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Wallich, N.

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Florae Nepaulensis

B-21474

1893.

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## MAGNOLIÆ, MICHELIÆ ET KADSURÆ NAPALENSES

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Next after the stately *Rhododendrum arboreum*, the members of the family of *Magnoliaceæ* claim the most conspicuous rank among the vegetable productions of Nipal, whether we consider the magnificence and fragrance of their flowers, the beauty of their foliage, or the general elegance of their growth. They are without exception large deciduous forest trees, yielding excellent wood for the purposes of carpentry and joinery, and not only admitting of being introduced into Bengal (three of the five growing with great luxuriance in the Honourable Company's botanic garden at Calcutta), but holding out fair prospects of standing the winter even of Europe. They blossom during the summer and ripen their fruits about the close of the rains; during winter, that is to say, from the beginning of November to the end of February, they shed their leaves in common with the majority of the trees of that Europe-like country; and in March they are again full of buds, which soon are succeeded by those of the blossoms. These buds are of a nature which is, I believe, peculiar to this family, and unite, at once, their own proper function, of protection to the tender shoots, to that, belonging more properly to the office of stipules. They consist of two, at first fleshy, afterwards membranous scales, which are always more or less downy, cohering in the shape of a cylindric tube, whose base is inserted circularly round the branch and obliquely along a protuberance on the upper side of the petiol, which latter scarcely extends beyond this said insertion and is at first totally destitute of any leaf-like appearance. As soon as the bud has come to its full size it splits into two equal lobes, beginning from the base and ascending along that side, which is opposite to its insertion on the petiol and soon drops off in the form of two large stipules.—The flower buds are large, solitary, erect, of an oval form, mostly clothed with wool or down, lifted up on a short, stout, columnar peduncle, and in *Michelia* always axillary; they are enveloped in two entire, membranous, rounded spathes, the outer one much sooner caducous than that within, which is contracted at the base into a cylinder, closely embracing the upper part of the peduncle. When it is considered, that these noble trees are natives of *Cu.* country, where the heat is never intense, and where they are exposed, during four months of the year, to a rather severe winter, sometimes even to falls of snow; that they are deciduous, and lastly, that they are extremely well furnished with protection for the tender leaves and blossoms; reasonable hopes may be entertained of their standing the winter even of England, equally well with many other plants from those regions, which I have already had the happiness of introducing, and which I believe, have answered every expectation.—To the practical botanist such details as these are neither uninteresting nor unimportant; I shall therefore resume them in treating of each particular species.

My two *Magnolia*\* are entirely new, and they certainly yield to none of North America in splendour and magnificence; one of them furnishes a very useful sort of wood, called *Chaiimp*, which is highly prized for furniture.—Two of the *Michelia*\* have been noticed by professor De Candolle, in his invaluable *Systema Naturale*; but his descriptions are rather short and deficient, owing to their having been made from dried specimens, which were collected above twenty years ago, by my friend and pre-

The following account of these genera was presented to the Medical and Physical Society of Calcutta in May 1823, and His with the consent of that highly meritorious body, that I am permitted to introduce it here in its original form, with very few additions or alterations.

decessor t)r, Hamilton; and a superficial acquaintance with the plants of this tribe is sufficient to convince any one, how very difficult it is to fix on decisive and discriminating characters for them, even under every advantage of observing them in their wild and most luxuriant state. I have little doubt, however, that the descriptions were intended for the very species, with which I have identified them. I am further corroborated in this assertion by a consideration of the *habitat*, which the learned author, on the authority of the discoverer, has assigned to the trees in question, namely at Narayoon Huttee, where my two Magnolias do certainly not grow. That his *MicJtelia Doltsopa* cannot possibly be my *Magnolia excelsa* is likewise obvious from the fact, that this *tree* is limited to one single station in that part of Nipal, which Dr. Hamilton and myself were allowed to visit, namely the great valley and its vicinity, and considerably elevated above the latter.

I have purposely avoided referring to the venerable Rumphius, because there can\* not be any question of his *Sampaccas* being distinct from mine, and quoting them as doubtful synonymes, would only be adding to the existing difficulties of the genus. I may, however, observe, in this place, that *Michelia parviflora* De Cand. which has been described and figured in the fine *Jcones Selectne* of the Baron De Lessert, the munificent patron of Botany in France, vol. 1. p. 22. t. 85, as the Ternate or small variety of XSonga Sjampacca of Herbar. Amb. 2. p. 200, appears to me as not by any means belonging to the genus.

The genera *Kadsurq* and *Mayna* have hitherto been involved in considerable doubt. The first of these was discovered about a century ago in Japan by Engelbert Kaempfer, and has been accurately described by him in his *Amoenitates exotiese*. Thunberg afterwards gave an account of the plant in his *Flora japonica*, with the addition of a description of the flower, omitted by his predecessor, under the Linnean name of *Uvaria japonica*, which was retained by all succeeding writers, until Jussieu suggested the idea of establishing it as a distinct genus in the family of *Annonacece* (*Annal. du museum dlii^toire naturelle*, 16. p. 340; which both Dunal and De Candolie have subsequently adopted. Roxburgh, who received it from Sylhet, calls it *Uvaria heieroclita* in his manuscript *Flora indica*. The other genus, *3fayna*, was first described by Fuseé Aublet, who found it at Cayenne, but had no opportunity of seeing the female flowers or the fruit. It is on this authority alone, and aided by very scanty materials indeed, that Jussieu and De Candolie have referred *Mayna* to the family of *filagnoliacece*. That these two illustrious botanists should have ultimately failed in deciding on the proper station of the above-mentioned shrubs, in the natural system, is not surprizing, when it is recollected, that their conclusions could only be founded on data\* which were not calculated to afford much insight into natural affinities; on the contrary, it will be seen from the following descriptions, how closely their sagacity made them approach the mark and how impossible *it* would have been to proceed a single step farther, without being aided by a knowledge of the internal structure of the seed. These two genera ought, I think, to be united into one, which has a very strong affinity to *Sihisandra* of Michaux : so strong, indeed, as to render it extremely doubtful if they ought to be separated from each other. In this case the last mentioned name would be far preferable to the barbarous *Kadsura* or *Mayna*, and I should accordingly have adopted it, if it were not derived from a character, which is inapplicable to the species with distinct stamina. They all belong to ^he family of *Menispermece*, connecting it with *Magnoliacea* and *Annonacece*, and perhaps constituting a new intermediate order, as has already been hinted by Professor JDe Candolie (*Syst. Nat.* 1. p. 5JA.)

Since this wlis written, I have been put in possession, through the kindness of my most excellent friend Dr. Abel, of all the splendid botanical works of Baron Humboldt, whose *TVintera granatensis*, *Plant, ^equinoctial.* 1. p. 205. t. 58. (*Drymis*, nov. gen. 5. p. 53.) bears a strong generic resemblance to our plants. This circumstance leads me to suspect that they must be referred, together ^ith that genus, to Mr. Brown's new

order of *Winterer*, alluded to by De Candolle, loc. cit. p. 548. It will be seen, hereafter, that Dr. Hamilton actually considered one of the Kadsuree as a species of *Drymis*.

It is not a little remarkable that *ISipal* should produce two distinct shrubs, resembling a plant of French Guiane, another of North America and a third of Japan to such a degree, as to be difficultly separable from the former, and scarcely at all to be recognized as different from the laist: and that they should serve to connect them all under the standard of one genus only.

None of the preceding plants possess to my knowledge any particular medicinal properties, nor are they admitted into the materia medica of India. The fruit of both my *Kadgurce* are eaten by the hill-people. They have all more or less of an aromatic pungency diffused in their leaves and seeds, especially in the pulpy arillus of the latter, and their flowers are, in most instances delightfully fragrant. The wood of the arborescent species is very useful, and not inferior to that of our *Champa* of Hindoosf han (*Mii'helia Champaca*, Linn.); that of my *Magnolia excelsa* is, as I. have already mentioned, highly valued for furniture.

MAGNOLIA INSIGNIS, Wall • TAB. 1.

Arborea, foliis oblongis acuminatis subtus glaucis, gemmis ferrugineo-tomentosis; floribus terminalibus solitariis novem-petalis; petalis tribus exterioribus calyciformibus reflexis; alabastris laevibus; strobilo ovato dense imbricato, capsulis verticalibus tetraspernis.

Nomen Newarrense, *Seete Soah*.

Crescit praecipue in collibus prope *Sankoo* convallis Napalise; etiam observavi ad cacumen montis *Sheopore* atque latus ejus septentrionalē, altitudine sex usque ad decem mille pedum.—Floret Aprili, Majo; fructus maturescunt Octobre.

Arbor vasta, ramosa, trunco recto, sive quatuor vel quinque pedes diametro effretente, comā dense frondosā expansā et umbrosā. Rami glabri, striati, emerei, calloso-punctati. Ramuli virides, glaucescentes, crassi, cylindrici, laeves, notati vestigiis annularibus, horizontalibus vel obliquis, a lapsis stipulis manentibus, approximatis, villosulis, demum glabris et distantioribus. Folia versus summitates valde approximata, patentia, undique sparsa, oblonga, in luxuriantibus ramis magis elongata et sub-cuneata, in vetustioribus ad formam ellipticam tendentia, acuminata, integerrima, deorsum parum angustiora, basi acuta, coriacea, firma, uncias sex ad decem longa, plana, laevissima, atroviridia, lucida subtus glauca et opaca, pube adpressā baud copiosā solubili et evanida conspersa, costā gracili elevatā, nervis copiosis parallelis numerosis approximatis tenuibus ad marginem anastomosantibus, siccilate utrinque, imprimis subfus, eleganter reticulato-venosa.—Petiolus gracilis, teres, sesqui-aut bipollicaris, glaber, basi subtus parum intumescens, supra notatus plagā elevata planā lineari unguem longd extrorsum obtusd. et rotundatā, primum villosuld, olim stipulas vel gemmam adfigente. Sfilw (fig. 15, 16.) duee, opposite, oblongse, acutie vel acuminatae, plagā istse petiolari et lineolse annulari rameae inserlse, ramum ipsum omnino amplectentes, valde deciduae, initio connatse in gemmam oblongam, densissimē cinnamomeo-tomentosam intus laevem, juxta latus ramum spectans demum fissam citoque delabentem.—Flores (fig. 1.) speciosissimi, fragrantēs, ex albo rosei, campanulato-patentes, terminates, solitarii, erecti, tres quatuorve pollices longi, laeves, suffulti pechmculo laevi columnari crasso medió cicatricem orbicularem gereffte, supernē pallido sub albicante. Alabastra erecta, ovato-oblonga, obtusa, basi rotundata, bipollicaria, involuta spathd (fig. 8.) lato-ovat& subrotundat& membranaeae laevi, basi contractae in collum breve, cyindricum, dimidia superioris pedunculi partieté adpressum, medio ejus insertā, caducā.—Calyx petaloideus, triphyllus, erubescens, demum fuscescens: sepala oblonga, obtusa, deorsum parum angustata, reflexa

«t directé dependentia, coriacea, parallelé et Viridiusculé nervosa, parum reticulata, tri-pollicaria. *Petala* octo vel novem, valde crassa et coriacea, alba, demum flavicantia, sursum rosea, figura et magnitudine satis ab invicem discrepantia, scilicet obovata, cuneata vel oblonga, obtusa, vel acutiuscula, parallelé et graciliter vasculosa, seriebus tribus apici pedunculi, circum basin tori, alveolis majusculis inserta; interiora sensim breviora saepiusque angustiora, una cum sepalis staminibusque subito delabentia. *Columna fructificationis* ovato-conica, sesquiunciam longa, basi integrum fere pollicem crassa. *Torus* (fig. 2.) sub-lignosus, crassus, sanguinei coloris, columnaris, dimidia inferiore parte punctis eleganter decussantibus a staminum insertione inscriptus; superne cum ipsis ovariorum basibus conferruminatus.—*Stamina* (fig. 3, 4.) plurima imbricata, adpressa, lineas octo longa, interiora sensim elevatiora, apicibus oblique truncatis rhomboideis regulariter decussantia. *Filamenta* brevissima, crassiuscula, carnosae, rufa; *antherae* lineari-oblongae, apiculatae, utrinque loculiferae, oculis albicantibus introrsum (fig. 4.) dehiscentibus, polline albo et particulis cylindricis conflato.—*Ovaria* (fig. 5, 6.) plurima, cuneata, sub-quadrangularia, e viridi glaucescentia, minutim punctulata, glabra, arete imbricata, vertice truncata rhomboidea sulco perpendiculari intermedio exsculpta; inferiora inagis latitudine verticali, superiora plus longitudine extensa, fabrica fibroso-lignosa; unilocularia, (fig. 7.) loculo ad basin locato laevi lucido angusto, 4-6-spora: *ovula* grandiuscula, angulo interiori loculi per paria adfixa. *Stylus* ex angulo superiore verticis ovarii surgens, erectus, subulatus, tres lineas longus, deciduus, dorso sulco notatus, apice parum patulus. *Stigma* latus externum styli occupans, scabriusculum constans papillis numerosis minutis.—*Capsulae* valde numerosae, dense imbricate, verticales, magnitudine et figura variantes, unguem digiti medii haud superantes, compressae, laeves purpureae, dispositae in *strobilum* (fig. 9.) ovato-oblongum, quinque-pollicarem, obtusum, erectum, suffultum pedunculo lignoso columnari bipollicari nudo, vestigiis insertionis spathae partiumque floris inscripto; vertice rhomboidea verticaliter juxta sulcum perpendicularem dehiscentes in valvas (fig. 10.) duas plano-concavas lineas, intus tegumento cartilagineo laevissimo nitente munitas.—*Semina* (fig. 11.) tria vel quatuor, ovata, dorso convexa, hinc angulata, sibi invicem adpressa, magnitudinis pisi majoris, coccinea, laevia, angulo loculi interiori, bases valvularum connectenti, adfixa ope funiculorum brevium sericeorum niveorum, lioiunique elongatione fere semi-pollicari demum extra cavitatem dependentia. *Ovula* aliquot iniuta, sterilia s. abortiva, emarcescenda observanda sunt ad basin seu angulum interiorem loculi, inter funiculos. *Arillus* (fig. 12.) carnosus, lineam dimidiam fere crassus, ruberrimus, odore et sapore parum aromatico, ad basin seminis, axi stragili obversam, insculptus fovea umbilicali parva. *Integumentum* exterius durum, fere osseum, leviter scrobiculatum, atrum, nitidum, compressum, lenticulare, crassiusculum, extremitate superiore perforatum umbilico interno, hinc exteriori diametricè opposito. *Integumentum interius* constans pellicula tenuissima *perispermum* involvente carnosum acqueo-pallidum, cavitatem exactè replens. *Embryo* (fig. 13.) minutus, in parte supremâ perispermi prope umbilicum internum pendulus, rectus, niveus; *cotyledones* ovatae, obtusae; *radicula* subturbinata, obtusa, *supera*!

## OBSERVATION.

It is scarcely possible\* to contemplate a more magnificent object than this noble tree exhibits, both when it is covered with flowers and in fruit. Nothing can exceed the former in elegance; they are very large, of a white or yellowish-white colour, tipped with pink, while the reflected calyx or rather calycine petals are of a brownish red tint, elegantly reticulated with greenish nerves and veins; their smell is agreeable, somewhat resembling that of *Magnolia glauca*, and though not very strong, yet the accumulated fragrance of the innumerable blossoms, with which this tree is covered at one and the same time, extends to a great distance. • They are of no long duration, as



the leaves of the corolla and calyx soon drop off together with the stamina, leaving the ovaria quite naked; these in the course of five or six months become ripe capsuled, disposed in large purple erect cones, which contrast elegantly with the scarlet seeds suspended on white, capillary, longish threads and hanging down loosely in all directions. The dark, elegant and thick foliage contributes to render the sight extremely agreeable. It is only during the winter months, from November to February, that the tree is altogether naked. The stipulation or gemmation is remarkable and belongs, as has already been noticed, to all the members of the family. The buds are axillary and terminal, long, subcylindric, inserted round the branch and on the protuberance which occupies the half of the petiole; at first there is no leaf at all, but gradually a small elevation becomes observable on the back of the bud, just above its base, which quickly grows out, becoming the upper part of the petiole and at length expanding into a leaf; the bud itself in the mean time rapidly increases in length and width, together with the tender branch which it encloses, and at length it splits along the outside and drops off in the form of two stipules, leaving behind it a circular, either horizontal or more or less oblique vestige of its insertion on the branch, and a flat lengthened prominence on the petiole, reaching from its base to above the middle.

I have only seen this tree in abundance at Sankoo in the valley of Nipal; on Sheopore it grows very sparingly. Its wood is of a pale yellow colour, close-grained, and probably very applicable for carpenters use; it is however not employed by the hill people, who, I am sorry to say, care little about cutting down the most glorious trees of their country, such as the Rhododendrons, even for the most trivial purpose of fuel and rafters.

The present species unites the two sections of the genus as doubtfully proposed by De Candolle, loc. cit, p. 450. The fruit is densely imbricated, strobiliform, with pendulous seeds, and the spathe is one-leaved as in the American species; but the dehiscence of the anthers is decidedly interior like those of Asia. For reasons, which I shall explain in treating of *M. excelsa*, I think, that all the spike-fruited species might conveniently be removed to *Michelia*; of their number is *M. fuscata*, which I have had an opportunity of examining in October 1818, when it ripened its fruit for the first time in the Honourable Company's botanic garden and of which I take this opportunity of giving a carpological account.

*Capsulæ* ovatae, lateribus gibboso-convexis, obliquè acutæ, punctis parvis collosis aspersæ, magnitudinis baccæ *Grossulariæ* minoris, cinerascens, sessiles, patentes, decem vel plures, haud pavidis abortivis parvulis intermixtas, dispositivè in spicam oblongam hinc inde curvam, tripollificarem, fructum *Micheliæ* planè referentem, pedunculatam. *Valvulæ* divaricatae, plano-concavae, intus rugosae, nitidae. *Sentien* unicum, coccineum, ovatum, parum obliquum, loculo exactè correspondens, basi umbilicatum, mox post dehiscen-tiam extra suam cavitatem funiculo sericeo laxo dependens.—*Nucula*, embryoque in-versus exactè ut in *Magnolia insigni*.

It is not a little surprizing that, according to the accurate Gaertner, the embryo of *M. grandiflora*, Linn, is erect, *Carpol.* 1. p. 343-1. 70; whereas it is unquestionably inverse with a *superior radicle* in the three species which I have examined.

Before concluding I may remark, that I have found a few individuals in the forests of Nipal, of a tree, which I hesitate not pronouncing to be Roxburgh's *Jliriodendron grandiflora*, notwithstanding I have only observed them in foliage. This noble tree blossoms annually at the botanic garden, but has not as yet ripened its fruit; the stipulation of the family is peculiarly beautifully illustrated by this species.

## MAGNOLIA EXCELSA, Wall. TAB. 2.

Arborea, foliis oblongo-ellipticis, acuminatis, subtus valde glaucis; alabastris gemmis-

que Terrugineo-barbatis; floribus solitariis, axillaribus; petalis duodecim, calycinis nullis; capsulis globosis, remotis, spicatis, monospermis.

Nomen Parbutteanum *Champa* s. *Chaump*.

Observavi tantummodo in monte Sheopore Nipaliae, ad elevationem ab oceano sep<sup>t</sup>em circiter mille pedum, florens Martio, fructibus maturis Octobre.

Arbor 50-ad 80-pedalis, admodum ramosa, trunco valde crasso, cortice varié fisso et rimoso. *Ramuli* crassi, teretes, fuscescentes, juniores grysei, punetis callosis majusculis conspersi, vestigiis stipularum delapsarum annularibus, horizontalibus vel ofoliquis, notati.—*Folia* sparsa, patentia approximata, pollicem et dimidium circiter distantia, coriacea et firma, oblongo-elliptica, in acumén lineare acutissimum semiu<sup>n</sup>iciale abeuntia, integerrima, margine subinsequalia obsoleté que repanda, basi acuta, spithamaead dodrantalia, suprá laevia, lucida, saturaté viridia, leviter plicata; subtus valde glauca, \*fere pruinosa eonspersaque pilis brevibus ferrugineis adpressis, aetate glabra, costd prominulá ^racili, nervis alternantibus ad marginem anastomosantibus, more generis, praepremis dum sicca, pulchré reticulato venosa. *Petiulus* pollicaris et parum ultra, teres, gracilis, leviter sulcatus, basi parum intumescens, suprá vestigio lineari piano elongato notatus.—*Stipulw* duse opposite, membranaceae, oblongas, acuminatse, sesqui- ad bipollicares, tomento densissimo sericeo cinnamomeo vestitae, intus laeves, more generis suprá descripta, initio in gemmam sub-cylindricam dense barbatam connate, mox solute citoque caducue, vestigiis istis annularibus rainorum linearibus-que petiolorum manenfibus.—*Florm* axiJJares, solitarii, magui, erecti, albi, fragrantés, campanulato-patentes, pedunculo elevati valde crasso brevi columnari, vix dimidium ppollicem emetiente, cinnamomeo-tomentoso, ad medium notato vestigiis duobus annularibus paullo distantibus. *Alabastra* oblonga, acuta, cinnamomeo-tomentosa, iiiollissima, bipollicaria, *spathis* involuta monophyllis : exteriore fugacissima, interiore tomentosst, intus laevi argentea diutius manente. *Petala* (fig. 1.) 12 vel 13 coriacea, crassa, gla<sup>n</sup>berrima, oblongo-ovata, obtusa, deorsum angustiora, fere bipollicaria, interiora sensim aogustiora et breviora, basi debilissimé viridescencia, coeterum alba, tripiici di<posita serie quadripetala, intima nunc quinquepetala.—*Columna genitalium* (fig. 1,3.) sesquipollicaris, erecta, basi crassior. *Stamina* (fig. 2.) plurima, laxé imbricata, inaequalia, tertiam petalorum partem longitudine a<sup>n</sup>quantia ; *Jilamenta* brevissima, carnosa, crassiuscula; *antherte* adnatee, marginales, paulio introrsum dehiscentes.—*Ovaria* (fig. 4.) parva, fusco-puberula, tetraspora; *ovula* angulo interiori loculi ope funicularum brevissimorum decurrentium adfixa. *Stylus* ovario longior, subulatus, recurvus, suprd papilloso-asperulus. *Baccae* (fig. 5, 6.) paruse, globosae, calloso-verrucosae, glabriusculse, cinerascetes, magnitudine nucis avelianae, basi latS, sessiles, plufribus effoetis interspersae, in spicam quadripollicarem curvam digests, hiatu semicirculari supni dehiscentes in valvulas duas divaricatas concavas. *Semen* (fig. 7.) unicum, grandiusculum, ovatum, subreniforme, coccineum, bacatum, plenA maturitate extra loculum suum dependens, ventre exsculptum umbilico mmutissimo.—*Arillus* carnosus, mollis, ruber, —*Integumentum exterius* atrum, crustaceum; *interius* tenuissimumL. *Perispermum* carnosum^ hyaiinum. *Embryo* ut in priore specie.

