria*, *Tymiphylla*
Grayi, *Nicolletia Edwardii*, *Lophomia halamifolia*, *L. rupestris*, and
 last six all *Compositae*). The Wrightian species in-
 luded here given amount to 418. We are much obliged to the
 author for his excellent work.

though coapicuoaa lor iU atat, *man** hitherto io Un cac»| ed the
 ey« of boUnUu m it. n«ive country; it « onCaxn\y •» «Mk lition to
 the number of the ^ro«W. tmt • ww fora, nutiripatiag in tbe flat*''*
 tive ebanetm of two thbes kitWrto ckarly ^^ratrU, hanM 'he
 flowen of *Ofptocvryn*, di.tu^ubrtl by tbr main of tkt tH x with
 the ipatfae, Mil tbe divisio • oT tW Utter into two cbamU rrs, but entirely
 di• rring (ran (bat grnu» in iU fret onnw, in vmieb it exactly re-
 •ODbkt n *Jmm* or ^ I M W. TV k^ » moit like that of a *Maso*
 or *StrriiUim* than of any *Anidm*, luvtnff a »UHII prtiole two feet long,
 and « toick alnmt coharroo* bMc. The uppminx stipule, which en-
 dotat the correvfnodutf kaf in ita carbar tUgo, if five inches long,
 aemoiDatad from a broad bate, with two *xtry* thtrp ke«U a n its back,
 and a <kep farrow ktatwvm th«A. TW anlben an unlikr an* thing I
 have Mm in Uii* family for in«tr«J of uprtuuK by umiuJ !*•••• each
 ulw ia furawhr«| with a long tlmdar tube, and ibw warwhlw a I ask
 or ancient WUr, from wnich I have draws ibe \$&* ic
 name. The fruit is noi barriad, t ut semicapsular*.

Nat. Ord. F.llr FNACEE.

HOLOCHILUS, genus novum.

Flores dioici. *Calyx* tubulosus, *integer*, *truncatus*, in squamis paucis bi-
 fariis imbricatis insidens. **fimffi** tubulo t*. fara ad avrdiuni tf
 re triplo longior, lobia ovatia oateaia pa4ml»biu. *Stamina* ""
 I. fu-ro. 6, sterilia, basi ooolbi inserta, iaUr ar kbara. a«tb-
 in»nt«« duplo brevioribus. *Ovarium* ta fl fain. naaMapaaw*
 (Ubrum. e-lorut re, styli 3, erecti, crassiusculi, apice obtusi, ovula in
 localis solitaria pendentia. -Arbor *mediocria*, *foliis ellipticis ve* ob-
 lamp* *Uui uttrnmniu apta oUmm acuminatis breve* l | poll.) *petiolata*
coriaceis fia6ru 4-5 pott. *Umfit t foU.* tot Fl ma «tt«» 'l' auti

* Mr. Law's attention, in Bombay, had been called to the same plant, for he says, in writing to Mr. Dalzell, "I had heard there was a plant which grew in abundance on the banks of a stream flowing from a sacred spring about forty miles from hence (Darwar), and not found anywhere else in the neighbourhood, the root (rhizome) of which is a most deadly poison, and often used by the natives for that purpose, so I went to gather it. The native name is 'Votamah,' which I have written down. I am very glad to hear that you have found the roots of which, I had thought it possible, might have been the same. I have seen the plant, and it proves to be, but your new genus *Lagenandra*."

(3 lin.), a nitarii, sessiles. Fructus cylindrico-oblongus, basi calyce trw»rvt& aucto \$mffull**_t, tier**_t, d*nf»_t pvtlknri*.

H. micromom.

Cross sit raro in jugo Syl«*in n»i, II. F<b. Mart. •.—G«tmu Macreipkh* primum, differ! caljrce integro cf ttuiina in floribiu furmiuru no* mrosiora.

Specimens «,f lht- tnr El fruit bIVO been several years in iti\ herbarium, but I never had the good fortune to det<A the flower until this year (1852); the male llown an still unknown.

No I, Ord. ORCIII DEE.

MALAXIDEM. S YIMVWOTUKUAJt.

Dendrochilum mama; mulfW junioribus foliosis, adultis floriferis aphyllis foliorum vaginis scariosis striatis vestitis, simplicibus ar- lanceolatis acuminatis ***** •aJbebntia uodotit pedefibM, lbSb geminis lexicaulibus basi articulatis, floribus in axillis alternis geminis b a p peUteeOitu, pm«atkii pftntfe subcomplanatis laciniis cumibus fnofrnttibot «|Ufillbui MHWU Ditr atibus roscis, II.:.!.« diam. pollicaribus.

Folia bifaria, 4 poll. longa, pr>ge IMMIU 1 poll, bta.—!n •rtiontMii in jugo Syhadrensi; fl Mart. et Apr.; f mctiaa cbrttum bipollicarem maturat Januario.

One of those singular-looking epiphytes, of which (be stalked J*a-drobia exhibit to tDny «unpl in this country, where e • be^hutiful and showy inflorescence seems to be tranirly eQfnft«d no an appar* utly wi (WT«| ml tifrkm tvif. TV is twig durin % tlir finl tar of its growth n of • tivtlr pm mtA dotWd vttfc k m i, fWat afterwards fall off, leaving only their vWat^iig 1 MM, vhirh nTt4op the stem in a grey, membranous T dead-lookin f covering. It is w)»« in this state that the p!»»u row des ri¹ 1 ii iirMMTimi - r l ill ^—if-¹, highly-polished, (XMf-cQ|a«f«4 icrvm. at tW « MI of« be third year, w baa llw P^u«* »»»* prrrrtr,) it* fruti. iac aMmbrMwa» «a«»tK« fell dT. »ad the •a dka, a«w aVwKa •pnttftiac ft«ai t be aw«v *> go through a similar course. The pedicels of this plant are rose-coloured, like the flowers; across the front of the OollMB* and below the orifice of the stigmatic cavity, there is a small crest, terminated on each side by a deeply-coloured horn, two- or three-toothed at the apex—these are doubtless

the abortive *tUmina*. Although the *ttnicUfc* of the flower is entirely the **i* of the genus to which I ban nfcmd it, %ull thr habit and character of the *io A o n m m* would appear to difaf troai those of *Dendro-* cfctai, and in thews *Utrr re«peati, a* I ha» c already said, are entirely Mauler to aunjr M M i i*, living to the aw age, and flowering at the same time.

DaWMQni

2. *Dendrobium ItoUwU*, Hook. (*D. funhrialaa, Ddt. mm Hook.*); pseudo-bulbis cespitosis orbiculatis rahk dapnaaia ralicoi tis epidermuk albtada, folu* pancu (4-5) lincanbva obtuaUiaeu lis mucronatis baain renua aHaplkaUt, acapo crnlrali eoKlarior tar ti apice florifero folio intiaw brctiorr, bncUu allenua faifuik eubolatie ovario scemli triplo loogionboa, fioribua 10-10 aocuadia .Uaminru minute af palta petaliama »ubwquabbtu aloatit acutU patentibua marf* glandalis la—fafu Mmi&nMtiA Imlmitn mmimlia dmmitt AnMiaf e oblongo basi eaneo r tubrcruialo madio aulealo tpiaa aargiae membra- uacca laocrrata rcAcxa alba tetainato.

Folia aopreaa (1-S) 9-4 pott, looga, *h* Itn. l*u, inCariora valde abbtu* via u. *Ftorm* i\ tin. longi.— Cn» cit in arbonbua ad Bam⁴ jhat; fl. Julio.

OB my ftrat galhiiriiig thu Orchid Fthoaght it waa aardy a rob«at »ancty of *IkwJntfm mmcJkiim* (aihi), ckaohbad id> vol. iii. of t^{tu*} iournal, but a Dearer nomination proved it to be a diettnct fpecie** The aar^ba of the peiab aad tejjak are beaulifully fringed »th capitate gland* ia a dowbk row, ^ hil_m*cn«D. A**<* the margin is naked; but the great—t dtatmotion U ia the tap, »b* h in *D. microchi-* U* k Leahy throughout, much aatruwai UiwaaAi the apas» and fur- vkM wit! two lubaraka at the W^{se}. Th.r habit of both plants is well ill*UmUtl I y Wrig M • looue*, No. 1642, which represents one of than, though I am really unabk to aay wbi< h.

t. I). *oJo4*m, caalibm] lurimis simplicibus pendulis nodosis pseudo- buiboa oblongoaeoj ressos monophyllos gerentibus, foliis lineari- oblongis obtusiusculis •aaflihtai, loribua vel axillaribus vel ad folli tergum eolitahia brere firtirehVilia, aapau* pruliw|ue subaequalibus MMohbaa MU>, labaUi tritobi lobo mtoawlio apiot lateraliter valde dilatato plicato emarginato, disco lamellis 2 carnosiss cristatis a baat usque ad medium notato.

GrcaeH in arboriboa ad Hani Gbftt ; fl. Au.-mMo.—Sprriw h abitu sin-
irakri, A *Mmcnei*, *Undl*, einullima.

Caulis sesquipedaba, gtabri, rigidi, duri, inter. *Ui* tubeaqvattfc**,
fimJubttlbai eeaqidpoUiafribtu gtabrb nilentibua rettiti; inter
pseudobulbos bUiuuAia 3-5, Bunum Wngiora, et ipice dilatata,
adulti ttoda, juniora vagtni* tubulom inmcatia ecartoiaa arete n*ita.

Folia coriacea, piano, 3-5 poll, longs, &-)£ lin. Utu. *Fbr* albi,
expansi 9 lin. lati, labello Ihui maculia rubrii picto. *IWic** *llas*
t KB. loogut, earn orario artirulatua, brteteb 3-0 acariotis acutia
Mf«ikmgb teeUta. *Gap**la* mBlu, oblu«e Vrigona, V-10 tin. looRa.

ThU curitma apedea la certainly vcrj 1, *facrmei*, and Uke no
other. A large maw of it wae found on • brack of Jfrijyaa-ai /a* Ao-
fasm on ttir S5tb of July laat, and the nW vt made tbtir appearaoc
oa the] Sth of A«gu»t. It a e is but one floww oo each bnueh. cm
thr ipexof the uppensnat or rnungnt b*Ib_t *xxl, vfcate i» wagtUr, ooi
(Mftaed to thr iuil of ibe Uaf, but aometinea at it* U~ U^mi. and
ofam ihere ia a flovcr on oae aide of the leaf, and the oral pn.dulous
fruit ..H lho othrr. At the apex of each bnaeh a new bulb and lea/
*n fcrming afimiltviMKNutj. Th point of the lip is dilated into a pair
of wing-like

I* the JIM-

Nal. OM. UMBELLU ERK.

Pe

Pastinaca fflia«M; ffl*l»r», glattoa, caul** rigido ps rum ranoeo, foliis
radicalibus subcoriaceis |<m»»r |k !.; 'k.»; jnnTsa';
raro integris saepissime profunde bi-tri-lobis, lobis obovatis mucro-
natis *isteperrimis*, involucri involucellique foliolis lanceolatis paucis
persistantibus, eaJ;en naifiav 5-dentato, ftwta Uu oral i vittis
linearibus inter juga solitariis inque asquilonis, commissura
tatae, vittis marginalibus.

Crescit frequens in graminosis prope Belgium.—*Caulis* 6-8 poll, ahua,
d 1-2. *Petioles* 3 poll. longi, fcilok pottieana, *Flora*

A smooth, rigid, glaucous plant, w th th« tott* Jyin g on the gnrond.
and if t*4 in flower or i ruit hardly to be t«a«ti for an *f'mLrMiflr**. I)r.
Ritchie informs me m a t*** that tbr b tive name is "K I und," bat
the nut u mtrn. «t»l has il" la*tc and twlour ef a mn

Nat. Ord. CRUCIFERÆ.

§ PLEURORHIZÆ.

Cardamine hirsuta, L^{fat}.

Var. *subumbellata** j t d | n A h t tote tirMttlt, canle Old otomo ramoso, f .i, [imliniiTi.rilli 5-7 petiolulatis ovatis obtusis *gracresnatis* bad ofattftii cuneatis terminali majore infimis multo minoribus, floribus corymbose-fasciculatis paucis 2-3 lat ides vel oppositifoliis, pedicellis fructu o bnriuribiu. NI^UM l»nr»nW •cut* sub-pollinaribus valvis planis.

Flores flavi, minuti.

Crescit in collibus prope Belgam; t. d fr. Julio.—*C. corymbosa*, Hook. fil., proxima, differt basi non ramosa, foliis majoribus crenatis, floribus nunquam axillaribus.

A reference to Hook. Ic. no. 686, will give an excellent idea of the habit of this interesting little plant. for ao MUMM r relationship or resemblance could exist than between t 1M^r *Cardamine* of Campbell's Island an' that just described. It was found on a wild wooded hill to the south-east of TUIpwn growing below trees; seed-stalk with wings, as in *Dentaria*.

Nat. Old. ASCLEPIADEÆ.

PERGULARIÆ. § HOYÆ.

Hoya villosa; parasitica, pendula, radicans,

filiformibus, (olu* W«ft prtioMt* hnranU* *triquetris* .? retusis carnosis pallidis, floribus i unculo brevissimo axillari solitaria vel geminis fasciculatis longe pedicellatis, pedicellis filiformibus, M^c is laciniis minimis »cutis, corol yr albe nitentis laciniis ovatis obtusiusculis margine brevissime velutino-fimbriatis, coronæ staminis foliis depressis obovatis rubris.

Folia l M pott. longa, 2-2½ lin. l«U. pagina superiore sulcata. Pedic-

* In his MS. Mr. Dalzell had considered this a new species, and called it *C. Belgamensis*. He rightly compares it with Dr. Hooker's *C. corymbosa* in Ic. Plant. t. 686, from Campbell's Island; but after an examination of numerous specimens of *C. hirsuta* from various parts of the world, Dr. Hooker is compelled to write *C. corymbosa* as a variety to *hirsuta*; and the present state, with corymbose flowers and fruits (for the inflorescence does not generally change into a raceme even in fruit), along with specimens from other parts of India, Australia, etc., may come under the same variety.

cellis 9 lin. longi. Corolla diam. 9 lin. In foliorum axillis sunt rami brevissimi, quorum intemodis valde abbreviate, et folia/aj<icu- late ridentur.—Species singularis. Creant in provincia Cnnarn, et in sylvis "Dindilly¹" dictis; fl. temp. ptuviali.

Heterosternum vrcroUitum, enule volubili purpureo puberulo, foliis herbacete glabris velutatis late ovatis acutis basi oordatis itaque lobatis, lobis betnirtis trinerviis, umbrillicis (bracteolatis) pinnatifidis; petiolo breviter tubulato, corolla trifida, lobis Wfmolata piceo bracteolatis 6-fidis, lacteosis Ktione Talvatis tinubui deinde minuto instructis.

CWvUa 8-] 0 lin. longa, basi teretibus, ore contrarto, extus purpureo-rubescens, intus alio-purpureo, fimbriis villinis; corolla Ucinia triangularis, 1-1½ lin. longis, dentes interlobos minutissimi. Corona tmmimta 5-plyua, folioli cantoria (gyvoategiaB operatibtu et cinm uin ntpulaji flflbnMBtibw) tripliciter boritoDtalittr titf^ii. nvarsiffia taterioria basi prominula, glabris Ugium atplerUnt^ apice dimlc introverso horizontali lobulato. Ariktr* prodi membranacea colorata, U irrnunatr, poiliniit in margin* gjrnottagu appianati incumbentibus ovato-rotundatis parum compressis medio laterali inferiore affixis brevissime stipitatis marjrioc ID tenure *la pludda inatnicti*.

Creant in colub—propa Batg f; 1 Julio.

I w. alint iduted to couwder t). is a rare plant as the type of a &* ifmtu, but on a rioter rrawinafwm I foood it to differ in no respect from Uttmvttmwm, eicey in the titkguUr form of the corolla; and Utta opinion «M aof «ffected efen by a oMtpariaoaf; with living speci Mmt of H. I'mUtekii, Wi^lt Il agrac* tlaO with tbr genus in the email number of aeck in etch ovan (twenty), for this is a peculiarly. Th* p«i mia t"» are oo to be mistaken, and ire rery correctl r BjwM in l«,.! wrt. Ir. Select, TO! \ In Martini* Ie have l»« "corolla ureolaU tel aolwoUU/* and the MM may be said of Hete H. . . . a.

(To be continued) at p. 247.

FLORULA HONGKONGENSIS: an Enumeration of the Plants collected in the Kingdom of Hong-Kong, the determinations revised and some new species described by GEORGE BENTHAM, Esq.

(Continued from p. 237.)

STYLIDIEAE.

1. Stylidium ... 5. flwf, HMM, in Walp. Ann. vol. ii. p. 1030.

Moist situations, Hong Kong. Comparison with specimens put by Dr. Utnber* of tU oriipMI Ceylonese species, I cannot discover any difference. De Camiolk't rktawrift, Ukrn probably from Swartz't ftgut< so f« inoamn tUt tW raMbto V>f«* » not in fact sessile i ataitdotiMt app^r that tW & *««.>. Wai from Silhet and ... ety, **** the leaves ttMftHjtooivluit Ur^rr •mlfmut r.

CAULULACEAE.

1. F*WiagtonU mtnmmhh*, A DC. Prndr. «d. vii. p. 3 ll« Canaan in rim-takfe. Plowtfti parpJc, in Pebtyrr.

2. ... A. DC. Prodr. vol. vii. p. 559. 3«0

H«4 nuiiin m Ua^Kaag. At ••futii i ky De Candolle, the inspection of numerous specimens shows that the L. trislata, Ham., cannot be specifically distinguished from the common L. trigona. The leaves vary from cordate to almost acute at the base, sessile or petiolate.

TW pin* ir»4Wrrd ty Mr. HiwU, «IM I Ud referred to Lobelia Chinensis, Lov-, » *n m Major CWi|4n>*» roIWrUm; mj specimen is however a» poor iht t it is ver I 4o«b4fiU vfcattWr my determination be correct.

5. FHjftodow grandiflorum, A. DC, Maoatfr. Cft»)«a.; 125, var. Chinense.—P. Chinense, liad) et Paxt. a fJwd. tol. ii. t. IL ... Chuchow MKW of DM uhad ool; t icrvfyte« to **** The first flower I examined had a th K-^tM OIW7, awl 1 «« ^ used to consider it as a tr ... hurian Platy-codon; a f

a nitre *siety*, nTO rigid in luibit nod foliage. The number o f HI* of the ovary is usually five, as in the Da hurian pLnt; the po»rion of the celb with relation to the calyx it Mill ui certain, and there are icamrh Mifficimt characters to separate *PkUycwh** generically from the larger-flowtnd *ffmAirleryut*.

i U« i.tobrrp* *afmlu*, A. DC. Monogr. Campan. p. 145.

Rue-field*, in Man-h. Flower* pale l lue. Some of Dr. Wallich's Silhe i *fwtfna dialribatad u (mpamtn (fTdtfmicrgia) *deitean*, i agree precisely with our plant, but belong prob. ibly alao to the) *V. agrestis*, which only differs from *W.* </eiuMM in Laving ooi rower leaves, and blue, not while, flow«n.

GOODIVUCRA.

U SOKVOU *buhelkt* U»u., rtr. #rUxa. — *S. aeridM*, Font., DC. Prodr. vol. vii. p. 506.

Rocks on *tine* *ea-*korr, growttlg ptrgnnoiw ly in l«i|e masses. Flowtrr* in July. Brown (Proilr.]). 552) had already indie ated the absence of ftii; distinguishing char; i - .! IntwM-11 \$ / ..>iVi HIM! S fc-n- oes except ikc |mUa«ai>, wluck inhaaa/Kajl opneaae k»i a hon to be very variable. De Vriese, who kaa aiac* worried «p tW gt»«t * with great detaU,, k»» pron.1 Uie *iri tity of UK <**u>oe mantiaM tpr*i<* of the New World (*S. /law*) with that of the Old World, and it is Km evide. l thai «4 oajr the •rr^ra) Jonaw <*«!Vn^d snfar cm aparie* bj Haace (\T«lf. Aon *ML p. 1055 i. but ako U>: *S. Plawieri*, *S. Than- lerpji*, and *S. SfMy«J»M«*, an- *11 vanetM* «f OM wid ly-spread mari- time species, far vhidi iKmnrf UM OU I inaawaa ttaiur *.- (>t«sj by De Vriese, *S. Lobelia*, is quite 'u"ci..', wi tbo«t tha **tifm of U« new on*, A. /u/rtwyr, pmpuaed by Hasoe.

