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# TENTAMAN FLORA NAPALENSIS

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# TENTAMAN FLORA NAPALENSIS

N. WALLICH



CALCUTTA  
1824



## MAGNOLLE, MICHELLE ET KADSURJB NAPALENSES

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Next after the stately *Rhododendrum arboreum*, the members of the family of *Mag\* noliacetB* 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 unitej 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 cylindrical 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 insertions 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 *Micholia* 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 a 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 Magnolfe are entirely new, and they certainly yield to none of North America in splendour and magnificence; on© of them furnishes a Very useful sort of wood, called *Chaump*, which is highly prized for furniture.—Two of the Micheliae have been noticed by professor De Candolle, in his invaluable System\* 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 \*as presented to the Medical and Physical Society of Calcutta in May 1823, and it if with the consent of that highly meritorious body, that I am permitted to introduce it here in its original form, wiy> ?ery few additions or alterations.

decessor Dr. 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 ray two Magnoliae do certainly not groyr. That his *Michelia 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 cannot 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 parri/lor*a De Cand. which has been described and figured in the fine *Icones Selects* 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 Bonga Sjampacca of Herbar. Amb. 2. p. 200, appears to me as not by any means belonging to the genus.

The genera *Kadsura* and *Mayria* have hitherto been involved in considerable doubt. The first of these was discovered about a centry ago in Japan by Engelbert Kaempfer, and has been accurately described by him in his *Amoenitates exoticse*. 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 *Annonacee* (*Annal. du museum d'histoire naturelle*, 16. p. 340, which both Dunal and De Candolle have subsequently adopted. Roxburgh, who received it from Sylhet, calls it *Uvaria heteroclitia* in his manuscript *Flora indjea*. Thp other genus, *Mayna*, was first described by Fuse6 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 Candolle have referred *Mayna* to the family of *Magnoliaceae*. 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 the family of *MenispermeiP*, connecting it with *Magnoliacew* and *Annonacee*, and perhaps constituting a new intermediate order, as has already been hinted by Professor De Candolle (*Syst. Nat.* 1. p. 544.)

Since this was 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 *JVintera granatenstSy* 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 with that genus, to Mr. Brown's new

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

It is not a little remarkable that *Islipal* 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 last: 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 *KadxurcB* 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 Hindoost'han (*Mihelia Champaca*, Linn.); that of my *Magnolia exceka* 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 densè imbricate, capsulis verticalibus tetraspermis.'

Noraen Newarrense, *Seete Soak*.

Crescit praecipue in collibus prope *Sankoo* convallis Napaice; etiam observavi ad caucinen montis *Sheopore* adque kitus ejus septentrionale, altitudine sex usque ad decem mille pedum.—Floret Aprili, Majo'; fructus inaturescunt Octobre.

Arbor vasta, ramosa, trunco recto, saepe quatuor vel quinque pedes diametro emetente, comâ densè frondosâ expansâ et umbrâ. *Rami* glabri, striati, cinerei, 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 approximate, 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 adpressâ baud copiosâ solubili et evanidâ conspersa, costâ gracili elevatâ, nervis copiosis parallelis numerosis approximatis tenuibus ad marginem anastomozantibus, siccitate utrinque, imprimis subtus, eleganter reticulato-venosa.—*Petiolus* gracilis, teres, sesqui-aut bipollicaris, glaber, basi subtus parum intumescens, supra notatus plagâ elevatâ pland lineari unguem longâ extrorsum obtusâ et rotundatâ, primum villosulâ, dim stipulas vel gemmam adfigente. *Stipule* (fig. 15; 16.) duae, oppositae, oblongae, acute vel acuminatae, plagae istae petiolarum et lineolae annularum rameae insertae, ramum ipsum omnino amplectentes, valde deciduae, initio connatae in gemmam oblongam, densissimè cinnamomeo-tomentosam intus laevem, juxta latus ramum spectans demum fissam citoque delabentem.—*Flores* (fig. 1.) speciosissimi, fragrantissimi, ex albo rosei, campanulato-patentes, terminatae, solitariae, erectae, tres quatuorve pollices longae, laeves, suffulti *pedunculo* laevi columnari crasso mediè cicatricem orbicularem gerente, supernè pallido sub albicante. *Alabastra* erecta, ovato-oblonga, obtusa, basi rotundata, bipollicaria, involuta *spathâ* (fig. 8.) lato-ovatâ subrotundatâ membranaceâ laevi, basi contractâ in collum breve, cylindricum, dimidiè superiori pedunculi partem aretè adpressam medio ejus insertâ, caducâ.—*Calyx* petaloideus, triphyllus, erubescens, demum fuscescens: *sepala* oblonga, obtusa, deorsum parum angustata, reflexa

et directis dependentia, coriacea, parallel<sup>a</sup> et viridiusculé nervosa, parum reticulata, tri-pollicaria. - *Petala* octo vel novem, valde crassa et coriacea, alba, demum flavicantia, siirsum rosea, figurA et magnitudine satis ab invicem discrepantia, scilicet obovata, cuneata vel oblonga, obtusa, vel acutiuscula, parallelé et graciliter vasculosa, seriebus tribus apici pedunculi, eircum basin tori, alveolis majusculis inserta; interiora sensim breviora s<sup>c</sup>piusque 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 colons, coiumnaris, dimidiA inferiore parte punctis eleganter decussantibus a slaminum insei tione iuscriptus; superne cum ipsis ovariorum basibus conferruminatus.—*Stamina* (fig. 3, 4.) plurima imbricata, adpressa, lineas ocfo longa, interiora sensim elevatiora, apicibus oblique truncatis rbombotileis regulariter decussantia. *Filamenta* brevissima, crassiuscula, carnosa, rufa; *antherw* lineari\*oblongse, apiculatae, utrinque loculiferae, oculis albicantibus *introrsum* (fig. 4.) dehiscentibus, poiline albo e particulis cyliulricis conflato.—*Ovaria* (fig. 5, 6.) plurima; cuneata, sub-quadrangularia, e viridi glaucescentia, minutim punctulata, glabra, arctó imbricata, vertice truncate rhomboideA sulco perpendiculari intermedio exsculpt&; inferiora magis latitudine verticaii, superiora plus longitudine extensa, fabriced fibroso-lignos&; unilocuaria, (fig. 7.) loculo ad basin locate 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 longr.s, deciduus, dorso sulco notatus, upice parum patulus. *Stigma* latus externum slyli occnpans, seabriusculum, constans papillis numerosis minutis.—*Capsulce* valde uumerosre, dense imbricate, verticales, magnitudineet figura variantes, unguem digiti medii baúd superantes, oompresse, laeves, purpnrese, dispositye in \*/ro&\*7Miw(fig.9.)ovato-oblonguin, quinque-pollicarem', obtusum, erectum, suffultum pedunculo lignoso columnari bipollicari nudo, vestigiis insertionis spathas partiumque floris inscripto; vertice rhomboideA verticaliter juxta sulcum perpeudicularem dehiscentes in valvulas (fig. 10.) duas plano-concavas lineas, intus tegumentu chartaceo laevissimo nitente munitas.—*Scmina* (fig. II.) tria vel quatuor, ovata, dorso convexa, liinc uugulata, sibi invicem adpressa, magnitudinis pisi majoris, coccinea, laevia, angulo loculi interiori, bases valvularum connectenti, adfixa ope funiculorum brevium sericeorum niveorum, horumque elongaiiunc fere semi-pollicari demum extra cavitatem dependentia. *Ovula* aliquot ininuta, sterilia s. abortiva, emarcida observanda sunt ad basin sen augulum interiorem loculi, inter funiculos. *Arillus* (fig. 12) carnosus, lineam dimidiatn fere crassus, rube minus, odore et sapore parum aromatico, ad basin seminis, axi strobili obversam, insculptus fovea umbilicali parvA, *Integumentum* exterius durum, fere osseum, leviter serobiculatuin, atrum, nitiduin, compressum, lenticulare, crassiusculum, extremitate *svperiore* perforatum *umbilico intrno*, illo exteriori diametricé opposito. *Integumentum inierius* constans pellicuU tenuissima *perispennun* involvente carnosum acqueo-palliduin, cavitatem e<sup>a</sup>cté replens. *Embryo* (fig. 13.) minutus, in parte supreme perispermi prope umbilicum intern um pendulus, rectus, niveus; *cotyledones* ovate, obtuse; *raditula* subturbinata, obtusa; *mpera I*

## OBSERTATION.

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 calyckie 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 saue 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 capsules, 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 petiol; 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 petiol 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 petiol, 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 1810, 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 acute, punctis parvis collosis asperae, magnitudinis baccae Grossularice minoris, cinerascentes, sessiles, patentes, decem vel plures, baid paucis abortivis parvulis intermixtae, dispositae in spicam oblongam hinc inde curvam, tripollicarem, fructum *Michelice* planè referentem, pedunculatam. *Valvulae* divaricatae, plano-concave, intus rugosae, nitidae. *Semen* unicum, coccineum, ovatum, parum obliquum, loculo exactè correspondens, basi umbilicatum, mox post dehiscentiani extra saam cavitatem funiculo sericeo laxo dependens.-»-Nucula, embryoque inversus exactè ut in *Magnolia insigni*.