#### OBSERVATION.

This is at all times a very beautiful, large tree, especially when in blossom. I have only met with it on mount Sheopore, where it is confined to one singly spot: a limitation which is not of very rare occurrence among the plants of Nipal; thus *Orchif(Habena\*>rid) gigantea*, Exot. Bot. is solely to be met with in a particular place of Nag-Arjoon, *Lyellia crispa*, Brown and *Daphne Gardneri*, Wall, are confined to one particular place on Sheopore. The wood is greatly prized by the inhabitants of Nipal as also at Patna, where it is employed for various objects of joinery and carpentry and

is commonly sold under the name of *Champ*. Its texture is very fine, the colour at first greenish, but soon changing into pale yellow.

I am doubtful whether to consider this fine tree as a *Magnolia* or a *Michelia*; it has entirely the structure of the flower and spicate rounded capsules of the latter genus, while the colour and smell of the flower and the solitary pendulous seed is that of the former. Perhaps a salutary reform might be effected by removing all the species of *Magnolia*, as it stands at present, which are furnished with rounded spicate, not imbricate, capsules to *Michelia*, which arrangement would, in all probability, comprize most, if not all Guillimise, De Candolle 1. c. p. 450 et p. 455; a suggestion which has indeed been hinted at by himself in p. 447.

### MICHELIA DOLTSOPA, *De Candolle*. TAB. 3.

Foliis elliptico-ovatis, valde acuminatis, subtus puberulis, longé petiolatis; alabastris gemmisque ferrugineo-tomentosis; petalis quindecim, interioribus angustissimis.

*Michelia Doltsopa*, De Cand. syst. nat. 1. p. 448.

Incolit varias sylvas Napalise, tarn vallis ipsius quam montium minorum huic vicinis, florens Aprili et Mayo; fructifera >sub-pluviis.

Arbor magna uiiibrosa, altitudine CO-pedali, trunco satis regulari crasso.—*Ramuli* teretes, cicatricibus plus minusve obliquis annulati, densé vestiti villositate serieeâ fuscâ; setate proveciores glabri, cinerei, calloso punctati.—*Folia* inagis forsan quam in reliquis remota, patentissima, integerrima, ad marginem leviter undulata, ovata, in acumen gracile, longum attenuata, basi acuta, nunc rotundato-acuta, pahnaria ad 10-pollicaria >coriacea, supr& laevissima, lucida; subtus parum glaucescentia puberula, siccitate utrinque venuloso-reticulata.—*Petiolus* valde gracilis, pollicaris et sesquipollicaris, teres, ferrugineo-villosus, ultra medium notatus vestigio insertions stipularum gracili elongato.—*Stipulte* aureo-v. fusco-villosae, connate in gemmam cylindricam acuminatam elongatam. *Flos* (fig. 1.) axillaris, solitarius, illo Champacre vulgaris fere dimidio major, petiolo parum longior, flavus, valde fragrans. *Alabastrum* cylindrico-oblongum, densé vestitum tomento fusco velutino, bip >licare, spatha (fig. 2.) dupliei caducissimd induturn. *Peduniulus* brevis, velutinus, cicatricibus duabus annularibus notatus.—*Petala* quindecim valde patula, ternario ordine disposita, quinque scilicet in singulo ordine, oblongo-spathulata, acuta, ad basin angustatam niunita pube furfuracea punctis minutissimis impressis interspersa; coeterum glabra; interiora valde angusta fere linearia. *Antherce* sessiles dorso latiore in apiculam subcarnosam desinente; loculamenta late\*raliter dehiscentia. *Torus* ovariorum velutinorum cylindricus supra antheras sessilis. *Stylus* (fig. 3.) brevissimus, recurvatus, valde papillosus.

### OBSERVATION.

As far as it is possible to judge from the short description of professor De Candolle, made from dried specimens of trees, which even in their natural and growing state are difficult of discrimination, I conclude that this is the species described by him under the name given above. *Latifolia* or *macrophylla* would have been an appropriate name, and one at once indicative of the chief specific distinction of the tree; it would at any rate be far preferable to a vague native name, which my most valued friend Dr. Hamilton, though in general inclined to employ such on the spur of the moment, in the hurry and inconvenience of travelling, for the purposes of easier reference, probably did not intend as a permanent one. No nation on earth is more fertile in the production of names of plants than those of India, who appear to have coined appellations in the hope of multiplying real or supposed virtues ad infinitum. This evil is greatly aug-



mented by the people often inventing names on the spot: If a specific or generic appellation is to be derived from any native language, which can never be necessary, and but rarely prove expedient, the Arabic or Sanscrit ought to be the only sources from whence they are to be derived.

MICHELIA KISOPA, *De Cand.* TAB. 4.

*Foliis* lanceolatis, acuminatis, glaberrimis, brevè petiolatis; *alabastris* gemmisque cinereo-villoculis; petalis duodecim, oblongis, subsequialibus.

*Michelia Kisopa*, De Cand. syst. nat. 1. p. 448.

Reperi in pluribus sylvis Napalise, eodemque anni tempore cum priore specie florentem et fructiferam.

Arbor excelsa, ramosissima. *Ramuli* glabri, teretes, cinerei, calloso-punctati, cicatricibus stipularum solitis notati. *Folia* sparsa, approximata, patentia, valde coriacea, rigida, oblonga vel lanceolato-oblonga, acuminata, basi nunc rotundata, nunc acuta, supra valde lucida atroviridia, subtus pallida atque opaca, pube parca adpressâ aetate evanidâ conspersa, utrinque dum sicca eleganter reticulato-venosa; 5-7 pollicaria.—*Petiolus* gracilis, teres, pollicaris, e basi ultra medium supra notatus plagâ elevatâ planâ lineari elongate. *Gemma stipulacea* oblonga, acuta, petiolum juniorem fere sequens, argenteo-vel cinereo-villosa.—*Alabastrum* axillare, solitarium, erectum, ovatum, brevè pedunculatum, semipollicare, cinereo-villosum; *spathæ* (fig. 4.) cito decidue, ovato-subrotundae, obtusissimae. *Flos* (fig. 1.) parvus, dilutè flavus, odore valde debili, pedunculo suffultus crasso, annulato, villosulo.—*Petala* duodecim acuta, lineari-cuneata, pollicaria. *Antheræ* fere sessiles, numerosae, laxè imbricatae, lineares, apiculâ nudâ cuspidatae; locula marginalia, introrsum parum dehiscentia.—*Ovaria* (fig. 3.) ovata, sericeo-villosa, coacervata in columnam cylindricam, supra torum (fig. 2.) antherarum pedicello angulato semiunguiculari elevatam. *Styli* recurvati, pubescentes, jiapillosi-*Capsuled* (fig. 5, 6.) subglobose, basi nunc lata subadnata nunc subcuneata quasi pedicellate, cinerese, punctatae, majores quam in antecedente specie, dispositae in spicam tortam quadripollicarem, pluribus abortivis intermixtis. *Semina* tria vel quatuor, ovata, coccinea.

OBSERVATION.

This species comes very near to *HI. Champaca*, but besides being a larger forest tree, its leaves are, generally speaking, narrower and the flowers much smaller. I have scarcely any doubt of its being the same as that noticed by De Candolle, although his specific character does not well apply to it, the leaves being almost always more or less acute or attenuate at the base. The fleshy part of the seeds is aromatic, and that more so than in the other species.

MICHELIA LANUGINOSA, *Wall.* TAB. 5.

*Foliis* oblongis, acutis, subtus ramis gemmis alabastrisque cinereo-lanuginosis.

Eadem fere ac precedens incolit loca, eodemque tempore florens; sed rarior est arbor.

Arbor magna et procera, ramosissima. *Ramuli* obtecti cortice cinereo calloso-punctato; juniores uti foliorum pagina inferior, petiolus, alabastra, gemmæque vestiti lanugine densâ decumbente mollissimâ cano-argenteâ. *Folia* valde approximata, alternè, subbifaria, patentissima, oblonga, acuta, basi parum rotundata, apice cuspidata, 5 ad 10

poilicaria, valde coriacea, supra lucida, nunc parum glaucescentia, subtus dehiscentissima tomentosa, vix setate glabriora, nervis parallelis numerosis, ad marginem integerrime arcuatim anastomosantibus, venis reticulatis tomento reconditis. *Petiolum* pollicaris; setate parum glabrior, supra notatus vestigio stipularum elongato. *Stipulae* valde deciduae, oblongae, densissime tomentose, gemmas formantes oblongas, petiolum subaequantes. *Alabastraxillaria*, solitaria, oblonga, sesquipollicaria, lanuginoso-barbata. *Spatha*\* (fig. 2, 3.) duse, oblongae, cito evanidae, *Flos* (fig. 1.) pallide flavens, odoratissimus, brevissime pedunculatus; *petala* numero variantia, decem ad quatuordecim, cimeata, acutiuscula, disco parum saturatius colorata, interiora parum angustiora. *Pedunculns* vix duas lineas longus, lanuginosus, crassus. *Columna genitalium* (fig. 4.) oblonga, petalis plus dimidio brevior. *Antherae* (fig. 5, 6.) valde caducae, introrsum dehiscentes; *filamenta* brevissima, purpurascens. *Ovaria* (fig. 7, 8, 9.) ovata, villosa. *Styli* erecti, columnae subadpressae. *Baccae* (fig. 10, 11.) magis, perasos mediocres aquantes, obovatae, deorsum paullo angustiores et fere pedicellatae, *pedicello* admodum lato; cineris, callosopunctatae, coeterum glabrae, maturitate fusciscentes, tri-quadrispermae, aggregate in spicam brevem, ovatam, longius pedunculatam. *Semina* (fig. 12.) magna, coccinea, arillo aromatico.

## OBSERVATION.

It is impossible to confound this tree with any of the preceding kinds; the dense, soft tomentum, which covers all its parts, readily distinguishes it from them all. The fragrance of the flowers is less powerful and therefore more agreeable than in the other species.

## KADSURA.

Juss. in Annal. du Museum d'hist. natur. 16. p. 340. Dunal Anonac. p. 25, 55 et 57. De Cand- syst, nat. 1. p. 465.

*Mayna*, Aubl.? *Schisandra*, Michaux. *Uvarice*, spec. Thunb. et Linn.

*Mores* unisexuales, pentandri-polyandri, polygyni, apetalii. Sepala novem, minute duodecim, ternatim triseriata, alternantia. *Stamina* completa, filamentis carnis; vel incompleta, antheris sessilibus, receptaculi foveolis adnatis. *Ovaria* conferta super receptaculum carnosum; dispersa. *Styli* nulli. *Stigmata* solitaria, carnosa, emarcescentia, oblongo-clavata, medio adfixa, utrinque libera. *Haccae* distinctae, conformi-ovatae\* mono-vel dispersae, capitatae, aut spicatae. *Perispermum* homogenum, carnosum. *Embryo* dicotyledoneus. *Radicula* infera; vel eentrifuga?

Classis Linneana: *Monoecia* vel *Vioecia*, *pentandria* vel *polyandria*.

Ordo naturalis: *Trispermum*. Wintered, Brown?

*Habitus*. Frutices volubiles, glabrae. *Folia* alterna, subcarnosa, denticulata, estipulata. *Flures* axillares, subsolitariae, fragrantae, *Baccae* carnosae, rubrae, edules.

## OBSERVATION\*

I have already hinted (p. 2.) at the supposed identity of *Mayna* with this genus. As far as can be gathered from the imperfect description and figure, given by that author, in the *Histoire des plantes de la Guiane* 2. p. 922. t. 352, the general form of the flowers agree; but there exists a remarkable difference in the monophyllous calyx and in the stipulated leaves of Aillet's plant. Until, therefore; we are better acquainted with that plant, it can only be admitted as a doubtful species. It agrees best with my *K. rran-dijlora*, both of them being furnished with distinct filaments; but the four-sided anthers,

recorded by Aublet, are wanting here.—Michaux's *Schimndra* seems to differ\* from the genus, solely in having a one-seeded berry, and in the shape of the seed, which is attributable\* together with the slight modification in the posture of the embryo, to the first mentioned structure.

KADSURA GRANDIFLORA, Wall. TAB. 14.

Dioica, polyandry; Jloribus nutantibus, solitariis; pedunculis petiolo duplò longioribus, mediò ebracteatis; staminibus completis, Jilamentis subulatis; baccis dispermis, spicatis, rachi crassà, clavatâ-

Observavi frequenter in monte Sheopore Napaliae, nœe alibi; florentem Aprili, Majo, fructigeram Octobre.

Frutex latè volubilis et scatidens, omnibus partibus glaberrima. Rami numerosi, -elongati, graeiles, vix pennâ anserinâ crassiores, fusci, calloso-punctati, epidermide tæctate demum solutâ; tenelli glaucescentes, rubicundi. Gemmae parvae, axillares, subcylindriae, acutse, squamis oblongis, ciliatis, bifariè imbricantibus, quibusdam persistentibus, basesque ramulorum juhiorum laxè ambientibus. Folia valde copiosa, approximata, patèntia, alterna, lanceolato-oblonga, 4-6-pollicaria, subcarnosa, ad lucem visa minutim pellucideque punctulata, acuminata, basi cuneata et per petiolum leviter decur-Tentia, remotè denticulata, dentibus subulatis, incrassato-subglandulosis, laetè viridia, suprà lucida, novella rufescentia, aetate opaciora, subtus pallida, penninervia, costd gracili, nervis obllquis, alternis, venis reticulatis. Petiolus teres, gracilis, suprà sulcatus, pollicaris, basi inarticulatâ, simplici. Stipulce nullae, nee ullum earum vestigium. Floras magni, admodum fragrantès, nutantes, axillares, solitarii, vel sparsi circum basin ramburum novoruin, globoso-campanulati, pollicemtransversumemetientes, exalbo flavicantes, extus versus basin saepe purpurascèntes. Sepala novem, ternario ordine disposita, ovatorotundata, obtusa, crassa et subcarnosa, integerrima, interiora sensim minorà. Aestivatio Itxè iifèbricata, globosa. Pedunculus teres, laxus, gracilis, bipollicaris, seqüialis, basi saepius squamuU gemmace^ un& alterave munitus. Masculonim (fig. 6, 7.) stamina (fig. 8.) ciro^tèrquadrigitita, calyceparum breviora, clavata, aggregata in acervum -ovata-rtarn sttper receptaculum carnosum, leviter elevatum (filamentorum bases connatce?); Filamenta brevia, erecta, subulata, alba, carnosà. Antherce ovatse, compressiusculae, obtusae, disco carnosae, utrinque dehiscentes Joculo angusto, longitudinal]', extrorsum verso; pollen albidum. Nullum pistillorum rudimentum. Foemdnei (fig. 1,2,3.) masculis parum majores, sepalaque exteriora saturatius colorata. Ovaria (fig. 4, 5.) admodum minuta^ numerosa, lenticularia, extrorsum obliquè acuta, subtus gibboso-convexa, sursum notata marginul^ rectiline&, sessilia, spiralliter et densissimè aggregata super receptaculum carnosum, oblongimi, sepala majora subaequans. Ovula duo minutissima, lateri loculi marginulae istae obverso adfixa, oblique pehdula. Styhis nullus. Stigma sessile, carnosum, ilyalinum, scabriuseulum, perpendiculare, utrinque liberum,, apice obtusum leviterque recurvum, basi ovario adpressum, medio apiculse hiius insertum. JBacce (fig. 9, 10.) ovato-subreniformes, sessiles, coccineae, laeves, nitidee, magnitudine Uibesiae majoris, valde numerosse, supernè apiculâ lineolaque brevi, fusc&, decurrente notatae, biloculares, clispermae, dispositae in spicam laxè pendulam, digidum crassam, clavatam, sex ad novem pollices longam, insidentem pedunculo gracili, apice leviter incrassato, coeterum vero Immutato. Rachis carnosà et crassa, punctulata, flavicans. Chro pallidè rlibra, itiollis, lineam crassa. Semina (fig. 11, 12, 13, 14.) dua, fusca, horizontalitèp unum super altorum posita, septo pilposo separata, reniformia, leviter complanata, lateribx̄is convexis, obtusa, hilo sursum, i. e. versus apiculam verticis baccae spectante. Integumentum ex-lerius crustaceum, laeve, sub lente minvitim puncticulatum; mfmWtenuissimum, perispermum areté involvens. Perispermum album, carnosum, tere^, in figuram semilunarem curvatum, extremitatibus obtusis approximatis, dorso convexo notatum fascid vascu-

lorum tenui fused; alter& extremitate exsculptum cavitate minut&, embryonifer&, superficiei apicis proximâ. Embryo minutissimus, subglobosus, albus, *Radicula* centrifega?

## OBSERTATIOK;

This is a very handsome, fragrant plant. The natives eat the fruit. The embryo is so minute, that I have not been able as yet to dissect it properly; but I trust, that the plants, which I brought with me from Nipal to the Hon. Company's botanic garden and which are at present thriving very well, will enable me to determine its structure at some future period.

## KADSURA PROPINQUA, Wall TAB. 15.

xjioica, polyandra; *Jloribus* subfasciculatis, erectiusculis; *pedimmlis* petiolum vix aequantibus, medió bracteatis; *antheris* sessilibus, immersis; *baccis* dispermis, spicatis; *rachi* tuberculosâ.

Observavi in monte Sheopore, rariusque in colliljus ad Sankoo, Napaliae^ Floret Majo et Junio; fructus maturescunt Octobre.

*Frutex* ramosissima, valubilis, glaberrima, ramis, gemmisque ut in priore specie. /\*o- /iainterstitiis duplo vel triplo longiora, ovato-lanceolata, in acumen desinentia longum et gracile, remoté denticulata, interque dentes obsoleté sinuata, nunc fere integerrima, basi rotundatâvel acutiuscul&, carnosa, firma et fragilia, 5-6-pollicaria, lucida, subtus pallida, nervis capillaceis versus marginem aiftistomosantibus> siccitate reticulata^ ad lucem visa minutim punctulata; in plantis novellis luxuriantibus maculis pallidé viridibus subalbicanibus variegata.—*Petiolum* crassiusculus, brevis, semipollicaris, coeterum ut in antecedente. *Stipulce* nullse.—*Flores* axillares, solitarii vel geminati\* illis dimidió minores, fere inodori, leviter nutantes, patentissimi, iníitio pallrdé flavi, dein aurantiaci, dioici, aestivatione in globulum pisi magnitudinis imbricati. *Pedunculus* teres, petiolum subaequans, nunc tertiâ parte brevior, basi squamulis duabus lanceolatis, emarcidis, deciduis, versusque medium instructus *biracteolâ* carnosâ, semiamplectente, bvat4, obtusâ patul^, dorso convex^, persistente. *Masculorum* (fig. 1,2.) *sepala* novem, ternario ordine alternating disposita, patentia; *exterior a tria* valde parva, ovata, insequalia; reliqua subrotunda, crassa et coriacea, membranaceo-marginulata^ sub leute punctulata, prioris speciei dimidio minora.—*Antherce* (fig. 3, 4, 5.) parvae, lanceolatae, sessiles, duodecim ad quindecim, tessellatim immerisse receptaculo carnosbj subgloboso, demum valvularum tilangularium adinstar hiantes leviterque reflexae, biloculares^ dorso earnosse, apice liberal, loculis, parallelis, distinctis lateraliter de\ncent\hus,~*Foeminei* (fig. 6, 7.) quoad sepala masculis simillima.—*Ovaria* (fig. 8.) minima, valde numerosa, carnosa, ovata, suprâ et intus martinulâ parum elevat4 notata, imbricata in acervulumsubglobosum. *Stylus* nulul. *Stigma* prioris.—*Bacca* (fig. 9, 10.) globose, carnosae, numerosse, laeves, coccone, parum minores quam in antecedente, fabricâ vero internâ omnino similes, dispositoe in spicam brevè pedunculatam, sexpollicarem, cylindricam, rachi parum incrassatA, ralde aspera propter tul^rcula numerosa baccas adfigentibus.