ERICACEÆ.

1. *Vaccinium* dja«ur, CKAH. p., sp. n.; foliis ann|>rvirentibus, hv»- viter petio 4atu ovktt« aniti* •crrulatt* rai»ia|— p!*lw is, raco «nt simplicibus sub Uiiiubu* iucjuw., flairwlia 1»H atis, antheris cano-pubescentibus, «ur- biroatnkK baora <b-namr«tji *pu minute «n# actunwaU, ba»i m 10-l •cahu. — P%UJ T, Cfiur paffa. ramis adultioribus teretibus junioribus sub ^QgitUi. Folia 1-1½-pollicat». actunwaU, ba»i m petiolum 1-2 lin. looguai anfuriaU, Uctnum coriaom. *Brnwk* - xil-

lares v. subterminales, raro pollicem longi, incurvi, juniores sub-
 aequales, demum floribus cernuis subsecundi. *Bractes* nunc foliaceae,
 oblongo-lanceolatae, t-3 Im longe, plus minus persistentes, nunc
 lineares, parvae, caducae. *Bracteolae* minutae. *Flores* vix 3 lin. longi.
Calycis dentes parvi, acuti. *Corolla* alba, fere cylindrica, dentibus
 minimis reflexis. *Gestatis* corollam subaequantia. *Antherarum*
 tubuli loculis ipsis subtriplo longiores; aristae dorsales latitudine an-
 therarum breviores, patentes, sursum incurvae. *Discus* epigynus cras-
 sissimus, villosus. *Ovarium* 5-loculare, ovulis in loculis paucis.
Bacca pisi minoris magnitudine, curvula, dissepimentis spuris in-
 trusis sub-10-loculare, seminibus paucis.

Hong-Kong. A pretty species, flowering in July and August, and
 ripening to fratt ia 8n<ta*a), I should have taken it for the *F.*
bracteatum, [fcaaKbal that Zuccarini, in his detailed description of
 that species (Pl Jip. >W. Nat. sect. ii. p. 6), besides differences
 ia lat akt of tW ftovan tad I m t, tad ia lat Wagta of the racemes
 and petioles, states expressly that the anthers are without aristae,
 whereas I haw fcaad taaia la. all lk* tnwrn t ktvt examined, al-
 though •o aMtO tad ihty ajaj aifv aaaaaa vMtanal's observation.
 Tat ttaatei* rf t»« ovary tad MI woaVJ aam Uu» plaii atst to the
 sections *Bulodendron* kad Qpataama* of Aaa UIBJ, »tta neither of
 which groupes however doiWoiaar characters precisely agree.

S. AuVa Imjum, liaa.

Abundant and grows on the banks of streams.

3. *Azalea squarrosa*, UmiL iatn. Walf. «ot nLLp, 152.—Bot.
 Bag, IUF, i. 9.

Abundant on the hills.

4. *Azalea myrtilloides*, Champ. ia Bot. Mai. tab t 4609; fattt petio-
 latis ovali-oblongis ellipticiave apice emarginatis cum mucrone calloso
 basi acutis subglabris nitidis, geminis imbricato-squamatis unifloris,
 pedunculis hispida, floribus pentandris, sepalis orbiculatis ciliato-
 hispida, corolla sub-5-partita laciniis obovati-oblongis.

Oa lat RUCi Moaatoia, oa mrk» «.Ui .1 *squarrosa* and *A. Indica*,
 •raam a ««• ant tta fcy CoL Eyrv it Marca IMt. ta the article of
 the 'Botanical Magazine' quoted aWt« wfl br feaad « detailed de-
 scription; mistake as a
 Hong-Kong fawt, la« artkat J. i^N^taa ia Uw manuscript having
 been intended to a» taatttaaVai far iW o- *A. ovata*.

The *Azalea rosea*, described by Uidlty (Journ. forl Soc. »J. iv. p. i*41), it bettered to hare curoo from Hong-^oog, but 1 hare •MM no •pecunnu ftwn then«.

5. *Rhododendron M«mpknur*, Hook. Bot. Mag. t. 4609.

Ravines of Mount Victoria. TheHowcn an rilhrr white with the centre ochre with lund tpoU, or pinkish « ith ochre or lurid spoU.

Col. E: n? u amid to hate aion ditcorercil another new *Rhododendron* on Mount Gwyk, vkidl 1 have not wr n.

«. HukjinihtM fMfttajbrwi, Lou., var. *brrect+lfj*.—*K. rtti calatus*, UmU.—DC. Prodr. vol. vi; p, 783*

Ataodaat ott tac hilU. Thaw an ttry fine aknba of it in Uie f lappy Valley woods.

Tfca fiWjaWUijw^fonn, which 1 formerly deacribed from 1 Hind's ajirriapw, must he avppraaad, having bam founded on a mistake. 2 ————— perfect flowers 4 *S. amimcutjbtu** had bem mixed wiUi imperfect specimens of *Azalea squamata*.

UTRICE.

The aianhca of Hong«luMaf contain at laaat Cow or fitn *Utric- iari**>_t whiah appaw ht naiai all u> be wjurtfal with widu>j ayiad Eaat Ind. —Mk aaMML tJftWY Cnr mt* m lia***- f^utnui'iaJitl^i.via. 1. *U. Aaatia*, BafK. at tvhait., Wight, Ic. t. 1569; 2. *U. humilis*, Vahl, Wight, Ic. t. 1572; 3. *U. «r»J«*. Uai., Wight, Ic. t. 1583; and 4: (if I am aot aiiattraa ia the diliawiaiwai) *V. •tyiaiai*, Vahl, but the tpaaiataa of On huter are oW and harr loat thdr h t m, awd the aiamiwiina of *rtntmUri** tram dried apaaam b at all tuaoi •rwadtugly diftcul. To the abore moat be added tW *U. extensa*, Ha. •«*,«: Walp. Ann. vol. iii. p. 3, which it etitln tly dis la •*! «f UH (brafoiag. but which, from the deamtMB DTC*. *m* must be closely *H-d Iv, if aot KkaOcal •oh, the common East Indian *U. fasciculata*, Roxb.

PRIMULACEE.

1. *Lysimachia alpestris*, Champ., sp. n.; piloso-hispida, subcaulis, foliis rosulatis oblongo-spathulatis subobovatisve, pedunculis unifloris v. imis racemiferis, corolla late rotata, filamentis ————— sterilibus obsoletis.—*Cassia percensis*, nunc brevissimus, <btu« radkalibw* rosulatis obtectus, nunc quasi proliker ramulos seu stolones emittit



1-2-pollicares, apice rosulato-folliiferos. Folia 1-1½ poll. longa, 3-5 lin. lata, basi in petiolum plus minus angustata, margine integerrima et revoluta, apice obtuso, utrinque pilis longis articulatis hyalinis hispida et glandulis minutis conspersa, supra inter pilos glabra et denum granuloso-verrucosa, subtus furfure minuta pallentia v. rufescentia. Pedunculata folia squamata, uti calyces hispidi et glanduliferi, inferiores saepe scapiformes v. stoloniformes apice racemum brevissimum v. fasciculum florum foliis intermixtum ferunt. Speta oblonga, acuminata, 2 lin. longa. Corolla flava, 8-9 lin. diametro, limbo rotato 5-partito, laciniis filibratis. Filamento brevis, ultra medium coarsata in cupulam inter stamina obscure et obtuse 5-dentatam. Anthera oblonga. Ovarium uniloculare, placentia globosa multiovulata. Capsula calyce brevior, globosa, valvulis 5 integris dehiscens.

In subalpinae situatione, flowering in _____ species appears in some measure to connect *Amdn*mt** with *Ipsimackia*, having somewhat of the habit of the former, with the inflorescence and floral characters of *Ipsimackia*.

MYRSINAE.

1. *Mussa Sisensis*, A. DC. Prod. vol. viii. p. 82, var. *glabrior*.

Very common in Hong-Kong, flowering early in spring. Fortune's specimens, n. 151, agree more exactly with De Candolle's character; Major Champion's are less hairy, and the panicles shorter; but all the species very variable.

2. *Mussa coriacea*, Champ., sp. n.; glaberrima, foliis elliptico-oblongis integerrimis v. remote dentatis coriaceis margine revolutis, paniculis petiolum brevem aequantibus rarius duplo longioribus, bracteis ovalis, bracteolis lobisque calycinis obtusissimis, drupa globosa obtusa.— Folia 3-4-pollicaria, breviter et obtuse acuminata, basi acuta v. obtusiuscula, petiolo 2-4-linearis, supra denum nitidula, punctis pellucidis minutis vix sub lente conspicuis, costa venisque primariis paucis supra impressis subtus elevatis. Bractea squamiformes, late ovatae; bracteolae orbiculatae v. fere reniformes. Calycis lacinae orbiculatae, longitudinaliter glanduloso-lineatae. Corolla fere 2 lin. longa, alba, tubo lato calyce subduplo longiore, limbi laciniis rotundatis vix crenulatis. Ovarium calyci adustum, disco lato depresso-pyramidato. Drupa 2 lin. diametro.

Equally common with the U. Smmm, (Wmn« in fpmn*: It is reader dirtiturwbwl frmn ail spoon known to aw by tae Imt b»cry ooa- atateDr e of t it teavr*. i nd the t bort iaBowmow. I fonncriv rrferml it tr. tf* M. mmorwi, A. DC., tpeM appau i to have broader •od Uutmcr tesvoa, and a tlftaai ly shaped fruit.

3. BabetU A te. Barm--A. DC. Prod. vol. viii. p. 85.

Common in nrines of Mount Victoria and ihr Happy Vail ey woods.

4. Samara uauwfr.—Cktripiml** oAtmt/tm, IktuI. in Latod, Joan. Bot TOI. I p. 490.—C. MaMMJira, JUnct in WaJp. Ann. But »oL iii. p, 10.

A common thmb at West Point and V (Horia Irak, Flowers small, jaUovM-wkit^ somtfest. Tbe |MMM Ckohptimtm, l«., is reduced to Hawiia, Linn., on the aataority at Armrtt, ss quoted in Wight, Il- lustr. Iol. ii. p, 139, who hat ahown that ihr plate of Itunuaau. vaam has auaied awdara ho<aniria, wu enooMoaiy n&rml b? f Inaataa to hit Anaont. Tbe leavw in oar spomt raiy from oborale to oafeag. but they UT« SO ftvqncnty t tendaxy to tbr obonU fora Inai 1 sat 00 rsasott ftir chstftag tae tpoafie MOM on^inayy gtfm.

5. Myr angustifolia.

Hwaj fia^_ gtaaiug to • tn*, but iovan 0* Fcoraary) also at * shrub. ^ Tbi» ibrai oaljr differ* ATM tbr far. H, r*mf«. A. DC., in the a m i fasiag tataar loagar aad asfinwti. TW JUISUIW plaat rr- ferred by JSoittapr aad MofitM to (ac JT. aiaaaa, aad amial otWr «««). posed Eastern species, am* br sddod to (at nritiai of tai» pUa, if the Silhet, Nilgherry, and Ceylon forms already united with it are really mere varieties U the oncinat largt-Itand Kcpakat IT. capitellata.

6. Ardisia pauciflora, Heyne —A PC. Phid. *I viii. p. 127.

In ravines. Shrubby. Flowers aavU. wl ite, wi (« orange dots. I had at a n considered taai ai aav, ov OSJ a closer examination I can find nothing to distinguish it from East Indian specimens of A. pauci- flora.

7. Ardisia eWtM, A. DC. Prod. vol. viii. p. 134.

Victoria Jvæk and aar tb» BarfdJhif T temple, rare, flowering in July.

8. Ardisia punctata, Lindl.—A. DC. Prod. vol. viii. p. 135.

Abundant on Vict tons I % ai. ftmrnr i in June.

9. Ardisia Jussieu, Blume.—A. DC. Prod. vol. l. t u i p i 35.

In t p of Mount Vict-ria ID iuly.

ferrugineis franc copioait loogb uunr pajvfa rnm inrfitia. *Pelunculi* masculi brevissimi, •quanv's iricati* f. rrogeo-piloo» obirecti, *Calyces* dense et moUiter pOoti, fen t Un. loagi, Wiu 4 Utu arttmarohi. Cbrv/la all*, pahter TUloaa, tubo fytiadrieo eafav pavJo loogiorc, lobii 4 aw is. *S. fauna* 16, 4-«rriaU; JfcawU wjtor bfrti*, citrrion doayiU; attthcra imininMtg. *Omtk* »bonivi ndimeotuin partwu. *Fl. f.rmi»rt*: *Dorolla* ignoU. OMTMH (ex GWnp.) viiMUIB, bfloeiUre, OTHUI in loruli» toUUrU* jxmdulia. *SlfU* ad nedium coonati. A WM cuttooa, oblooga, polltoe brerior, obtusa, ex HI pikwa, abortn mootpenika,

Happy Valley woods; flower* in July and Aufttti fr uits in JJ^ST. Wiife aumc giuiiitl raawdlilaaw in foliage to *Vr li. ttrie ta*, Ro vb^ and lo the *Ommmtkm pil-mi*; A. DC., *U m wpcek** b tety different in structure from either.

STYRACEÆ*

1. *^yplueua Jfemic**. A. DC. Prod id. viii. p. f\$S, \wt.f *crassifolia*; *foliis* itageniiiui, mlvci* kibia obtaai* roliatu,

Mount Victoria. tOmibby. IV iaienaabMa ia in whiaaift fascicles, as in *S. tinctoria*; ihr lct*M iftiafc and afchiti^ t| to Si inches long, *vi wbamt* IJ IffoaJ. Tfc* •fcatan *er of S. >?***<**. at fpini in ^{twk} 'ftodroana>' crrtaiidy doaa aoi agraa with o«r apMiamw, especially i Q the MBMU aiaa attfifcirtai to the leaves, thair wmtatl margin, the pubescent racemes, aad the aeafo dKata aal jam % bu 11 be specimen of *S. f. ...* tfaaaA/ajwa* — A V •€.) — *er*, cated to OM by Zanoarmi kiamtf. haa the InioraaoeDee and «l vx of w Hiitin-Koot; pkM; the laavaa *art intaroai* ate in cta», • with here and there • few tanall iodmtuiw, ao that moat prnb bly all these forms belong to «aw vuiabta tptciaa, naanr iStioA to tht Averiou *S. tinctoria* than t» aay A«akk apeW».

2. *Symplocos* (*Hopea*) *mientmrptt i*h*mp,t* «f a., ft *berrima*, *foliis* elliptico-oblongis longe acuminatis vix crenulatis basi acutis, racemis axillaribus simplicibus v. a basi trifloratis folio pluribus brevioribus, calycis bfak lalia «b«aaia, dmpa parra aa*gk4»aa.—,*lar p affinis

* I • «t« (M Mr V-o) excludes *Symplocos* from *Styracae*, but his views of its affinities are not yet published in sufficient detail to justify the disturbing De Casselle's arrangement in a partial Florida like the present one.

poll. longa, $\frac{1}{2}$ -1 $\frac{1}{2}$ poll. lata, acuminata quam in *S. conchata* brevior, subcoriacea, nitidula, petiolo brevissimo. Racemi axillares, subsessipollicarum, saepius simplices, rigiduli. Flores in genere parviscaules, laud crebri. Bractee orbiculatae v. reniformes, squamiformes, saepe ciliolatae. Calycis tubus brevissimus, laciniis breviter orbiculatae, post anthesin inflexae. Petala vix linea longiora, oblonga, ima basi cum staminibus in anulum brevem connata. Filamenta non manifeste pentadelphica. Ovarium triloculare v. internum biloculare. Stylus corollam aequans, stigmate capitato vix lobato. Drupa globosa v. ovoido-globosa, calycis limbo coronata, vix 2 lin. diametro, abortu monosperma. Semina perfecta non vidi.

Happy Valley woods.

The *Symplocos sinica*, **•** et, **>** **n y** sent from the adjoining continent, does not appear to **W* b«e «|«i«MWnii u** Hong-Kong.

3. *Styrax suberifolia*, **Itook. ct Am. Itoi Bmk p IH** L. 40.

Rather common, **fem.n«•*****m will tew. TW** flowers, appearing in May, vary, as in other species, in **the wmbcf ci p** parts, being as frequently pentamerous as tetramerous. **T•* frmt, ftboot IW ^w of « IMMA-UH**, white, and sweet-scented. **frmt, ftboot IW ^w of « IMMA-UH**, splits into three valves, from globose.

4. *Styrax odoratissimus*, Champ., sp. n.; ramulis minute puberulis, foliis ovato-oblongis, acuminatis subintegerrimis basi acutiusculis glabris, pedunculis 1-2-floris geminisve supra-axillaribus summis racemosis, calyce campanulato apice membranaceo integro v. irregulariter lobato, drupa oblique ovoida acuminata a basi dehiscente.—
Folia membranacea, subtripollicaria, **lis S. Pariteriesi** simillima nisi glabriora. Pedicelli plerique calyce longiores, uti calyces et corollae pilis stellatis canescentes. Flores nutantes **lis S. officinalis** paulo minores. Bractee minutae. Stamina filamenta complanata, ciliata, juniora basi connata, supra medium geniculata. Antherae lineares, in flore aperto apice recurvae, breviter acuminatae, pilis stellatis conspersae. Ovarium ultra medium calyci adnatum; placenta centralis, crassa, a parietibus libera, sed alas 3 emittens cavitatem in loculos 3 incompletos dividentes. Ovula in loculis spuris 6, **t** **^** omnia certe ascendente. Drupa 5 lin. longa, basi rotundata et brevissime tantum adnata, apice styli basi oblique acuminata. Semen oblique ovoidum.

Ravines of Mount Victoria. A most **baonliM**, moderate-sized shrub,
 % BO MHU aO WHBBKWI M th< *S. suberifolia*, ami w«U deserving in-
 troduction into I hii rooftlr. It ka* much tk* appearance of *Desclia*
acabra; t» flowm, in April, an most deliciously and delicately scented,
 much raacatbtiag the prrfuaw of vfdcu It ia rririaallj allied to *S.*
virgatum / MfJBWB BBBB^ OEBV UW H n i an much smoother, the
 flowers lo ojafr, He. The Orala* an ail end, as deaorikad by Zuccarini
 in *c A J*p**imm. a ipooJoi in other IOBBOOBI iSlniaj considerably
 from own. The A. ayroafe, Uos, or />r<< ayiMaria, Lour., aMat aJao be
 nearly allied to 9. tabra/uMuaaM, bol the fruit is said to be attenuated
 at the bat* aa w«U a* al tke aa«x 1V Caadofie wat ndead disposed
 to reject the t'frt* ahnfrtkw foot *jf«x, a* hataaf, •routdwg to
 Lourviro, the " jrrenM» HJiiillal " %l m Mymr itadf ihe orw> ia, lo
 the present day, at M'quently f daanbod aa tajpatior aAer Ji nica, as
 inferior after Linnaeus.

(/; be continued.)

trier frnm MR. SPRUCE to GEORGE BENTHAM, Esq.

S. Gabriel da Cachoeira, Rio Negro, April 13, 1852.

The last Correo brought too your tail* of Vagm* 1*, 1851, in
 which you inform aw of iW atfa arriTal of atj eaaaa, M My principal
 object mvrttiaf aow at u> ia aora rm thai I leAaaaar of plants at
 Uanauka, below the falls of Sao Gabriel, 4* be daaaajahad to Paca by
 the fa* iBjaaHaaatj. aod 1 expect it will bo forwarded abort ihia time*
 In future you will I prtioablv Rvntv an aadiiur* w» bol small quantities
 •» a Utor tk* —^w— of Ma Va>da that aannU tki use upper waters
 not allowing of «bott ««« or two «nuJi»k cases being sent in them;
 but •"« «n «f oano kavp thoB by yo« until rou have «O0or4M
 s to distribute.