It is not a little surprizing that, according to the accurate Gaertner, the embryo of *M. grandijiora*, Linn, is erect, Carpol. Itp. 343. t. 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 *Liriodendron 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 gemmi\*.



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

Nomen Parbutteanum *Champa* s. *Chaump*,

Observavi tautirmmodo in monte Sheopore Napaliae, ad elevationem ab oceano septem circiter mille pedum, florens Martio, fructibus maturis Octobre.

Arbor 50-ad 80-pedalis, adniodum ramosa, trunco valde crasso, cortice vario fesso et rimoso. *Ramuli* crassi, teretes, fuscescentes, juniores grysei, punctis callosis majusculis conspersi, vestigiis stipularum delapsarum annularibus, horizontalibus vel obliquis, notati.—*Folia* sparsa, patentia approximata, pollicem et diutius circiter distantia, coriacea et firma, oblongo-elliptica, in acumen lineare acutissimum semiuncia abeuntia, integerrima, niargine subinequalia obsoleté que repanda, basi acuta, spithamaea ad dodrantalia, supra laevia, lucida, saturaté viridia, leviter plicata; subtus valde glauca, fere pruinosa conspersaque pilis brevibus ferrugineis adpressis, aetate glabra, costâ prominulâ gracili, nervis alternantibus ad marginem anastomosantibus, more generis, preprimis dum sicca, pulchré reticulato venosa. *Petioli* pollicaris et parum ultra, teres, gracilis, leviter sulcatus, basi parum intumescens, supra vestigio lineari piano elongato notatus.—*Stipulae* duse oppositae, membranaceae, oblongae, acuminatae, sesqui- ad bipollicares, tomento densissimo sericeo cinnamomeo vestitae, intus laeves, more, generis supra descripta, initio in gemmam sub-cylindricam deorsum barbatae connotae, mox solute citoque caducae, vestigiis istis annularibus ramorum linearibusque petiolorum manentibus.—*Flores* axillares, solitarii, magni, erecti, albi, fragrantés, campanulato-patentes, pedunculo elevati valde crasso brevi columnari, vix dimidium pollicem emetente, cinnamomeo-tomentoso, ad medium notato vestigiis duobus annularibus paulo distantibus. *Alabastra* oblonga, acuta, cinnamomeo-tomentosa, niuisissima, bipollicaria, *spithis* involuta monophyllis: exteriore fugacissima, interiore tomentosâ, intus laevi argenteâ diutius manente. *Petala* (fig. 1.) 12 vel 13 coriacea, cvasa, glaberrima, oblongo-ovata, obtusa, deorsum angustiora, fere bipollicaria, interiora sensim angustiora et breviora, basi debilissimé viridescencia, coeterum alba, triplici disposita serie quadripetalâ, intus nunc quinquepetala.—*Columna genitalium* (fig. 1,3) sesquipollicaris, erecta, basi crassior. *Stamina* (fig. 2.) plurima, laxè imbricata, inaequalia, tertiam petalorum partem longitudine sequantia; *Jilamenta* brevissima, oarosa, crassiuscula; *antherae* adnatae, marginales, paulo introrsum deliscentes.—*Ovaria* (fig. 4.) parva, fusco-puberula, t6traspora; *ovula* angulo interiori loculi ope funiculorum brevissimorum decurrentium adfixa. *Stylus* ovario longior, subulatus, recurvus, supra papilloso-asperulus. *Baceae* (fig. 5,6.V, paruae, globosae, callosa-verrucosae, glabriusculae, cinerascens, magnitudine nucis avellanae, basi latè sessiles, pluribus effoetis intersperse, in spicam quadripollicarem curvam digestas, biatu semicirculari supra dehiscentes in valvas duas divaricatas concavas. *Semen* (fig. 7.) unicum, grandiusculum, ovatum, subreniforme, coccineum, baccatum, plend maturitate extra loculum suum dependens, ventre exsculptum umbilico minutissimo.—*Arillus* carnosus, mollis, ruber. —*Integumentum exterius* atrum, crustaceum; *interim* tenuissimuui. *Perispermum* cacosuui, hyalinum. *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 single spot: a limitation which is not of very rare occurrence among the plants of Nipal; thus *Orchis* (*Habenaria*) *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 BICO at Patn», 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 Guillimioe, *De Candolle* 1. c. p. 450 et p. 455; a suggestion which has indeed been hinted at by himself in p. 447.

MICHELIA DOLTSOPÀ, *De Candolle*. TAB. 3.

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

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

Incolit varias sylvas Napaliae, tam vallis ipsius quam montiuin minorum huic vicinis, florens Aprili et Mayo; fructifera sub-pluviis.

Arbor magna umbrosa, altitudine 60-pedali, trunco satis regulari crasso.—*Ramuti* teretes, cicatricibus plus minusve obliquis annulati, densè vestiti villositate serice& fused; state proveciores glabri, cinerei, calioso punctati.—*Folia* magis forsàn quam in reliquis remota, patentissima, integerrima, ad marginem leviter undulata, ovata, in acumen gracile, longum attenuata, basi acuta, nunc rotundato-acuta, palmaria ad JO-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 insertionis stipularum gracili elongato.—*Stipulæ* aureo-v. fusco-villosee, connate in gemmam cylindricam acuminatam elongatam. *Flos* (fig. 1.) axillaris, solitarius, illo Chanipacae vulgaris fere dimidio major, petiolo parum longior, flavus, valde fragrans. *Alabastrum* cylindrico-oblongum, densè vestitum tomento fusco velutino, bipollicare, spathâ (fig. 2.) duplici caducissim& indutum. *Peduncululus* brevis, velutinus, cicatricibus duabus annularibus notatus.—*Petalum* quindecim valde patula, ternario ordine disposita, quinque scilicet in singulo ordine, oblongorspathulata, acuta, ad basin angustatam munita pube furfufacefi punctis minutissimis impressis intersperse; coeterum glabra; interiora valde angusta fere linearia. *Anthene* sessiles dorso latiore in apiculam subcarnosam desinente: loculamenta lateraliter dehiscentia. *Tomus* ovariorum velutinorum cylindricus supra antheras sessilis. *Stylus* (fig. 3.) brevissimus, recurvatus, valde papillo'sus.

OBSERTATION.

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 *macropkylla* 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 aftg\*

minted 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 Cartel* TAB. 4.

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

*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. *Ramidi* 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 à atroviridia, subtus pallida atque opaca, pube parcè adpressè aetate evanidè conspersa, utrinque dum sicca eleganter reticulato-venosa; 5-7 pollicaria.—*Petiolus* gracilis, teres, pollicaris, e basi ultra medium supra notatus plagiè elevatè planè lineari elongate. *Gemma stipulacea* oblonga, acuta, petiolum juniorem fere aequans, argenteo-vel cinereo-villosa.—*Alabastrum* axillare, solitarium, erectum, ovatum, brevè pedunculatum, semipollicare, cinereo-villosum; *spathæ* (fig. 4.) cito deciduæ, ovato-subrotundæ, obtusissimæ. *Flos* (fig. 1.) parvus, dilutè flavus, odore valde debili, pedunculo suffultus crasso, annulato, villosulo.—*Petala* duodecim acuta, lineari-cuneata, pollicaria. *Anthera* fere sessiles, numerosæ, laxè imbricatæ, lineares, apiculè nudè cuspidatæ; *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, papilloso. *Capsule?* (fig. 5, 6.) subglobosæ, basi nunc latè subadnatæ nunc subcuneatæ quasi pedicellatæ, cinereæ, punctatæ, majores quam in antecedente specie, dispositæ in spicam tortam quadripollicarem, pluribus abortivis intermixtis. *Semina* tria vel quatuor, ovata, coccinea.