## OBSERVATION.

This is altogether a smaller species than *K. grandiflora*; particularly the flowers. It approaches to *Schisandra coccinea*, Mich. Flor. boreal, amer. 2. p. 210. t. 47. and Curt. bot. mag. 34. n. 1413. The flowers are at first pale yellow, but become afterwards deep orange-colored, especially the inner leaflets. The male receptacle is globular, fleshy,

sessile, not larger than a pepper-corn before expansion, marked with firm twelve to fifteen superficial pores, which are arranged in a quincunx or decussate manner from the basis to the top; in these the anthers are completely sunk, their two-lobed apices being only visible above the surface. Immediately after expansion these pores open, their lower sides turning gently downwards and resembling so many small, triangular, acute, valves, each having a distinct, two-lobed, two-celled anther attached to its inner or upper surface, its apex being free and somewhat shorter than that. When the anthers burst, each cell appears to be two-lobed. It may perhaps be advantageous to consider the receptacle as the connate filaments; and the above-mentioned antheriferous valves, as the free apices of these latter.

#### &ADSURA JAPONICA, Dunal

Bioica, polyandra; *Jlorihus* subsolitarius wectiusculis; *pedunculis* petiolò longioribus; *antheris* sessilibus, immersis; baccis dispermis, capitatis.

*Kadsura*, Jussieu, in Annal du Mus. 16. p. 340.

*Kadsura japonica*, Dunal Anonac. 57.—De Cand. syst. nat., 1. 466,

*Uvaria japonica*, Linn. spec. plant. 756.—Thunb\*. jap. 237.

*Uvaria heteroclita*, Roxb, Mss. et Icon,

*Drymis*, F. Hamilton, Icon. pict. in hort. bot. Calcutta asservata.

Fiitò *Kádsura*, sive *Sáne Kádsura* > aliis *Orejñ Kádsura*; *Kenkoo*; Kaempf. amoen\* p. 476 et 785. tab. 477.

Crescit in montosis prope Sylhet, ubi detexit beatus M. R. Smith.—Specimina tam viventia quam sicca misit collector horti hujus F. 15e Silva.—Floret sub initio pluviarum; fructus maturus profert Octobre, Novembre.—In horto botanico Calcutta floruit prius vice Junio, 1823.

#### OBSERVATION.

This interesting shrub does not grow in Nipal; it has hitherto only been found in Japan and at Sylhet, on the eastern frontiers of Bengal; probably also at Gualpara, where I conjecture that my worthy friend Dr. Hamilton met with it. I have had opportunities of examining it both in its cultivated and dried states. It is extremely like the preceding species (for which reason I have called the latter *K. propinqua*); nor can I distinguish it except by the capitate berries, and by the other, less prominent marks, which I have introduced in the specific character.—Kaempfer's figure is excellent.

#### COLQUHOUNIA, Wall

Calyx cylindricus, fauce aequali, 5-dentatà; fructifer clausus. *Corolla* bilabiata; *lobium* superius fornicatum, bidentatum; inferius trilobum, lobis lateralibus fauci ampliatæ utrinque insertis, intermedio minore, integro. *Stamina* adscendentia; *antherarum* lobis divaricati, nudi. *Stigma* bilobum, lobo superiore brevior. *Ovula* solitaria, pendula! *Achenia* maxima, alata. *Perispermum* copiosum. *Embryo* erectus.

*Habitus*. Frutex late volubilis, supernè tomento stellato, ferrugineo: ramijuniores alternatim compressi, subarticulati. *Folia* ovalia, serrata, scabriuscula, odore debili jaromatico. *Florès* pulchri, coccinei, fasciculati, axillares, subverticillati, nuac subracemosi.

Syst. Linn. *Didynamia Gywinospernia*\*

Ordo. natural. *Labiata* w,

Dixi in honorem amici aestumatissimi Roberti Colcutioun, Scotiae Baroneti, historiae naturalis fautoris indefessi, qui hortum botanicum Calcutta ditavit plurimis plantis viventibus, seminibus, speciminibus, nee non observationibus, photographiâ regionis Kumaon spectantibus.

COLQUHOUNIA COCCINEA, Wall. TAB. 6.

Legi in variis montibus Nepalise : Chesapanee, Chandaghiry, Sheopore; etiam in sylvis minus elevatis Suembonath, Gokurna, &c. Floret sibi fine pluviarum et tempore frigoris, ab Octobre usque ad Februarium. Fructus maturescunt Martio.

Nomen Parbutteum *Aesinallae*; Newarrense *Goontomah*.

*Frutex* anipla super alias frutices arboresque minores volubilis. *Rami* longissimi, orgyales, obsoletè tetragoni, pennam cygneam ad digitum crassi, a punctis minutis, copiosis scabriusculi, tomento parco hinc inde eonspersi, dilutè ferruginei; *juniores* gracillimi, obsoletè 4-angulares, sulcis duobus oppositis notati, ad insertionem foliorum alternatim dilatato-complanati lineâque elevatâ annulari subarticulati, tomento vestiti denso, ferrugineo, lepidoso, stellato, ciliato, friabili. *Folia* opposita, ovata, acuminata, 3-5-pollicaria, vetusta duplo majora, patentia, obtusè crenulata, basi acuta integripa, utrinque a tomento parco asperula, supra atro-viridia, rugosa, opaca, subtus pallida, costâ nervistjue suboppositis, arcuatis, prominentibus, tomentosis, venis transversim reticulatis; novella densissimè tomentosa, incana. # *Petioli* unguiculares, semiteretes, tomentosi, suprà plani. *Flores* (fig. 1.) magni, inodori, fasciculati, plerumque ternati, axillares, subverticillati; verticilli nunc brevissimè pedunculati, saepius fere sessiles, in ramuis juxiioribus approximati, subracemosi. *Pedunculi* teretes, patentes, petiolo triplo breviores, tomentosi, basi, nunc quoque medio, *bracieolis* duabus oppositis, linearibus, persisteotibus muniti. *Calyx* (fig. 2.) basi subcylindricus, sursum ampliatus et subcampanulatus, membranaceus, scariosus, persistens, seniuncialis, tomentosus, intus laevis, nitidiis, obsolete 5-nerviis, reticulatus, leviter incurvus, dorso parum convexior, limbo 5-dentato, patentiusculo; dentibus triangulari-ovatis, acutis, uni-nerviis, post florescentiam clausis et subvalvatis. *Corolla* (fig. 4.) coccinea, calyce duplo longior, villis canis, mollibus, brevibus, hyalinis, articulatis extus obsita; tubus brevis, cylindricus, inclusus, mox ampliatus in faucem ventricosam, lateribus leviter compressam, subtus foveolatam, perthiam, nudam. *Limbus* bilabiatus; *labium superius* adscendens, ovatum, fornicatum, apice bidentatum, deitibus lanceolatis, obtusiusculis, basi dorsi leviter contracta; *inferius* majus, patens, tripartitum, lobis integerrimis obtusis, lateralibus obliquè ovatis, leviter recurvis, fauci utrinque insertis et quasi interlabialibus: intermedio duplo fere illis brevior, descendente, concaviusculo, linguaeformi, citius emarcescente. *Stamina* (fig. 5.) quatuor, absque rudimento quinti, intra galeam adscendentia, baud plane ab illâ recondita, sinus (more familiae, ut dudum monuit eel. R. Brown in Prodr. Fl. Nov. Holl. 1. p. 500.) interlabialibus, primariisque labii inferioris, intra faucem inserta. *Filamenta* crassiuscula, linearia, villomla, colorata, apice parum dilatata et inerva; superiora duo breviora., *Antherae* parvae, oblongae, nutantes, purpurascens: lobi divaricati (sursum et deprsum), nudi, obtusi, rimâcontinua longitudinali et quasi communi dehiscentibus, *polle* flavo majusculo. *Ovaria* quatuor, oblonga, planiuscula, apice parum obliqua etcrenulata, imposita *disco hypogyno* annulari, angusto, obsoletè quadri-loba, flavicanti; centro parum elevatiore subconico; unilocularia, monospora: *ovulum* teres, ex apice placentulae erectae, fungosae pendulum! *Stylus* filiformis, laevis, purpurascens, longitudine staminum, unacumillis adscendens. *Stigmabilobum*, lobissubulatis acutis, patulis, superiore dimidio brevior. *Achenia* (fig. 7.) quatuor (rarius unum duove cassa) grandia, calyce (fig. 15.) persistente, haud aucto, dentibus conniventibus subvalvatis clauso parum breviora, ejus fundo, supra discum hypogynum fere immuta-

tnoi *imevta*, erecta, glabra, exsucca, basi obalia, conniventia, convexiuscula, intus obtusè carinata subtrigona, apice terminata alâ membranaceâ, parum recurvâ; oblongâ, extremitate subtruncatâ hinc convexâ, inde acutâ, levissimè crenulatâ, margine altero rectilineo, subsulcato, crassiore, altero (exteriore) convexo scindente; epidermide obducta tenuissima, fuseescente; 1-locularia 1-sperma, indehiscentia. *Semen* (fig. 8, 9.) obovatum, compressiusculum, obtusum, basi acutiusculum, album, laeve, infra apicem *xxxsyensum funiculo* longiusculo, descendente supra basin placentae fungosae, erectae, liberae inserto. *Integumentum* simplex, tenuissimum. *Perispermum* crassiusculum, carnosum, album, embryonem aretè hrrolvens, confôrme. *Embryo* (fig. 10.) ovatus, planus, erectus. *Cotytedônes* maximae, ovatae, obtusae, basi subcordatae. *Plumule*\* inônspicua. *Hadicuia* conica, acuta, brevis, infera.

## OBSERTATIO.

Genus puleherrimum, *Leucadi*, Burm. (R. Brown 1. cit. 504.) et *Dracocephalo* quodammodo affine, ab utroque et a tota fere familia diversum fructus magnitudine et forma, positione ovuli penduli semiaisque suspensi, et perispermio copioso. Odor foliorum partiumque novellarum citrinus, debilis. *Wall. foe. cit.*

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Since the preceding account was sent home to the Linnean Society, from whose Transactions I have almost literally copied it, I have found a second species growing on the summit of Sheopore, blossoming during the height of the rainy season, which has also been brought to me from the far more elevated regions towards Gosain-Than, from Kumaon and Sirinagur. This shrub is exactly like the preceding in height and stature. All its upper parts are very densely clad in stellate, soft, separable tomentum; becoming somewhat smoother by age. The leaves are ovate, attenuato-acute, obtusely and unequally dentate, entire and roundish at the base, four or five inches long, pubescent above, covered underneath with white tomentum\*. *Petiols* hoary.—*Flowers* resembling those of the former, disposed in small spikes. This plant may be called *Colquihounia vestita*,

## BEAUMONTIA, Wall

*JEhildis species, jRoa>b.*

*Calyx* quinquephyllus, foliaceus, coloratus. *Corolla* campanulata, tubo **brevi fau-  
gue** esquamatis, laciniis subsequilateris. *Stamina* filiformia laxa, *antheris* subexsertis, sagittatis, mediò stigmati adherentibus, lobis posticis polline vacuosis. *Ovarium* biloculare, suffultum *annulo hppogyno*, quinquelobo. *Stigma* oblongum, apiculâ bifida. *Folliculorum* duo maximi, cohaerentes. *Semina* ad umbilicum sericeo-crimosa.

Classis Linneana: *Pentandria monogynia*.

Ordo naturalis, *Apocynae* vcrce\*

*Habitus*. *Frutex* maximus, volubilis, laetè copioso factus. *Folia* opposita, perennantia, magna, oblongo-obovata, juniora, uti rami novellii, ferruginei, ciliis axillaribus et interpetiolaribus subulatis, sphacelatis. *Cymae* ternariae, bracteatae, pedunculatis brevibus articulatis parum ramosis, dichotomis. *Fibres* maximi, istos Poitlandiae aemuli, nivei, speciosi, fragraotes. *Sepala* magna, bracteiformia, rubicunda, vasculosa. *Fructus* cylindricus, pendulus, cucumerinus, giganteus; demum in duos secedens folliculos. *Coma* ampla, sericea.

Genus hinc *Parmnium* illinc *Lyomia* affine, ab **ilia** diversum figurâ corollae, ab hacoi

corollâ fructuque. Nominavi in honorem Dominee Dianae Beaumont, scientke botanices et horticulture in Anglia devotissimse earundumque fautrici munificse, cujus benignitati hortus Calcuttensis plurimas debet plantas exoticas prsecipue Europaeas.

## BEAUMONTIA GRANDIFLORA, Wall. TAB. 7.

*JEchites grandiflora*^ Roxb. hort. beng. p. 20.

Incolit sylvas depressas montanasque Bengali orientalis, Chittagong, Sylhet, coet. Etiam habui e Noakote, Napalise. Floret a mense Februario usque ad finem Aprilis. Fructus matorescunt post integram annum.

Nomen bengaleinse : *Diwotura Luta*, propter formam florum, istos *Datura* quodammodo referentium; nomen quod etiam convenit *Biittneriae asperae*, Colebr. (vid. Roxb. flor. ind. 2. p. 3fi3.)

*Frutex* ramosissimus, praevalte super arbores volubilis, nunc juxta terram longé latéque extensus, valde frondosus, trunco crasso, cortice cinerascete, spongioso. *Mami* longissimi, nutantes, robusti, valde lactescentes, cylindrici, cinerascetes, dura juniores tomento ferrugineo, copioso, brevi, mollissimo obtecti, superné obsoleté quadrangulares. *Folia* opposita, interstitiis lon^iora, patentia, subdependentia, oblongo-obovata, apice rotundata cum acumine brevi, angusto; basi parum angustata et acutiuscula; undulata, integerrima, suprâ lucida, atro-viridia, laevia, subtus pallidifora, opaca, cost4 crassS, nervisque elevatis, suboppositis, obliquis, ad margines anastomosantibus, albicantibus, puberulis, coeterum glabra, venis magnis, inter nervos transversalibus, parallelism approxirnatis; chartacea, sex- ad octopoilicaria, quin, in luxiiriantibus nempe ram is, pedalia; jnniora subtus, juxta vassorum tractus ferruginea. *Petioliteretes*, crassi, semipollicares ad pollicares, suprâ leviter sulcati, aequales, pubescentes, nunc ferruginei. *Stipulce* nullae^ nisi corpuscula quaedam glandulosa, subulata, sphacelata, in omnibus axillis recondita, quandoque serie simplici trans ramura migrantia. *Cijma* magna terminalis, ovata, octo ad duodeciuflorea, rarius subaxillaris foliorum paris supremi, ad basin ssepe aucta foliolis aliquot parvis floralibus lanceolatis, fere, sessilis. *Feduncuii* breves, crassi, articulati, bis terve dichotomi; *pedicelli* pollicares, subcomplanati, bi- triflori. *Bracteae* magnae, membranacete, sparsae, plerumque solitarise ad divisuras, subimbricatue, villosae, deciduae, ovate, acute, undulatiK, semipollicares, e viridi rulescentes, venis reticulatis, ferrugineis. *litres* plerumque terni, nivei, initio pavum viridescuUes, denium flavicantes, admodum fragrantés, quinquepollicares. *Cult*^; (%. 1.) iiiagonus, quinquephyllus. ^\* *pala* ovato-lanceolata, cuspidato-acuta, undulata, villosa, pallidé viridia vel albicantia, ferrugineo-reticulata, erectiuscula, subimbricantia, bracteis figura et colore similia. *Glan*^ rfwfcsbulatee, minute intra singulufn sepalum serie regulari ordinatue, basi corollae adpressae. *Corolla* coriacea, crassa, campanulata, extus pubescens, intus laevis, nitida, longitudinaliterque nervoso-sulcata, quatuor pollices longu, *Umio* pateite, quinquefido, tres pollices eineticnte, fauceamplâ, nuu^i, perv^; deorsuni seusim :iUenuatabasiquecontracta in *tulum* viridescetem, semipollicarem, intus a filamentorum basibiisdecurrentibus costatam, culyce parum breviorém. *Latinice* ovate, acuta?, planar patentés, laleribus subaequalibus, basi parunlftontracta?, aestivatione imbricatae in conum ventricosum. *Stamina* (fig. 2;- parallela, extra faucem parum prominwla, flaccida. *Filamenta* filiformia carnosa, laevia, alba, leviter compressa, basi tubo intus adnata, stylo parumper breviora, ideoque parum curva, apfceleviter incrassata. ^4wfi^rPOvato-sagittata% acuminatse, dorsogibbosae etcarnosse, stigma occultantes, huicque medio adnatae, corpus formantes ovatum, leviter pentagonum, acutum; utrinque longitudinaliter loculo angusto dehiscentes; lobis posticis longis, subulatis, conniventi-incurvatis, liberis, polline vacuis. *Pollen* pallidé Havescens. *Ovarium* parvum, ovatum, pilosulum, biloculare, polysporum, *ovulis* numerous, insertis placenta interiorly carnosae, septo adnatae; immersmn et fere occultum *annulo*



*Jiypogyno* carnosus, convexo, subquinquelobo, flavescente. *Stylus* (fig. 3.) filiformis, latus, apice clavatis dilatatisque in *stigma* oblongum carnosum, glutinosum, medio antheras adfigens, apicute biloba terminatum. *Folliculus* (fig. 4.) maximus, oblongus, subcylindricus, obtusus, viridis, demum lutescens, glaber, minute parum tuberculatus, basi retusus, pedunculo lignoso crasso brevi insidens, pendulus, pedalis, diametro tripollicari, lignoso-coriaceus, plena maturitate longitudinaliter debiscens in duos lobos (fig. 5.) sequales, extus convexos, intus planos et parallelos, parum distantes. *Caro* valde erassus, coriaceo-spongiosus, longitudinaliter lignoso-fibrosus, initio rufescens, demum fuscus. *Dissepimentum* nil nisi latera interiora utriusque lobi incurva, plana, parallela, crassa, coriacea, e basi usque ad apicem riuata longitudinali intus placentifer & fissa. *Loculamentum* in singulo lobo unicum, oblongum, tunica valde nitida, laevi, alba vestitum. *Receptaculum* (fig. 6.) tenue, membranaceum, sublineare, foraminibus pluribus longitudinalibus pertusum, retiforme, apicibus adfixis *placenta*\* gracili, longae, debiscens demum liberum.—*Semina* (fig. 7, b.) valde numerosa, dense imbricata, pendula, cuneiformia, pollicaria, angulata, papiloso-rugosa, fusca, *raphi* longitudinali vix videntem, pendentem umbilico parum contracto et excavato, comoso, *Membrana* exterior fusca; subspongiosa; *interior* tenuissima, albumini arete applicata. *Coma* dei. sa, longa, senescentis splendentis, setula minuta, ex umbilico orta, quasi stipitata, semine ipso duplo longior.—*Albumen* conforme, camosum, lacteum. *Embryo* (fig. 9, 10.) niveus, carnosus, lactescens. *Cotyledones* maxima, crassae, oblongae, obtusae, dorso convexiusculo *venulosae*. *Radicalis* supra, cylindrica, brevis.

## OBSERVATION,

This truly magnificent plant was introduced into the Hon. Company's botanic garden by the late Mr. John Roxburgh from Chittagong in the year 1810, and has since grown to an enormous size, some of the individuals overtopping the largest trees, with stems measuring at the base from 11 to 13 inches in circumference. It is at all times extremely ornamental; chiefly, however, when covered to excess by its ample bunches of superb, snow-white, most delightfully-fragrant blossoms, when it is also clothed with a profusion of dark green, shining, large leaves. The fruit is probably the largest of the whole tribe, being twelve inches long, sometimes even longer, and proportionally thick, hanging down perpendicularly, not unlike like a large green cucumber. It is produced in great plenty; its internal structure is extremely elegant, the seeds being very numerous, and beautifully arranged, each furnished with a long, silky, extremely soft and delicate coma. The shrub is easily propagated both by seeds and layers; in short, I know of no vegetable production, more noble, more desirable, more ornamental in all its stages than the one I have now described, and which, I hope I have been so fortunate as to succeed in introducing into the gardens of Great Britain.

HEMIPHRA<sup>G</sup>MA, Wall, in Art. Linn. 13. p. 611.

*Calyx* 5-partitus. *Corolla* infundibuliformis: limbo patente 5-fidibus aequali. *Stamina* 4, aequalia, antheris nudis, liberis. • *Stigma* simplex, acutum. *Bacca* globosa, exsucca, incompletè 2-locularis, polysperma, *dissepimento* placentiferè sursum fisso.

Syst. Linn. *Tetrandria Monogynia*, floribus nonopetalis, monocarpis, irrefertis. An potius *Didynamia Angiospermia*?

Ord. Natural. *Scrophularinae*, Brown.

*Habitus*, Herba gracilis, repens pilosula. *Folia* duplicitis indolis; caulina et ramea orbiculato-oviformia, opposita, subsessilia, dentata; alia aerea, gracillima, conferta

in fasciculos petiolatos. • *Flores* solitarii, parvi, rosei, brevè pedicellati, ebracteati, alterni vel oppositi in axillis foliorum majorum, vel terminales fasciculorum. *Baccae* globosae, ruberrimae, nitidae.

HEMIPHRYGMA HETEROPHYLLUM, Wall, *he.cit*612.—TAB. 8.

Planta sat commimis in raontibus Napaliae, saxatilis, florens et fructifera toto fere anno, praecipue ab Octobre ad Februarium.