I found H • great advantage irwrUiaaj in BIT oaa> onma* I h#^ it fit-
 ted up so that I could work comfortably, and stow away my plants when
 ihv<*. W«idb« botef obit lo dry my paper MI the IOp of th# cabins
 P ^^^^^ #^ ^aj ^p inconvenient to stop (i i ^a^ middle of UM day 1 w*» affe*
 of wiy own movements,—could stop where and when I liked,—
 serve that it ... Buiiaaajj *- V~T A>" *">t_ u | | — " ———— When
 ta* .wUHV via t>ol Ury did i* - like to be interrupted in pulling, but

when ... ling under a hot sun they rather liked a stoppage
now an ... the habit

of peering **WtO Ikt (M I w M W<<* along in tW hot rfUIT—**
would call **O<t 4» ».—DM?** among my pa

f **straõl aikné** ("Patron!
1 of course **Um*i cwt to »r< if it VM** anything <<><. >.* often prov
to be.

Leythides were very numerous, and I had not time either to gather
or preserve all I saw. I hoped to get some of them here in ...

I cannot **<r a ^>fir rayll** in the Gapó of the **UIU**

all **tW M <p. all I <i<< tm <W** I could not tell ... * . . *

these they should **W i /t . . I** If I **L ^ ^ 1 I ^ ^ <m <ra l l t a a a ^ # <i A a a ' a a a a a a**
side **it a * U t l t i l a a ^ a a W a l l a W < n a a a ^ a V i t * * k a ^ ^ . . l ^ t f T T t l A a ^ a M a a t a a a a a V i . . r ^ * ***

these apparently intermediate forms, but when a large canoe had to be
stopped, and a tree to be climbed or cut down for this purpose, involv-
ing *** o a o j a t W m U a v a a t o f t a a w . i** felt **i wa» a o t w o r t * t i t s** trouble.

Dicorys ... 1918 was frequent and very common ... ^ i
little **bdow BaitvUoa nc** early to **tW l * a a o f t W k f r , A W o o t i k * ^ 1**

its place is supplied by another Casalpinoace tree (2077), **OT V a a a l** I
gathered in **U>mr, Md a c p » l o f f t <a<i » i i h r i f i c I n * .**

Shortly after ... reached here my montaria broke from its moorings
a<at atgai, aa4 wroi omr lk<< f>IU. I at* **mj |wo ma ai W** of

it: **iWj <oj» ool all .Jjht. aaai W t o f l f l v t l i l * y w * U** the montaria,
which an honest Indian had found, almost uninjured, wedged between
too R M 4 < I t W j l a u w g U a w a k o f t b t <r > r i i o f . t o w i a flower, * , < * .

Dicorys ... a small-leaved *Dicorys*. Three or four days afterwards
I **<<'ot aoam ih» fall* 10 gat man** of it, but the flowers were nearly all
gone, and, strange ... could find only that one tree from which
the men had plucked ... branch.

Gasterias were tolerably frequent, but possibly all reducible **It** one
species. It **w— a a w w i f r p o a i h a *** to preserve their flowers, on account
of **iW r m m U r o f o l c r p i f i a n b n » i** in them.

It would ... **iqmir a v l p * q p i c t o l** I told that *Protea* are so nu-
merous **I O B i W * h o T T * |** of the **U o N < ^ f** (in individuals %r. **M o t t B . * § . . * * * ' .**
as to give a marked character to th ... with

three or four *Protea* (*Andriopetala*) of the **mjr—.tol I WW**
never been able to find them in flower or fruit. All that ...

haberto gathered (including dm ana fh» a Santarem) rv <f it* Gapó ; all are n marUUe for tU* leant of the yming pUiti* bring pofyaor-phous—pinnate, pinnatifid, or lacmiitod,—tbongti tin. i» DUI noted by Endlicher under *Andriopetalum*.

I fa "H trrr mi ibr Rio Ktgro w i 1857, «|tj«riiiiUT an ut«r~scribed Ifra«»Mf. Xotvitaatndii! its lifrwr oranr. I dunk its •flinitt it dn ||y••h AyaaaaaaM?. If ibe pesos be new, I bopa you will allow at* to «aJ it I/jtrtfww, in booor of Kgaor llcohqae An onij, a aatin* uf L thorn, but fur awn tkan tlirty ye an wilk*; at the Ban* do KM Ncgm, «• lwtr hi* bat fowHantly tendered r my aa-istance to wibalUk and OUMT »avellers durig abat prriod, at you may see by rfrning to all tbe vori* ilut ban boen latt ly written re-pecting these rivers.

An Oe Uoriw, n« 3012 wbirb went to We new, I bav« vent ured to •Aajaeato to an fnoad Xlr A. Wallace, <be oaloawlugiat,, wbo, tMaiaat ••• natarftl bt^ofv panaito, baa ffwad tia* to eoUeot awca ranam *»d valaabk iafMfaiiliin wmjuutiaj Uf Bto Ntfio tad iU aoongiaal inhabitants, which, as he is about to return to Kourant he will prob-ably •knrtk give to th 4«ari l.

Near St. Isabel I got aaniacr lafft Onto* (OaaW«Mfe>), vtUi sweet-scented flowers, which I have called *Ascuridium muscivora*.

My Indians came from Uanaúca, and were only engaged to '«fcc me thus far r«p l he river. Uanaúca is but a single sitio, tb« moat flourishing on tW Kb Negro, belonging to • Scahor Manoel Jacrato da Souza, who was Commandant of 8aA GabffM when Schomburgk passed down the of Kin N«-pr. WbiM votang b re, comes the Tochána (chief) of 8aA Jrtmtymo, on tW Bio Ua«ae\ with a dneii naktd In* dians, to trade with t« Maanrl Jwmtn. and I ttiacd tW t»pporiuDit» far continuing my voyage by their aid. My departure was still delayed a few •nyt (I vat tam abnal tbnv *«»&• in a!) by an attae% of a>trr.

At Uanaúca I was employed in packing my plants into other paper, •N writing UM« to tbm I Mo ta#*I my •-mpaboo by • frw l»**Maa, o» of i hich, in fwtinbv. team attadafcd oaMpo b? • UU on the ••• (w»';l % ^^^B^ fff the ra>^Ba-a ^araav VaTflaVaaTaVva^F Wai Tafaazapali ****? I «a* g**J to g*4, at raainara, * CiMm^mm tret, of whose fruit I k I k n d M ^ ^ en in «• IWm, «Kl wl hich is frequent near •W«a4ar«aa> all tbe apaar Kin VTTU-ibr gnat Caram it seems

•It «» •raoa*** am NICAL EXCU MI

a aaHha w n a a a ^ ABJ; and the small *Coccyz* (*Coccyz-i*), sent from the Barn* t* probably af tat *MM> MBM. tbwVgB i*TM« ^ Uwgbt it M ajwbawftw gaim

Above U nittiata 111 »•• #M*M; BMMJ laam bia bM« iwi* •** fcaa «t Uabal aad * atiU toot aw aemal 4*}* to gH to lb* M»» (tbe gnat Uk. To aacaad tb* ltttar toot tana nwtiA) day* a*Jn***1*1 and I can assure you that cataracts are far more OifbdW t f c i f ^ loot at 1 MB to go «p or do* W* bad MA* aawow iataM** «.* a atrittd to «a o • bob ia tb* ltaal of tb* em rbjak hMt ^y aaa baSagoat w « * IM wbofa of tbt la* aigt. TW|ptwdMI #B b ja bolov 8bft Oabml. M d « mar i«ver i i t / « r ; b * j | v p i o t b *** 1 t b of the Ua t nfe tbe r ver is *UQ ontbiag bat folk u and rapids. I went tbu far (to SiA Joaq>») tbattly alUr iMiaMg Si Gabriel, in order to visit Mr. Wallace, w*) wa* bioagM to 4c*tJ< a door by "Rio Negro fever," whose effects will probably long hang on da%taoagwh«»» bMpily got Kbum afMa.

From *Uranica* upwards it was scarcely possible la wo aayiaw^* on •BWOM* W W fS|W(U It «.* MWBrJ IP IM*, •vwytbiaf *> lbr mUm of the told*, to pfwvat (Mr MBag oat oa 1 be other; nor was it p wihb to dry My paper oa tbe oaadd. It i »a«^ very P*--|l| work htrt to b» al«ay« mnm\$ cataract* i» *jy a curious. I have bM(* crlb(vbob kBgU of UM UiW. Md «p *f<tin 1 «a»wat four .toy*, bat two oftVm »m- lo>t in r. 1 aubvaiy atatioaat tb« b^{1*11,1} «f t W j4k4 of the Mk •* tW foot of tW lattor. and arrived just in t UM tO MS tb* (MMjMMJBMjt «f M« Of t M t gl«l "festas." Much against my will I was compelled also to see the e •lof *!..* •**

4*1 m aaJM HW^ two day* of onaaMaj aad ' • i aajat* of daiai* I was interested to hear the legend of the discover r •! lb# \1 iuci'"" root, Mag ia tb* tort* taagMfv; W this U.. |MwaM*ol*tw* *. VUCS • MM* *W MIW*, VJR y^W MOT iib^BJUPP BBW 1 1 nitted in my impi- •OaM^wt in * MM ffMfty MUM, OPglft wMb fuMJIMJ MJM% * TM 4iabl aot aad a akgb torn tart 1 Ud «4 Mitr galbani* io **v turning, wtk fo« B M \ «f paavd all tW kl laoat MMtoA •« rrrartiing IW gf«at ftai abffw aataripwwd i brtr, ia waajbc *** ** w, tb* iw b H t b d wtb wa4«r t «d • torM aarai/ of atMt* • r r ^ about three feet high, was so completely soaked that two *auwtr oarr it. Two Urge raomb MI of flnob niauwarw* ' lated w, **.. wv oflanaaavju HP I lost only a few pl aato.tbM . . . * . .

in 4 haaVat. I «aa ntura Jatigo*, having jr. beta on ihe wvtar from «U
 iu tbc nuirnittg till fi* hi *ft*rwioft, yet I bad now ike waked
 pam-1 lo open oat nnd the pbmU to tfaaafer to dry paper, wkbk oceo-
 piad me until *midnight*. To #ome of tbtm tbc m«liwf mi already
 done—the lent t* bad bqpin to diwiticulale; bat yea amsl Uke the
 specimens at they arc, at I •lull ptobaUy not find tbt same again.
 Waatetar adfantnajat 8a3 Gabriel may ba*e a> a «UUoo> on aewu of
 its interesting n*«utioa, it bw dimdwratagw eo gnat tb*t if J bad
 commenced 1 my South Ajaariau oolbcbmu aero 1 dan any I tboald bam
 fmm tbtm up in daapair. Tbe bom* I am in ia very old. the tbatch
 is alntfcatl vita imte, taatptra^ acnrpyxia, awikwauaaa, aad trfber paata
 to aMiety; tba 5oor (being tiaply inotber avtb) i* umlenniwd by
 Sa•ba uu, «iAb whom t ban bad mmc terrible toaMa: ia oa»
 night they i wwd off a* mwh firmiUa ** I eoaU eal ia aaumftb; tarn
 they found out n» driad »4a»U. and bajan to out ikrtn up and cany
 them off. I bstt batnt tbca^ awokad tUm, drowacd them, trod oa
 them, Ki in abort ntatiatad ia envy poaaUa m y, so that at tku
 moment . . . see inside the house;
 but they iaamd a>y mw<tni Tjgihaw, Thta taa tataaiftt, »bica are
 more wwiuMa in tanr aparanraai, aara w n n o way* atony CTCTJ
 post a nd aaaait taey aa«r Wi—ily «alaa ap a tovoV aad mtie laatr
 way in ito a tied parfriaa naaa, vbem fortunaUy tacy Ibaad aotbttag
 to the rir taala. B«t tb« ffraataat nuiaanrc at Sad QabcW it one I bad
 not foreseen. A Imott taa aofe fa babi ta nu am tbe auUien of tar Rar-
 rison, and do roa know bow tbt anaiot of Urmtl an iwraiu y When
 a man i eamjaka a etirn* whieb aaUha bim to tfaaapnHatka, be u oa-
 •••< fctod mairbad off to oaa of taa flmatkr porta. Tbu», of lbc four-
 s*n» aMM eoamoajaf tar pumom at ftao Gabriel, ibrtv it not otir nrbo
 •a* not eoaaaiUad anaw tanna* crane, aad at kaai half of t beta arc
 aimduuft. Jadfa wilb what tacvnty I ana kate wy bouae fur a few
 »>•; i| fc^ Ajneajy boca twwr eaiffad dona my I W M , and ahoul
 tw' f*Qoaa of n a , a qaan tity of BIBUIWI and viaapt, aad aaaaa otacr
 *•••. «Wfia fnm it.
 I h m ia tat aoatt wit* a» tto Indian*, a anattr and a fttarraiaa
 On • at kaat b an aoaolut* a*daia^y, w pfavaat my 4«ng of b«afer#
 for here is aotaaag to b« boafbt. not « «a ta qpt or a banana; for
 <nn«aa 1 ba«* bad to «wi U» tfer Rio U^apfli. T•- baattr 1 bio«a>i
 *Ha aw fbaj) (W Bans he is an excellent shot, and keeps me mostly

- U Mopfcad «tt* p.*. be » abo aaafal I me for climbing trees
 and roviag, at botb of wkfew kc caaaot be ctoa¹ led; but he is a ter-
 ribia faUow for raakao. adoad ml of k» I see. I induced one
 of the Ua «po ladiaaa, *bo caa* with aw I from Uanaulca, to become
 my fisherman: be waa arils av abort two months, when the com-
 mandant of the fort seized him for the service of the courier to the
 Ban*. iniHani to row tW oaariar'a eaoa an obtataed ia ibi way:—
 a drtnkaml of aoldian u aval by m*I to enter the sitios and seize
 at »*o v mew at an watted, wbo an Jbrtk* ttb cUpped ialo prison, and
 tkan kept uuul iaa day of aattiaa^—4a inn, if ti -7 at ke any resist-
 ance. TW w«aga a«tnfia My day», aad tkaae poor Mlowt receive
 neither pay mm mi food lbr tke wkola of lk» ltrnr. As iadj»
 bowrvrr acrr diet of bnagii trkaw kit bratIMr Miaa ka food, and
 tkata fIMw call at lac awanat ailio t replenish their supply of farinha
 from m tiaw to tawa. IWt eak tnalawtit w a gnat disgrace to the
 Govern tawat, «i» it is not to ba woadarad at laat lke It»diaaa hide
 tkaejarlvn ta lae forart* wbea lkay MI *tt tkal tkr emr pier is about to
 be itoJpalki. With a ibr* few days I have been fortunate enough

to aafaga aotkar jikimain i % vorik my wkda to tap lbaat
 torn, auUy for tbt «ak« of aumajf—yiag aw ta my the rocks
 not aafc to fratan aajoag lke falU . «* tkaa two ving long ago
 Vn*» st. Ubrl to ib. M i l be tope is, a of midsum-
 wan eovand »ab h a r f w u , but all daad. lke water b»
 Mltwtau Wkatttkvnrbaftaatofocti* SAAOabradvn a gnat attoactioa to my ex-
 ••kabiag a r t U s bar I «emti wtta ike towatt, «bu K natt 1 at the
 baok of 8a5 Ua: riel. In stre aaw aboi, its base I g ot avmal Ferns,
 ba* on lk* aarm*itealf aotloog I t l ** vadartott lo aapmd a serra
 vkiek, appear* ia froat. Oft tka r%kA Uak. wkat one |toa» katf . 'lay's
 joaraey ap tka rittr. On bcbumUtnci* wa it is m
 W ^aarimapa, but ao oa* kao* it by th«i aaaw. lke ladaatt uai«*
 ia Uracl-« < * . (or tka UiUof Xftauo), bat it ia a m * naaratty U" own
 by its Pe ria«v«aa M M . . W t a V ltaa. I es aiklnaail »ytatf «» **
 nearest sitio, aadvrttooM ladiatw to work to c- it a road through the
 forest—a n HMaary pratiaaaaary, at so oar Unag bad associated the serra.
 I succeeded ia nraakiaf ibv very bi«ba«t powi of ibr «ena. bwl it cost
 me above a wark , «t»0 kctc aleo tl the serra itself proved barren of no-

relty, being clad with lofty forest to its summit, and destitute of water save t mrtUba*. It »• 1500 fath high «bm» the river - ft Saõ Gabriel. All tKrv nerm ìrr hupr naatei of graatW, riaiag afan pUly out of t... pUr. You have no itm whit wort il ii riitnbmjr tbrm , towards U» faa«- • an ativwad with bloci* a* b% at ehuieam, all enveloped ia f.cr,t. MH nrttwl Mir • ith twiwers. In a "•Caa-ti ap^N*t the base of the Serra do Gama I made an interesting collection. There are also other Caa-tingas, or ***«it« fanatt,^w ia IW adghbeaHuod; the snl a thin covering of white aaad o«er giwate; IW tree* scarcely any; trunk» baag wttb Fcnt at. Orel i»c», hrimliM « with significant; a* tiimt\$im few ia IHBIM Smt eely any of the trees are now in flower, but they seem all peculiar.

I am now entering another great ... I have c... few plants utWaHKbii it is across the fi* tier that it is cultivated greatest quantity. TW Barré Indi«o* of VfMnMla 4MHal immense quantities, especially the inl thine in * morning in place of coffee, aa4 tLMjr •• ovjir lke IM i bmr, fpMed, «rilkni sugar. Their nan « for it W ftyawa (poiap* Aubri* Mase Captaie, applied to other plants of the same MI ^ . mtght be Uwad to the same to;). I have got a few specimens of ChnMffc* «a4 «li«il b« »w- It seems lo tnwcr jaW frwt all ilir /Mr *M*4» bill DO fruit is allowed to ripen, as the people gather u w»ik >H ftwi , I M not certain that it is the same as the Guarani of tkfM«Wf>t 1 be- * ve it to be so. rat Urm l»ior». but] ham M i m M v trod;

The riv «r aa* baa« riaiag M*i lalliaf et«r aMa* 1 iwaratd &a i Gabriel (iaaawj U), bm « tW tk it «aiaia«. TWe rfm*th oT the ra^w* H W 1 M tOW VWV^HBK VH |IJ"TT IP WC»TT aRjF " speaking), « M! will eotrtime —iHatnH until laa rivar w f«U, aboat St. John's day: ttlrtil p. 1 jj^t ppfim] I as »ftitmrr arrr. and afterwards my plans are unceruu. The C iin—ilairii of ManMa invites me to iro WJ IHP Ifamyi with lmi. «w) *wrt tW Srmi «c Tarnbv, WI I have had am toparMCv </ CfffdUag ia ochar paofifa't boata, a»d find it more agreeable, and even less expensive, travel g in my own. On the voyage from Santarem to the Barra the rum, coffee, aad wjr«r for every person on board was furnished by me, and the captain lived entirely at my expense; there was besides my ova r«wd MK! If King's, and his wages of a milrei per day, and tbfc far a tfiacr of sixty-

tlut* el*;* , tad under circumstances which almost rendered collecting
m possible. These so-called "negociantes" of the Amazon correspond
 to our hucksters in England: poorer devils you could not find in any
 co country, and they are glad to lay hold om « passenger, whom they make
 bear nearly all U» n | m « of the voyage.

My own wishes point now to the Uaupés, a large river, which is
 undoubtedly the main branch of the Rio Negro, and whose source can-
 •ot W far Urm B H U Fff <b Bogoi^ The general course of the Rio
 Negro is easterly (not southerly, as is generally said), and nearly pa-
 m!W lo tWt of tW Japurá; the Indians frequently cross from one to
 the other. I suppose I may have got some plants on the Rio Negro
 which Martius found oo iW J*|>«ri TV sources of the Rio Negro
 are well known; they are not much above Thonso, and all the ramifi-
 cations represented on maps extending westward are imaginary. I
 have conversed with k several |»ofi» »W» Wvt crossed from the upper
 part of the Içanna by a short portage to the Guaviare (a branch of the
 Orinoco), without encountering any tribu ury •* ilw Bis N*v.

TW — cM* TijilU nil do B Rio Negro" is
 « |nmi—» HHfar tkt MOW of •• (V.Tion. do Amazonas," with the
 Bvn Cr iu mtnul TVv talk of making the Barra a "porto do
 HT," nd aUo«te|ftwogn nMA- to trade to it; but this is too good
 news to be true—the Brazilians have a mortal fear of an English
 steamer entering the Amazon.