OBSERVATION.

This species comes very near to *M. 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, *Walt.* 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, gemmseque vestiti lanugine densè decumbente mollissimè cano-argentea. *Folia* valde approximata, alterna, subbifaria, patentissima, oblonga, acuta, basi parum rotundata, apice cuspidata, 5 ad 10

pollicaria, valde coriacea, supra lucida, nunc panlm glaucesc&itia, subtns densissim6 tomentosa, vix rotate glabriora, nervis parallelis, numerosis, ad marginem integerrimum. arcuatim anastomosantibus, venis reticulatis tomento reconditis. *Petioku* pollicaris, aetate parum glabrior, supra notatus vestigio stipularum elongate. *Stipuks* valde deciduce, oblongee, densissim&etomentosse, gemmas formantes oblongas; petiolum subsequantes. *Alabdra* axillaria, solitaria, oblonga, sesquipollicaria, lanuginoso-barbata. *SpathiB* (fig. 2, 3.) duae, oblongae, cito evanidse. *Flos* (fig. 1.) pallide<sup>n</sup> flavens, odoratissimus, brevissime pedunculatas; *petala* numero variantia, decem ad quatuordecim, cuneata, acutiuscula, disco parum saturatius colorata, interiora parum angustiora. *Peduncululus* vix duas lineas longus, lanuginosus, crassus. *Columna genitalium* (fig. 4.) oblonga, petalis plus dimidio brevior. *Antherm* (fig. 5, 6.) valde caducae, introrsum dehiscentes; *Jilnmenta* brevissitna, purpurascencia. *Ovaria* (fig. 7, 8, 9.) ovata, villosa. *Styli* erecti, columns subadpressi. *Bacca* (fig. 10, 11.) magna, cerasos mediocres aquantes, obovata, deorsum paullo angustiores et fere pedicellatae, *pedicello* admodum lato; cineree, callosopuuctatae, coeterum glabrae, maturitate fuscescentes, tri-quadrispermffi, aggregates in spicam brevem, ovatam, longius pedunculatam. *Semina* (fig. 12.) magna, coccinea, urillo 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. *Utariee*, spec. Thunb. et Linn.

*Mores* unisexuales, pentandri-polyandri, polygyni, apetalii. Sepala novem, nun-} duodecim, ternatim triseriata, alteraantia. *Stamina* completa, *Jilatnentis* carnosis; *Tel* incompleta, *antheris* sessilibus, receptaculi foveolis adnatis. *Ovaria* conferta super receptaculum carnosum, dispota. *Styli* nulli. *Stigmata* solitaria, carnosaa, emafcesc&entia, oblongo-clavata, medio adfixa, utrinque libera. *Bocae* distinct®, reniformi-ovata®, mono-vel dispermse, capitatae, aut spicatae. *Perispermum* homogoeum, carnosum. *Embryo* dicotyledoneus. *Radicula* infera; vel centrifuga f

Classis Linneana: *Monoecia* vel *Dioecia*, *pentandria* yelpolyandria,

Ordo. naturalis: *Menispermete*. *Winterets*, Brown ?

*Habitus*. Frutices yolubiles, glabrae. *Folia* alterna, subcarnosa, denticulata, exsti\* pulata. *Floret* axillares, subsolitarii^ fragrantes. *Baccte* carnosae, rubne, edules.

## OBSERVATION.

I have already hinted (p. 2.) at the supposed identity of *Mayna* with this genus. A\* far as can be gathered from the imperfect description and figure, given by that author, in the *Histoire despkmtes de la Gniane* 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 Aublet'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 *JC gran\* di/lora*, both of them being furnished with distinct filaments; but the four-tided anthers,

recorded by Aublet, are wanting here—Michaux's *Schisandra* 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, Watt. TAB. 14

Dioica, polyandra; floribus nutantibus, solitariis; pedunculis petiolo duplo longioribus, medio ebracteatis; staminibus coriis; 2amentis subulatis; baccis dispermis, spiritalis, rachi crassae, clavatae.

Observavi frequenter in monte Sheopore Nepalicae, nec alibi; flores in Aprili, Majo, Yructigeram Octobre.

Frutex latè volubilis et scandens, omnibus partibus glaberrima. Rami numerosi, elongati, graciles, vix pennae anserinae crassiores, fusci, callibus punctati, epidermide state demum soluta; tenelli glaucescentes, rubicundi. Gemmae parvae, axillares, subcylindricae, acutae, squamis oblongis, ciliatis, bifarie imbricantibus, quibusdam persistentibus, basesque ramulorum junibrum laxè ambientibus. Folia valde copiosa, approximata, patentia, alterna, lanceolato-oblonga, 4-6-pollicaria, subcarnosa, ad lucem visa minutim pellucida punctulata, acuminata, basi cuneata et per petiolum leviter decurrentia, remote denticulata, dentibus subulatis, incrassato-subglandulosis, laetè viridia, superius lucida, novella resplendentia, aetate opaciora, subtus pallida, penninervia, costae gracili, nervis obliquis, alternis, venis reticulatis. Petiolus teres, gracilis, superius sulcatus, pollicaris, basi inarticulate, simplici. Stipulae utilis, nec ullam earum vestigium. Mores magni, admodum fragrantis, putantes, axillares, solitarii, vel sparsi circum basin ramorum novorum. globoso-campanulati, pollicem transversum emittentes, ex albo flavicantes, extus versus basin saepe purpurascens. Sepala novem, ternario ordine disposita, ovato-rotundata, obtusa, crassa et subcarnosa, integerrima, interiora sensim minora. Aestivatio laxè imbricata, globosa. Pedunculus teres, laxus, gracilis, bipollicaris, sequalis, basi stepius squamibus gemmaceis natis akerave munitus. Masculorum (Gg. 6, 7.) stamina (fig. 8.) circiter quadraginta, calyce parum breviora, clavata, aggregata in acervum ovatum super receptaculum carnosum, leviter elevatum (filamentorum bases connatae?). Piliamenta brevissima, erecta, subulata alba, carnosissima. Antherae ovatae, compressiusculae, obtusae, disco carnosae, utrinque dehiscentes. Joco angusto, longitudinali, extrorsum verso; pollen albidum. Nullum pistillorum rudimentum. Foemineae (fig. 1, 2, 3.) masculis parum majores, sepalaque exteriora saturatius colorata. Ovaria (fig. 4, 5.) admodum minuta, numerosa, lenticularia, extrorsum oblique acuta, subtus gibboso-convexa, sursum notata marginata rectilinea, sessilia, spiraliter et densissime aggregata super receptaculum carnosum, oblongum, sepala majora subaequans. Ovula duo minutissima, lateri loculi marginulæ istae obverso adfixa, oblique pendula. Stylus nullus. Stigma sessile, carnosum, hyalinum, scabrinulum, perpendiculare, utrinque liberum, apice obtusum leviterque recurvum, basi ovario adpressum in medio apiculae hujus insertum. Baccae (fig. 9, 10.) ovato-subreniformes, sessiles, coccineae, laeves, nitidae in magnitudine Ribesiae majori; Valde numerosae, superius apiculae lineolaeque brevi, fuscae, decurrente notatae, biloculares, dispermae, dispositae in spicam laxè pendulam, digidum crassam, clavatam, sex ad novem pollices longam, insidiatem pedunculo gracili, apice leviter incrassato, coeterum vero immutato. Rachis carnosissima et crassa, punctulata, flavicans. Caro pallide rubra, mollis, lineam crassa. Semina (fig. 11, 12, 13, 14.) dua, fusca, horizontaliter unum super alterum posita, septa pulposo separata, reniformia, leviter complanata, lateribus convexis, obtusa, hilo sureum, i. e. versus apiculae verticis baccae spectante. Integumentum exterius crustaceum, laeve, sub lente minutim punctulatum; interius tenuissimum, perispermum arctè involvens. Perispermum album, carnosum, teres, in figuram semilunarem curvatum extremitatibus obtusis approximatis dorso convexo notatum fasciis vasculis

loram tenui fusc&; alteftt extremitate exsculptum cavitate mitiutffi, embryoniferA, superficiei apicis proximo Embryo minutissimus, subglobosus, albas. *Radicuh* centrifugal

OBSERVATIOV.