*Caulis* gracillimus, pedalis bipedalisque, prostratus, per distantiam pollicuni trium vel quatuor radicans, radiculis simplicibus, pallidis, fibrillosis; obsoletè quadrangularis, epidermide fuscescente, secedente. *Rami* pauci versus extremitatera caulis, tenerrimi, breves, indivisi, oppositi, acutanguli, asperuli a pilis brevibus, articulatis, patentibus, hyalinis. *Folia* biformia. *Caulina* ovato-cordata, subreniformia, plana, patentia, membranacea, citius emarcescentia, opposita et fere amplexicaulia, brevissimè petiolata, unguicularia ad pollicaria, remota, interdum pollices plures distantia, obtusa, acutiusculè et lato-dentata, lobis baseos integris, rotundatis; utrinque pilosula, subtustrinerviale viterque reticulato-venosa, siccitate ferruginea; superiora et ramea ovata, vel suborbiculata, paucà, bracteiformia, illis ter quaterve minora. *Folia alia* subulato-acerosa, bi- vel trilineararia, semiteretia, suprâ sulcata, pilosula, acuta, laetè viridia, nitida<sub>3</sub> sessilia, undique patentia, 20-30-circiter conferta in fasciculos (fig. 1.) ovatos, unguiculares, brevè petiolatos, patentes, axillares et oppositos foliorum caulinarum, vel terminales. *Petioles* foliorum majorum vix bi-lineares; suprâ sulcati, pilosuli, lineolâ elevatè tenerrimè caulem, vel ramum ambientes. *Stipulae* nullae. *Flores* (fig. 2, 3.) parvi, solitarii, axillares foliorum, vel terminales fasciculorum, *pedicello* insidentes brevissimo, villosi, ebracteati. *Calyx* (fig. 4.) subovatus, persistens, densè villosus, profundè quinque-partitus, *laciniis* patentiusculis, linearibus, purpureo-acutis. *Corolla* (fig. 5.) rosea, calyce duplo major,\* infundibuliformis, glabra; *tubus* obsoletè tetragonus, mediè ventricosus, flavescetis; *Embus* patens, quinque-raro sexfidus, admodum obscurè bilabiatus, aestivatione imbricatus, *laciniis* ovalibus, obtusis, nunc subretusis, duabus superioribus parum latioribus *stigma* per via, nuda. *Stamina* quatuor, oequalia, parum supra faucem elevata, medio tubi inserta; *antheris* ovatis, erectis, parum conniventibus, utrinque longitudinaliter dehiscentibus, nudis. *Pistillum* staminibus parum brevius; *ovarium* (fig. 6, 7.) subrotundum, laevè, *disco* *Jiypogyno* exiguo, annulari, flavicante suffultum, biloculare, polysporum, *ovario* insertis placentae, dissepimento apice minutim perforato utrinque adnatae; *stylus* teres, brevis; *stigma* leviter incrassatum, simplex, acutum. *Bacca* (fig. 8, 9, 10.) ovato-globosa, magnitudine pisi, stylo persistente coronata, suffulta calyce patentissimo, hand aucto, coccinea, laevis, nitida, inscripta lineis gracillimis impressis quatuor, e vertice cruciatim decurrentibus, commissuras valvarum mentientibus, cultro difficiliter in totidem valvulas partibilis, nunquam sponte dehiscens; *membrana exterior* tenuissima, chartacea; *caro* spongiosa, pallida, basi copiosior, vertice tenuior. *Dissepimentum* incompletum, membranaceum, tenuissimum, vertice perforatum liatu inversè triangulari, aetate ultra medium baccae deorsum extenso. *Placentae* duae, semilunato-bicorlicae, spongiosae, convexae, biatu dissepimenti utrinque adnatae, ibique confluentes, medio crassiores, sursum attenuatae, rugosulae. *Semina* numerosa, minuta, pallide ferruginea, ovata, sessilia, punctata, mox soluta fundumque baccae utrinque occupantia. *Integumentum* simplex. *Perispermum* carnosum, aqueo-palidum, tenue, semini conforme. *Embryo* dicotyledoneus. *Radicula* centripeta,

## OBSERVATIO.

Plantula elegantissima *Scrophularinis* potius quam *Gentianeis* Juss. associanda, ab bis discrepans corollâ staminibusque, ab illis quadammodo abludens structure fructus.

An *Solanearum* civis? Nomen imposui a septo incornpleio; quasi dimidiato.—*Wall Leit*

To the preceding account, which is almost literally extracted from the 13th Vol. of the Linnean Transactions, I have nothing to add, except th^t I have hitherto found it impossible to make the plant live in Bengal.

SCHOEFFIA FRAGRANS, *Wall in Roxb. for. ind. 2.p. 188. TAB. 9.*

Foliis lanceolatis, acuniinatis; raceniis tfixillaribus, solitariis; ovario triloculari; drupa ovata, mono-sperma.

Nomen Farbutteanum: *Haloomaplie*.

Crescit in sylvis minus elevatis Napalia?, a Bechiaco, usque ad convallem magnam, ubi satis frequens. Etiam incolit Joca magis elevata, septentrionalia. Floret sub pluviis; fructus maturescunt Decembre-Martio.

Arbuscula, *trunco* irregulari, diametrum pollicum tres vel quatuor emetente, *cortice* crastso, spongioso, molli, rugoso, ex albido fiavescente; *ligno* levi, cinereo. *Mamiteretes*, albicantes, leviter flexuosi, uti reliquae partes glaberrimi; *gemma?* jcopiosa?, parvae, squamis constantes numerosis. *Folia* sparsa, approxiniata, interstitiis pluries longiora, bi-tripollicaria, *integerrima*, Janceolata, acuininata, basi acuta, lateribus parum inaequalia, subcarnosa, fragilia, avenia, supra atro-viridia, lucida, subtus pallida, nervis aliquot obsoletis, obliquis, capillaribus\*, ad marginem reticulatis; setate flavicantia. *Petiolis* trilineareG, teretes, supra sulcati, basi articulati, siccitate mox decidui. *Stipulae* nullae. *Floras* (fig. 1, 2.) flavi, fragrantissimi, dispositi *inrucemos* simplices, axillares, subsessiles, tenuos, folio dimidio breviores. *Pedunculus*, uti *rackis*, gracilis, teres, nudus, basi circumdatus squamulis gemmaceis\* nunc parum ultim adscendentibus^ bracteolas mentientibus crassas, ovatas, subpedicellatas, gibbosas. *Pedicelli* sex vel septem, filiformes, subclavati, unguiculares. *Calyx* (fig. 3.) parvus, duplex (judicio auctorum) uterque monophyllus: alius inferior (*bractea calyciformis*, mihi) pedicelli apici insertus ovariumque suffultiens, divisus in lobos duos tresve ovatos, acutos, inaequales, membranaceo-marginulatos, intermedio majori nunc bi- vel tridentato; alter (*calyx verus*) superior, obsoletus, margine angustissimo, integerrimo ovarium coronans. *Comilla* (fig. 4.) subcarnosa, infundibuliformis; *tubus* cylindricus, unguicularis, basi obscure pentagonus, apice leviter ampliatus in *limbum* quinquefidum, laciniis lanceolatis, acutis, aestivatione valvatis, vix inaequalibus; *faux* pervia, ad basin singulise lacinise munita faaculo pilorum succulentorum minuto, erecto, filamentum oeuitante. *Filamenta* brevissima, crecta, subulata, laciniarum basi, infra ^cervulosistos pilorum inserta, iisdernque eposita, inde per tubum lineis capillaceis decurrentia. *Anther* & ad faucem corollae erectae, biloculares, *Ovarium* (fig. 5, 6.) carnosum, oblongum, calycibus inulto longius, lineas tres emetiens, vertice gerens discum carnosum, latum, conicum, obtusum, intra corollae tubum proinulura; triloculare, trisporum. *Ovula* cylindrica, oculis breviora, ex apice axis pendula. *Stylus* filiformis, tubi longitudine. *Stigma* elavatum, carnosum, parvum, trilobum. *Drupa* (fig. 7, 8.) baccata, oblonga, obtusa, laevis, ex albo flavescens, magnitudine fere fructus Oleae sativae, calyce sic dicto inferiore, persistente suffulta, vertice inscripta vestigiis insertionis corolla et calycis superioris fere oblitteratis. *Caro* mollis, lineam crassus. *Putamen* (fig. 9.) tenue, chartaceum, oblongum, album, lineis numerosis, parallelis, longitudinalibus, elevatis, anastomosantibus notatum, uniloculare, monospermum, vertice umbilicali carni arctius adhaerens. *Perispermum* (fig. 10.) amj^ dalinum, album, putamini conforme, parum rugosum. *Integumentum* simplex, tenue, ferrugineum, spongiosura, ad verticem seminis notatum vestigiis linearibus ovariorum duorum abortivorum et axis ovarii. *Embryo* (fig. 11, 12.) minutus, lacteus, cylindricus, rectus, ad verticem perispermi locatus, inversus. *Cotyledones* parallelis, ovatae,

obtusae, dorso convexae, dimidium ipsius embryonis emittentes. *JRadicala* supera, sub\*  
 turbinata, lineam demidiam e superficie perispermi remota. *Plumula* inconspicua.

## OBSERVATION,

Mons. de Jussieu has justly observed in an excellent memoir chiefly on the families of *Caprifoliaceae* and *Tjoranthaceae*, inserted in *Annal. du muséum d'histoire naturelle*, 12. p. 500, that this genus is the connecting link between those families, belonging, however, more properly to *Loranthaceae*. I would add that it is nearly allied to *Santalaceae* of Mr. Brown. The account which the first mentioned immortal botanist has given of the fruit, taken from the manuscript of the accurate Richard, as far as it goes, agrees exactly with the present species. The difference between the structure of the ovary and that of the fruit has, however, not been noticed; and as Schreber describes the genus, as having a three-celled berry with several seeds, the number of the abortive ovula may perhaps vary. In my tree there are invariably found three ovula, one of which only comes to maturity; the other two are abortive, remaining attached to the upper end of the cavity of the putamen, as does also the axis of the ovary, in the shape of withered, flattened threads.—*Haenkea*, Ruiz et Pavon flor. peruv. (not of the prodromus) belongs probably to this genus, as has been remarked by Schultes, in *syst. veg.* 5. p. viii.—The fruit bears some resemblance to *Rhysospermum*, Gaert. carp. suppl. p. 232, t. 224, which is the same as *Notelaea*, Vent, according to Mr. Brown, (*prodr. nov. holl.* 1. p. 523).—The perfume of the flowers is of a most delightful kind, and may be perceived on steeping them in warm water even long after they have been dried.—*Wall. he. tit.*

**SPHAEROCARYA, Wall, in Roxb. Flor. ind. 2. 371-**

*Calyx* quinquepartitus. *Petala* quinque, minuta, staminibus totidem alternantia. *Squamula* quinque, fimbriatae, inter stamina laciniisque calycis. *Ovarium* absque ullo disco. *Stylus* indivisus. *Drupa* infera. *Nuoc* glabra, suturis destituta.

Systema Linneanum: *Pentandria monogynia*, sectione floribus superis, pentapetalis, fructu drupaceo.

Ordo naturalis: *Rhamnacearum* sectio dubia, fructu infero, insuper ablutens embryo inverso.

**SPHAEUOCARYA EDULIS, Wall. TAB. 10.**

Haud rara in sylvis vallis Nepalicae montiumque vicinis. *Flvet* Aprili, Majo. *Fructus* Octobri.

**Nomen Newarrensse** *Ltishpoo*; **etiam** *Eal-Murisee*.

**Nomen Parbutteum** *Run-Amb*.

Arbor frondosa et umbrosa, cortice cinereo. *Ramuli teretes*; juniores, foliaque tenella obtecta villis longis, sericeis, nitidis, copiosis. *Gemma* (fig. 12.) majusculae, ovatae, sericeo-pilosae, squamis imbricatis rotundatis. *Folia* alterna, patentia, ovato-oblonga, acuminata, integerrima, basi acuta, marginibus subrecurvatis, supra laevia, lucida, juxta nervos sulcata, subtus pallidiora, costa nervisque paucis alternis, obliquis, villosis, elevatis, venis reticulatis; subcarnosa, tri- ad sexpollicaria, in luxuriantibus ramis usque ad novem-pollicaria, decidua, tempore florescentiae germinantia. *Petiolus* vix semi-unguicularis, convexus, supra sulcatus. *Stipula* nullee. *Racemi* solitarii, subsessiles, terminales vel axillares foliorum supremorum, dense villosi, bi- tripollicares. *Mores*

(fig. 1,2.) pauci, alterni, virides, inodori, parvietenconspicui, /7^W/^insidentesbrevibus, clavatis carnosus, nudis. *Calyx* superus, quinquepartitus, una cum corollâ emarcescens, persistens; *laciniw* (fig.3,4.) triangulares, acute, apice villosae, intus glabrse, patentes, vix semilineam longae, aestivatione valvaUe. *Fetala* quinque, minuta, ovata, obtusa, laciniis calycinis multo minora, infra fissuras calycis inserta. *Filamenta* quinque, brevia, erecla, glabra, petalis alternantia, basi laciniarum calycis inserta iisdemque opposita. *Aniherce* erectae, biloculares, albne. *Sqimulce* quinque minutissimoe, pilis fasciculatis succulentis barbatae, inter filamenta et lacinias inserts. *Ovarium* (fig. 5,6.) inferum, clavatum, majusculum, nitidum, pubescens, vertice, intra florem, concaviuscuM, uniloculare, monosporum. *Ovulum* succulentum, oblongum, erectum/elevatum chordâ spirali, carnosâ, subdiapban^ fundo ovarii inserta, perque canal em proprium angustum in cellulam oblongam, propriam ovuli conductâ. *Stylus* brevis, cylindricus. *Stigma* convexum, obsoleté bilobum. *Drupa* fig. (7, 8, 9.) pyriformis, pollices duas et demidium longa, sesquipollicem crassa, epidermide obtectalutep-viiidi, tenaci; extremitate superiore rotundata et excavata faveolâ centrali profundâ lacinias calycinis incrassatas, petala filamenta styliuinqe emarcida occaltante; basin versus attenuata, cuneiformis; unilocularis. *Caro* pallidé fuscus, mollis, subglutinosus, tertiam pollicis partem crassus, fibroso-vasculosus. *Nrx* fig. r-0,11.) solitaria, niagna, globosa, glabra, sine ulla sutura, eavitatem ominoreplens ereque fermiter adherens, liinc inde notata foveolis parvis carni arctius adhaerentibus, vertice obsoleté apiculatA, basiparum scabrâperforataforaminulo exiguo. *Fiitamen* Cinereum, vix lineam crassum, unilocuiare, monospermum. *Perispermum* amygdalinum, album, nuci conforme, usque ad medium perforatum canalicilâ obsoletâ e fundo seminis, prope foraminulum istud putaminis surgente, sursum obliterate, vestigium chordae ovuli -includerite. *Integumentum* simplex, ferrugineum, tenue. *Embryo* albus, oblongus, brevissimus, intrâ verticem perispermi obliqué locatus. *Cotyledomg* oblongae parallel©. *Itadicula* supera, conica.

## OBSERVATION\*

The inhabitants of Nipal are very fond of the fruit of this tree, which however, to a European palate holds out but little temptation. The wood is nearly white, of a firm texture, and appears to me suited to the work of the cabinet maker; it is used, only, for firewood and posts. The direction of the ovulum and that of the embryo are directly contrary, the former being decidedly erect, while the latter is pendulous.— *Wall. loc. cit.*

PASSIFLORA NAPAL.ENSIS, *Watt.* TAB. 11.

Fruticosa, scanclens, laevis; *foliis* indivisis, integerrimis, ovato-cordatis, acutis, glaucis, basi subtus petiolisque medió glandulosis; *pedunciiUs* axillaribus, bi- trifloris, bracteolis sp&rsis, subulatis; *perianthii* foliolis oblongis, alternis quinque angustioribus.

Crescit rarius in sylvis convallis Napalise ad Pusputnath, Nag arjhoon, etiam montis Chandaghiry. Floret Junio, Au^usto. Fructus maturescunt versus finem pluviarum.

Frutex tenuis, ramosa, glaberrima, scandens et volubilis. Cai/fegraciHimus, eortice tectus gryseo. *Manii* longi, gracillimi, vix filo emporetico crassiores, pallidi, glauci; tenelli pubescentes. *Folia* petiolata, alterna, patentia, interstitiispaullo longiora, ovato-cordata, cuspidulato-acuta, integerrima, nunc obsoleté crenulata, sinu baseos parvo, lobisque rotundatis, nunc (basi folii rotundatâ) fere obsoletis, bi- tripollicaria^ meinbrana^ ea, laevis, valde glauca et opaca; paginû superiore interdum variegata maculis amplis, albicantibus, inferiore tri- vel quinque-nervi^i, nervis gracilibus, in junioribus foliis puberulis, exterioribus brevissimis, parum reticulate, ad basin costse, utrinque, glandula orbiculatâ, sessili, plano-convex^, viridi, lucidâ, nunc geminatft; quandoque pluribus

inter nervos vagis. JP<sup>o</sup>^teres, gracilis, filiformis, suprà sulcatus medioque, vel paullo infra, glandulis duabus, parvis, cylindricis, brevibus, alternantibus, approximatis. *Stipulce* nullae, nisi ciliee axillares, subulatae, minutae, camosse\* fasciculatae, emarcescentes. *Cirrho* axillares, solitarii, filiformes, spirakter torti, indivisi, laeves, nudi, folio sesqui vel duplo longiores. *Pedunculi* axillares uniflori, nunc bi- vel triflori, filiformes, petiolo dimidio breviores, puberuli, *bracteolis* quibusdam sparsis, subulato-linearibus, emarcescentibus instructi. *Involucrum* nullum. *Flores* (fig. 1, 2.) inter minores, vix ultra pollicem transversum, emetientes, albi, externè dilutè viridescentes, inodori. *Perianthium* decempartiturn, patenti-recurvum, fundo convexo, parum proininulo; *lacinice* oblongo-lineares, obtusae, membranaceo-marginulatae; alternè angustiores, petaloideae. *Corona* triplex, concolor: *exterior* setaceo-multiradiata, patentissima, perianthii foliis plus dimidio brevior; *media* huic proxima, haud vero contigua, plicato-multifida, inflexa, basi urceolata, lobis (fig. 3.) lineari-lanceolatis, versus columnam conniventibus, acutis, propter margines sursum revolutos suprà canaliculatis; *intima* constans annulo obsoleto, angusto, integerrimo, puberulo, basin pedicelli ovarii purpurascentem cingente. *Columna* perianthio brevior. *Fylamenta* subulata, recurvato-patentia. *Antherce*, ovatae, leviter deflexae. *Ovarium* ovato-subglobosum. *Styli* devaricati, filamentis breviores. *Stigmata* clavata. **Bacca (fig. 4.)** sphaerica, nuda, laevis, llava, diametri linearum trium.

## OBSEBTATION.

This species comes near to *Passijora pallida*. Linn., which Sir J. E. Smith has justly observed (Rees's Cyclopaedia, in loco) consists of two different species, namely onedescrib\* ed by Plumier and the other by Piso. Loureiro's *P. pallida* (Flor. cochinch. 2. p. 527) is no doubt a distinct plant, as pointed out by Willdenow, in his edition of that work (2. p. 645.); it seems to differ from ours in having opposite, ovate leaves, and much larger flowers. These two last mentioned species appear, therefore, to be the only ones which have hitherto been found in India; unless *P. coeruleabe* considered as a native of China, where Loureiro, in the above quoted work, says it grows wild; but this has been doubted by Sir J. E. Smith (loc. cit.) The present species is not without its elegance, although it is far behind most of the members of this beautiful genus. It is rather an uncommon plant in Nipal.

## LILIUM GIGANTEUM, Wall TAB. 12.13.

*Caule* folioso, racemoso; foliis petiolatis, sparsis, cordatis, amplissimis; floribus infundibuliformi-campanulatis, intus glabris.

*Sjire*, rectius *Sjiroi* et *Osjiroi*. Kaempf. Amoen. Exot. p. 870. Ejusd. Icon, select, a Banksio edit., p. 3. t. 47.

*Lilimn candidum*, Thunb. jap. p. 133?

Crescit in monte Sheopore, versus medium ejus, ad loca humida, umbrosa.

*Floret* sub pluviis, a mense Maii, usque ad finem Julii. Fructus maturitatem attingunt Octobre.