BOTANICAL INFORMATION.

Paper of DAPHNE LAUREL (Spurge Laurel).

Now that public attention is so much directed to the obtaining use-
 ful fibre from various plants, whether for textiles or for our paper ma-
 nufactories, it may not be uninteresting to our readers to know that
 paper has been prepared from the common European Spurge-Laurel
 (*Daphne Laureola*). In tkt worth W ltd*. allied species of *Daphne*
 (*Daphne cuneata*, *Daphne Gerardii*, etc.), have been, perhaps for
 centuries, employed by the natives in the preparation of a strong and
 useful paper for the ordinary purposes of the country. Dr. Wallich

has recently presented to our Muarum of Economic Botany »t ^tw.
 t... * 'i(KMBJ| riilirr valuahf ar!irlr«, «|>crini«» of p..jw r prr-
 p*ft*i by Protean* JOSEUM Brignoli v. Bnrohoff. of the University of
 MrKkiu^ BiflmmBinted Kr the flntowing note, addreavt d to Dr. Wallich
 in 1559.— Je c MM pu w tout •ret eoanuMUm qae j'ai utiri m
 Europe k prumic dr KMUMNI poor obtrnir de |»pier ioAIU^u*JJr
 des tigr«* m U Jityim Lanrtvla, nit liea de la Da t/J« waiww,
 Je vous «i rmetf d aux petits M»ai.illous." This siprT «•-tly re-
 sembles, in ju COIOUT, texture, ind •tranglh, the ladtan paper •bow
 mentioned.

G i>'I Bli M SACCHAROIDES.

Even in our own f^urdou^ •* ere BOW BwwMf with an <mtidu>riy
 beautiful species at Qjmmmm, i f i nm or Rent oat in- of Sou* b Brail,
 but capable flf bearing U» wittier mherlMd with u« the fijarraai
argentea (the name of the plant is not given in the original, but is given in the
 flowering tUfits arr at lbt» eMflMOI I (October 18th) eleven feet high;
 the foliage ... their large silvery pani-
 cles, many from the same root, waving with every breath of wind, four
 to six feet t ehorr the k»»».—A «titt SMM neaarti^i R«J, especially as
 regards the kff» m of the peaiete, thoorjh mmung (h« silvery hue of
 the *argentea*, is the *Glyceria saccharoides* of Humboldt and Bonpland,
 who figured .ml Jr«rribe>l it Hl the 'PIMtoi KqviaotiftK' rol. ii.
 p. 112, t. ... " Cette Graminée
 (they ... Manzanarès, près
 de ^BJMWI, thmnt h protinr* b> U Nouvelle-Andalousie, ft qui, par
 son pnri MI im ii« plui bMBX onewM tie k t^^tioa *V Tropi-
 piques. l»» pMimlc • utK tormr trrt^npuitr . elk ešt vortovt d ym
 effet singulièrement |nllf irmjn* qmiMI elk cat « ^ e ptr ki Mate.*
 Messrs. Richard ami PbitaM Awid the MM pUat iMWIwrn I n-
 toils and **toil** Domingo, where the colonists cut the stems annually,
 and ^ r m mtd a* kthee (Ua») u» evpawm the leV (twiles) with
 which •^ •ivdlmitt arr «mn ed. T liere « be fctfe dbdht thet thai
 is the same plant that is described by Aflhrt (Fleatea de k < Juiane
 Françoise, vol. i. p. 50). mckr tht neiiv of Sm**m*m mpUah
 (Kou-rou-mary, or BoæeM • Aeehee of Barn^r, Fr. %, *winos. p. 1*),
 VOL. IV. * a

of which that author says, "Les tiges mâchées rendent un suc doux et sucré. L'extrémité de la tige porte les fleurs; cette partie de la tige sert pour faire les flèches." It is probably the Arrow-Reed of Tropical America.

We were particularly gratified to receive, as we have just done, from Dr. Inray of "Roseau," Dominica, fine flowering specimens of this same Reed, and thus ascertaining that it is the identical Reed (*roseau*) that gave a name to the capital of the island, now, being in possession of the British, more generally called **Outfall* T<*n.** "I have sent you," writes Dr. Inray. **- fc? tW far* C«J...m» ^tateta* «^** of a species of Reed, here called, *par excellence*, 'the Roseau.' The town derives its name from it, the site being covered with the plant when the island was settled. The flowers will keep uninjured for five or six years, **awl I luak yt* •01** consider them, very pretty. The ladies here (Dominica) use them as ornaments in their drawing-rooms, —two or more of the reeds, with their graceful, large, and drooping panicles of dry flowers, forming a kind of pointed **u** arch above a mirror or painting, or anything else; and really the effect is very good." Fine specimens of this stately grass, from Dr. Inray, **fr** deposited in the Museum of the Royal Gardens.

Notes on the Botany and on the Government Gardens of Bombay; by Dr. J. E. STOCKS, Conservator of Forests and Superintendent of Botanic Gardens, B. Establishment; extracted from a letter addressed to the Editor; 4M«d Settar, May 7th, 1852.

About the flora of this Presidency I can of **mm** say nothing at present. Three months is not quite enough **" IMMI** one to take in an idea of a vegetation from **(KM U> pj Jij < MHi k tfri mm* h)**, and from Bombay to Ahmednuggur. **But** Dr. G. **bminktmtoi** all you **«U»^owl** our side, knowing, as **u u, u, u** almost every village, and he could give as exact an account of the whole, as he has already done **of 0—int» i** in his memoir in the Bombay Medical Transactions, which perhaps you know,—if **Ml, 1 mm** send; but I do not think much of *extensive* novelty remains here. Fragments may be picked up doubtless, **M4 I drk lb nifct** already; but as our limits only extend to Vingoria (just the beginning of the rank vegeta-

Uoa of Malabar, and which PalHI is working out) in * earthen dfetc-
 tn*. wt anaa Canara, Codrgt M v«ore, am I U» Malabar coast, w acre
 **«y» "Ji»y thiofft are new, and yet wait a '»oUfn< deapha of W%M*a
 «»da^f y. Thi fimeta haw (u fir u 1 haw aeea taaai at j»t) are : **
 tht tea* tad dark am which dotbo tho Malabar GHauU. where oa*
 «ea c*K waft «r rrrtrp, am n*V or ...e, rfWr where the heavy rains
 **»*d * nak aailai jaaa.li aad when the Ttak and Black *<o<J. and
 •wtea aatv trw», grew fpaate it rtatore. Thr Concern here are p • in-
 Mr <^*ti*atcd ens ap to the hai-top, and ihe annual borniug uf the
 jungles, asd law AAMHUHaa^iem d bra^eact faf Waod'-aalMM for nuBntt
 have in m«n» p*rt# aada thr cotmtnr aa ban aa ow eaa imaf me. I
 understand however that it is rare her tiriirr 1a Meiwa, where Dalcetl w,
 and also in I aoBM dotp ftmwta, ealfed I IK •• Deag*" betwwa 8«nt aa4
 Kandeiah. If in parts of the Concan there are still left slender spars
 of Teak (wh *Ji fay tmxr awd pneaiaina) will iliwlitha* aliaju a respect-
 able size) we must thank Dr. Gibson, and hi* tareaww If lh« CoacM
 is thus bare by cultivation, what can we say of the Deccan, which is
 just the hills of Scinde, ;4m a aMMfee rae anmtallt * fCent* a stunted
 carpet of • «-H™«l on; be nee nk of weler hiemr the high h At| but the
 •JU* blak, brown, and barr, xt w in April and May, aad decidedly no
 ***** vajgrtatioa an^wharw* *»ut a dry cTiwtr aad hot »ted, and lots of
 •*o*~»». But between the «adeiatlf awl aaruw atrip of t he Concan
 **d th* TiMf lead of th« l>eemn are thr Mawal districts, J«at beyond
 (or •M4 d') the ridge of the (Havta, wherv the dyacaa qf ihc atmo-
 •Pb^rr M IMM, !»*• plant* are more givm, the wabr i« eaore abundant,
 ••d aoaje faft at yet left on the hill-sides (slowly but itiwlly disappear-
 ing however under tWnUUTal/ r). Her« weaiey get afew thingm: Ma-
 haldeahwar (4500 feet), whose plants you doubtless kajow# ii m the
 Mawal country, and Dr. Gibson knows of other lofty hills, near Joonoor
 (Hurrychanda, etc.), which may yield a few things. But I fancy that
 up the K«rbtaiik, towe*de Juheaapooft, m p rts of Ki iilaiakhi perto of
 Central India, ami eapa^Wfy. of m n », «m cae Maiebar coast, we may
 meet with aw aw good Oiioa>. aad I a m . within the next three years
 (D. V.), to try them; but not much in Bombay Presidency Proper.

I •m Kabat «• nmiaelirai ta all thte. aad I hope «J-» to ehov you
 ^ . fr» «mt|«red aovaiyea amain, having bean aeea by manr, but
 unheeded. Thus, for example, the *Rikakia* you figured in your 'Icones'
 has haunted me from Balsar in North Concan, to tteteavfccm m South

Concan, and moreover all over the Deccan, in river-beds, a 1 VMT * . ^ ^ ^
 commonest plants. And I have what is probably a new *Physiclydia*,
 which seems also common,—very near *P. Scopolensis*, having pinnatifid
 leaves, but seems to differ in its suffruticose, erect, ligulate, pubescent
 stems, leaves often very large, etc., MI it has two marks not noticed
 in *P. Scopolensis*, viz. cells of ovary twice-angled (which renders the
 generic character necessary to be extended), and sepals toothed; but
 it is a true *Physiclydia*, and its flower cannot readily be distinguished
 from *P. Scopolensis*. I mention this merely to show that little windfalls
 may be expected, but not "a new plant at every yard," as I ... U>W I
 might expect.

The two • M M S I ! • ifc Deccan,—one, Dapoorce, near Poona; one,
 Hewra, near Jooner. The first is merely the cabbage-garden of the
 Governor, and I hope th M J may see as little of it as possible; for
 a garden, wh niaoMitluhv to be wiggled for neglecting the cabbages
 in favour of some botanical novelties,—I say, such a garden is not
 a pleasing charge, and Dr. Gibson long ago recommended its being
 left in But Hewra, in the Jooner valley
 (Dr. Gibson's own Den), is a much nicer garden, situate on a peninsula
 of thirty-six acres, neck, U>tug abundant water in the
 river, and besides • fettle nil running hills behind;
 whereas Dapoorce is a nasty dry soil, bad quality, and no water.
 Here, at Hewra, Dr. Gibson has collected all the commoner, and many
 of the rarer, Indian trees and shrubs,—about two hundred *Fatist trees*,
 and three hundred ihnbi and herbs. is small
 number, but Dr. G tUMI has collected IW> M W M> UW in his p T
 (far W petal travels has only three months per annum at), and
 reared them here, in the corners of the garden and along the walks.
 For unfortunately the Hewra garden is limited in its allowance, and has
 to grow sugar-cane, *Leontodon Torosorum*, *Hyocyanus*, *Sesua*, *Archie*,
 and other things, to support itself; so the botanical part is a volun-
 tary addition, however I Wops will MM be improved on, since
 the garden is, I believe, to be doubled in extent*, which will give room
 for all iW tirw. He In the Deccan garden grow admirably things
 from New South Wales, Cape, Mexico, etc., and in the cold weather

* We have the pleasure to learn from Dr. Gibson, now on a visit to England,
 that such is actually the case. This garden has been much extended, by order of
 the Government.

all the common annuals of *the* Kagtieb gardens. The decidedly tropical aad *moud* plaati do not grow well, aucta u Nutmeg, Clove, Cinnamon, *Qmtffrr**, etc, aul for tbaao I hope, in some future year, to get a •Bail garden below the Ghwjta, in liic inoiit climate of *the* Coaowa. Tbr lftoseooa rain, which in Bombay average* terejity-aii incbe*. and at Mabauleahwur *4\$ inebe*! falli m tf*> Deooaa Proper to twi nty-six i\ckf, Mat Pooaa, and twenty-three aa at AJuoodnuggur, a quantity which, eten in rainlma Soiada, we had Utt year; but thU, to be •at; wai a moat citraardinry fall fur .Scimlr, and u duly rwonJed in the Bombay Transaction • already. By the wa\, if Dr. H\lofcer wanU details of diaiaatr* in India, tbr IVa««ct»oo» of the Bombay Geological Society aad of the Bombay Medical aad I'hyical Society should b* wajulmi fer our *4dc*, not omittiog a book jaat pubUib«d bj Dr. B«*t, 'Ibaual of Pbnical *Unmtib* for ladia,' Bombay, 18&S : any of these, if not procurable wtk yoo, aball wttb pkaattn be aoot by me to your addiwM.

Howevtr, tftia oaaspanttvefy imall amount of mm to the Deccan makes Ibe dimate daring tbote moolha very pliwrrnt and cool. and wanting the lomaU of water in Bumtaf» wkwfe ptwcfitt ooi-ofi loor occupation. In short, April aad U*\ (aa ail ovw *Iml* a) are the only bad months ia tin¹ TVfflia. ami d'nMP ikcta (wbila oaf Mntcakra Ian* guish) we ftropaaaa toy ^iwaaiH/ to (afct a ma up to Mahabishwur, where a lovely climate, pretty Marry, poUtoea, atrawbarriaa, geraniums, Fuchias, and waat aot, <U Ufbt and refttsa the body and miad, waaried out fcy the rfry hmt of totf Zfoaaaa or (oc mowC aCoaiy hemi ot the Concan. I want atae to r/i« eteaad grewnboaai to grow Oreaida, *Scitmisce*, *K«rw**, etc, for wan* the Pecan *k* too dry wthiout men aid, aad I thii k Dr. <iib*m may be pariaariwt to tfod out * *nuAf** made house, wUica 1 euppeoa woaid aot eoet above t-1u, of a Cur me. I will wth fileaaan wad *ym* detaBa of aay nioa eoatry I MOM aroat (since you wish it), but at piceasl 1 bare amn aotaJag bai tfo un<Jo- lating bare lull* of ttw Soatk *Qtmtmt* about Kat*efb«ny, aad ibe abrupt bare hills of Deccan here, and about Poona—nothing interesting there.

Plants of Algeria, etc.

L'Association Botanique Française d'Exploration **til aat I** le point de
 terminer **V uvur dtt** collections recueillies en **to** l'un de ses
 voyageurs en Algérie, M. Balansa, dans le voyage annoncé **to** la
 circulaire **dn SO JHTW** dernier. M. Balansa, forcé, à cause de l'état
 politique **da p p , ito »odato b** premier itinéraire **S** qui avait été indiqué
 dans cette circulaire, **• d4** renoncer à l'exploration des environs de
 Tlemcen; mais il a été à même, par un séjour de plusieurs mois à
 Oran, **I** le recueillir toutes les espèces intéressantes de cette riche localité.
 Une excursion entreprise en commune avec M. Conon, dans la région
 des hauts-plateaux, depuis Saïda jusqu'à **v** Chott-el-Chergui, lui per-
 mettra **(D wtrr ilr** donner dans ses collections la plupart des plantes
 spéciales à cette région, riche en espèces Espagnoles et Orientales, et
 dont la végétation n'était pas encore représentée dans les herbiers.
 Les collections de M. Balansa se composeront de 500 espèces. Elles
 pourront être envoyées à tous les souscripteurs dans le commencement
 du mois d'Octobre*. Le prix de chaque centurie reste fixé à 20 francs,
 comme par le passé.

Le nombre des collections **qot m ta * diayoaitaB &*»t &• a**"**
 naut très-restreint, nous vous prions, **oaaar, or Yoaaar w*** nous
 adresser votre adhésion dans le plus bref délai possible, dans le cas où
 vous ne seriez pas déjà compté au nombre des souscripteurs. Votre
 réponse devra être adressée, **•Hyafaat •** Monsieur Balansa, Rue
 Suger, No. 1.

Paris, 4 Septembre, 1852.

P.S.—Nous profitons de cette occasion pour informer les souscrip-
 teurs aux collections **J** M. Bourgeau, que l'envoi **:«»** plantes recueillies
 en Espagne cette année, envoi qui se composera d'environ 200 espèces,
 leur sera fait en même temps que celui de **dat ft** M. Balansa,
 pour éviter **dat ft** les frais d'expédition. Nous croyons prévenir également
 les botanistes **de** qu'un petit nombre d'exemplaires des

collected, and we
 our own, that the specimens are all beautifully prepared, and very many of great va-
 lue, and many of them entirely new. This "Association Botanique Française d'Exploration" is
 deserving of every encouragement. We have the further pleasure of being able to
 state, from a letter dated Paris, Oct. 1, 1852, that M. B. **es** intended to ex-
 plore the southern part of Portugal, during **es**
 a hitherto little known by the botanist, and where he reckons upon collecting
 from 400 to 500 species of plants.

multiplied to such an extent **M ton dH** it extremely difficult to know
ttlm lo look far BBT particular subject. Very full Indexes conclude
 the volume of 547 pages, and every botanist will have reason to thank
 Dr. Pritzel for the labour and skill he has employed in the work. It
 might have been improved by consulting the botanical libraries in
 England, if the author could have spared the time.

MARSHALL, WILLIAM, ESQ.: "*The Water-weed, Anacharis Alinastrum, some account of it.*" 8vo. Pamphlet. London, 1852. Pamplin.

We have here **B **./** interesting account, by a gentleman of Ely,
 Cambridgeshire, **of,** apparently, an *imported* water-plant from North
 America, where **awl pint.** according

distinguished **KOIUI AMfkm bou*i- Dr. AM C>T>T. do» MI ffm*1**
 so as to become a nuisance,—yet in **fnghailh the** course of a few years

extending itself in **OV WW Mil CHfill IOMtflh MI ttIMI M *** become
 a great

Cambridgeshire, a **called by the watermen in**
 of our "Pond-weeds" **the smallest**

now forms **pat. Tk> "/^y^r; • w H it** "large submerged masses"
 large

tion **b «utpp<d till t rfafif tftltc* ploftw** by manual labour; in
 short, **ud *n dro*. that UM pMMft of boMs b |** "Dock," at Ely, to

such a degree that boats **by H. -lbr (Uf) »y** several tons were re-
 moved.

to to **For fcrtWr paftMan, B>d bow (W** extension of the plant
 readers

ment (to **to tW pa|ta* of lk- littk ***** itaalf** "At the commence-
 discuss "who the stranger is—whence he came—how he g—
 and by what means he is **«b B ^ rid of." vtttMltbt^** pledge is

satisfactorily redeemed: **the reply l** to this we were rather disappointed **id**

to **ft>l »M by »n tMpb** "NOT AT ALL." This is poor comfort to
 those interested **>>**

our "watermen, sluice-
 keepers, rowers, swimmers, and fisherries," and, last and not least, to the
 "drainage" of **it fw>**

An experienced officer has asserted that the
 waters of Denver sluice, below Cambridge, have been this year a *foot*
 higher than in ordinary seasons, and he refers *at least* half this differ-
 ence to the obstructions occasioned by the presence of "*Anacharis.*"

AMERICAS EGROVEGETATION, etc. (JV *Out-vegetation of America*; abridged from *imm* popular lectures delivered before the Association Of Natural History of Copenhagen*, and separately reprinted.) By Professor F. LIEBOWITZ, **MUSS, G. f i a f**, 1851. raiUtod from **Uv** Paaiah, hvl> F. WALLIC a. FJ .S., V.P. liaa. Boe.

If the s« reader aknak) happen to IN? arquaii. ted only with our own in* digenous O 1,laoaga he would mcogr it a regeUblr form, v hxfc from old m ttajav hat oor inued the symbol of vtrvnuth aru* the pr iir of civic nrtaa* m W aroaUl mA deriw 6 D « it any eooepttoii of tae rich varie tr <at atKwafaaobt, artaa to* *Htkk* ^T^ufcipat in it« distri- bution over ar ibe auHaw «f laa flofaa, Tae apaciea peHbna ao great a role — — — — — they appear, tta eiaaf ooajitnaau at *hn^i*, il hat it »y parfcap* b# , considered of idanal lo girt bar* aoa« aooant of UM nahm of the CA% ia An"tin- V e will prcania » » r brief rvenarka oori ming their eiwt- enee in other parts of the world.