This is a, very handsome, fragrant plant. The natives eat the frtiit The embryo it 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, tVall. TAB. 15.

Dioica, j>o\y&ndr&; Jloribus subfasciculatis, erectiustfulis; pedunculis petiolum vit bequantibus, medi6 bracteatis; antheris sessilibus, immersis; baccis dispermis, spicatis; rachi tuberculod.

Observavi in monte Sheopore, rariusque in collibus ad Sankoo, Napaliee. Floret Majo et Junio fructus maturescunt Octobre.

*Frutex* ramosissima, valubilis, glaberrima, ramis\* gemmisque ut in pridre specie. JFb-*lia* interstitiis duplo vel triplo longidra, ovato-lanceolata, in acumen desinentia longum et gracile, remote denticulata, interque dentes obsolete sinuata, nunc fere uitegerrima, basi rotundat&vel acutiuscul&, carnosa, firma et fragilia, 5-6-pollicaria, lucida, subtus pallida, nervis capillacea versus marginem anastomasantiUus, siccitate reticulata, ad lucem visa minutim punctulata; in plantis novellis luxuriantibus maculis pallide viridibus subalbicanibus variegata.—*Petiolus* crassiusculus, brevis, semipollicaris, coeterum ut in antecedente. *StipultB* nullae.—*Flores* axillares, solitarii vel geminati, illis dimidi6 minores, fere inodori, leviter nutantes, patentissimi, initio pallide flavi, dein aurantiaci, dioici, eestivatione in globulum pisi magnitudinis imbricati. *Pedunculus* teres, petiolum subeequans, nunc tertift parte brevior, basi squamulis duabus ianceolatis, emarcidis, deciduis, versusque medium instructus *bracteola* carnosd, semiamplectente, ovatd, obtus& patulA, doi^so convexd, persistente- *Masculorum* (fig. 1,8.) *sepala* novem, ternario ordine alternatim disposita, patentia; *exteriora tria* valde parva, ovata, inaequalia; reliqua subrotunda, crassa et coriacea, membranaceo-marginulata, sub lehte punctulata, prioris speciei dimidib *rimom*.—*Antherce* (fig. 3, 4, 5.) parvee, lanceolate, sessiles, duodecim ad quinde-  
cim, tessellatim immerse receptaculo carnosso, subgloboso, demum valvularum triangularium adinstar hiantes leviterque reflexe, biloculares, dorso carnosse, apice liberfe, loculis, parallelis, distinctis lateraliter dehiscentibus.—*Foeminci* (fig. 6,7.) quoad sepala masculis simillima.—*Ovaria* (fig. 8.) minima, valde numerosa, carnosa, ovata, suprd et intus marginul& parum elevatA notata, imbricata in acervulum subglobosum. *Stylus* nullus. *Stigma* prioris.—*Baccts* (fig. 9,10.) globosse, carnosae, numerosae, laeves, coccinense, parum minores quam in antecedente, fabric! Vero internfi omnino similes, disposita! in spicambrev6 peduuculatam, sexpollicarem, cylidricam, rachi parum incrassatfi, valde asper& propter tubercula numerosa baccas adfigentibus.

OBSERVATION>

This is altogether a smaller species than *K. grandijbra*; particularly the flowers. It approaches to *Schisandra coccinea*, Mich. Flor. boreal, amer. 2. p. 219. t. 47. and Cftrt. 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 from twelve to fifteen superficial pores, which are arranged in a quincunx or decussated manner from the basis to the top; in these the anthers are completely sunk, their two-lobed apexes 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.

### RADSURA JAPONICA, Duntil

Dioica, polyandra; *jlurihu*\* subsolitariis erectiusculis; *pedunculis* petiolo longioribus; *antheris* sessilibus, immersis; baccis dispermis, capitatis.

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

*Kadsurajaponica*, Dunal Anonac. 57.—De Cand. syst. nat. 1.466.

*Uvariajaponica*, Linn. spec. plant. ?56.—Thunb. jap. 237.

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

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

*Futd Kádsura*, sívfe *Sáne Kddsura*, aliis *Ormj Kddsura*; *Kenkoo*; Kaempf. amoeft. p. 476 et 785. tab. 477.

Grescit in montosis prope Sylhet, ubi detexit beatus M. R. Smith.—Specimina tain videntia quam sicca misit collector horti hujus F. De Silva.—Floret sub initio pluviarum; fructus moturos profert Octobre, Novembre.—In horto botanico Calcutta floruit primò vice Junto, 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. propinquaj*; 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, Watt.

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

*Habitus*. Frutex latè volubilis, supernè toinento stellate, ferrugineo: rami juniorea bhernatim compressi, subarticulati. *Folia* ovalia, serrata, scabriuscula, odore debili aromatico. *Floret* pulchri, coccibei, fasciculati, «xillares, subverticillati, nuuc subramosi.

JSystem. Linn. *Didynamia Gymnospermia*.

Ordo. natural. *JLabiataw*.

Disi in honorem auctoris pestumatisissimi Roberti Colquhoun, Scotiae Boroneti, biatoriae naturalis fautoris indefessi, qui hortum botanicum Calculus ditavit plurimis plantis viventibus, seminibus, speciebus, nec a se observationibus, phytographiarum regionis Kuniaon spectantibus.

COLQUHOUNIA COCCINEA, Wall. TAB. C.

Legi in variis montibus Nepalice : Chiesapanee, Chandagbiry, Sheopore; etiam in sylvis minus elevatis Suembonatb, Gokurna, &c. Floret sub fine pluviarum et tempore frigidis, ab Octobri usque ad Februarium. Fructus maturescunt Martio.

Nomen Parbutteum *Aesiiulhe*; Nevarreuse *Gootlonuth*.

*Frut&e* antea super alias frutices arboresque minores volubilis. *rami* totifrisissimi, organales, obsolete tetragoni, penam cythifani ud **digitum** crassi, a punctis minutis, copiosis scalariisculis, tomento parvo hinc inde conspersi, dilute ferruginei; *juniores* gracillissimi i. absolute inflexi, sulcis duobus oppositis notati, *nd* inscriptioni foliorum alternatim diluato-complana lineaque elevata nullo rubarticulati, tomento vestiti denso, ferrugineo, irpidoso, stellato, ciliato, fimbriati. *Folia* opposita, ovala, acuminata, 3-5-pollicaria, vutusta duplo majura, patentia. obtus^ circuli, basi acuta integriora, ulloqñ a tomento parvo asperula, supra atro-viridia, ru^osa, opaca, subtus pullida, cost& nervii (iie suboppositi, arcuatis, prominentebus) tonicosis, venia transversim reticulatis; novella densissime tomentosa, iucana. *Pel tali* diffracta, scimiteres, tonientosi, supra plani. *Flares* (fig. 1) nigri, iodorati, fuscissimi, plerumque ternati, asiurcas, stibimidiati; verticilli nunc brevissimum pedunculati, saepius fere sessiles, in ramis junioribus proximati, subracinosi. *Pedunculi* teretes, patentee, petiolo triplo breviores, tomentosi, basi, nunc quoque medio, *hracleolite* duobus oppositis, inearibus, persistentibus nudo. *Calyx* (fig. 2) basi subcylindricus, sursum ampulatus et subcylindricus, niembraaceus, icario, pteris, **aemundatua**, tomentosus, intus lac vis, nitidus, obsolete 5-dentatus, reticulatus, leviter inmirvius, dorso parum convexior, limbo 5-nerviis. *Corollae* (fig. 4) coecioea, ciliata longior, villis canis, mollibus brevibus, ulculata extus obtusis; tubus biseriatus, cylindricus, inclusus nios compliatus in faucem rentriens, lateribus leviter conjunctis, subna foveolam, peroviam, emittit. *Stamina* bilobata; *labium tubum* adscendens, ovatum, fornicatum, apice bidentatum, dentibus lanceolatis, basi dorali leviter contracta; *in- Jertum* ninjis, patens, tripartitum, lobis heterogermis oblongis, lateralibus oblique ovalis, leviter recurvis, in medio insertis et quasi interlabialibus: in medio duplo fere brevior, descendente, concavosculo, linguaeformi, citius emarcescente. *Stamina* (fig. 5) quatuor, altissime nidi men to inini, intra fraeam descendente, limbo plane ab illa recondite, uanbns (more **numlise**, ul **dad** am monuit eel. R. Brown in Prodr. Fl. Nov. Hull. 1. p. 500.) interlabialibus, primariis scilicet inferioris, in faucem inserta. *Filamenta* ewssiuscula, hnearia, villosula, cotorata, apice parum dilatata et iucurra; **superiora** duo breviora. *Antherae* parvae, oblongae, nut antes, purnsecnteg: lobis divaricatis; (sursum et deorsum), imdi, obtusi, rimae continue longundissimi et quasi communi (k-liscentibus, *poltine* flavo majusculo. *Quesaria* quatuor, oblonga, planiuscula, apice parum obliqua et crenulata, imposita disco hypogyno annulari, angneto, obsolete quadrijoba, flavicanti, centro parum elevatiore subconico; uibcularia, nionospora: *omlum* ieres, ex apice placentulae erectae, fungosae pendulum! *Stigmatum* filiformis, laevis, purpurascens, longitudine staminum, uacuum illis adscendens. *Stigma* bilobum, lobis subdati acutis, patillis, superioris dimidio brevior. *Achenia* (fig. 6) quatuor (rarius unum duove cass), gramlia, calyce (fig. 6) perdistente, haud aucto, dentibus cooniveatibus subvalvatis clauso parum breviora, ejus fuidi, supra discum bypogynum fere imiuta-