*JSulbi* ovato-globosi, aggregati, magnitudinis pomi mediocris, vetustuti maximi, constantes squamis pluribus crassis, carnosis, ovatis, truncatis, planiusculis, glabris, subpatulis. \* *Caidis* strictus, cylindricus, uti tota planta glaberrimus, cylindricus, sulco laterali alterpatimMterupto saepius notatus, e basi, diametrum pollicarem ad bipollicarem rimetiente, cequaliter attenuatus in apicem calamum scriptorium ad digitum minimum erasam, quatuor ad septem pedes altus, fructifer adhuc elatior, cavus et inanis, nee septis interstinctus, parietibus duas tresve lineas crassis. *Folia* magna, sparsa, plana, mem-

brariacea, patula, petiolata, quaedam remotiora, alia approximatione, saepe interstitiis plus duplo longiora, lato-ovata, cordata, attenuato-acuminata, sinu profundo subdecurrente, lobis latis, rotundatis, distantibus, leviter repanda et imbricata membranaceo-inarginulata nitida, supra saturate viridia, subtus pallidiora, eosta ampla, crassa, albicante, nervis obliquis, distantibus, venis capillaceis, reticulatis, venula insuper indivisa, submarginali; inferiora maxima, ovem pollicaria ad pedalia, longinquetiolata, superiora sensim minora, minus profunde cordata, summa tripollicaria, brevissime petiolata, gracilius et longius acuminata basi que subrotundata, subintert. Petioli crassi, sulco lato canaliculati, marginibus scindentibus/basilatissimè tertiam caulis partera amplectente, infimi folia aequantes vel superantes, superiores iisdem his terve breviores, summi brevissimi, latissimi, pollicares vel infra, marginati. Flores maximè fundibuliformi-campanulati, oblique nutantes, octo ad decem dispositi in racemum amplissimum, terminalem, nudum, pedalem vel sesquipedalem; albi, extus deorsum viridescentes, intus rufescentes, fragrantés; tubus viridescens/digitum medium fere crassus, tricostatus, obtuse triangularis, basi retusa insequenter subtrilobus, sensim dilatatus in limbum sequaliter patulum, subrevolutum, quadri ad quinque pollicarem. Pedunculi teretes, crassi, breves, semipollicares, recurvato-nutantes. Flores ante anthesin virides, deflexi, bracteis obtecti magnis, foliaceis, ovatis, albicantibus, caducissimis, insertionis vestigium infra singulum pedunculum inq. angustium, semilunare, utraque extremitate ascendens; proeterea bracteola interim, alba, linearifiliformis, ascendens, pollicem longa, supra basin singuli pedunculi inserta.—Petala (fig. 3.) oblongo-spathulata, inferiore dimidia parte valde crassa, vix lineas quatuor lata, exteriorè dilatata in laminam lanceolatam, acutiusculam, minutim striatam, intus ad irragiles a punctis minutis densissimis rufescentem; basi subius gibboso-convexa, supraque foveolatuscula, melliferè leviter excavata, pagina superiore sulco exarata longitudinali, extrorsum oblitterato; marginibus nunc parum inaequalibus; tria exteriora parum iatiorti, dorso convexo costato; interiora tria costata lata, elevata, utrinque sulco exsculpta profundo marginibus petalorum interiorum recipiente. Stamina parallela, recta, conniventia, supra faucem floris vix exsertita, limbo parum breviora, longitudine parum inaequalia. Filamenta alba, carnosà, plana, petalorum basi inserta, sulcibus interiorum incurvata, cuinque illis canaliculam formantia nectariferam, apice teretia. Antherae oblongae, obtusae; pallidè flavae, rectae, leviter versatiles. Ovarium (fig. 4.) oblongum, obtuse triangulare, lobiis sex notatum, nitidum, sesquipollicare, trilobulare, ovulis orbiculato-planis, fere absque numero placentae, in sigulo loculo bijugae, duplici serie parallelè insertis. Stylus crassus, rectus, filamentorum longitudine, infra stigma leviter incrassatus. Stigma prismatico-trilobum, obtusum, vertice triangulari, scabro, mucoso. Capsula (fig. 5.) ovato-prismatica, angulis obtusis, reflexa cum cuspidula, lateribus condavivtibus, basi clavata, pollices duos et dimidium longa, duos lata, fusca, glabra, coriacea; vulve margine incrassatae, introrsum pectinatee serie simplici ciliarum longissimarum, angustissimarum. Semina (fig. 6.) innumera, levissima et tenuissima, triangularia, oblique obovata, membranata, tenuissima marginata, basi angustata et retusa, semipollicaria. Coetera ut in Lilio bulbiferoj Gaert. carp. 2. p. 16. t. 83.

## OBSERVATION.

This majestic Lily grows sometimes to a size which is quite astonishing; a fruit-bearing specimen of the whole plant, which is destined for the Museum of the Ron. East India Company, measures full ten feet from the basis of the stem to its apex; its general height, however, when in full blossom, is five or six feet, and in that state is a truly superb object. The flowers are proportionally large and delightfully fragrant, not unlike those of the common white Lily. The outer three petals are closely united to those within by their acute margins insinuating themselves under the dorsal rib of the latter, each

side of which is deeply furrowed. The filaments are inserted with their flat broad base just above the little cavity at the base of each petal and continue closely applied for about half their length to the furrow which proceeds from thence, forming a nectariferous canal, which leads to the above mentioned cavity. *Kaempfer's* figure is a tolerable representation of my plant before its flowers expand; but it is impossible for me to say, if it is actually intended for the same species. My ever-to-be-lamented benefactor and patron, the late Sir Joseph Banks, observes in the above quotation, that Thunberg refers this figure to *L. candidum*; but this last is a widely different species. I have ventured to quote Thunberg's plant, because the extraordinary length, which he ascribes to its flower seems to indicate, at least, that it cannot be the same as Linnæus's *L. candidum*: The root is at first very small, consisting almost of a solid mass; a number of leaves soon spring up from thence and it is the very thick and fleshy bases of these, which afterwards constitute the large bulbs. A number of these are often found surrounding the base of the stem, the whole forming a mass as large as an infant's head. Although I have repeatedly procured its roots I have never been able to succeed in making them shoot out any plant, or even survive one season in the Honorable Company's botanic-garden.

### FIOLBOELLIA, Watt

**Flores** monoici. *Perianthium* hexaphyllum; *foliolis* duplici serie, ordiine teruario, alternatim dispositis. *Masculi*: *Stamina* sex parallela, distincta; *antheris* adnatis, extrorsis. *Glandida* sex ovatae, filamentorum basibus opposita, iisdemque adnatae. *Rudimenta* pistillorum centralia. *Foeminei*: *Ovaria* tria, distincta, oblonga, attenuata. *Styli* nulli. *Stigmata* simplicia, sulcata, evanida. *Stamina* sex sterilia, nana, completa, pistillorum bases ambientia. *Baccae* saepius tribus pauciores, divaricate, oblongae, carnosae, sessilis, corticate, folliculares, intus longitudinaliter dehiscentes, uniloculares, polysperae. *Seniina* nidulanta, oblongo-ovata v. reniformia; *perispermio* copioso; *embryone* minuto, radice infera vel centrifuga.

Classis Linneana: *Monoejia hexandria*.

Ordo naturalis: *Menispermew xerce*; ab hisce tamei nonnihil abluens directione radicee, infera vel centrifuga. A generibus tribus, sectionem harum foliis compositis insignitam constituentibus, distinguitur sequentibus. A *Lardizabala* Ruiz et Pavon, floribus hexaphyllis, staminibus liberis, stigmatibus sulcatis, evanidis, baccis follicularibus, unilocularibus, pulpa polysperna. A *Staimtonia*, De Oandolle, differt staminibus hand coalitis nee aristatis; a *Bursaia*, du Petit Thouars absentia corollas (perianthii nempe foliola in nostris plantis iniforinia, petaloidea vel sepaloidea) filamentorum basibus distinctis, et fructus fabrica hand drupacea nee monosperma. Abludit praeterea floribus monocis, qui in illis dioici vel polygami. Habitus generalis *Jardizabale biternate* (in Itinere Perousii, tab. 6, 7, et 8 optime delineatae) magis adhuc, quoad folia, *Statwtoniae* accedens.

Habitus: *Frutices* magnae, extense volubiles, gemmiferae glaberrimae. *Folia* aterna, peltatim digitata, foliolis integerrimis, coriaceis, trinerviis, petiolis omnibus utraque extremitate intumescens et articulatis. *Ilacemi* fasciculati, subcorymbosi, nudi, laxi, axillares vel ad basin ramulorum, pauciflori. *Flores* albi, extus parum purpurescentes, fragrantis. *Baccae* magnae, tumidae, purpureae, abortione saepius tribus pauciores, esculentae. Genus consecratum amico et praeseptori carissimo, Frederico Ludovico Holboel, Horti Botanici Regii Hafniensis hortulano dexterrimo, botanico peritissimo, operi Hornemanni *Flora Danica Oeconomica* nuncupato aliisque contributori, quique hortum Calcuttee ditavit thesauris seminum frequentibus, amplissimis, omniumque fertilissimis\*



## HOLBOELLIA LATIFOLIA, Wall. TAB, 16.

Foliolis ternis vel quinis, ovatis; floribus racemosis; baccis ovatis.

Parbutt. *Gooplea*; *Baegul*.

Frequens in sylvis montanis Napaliae, Cheesapany, Chandaghira, Sheopore, coet  
Norens Martio-Majo. Fruct. Octobre.

*Frutex* ampla, ramosa, valde volubilis, omnibus partibus glaberrima, surgens e radice lignosa, ramosissima. Caulis cylindricus, valde tortuosus, frequenter diametrum pollicum trium ad quinque emetiens, cortice crasso, suberorso, molli, cinereo, vel flavicante, ligno cinerascens, radiato, paroso, levi. Rami teretes; juniores flagelliformes, glauci, subcirrhati. Gemmae magnae, squamis coriaceis, lato-ovatis, cuspidato-acutis, diutius persistentibus et ramorum novellorum basin ambientibus. Folia patentia, petiolata, remotiuscula, peltatim digitata, ternata vel quinata, palmaria. Petioli graciles, teretes, supra plani, basi apiceque articulati et oblongo-intumescens, tri-quadripollicares; partiales illis simillimi, sed graciliores et breviores, pollicares ad bipollicares, intermedio longiore, demum tribus plures laterales longitudine decrescentes, utrinque articulato-incrassati, verticillatim patentissimi. Foliola tria vel quinque, ovalia, acuta, rarius acuminata, nunc rotundato-acutiuscula, basi rotundata; integerrima, leviter complinata, apicem versus parumper recurvata, firma et coriacea, laevissima, siccitate flavicantia, tri- ad quinquepollicaria, quin majora, supra atro-viridia, lucida, ad vasorum tractus leviter sulcata, basi, ad utrumque latus insertionis petiokili, notati tuberculo minuto, oblongo, glanduliformi; subtus opaca, pallida, subglancescentia, trinervia, costa gracili elevata, nervis lateralibus in arcus anastomosantes, submarginales delitescens; praeterea nervi e costa lateraliter progrediuntur subtransversales, breves, remotiusculi, alternantes; venae reticulatae capillares. Stipulae nullae. Flores subcampanulati, nutantes, albi, semipollicem longi, valde fragrantis, dispositi in racemos simplices, fasciculatos, subcorymbosos, laxos, axillares, vel circum basin novellorum ramorum subsparso, petiolis breviores. Aestivatio valvata.—Pedunculi graciles, subcomplanati; communis pollicaris, bipollicaris, basi saepius squamis gemmaceis aliquot circumdatus; partiales filiformes, subclavati, pollicares, basi articulate suffulti bracteola lineari, membranacea, patula, mox decidua. Staminula (fig. 1,2.) in distinctis racemis. Foliola perianthii parum carnosum, oblongum, exteriora obtusiuscula, interiora paulo angustiora, introrsum hamoso-acuta. Stamina (fig. 4,5.) distincta, parallela, recta, contigua, sequalia, perianthio parum breviora, subclavata; rudimenta subulata, carnosum, apice ab anthera denudata, basi extus glandula carnosum, sessile, plana, ovata, adnata; antherae lineares, albescens, loculis angustis, remotis, filamentum dimidiatum superiori parti longitudinaliter adnatis, extrorsum dehiscentibus. Rudimenta (fig. 3.) pistillorum tria, subulata, carnosum, intra stamina, hisce dimidio breviora. Flores foeminei (fig. 6,7.) masculis parum breviores, foliolis paulo latioribus. Pistilla (fig. 8, 9, 10.) tria in centrofloris, parallela, apicem versus leviter divergenti-recurvata. Ovaria oblongo-cylindrica, attenuata, foliolis perianthii interioribus opposita; intus obsolete sulcata facileque juxta longitudinem in duas valvatas divisibilis, unilocularia, polyspora: ovulis parietibus indistinctis, salvo sulculo isto, adnatis. Styli nulli, nisi apices ovariorum. Stigmata simplicia, parva, obliqua, obtusa, sulcata, evanida. Stamina (fig. 11.) sex sterilia, clavata, pistillorum bases circumposita, hisce multo breviora, erecta, filamentis crassis, brevissimis; antheris grandiusculis, polline vacuis. Baccae (fig. 12,13.) ssepiissime duae, nunc tres, divaricatae, raro solitariae, apice dilatatae pedunculi lignosi, parum elongati, penduli insertae, ovato-oblongae, utrinque obtusae atque rotundatae, pollices tres longae, sesquipollicem crassae, atropurpureae, nitidae, tumidae et torosae, superficie nempe aequali et undulata, nunc parum senescentes, latere interno inscriptae sutura longitudinali, undulata, crassiuscula, juxtaquam plena maturitate, a basi usque ad apicem dehiscentes in valvas duas aequales, folliculares, crassas; uniloculares, polyspermae. Cortex carnosus, tres lineas crassus, intus obtectus.

*tus* cuticuU tenui, e.granis crustaceis vel subosseis con flat â, a came facilè separabili. *Caro* alba, mollissima, spongioso-reticulata, ab axi cylindricâ, solidâ, carnosâ, usque ad peripheriam divisa in cellulas concentricas, horizon tales, alternas, seriebus sex ad oculo sibi invicem impositas, approximatas, septis tenuissimis, pulposis separatas, monospermas. *Semina* (fig. 14, 15, 16, 17.) valde copiosa, numero cellularum correspondent, horizontalia, centrifuga, oblonga vel rhomboidea, laevissima, atra, lucida, unguem longa, ad basin latiusculam, rotundatam inscripta *rimd umbilicali* lineari; apice paullo ano-ustiora, lateribus planiusculis, margine altero convexiore, altero angustiore. *Testa* coriacea, secus dorsum seminis paullo crassior. *Integumentum interim: pellicula* tennis, fusca, albumini areté applicata. *^l/6ni>i^/iamygdalino-carnosum*, album, semini conforme, extremitate umbilicali, distantia minutâ ab ipsa periphèria, exsculptum cavitate exigua, mucilaginosâ, embryoniferâ. *Embryo* brevissimus, vix lineam longus, trochleari-oblongus, niveus. *Cotyledones* duse, ovatae, obtusse, contiguae. *Radicula*, cylindrica, dimidiam embryonis longitudinem efficiens, *infera*,

## HOLBOELLIA ANGUSTIFOLIA, Wall TAB. 17.

*Foliolissenis* nonisve, lineari-lanceolatis; *pedunculis* bi- trifloris, subfasciculatis; *baccis* oblongis.

Nomina vernacula, statio, tempus florendi, fructuumque maturatio eadem ac pr«cedentis.

Habitus omnino prioris, sed statura gracilior et minor. Tota glabra. *Rami* perquam longi, viminei, valde tortuosi et volubiles, nunc radicanes. *Folia* longius petiolata quam in ilia specie; *petioli communes* foliolis saepe sesqui ad duplo longiores, supra sulcati; novella rubicunda. *Foliola* septem ad novem, in formam ovato-orbiculatam, peitatum, verticillatim patentia, lineari-lanceolata, attenuata et subacuminata, cuspidata, basi rotimdata, parumper repanda, integerrima, laevissima, lucida, coriacea, sed minus firmia quam en altera specie, tripollicaria ad sexpollicaria; intermedium longius, petiolo partiali gracili, pollicari suffultum; lateralia utrinque decrescentia, breviusque petiolata; duo baseos reliquis duplo breviora, petiolo brevissimo insidentia; circumscriptio generalis folii hinc subovalis evadit; superficies inferior glauca, reticulata, ad basin obsolete trinervia, juxta tractum vero costae elevatae nervis brevibus, subtransversalibus, intra marginem arcuatim anastomosantibus instructa. *PeduW&U* axillares, lateralesque, subfasciculati, bi- triflori, teretes, laeves, petiolis bis terve, quin pluries breviores; fructigeri valde elongati, laxi. *Flores* (fig. 1—6.) albi, extus parum purpurascens, suaveolentes, structurâ omnino priori aemuli; *pedicelli* ad basin bracteote lineari, patula, suffulti. *Bacice* (fig. 1.) saepessimè duae, oblongo-cylindricae, pollicem crassae, tres longae, undulate, nitidae, purpureae, latere interiore dehiscentes. *Semina* (fig. 8, 9.) ovato-renifolia, niinora quam in priori specie; *embryo* (fig. 10.) in altera perispermi extremitate locatus, centrifugus.

## OBSERVATION.

These two shrubs are easily distinguished from each other. The first species is by far the strongest, growing sometimes to a gigantic size. I brought specimens down with me, for the Honourable East India Company's Museum, of a trunk, as thick as a good sized arm. Its leaves are broad, ovate, either ternate or quinate, about as long as the petiole; the flowers quite white, collected in clusters; the berries large and ovate, the seeds oblong. The second species has long-petioled leaves; the leaflets from seven to nine, narrow- or linear-lanceolate, scarcely two-thirds of an inch broad; the peduncles few-flowered, and the flowers attaining soon after expansion a purplish colour;

the berries are not so thick, and of an oblong shape; the seeds reniform. The natives of Nipal eat the fruit of both plants, the pulp of which has a sweetish, but otherwise insipid taste.—Can Thunberg's two *Raianice*, *quinata* and *hexaphylla* (Flor. japon. p. 148 et 149) possibly belong to this genus?

### ARUM NEPENTHOIDES, Wall TAB. 18;

Caulescens, erectum, laeve, dioicum, vaginis petiolisc<sup>ue</sup> variegatis; *foliis* binis, peltatim quinatis, *foliolis* lanceolatis, acuminatis; *spatha* terminali, pedunculate, *limbo* trilobo: *lobis* lateralibus reniformibus, horizontalibus, interradio acuto, fornicato; *clava* spadice obtusissim<sup>a</sup> nud<sup>a</sup>, vix exsert<sup>a</sup>, basi truncato-retus<sup>a</sup>; *staminibus pistillisque sterilibus* nullis.

Legi in sylvis Sheopore montis, florens et fructigerum tempore pluvioso.

*Tuber* depresso-orbiculatum, carnosum, fuscum, undulatum, laeve, intus rufescens, vertice comosum radiculis longis, crassis, teretibus, pallide rubris, parum fibrillosis. *Caulis* erectus, carnosus, teres, bi- usque ad quadri-pedalis, laevis, nitidus, basi pollicem ad duos crassus, *vaginis* aliquot indutus remotis, alternantibus, oblongis, arete adpressis, obtusissimis, hinc fissis, infimis brevissimis; medio diphyllus, supern<sup>e</sup> gracilior, nudus, florifer, penn<sup>a</sup> cygne<sup>a</sup> vix crassior; totus variegatus maculis parum elevatis, scabriusculis, transversalibus et subannularibus, lateritiis, striisque t<sup>ri</sup>sc<sup>e</sup> alternantibus, perpendicularibus, copiosis, parallelis, violaceis. *Folia* dua, subopposita, erecto-patentia, petiolata, peltatim-digitata, quinata, circumscriptione orbiculato-cordata. *Foliola* lanceolata, in acumen gracile attenuata, sessilia, deorsum angustata, basi subacuta, dor<sup>so</sup> l<sup>an</sup>tal<sup>ia</sup> ad spithamaea, inferiora duo hinc gibbosiora; membranacea, laevissima, supra atroviridia, nitida, subtus glauca, cost<sup>e</sup> elevate, nervisque gracilibus, remotis, alternantibus. *Petiolus* teres, laevis, attenuatus, foliolis duplo longior, striis violaceis medio confluentibus annulatus, basi su<sup>per</sup>, pennam cygneam crass<sup>a</sup>, infra apicem vaginae (fig. 2.) in ligulam, brevissimam, obtusissimam products inserts. *Spatha* (fig. 1.) solitaria, terminalis, apice caulis spithamaea pedunculi in modum elevata, laevis, erecta, sex ad octo pollices longa, extus ex albo viridiuscula, pulcherrim<sup>a</sup> picta; intus emaculata, fuscescens; subnervia et subavenia; dimidia inferior<sup>e</sup> pars convoluta in cylindrum pollicem crassum, ornatum st<sup>ri</sup>b<sup>us</sup> brevibus, violaceis, numerosissimis, geminatis, longitudinaliter seriatis; *limbus* patens, trilobus: *lobi* laterales orbiculato-reniformes, horizontaliter patentissimi, obtusissimi, sesquipollicares, supra convexi, fusciscentes, radiatim punctati, subtus concavi, albicantes, parallel<sup>e</sup> venulosi; *intermedius triplo* major, recte ascendens, ovatus, fornicatus, apice leviter decurvus, subacuminatus, marginibus vix repandis, baseos parum contractis lateribus recurvatis, sensimque in lobos istos laterales auriculaeformes abeuntibus, dorso convexo, inscriptus lineis quinque albicantibus; latiusculis, parallelis, minim<sup>e</sup> elevatis. *Spadix* erecta, laevis, tubo spathae parum longior, apiceque leviter supra faucem elevata, dioica; mascula foeminea parum gracilior, et una cum spatha brevior; pars dimidia inferior teres, e basi ultra medium dense staminifera vel pistillifera; coeterum nuda, absque genitalibus sterilibus, aliisque appendicibus, teres, gracilis, violaceo-punctata; pars dimidia superior, seu *clava*, cuneiformi-cylindrica, alba, punctulata, laevis, obtusissima, intus spongioso-fibrosa<sup>a</sup> medio contract<sup>a</sup>, basi iterum parum dilatata, subtruncata et retusa. *Filamenta* valde numerosa, distincta, brevissima, subconica, seriebus quinque vel sex spiraliter ordinata, apice gerentia *antheras* tres vel quatuor verticillatas, nudas, globosas, uniloculares, vertice dehiscente<sup>a</sup> rim<sup>a</sup> brevi transverse; illae staminum superiorum sunt majores, violaceae, subreniformes: inferiorum vero minores, citius emarcescentes, flavicantes, globosae: omnes tamen polliniferae. *Ovaria* (fig. 3, 4, 5, 6.) in distincta spadice, ovato-subrotunda, numerosissima, seriebus circiter duodecim dense imbricata, unilocularia, vertice purpurascencia, continentia *ovula*

qu&dam erecta. *Stylus* brevissimus, columnaris, purpureus. *Stigma* orbiculato-reniforme, subpeltatum, cinerascens, pubescens. *Baccw* (fig. 7, 8, 9, 10, et Tab. 20. fig. 6.) obovate, laeves, carnosae, eocinereae, nitidae, vertice leviter retus& notate rudimento subulato, minuto, sphacelato styli, deorsum a pressura mutua parum angulares, uniloculares, di- ad tetraspermae, epidermide tenuissimâ obtectae, lineas octo *Ionize*, super axin spongiosam, foveolatam, crassam, densé imbricatse in strobilum cylindricum-oblongum, obtusum, quinque ad sex pollices longum, duos fere crassum. *Caro* mollis, tenuis, pallida, excavata loculo amplo, laevi, aequali. *Semina* (fig. 11.) subglobosa, magnitudine grani piperis nigri, angulo uno alterove notata, dorso convexiora et subgibbosa, vertice mucrone exiguâ ab angulis confluentibus, basi hinc crassiusculo munita, erecta, laevia, nitida, cinerea, suffulta *funiculis* brevibus, carnosis, e fundo loculi ortis, uno altero demum parietalibus. *Integumentum* eoricium, crassiusculum, intus auctum membrana purpurascens, mucoso-carnosa, tenuissimâ, versus hilum parum incrassatâ. *Perispermum* (fig. 12. et Tab. 20. fig. 7, 8.) crassum, sub-carneum, album, figurâ seminis; pars peripherica, semilineam crassa, fabricâ molliori, et colore e viridi cyaneo distincta; basi leviter retisum, vertice *poro* minuto, convexiusculo perforatum. *Embryo* cylindricus, rectus, vel leviter arcuatus, lacteus, totam axin perispermii, saltem infimâ ejus parte, occupans; extremitas superior (radicalis?) paullo crassior, rotundata, porum istum perispermii omnino occupans, ita ut, a substantia ejus denudata, immediatè tegatur seminis integumento proprio (*epispermio*); extremitas inferior, (*cotyledonea*?) hilo opposita, ab hocce parum remota, obtusiuscula. Interstitium inter duas extremitates parum contractum, supra medietatem lateraliter fissum rima (Tab. 20. fig. 10.) brevi, longitudinali, introrsum et sursum in *cavitatem gemmiferam* embryonis parvulam, centralem, pervia. *Gemmula* (Tab. 20. fig. 11.) admodum minuta, conica, cavitate propria sud inclusa, pendula, basi nempe lata substantiae ipsae cotyledonae sursum accreta, apice liberi, directione obliqua versus rimam externam descendente, centrifuge.