Up to tar pnamt tiar, auoat t30 aauctaa of naka are b i n , ac» W»»*f (iriorjuaUjr to Ut aoitaan ha^aaaa«t To lae south of the line they occur only on the lawai laia»K aaaiav wkirh, at Sumatra, crossed by the equator, and at Java, in lat. 8° aoofta, laawcuo (is a nu- merous and highly remarkable ffraap»of Oaka. It is a striking fact, >*aitW y are entirely wanting in the temperate zone of the southern aa nisphere, i. i., in New Zealand (35-45° S.), ui V«a Diemen's Land (42° S.), in southern Chili, f rfajrwiw. aad Terra del Fuego (40-54° S.); the more «», because forests ar« foua. l there of I ecohas trak*> in Europe ordinarily accompany (b»O»l, and w k^li c*juat UK aujonu of .species in the 'vw *rtv favto of llat mAaani WafMitWrt .

With meat* to UM distri«IUO* of tW apaaka^ onlj S (3) Oak* an found it. fc««*pf. aoftk of lar AJpa To (act loatii of taie. ia tW .o^*»« Europe, bordering in the Me Odinaiaaai. taaw aw 3» apacam That per rtu.i, uf vaatani Aaia^akifc aptnuaraii aaaiaal la (a. Madifcnv rusean has 14^ ipnajai, Taa aaatora teaapanhi aoa« of Aak aaa /5 species, out of which 20 belong to Japan; India has 21, and the Islands

* It must be borne in mind that this deservedly flourishing Society, now seventeen years old, is by no means of a purely scientific nature. Communications, written or oral, suited to a mixed audience, are made on every alternate Sunday during the winter months.—TRAVEL.

of *Sunda*. **•7 *** «••**. TV imrthrn roaft-bndi of Africa possess seven sorts, the **Ctnu? I*Utid* (HwMn) oae •or**; but none is met with in middle and **•mrth Aftxm, or UM litaarii bttnaffag** thereto. New Holland and **AdttrftIU U tr no cvb, nor 8oolk Ammn, «niO** of the line. Thus Europe **«xwU ID, AJAA 97. afd AIKei * tntcwft. B«t** since several of the South European Oaks **m r t n f e ia JUat Mionc MHI** the adjoining countries, and in northern Africa, the sum total of Oaks in **fcwope, Atia, UM! Afnm * a * t be** reckoned at **110** species.

From **391** species of Oaks have already been described; which number, **UM** will probably suffer a not inconsiderable reduction, when **UM** species are critically revised. I venture, nevertheless, **to awaft** that the American Oaks surpass in number the aggregate amount from all **I other part* of iW »rrl«"l, vita nfcwrr «»** forms preserved in **to* iMitaiia vi BMHW—»*T_k to taow f*'? *** are at present **ia my hand****.

It is **datfrvia^ of attietp UMA vliw OUMT part* of UM world** where **wsnl QBI«4|MBIM) IN cunaoo, tW caw M aol to «»** **aoi am «•«> i|mat nk(a froa Ow-r TU maw of 11** **lo be tmsed, j»r ly in be firriiMaOMw, taal nrith^r in Amrrw* ""*** **Aau do the Odtt tittad to for aorta, • to be able to xi . ^U ^m** **one qoarrr MHO toothrr. wkcr the transition is «'wrtart. ***! P"1,** **n w rxvaannaanijr onai Tnainj ai MM a » ^ oj i w i * ^ <M>** **prtiaulnJ 6na lrmwportiog IMMJ is • lit tag oaatitJBa, I** **#f tat jW*f to UW DAIMTI**

As in **Ranpa, sorta of ike Alpa, laf Oafci «r« AWBAM. M)** leafless **d«hmc ftU tlm vkt** evergreen; so **aUo do w* iwl** that, in North **Vawrka, b> UM mid'** of the equator, **aad at Car a* a niwaiifcwMi rhftnan t*i«** between the temperature of summer **aad •tattr. UM» I** Oaks ***• rfirfaww, »kik lac-** its tropical and subtropical zone, are evergreen.

It **W kit WTto bam a pnvaiKat wAxm,** that the oak-form **M** peculiarly characteristic of **r taa MRjant* wm> H«t * U U «• ***** to the number of species, **MJ beMty of tW lbna^ or UM «»»** of particular organs (leaves, **frvita» C«B»**). **vi taail i** and their maximum in

* Among **total tWr «f A—rt^ <^U^»ak4** contributions I have received from abroad, **I i** must show all solvent to the rich collection so liberally confided to me by Sir William J. Hooker, containing as it does, besides most of the published American Oaks, a number of undescribed species also. (This note is added by desire of the author, in a letter to the translator.)

M

some species, whose leaves become mottled towards the fall, thereby imparting to the forests in autumn, a magnificent appearance; among them *Q. coccinea* and *rubra*. I now go on to the vegetation of America, proceeding from north to south.

Its appearance in America, may be traced to the 2° N.; consequently it does not appear with three species

in the Cordilleras of New Granada. Its limit is at 50° N. In the mountains of Nootka (50° N.), it occurs, as far as the heat is concerned, as far as the limit is at 10° C. In the mountains of the Alps, it occurs in 47° north. In the mountains of the Alps, it occurs in 47° north. In the mountains of the Alps, it occurs in 47° north.

It is introduced into the mountains of the Alps, it occurs in 47° north. In the mountains of the Alps, it occurs in 47° north. In the mountains of the Alps, it occurs in 47° north.

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but disappear altogether in the vast prairie, which extends from the
 • « * w ard of iboee mountain! to lbe Hooky Mountains. In this Uat
 great mnaeiia fhain. the Oak teem allogethiir to be wanting, owing
 principally, perhaps, to the rirniastaocc that, in a»nrodiag from the
 Prairies, it* elevation nborc thr ocean at tbe very bate it each, llat
 the Oak can no longer exist. The dry c •atfaeiaial d i m* of the Rocky
 Mount >ina co-operafea prubalily with equal forr< in producing this
 •Miieuuj. The Oak* on the western aide are different from tboae on
 thr ituurn ; lb« i.nly flBjentfae] >NMII^ & r*br*.

The •oat important fcreat Oaks in lhoa Eastern Stale*, which barr
 • tenptnte oUmato, arc Q. OMviaea, a tree eighty feet in bei;ht,
 reaching t, •• far M Georgia ; Q. Pr « « , esleadtaa; from Peaneylrnin to
 Florida ; Q. oimjbrmm, whieh oeoan oa the ahom of the riw Hud* m ;
 Q. tril* r. a y n , amJ/«J^»ta.

M*ny of the Nqrth Amerktw formta are known to be very •wanpy ;
 •*d «oh are chidly (bmed of thtw ipeeaM, Mmriy, Q. W*los,
 •lining a brig*, of aitty f-rt. and estoming to Florida ; Q. Ma*
 var. PcAutnt, and U^efaeint, which apewda eapeduly over r«u» syl-
 vania.

The Southern, or so-called Slave States, possessing a warm, temperate
 or subtropical climate, produce, beside the abote BWtioncd aurt s found
 in the North, &»UK a number of peculiar Oaka. nmuujr*t which we
 will enumerate in thi • pUrr (/ aiecwuarya, in the St (« «<at of
 the Alleghanies ; Q. cinerea, . low ttw of VirgMa aad Georgia ; and Q.
 virens, the northernmost „f ii e United Sta tea e m * * * Oaka, attaia*
 ing a height of fatty ta My feet, epreedia* over Virginia, lorkk. ead
 the Valley of the M l tteiaippf, aad beinf of fwat talae* aa the U st naval
 timber-tree of the Southern States. In s "«»py faweU tnm i Carolina
 to Florida, H tei Q. r*/4, ami from Maryland to Florida Q.
 aquatica, aawwajahaightofeiuy f.

As yet I the botany of the w«trm eoet of U> United S***** and
 California fcea been be* imf«riaciuy expkx* L We •« indebted « Noé,
 Douglas, * Couler, itar reg, and Fnajoai for wUi i. known of the
 Oaks of those per-a. Q. rwfc* hea already bees named ee •pnwami
 over the wester » eitk. At H i t f fcrme «w>t be mentioned Q. agri-
 /w*-. tW hmwa of whieh raembk tht Holly ; Q. Garryana, Q. Dou-
 glasi, Q. densiflora, a unjiawit Uw*, vhrh u remarkably like the
 Chestnut, and in appearance very foreign from AaeftkM Oaks, and

in this respect corresponding more with **Ik U** Chinese and Himalayan sorts; and finally the before-mentioned *Q. Hindsii* with edible fruit. **Mo*** of **tW N'Jth-m Xmniwm aod U** Californian species descend from the **• i iHajaji bto iW ;>Un**; **iW** evergreen species extend on the **meat on** fcritWT ialo tW «mti** than on the east coast, which is caused **bj lie ajOdcrcitfaat* <ir** derived from the warm currents of the South Sea.

I Before quitting the temperate **Voftk** America, we may point out **tW Mauvuf «HUK« (im dai** of its Oaks: deep-lobed leaves predominate, give **4f tk« Um an Wbkaal 1** likeness with our North European **torta; Moat vpecics k*tc MBA!** oval **f*4#, awl Ukeat «ft** generally sessile, of very short-peduncled.

Ne* \frijrt. an Texas, **«BM« ksa* baa** visited botanically by **iWrkodm, 1 itMJkdwm, FewLkv, Wnfri. mi** Drummond, have a subtropical **p**i <*>*ic, aad. at nr«wti* (*** Our Oaks, correspond much with the **wutkcnuDMt I \itml Nat** **a« «• BM«t »C^a W«» •iti <i** *virata*,

****ieli ajBBM ila i||iMMti MMBT as teambfaai fmhaty '^ »<*>»'** in the vicinity of **extend** from **ft* MNMLaiM iml / *ta«U W. Moat •{••••**

Previous to entering upon our account of the Oak-region of Mexico, we have to observe that the entire West Indian Archipelago is destitute of Oaks, which is somewhat surprising, since several of the islands have a **twaiihitiliU aba aa4 nansto iwiar<iMi axwUta*.** «Wtf r» « i*

Ub prafetffaa of t W Oak, an pfDe*Uy IW waat of iki», though I know I **uule «f W «* laUia* fwyxjqf, u>** form any correct opinion on the subject.

Wherever I have **vei wHk • hikt OO lka eiwtiarttl c>** America, I have found them growing **ta a vrf^f ka«f} «layt <V*p ml ftoaji** iron, and wholly wanting all chalk admixture. In **tkoM** parts of Cuba which I visited, I nowhere observed that sort of soil; **baldM** clay was mixed **«kk eajk. I a» %wra4 of iWt cwl.iicw,** in this respect, of the more elevated mountains of Cuba, especially **ia lk«** eastern part of Sierra Maestra, where it might **ka** expected to find Oaks in high situations, but where none are as yet known to exist.

We now come to the tropical zone of continental America, where the genus attains its maximum. The reason why Mexico is so ex-

trremely interesting, in rngint to lit vtfoUue geograjhy, is its ex-
 irrmt imttfm%iy of wrfr^ midwlaa, ofe* ihc grata* itiflinmn ...
 climate, at v nr tbori iii>t aoces ; all the changes, from the most scorch-
 ing tropical lowland, to the region of perpetual snow, may be experienced
 within one six «le ilir'i jrmi»y. T i note b Wi tkr influence, which
 tfc>t HifcwrtoniitiioM rf rtrwr on *adi a Urge gWM •» Ufct Oak,
 •tiuld be ttfy kgtmctivr io tW lioUnitt.

It i wripadaeat lo treat nf tKr pradaetioa of Oaks of Mexico as a
 wW4»; iW bs(pUR wiU be to divi i« tte species into groups, accord-
 ing to the elevation n »l wUck thvt oorur. MTheti it is considered, that
 <fcb «n foomt in Mrvito, fmm the le|r| of tu ocean, to a height of
 12,000 »M, «nd(oMi amount at least of eighty known species, notwith-
 •Uadiu^ tKat cmtrow-ttmf n^iu ami bubfcni investigated, it may be
 raly understood, that such a division becomes necessary ; although,
 on the other hand, the theme is too •MMbl, to admit of being ex-
 ItAuitnt m ibis pto*. Nor t* tktt, pcr1»p»»» rwptiral, «nrr imr to)
 object is to *ihiwi, in i&zc reBlufrt, thfl gflQf liplimi ntauoftt of a
 tribe of nhurt» k OM f«rt of lk w«rM, by rtpUtting tie rfcingn
 which its species undergo from the north to the south, from the lowland
 to high localities. I deem it most suitable, therefore, to consider the
 Mexican Oaks as they exhibit themselves to the traveller, who proceeds
 right across f»»W U» eastern coast westward, until he descends on the
 opposite side, to the ikons of ih« Sontli >. 4 ; whi h route wilt carry
 him across tbe loftleil •WHIIIW'TII of O* eouitry.

(to continued.)

FLORULA HONGKONGENSIS: *m* Enumeration of Plants collected
 in the Island of Hong-Kong, by Major J. G. Champion, 954 | *Reg.*
 ^WWBIIPIII rmm VIM the new species described by GEORGE
 BENTHAM, Esq.

(Continued from p. 305.)

AQUIFOLIACEÆ.

1. *Ilex cincta*, Champ., sp. B-i fUbt«t ramalis novellis angulatis,
 foliis brevissime petiolatis oblongis paucidentatis bad obtuts •«!».

* Omitted among *Polypetales*, where it might have been better placed next to
Colantheae, although usually gamopetalous.

cordatisve coriaceis, floribus subsessilibus glomeratis tetrameris, petalis subdistinctis. — *Frax*, ramulis crassiusculis, cortice cinerea. Folia majora 4 poll. longa, 1½–2 poll. lata, obtusa v. in acumen breve obtusum producta, margine breviter et remotiuscule callosa-dentata, subtus pallentia, supra non nitentia, petiolo crasso 1–2 lin. longo, omnia basi quam in affinis multo latiora; minora saepe obovata. Flores per 8–15 in glomerulos globosos collecti, pedunculo communi subnullo, pedicellis raro linearibus longis. Bractea squamiformes, parvae. Floris quam in *I. Aysifolia* paulo minores. Calycis dentes lati, brevissimi, minute ciliolati. Stamina petala aequantia, filamentis crassiusculis.  subglobosum, disco stigmatoso superatum, 4-loculare. Bacca  diametro, laevi spiculata.

In * nritt of Moit Wt*ria. The very short petiole and the  species from all others known to me.

2. *Ilex gtmii* Aftm. CTwiip . *p n.. glabra, ramulis teretibus, foliis elliptico-f. obovati-oblongis obtusis pascidentatis basi in petiolum longiusculam angustatis coriaceis nitidis, umbellis subsessilibus, pedicellis gracilibus, floribus tetrameris, corollis profunde fissis, bacca natica. — *Arbor*, ramulis in vivo purpurascens, siccitate fusca, apice vix sub fol» angulatis . Folia majora 3–3½ poll. longa, 12–15 lin. lata, acumine  distincto, dentibus paucis brevibus subcallosis, petiolo »-7 hn lmr; minora 1–2-pollicaria, obtusiora, integriora; inferiora fere obovata; omnia consistentia laurina, •npm nrtkW. N U M pdUft, mrta MM »* rir« • (a, venis -liirf gentibus ramosis parum prominentibus. Flores fasciculi axillares, pedunculo communi  nullo v. hinc inde semilineam longo. Pedicelli marium 15–20, graciles, 3–4 lin. longi, hermaphroditorum paulo breviores et saepius pauciores. Calycis dentes breves, orbiculati, cffini ti. P**i4 basi breviter connata, 1½ lin. longa, orbiculata, per anthesin reflexa, exteriora leviter ciliata. Filamenta petalis subaequilonga, antheris parvis. Ovarium depresso-globosum, stigmate disciformi. Bacca  magnitudinis , ^ . Common in the Happy V. IWy wt> la.

3. *M»» menegifolia*, Champ., sp. n.; glabra, ramulis subteretibus, lili breviter petiolatis ovatis obovatis v. raris oblongis integerrimis coriaceis nitidulis subvenia, umbellis sessilibus, pedicellis rigidulis flore vix longioribus, floribus tetrameris, corollis profunde fissis, bacca

umbonata.—*Frutes ramosissimus. totim* Mrpios 1-J J poll. looga, 7-11 lin. •at*, obtuaa f. in acumen btere product*, Uti acuU, marfiat rerurto trpe pvpwmcmtē H conataiifrr inleQcrrimo, petioio 1-t lin. lougo. eoiU lubtut prominentē Teak iaam»pieui«, »Upt viri lit, M U W pallida, in MOO aapa Itriaatia. *Fate* axillares, 3-6-flori, padaaculo wwnmni whnylto, prdir. lilia 1-2 lin. longis. *Calyceis* deotet birro*, Um. uon riluli. /'«teia alba, lieoam long*. ad quartam p«1«B rounMU. *FFrimae*EU *rabberru pntkt hngion. *Bacca* coccinea, i pui ma|wit««ihM, stylo brevi crasso spiculata. A very comm' thnib on th« hills. IU»id« the form above de- scrib~wt ti» apMiaaaw indicate two diatinct varieties: 0.....w, will < •mall, broadly oborate, tod usually retuas letve*, and y, oMoayt / ^•f with narrow aonauaafe karn, sear tbree iodbet long, and m her longer pedicola, but the laavw an perfectly entire, and of the turn consistence and colour, and (be barriera aovkt and apteulale ai in the more comm OB forai.

4. *Ilex viridis*, Champ., sp. n.; glabta* nunulia angulalo-»trut is, foliis petiolatis ovatis Javlicakiia baai arutu IcowlaT coruocb nitidis, pedicellis femineis solitariis petiolo longioribus, floribus tetrameris, corollis ad medium divisis, bacca obtusa.—*Frutes* 2-3-pedalis, ramosissimus, ramulis foliisjue bru- twroUbw. /Ww 1-1 i | -:i longa, 6-9 lift. Uu, oUuaa v. braritar aruauaat*. rmmu« arutiutruia, crenaturis pai vis su liralhiaia f. rariu* apinilalw *Fltrwm* /rwimi rram pedicelli 3-4 Im. lonjri, auparaa timaatti OtijfrM lulu brr*U»imi, orbiculati. O <W/* aabroUUf 3 lin. (Uunrtro, lob» brtia orbmii tia. *Filamenta* bnrawBB, antbmt oratia. (hmrirm oroidee-obtoogaas, disco at%«alaoa eraaaiMibo trunrato. Aaem purpurea, gtoboa, 4-5 lin. iliaartrn, baud apiruUu, tctinpyrpoa. O>i tba biUa, Aovatiof in April. Amordjng to Major Caaa pion, the ina\ mi],,|tjmj, (which I ban aoi ami) ban their Jknnn arvraJ togt tbr in kiUU n wt nln.

5. *Ilex aajiwtf.* Champ.—*Pris.*« •yrr'as, Hook. et Arit. Bot. Beech b. p. 176. t. 3«.

Victoria P <*k and LiUla Uooff-Koa«. Tbia apaeiea ia allied to the *••, but is naililj iliaiiagiifabaii lijlnh Ihiaarr •nriai i' ———thnihr •vdioek, irumpaiaf lobet of the mj> i. «te. Tbr lowan in my apaci- ~~\ tn aimitlj liliaannm. bat tWy ait otwaaiionaily pnilanwrwn <nd even hexamerous.

species, although more decidedly dioecious than many others, cannot be serially distinguished. In the Eastern species at least there appears to be a sexual separation, the predominance of each sex in different individuals. In male individuals there are usually many flowers more numerous in each fascicle, the pedicels more slender, the filaments longer, and the ovary often quite rudimentary; the females (which are always to a certain degree apparently hermaphrodite) have the flowers few, the pedicels usually thickened under the flower, the stamens always present, but with short filaments and perhaps sterile anthers, and a perfect ovary. The number of parts of the flower, etc., although constantly quaternary in some species, varies in others in fours, fives, or sixes, and is occasionally even reduced to three.

6. *Ilex pubescens*, Hook. et Arn. Bot. Beech. p. 176. t. 35.

Subarborescens, in the Happy Valley woods. Flowers in April, numerous, light lilac, sometimes white. There is also a smaller variety, with much smaller leaves, minutely denticulate, the teeth mucronate; it forms a shrub on bare hills, with a scarlet berry.