tarn iriserta, erecta, glabra, exsucca, basi obalia, conniventia, convexiuscula, intus obtusè carinata subtrigona, apice terminata al& membranace&, patum recrvfi; ohlong&, extremitate subtruncatâ hinc convexfi, inde acutâ, levissimè crenulatâ, margine altero rectilineo, subsulcato, crassiore, altero (exteriore) convexo scindente; epidermide obducta tenuissimA, fuscescenie ; 1-locularia 1-sperma, indehiscentia. *Semen* (fig. 8,9.) obovatum, compressiusculum, obtusumj basi acutiusculuni, album, laeve, infra apicem *nuspensum funitulo* longiusculo, descudente supra basin placentae fungosae, erectae, liberae inserto. *Integument urn* simplex, tenuissimum. *Perispermum* crassiusculum, carnosum, album, embryonem aretè involvens, conforme. *Embryo* (fig. 10.) ovatus, planus, erectus. *Cotyledones* maximae, ovatae, obtusae, basi subcordatae. *Plumula* inconspieua. *Radicula* eonica, acuta, brevis, infera.

## OBSERTATIO.

Genus pulcherrimum, *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 seminisque suspensi, et perispermio copioso.. Odor foliorum partiumque novellarum citrinus, debilis. *Wall. ho. cit.*

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 G'osain-Than, from Kumaon and Sirinagar. 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 *Colquhounia vestita\**

## BEACMONTIA, Wall.

*Echitidis species, Roxb.*

*Calyx* quinquephyllus, foliaceus, coloratus. *Corolla* campanulata, tubo brevifaeaeque esquamatis, laciniis subsequilateris. *Stamina* filiformia laxa, antheris subexsertis, sagittatis, medio stigmati adhaerentibus, lobis posticis polline vacuis. *Ovarium* biloculare, suffultum annulo hypogyno, quinquelobo. *Sigma* oblongum, apicula bifida. *Filiculi* duo maximi, cohaerentes. *Semina* ad umbilicum sericeo-comosa.

Classis Linneana : *Pentandria monogynia.*

Ordo naturalis, *Apocynae* vene.

*Habitus.* Frutex inaximus, volubilis, lacte copioso fartus. *Folia* opposita, perennantia, magna, oblongo-obovata, juniora, uti rami novelli, ferruginei, ciliis axillaribus interpetiolaribus subulatis, sphacelatis. *Cymae* terminales, bracteatae, pedunculis brevibus articulatis parum ramosis, dichotomis. *Flores* maximi, istos Portlandiae aemuli, nivei, speciosi, fragrantis. *Sepala* magna, bracteiformia, rubicunda, vasculosa. *Fructus* cylindricus, pendulus, cacumerinus, giganteus; denuim in duos secedens folliculos. *Coma* ampla, sericea.

Genus hinc *Partonsia* illinc *Lyonsia?* affine, ab illis diversum figurae colorum, ab hacce

corollâ fructuque. Nominavi in honorem Dominae Dianae Beaumont, scientiæ botanice et horticulture in Anglia devotissima? earundumque faulrici munificentiæ, cuius benignitati hortus Calcuttensis plurimas debet plantas exoticas precipue Europaeas.

BEAUMONTIA GRANDIFLORA, Wall TAB. 7.

*Echites grandiflora*\* Roxb. *hart, beng. p. 20.*

Incolit sylvas depressas raontanasque Bengalee orientales, Chittagong, Syttiet, coet Etiam habui e Noakote, NapalUe. *Floret* a mense Februario usque ad finem Aprilis. *Fruttus* maturescunt post integram annum.

Nomen bengalense: *Dhoottra Luia*, propter formam florum, istos *Datura* quodammodo referendum; nomen quod etiam euaveuit Bittqerise a«pene, Colebr. (vid. Roxb. flor.ind, 2. p. 383.)

*Frutex* ramosissimus, praevalte' super arbores volukilis, nunc juxta terrain long6 lat6 que extensus, valde frondosus, trunco rrsso, cortice cinerascete, spongioso. *Baud* longissinii, nutantes, robusti, valde lactescentes, rylindrici, cinerascetes, dumjuniores tomento ferrugineo, copioso, hrevi, mollissimo obtecti, superné obsoleté quadrangulares. *Folia* opposita, interstitiis longiora, pattntia, suhdependoritia, oblonpo-obovata, apice rotundata cum acutnine brevi, angusto; busi parum angu&tata et acutiuscula; undulata, inte^errima, supr^ lucicla, atro-viridia, laevia, subtus pallidiora, opaca, costA crassa, nervisque elevatis, suboppositis, obliquis, ad ti.argines anastomosantibus, albicantibus, puberulis, coeterum glabra, venis ma^uis, interneryoj transversalibus, parallelism approxiroatis; chartacea, sex- ad oetopollicaria, quin, in luxuriantibns nempe ramis, pedalia; *juniora* subtus, juxta vassorum tractus ferruginea. *Petioli terete\**, crassi, semipolUeares ad pollicares, suprd leviter sulcati, aequales, pubescentes, nunc ferruginei. *Stiputo* nulle, nisi corpuscula qaadam glaudulosa, subulata, spbacelata, in omnibus axillis recopdita, quandoque serie simplici trans ramum migrantia. *Cyma magna* terminalis, ovat^, octoad duodecimflora, rarius^subaxillaris foliorum paris supreini; ad basin saepe aucta foliolis aliquot parvis fluralibus lanceolatis, it re ^essilis. *Peduncuti* breves, crassi, articulati, bis terve dichotomi; *pedicelli* pollicares^subconiplaimti, bi- triflori. *Bracteae* magne^ membranaceae, sparse, plerum'que sohtame -ad liivi^uras, subimbricatae, villosae, decidu», ovate, acute, undulate, semipollicareî. e viridi ruiescentes, venis reticulatis, ferrugineis. *Flores* plerumque lerui, hivei, UiiiO [arutu vindescentes, demum flavicantes, admodum fragrantés, quinquepollicare\$. *Caiya*; (fig. 1.) ina^rnus, quinquephyllus. *Sepala* ovato-lanceolata, cuspidato-acuta, undulata, villosa, pallidè viridia vel albicantia, ferrugineo-reticulata, erectiuscula, subimbricantia, bractejs figuna et eolore siinilia. *Qlan~dulce* subulate, minute intrâ singulum sepal um serie regulari ordinatae, basi corollas adpressee. *Corolla* coriacea, crassa, campanuUta, extus pubesceas, intus laevis, oitida, longitudinaliterque nervoso-sulcata, quatuor poliices lon^u, limbo patente, quinquefido, tres poliices emetiente, fauceampl4, nud&perv.&; deorsum sensiiu attenuatabasiquecontracta iu tuiunx viridescentem, semipollicarem, iotus a iilaientoruui basibus decurrentibus costatam, calyce parum breviorém. *Leninite* ovatae, acuta?, (ilaneae, patentes, lateribus subsequilibus, basi parum contractè %stivatione imbricate in conum ventricosum. *Stamina* (fig. 2.) parallela, extra faucem parum prominula, flaccida. *Filamenta* filiformia, carnosa, laevia, alba, leviter compressa, basi tubo intus adnata, stylo parumper breviora, ideoque parum curva, apice leviter incrassata. *Antherce* ovato-sagittate, acuminatè, dorsogibbôsae etcarnosae, stigma occultantes, huicque medio adnatae, corpus formantés ovatum, leviter pentagonum, acutum; utrinque longitudinaliter loculo angusto dehiscentés; lobis posticis longis, subulktis, conniventi-incurvatis, liberis, polline vacuis. *PolUn* pallidè flavesens. *Ovarium* parvum, ovatum, pilosulum, biloculare, polysporum, *ovulis* numerous, insertis placenta interior^ carnosae, septo adnatse; iimmersum et fere occultum *annuo*