## OBSERVATIONES

This species of *Arum* is very remarkable on account of the singular form of the inflorescence, and the beautiful manner, in which the whole plant, with the exception of the leaflets, is variegated. It is difficult to express in a description\* the beautiful manner of this variegation; but the figure of the plant in Tab. 18, will give a pretty correct idea of it. In general it consists of annular, radiated bands, alternately purple and red, the latter somewhat elevated. The fanciful form and decoration of the spathe represent somewhat the appearance of one of the pitchers of *Nepenthes Rafflesiana* of my late, most deeply lamented friend William Jack, excellently described by him in the 3d Appendix to the 2d Vol. of *Malayan Miscellanies*, of which superb plant I brought innumerable specimens back with me from Singapore, which were subsequently forwarded (in February 1823) to the Museum at the India House, on the Hon. Company's ship *General Hewett*. This resemblance has suggested the specific name. The female inflorescence is larger than the male; especially the spadix. The separation of the sexes in distinct plants, and the absence of barren stamens and pistils, as well as of all other appendages on the spadix, have afforded good characters for this and the two following species.—The difference in size and colour of the anthers attached to the upper and lower half of the staminiferous portion of the spadix, seems to be unconnected with any sterility; they are all polliniferous, and appear to be equally perfect. The singular structure of the embryo, discovered by Mr. Brown in the family of *Aroidae*, and by the late Mr. Richard in the whole class of *Endorhizae*? (*Monocotyledones*), was first promulgated by the former in his *Prodr. flor. nov. holland.* 1. J. 334, and subsequently, by the latter, in his *Analyse du fruit*\*; nor should

\* For the English version of this admirable little Work I am indebted to the translator John Lindley, Esquire, from whom I received it, together with a copy of his valuable monography on *Roses*, while I was in Nipal, and to whom I take this opportunity of presenting my warmest thanks.

I everliave thought of looking for the minute fissure and gemmula, if they had not previously been pointed out by those immortal botanists. The gemmula is fixed with its broad basis to the vault of its cavity, just in the centre of the upper extremity of the embryo ; its free apex points obliquely downwards and outwards, so as to protrude towards the fissure, which commences a little above the middle of the embryo and extends towards its upper extremity.—By an oversight the perfectly mature seed has been represented on the plate exhibiting another species, namely *Arum speciosum*, Tab. 20. fig. 6, 7, 8, 9, 10, and 11. instead of Tab. 18; a circumstance, which the reader is requested to bear in mind.

ARUM COSTATUM, Wall. TAB. 19.

Acaule, laeve, dioicum ; folio solitario, ternato, foliolis semicordato-ovatis, valde acuminatis, undulatis, sessilibus, subtus nervis numerosis, parallelis, elevatis, approximatis, anastomosantibus; scapo petioli dimidium vix aequante ; spathâ cylindraceo convolutâ, striatâ, intus carinata, fauce in appendiculatâ, limbo integro, ovato, fornicato, acumine tereti, brevi, filiformi; clavâ spadiceis basi subtruncata, apice longissima, flagelliformi, descendente, spatha fere triplo longiori.

Habitat et floret cum priore.

*Tuber* magnum\* orbiculatum, parum depressum, carnosum, fuscescens, como & xmihris copiosis, teretibus, crassis, dilute rufescentibus, subnudis. *Tolium* unicum radicale, erectum, ternatum, ainplum, uti omnes plantae partes laeve, circumscriptione trilobocordatum, diametrum sesquipedalem emetiens, sinu baseos profundo, lobisque fere contiguis. *Petiolus* crassus, carnosus, pallide virens, striatum lineis plurimis, parallelis, roseis, pallidis, bipedalis, basi unicum scapo, quem sulco satis profundo, subligulato amplectitur, sesquipollicem crassus, vaginatus, supernè nudus, hinc exsculptus sulco levi, marginibus obtuso, sursum attenuatus. *Vaginae* duae vel tres, membranaceae, striatae, ex albo vufescentes, alternæ; infima brevis, adpressa, acutiuscula; reliquae laxè amplexantes, lanceolatae, attenuato-acuminatae, erectae, sursum hberoe et leviter convoluteae: summa et intima, longissima, scapum excedens. *Foliola* sessilia, purpureo-marginata, undulata, in acumen lineare, fere bipollicare desinentia, coriacea, pedalia, supra atroviridia, lucida, subtus praedita costâ e basi crassissimâ extrorsum valde attenuate, nervisque innumeris, perquam approximatis, parallelis, obliquis, elevatis, parum ramosis et anastomosantibus, versus marginem arcuatis, venulâque graciti connexis; *intermedium* ovato ellipticum, basi attenuatum, costâque robustâ quasi petiolatum ; *lateralia* patentissima, illo parum angustiora, semi-cordata, latere interno baseos valde obliquo, subexciso, externo producto in lorum magnum, rotundatum, quadripollicarem, lobo folioli oppositi feie contiguum. \*S *apud* petiolo dimidiò brevior, basi sexpollicari ab hujus parte inferiore amplexus, erectus vel obliquus, nunc subrecurvus, teres, digitum minimum crassus, apicem incrassatum versus purpurascens. *Inflorescentia* terminalis, erecta, inodora, dioica, speciosa; mascula (fig. 1.) minor, gracilior. *Spatha* atropurpurea, extus ornata striis albis, parallelis, latis, versus apicem lineis anastomosi duplici, ab invicem parum distantibus, connexis, intus costata carinis totidem angustis, attenuatis; *tubus* cylindraceo-convolutus, tripollicaris; *faux* ampla, parum obliqua, nuda, margine leviter revoluta ; *limbus* integer, ovatus, ascendens, fornicatus, apice nutans, acuta, terminate processu, vel acumine filiformi, tereti, descendente, pollicari, concolore; in nlascula limbus, una cum processu isto oblique ascendit. *Spadix* gracilis, basi inclusa, bipollicaris, teres purpurea, et maxime parte oblecta organo fructificationis, supernè nuda et absque organo sterilibus appendicibusve. *Clava* gracilis, teres, atropurpurea, basi cuneata, propter rugos longitudinales sublobata, infra fornicem leviter ventricosa, mox vero abiens in flagellum gracillimum, longissimum, undulatum, exsertum, oblique descendens, concolor, processum spathee

longe excedens, pedale et ultra; in spadice *masculâ* (fig. 2.) basi vix incrassata, flagello quadripollicari. *Mascula*: *filamenta* sparsa, distantia, teretia, brevia, carnosâ, terminata verticillo *antherarum* quinque vel sex reniformium, lutearum. ~ Jbm « Wa (fig. 4): *ovaria* (fig. 5, 6, 7.) densissimè imbricata, laevia, ovata, oligospora; *stigmata* subsessilia, subtruncata.

## OBSERVATION,

This handsome species is readily distinguished by its leaves, which are strongly marked with innumerable parallel, closely approximated nerves, proceeding in an oblique direction from the strong middle rib towards the margin, and here and there united by means of a few short ramifications. The spathe is beautifully striped on both sides and keeled within: the stripes unite under the apex of the limb by a double line.

## ARUM SPECIOSUM, Wall. TAB. 20,

Acaule, laeve, dioicum; *radice* repente; foliis solitariis *tevnnto.folioUs* ovato-cordatis repandis, acuminatis, petiolatis, distanter nervosis, *petiolo* variegato; *scapo* brevissimo; *spatha* striatâ, ecostata, basi cylindrâco-convolutâ, fauce nudâ, *limbo* lato-ovato, intus fornicato, in acumen lineare, longum attenuato; *clavâ* cuneâ, apice filiformi, *spathâ* dimidiâ longiore.

Habitat in monte Sheopore. Florens sub pluviis.

*Radix* crassa, carnosâ, repens, quatuor ad sex pollices longa, diametro bipollicariâ squamis multis lanceolatis, membranaceis, aridis, ferrugineis oblecta, e latere inferiore demittens *filibras* longas, teretes, albicantes, ramulosas. *Folium* unicum, radicale, erectum, uti omnes paries laeve, circumscriptione trilobo-cordatum, lobis distantibus, pedale. *Petiolus* crassus, teres, carnosus, bipedalis, zonis plurimis, parallelis, radiatis, purpureis annulatus, basi tubulosus. *scapum* fere totum involvente, ostio obliquo, nudo. *Vagina* duae, unilaterales, dimidiatae, membranaceae, fuscae, striatulae, lanceolatae: inferior brevis, superior attenuato-acuminata, petioli dorso adpressa, *scapum* longitudine parum excedens. — *Foliola* ovato-cordata, decem-pollicaria, ad pedalia, acuminata, purpureo-marginata, repanda, vix undulata, coriacea, petiolis partialibus suffulta pollicaribus, crassis, sulcatis, submarginatis; pagina superiore lucida, inferiore pallida, costâ mediocri, nervis remotis, gracilibus, parallelis, versus marginem arcuatim anastomosantibus; tenuissimè et reticulatim venosa; lateralia vix minora, semicordata, lobis rotundatis. *Scapus* teres, erectus, albus, petiolo quater brevior, ejusque basi vaginatus; apice tripollicari exsertus, purpurascens, supernè vix dilatatus. *Inflorescentia* leviter nutans, dioica, inodora, speciosissima, purpurea, basi intus albicans, absque costis vel carinis, striis ornata usque ad apicem fere parallelè decurrentibus; *mascula* vix minor. *Tubus spathae convolutus*, cylindricus, quatuor pollices longus, diametro sesquipollicari, intus albicans, extus striis rufescentibus notatus; *faux* pervia, nuda; *limbus* maximus, integer, ascendens, ovatus, subfornicatus, pedalis, palmam latus, basi intus pallidus, supernè striatus, venulosus, apice nutante attenuatus in acumen gracillimum, lineare, tripollicare, versus tubum incurvum, atropurpureum. Tota *spatiâ* (fig. 1.) basis oblecta organis fructificationis, absque appendicibus; *clava* digitifera fere crassa, cuneata, semi-inclusa, flava, attenuata in flagellum descendens, teres, fragile, decem-pollicare, purpureum, undulatum, limbo spathae dimidiâ longius. *Mascula*: *filamenta* longiuscula, teretia, sparsa, approximala; anthers praecedentis speciei. — *Folia* (fig. 1, 2, 3, 4.) prius.

A very superb plant, belonging to the less frequent productions of Nipal. Like both the preceding species it inhabits dark and shady parts of the high mountain of Sheepore, and has hitherto resisted my endeavours to make it survive a hot season in Bengal. Fig. 5, 7, 8, and 9 belong to *Arum nepenthoides*\*

CINCHONA GRATISSIMA, Wall TAB. 21.

*Folius* ovato-oblongis, acuminatis, subtus ad nervos villosis; *panicula* terminali inul-  
Aiftořa; *calyce* Woso, *laciniis* Aongis, Yinearibus, Aec\A\X\; *corolla* gYaYick, tubo long\us-  
ulo, cylindraceo, *lobis* subrotundis, concavis. Wall in Roxb. flor. ind. 2. p. 101.

Crescit copiosè in rupibus subnudis Nag-Irjoon, aliisque montibus minoribus Napa-  
liee; ctem ad Bechiako et Koolakan, florens to to fere anno. Èliam habui e montibus  
*Pundooa*, Sylhet vicinis, ubi floret Septembre.

Nomen Newwarrense et Parbutteum *Toongnusi*. Bengalense *Usookooli*.

Arbuscula ramosa, sedecimpedalis, *trunco* aequali, diametvnm sexpollicarem attingente,  
obtecto *cortice* tenui, fvisco, scabro- *Lignum* compactum, pallidum, albidum. *Kamli*  
oppositi, cinerei, calloso-punctati; juniores rufescentes, puberuli. *Folia* opposita, paten-  
tia, approximata, acuminata, ovato-oblonga basi acuta, marginibus subundulata, ciliata,  
coriacea, quadri- ad sexpollicaria, giaberrima, supra lucida, subtus pallida ctopaca, cosl4  
elevatâ, nervisque villosis, obliquis, parallelis, approximatis, ad axillas acervulo pilo-  
rum munitis. *Petoli* teretes, pubescentes, pollicares vel sesquipollicares, nunc rufescentes,  
*Stipulce* lanceolatae, canaliculato-acumiatsej lineas quinque longae, glabrae, valde deciduae.  
*Paniëula* terminalis, sessilis, ovato-rotundaj folia superiora longitudine subaequans; *rami*  
decussati, incano et densè villosi. *JBractea* infra divisuras adque basin pedicilorum  
oppositae, lineares, longae, caducæ. *Flores* (fig. 1 > 2.) mngni, speciosi, rosei, ternati;  
fragrantes, *Calyx* villosus, *pedicello* brevi, subcarnoso insidens, divisus in *lacinias* (fig.  
3.) quinque lineares, erectas, acutas, subinaequales, nunc inaequilateras, coloratas, basi le-  
viter angustatas et subailiculatas, caducas, villosas, intus glabras, sex- ad duodecim lineas  
longas. *Corolla* (fig. 4.) glabra, calyce duplo longior, subcarnosa; *tubus* cylindricus,  
gracilisjSursum parum ampliatus \faux pervia, nuda; *limbus* patens, tubo dimidió brevior,  
*laciniis* subrotundis, concavis, obtusis, crenulatis, basi subcordato-retusis. *Filamenta*  
brevissima, iafra faucem; *antherce* lanceolatae, vix exsertse. *Ovarium* (fig. 5, 6.) ob-  
longo-cuneatum, carnosum, villosum, biloculare; *ovula* super *placentam* septalem, car-  
nosam densè imbricata; *stylus* filiformis; *stigma* clavatum, carnosum, divisum in lo-  
bos duos, lanceolatos, margino revolutos. *Capsula* (fig. 7, 8.) oblongo-clavata, parum vil-  
losa, fusca, lineas octo longa, leviter compressa, apice truncatâ notata vestigio insertionis  
calycis, bilocularis, inscripta sulcis oppositis duobus, juxtaque hos usque ad basin acutam  
dehiscens in locula duo; *membrana exterior* carnosâ, demum coriacea; *interior* charta-  
câ- *Dissepimentum* parallelum, planum, constans membranâ interna utriusque locu-  
lorum inflexâ, maturitate ab apice usque ad basin in duas panes divisum, apice ostio ro-  
tundato excisum. *Placenta* lineari-oblonga, foveolata, demum libera; *locula* (fig. 9, 10)  
fissurâ internâ ab oslio dissepimenti ad basin usque longitudinaliter dehiscencia, ideoquè  
quasi bivalvia. *Semina* (fig. 11, 12.) cop&osa, minuta, cuneata, adscendentia, dense im-  
bricata, ferruginea, rugosaet scabra, apicem obtusam verus membranulâ venosa, angustâ,  
crenulatâ, nequl i e ucta.

OBSERTATION,

It is impossible to conceive any thing more beautiful than this tree, when covered with its numerous round panicles of pink-coloured, very fragrant and large blossoms. I have

been *told* that it grows "sometimes to a much greater size than that, mentioned above, which is the one I have observed it to attain. The ovary and halfripe capsule show a peculiar structure; they appear four-celled\* when divided horizontally\* in consequence of the inner tough membrane continuing, after it has formed the dissepiment, to turn further inwards, penetrating almost through the fleshy placenta to the opposite or external side of the cell, which latter, in consequence, appears to be subdivided into two compartments, \*— Wall, *loc. cit*\*

HYMENODICTYON, *Wall. loc. dt. p.* 148.

*Calyx* adnatus, quinquedentatus. *Corolla* infundibuliforrais, limbo quinquefido\* *Filamenta* brevissima, glabra, infra faucein adfixa; *antherce* exsertae, limbo breviores *Capsula* nuda, bilocularis, bivalvis, dissepimento ventrali contrario, demum bipartito. *Seminapkina* cincta membrana redculata (undenomen), inbricata super placentam, septi commissure adnatam, demum liberam.

Classis Linneana: *Pentandria monogynia*, sectio floribus monopetalis superis, capsulae biloculari, bivalvi.

Ordo naturalis: *Rubiacearum* subdivisio secunda, sectio tertia (Jussieu in *Memoires du museum d'histoire naturelle*, 6. p. 365 et sequ.)

*Habitus* Arbores excelsae, umbrose, ramulis compressis, foliis oppositis, coriaceis, stipulis glanduloso-ciliatis. *Flores* incortspicui, pubescentes, virides, densi, fasciculati, in paniculam digesti terminalem, vel in racemos cylindricos, pedunculatos, axillares terminalesve, simplicios vel parce ramosos. Pedunculus communis apice gerens *bracteam* aridam venosam lanceolatam, longe pedunculatam convexam. Affinitas praecipua *Macrocnemum*, *Mussaendce* *Cinlonce* atque *Exostemmati*. Differt a primo horum generum slamnibus glabris seminibusque alatis; a secundo fructus structura et consistentia; utroque vero approximatur folio bracteaveilla singulari florali, in eo tamen abludente, quod ex apice pedunculi communis, nee ut in illis e basi ipsius calycis, prodeat. A posterioribus duobus generibus distinguitur capsula nuda baud bipartibili, dissepimentoque contrario, juxta axin in duas partes aequales disrumpente, valvulis adnatas. Semina insuper majora et eorum ala basi bifida; figura tandem corollas magis *Cinchonae*, antheris exsertis *Exostemmati* cognatum. *Wall. I. tit.*

HYMENODICTYON FLACCIDUUM, *Wall: i. ct.p. 152. TAB. 22,*

Foliis elliptico-ovariis, supra glabris, nitidis; stipulis oblongis, spatulatis; **racemis** axillaribus, gracilibus, laxis; capsulis oblongis,

Observavi ad deseensum septentrionalem montis Sheopore, versus basin, in sylvis densissimis, floribus capsulisque preecedentis anni vacuis onustum mense Junio. Etiam habui e Noakote, eadem mense florentem.

Arbor mediocris, umbrosa, cortice cinereo, glabriusculo. *Flami* patuli; superiores bi- vel trichotomi, glabri; tenelli leviter compressi, basi circumdati squamulis aliquot gemmaceis, ovatis, conclvis, brunneis. *Folia* vake copiosa, versus apices ramorum approximata, patentia, ovato-elliptica, acuminata, basi attenuatb-acuta, coriacea, sex- ad decempollicaria, parum undulata, glabra, nitida, juxta nervos leviter sulcata, subtus pallida, opaca, costis nervisque oliquis, elcvatis, parallelis, pubescentibus, ad axillas faveolatis puberulisque; reticulato-venulosa. *Petiolus* teres, crassus, glaber vel puberulus, pollicaris, apice una cum basi costae rufescente. *Stipula?* oblongee, spatulatae, obtusae, glabrae, membranaceae, subpetiolares, unguiculares ad pollicares, emarcescentes, deciduae, basi parum contractae, capillaceo-venulose, denticulis sphacelatis ciliatae, intra basin et ia axillis petiolorum



glandulis subulatis, minutis, atris, serie simplici dispositis. *Racemi* flaccidi, penduli, axillares, solitarii, foliorum circiter longitudine, graciles, cylindrici, dense *oh\$\\|\\|* *floribus* (fig. 1) approximatis, fasciculatis, ternatis vel quinatis, viridibus, pubescentibus, inodoris. *Pedunculus communis* pubescens, bipollicaris, apice instructus *bracted* vel *foliolo florali* patentissimo, lanceolato-oblongo, membranaceo, acuto, integerrimo, pallidè viridi, vel subalbicante, pubescenti, rugosulo, nervoso-venoso et reticulato, tripollicari, supra convexo, subtus concavo, *petiolo* glabro, tertia parte brevior. *Pedicelli* brevisinii; singuli bracteola minuta, lineari. *Catycis lacinia* (fig. 2.) brevissimae, lineares. *Corolla* *titibus* (fig. 3.) calycis laciniis duplo longior, gracilis, villosa; *limbus* subplicatus, campanulatus: *laciniis* lanceolatis, acutis, basi membranacea tenuissima unitis. *Stamina* infra faucem inserta, glabra: *Jilamenta* admodum brevia; *antherae* lineares, erectae, exsertae, limbo paullo breviores, *Ovarium* (fig. 4, 5.) ovatum, pubescens, biloculare; *ovula* numerosissima, lanceolata, plana, marginata, super placentam carnosam, septalem dense imbricata; *stylus* capillaceus, glaber, corollam bis longior: *stigma* clavatum, obtusum, glabrum. *Capsula* (fig. 6, 7.) oblongo-ovata, fuscescens, decem lineas longa, glabra, callosopunctata, bilocularis, bivalvis, juxta ventrem valvarum septifera; *semina* haud vidi.