OLEACEÆ.

1. *Fraxinus* (*Ornus*) *retusa*, Champ., sp. n. (vel var. *F. floribunda* ?); foliis subquinis longe petiolatis ovatis v. ovali-lanceolatis acuminatis basi rotundatis dentibus parvis inæqualibus, paniculis laxis multifloris, petalis oblongo-linearibus obtusiusculis, varicis oblongo-linearibus retusa glabra.— *Foliola* 2-3 poll. longa, 1-1½ poll. lata, petiolulo 4-6-linearis. *Spicæ* 10-12 lin. longæ.

Woods in the Happy Valley, near the Waterfall, flowering early in spring. It is closely allied to *F. floribunda*, Wall., from Nepal, to *F. szechyana*, Wall., from Sibiria, and to *F. longicaulis*, Sieb. et Zucc., from Japan, and it is not improbable that the whole may be mere varieties of one species.

2. *Olea myrsinæ*, Champ., sp. n.; foliis elliptico-oblongis obtusis v. vix acuminatis basi angustatis crasso-coriaceis glaberrimis nitidis culloso-marginatis, paniculis 1-3 axillaribus petiolo paulo longioribus, corollæ lobis latis tubo sequilongis.— *Ramuli* crassi, cortice cinerascens. *Folia* ad apices conferta, opposita, 2½-5 poll. longa, 1-1½ poll. lata, apice nunc rotundata nunc breviter et obtuse acuminata, utrinque viridia, costa saltem elevata, venis obscuris, petiolo 8-12

lin. longo, rigido, supra plano, basi incrassato. *Paniculae* thyrsoides
 v. subcorymbosae, raro pollicares, densiflorae, tenuissime puberulae,
 ramulis oppositis. *Bractea* linearis-carinata, 1-2 lin. longa. *Flores*
 abortu subdioici; *Masculi*.—*Calyx* semi-4-fidus, lobis triangulari-
 bus obtusis subcilio **Utift tabu** (corollae paulo brevioribus. *Corollae*
 tubus latus, 1 lin. longus. *Filamentum* 2 obtusum. *Stamen* 1 lin. longi. *Filamentum*
 usque ad **pioBOI tttbi tcfatu**. *JmUtra* oofotba **asquantex**. *Ovarium*
 depresso-globosum, **obtoiais hiinaiUfT**, **ovuli* luoaupkui***, »iyo
 nullo. *Flores fertiles* non vidi. *Iq/htnemtia* **f*iff|pⁱ* fn^cttfcn**
 eadem ac marium nisi minus ramosa. *Dr*/NT* **obioag% fen 6 la**
 longe, pericarpio tenui, putamine **1 t^tKmi, kbortu a^iwapBiMa**
K«r tW top of tbc VViUrfilJ m the Happy Valley. **Wib** flowers
 of **tb« tlu ^ tW*r of O./r*frmm»»** **boi Uilcfratlf tluped, ttuv** species
 has the inflorescence of some species of De Candolle's first division of
Eschscholzia, at **J IMITM ditfawi ftvai «ay Otm imam to a t**
 3. *LimutniB Sim*— (L.,«r *Fl. Cor.* **duutl**, p. 197); foliis ovatis v.
 ovato-lanceolatis subtus **rauuqaæ pubew** **entibus**, paniculis axillaribus
 terminalibusque densis multifloris, «**Ij« obtotttc iknUt**», corollae
 tubo brevissimo incluso, bacca globosa.—Affine *L. Neg.*
 multo minor, calyx subinteger et baccae globosae nec ellipticae.
 Cultivated, but found also frequently by roadsides, though perhaps
 not truly indigenous. No. 155 of Fortune's plants appears to
 same, and I should **tba^ fr»« |W** characters given, refer **tolbc Muor**
 species the *Olea Walpersiana* and **tb^t'** **Obi 4MMMWMV** of **||f«Hf**
 (Walp. Ann. Bot. vol. iii. p. 17, 18). No. A **II** of **Kneionr'a AMPJ**
 collection **it nearly** allied, but smoother, and is probably the *Ligustrum*
Stamatoxi, DC. No. A 6 of the same collection agrees very well with
 Japanese specimens of *Ligustrum Itoi*, Sieb. et Zucc.

JASMINE.

1. *Jasminum paniculatum*, Roxb.—DC. Prodr. vol. viii. p. S10
 Common on the Victoria Peak and other ravines.
2. *Jasminum officinale*, Linn.?
 A mere fragment in Col. Eyre's collection.

APOCYNES.

Of the genus **MtttJmm** **tbetc we tknt (braM, iU** very similar to
 each other as well as to **in general ap-**

pearance. They are all found growing together, and flowering about the same time, in April and May, and might readily be considered as mere varieties of one species, were it not for considerable differences in the form of the corolla, and in the corosa or scales which crown its mouth, which have even induced Mr. Hance to propose one of them as a distinct genus. All three, as well as *M. monogyne*, are tall creepers, with ovate-oblong or oblong-lanceolate, acuminate, smooth and shining leaves, and terminal corymbs of numerous more or less sweet-scented white flowers, with the throat yellow. The corosa consists of five scales, which are either free or more or less united into a five-lobed cup, each scale being entire or more or less bifid. Major Champion has also observed a difference in the shape of the fruit, as to one species at least, but this point requires further investigation. The following are the Hong-Kong species*.

1. *Melodinus fusiformis*, Champ., sp. n.; cymis terminalibus, corollæ lobis oblongis falcatis edentatis, corosæ squamis 5 subdistinctis brevibus latis retusis subbifidis villosis, bacca fusiformi.—*Folia* quam in *M. monogyne* breviora, summa interdum subtus leviter puberula. *Cymæ* pauciforme, puberula. *Lobi calycis* obtusiusculi. *Corollæ* multo major quam in *M. monogyne*, leviter odorata. *Tubus* intus supra staminum insertionem pilosiusculus. *Corosæ* squamæ nunc fere distinctæ, nunc breviter in anulum connatæ. *Bacca* (ex Champ.) magnitudine *Mali* majoris, fusiformis v. interdum subpyriformis.
2. *Melodinus letus*, Champ., sp. n.; cymis terminalibus, corollæ lobis obovato-falcatis hinc obtuse 1-2-dentatis, corosæ squamis longiuscule exsertis semi-bifidis basi leviter connatis (bacca globosa?).—*Folia* omnino *M. monogyne*. *Floræ* majores, in cymas simplices laxè dispositi. *Corosa* tubum corollæ hinc 1½ superans, intus villosula, squamis lobisve erectis angustis bifidis.

* The following diagnosis, taken from Sillet specimens, will distinguish the true *M. monogyne*, Roxb.: cymis terminalibus, corollæ lobis oblongis falcatis edentatis, corosæ squamis 5 distinctis brevibus lanceolatis integris longe pilosis, bacca globosa. A. De Candolle, it is true, says there are two scales opposite each lobe of the corolla, making ten in all, but this is evidently a mistake, for in all the Sillet specimens I have seen there are but five as described by Roxburgh and figured by Wight. There are indeed occasionally in all these *Melodini* one or two small smooth scales at the base of the lobes of the corolla above the corosa, but they appear to be quite independent and very irregular in their presence, number, or size, and might suggest the propriety of re-uniting the genus *Baccharis*, A. DC., with *Melodinus*.

I have a specimen of *M. saureoles* f It* auae for*, gativrvd by Mr. Kf em c* in a garden at Dahra, in North I iidu, ami oommniolrd to as tatkr ike name of *M. saureoles*.

3. *Melodinus saureoles* I, Chattp.; rvim, wnniaaltlnu, OQUQOB lobis suborbiculato-falcatis (fine <olabriformibus i) Kiuc biiknUtn, corona campanulata semi-5-fida *Leucotis* globosa.—*Lycium saureoles*, Ha:mio Walp. Ann. Bot. vol. iii. >. S).—iWM <uaci in *M. saureoles* breviori «i Ulwrm. ffrpat tjmdem magnitudiuc, ted forma loboranj rakfc dum*. (Www tubum liaai una superans, squamis const

All tfe ibovt J/^n^i ifeKtuR furtW ~[+**i''*n<< of • considerable number of individuals from different localities, to ascertain tfaeepatttr of UM distinctions observed.

Mr. Hance is probably oomwl in hi* suggestion, that *Oscinax* of Loureiro, hitherto *Myrsine*. ajutt be ailiad to, if 101 ft species of, iM *indiana*.

4. *Leucotis*, sp. n. ?
 Of this curious iM-kKiking pUut I hir« only small aiife-IWiaflbct, gathered by f Colonel Eyre, uui «1J to «u «boorail proliferosa state. I «fcr UMOO to *Leucotis* oa account of the tetramerous flowers, cinc glands, hypocateriform corolla, *uUnjt scales in Uw ihn«4, MM! bilocular UTUIUM i Imi I «ai unable to characterize t Wtu M • species, for I hav green and herbaceous, and therefore probably in an abnormal state, although bearing stamens, apparently perfect. These specimens are tvoortbrnr inches long and, from tkctr ramification, •rr t*4j«(>h prulifauui utfloraccftota. ID Uw lower part th*7 bear a f«w rioven wiib a abort lube to th» corolla, and obovate green i tobaa about three tiaaa bwje. and ftuur itwiwaw inserted in the mouth c/ th« lajbc; «o *»*—^*^*y abort auaaUr di«c round the ovar, U. style O»rt«r iK»tj ihe corolla, mod fatod at llw apex, am n) minute o*«b» in a«CB «att of Ue otan. The kafy Iwnwhaa til pce> cood fruau tW rmxn tt • io««r, of vluch UM> eajgrs it vnaltnvd, UM lobes «f ibe ourijk UMJU « nrtied uf Iaur ob«>tti» aqati Jatwa mood the base of the branch, there are no stamens, and the upper part of tie bnaoB it i,« nrdad «ilh leaves. NMat «l« oppoatk. obova«f or ittmt ofataa*. w membranaceous, 9 to 15 lines long, hf, aad BBaaie, 'i'al »rry fctw* tuifroird ai Ihfli... Immediately above cadipair, and albn* 1-4>f with the**, ai a pair (at reduced bwna or •caiw, %tn alaoriaad

broad at the base, and terminating in a long point like the stipules of a *Ferrea*, or of some other *Rubiaceae*. It would be interesting to procure this plant in its natural state, to compare it with this singular deformity.

5. *Alyxia Siccasis*, Champ., sp. n.; foliis oppositis ternisve parvis orbibus obovatisve obtusis retusisque coriaceis margine crasso recurvo, paniculis foliis multo brevioribus subsessilibus dense multifloris, corollae parvae vix duplo longiore.—*Habitus* et folia fere *A. lucifoliae*. Flores minores et numerosiores quam in omnibus speciebus mihi notis. Rami elongati, tortuosi, diffusi v. subscandentes. Folia breviter petiolata, raro pollice longiore, nitida, praefer costam mediam arenis, in vivo (ex Champ.) subdiaphana, succo lacteo. Fasciculae ovoides, vix semipollicares, ramulis oppositis cymosis. Bracteae parvae, latae, squamiformes. Flores 2 lin. longi. Calycis lobi crassiusculi, obtusi, glabri v. vix minute ciliati, glandulosi. Corolla alba, tubo medio inflato apice contracto intus subglabro, lobis parvis ovatis. Ovaria sessilia, basi pilosa. Baccae longiuscule stipitatae, monospermae v. in articulos duos monospermas divise, ellipsoideae. Endocarpium albidum, reticulato-venosum. Seminis albumen osseum, ruminatum; embryo curvatus, longus.

Exceedingly common on rocky hills and in woods, having a straggling or climbing habit.

6. *Cerbera Odollam*, Gaertn.—A. DC. Prod. vol. viii. p. 353.

Rather scarce in Hong-Kong, growing chiefly towards the sea-shore.

7. *Vinca rosea*, Linn.—A. DC. Prod. vol. viii. p. 352.

Apparently wild, but probably not really indigenous to Hong-Kong.

8. *Strophanthus diversus*, Grah.—A. DC. Prod. vol. viii. p. 417.

Abundant in Hong-Kong, in spots near the level of the sea, flowering in March and April.

9. *Rhynchospermum jassinoides*, Lindl. in Journ. Hort. Soc. Lond. vol. i. p. 74.

et in Paxt. Voy. Owd. ?*L U f. I* ed. t. 147.—var. *minor*, glaberrima.

Abundant in Hong-Kong. Gough. TW wdkcr* it* inserted about the middle of the corolla. The style is expanded into a peltate disc immediately under the oblong stigmatic apex. The plant generally agrees with Lindley's figure and description, except that it is smaller, and perfectly smooth, and the peduncles are shorter. Fortune's specimens, A SS, ^ IW otlfff hand, are larger and more hairy, and have the peduncles rather longer than is represented by Lindley. *Malouetia Aristica*, Sieb. et Zucc., from Japan, is a closely

I

allied though diMinrt species, •ad BoUrrimm *JbtU, Hook. «t Ant., (wilk wfefc* I tm unacquainted) w jflvoBBQr atoo a ooawnwr^ uvt M the seeds of none of thaw pbntt are known, it remain* u yet rrry uncertain whether they really belong to *Rhynchospermum*.

10. *Aganostma*? *levis*, Champ., sp. n.; glabra, foliis oblongis lanceolatis utrinque angustatis, corymbis terminalibus, aatjnai glanduloso, tubo corollae multo brevioris, ovaria brevissima i nectarium superantibus.—*Ocellis* scandens. JW i» ^-3-tioBima, crassiuscula, paucivenia. *Corymbi* pedunculati, laxiusculi, ———i. *Bractes* parvas, acutae. *Corollae* tubus f tin. fcJOjn», inKw iihhinaiii. Mm angustis obliquis supra pubescentibus. *Stamina* prope basin tubi inserta, filamentis brevissimis. *Nectarium* truncatum ——— dentatum, *Ovario* I. ifitiMte, stylo hinhwwB, stigmatate? subsessili crasso oblongo apice minute acuminato — bilobo.

In a ravine. Flowers white. It «M fiWmi d«» by If Hii ds, but in very young bud only, an4 I txwml) thtmtff it might bi tle *Holarrhena affinis* of Hooker and Amotl, Wt Major Champion's specimens are in good flower tmd Aa uaH agrae with ihnr tlwrtpion. I refer it to *Aganostma*, of *Uv which it has the ir. Hwt w i K awl (lowm, but until the fruit is known it will be impossible to •«!t' :!..!!!, It* genus with certainty.

11. *Ecolysanthera rosea*, Hook. et Arn. Bot. Beech. p. 198. t. 42.

Ravines at West Point, in the Happy Valley. Flowering about May.

* 12. *Pottsia Crutoniensis*, Hook. et Arn. Bot. Beech. p. 199. t. 43.

Hot f KiMq|-

(To be continued.)

Notes on the Sandwich Islands; by Uknu<>u> MIS ANN.*

Of the twelve islands which compose iW OwiJ^hih, «t •• it i» aotr generally termed, the ———— MM of MQ iijaap BHIM It «VBi its situde, covering a superficial mi dkt Uwn ^Kfiinw of n n K w is origin to volcanic action Id «o«AVc«al bj ft hdgtof ttaai mountains, traversed from north-west the summits of which are nearly always enveloped in clouds or deluged with rain. Numerous streams descend from these heights, sometimes

as little springs, more frequently forming cascades, which, after irrigating the lower lands, and diffusing freshness and verdure, discharge their waters into the Pacific Ocean.

The valley of Nuana, in the vicinity of Honolulu, which was formerly a mere wilderness, is now intersected by substantial roads, and converted into plantations and gardens, between which the still primitive huts of the natives, and the country houses of the foreign inhabitants of Honolulu, shaded by Koa, Ilae, and Kukui-trees, display themselves; while at a distance the mountain-chain arises, presenting, from the constant moving of the clouds overling • "•" - • • — — — " of its vegetation, and its deep nooks and a change of light and shade truly enchanting.

In advancing towards the north of the island the road gradually ascends until it reaches a broad chasm, where the mountain seems to have been torn MMMir. A strong breeze rushes into your face, you stand on the edge of a yawning precipice—the celebrated . ^ " " Your heart shudders tf ttolfa thought that here the victorious Kamehameha drove over Mi vanquished enemies, and that here the unfortunate wretches, instead oT ***** t*(of being in the fastnesses of the mountains, were doomed to VTwk Your cheeks flush, your pulse beats quicker as imagination paints with rid « t b t n Ua& febtoriod rnmt. awl you fancy you see the fugitives one after the other pushed over the edge, their bodies falling, touching the bottom, and dashed to atoms.

Having recovered from the surprise, a view opens which quickly dispels the gloomy thoughts of by-gone days, and the fear which the unexpected appearance of the precipice and the violence of the wind were calculated to produce. Beneath stretches the smiling district of Koolau, a grassy, undulating country, dotted with ft" of Screw-pines and Breadfruit-trees, IW lfm f*JI^II» «> r/ ft l'»I?..** of a sian landscape. Here and there «n fin! eta windia f their courses through verdant plains, farms surrounded tence, on a fine-looking bay, arises or ick , with its church, its court-house, and its extensive fish-ponds, the whole beautifully contrasting w.U tW bfMd ocean, which, like a silvery belt, encircles all, and bounds the view on the distant horizon.

Oahu, although situated within the limits of the tropics, and deprived of the cooling influence of snow-capped mountains, has i, no means a hot climate. During nine months of the year, from the be

beginning of March to the end of November, the winds are moderated by the trade-wind*, which sweeps with more or less force* across the island, and in consequence a considerable reduction of *lvm\mwim**. In the rainy season, the three months* that the trade-wind does not blow, the sun has* tempered too far to the south to admit an oppressive degree of heat; the thermometer never rises above 70 Fahr., nor falling below 50°. In winter the air is pure and refreshing, the sky rather a smoky blue, and the sun brilliant. No more is known that in March a little sickness prevailed, that epidemic* and almost unknown, and that the Uaguma disease, except those of a contagious nature, have not yet extended their influence to the natives.

The flora is neither strictly tropical, nor does it exhibit the same common in the temperate zone, rather a mixture of both. It is remarkable, however, only applicable to the island; in analysing the vegetation more closely we find that the greater number of its plants are derived from the eastern part of Asia and that Potynei*. the shores of Anatolia, and the frontiers of America, have contributed their share. To the philosopher who attempts to determine the geography of plants, the Hawaiian flora presents a problem difficult to solve. That the greater part of the island is like the branch of the human family which inhabit the former world originally have come from a common source is a speculation, and in the distribution of plants in nature probably employed other means than those afforded by the currents of the atmosphere, the waves of the ocean, or the influence of man.

A considerable portion of the plants are of the same kind, some of which engage the attention of every observer. The most remarkable only a single species, the *Coccoloba*, is found in the island, of two kinds of *Jussiaea* in the other islands of the group; the most of the island is a species of *Jussiaea*, *Orafa*, *Sedges*, *Linnaea*, and *Aman*. It is interesting that there are so few *Jussiaea* peculiar to the island, and there is reason to suppose that when the surface of the island was first discovered, the number of *Jussiaea* was small.

But whatever may be the component parts of the Hawaiian flora, or whatever its origin it may have derived, it presents a variety of useful plants*. Some afford the best wood, equally valuable for domestic use, and the construction of the

tectural works; others yield spontaneously abundant harvests of delicious fruit, only waiting for hands to gather them; while again a considerable number bear tubers and cereals, which contain a quantity of farinaceous substance, enabling the natives to prepare not only their own food, but also Arrow-root for exportation.

Some of the islands, especially Maui and Hawaii, produce several species of beautiful fancy wood. In 1850 King Kamehameha III. presented to Her Britannic Majesty a circular table, solely composed of these. In its centre were insid the royal arms, well developed with the different woods, but the greater part of the table consisted of the Koa (*Acacia heterophylla*, Willd.), the light yellow tint and feathery appearance of which render it an elegant material for every kind of ornamental furniture, while its toughness and durability equally qualify it for the construction of the native canoes*. The Ohia (*Jasione Malaccensis*, De Cand.) and the Koa (*Gordia ascleurata*, Lam.) also have a wood used by cabinet-makers and carpenters. That of the Ohia was considered sacred in the time of paganism, and served for carving idols. The Oahu Sandal-wood (*Santalum paniculatum*, Hook. et Arn.), the Iiaki, or Lam-ala (fragrant wood) of the Hawaiians, is now to be found in only one place, called Kuaohu. Of the splendid groves, with the produce of which formerly so many ships were laden, but a few isolated bushes remain, and these would probably have disappeared had they not been protected by the law, and thus escaped being converted into fuel. The specimens now to be seen do not exceed three feet in height, and an inch in diameter; they are growing on the slopes of hills, close to the sea.