*hypogyno* carnosus, convexus, subquinqueiobo, flavescens. *Stylus* (fig. 3.) filiformis, laxis; apice clavatus dilatatusque in *stigma* oblongo carnosius, glutinosus, medio antheras adfigens, apiculi bilobis terminalibus. *Folliculus* (fig. 4.) maximus, oblongus, subcylindricus, obtusus, viridis, demum lutescens, glaber, nunc parum tuberculatus, basi retusus, pedunculo lignoso crasso brevi insidens, pendulus, pedalis, diametro tripollicari, lignoso-coriaceus, plenè maturitate longitudinaliter dehiscens in duos lobos (fig. 5.) sequales, extus convexos, intus planos et parallelos, parum distantes. *Caro* valde erasibus, coriaceo-spongiosus, longitudinaliter lignoso-fibrosus, initio rufescens, demum fuscus. *Lissejmiculum* nil nisi latera interiora utriusque lobi incurva, plana, parallela, crassa, conacea, e basi usque ad apicem longitudinaliter intus placentiferè fissa. *Loculamentum* in siugulo lobo uniuersum, oblongum, tunicè valde nitida, laevi, alba, vestitum. *Receptaculum* (fig. 6.; tenue, membranaceum, sublineare, foraminibus pluribus longiusculis pertusum, retiforme, apicibus affixum plantis gracili, longae, dehiscens demum liberum.—*Semina* (fig. 7, 8.) valde numerosa, densè imbricata, pendula, cuneiformia, pollicaria, angulata, papillosa-rugosa, fusca, r. *phi* longitudinaliter ventrem, percurrente umbilico parum contracto et excavato, comosa. *Membrana* exterior fusca; sub-spongiosa; interior tenuissima, albumini arete applicata. *Coma* dei-sa, longa, sericeo-splendens, setulè minutè, ex umbilico ortè, quasi stipitata, semine ipso duplo longior.—*Albumen* conforme, carnosum, lacteum. *Kubryo* (fig. 10.) niveus, carnosus, lactescens. *Cotyledones* maximae, crassae, oblongae, obtusae, doiso convexiusculo venulosae. *Hudicula* 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 profuseness 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.

## HEMIPHAGMA, Wall in Act. Linn. 13. p. 611.

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

Syst Linn. *Tetrandria Monogynia*, floribus monopetalis, monocarpis, inferis. An potius *Didynamia Angiospermia*?

Ord. Natural. *Sjrophularinae*, Brown.

*Habitus*. Herba gracilis, repens pilosula. *Folia* duplicis indolis; caulina et ramea orbiculato-reniformia, opposita, subsessilia, dentata; alia acerosa, gracillima, conferta

in fasciculos petiolatos. *Flores* solitarii, parvi, rosei, brev6 pedicellati, ebracteati, alterni vel oppositi in axillis foliorum majorum, vel terminates fasciculorum. *Baccae* globosae, ruberrimae, nitidae.

HEMIPHAGMA HETEROPHYLLUM, *Wall. loc.cit.* 612.—TAB. 8.

Planta sat communis in montibus Napaliae, aaxatilis, florens et fructifera toto fere anno, praecipue ab Octobre ad Februarium.

*Caulis* gracillimus, pedalis bipedalisque, prostratus, per distntiam pollitium trium vel quatuor radicans, radiculis simplicibus, pallidis, fibrillosis; obsolete quadrangularis, epidermide fusciscente, secedente. *Rami* pauci versus extreniitatem caulis, teneirimi\* 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, brevissim6 petiolata, unguicularia ad pollicaria, remota, interdum pollices plures distantia, obtusa, acutiuscul6 et lato-dentata, lobis baseos integris, rotundatis; utrinque pilosula, substrinerviale viterque reticulato-venosa, siecitate ferruginea; superiora et ramea ovata, vel suborbiculata, pauca, bracteiformia, illis ter quaterve minora. *Folia alia* subulato-acerosa, bi-vel trilineararia, semiteretia, supra sulcata, pilosula, acuta, laet6 viridia, nitida, sessilia, undique patentia, 20-30-circiter. conferta in *fasciculos* (fig. 1.) ovatos, unguiculares, brev6 petiolatos, patentes, axillares et oppositos foliorum caulinarum, vel terminates. *Petioles* foliorum majorum vix bi-lineares, supra sulcati, pilosuli, lineola elevat6 tenerrima caulem; vel ramum ambientes. *Stipulae* nullae. *Flores* (fig. 2, 3.) parvi, solitarii, axillares foliorum, vel terminates fasciculorum, *pedicello* insidentes brevissimo, villosus, ebracteato. *Calyx* (fig. 4.) subovatus, persistens, dens6 villosus, profund6 quinque-partitus, *laeniis* patentiusculis, linearibus, purpureo-acutis. *Corolla* (fig. 5.) rosea, calyce duplo major, infundibuliformis, glabra; *tubus* obsolete tetragonus, medib ventricosus, flavescens; *limbus* patens, quinque-raro sexfidus, admodum obscur6 bilabiatus, aestivatione imbricatus, *laeniis* ovalibus, obtusis, nunc subretusis, duabussupeioribus parum latioribus *faux* pervia, nuda. *Stamina* quatuor, tequalia, parum supra faucem elevata, medio tubi inserta; *antheris* ovatis, erectis, parum conniventibus, utrinque longitudinaliter dehiscens, nudis. *Pntillum* staminibus parum brevius; *ovarium* (fig. 6, 7.) subrotundum, laev6, *disco hypogyno* exiguo, annulari, flavicante suffultum, biloculare, polysporum, *o^/Z^* 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 corbnata, suffulta calyce patentis\* sirtio, baud aucto, coccinea, laevis, nitida, inscripta lineis gracillimis impressis quatuor, e vertice cruciatim decurrentibus, commissuras valvarum mentientibus, cultro difficilium in totidem valvas partib'.lis, nunquam sponte dehiscens; *tnefnbrana exterior* tenuissima, chartacea; *caro* spongiosa, pallida, basi copiosior, vertice tenuior. *Dissepimentum* incompletum, membranacum, tenuissimum, vertice perforatum hiatu invers6 triangulari, aetate ultra medium baccae deorsum extenso. *Placentae* duae, semilunato-bicornes, spongiosae, convexae, biatui dissepiment! utrinque adnatae, ibique confluentes, medio crassiores, sursum attenuatae, rugosulae. *Semina* numerosa, minuta, pallid6 ferruginea, ovata, sessilia, punctata, mox soluta fundumque baccae utrinque occupantia. *Integumentum* simplex. *Perispermum* carnosum, aqueo-piillidum, tenue, semini conforme. *Embryo* dicotyledoneus. *Radicula* centripetal.

OBSERTATIO.

Plantula elegantissima *Scrophularinis* potius quam *Gentianeis* Juss. adsocianda, ab his discrepans corolla staminibusque, ab illis quoadmodum abluens structure fructu^

An *Solanearum* civis? Nomen imposui a septo incomplete, quasi dimidiato.—*Wall. Lett.*

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

SCHOEPIA FRAGRANS, *Wall, in Roxb Jtor. ind. 2.p. 188. TAB. &*

Foliis lanceolatis, acuminatis; racemis axillaribus, solitariis; ovario triloculari; drupis ovatis, mono-sperma.