## OBSERVATION.

This species comes near to ray *Hymenopogon thyrsoiflorum* (*Cinchona*, Roxb.) which differs, however, in having broader, ovate, subcordate, downy leaves, and much thicker, both terminal and axillary, subcompound racemes; its capsules, too, are broader and almost oval—*Wall. l. cit.*

SARCOPYRAMIS, *Wall*

*Calyx* inversè poramidalis, ore truncato, quadridentato, dentibus compressis, ciliatis, persistentibus, interstitiis nudis. *Corolla* tetrapatala. *Stamina* octo; *antherae* simplices<sup>^</sup> rectae, nudae, *Ovarium* semiadnatum, vertice infundibuliformi-quadrilobum. *Cap-\** *sula* quadrata, calyce basi cincta, apice quadrialata; quadrilocularis, quadrivalvis, polys<sup>\*</sup> perma; valvulae foliaceo-dilatatae.

Classis Linneana: *Octandria mohogynia*.

Ordo naturalis: *Melastomaceae*, R. Brown; generibus *Rhexia* et *Osbeckia* intermedium. *Stomandrorj* beat. Guil. Jack, (Act. Soc. Linn. 14. p. 10.) affine.

Planta annua, carnosa, subsimplex, ramis paucis instructa. • *Folia* opposita, serrulata, pilosula. *Floret* terminales, umbellati, majusculi, rosei.—Nomen sumpsi e consistentia et figura ovarii.

SARCOPYRAMIS NAPALENSIS, *Wall.* TAB. 2a.

Legi in montibus vallis Nepalise majoris Sheopore, Chandaghiry, aliisque ad loca umbrosa, humida, saxosa. Floret Julio-Septembre. Fructus maturescit Octobre et Novembre.

Planta subsimplex, herbacea, erecta, laetè viridis, nunc rubicunda, carnosae, subdiaphana, glabriuscula, sex ad duodecim pollices alta. *Radix* gracilis, fibrosa; interdum elongata, subrepens. *Caulis* laevis, acutè tetragonus, basi pennam anserinam crassus, sursum attenuatus, angulis scindentibus, per pares approximatis, lateribus duo oppositis itaque latioribus. *Rami* pauci, nunc alterni versus apicem caulis, erectiusculi, breves; nunc sub-

nulli. *FoU^o(-)\*oyda*, subdecussantia, p'etiolata, interstitiis duplo longiora, bi- ad quadripollicaria, feuprema nunc valde approximata; magnitudine inequalia, altero nempe ejusdem paris tertio vel dimidio breviora; fere membranacea, ovata, acuniinata, basi infiqua acuta, extrorsura crenato-serrulata, serraturis acutis, Simula terminatis, supra atroviridia, lucida, setis hyalinis, brevibus, rectis conspersa, trisulcata; subtus pallidiora, ssepeque purpurascantia, quinquenervia, nervis extimis gracillimis, submarginibus; transversini venulosa, juxta tractus vasorum pilosula. *Petioli* carnosii, graciles, sulco Augusto exarati, equates, folio dimidio vel triplo breviores, laeves. *Stipula* nalla? nisi series transversalis ciliarum subularum, succulentarum, caulem inter petiolorum insertiones ambientium. *Flares* (fig. 2, 3. idem dissectus fig. 4.) tres ad quinque, terminate\*, umbellati, ratione magnitudinis plant\* sat magni, rosei, modon, glabri, suffulti pari uno vel duobus Miolorum floralium lanceolatorum, subsessiliura, semipollicarium. *Vrcpftoratio* (fiff. 1.) conica, imbricata. *Pedimculi* carnosii, brevissimi, laeves, rufescentes. *Calyx* (fig! 8. idem staminibus inflexis fig. 7. idem ovario foecundato fig. 9.) carnosus, laevis, obovatus, acute tetragonus, persistens, adlateraconvexusculus, ore truncato, quadrate, juxta margines scindentes, nudos leviter exciso; angulis dentes totidem desinentibus porrectos, compresses, verticales, patentes, apice oblique truncates, ciliatos setis simplicibus, hyalinis, utrinque patenssimis, duplici serie dispositis, juxta angulos ipsius calycis quandoque decurrentibus. *Petah* (fig. 4.) quatuor, ovata, carnosia, cuspidato-acuta, integerrima, patentissima, rosea, laevia, nitida, Hneas quatuor emetientia, calyce duplo longiora, basi latiuscula infra ostium calycis inserta, dentibus alternantia. *Stamina* (fig. 5, 6.) octo, petalis parum breviora, erecta, parallela, ibqualia, serie simplici annulari equidistanter calyci inserta, dentibus calycinis petalisque alternatim opposita. *Filamenta* alba, filiformia, carnosia. *Anthera?* conformes, simplices, erecte, flavete, oblongo-cuneate, nudae et absque ullis appendicibus, basi acutiuscula, apice leviter dilatata, subfeiloba poris duobus, oblique hiantibus dehiscentes, aestivatione una cum apicibus filamentorum recte deflexae. *Ovarium* (fig. 4, 5.) ovatum, carnosum, dimidia inferiore parte fundo calycis arete accretum, superiore tetragono-pyramidatum, lateribus convexum, liberum, juxta margines ope membranulae angustissimae, brevifemise, demum evanidae, angulis internis summi calycis adhaerens, unde cellulae parietales quatuor formantur, antheras, clauso adhuc flore deflexas, per pares recipientes; apice contractual, truncatum, quadrilobum, lobis carnosissimis, brevissimis, latiusculis, obtusissimis, ciliatis minutimque crenatis, in hiatum infundibuliformem, quadrangularem conniventibus, post fecundationem amplialis; quadriloculare; *locula* rotunda, angulis exterioribus opposita, *oeulis* repleta sub-cylindricis, placenta axili, convexa, sessili, carnosae adfixis. *Stylus* rectus, cyundricus, laevis, deciduus, vertice quadrilobus ovaribus inclusus, nevae axin inde decurrens. *Stigma* parvum, convexum, puberulum. *Cbphnmagm-* Linisipi communis, laevis, quadrata, excepta ipsa basilata libera, inferiore dimidia oblecta calyce paullo ampliato, desiccata, membranaceo, angulis quatuor sursum <sup>Pa;T</sup> <sup>o</sup> <sup>ni</sup> <sup>inentibus</sup> et porrectis notato, vertice coronata alis quatuor terminalibus, rotundatis, <sup>pro</sup> obtusis, levissimis crenulatis, venulosis erectis, margine contiguis; quadrilobus, vertice quadrivalvis: valvulae triangulares, dissepimentis oppositis, alis istis seorsim <sup>cu. aris,</sup> <sup>««</sup> *Dissepimenta* angusta, tenuissima. *Semina* crebra, parva, fusca, cuneato-Z £ \$ X basi acuta glabriora, verticem obtusam versus punctis minutis, elevatis pilosula, receptaculis axibus inserta.

## OBSERVATION:

I cannot refer the plant which has just been described, to any of the established genera. I cannot refer the plant, very reasonable to suppose, from having communicated to my friend Mr. A. B. Lambert, that it must be included in the descriptions of the new genera of that most difficult and extensive class.

tribe, which were presented, two years ago, to the Wernereau Society of Edinburgh by the curator of his herbarium, that indefatigable and excellent botanist Mr. David Don. In general appearance it resembles an *Exacum*; but its flowers and fruit are those of a widely different family, and decidedly mark it as a member of the one, under which I have placed it. The structure of some parts of the flower and of the fruit is very peculiar and not easily explained. I will attempt to exhibit it in a clearer light, perhaps, than I have done above. The calyx forms a fleshy, inverted pyramid, with somewhat convex sides, and sharp, rather prominent and almost straight angles; its mouth is four-sided, open, with slightly concave, naked margins, and protruding corners, which form four vertically compressed, fleshy teeth, acutely truncated and flattish at the apex, and there ciliated by two rows (one along each margin) of short, pellucid, subulate, most spreading bristles, which sometimes continue to the point, whence the two rows diverge, a little way downwards on the sharp back of the teeth, towards the angles of the body of the calyx which, in every other respect, is perfectly free from hairiness. The ovary is considerably shorter than the calyx, to the bottom of which its lower half is uniformly attached; the remainder has a pyramidal figure with convex sides, and curved, obtuse margins, which are connected with the internal angles of the calyx, by means of four very narrow, short, and thin membranes, whereby four lateral broadish cells are formed, corresponding to the sides of the calyx and the ovarium, in which the anthers are hidden, by pairs, in their nodding state, during the aestivation of the flower. Its vertex is suddenly contracted into a short, quadrangular, truncated cone, consisting of four very short, fleshy, rounded, slightly uneven and ciliated lobes, which are parallel to its sides, having their margins closely applied to each other, and leaving an inversely pyramidal opening between them, into which the base of the style descends before, it enters the axis of the ovary. In proportion as this latter increases in size, it rises above the mouth of the calyx, the above mentioned connecting membranes disappear, and its rounded angles become prominent; in this state a double pyramid is represented, the lower apex of which is supported by the peduncle, and the middle (or the opposed bases) is surrounded by the very narrow mouth of the calyx and its protruding angles; the upper, contracted and truncated apex is perforated. The capsule is dry, four-sided, smooth, marked round the middle by the withered teeth of the calyx, and crowned with the four lobes of the ovary, which have now become as many membranous, rounded, small wings; bursting at the vertex into four short valves, each having a dissepiment along the middle of the base and terminating into a wing. The situation of the cells is contrary to the direction of the wings; the seeds are very minute and numerous.

MYRSINE SEMISERRATA, *Wall in Roxb. flor. inch 2. p. 294.* TAB. 24.

Arborea, erecta\*; *foliis* extrorsum acutè serrulatis, basi integerrimis; *floribus* fasciculatis, pedunculatis *stylo* brevi; *stigmatibus* dimidiato, laciniato-fimbriato.

Nomen Parbutteum et Newarrensè : *Bilsee* et *Seresee*; etiam *Kalikath*.

Cominunis in omnibus fere quas visitavi Nepaliae sylvis, usque ad apices montium Chandaghiry et Sheopore, florens et fructifera tempore frigido, a Decembre ad Martium. Etiam habui e Kumaon et Sirinagur.

*Arbor* ramosa, triginta ad quadraginta pedes alta, *trunco* diametrum semipedalem attingente, vestito *cortice* glabro, pallido. *Rami* cinerei, teretes, callosopunctati ramiferae laeves, angulosi. *Gemmae* terminales, graciles, conicae, punctis *carinis* notatae; *Urticae* nosis, rulescentibus conspersae; *squamae* lanceolatae. *Folia* sparsa, *aperta*, *patentia*, lanceolata, nunc lineari-lanceolata, acuminata, utrinque attenuate coriacea firma triadactyla ad quinque pedicaria, extrorsum, raro basi usque ad apicem, nunc unimodò laterale cus-

*Pediculus serrulatus* in terdirantibus ramis quandoque lutescentia, integerrima; laevia, lictida, conspersa plicis, piosis, resinosis, pellucidis, rufis, juxta marginem leviter revolutum lineolam huic appropinquatani dispositis; costâ subtus parum elevata, nervis capillaceis, obliquis, intra marginem arcualem et reticulatim anastomosantibus. *Petiulus* brevis, vix ultra (dsas) emetiens, punctatus, supra planus. *Stipulus* nullae. *Flores* (fig. 5) p&rvi, inodori, tetrandri vel pentandri, omnes hermaphroditi vel masculis interspersi, sex ad duodecim conferti in fasciculos axillares, numerosos, rotundatos, basi amplexos *bracteos* ovatis, deciduis, fuscis. *Pedunculi* semipollicares, graciles, filiformes, obsolete angulati, stibclavati, centrales fasciculorum interdum abortivi vel nulli. *Calyx* persistens, punctis notatus copiosis, elevatis, resinosis; *denes* quinque, lanceolati, acutij patentes, ciliati. *Corolla* (fig. 7.) rotata, erubescens, punctata, calyce duplo longior; *lacinae* lanceolatae, recurvae, dentibus calycinis alternantes; *tubus* brevissimus. *Filamenta* brevissima, laciniis opposita, earumque basi inserta; *antherae* magnae, ovales, erectae, aurantiacae, utrinque longitudinaliter dehiscentes. *Pistillum* (fig. 6, 8.) punctatum, stamina parum longitudine excedens. *Ovarium* (fig. 9, 10.) ovatum, uniloculare, tri- tetrasporum; *ovula* placentae erectae, cariosae, globosae lineâ circulari semiimmersae; *stylus* brevis, columnaris; *stigma* carnosum, subfundibuliforme, limbo amplo, unilateral], trilobo, laciniato-fimbriato. *Mores masculi* (fig. 1, 2, 3, 4.) minores quam hermaphroditi, antheris violaceis, cum rudimento centrali pistilli. *Drupa* globularis, leviter depressa, apiculata, monosperma, rubra, magnitudinis pisi minoris, calyce immutato suffulta, laevis, nitida. *Carrollis*, pulposa. *Semen* erectum, globosum. *Putamen* crustaceum, glabrum. *Integumentum* membranaceum. *Perispermum* cartilagineum, semini conforme, albicans, foveolatum et superficialiter ruminatum. *Embryo* longus, cylindricus, horizontalis, leviter curvus, diametrum perispermii sequans, totumque fere excurrans, *Cotyledones* cylindrici, obtusi, intus plani; *radicula* obtusa.

## OBSERVATION,

'The wood of this species is of a chocolate colour, radiated, compact and heavy; it is much esteemed by the hill people for various carpenters works. They eat the fruit!'  
*Wall-loc>tit\**

## MYRSINE CAPITELLATA, Wall I cit. 295. TAB. 25.

Arborea, erecta; foliis oblongo-lanceolatis, integerrimis, coriaceis; floribus subsessilibus, axillaribus, capitellatis; stylo elongato crasso; stigmatibus integro, glabro, obtuso,

Nomen Parvultum; *Syade*.

Newarrens; *JBhoe Billoo*.

Valde communis in Nepalice sylvis, florens et fructifera hyeme.

Arbor priori habitu et magnitudine simifis. *Ramuli* crassi, angulati. *folia* approximata, sparsa, patentia, coriacea, firma, oblongo-lanceolata vel subovata, integerrima, acuminata, basi acuta, quinque- ad septem-pollicaria, juxta marginem copiose punctulata, superne lucida, inferne pallida parumque glaucescentia, costâ elevata, nervis obsolete capillaribus. *Petiulus* crassus, brevissimus, sulcatus, nunc rufescens. *Flores* (fig. 1, 2, 3.) polygami, sessiles, vix diuisculi, punctis conspersi copiosis, minutis, elevatis, resinosis, fuscis, aggregati in capkala palya, rotundata, axillaria, vel lateralia ad vestigia foliorum delapsorum, subsessilia vel suffulta *pedicello* communi sublignoso, brevissimo, columnari, e *bracteolis* minutis, ovatis, concavissimis scabriusculo. *Jestivalio* valvata. *Calyx* (fig. 4.) urceolatus, densus quinque ovatis, acutis. *Corolla* (fig. 5.) calyce bis longior; *tubo* brevi; *laciniis* recurvatis, lanceolatis. *Filamenta* brevissimaj subulata;

*anthera* oblong, erect\*. *Ovarium* (fig. 6, 7.) globulare.  $\text{f}^1$  carflateros, erases; coroll<sup>a</sup> bis longior, medio intumescens, apicem versus parum c<sup>4</sup>rvis, Wasi vertici ovarii depfessa? parum immersa; *stigma* obtusum, obscure, bilobum. \* *Floras masculi*, foemi\* neis parum majores. *Fructus* (fig. 8.) quadummodo minor quam prioris<sup>a</sup>peciei: code- rum omnino similis.

## OBSERVATION.

<sup>41</sup>The wood of this tree is hard and durable like that of *Myrsine capitellata* and is used for similar purposes. The fruit is also eaten." *Wall. loc. cit.*

CRYPTOCHILUS, *Wall.*

*pbres* resupinati. *Perianthii* foliola extei iora coriata in tubum, fundo peruliferum; apice libera, dentiformia. *Labellum* oblongum, imduiri, calcaratum, inclusum, subses- sile, basi *gynostemii* apteri elongate adnatum. *Anthera* terminalis, decidua, bilocu- laris. *Massae* pollinis octo, cereaceae,\*per pares filo connuni, elastico coherentes.

Classis Linneana : *Gynandria Monandria.*

Ordo naturalis: *Orchidearum* sectio quinta Browniana.

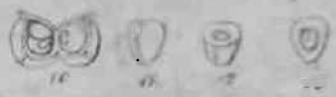
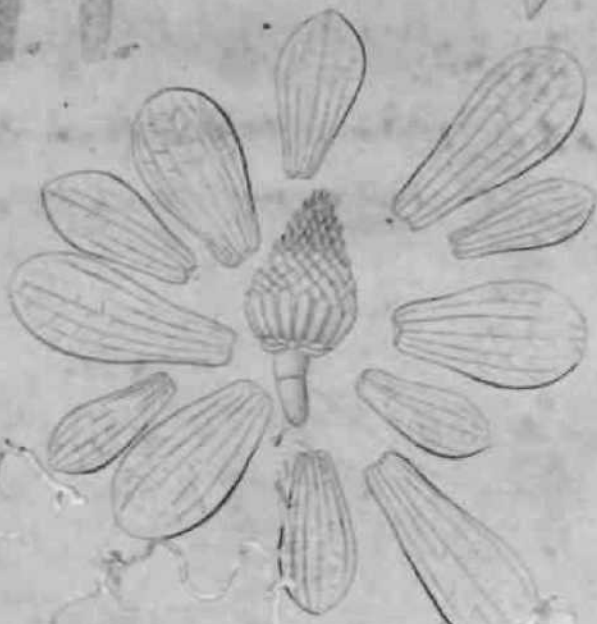
Habitus. Planta parasitica, rupicola, bulbis bifoliis, uniscapis. *Flores* sanguinei, tu<sup>a</sup> bulosi, tridentati, spicali, secundi; ante anthesiri distichi.

Genus, *Blasdevallice*, Ruiz et Pavon et *Stelidi*, Swartz, intermedium ; distinctum flori- bus tubuloVvs, ore tridentatis, propter foliola perianthii exteriora, salvis ipsis apicibus, connata; labello subsessili> incluso (unde nomen) basi gynostenrii elongates adnato; biassis pollinis octo ; habitu magis *Stelidi* accedens.

CRYPTOCHILUS SANGUINEA, *Wall.* TAS: 26.

Legi in Napalia, ad cacumen Chandaghiry, saxicolam, florentem Junio. E montibus Cachar, Sylhet confinibus, misit M. R. Smith, anno 1815.

*Herba* parasitica, repens, laevis, *radiculis* fuscis, filiformibus, ramulosis, glabris, *S<sup>a</sup>H* *hi* oviiti, vel oblongi, pollicareSj carnosi, obtusi; diphylli, nitidi, aetate m<sup>a</sup>q<sup>a</sup>, vel ves- tigio uno alterove vaginarum emarcidarum basi circumdali; dum juniores graciles, sub- caulescentes, vaginis que induti quatuor vel quinque lanceolatis, acutnatis, complicalis> •bifariis, basi imbricaniibus, pallidis, lineatis, margine dilute purpureis, bi- tripollicaribus, inferioribus decrescentibus— *Folia* duo ex apice bulbi, erecta, leviter divergentia, lan- ceolata, acuminata, apice minutim bidentata, basi acuta, sex ad oculo-pollicaria, deorsum parum complicata, extrorsum plana cum sulco medio; coriacea, kicvia, supra atroviridia, lucida, subtus glauca, opaca, septem-lineata, c<sup>1</sup>ista carinala, marginibus purpurascens. *JPetioli* crassi, canaliculati, basi parum dilatati: exterior paullo major, margines inleri- oris amplectens. *Scapus* ex apice bulbi, erectus, teres, carnosus, crassus, nudus, atro-purpu- rous, basi viridescens, longitudine foliorum, apicem versus leviter complanatus. *Racemus* terminalis, erectus<sup>a</sup> solitarius, quadripollicaris, ante florum expansionem complanatus, anceps, digitum latus ; postea oblongus, secundus. *Rachis* purpr. va, carnosus, planiuscula, flexuosa, deinum recta. *Flores* sangvii<sup>a</sup>, inodori, carnosi, n<sup>a</sup>-filicaife, cylindrici, approxi- mati, alterni, initio distichi et patentes, Jbst anthesin secundi et adscendentes; extus pilis ca- Bis, mollibus, ndpressis, geniculatis condbeim; pedr.v<sup>a</sup>lis.suffulli brevissimig, \eretibus, pilo- sulis, lineam longis. *Bractea* infra singulfom ^orem ^lilaria, lineavis, acuminata, cana- liculata, unguicularis, laevis, purpurea, carnosus, parum incurva, directic ic floribus op- posita secur<sup>a</sup> p<sup>a</sup>istens. *Perianthii* foliola exteriora tria connata in tubum (fig. 1, 2.)