Numerous plants are used as articles of food. The root of the K (*Dioscorea torosivalis*, Linn.), which has a sweetish-bitter taste, is baked between heated stones, and eaten; formerly an intoxicating beverage was extracted from it. The stem of the plant, it may be added, is used for hedges, and the leaves for thatching, and wrapping up bundles of food, fish, charcoal, etc. The leaves serve also among the native women as a medium of communicating ideas, which appears to be somewhat similar to the Quipos of the ancient Peruvians; the leaves are reduced to narrow shreds, and by making in them certain folds and knots the object is effected. The unexpanded fronds of the Kikawaiko, a fern

* The statement of a recent traveller, that the canoes of the Hawaiians are now of the trunk of the Cocoa-nut Palm, is erroneous.

are considered a delicacy by the Hawaiians; but it must be confessed, that to a Bawnai tbr y taste ins ipwl, ruuaibliaf in tsvoar RBDK the wtetoof a nm egg tbaa aayotber iwbaaafw. The flaaby Ireaka of lbe 4f*. KB Afxnd* & t wttb lcatraa lmawi & g nuvt oj(U l o twelve feet in cir-
 —reference | aAar bavtag bam roaatul. ami (kiu iirpnr «J of tbsir acridity, wr aafta, Tar /rait of the PhpmU* /- * . wv»«, lift*, is brought to iloaatak, wbei* the white raiiacaU a » U it iaio aw ts and pick, terming it aatirt Onraaiiii ry. Tba fruit of tba Lab«la (*Pandanus odoratissimus*, Ijntt) tbe CHyaa f / M N V M Mmtstttmm IH i tbr i .

the Kil in ' V ^ HM ImJtcm, l..), and mubv otbo \ ai^a caMa. TW berry of th« kiln* *Wf« npc i* Mack, but tnfriv.r ID BJtfOal V> nny **it** MUIDCTTW rulittstru >n t *ir* >v tali Mdfittt u i prorr d aat; silk plantations; its foliage is sm alyatooc takfa fimalba lcUa at random, of eight months' frovrta* anwlaaad Ura pa—di aad * half of lomt, aod vitbia «a wekt after Wi»f »b.4U *in|»»i, it had so amca wamrad. t tmt it M D U aot be daMioguwbed (uaft tb(M which had not brra m trv*U«L Tae >miiwnk l»Uwl« ARM-IW it is prepared from spontaneously in dry sunny is a considerable extent; it

foul* UMKI* fnm its tubers is .jual t the best West India Arrow-root, tad amca awd by tbt inbaMUat* far cuUion preparations, starching >MB, Mtd ifaifciai dttrr porpoao It win tn iMaOnai at aowt .*. * .ata a pewftd, *nd, accafdlajr in aaVial f«taaja« i>»<4t lbt. of it werr rported in 1845; 10,000 HI lb» in 18 i«. U tae t bw fotkm ing years quality wni to lbf«%a auuauiai *«)nm. in 1850 it again in-

traced. MM wm «»»poftaat taut tbe i ia, is ibr IUlo* (<U*mm*«> **Uai**«> pleat, Schott), the favourite vegetable of the Hawaiians. It is <^aiaa> iov« in artttaU 1***1*, bttl *)*>*, is in C au«J America, on . dry round. Aa la tb* «aw wilb ail v^gatafaln loa^ eabitated by awft, a reat number of v .vtir exist, dMa«uabad ftoai aafh olaar by lbc flour of the corns . the entire

)4v tnt aad *br abapa of tb* laaVaa; tboat wMfattai bowavar ia * . * h a b fDloar prwih m nnmMwH la*rvat, aad tfc* tribata to the irt

was first "Taro" by the early voyagers, though incorrectly, as there is neither

chief has always to be discharged with them. Besides the Kalo, there are at present under cultivation Sugar-cane, Sweet Potatoes, Water Melons, Cucumbers, Potatoes, Bananas, Pumpkins, &c. No pains are taken with the Breadfruit, as the natives, unlike those of the UwtJ 1**U, *, *A mi it. Cocoa-nut Palms are grown on the sea-side, but do not thrive well; they have evidently attained their northern limit. Under the old despotism, their fruits were reserved fa*tW • « . women not being allowed to eat them; but since the overthrow of the *talo* system tad tW WaAi in superstitious •»*. IW.* i U»1M>. lifcc • • H others, was discontinued, and Cocoa-nuts are now eaten by both sexes.

Various vegetable substances are employed for miscellaneous purposes. One of the most valuable for medicinal purposes is the bark of two trees—the Wauke (*Broussonetia papyrifera*, Vent.) and the Mamaki (*Bolusaria albida*, Hook. et Arn.). Formerly the Cordage was made from the *Morus Indica*, L., but as it is of inferior quality, it is now made of European manufacture may be had at a cheap rate, but little used. Cordage is obtained from the Han (*Paritium filicicum*, St. Hil.), and two Solges, *Solges* through similar processes of preparation as the Flax. The vessels out of which the *Wai*, i. e. *Wai* (*Colocasia esculenta*, Schott) is made consists of the shell of *Cucurbita maxima*; the network surrounding it is prepared from the bark of the Han (*Paritium filicicum* St. Hil.). The water-flasks, or *Hawani*, are sometimes handsomely ornamented, and are obtained from the Bottle Gourd (*Lagenaria vulgaris*). The kernels of the Kukui (*Aleurites triloba*, Forst.) are used for making oil, and are also employed instead of candles; a number of them strung upon a stick will burn for hours, giving a clear and steady light.

The Hawaiians display an intimate knowledge of the Vegetable Kingdom. They possess vernacular names for nearly every plant, and have almost invariably succeeded in discovering the uses to which various herbs, shrubs, and trees may be applied. These they are always ready to communicate, with the exception of the medicinal properties. The knowledge of the latter is chiefly confined to the native physician and the "wise women," who, deriving from it a lucrative return, observe a strict silence on these points, and, if questioned, give an evasive answer. Their sovereign remedy seems to be a decoction made with the root A U *Awa* (*Piper methysticum*, Forst.), a plant cultivated

different part* of the kingdom; but u formerly great quantities of intoxicating liquor were ex. in rri«-fl fru in it, its cultivation is %% present restricted by a law, according to which, in the whole Hawaiian dominions, only four h-tch, each not to exceed four acres in extent, are allowed to be planted with it.

Contributed to the Botany of Western India;

By N. A. DAL*ELL, Esq., M. A.

(G)

Nat. Ord. SCITAMINEÆ.

ZINGIBER.

1. *Z. Niamosii*, Dilt.; M. N. L. n. 1. f. v. «4~«n»*. t. «, - labro. foliis lanmV! alis animmat is basi in petiolum brevissimum angurtatit wipra la?tr » iridibus subtus pallidis arachnoidicis, spica adaccpdeiila cnaU but* pedunculata verticem vix e solo exsertente, bracteis lmc ari-oblongis vel lanceolatis acutis a>bra n*bn>-* cristis aurafeav Hindi*. cotoUn lacinis r\irT: ^n''U* mi%r*«Trui.-ni'irt*_k i>r. «lli ins«>oi rail i'i». •MICT- medio ovato-rotundato vix emarginato, capsula ovi columbini magni

Crescit in utroque Concano, etiam in jugo Syhadrensi; fl. Julio.

Alt. tMM|r> it b a maxim aw on a; naiwrafaU that dtfermci s of colour with aMI jiiifiraii* of form eaaaol makr a apedaa, 1 find ta making out tar dUlffrtial Hkaractcn of tbt> fpaaw great I MAP In mwitii g colour «« «dl aa ttf to tW rery gnt o uifonuity among the species, UJ> aa nyud> Wahit and Hrwiurr, CTOI of tfer minQtcat part». T V present •pevka it by (ar tke momowtt of tke tbrw hat* tkfribfj, and it i »tba o*W oor of wirfdi l a« at att fai d<mbt a* to il- bcJt* an undescribed species, aa it a fiw* wail wrta ifca daaenptian of *Z. pseudo-rufum* of Botb. nor lad., wak4 lwtvit was not found in the Indian peninsula. TW aaacia* wbira l iawt warn attnatpiwf to duractrrtu it mentioned J» On kn't aatalofw of BoMfaajr plaala, uadrt tbc mac jCm ^MaaiM JvafiHsa*a> out at isas IH M tbc wwrn¹ were unknown, which IM ac4 muck to be weaxknd »t. m ihrj appear (in common with «f tW otkt .jjcr*» j at a time whm the wbok oouutn it deluged with heavy and continued rains.

2. *Z. cerasum*; caule glabro laete viridi, foliis anguste ellipticis acumina-
tatis striisque glabris, spicis ovatis obtusis brevissimè pedunculatis
verticem vix e solo exsertentibus, bracteis ovatis vel oblongis obtusius-
culis luteo-virescentibus glabris interioribus brevè trifidis, corollae
laciniis exterioribus elastacis, labelli trilobis lobo intermedio ovato
profundè bifido albo puniceoque lateralibus flavo puniceoque pictis.

Crescit ad Ram Ghât; f. Julio.

This is the smallest of the three species here described. The apex of the leafy stem is always somewhat curved; beside this mark, it may be readily distinguished by its bright green stems, never having a tint of any other colour. The habit and form are entirely those of the preceding, but the colouring of the lip is the handsomest of any species I have seen. Fruit yellowish-white, smooth; seeds (unripe) red, striated, with membranous aril.

3. *Z. macrostachyum*; caule rubro pubescente, foliis lanceolatis acumina-
tatis supra atro-virentibus subtus pallidis pubescentibus, spicis e radice
solitariis vel geminis cylindricis elongatis longe pedunculatis, bracteis
obovatis acutis rubiginosis, corollae albæ labio 3-lobo, lobo inter-
medio rotundato emarginato lincis purpureis flabellatis pictis, capsula
obovata pubescente rubra bracteis breviorè ovi fringillini magni-
tudine, seminibus atro-purpureis arillo longe fimbriato omnino tectis,
spica florifera sesquipedali rubiginosa fructifera magis elongata laete
rubra.

Crescit ad Ram Ghât; f. Julio.

This species is well distinguished by its long stalked spikes, and also by its very dark green leaves. The root smells much more aromatic than those of the two former. This is also mentioned in Graham's Catalogue under No. 1455 as *Alpinia Meesa*, from "Meesa;" neither had the flowers of this been observed at the time of publication.

Nat. Ord. VIOLARIÆ.

Ionidium acroperum, Dalz.; semipedalis, caule simplici stricto pubes-
cente, foliis linearibus basi apicisque angustatis glabris margine sen-
sibus remote denticulatis, stipulis subulatis ciliatis, petalis latera-
libus ovato-oblongis obtusis mucronatis, capsula hexasperma.

Folia 20-22 lin. longa, 2 lin. lata.—Crescit in collibus prope Belgauz,
f. et fr. Julio.

Ver\ diacрати fmm /. lajhiw'niiw or m M a w n a i, whack an certainly flm aad the «mr jpasfaa. Tfce prwent pUnt kat oo bi much luagtr «ml proportionally narrower kavo*, and larger flowers of the beat (twliactnu are in la* aamfacr of MMU, aa4 in t i e / * * of lateral pcUl», «aidi in"7. mfrutK+mm mr mtwmintUifnm tkt middle, while in the prr^ttt cpMiet ibcj aie tuafjr M bvoad at lac apar a* at the baat, bhmt, and ftiraiaaed wiik a . nafo, Tkia cpcda* •taia* papar yellow. A* ! f^kvad thk on ike hoflfcn of H*y«* nfm. and a* it agrees naaariabl r nfl wttk tke dcacripCiaa of /l a b arwnta, Uath, Nov. PI -p. (w:k thr Adaption uf ">W*" aaym." watek at of no moment, to ktfawaf lk» to hr Urjne'« plant, «od llui lo giv« r*dta erecta as a synonym for *I. cuneospermum* is an error.

Nat. Ord. COMMELYNEÆ.

Cyanotis adscendens, Dalz. i noUbw « ndite tftbaoto planb«t adscendentibus simplicibus basi ad nodum infimum radicantibus teretibus striatis nitentibus alternatim linea pilosa instructis, foliis linearibus acutis glabris carnosissimis recurvis basi vaginatis vagina brevi integra glabra vel pilosa, pedunculis axillaribus terminalibusque elongatis, axillaribus solitariis v. geminis, terminalibus ex folio supremo quinis umbellatis, capitulis involuto-spiceatis multifloris (30 N. r i) folio brevi suffultis, bracteis floralibus biserialibus imbricatis salentis obtusis ciliatis.

Tubers cylindrico-oblonga. *Caulis* ses pedalis. *Folia* 2-3 poll. tonga tr } lin. lata. ftfaf^ .-ll. k 3 p } ungi. *Calycis* laciniæ lineares, acutæ, dorso pilosæ. *CkniU* S Ua. longa. *Filamenta* corollæ duplo longiora; antheræ fl. *Ovarium* 3-lobatum, adpresse pilosum; semina in quoque **lsnb I**, *septa*, nitida.—Crescit circa Belgiam, in graminosis humidis frequens.

Tka> tpeaiat f fliUi *C pihm* (Hum. ot detail) in its inflorescence and its r *K but daffrn otkvrnat piirifanfaly, a* tke? is no tuft oi elongated radical [Mt«« m ibi« pUi •to a iipmak it UW a i m Reem. et Schult.) is ike aSfklaat «Vfm-. tke loafnat leaf iwv< r ex- ceeding three inches. IV torn «? «4 « Imrjlr WIK, attd ooaat oat a succession, and ta gmu numbers, dbhaf tW «Vaai rainy season.

Nat. Ord. ACANTHACEÆ.

Asystasia Lowiana, Dalt.; caule herbaceo erecto quadrangulati nodoso trichotomo, foliis elliptico-oblongis acutis basi in petiolum pollicarem subito angustatis supra scabriusculis subtus nervis hispidis cum petiolo 4 poll. longis 2 poll. latis, spicis terminalibus solitariis brevibus, floribus approximatis oppositis sessilibus decussatis, bracteis bracteoisque lanceolatis acuminatis foliaceis triserviis villosis illis corollam superantibus.

Bractea 9 lin., *bracteoia* 5 lin. longa. *Calycis lacinae* subulatae, glanduloso-puberulae, 2 lin. longa. *Corolla* parva, alba, bilabiata, 7-8 lin. longa, labio superiore 4-loba, lobis obtusis aequalibus, inferiore integro, palato transverse rugoso, medio sulcato, ibique pilis introflexis lineato. *Capsula* immatura glandulosa, matura 8 lin. longa; semina, ut in genere, 4, fusca. *Filamenta* glabra, antherarum callosi. *Stipes* brevissime bilobatus.—Crescit prope Darwhar; fl. temp. pluviali.

A remarkable plant, discovered by my friend Mr J. S. Law. Though it has the smallest flowers I have seen genus itself is here exhibited in its most highly-developed form, for in all known species, with the exception of *A. denticulata* (N. ab E.), the bracts on the other side of the rachis, opposite each flower, are sterile or empty, the flower being undeveloped; hence the generic character of "flores secundi," taken from a series of what I may be allowed to call unperfected forms, is not perhaps quite correct. In the present species each bract subtends a flower, and these bracts also are more highly developed than usual, as they are scarcely more than scales in the species previously known.

Nat. Ord. LEGUMINOSÆ.

Glycine pentaphylla, Dalt.; caule tereti velabili strigoso, foliis bipartitis cum impari lanceolatis mucronatis supra sparsim subtus crebre strigosis, floribus axillaribus interrupte spicatis, spicis strictis rigis sic solitariis vel geminis folio brevioribus.

Folia 5 poll. longa, foliola prominulo-reticulata, *calypollata*, inferior minima, impari maximo, 3 poll. longa, medio 1 poll. lato. *Floris* in rachis tereti strigoso gemini, subsessiles, minimi, crebri. *Bractea* minuta acuta ead quoque pedicello brevissima, tertia inter pedicellos

Calyx adpresso pilosus, basi bibracteolatus, subbilabiatus, dentibus
oajnztm* breribiu aeatti lubflvjuolibtu. *Farilimm* otito-Mmdafrm,
fnaaintm, longitucalo ungaieokUno, dono tdpraate pfloww. .-«*
tanaque rquilongir. *Stttmima womodetpA*; %onthn* oisoet frttilw.
alternae breviores. *Ovarium* adpresso pilosum. *Stylus* brevissimus,
incurvus. *Stigma* capitatum. *Ufwmm* (iminatuniia) vaU* u jwyw-
sum, lineare, •ruturn. marram hrrvi nvto l^rniitwita (n^{vis} inter
semina coherentibus), pluriloculare, •^aqwpottfcare, fcw 4 UA. latuav
sutura bcnaaHam.—Ctaaft in rr^n.i Uanrwhn, L iNavore fc-
gido.

1 h*rr given rather a deUOed deacnptloo 01 this newly-discovered
plant, because it lifer* from the gmm at dfAned, in W i^bt and A n*at's
Prodromus, in haiing no unriiutr narro to lhc p^d. so pa? tial stipules,
and few laiafri bat I think « = f hr aaWtbd that it it a . J ^ M
Glycine, notwithstanding the vbolt* »(ryrttirr of tW ft¹
of *O. Mt*»*, with the ex tptkw r/ the sterile anthers of the
latter. The lapH* u broa.lrr tluu m *a> alher O^ifiai I han seen,
while the flowers are only 2½ lines long.

I hey to lake advantage of the |amal oppatiaailf to eafraal aa
error I cot with respect t n a le ^ ai * t 4 ent from Cassara,
described in the second volume of this Journal* Under thr name of
Pongamia Cassarensis. Having since been i fiirtuiwte in obuioiftg th#
legumes (lhra «nkfWT«fi>, I find that th« i«Unt it a tHond«, species of
Brachypteron, and has th- lrfuuv? yWaitfcrf ri/i # «*rf ri>/ «• Call
sides : a ihird apactaa of tak gem*ktke /kaVvyia aiafyiaiaN </ Roxb.
Flor. : Tw, of t i n ^ Maraaft a ^ n M i (Grab.), (Slight and Arnott's
Prodromus, p. f «8, i» a ayaaj*. Thai laat dmiH< is pretty common
is ihii part of Imlia, and I have *Umad ü* both ahoi* «od boloa> the
Ghauts.

Nat. Ord. EUPHORBACEÆ. Tribe BUXÆ.

PROTORUS, Dalz. Genus novum.

Floris dioici. Calyx 4-partitus, laciniis aestivatione imbricati. lo-
rinribiM auMonbaa. CWvJat aattt. *Stamina* 4, in disco carnosio medio
inserta, laciniis calycinis opposita; *antheris* ntrorak. *Ovarii* ru-
dimentum nttOum Fern. C. /•# ut in fl. masc. *Ovarium* disco car-
noso insidens, 3-loculare biovulatis. *Stylus* nullus. *Stig-*
mata 3, longiuscula, plana, reflexa, apice bifida. *Fructus* capsularis,
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trilocular, cocciis bivalvibus dispersis. Sessile nitida, purpureo-carulea, testa ossea.—Arbor in jago Syhadrensi crocena, foliis breve petiolatis, stipulatis, ovalibus vel oblongis, breve acuminatis, glabris, penninerviis, integerrimis, stipulis parvis, acuminatis, deciduis, floccibus in ramulis junioribus, infra folia juniora fasciculatis, masculis numerosissimis, pedicellis 3-4 lin. longis, basi articulatis, bracteolis minutis, obtusiusculis, sessilibus; ♀. locumina ternis, pedicellis longioribus.

Procerus India, Dalz.