Nomen Parbutteanum: *Haloomaphe*.

Crescit in sylvis minus elevatis Napalire, a Bechiaco, usque ad con vail em magnam, ubi satis frequens. Etiam incolit loca magis elevata, septentrionalia. Floret sub pluvii; fructus maturescunt Decembre-Martio.

Arbuscula, *trunco* irregulari, diametrum pollicum tres vel quatuor emetiente, *cortice* crasso, spongioso, molli, rugoso, ex albido flavescente; *ligno* jevi, cinereo. *Rami* teretes, albicantes, leviter flexuosi, uti reliquae partes glaberrimi; *gemmae* copiosae, parvae, squamis constantes numerosis. *Folia* sparsa, approximata, interstitiis pluries longiora, bi-tripollicaria, integerrima, lanceolata, acuminata, basi acuta, lateribus parum ineoqualia, subcarnosa, fragilia, avenia, supra atro-viridia, lucida, subtus pallida, nervia aliquot obsolete, obliquis, capillaribus, ad marginem reticulatis; aetate flavicantia. *Petiolii* trilineares, teretes, supra sulcati, basi articulati, siccitate mox decidui. *Stipulae* nullae. *Florae* (fig. 1,2.) flavae, fragrantissimi, dispositae in racemos simplices, axillares, subsessiles, tenuos, folio dimidio breviores. *Pedunculus*, uti *rachis*, gracilis, teres, medio, basi circumdatus squamulis gemmaceis, nunc parum ultra ascendentibus, bracteolamentientibus crassis, ovatis, subpedicellatis, 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, obsolete, margine angustissimo, integerrimo ovarium coronans. *Corolla* (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 singulorum lacinarum munita fasciculo plurimum succulitorum minuto, erecto, filamentum occultante. *Filamenta* brevissima, erecta, subulata, lacinarum basi, infra acervulos istos pilorum inserta, iisdemque opposita, inde per tubum lineis capillaceis decurrentia. *Anthera* ad faucem corollae erecta, biloculares. *Ovarium* (fig. 5, 6.) carnosum, oblongum, calycibus multo longius, lineas tres emetens, vertice gerens discum carnosum, latum, conicum, obtusum, intra corollae tubum prominulum; triloculare, trisporum. *Ovula* cylindrica, loculis breviora, ex apice axis pendula. *Stylus* filiformis, tubi longitudine. *Stigma* clavatum, 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 corollae? et calycis superioris fere oblitteratis. *Caro* mollis, lineam crassa. *Putamen* (fig. 9.) tenue, chartaceum, oblongum, album, lineis iramerosis, parallelis, longitudinalibus, elevatis, anastomosantibus notatum, uniloculare, monospermum, vertice umbilicatum carni artius adhaerens. *Perispermum* (fig. 10.) amygdalinum, album, putamini conforme, parum rugosum. *Integumentum* simplex, tenue, ferrugineum, spongiosum, ad verticem seminis notatum vestigiis linearibus ovariorum. *Quorum abortivorum et axis ovarii*. *Embryo* (fig. 11,12.) minutus, lacteus, cylindricus, rectum ad verticem perispermum vocatus, iaversus. *Cotyledones* parallelae, ovatae,

obtuse, dorso convexae, dimidium ipsius embryonis emetientes. *Radicula* supera, sub\*  
turbinata, lineam demidiam e superficie perispermi remota. *Plwnula* inconspicua.

## OBSERVATION.

Mons. de Jussieu has justly observed in an excellent memoire chiefly on the families of *Caprifoliaceae* and *Lorantaceae*, inserted in *Annal. du muséum d'histoire naturelle*, 12. p. 300, that this genus is the connecting link between those families, belonging, however, more properly to *Lorantaceae*\*. 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 ovarium 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 ovarium, 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, 1224, 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, *loc cit.*

SPHAEROCARYA, Wall, in *Roxb. flor. ind.* 2.371.

*Calyx* quinquepartitus. *Petala* quinque, minuta, staminibus totidem alternantia. *Squamulce* quinque, fimbriatae, inter stamina laciniatae calycis. *Ovarium* absque ullo disco. *Stylus* indivisus. *Drypa* infera. *Nu&* glabra, suturis destituta.

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

Ordo naturalis: *Rhaninearum* sectio dubia, fructu infero, insuper ablutens embryone inverse.

## SPHAEROCARYA EDULIS, Wall. TAB. 10.

Haud rara in sylvis vallis Napalise montiumque vicinis. *Floret* Aprili, Majo. *Fruct.* Octobre.

Nomen Newarrense *Lushpoo* ; etiam *EaUMurisee*.

Nomen Parbutteum *Bun-Amb*.

Arbor frondosa et umbrata, cortice cinereo. *Ramuli* teretes ; juniores, foliaque tenella oblecta villis longis, sericeis, nitidis, copiosis. *Gemmulae* (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 sexpolliearia, in luxuriantibus ramis usque ad novem-polliearia, decidua, tempore florescentiae germinantia. *Petiolus* vix semi-unguicularis, convexus, supra sulcatus. *Stipulae* nullae. *Racemi* solitarii, subsessiles, terminales vel axillares foliorum supremorum, densi villosi, bi- tripollicares. *Flares*

(fig. 1, *It.*) pauci, bitermi, virides, inodori, parvi et *conapicui*, *pedicellis* insidentes brevibus, clavatis carnosissimis. *Calyx* superus, quinquepartitus, una cum eorum emprescens, persistens *laciniis* (fig. 3, 4.) triangulares, acute, apice villosae, intus glabrae, patentissimae, vix semilineam longae, aestivatione valvatae. *Petalae* quinque, minutae, ovatae, obtusae, laciniis calycinis multo minores, infra fissuras calycis insertae. *Filamenta* quinque, brevissima, erecta, glabra, petalis alternantia, basi laciniarum calycis inserta iisdemque opposita. *Antherae* erectae, biloculares, albidae. *Squamulae* quinque minutissimae, pilis fasciculatis succulentis barbatae, inter filamenta et lacinias insertae. *Ovarium* (fig. 5, 6.) inferum, clavatum, majusculum, nitidum, pubescens, vertice, intra florem, concaviusculum, uniloculare, monosporum. *Ovulum* succulentum, oblongum, erectum, elevatum chorda spirali, carnosum, subdiaphanum, fundo ovarii insertum, perque canalem proprium angustum in cellulam oblongam, propriam ovuli conductam. *Stylus* brevis, cylindricus. *Stigma* convexum, obsolete bilobum. *Drupa* (fig. 7, 8, 9.) pyriformis, pollicis duas et demidium longa, sesquipollicem crassa, epidermide obducta luteo-viridi, tenaci; extremitate superiore rotundata et excavata foveola centrali profunda lacinias calycinas incrassatas, petala filamenta stylumque emarcida occultante; basin versus, attenuata, cuneiformis; unilocularis. *Caro* pallide fuscus, mollis, subglutinosus, tertiam pollicis partem crassus, fibroso-vascularis. *Nux* (fig. 10, 11.) solitaria, magna, globosa, glabra, sine ulla sutura, cavitatem omnino replens eaque firmiter adherens, hinc inde notata foveolis parvis carni arctius adhaerentibus vertice obsolete apiculata, basiparum scabra perforata foraminulo exiguo. *Putamen* cinereum, vix lineam crassum, uniloculare, monospermum. *Perispermum* amygdalinum, album, nuci conforme, usque ad medium perforatum canaliculo obsolete e fundo seminis, prope foraminulum istud putaminis surgente, sursum oblitteratum, vestigium chordae ovuli includente. *Integumentum* simplex, ferrugineum, tenue. *Embryo* albus, oblongus, brevissimus, intra verticem perispermii oblique locatus. *Cotyledones* oblongae parallelae, *Radietula* 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 NAPALENSIS, *Wall* TAB. 11.

Tratiosa, scandens, laevis; *foliis* indivisis, integerrimis, ovato-cordatis, acutis, glaucis, basi subtus petiolisque medio glandulosis; *pedunculis* axillaribus, bi-trifloris, bracteis sparsis, subulatis; foliolis oblongis, alternis quinque angustioribus.