*MICAVILLA /* *var. ...*

*Illustration del ...*







*MICHELIA Keesa, DeCand.*

&—1, 1816, 1818

*Michelia Keesa, DeCand.*



W. G. S. P. 1843

MICHELIA lanuginosa, Wall.

Kühnemann del.

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\* u *Myrsine* Cf., etc

*COLOHOUNLE* *coccinea* Wali

Wali



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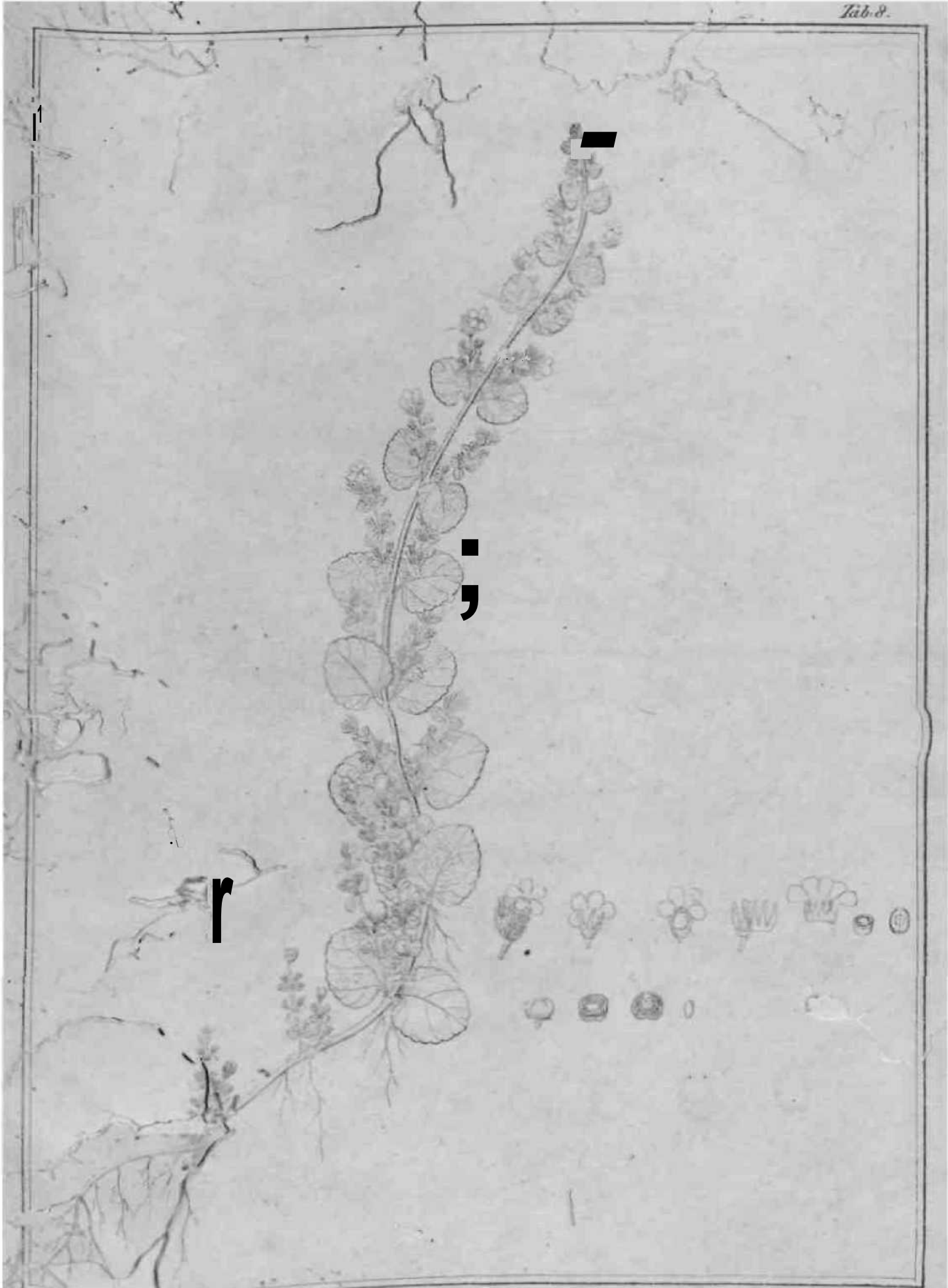
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Goussard del.

*Vanilla grandiflora* Willd.

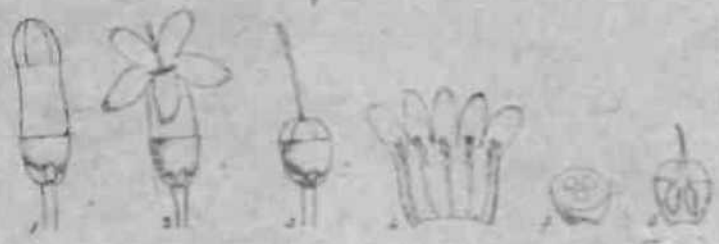
*Vanilla planifolia* Mill.



*THIENPHU H. M. A heterophyllum, Hi//*

*Comberford del.*





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*CAEREPHIA fragrans* Willd.

W. Schimper del.



*SPHAEROGARYA edulis, Wall*

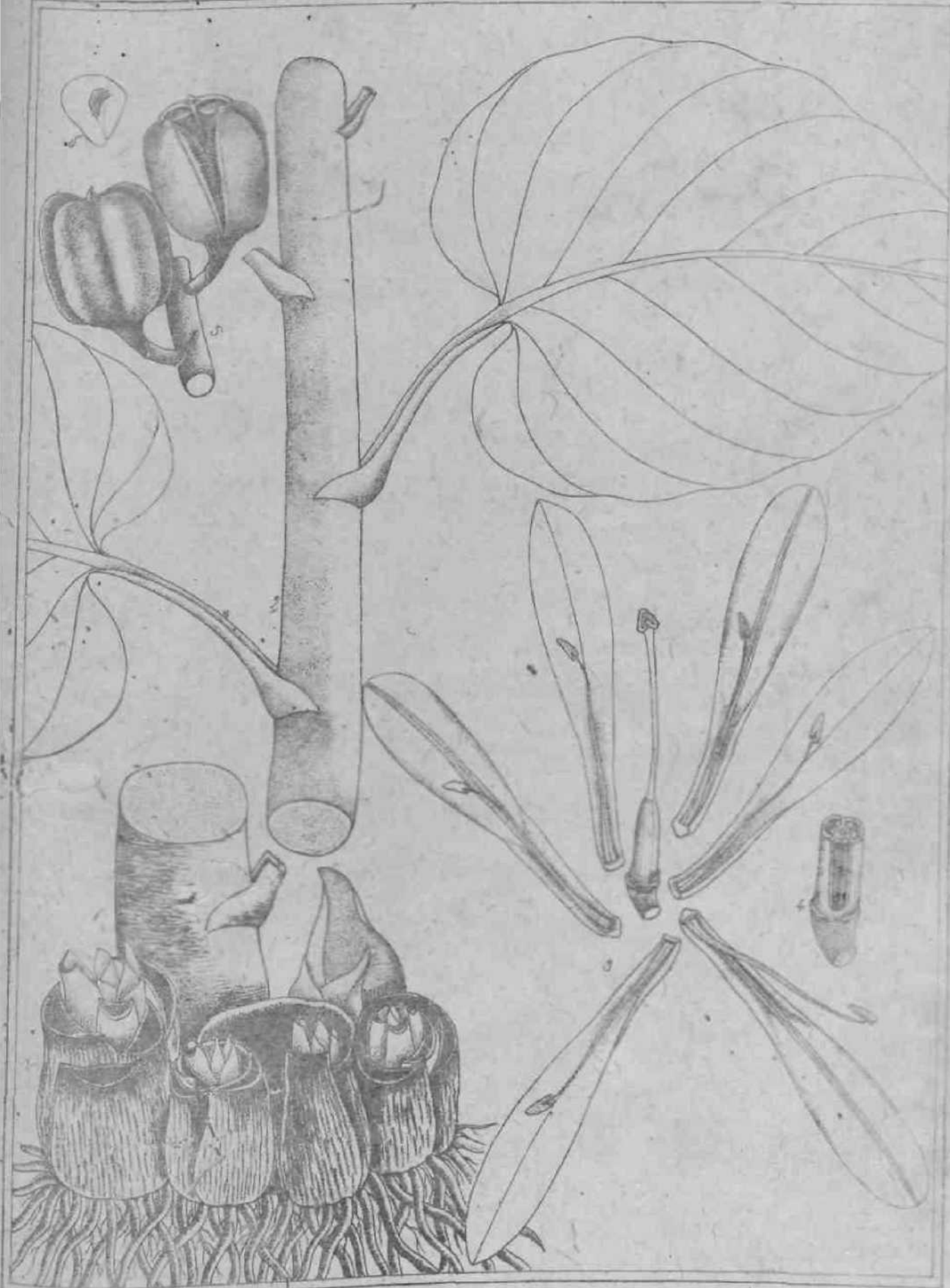
Griseb. del.

Engelm. del.











KADUUA, sp. ~tftα\*. Wall.

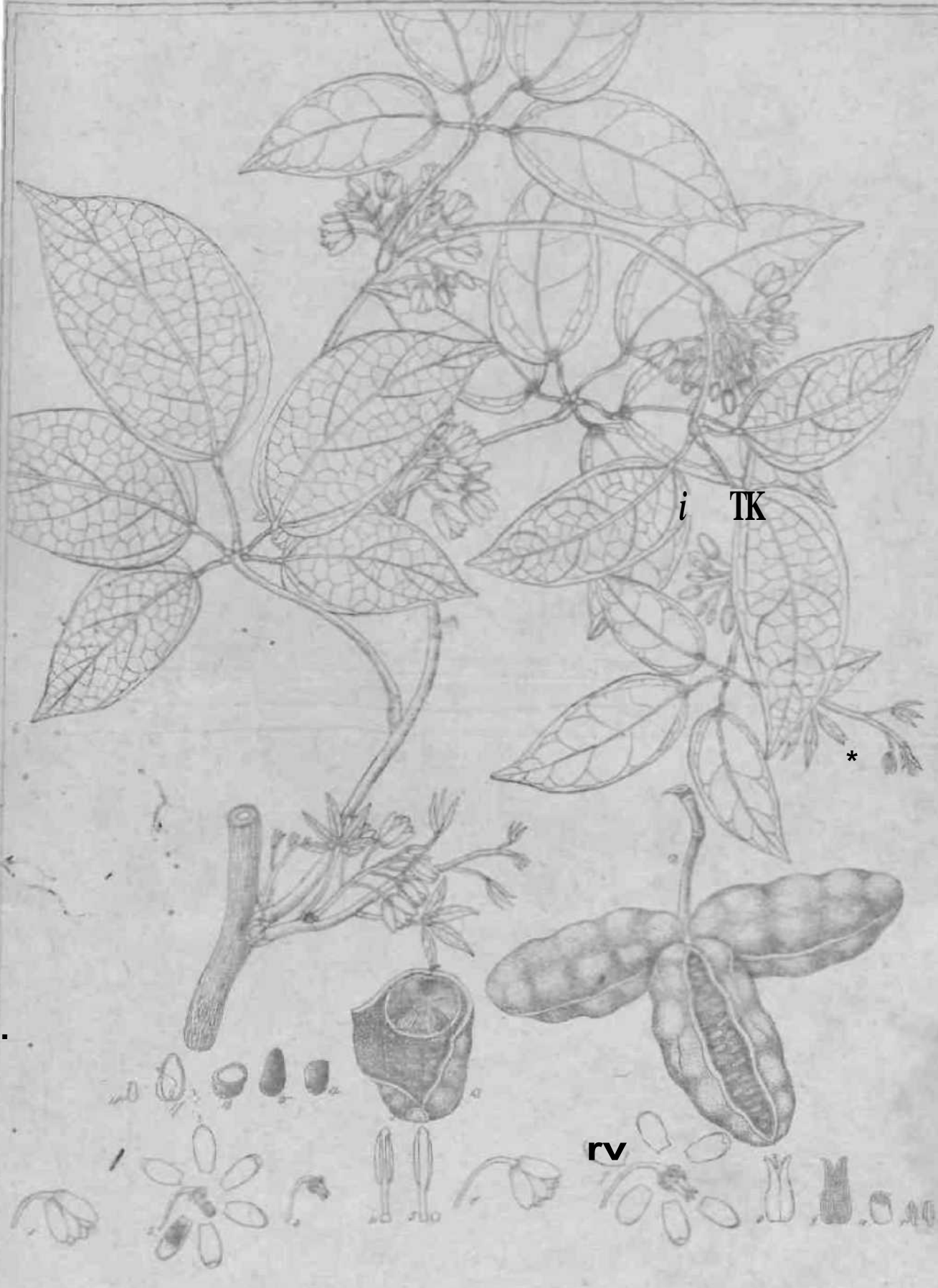
Sp. Pl. Ind. Arch. Bot. Tab. 17.

Engraved by ...



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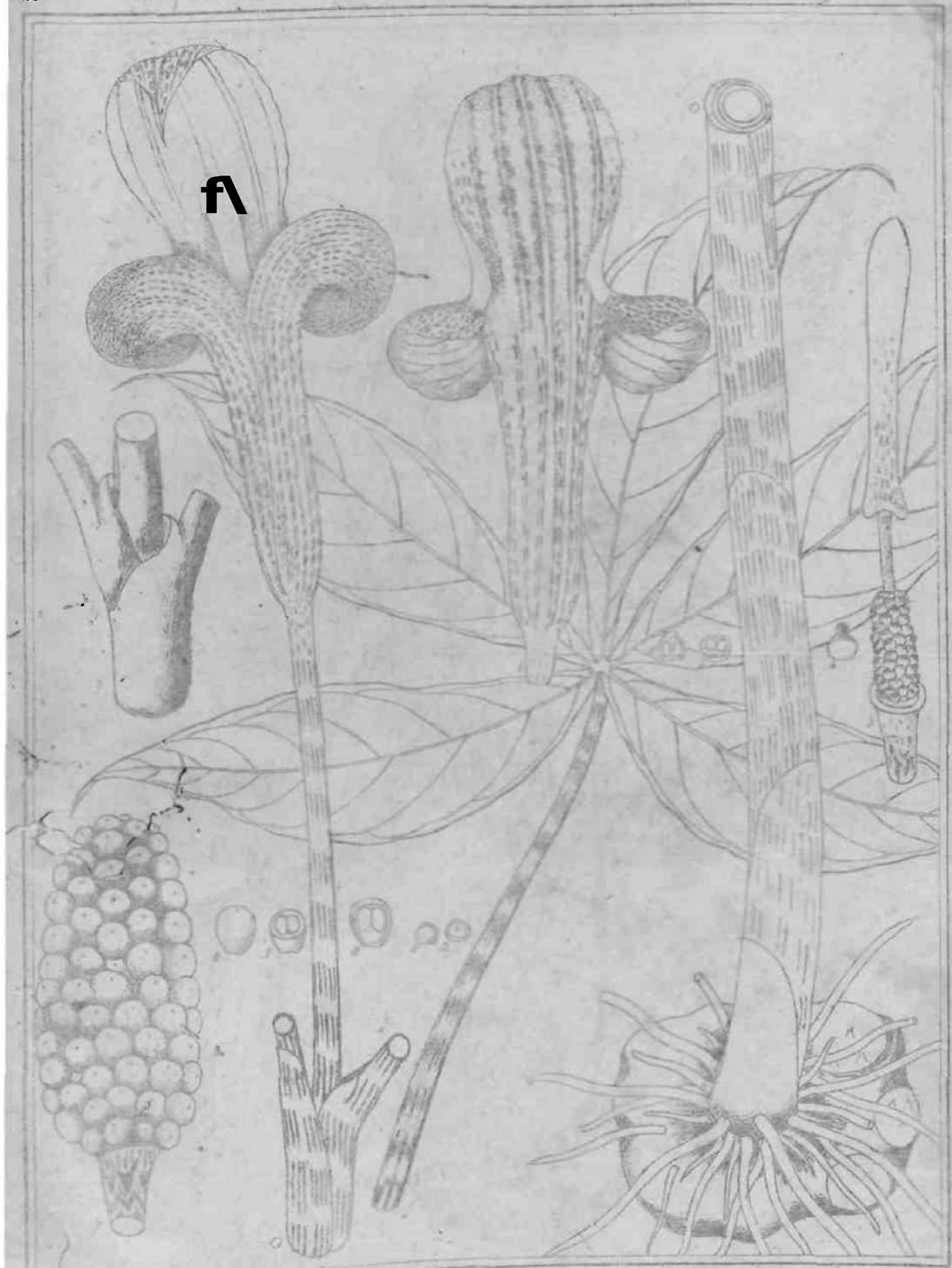


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Carl Ludwig Willd. Bot. Berlin

• *ARISAE speciosum* Willd.

Ernst Hausskn. del.



*ARUM costatum* Wulfen.

W. Kraussmann del.

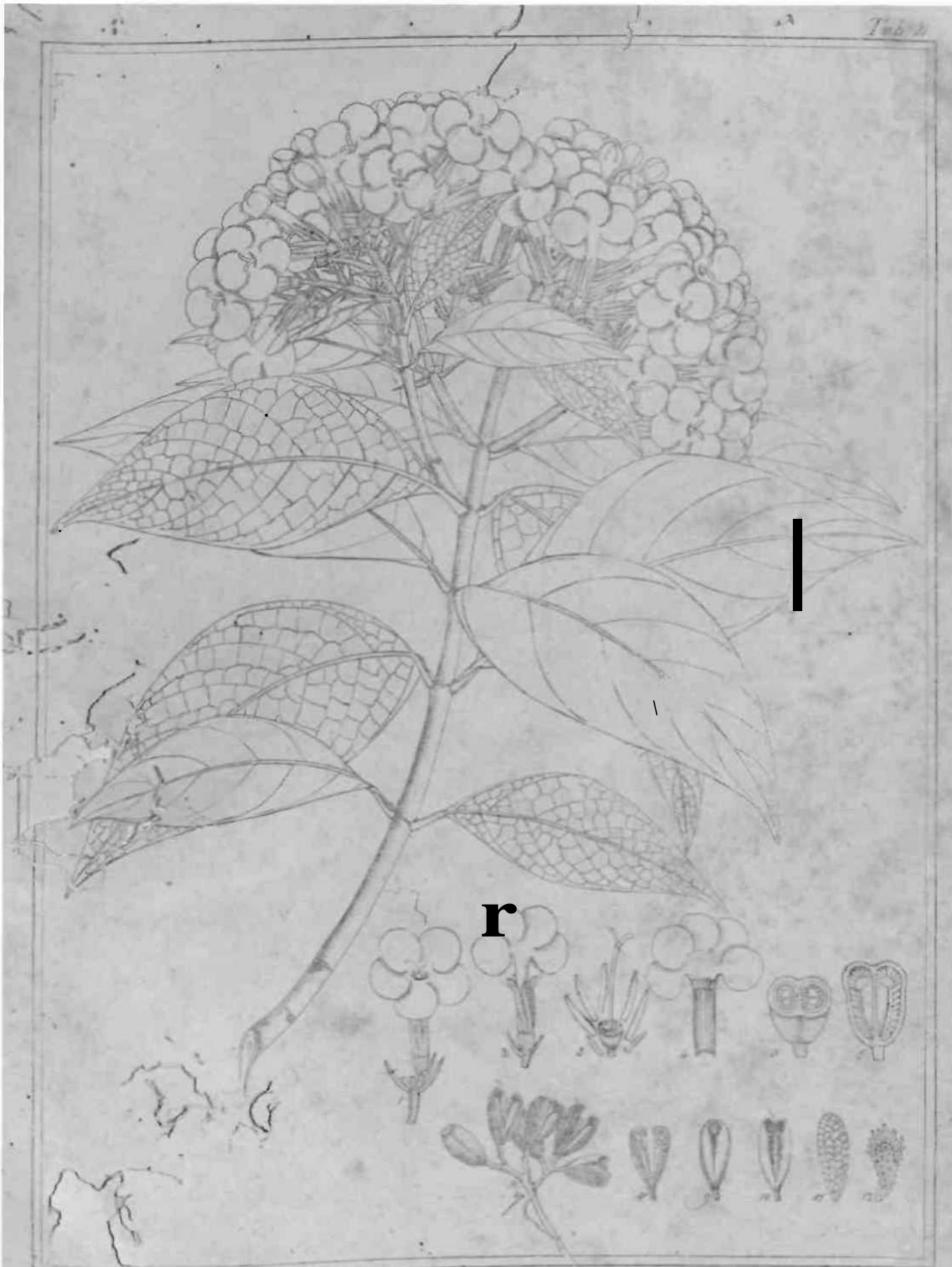
Geogr. Anstalt, Wien, 1840.



*ARUM speciosum*, Willd.

Königsmann del.





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*ffv, !> Na gracissima, Wall*

*Kuhn's original del.*



Aut. Lithographia Provi. Calcuttæ

*HYME. NODICTYON* *saccatum* Wall.

*Vichna parva* et. al.



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MYRSINE capitata Walt

Bot. Garden, New York

Walters



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