Both male and female specimens of this plant have long lain in my herbarium unnamed, the former as a tree of which the female had not been found, and the latter vice versa, it having never till very lately occurred to me that there was any relationship between them. The male flowers, which are minute, appear along with the young leaves in March, and the ripe fruit is found in the rains. The genus comes very near to *Flüggea*, from which it differs in the quaternary division of the perianth, the fewer stamina, the absence (in the male flowers) of nectarial glands and rudimentary ovary, notwithstanding the habit is entirely that of *Flüggea*. Perhaps this is the plant alluded to by Dr. Wight in his note on *Flüggea leucopyrus*, Ic. 1875, where he says, "On the eastern slopes of the Nilgherries a very distinct form occurs in great abundance, flowering during the earlier months of the year, and much more luxuriant than any I have seen on the plains. It is perhaps a distinct species, a point which I regret to say I have never determined by careful comparison." Gen. name from *επισημον*, *effinis*.

Nat. Ord. CRASSULACEÆ.

Kalanchoe Ritchiana, Dalz.; sesquipetalis, herbacea, glauca, caule simplici erecto tetragono succulento, foliis oblongis basi versus angustatis perfoliatis decussatis crassis cernosis crenatis margine obscure dentatis inferioribus approximatis glabris superioribus viscoso-glandulosis minoribus, inflorescentia terminali racemoso-paniculata viscoso-glandulosa.

Crescit in colle "Caktay" dicto, inter Belgazum et Sholapora. Legit Dr. Ritchie, cui rite dicata.

Folia 6 poll. longa, 2½ poll. lata. Calyx inflatus, viz ad medium pædrifidus, glanduloso-viscidus, 3½ lin. longus. Corolla calyce subduplo longior, basi ventricosa, medio contracta, apice 4-fida, laciniis oblongis apice emarginatis et mucrone longiusculo incurvo termi-

natis. *Stamina* 8, quorum 4 in medio tubo, 4 his alterna, in fauce; glandula hypogynae longa, lineares, acule, capsulis dimidio breviora. /la m dwUuUs, alterni, bmriKtae |>fdicclinti, bracteola subulata iofful ti.

Ait <n>rrinat> on of this remarkable plant more than pr<m the t mib of De t'tadollr'* observation, as contained in his memoir on this family, "Qu'il est • • • <ut-Hre plot conform* m rflaiUi de r&uur fliyu-pintimm vrtmtae uteiHrh tic A r/<••A:v " for *c Lm - !• r. ih<' tu'l !• -I •twl ttibvUr e>i>\ of the former, with •it t*< at**r p<rt> pecolv letke bltcr gewtt. It ft eri<l<ot theidbre thai thr two muft form bat one [[B<llt, ai>J *BryopkyUmm.* the Itttf Ml: e, be expunged.

BOTANICAL INFORMATION.

RICE-PAPER OF CHINA.

We had flattered •amfcmtti. at the question respecting •> <<r\su of the Chinese Rice-paper had been set at rest by the results of our inquiries as related in the pages of this Journal, namely, that it was the product of a plant |w^ liar to the island of Formosa, to which we believed we had sufficient materials for assigning the name of *Aralia ? papyrifera*. (See our figure and description, p. 50, Tab. I., II., of the present volume.) Other plants, it is true, had been suggested; but either the iiwriulUrr »ot • • • pVWd, on investigation, like the "Skole," not to confirm the opinion, or there was no opportunity of coming to a knowledge of the nature of the plant suspected. Our own reasons for believing the *Aralia ?* to be the plant are before the public, and they have, in our minds, been ^ substantiated by subsequent inquiries, particularly by those instituted by the Messrs. Bowring, father and son, at Hong-Kong. These gentlemen have been indefatigable in their researches. They have procured for us specimens of the stem, of the pith, numerous packets of the paper as prepared for commerce, etc. etc.; and now at length we have the high gratification of saying, that out of four separate cases sent by the Overland Mail, on two different occasions, two living plants arrived in a healthy state at the Royal

Gardens of Kew*. The results of all the well-directed efforts† to ascertain the true plant, commencing with those of John Reeves, Esq., some thirty years ago, to the present time, point to one and the same plant, viz. our *Aralia / papyrifera*.

A number however of the 'Journal of the Agricultural and Horticultural Society of India' (Part 2 of vol. viii.) has just been most kindly communicated to us by Dr. Falconer, which contains a memoir "On the Plant yielding the Rice-Paper of China, by W. T. Lewis, Esq."

"I have frequently," says Mr. Lewis, "remarked the similarity to Rice-paper of a substance in common use among the Malays and Siamese in making their artificial flowers, and on examination was convinced that I am right in conjecturing that it is the same. I have therefore procured some of the plant, which is very abundant on all the sea-coasts of the Malayan Archipelago, and find it to be the *Sarcocolla Taccada* of Roxburgh."—"Only one or two Chinese of this place (Penang) have been able to give me any certain information of the paper, and from their accounts I am enabled to afford a pretty satisfactory description of the process of preparing the pith for use." He then proceeds to say, "It is not plentiful on the coast of China, but is imported from the island of Formosa in pieces four to six feet in length. The outer parts (bark and wood, greatly resembling the Elder plant) are taken off, when a sharp instrument, from ten to twelve inches long and about four inches broad, is employed for slicing the pith carefully—and by an experienced hand, as this is requisite—and then flattened out."

The above is very nearly the whole of Mr. Lewis's communication; and from this, although that gentleman is aware that the stems are imported from Formosa, it does not appear that he has ever examined or compared the stems and the *filings* of the two: but rather that he has formed his opinion on a comparison of the *piths* exclusively.

* One of these, at the request of Dr. Bowring, has been presented to his Grace the Duke of Devonshire.

† We are here happy to have the opportunity of adding the exertions of George Bennett, Esq., author of the 'Wanderings in New South Wales, Singapore, and China.' While correcting the present sheet for the press I have the pleasure to receive a letter from Mr. Bennett, dated Sydney, June 28, 1852, referring me to p. 77, vol. ii., of the above work, where he has related the substance he received in 1834 from J. Beale, Esq., of Macao, in endeavouring to ascertain the plant yielding the Rice-paper. He there gives a woodcut of a drawing prepared, professing to be the plant, which the late Mr. Lambert and Mr. David Don considered was probably a species of *Aralia*.

we think, stronger evidence for considering to be an Araliaceous plant, for we possess perfect dried stems, the dried foliage, the pith in various stages of preparation, and now the living plant. We are nevertheless grateful to Mr. Lewis for having, as Dr. Falconer says, "awakened attention to a material of the Malay Islands which has been long overlooked, and which is, assuredly, not inferior in texture to that of the far-famed Rice-paper." We trust that our Kew Museum of vegetable products may, through the kindness of our friends in India, soon possess an extensive and illustrative collection of the "*Tacca*" pith as it does of the Rice-paper. The living plant, the *Saccolis*, we have long possessed in the garden, from our great oriental contributor Dr. Wallich, and from the late Mr. Allan Cunningham, who introduced it from the northern shores of New Holland. From the observations of De Vriese, in his Memoir on the *Goodenaceae*, there is reason to believe that *Saccolis Tacca* of Roxburgh is not specifically distinct from *S. Kinshipii*, Vahl.

We shall conclude our present notice of the Rice-paper by an extract from the recent letters of J. O. Bowring, Esq., Hong-Kong, which accompanied the rooted plants.

"Mr. Sullivan," he says, "H.M. Consul at Amoy, is at present in Hong-Kong, staying with my father, but he is, I am sorry to say, in so weak a state that I have hitherto been unable to obtain any information of value regarding the plant, and I much doubt if he can really furnish any. The Chinese at Amoy tell the most extraordinary stories of the way in which the plant is procured; yet Mr. Sullivan seems to think that this arises quite as much from ignorance as from a desire to deceive. The leaf of the plant resembles the dead one I saw last year. I send you the living plants in their original Chinese juts, as they are growing so well therein that I do not like to remove them; and I have had a couple of Ward's cases made, in which I hope they will travel safely.

"I have also obtained from Mr. Sullivan a quantity of the Rice-paper made up in packets, as it is exposed for sale at Amoy, a number of specimens of the pith, some of which is a foot long, and some artificial flowers made from this curious substance. A bundle of the Rice-paper contains, or should contain, one hundred sheets, and sells for 55 'cash' (five farthings, or thereabouts) each bundle, so that it is evident that the plant is produced in great profusion in the places of its growth.

Mr. John Smith, who returned to Eafraad by tW-awO, hM kindly taken r ba njr of a pm*krt raotraut^ ctgnf nvnums iMvtt of the Rioa* papr, in the state i vfcid it is \pn*od far air. which hr will .Direr to yon, and be will abo fiv* an err iincMitmlty to the H*mir plant. [The bundles of p*f<r m ntrlj chpoatod in ou annum, but the growing pltnU *bore mwitinwwd wrtr raoaivpd qute dad.]

" - iuw (taft wrote' obwrros Mr Bownng in i Mibscqwaf tMcrc, " I have received fr HI \noT n <BO<BOW Mipph of the pHh, VOMP of the bqrt piece* of which I wilt <md y.11 with thi artificial flow* I TV ntfntnKuL** which are B*id to be imyitrtA tn paifMUig the namer <tyer al*o rnachftfl (IK. but they are such common, rough-looking . * trttck* thil I tospoct them to be turtrly thott <Md in ewtiMf down the planU in the vo sds. As I ttod that »M» of the ti^*htp% arc likrl, to tooeh here At prr*rnt, on thnr wuy fnM Wbjn©|xia, I haw BUMV wjt mr mi>l t« trad two note of the pi ants overlaid, and I now e odoav the hiU of bdiaa: for I be two tmm, H« have jtwt heatd from Puhflhtnr that nothing ha* been jH ^WHBH them napertug tW plu*t IV c hirtaWawawn of that placv had, at W*nun« thai mj fathat ha4 4 sigd inquiries ko be afcatir o* ihr inhi'i^ . deaMaahnl 4 avaaMaMt Formosa to obtain live plants and gather information; but it is feared that the junk in which he embarked has met with some accident, as nothing has been heard of it."

MR. CHARLES WRIGHT'S Plants of New Mexico.

Our friends will be interested i* ioowii* IU Mr. Charles Wright has continued to prosecute his botanical researches in New Mexico with eminent success, extending his journeys to the borders of Mexico [*n]- per. The first part of the sets O « d in 1851 and 1852 m iww ready for distribution. (' • xttafato O separate inclusive, and Dr. Asa Gray has already commenced)>rtAta^ thv »• * <. m whkih thrj will

* The instrument here alluded to, two of which are deposited in the Rice-paper collection of the Kew Museum, is like a s*U hatchet, or an implement used by the peasantry for heading and tailing turnips, rather than one required for cutting the cylinder of pith into the delicate sheets of paper; yet our drawing, represented at Vol. II. 1V. IX. of t)i« Journal, shows such to be the use made of it, if their drawings and the accompanying descriptions can be depended upon. In those drawings, however, let it be observed that the size of the pith is monstrously exaggerated.

be named or described according to the numbers attached to them. Scarcely ever, writes Dr. Asa Gray, have I received any collections that contained so much of novelty.

We are thankful to learn that so able and experienced a collector is about to embark on another botanical mission, **wlbtf Jbr tW** Sandwich Islands and the coast of Oregon, **«r fr** is, what we earnestly hope will be accomplished, to accompany the United States Japan Expedition.

NOTICES OF BOOKS.

BONPLANDIA, a new Hauserian Botanical Journal; conducted by Berthold Seemann (in London); published by Carl Rümpler (in Hanover).

This journal is intended, according to **ID IM** prospectus at the commencement of the first number, to be devoted to the practical applications of Botany, and **IW artkW • tfl. «• tk»<** account, be made as popular and amusing **M pOMUr. » tkit** purely scientific research, which cannot be considered of interest **to tfer** general reader, will find no place in it. It is proposed **tot,** the newest botanical discoveries which have reference to medicine, pharmacy, horticulture, agriculture, and, in **tot,** all branches of practical science, as well as accounts of botanical journeys, papers on the geography of plants, and occasional biographical notices; but all controversial matter will be carefully avoided.

The first number contains an interesting article **«• <it Udltw<U»** of Tea; an abstract of Dr. Royle's essay on the Soma plant; some remarks on poisonous Colerone, by Dr. Schultz (Dipontinus); a biographical notice of Edmonstone, the botanical traveller; some reviews of books, and numerous pieces of intelligence on botanical subjects. The work is to appear in fortnightly numbers, each of which will contain eight long-quarto (or small folio) pages, and the price is fixed at 3½ Prussian dollars per annum. It is announced that contributions, which may be written in any European language, but will appear in German only, may be sent either to the editor, Mr. Seemann, at Kew, or to the publisher, Mr. Rümpler, in Hanover.

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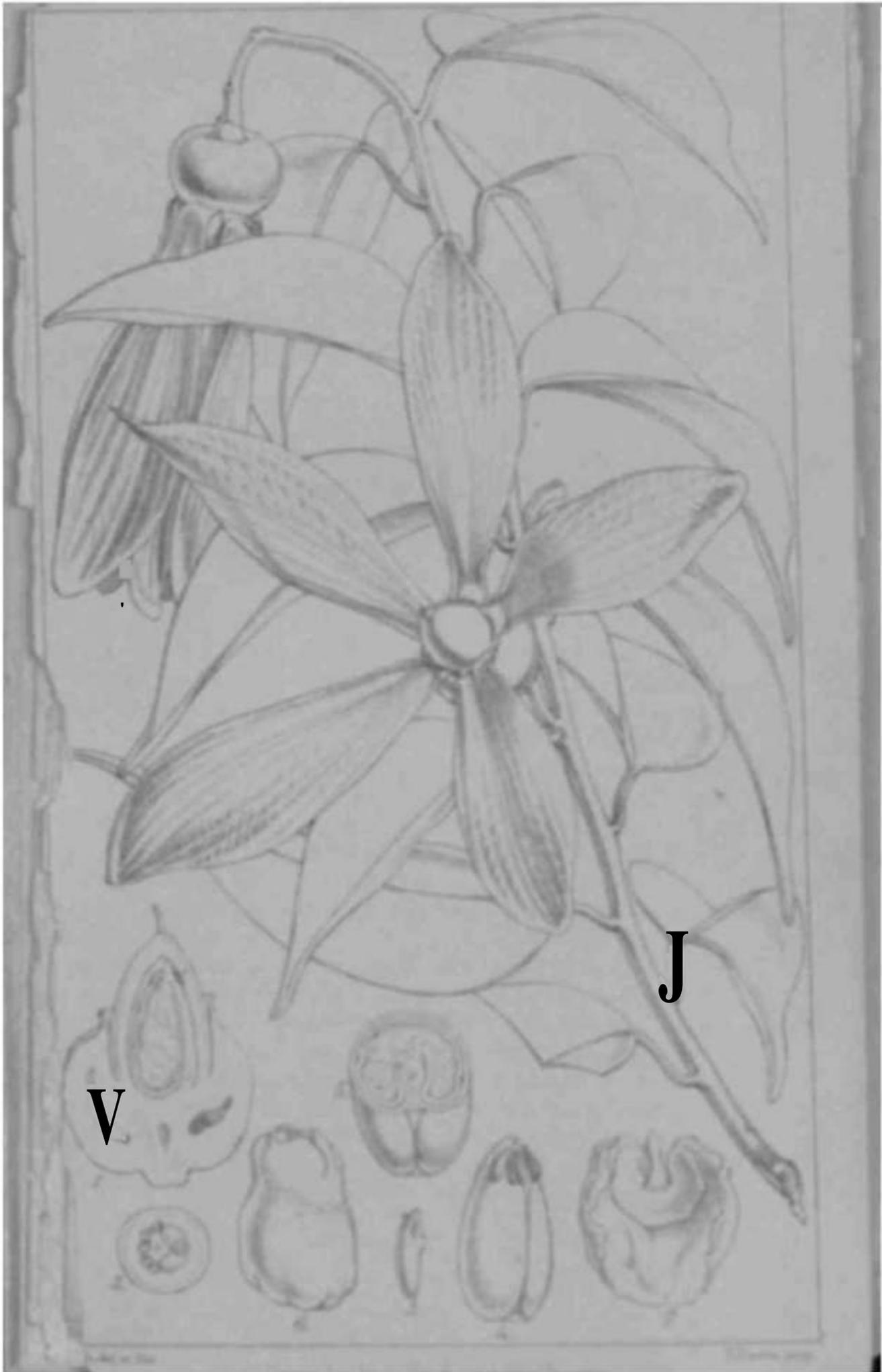
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Marasmius stipitatus Pers. *Marasmius stipitatus* Berk.

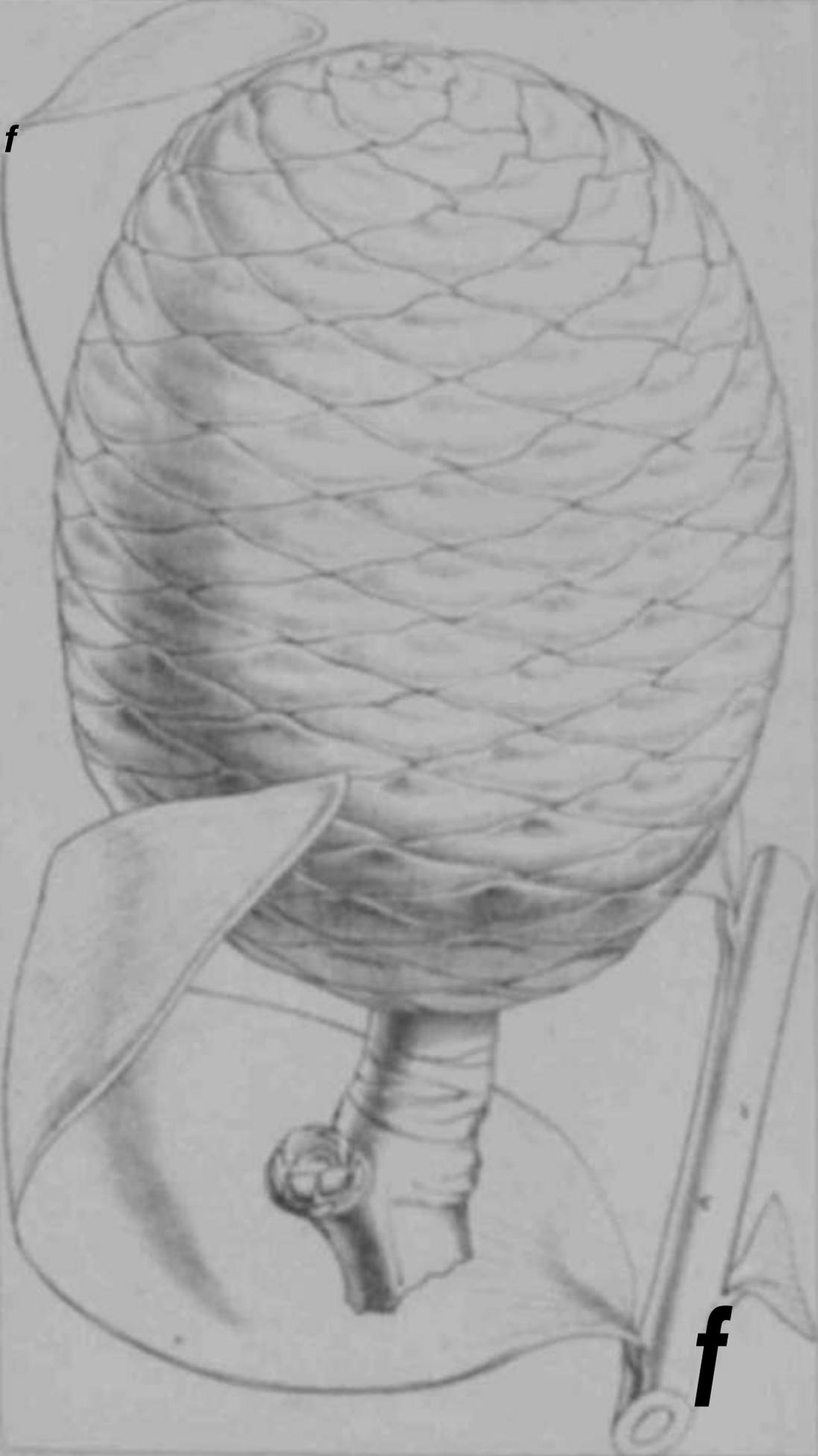


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Amanita Afofole

Spencer 1892

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Demmara Nevada Mill.



Deparia Montii Hook.

Wm. A. Patten, Del.





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