Crescit rarius in sylvis convallis Napalicae ad Pusputnath, Nagarjhoon, etiam montis Chandaghiry. Floret Junio, Augusto. Fructus maturescunt versus finem pluviarum.

Frutex tenuis; ramosa, glaberrima, scandens et volubilis. Cati gracillimus, cortice tectus gryseo. *Hamuli* longi, gracillimi, vix filo emporetico crassiores, pallidi, glauci; tenelli pubescentes. *Folia* petiolata, aeterna, patentia, interstitiis panlo longiora, ovato-cordata, cuspidulato-acuta, integerrima, nunc obsolete crenulata, sinu basos parvo, lobisque rotundatis, mine (basi folii rotundata) fere obsolete, bi-tripollicaria, membranae, laevissima, valde glauca et opaca; pagina superiore interstitiis variegata maculis amplis, albicantibus, inferiore tri- vel quinque-nervi, nervis gradilifilis, in junctionibus foliorum pinnatis, exterioribus brevissimis, parum reticulatae, ad basin costae, utrinque, glandule orbiculatae, sessili, plano-convexae, riridi, lucidae, nunc geminatae, quandoque pluribus

inter nervos vagis. *Petiolusteres, gncilis*, filiformis, supra sulcatus medioque, vel paulo infra, glandulis duabus, parvis, cylindricis, brevibus, alternantibus, approximatis. *Stipules* nullae, nisi cilice axillares, subulate, minute, carnosae, fasciculatae, emarcescentes. *Cirrhii* axillares, solitarii, filiformes, spiraliter torti, indivisi, laeves, nudi, folio sesqui vel duplo longiores. *Pedunculi* axillares uniflori, nunc bi- vel triflori, filiformes, petiolo dimidio breviores, puberuli, bracteosis quibusdam sparsis, subulato-linearibus, emarcescentibus instructi. *Involucrum* nullum. *Flores* (fig. 1, 2.) inter minores, vix ultra pollicem transversura, emetientes, albi, externe dilute viridescentes, inodori. *Perianthium* deceinpartitum, patentirecurvum, fundo convexo, parum prominulo; lacini oblongo-lineares, obtusae, membranaceo-marginatae; alterne angustiores, petaloideae. *Corona* triplex, concolor: exterior setaceo-multiradiata, patentissima, perianthii foliis plus dimidio brevior; media huic proxima, baud vero contigua, plicato-multifida, inflexa, basi urceolata, lobis (fig. 3.) lineari-lanceolatis, versus columnam conniventibus, acutis, propter margines sursum revolutos supra canaliculatis; intima constans annulo obsolete, angusto, integerrimo, puberulo, basin pedicelli ovarii purpurascens cingente. *Columna* perianthio brevior. *Filamenta* subulata, recurvato-patentia. *Antherae*, ovatae, leviter deflexae. *Ovarium* ovato-subglobosum. *Styli* devaricati, filamentis breviores. *Stigmata* clavata. *Bacca* (fig. 4.) sphaerica, nuda, laevis, flava, diametri linearum trium.

## OBSERVATION.

This species comes near to *Passiflora pallida*, Linn., which Sir J. E. Smith has justly observed (Rees's Cyclopaedia, in loco) consists of two different species, namely one described by Plunder 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. coerulea* 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.

*Sfere*, rectius *Sjirdi et Oyiroi*. Kaempf. Amoen. Exot. p. 870. Eiusd. Icon, select, a Banksio edit., p. 3. t. 47.

*Lilium 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.

*Bufbi* ovato-globosi, aggregati, magnitudinis pomi mediocris, vetustuti maximi, constantes squamis pluribus crassis, carnosis, ovatis, truncatis, planiusculis, glabris, subpatulis. *Caulis* strictus, cylindricus, uti tota planta glaberrimus, cylindricus, sulco laterali alternatim interrupto saepius notatus, e basi, diametrum pollicarem ad bipollicarem eoiectiente, aequaliter attenuatus in apicem calami scriptorium ad digitum minimum erassam, quatuor ad septem pedes altus, fructifer adhuc elatior, cavus et inanis, nec septis interstinctus, parietibus duas tresve lineas crassis. *Folia* magna, sparsa, plana, mem-



bifurcata, patula, petiolata, quaedam remotiora, alia approximatioa, ssepe interstitiisplu\* diiplo longiora, lato-ovata, cordata, attenuato-aciiminata, sinu profundo subdecurrente; Idibus latis, rotundatis, distantibus, leviter repanda et undulata, membranaceo-marginulata\* nitida, supra saturate viridia, guttus pallidiora, costis amplis, crassis, albicantis, nervis obliquis, distantibus, venis capillaceis, reticulatis, venula insuper indivisa, submarginali; inferiora maxima! ovipollicaria ad pedalia, longius petiolata, superiora sensim minora, minus profunde cordata, summa tripollicaria, brevissime petiolata, gracilius et longius acuminata basi subrotundata, subintegra. *Petoli* crassi, sulco lato canaliculati, marginibus scindentibus, basi latissima tertiam caulis partem amplectente, infima folia cequant vel superantes, superiores iisdem his terve breviores, summi brevissimi, latissimi, pollicares vel infra, marginati. *Flores* maximifundibuliformi-campanulati, oblique rotundantes, octo ad decem dispositi in racemum amplissimum, terminalem, nudum, pedalem vel sesquipedatam; albi, extus deorsum viridescens, intus rufescentes, fragrantis; *Pili* viridescens, digitum medium fere crassus, tricostatus, obtuse triangularis, basi retus inaequaliter 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 linquentibus angustum, semilunare, utraque extremitate ascendens; praeterea bracteola interna, alba, linearifiliformis, ascendens, pollicem longa, supra basin singuli pedunculi inserta.—*Petala* (fig. 3.) oblongo-spathulata, inferiore dimidii parte valde crassa, vix lineas quatuor lata, exteriore dilatata in laminam lanceolatam, acutiusculam, minutim striatam, intus ad marginem apunctis minutis densissimis rufescentem; basi subtus gibboso-convexa, superius foveolata, melliferis leviter excavata, pagina superiore sulco exarata longitudinali, exteriorum obliterate; marginibus nunc parum inaequalibus; *tria exteriora* parum latiora, dorso convexo foveolata; *interiora tria* costata, elevata utrinque sulco exculpta profundo marginibus petalorum exteriorum recipiente. *Stamina* parallela, recta, conniventia supra faucem floris vix exserta, limbo parum breviora, longitudine parum inaequalia. *Filamenta* alba, cartiosa, plana, petalorum basi inserta, sulcibus inferiorum incumbentia, cunisque illis canaliculam formantia nectariferam, apice teretia. *Antherae* oblongae, obfuscae, pallide flavae, rectae, leviter versatiles. *Ovarium* (fig. 4.) oblongum, obtuse trianguliforme, liriosis sex notatis, nitidum, sesquipedale, trilobum, *ovulis* orbiculato-planis, fere absque numero placentae, in singulo loculo bijugis, duplici serie parallelis insertis. *Stylus* crassus, rectus filamentorum longitudine, infra stigma leviter incrassatus. *Stigma* primitivo-trilobum, obtusum, vertice triangulari, scabro, mucoso. *Capsula* (fig. 5.) ovato-prismatica, angulis obtusis, retusa cum cuspidula, lateribus concaveusculis, basi clavata, pollices duos et dimidium longa, duos lata, fusca, glabra, coriacea; *valvula* margine incrassatae, introrsum pectinate serie simplici ciliarum longissimarum, angustissimarum. *Semina* (fig. 6.) innubera, levissima et tenuissima, triangularia, oblique obovata, membranacea, tenuissima marginata, basi angustata et retusa, semipollicaria. *Coetera* ut in *Lilio bulbifero*; Gaert. carp. 2. p. 16. t. 03.

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 Hon. 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 it 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 We 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 Linneus'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.

### HOLBOELLIA, Wall

*Mores* monoid. *Perianthium hexajthyuum; foliis duplici serie, ordine ternario, alternatim dispositis. Masculi: Stamina sex parallel a, distincta; anthris ndn&tis, extrorsis. Glandulce sex ovatae, filamentorum basibus oppositae, isdeiiqtie adnatas. Mudimenta 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 pauciore% divaricate, oblongae, carnosae, sessilis, corticatae, folliculares, intus longitudinaliter dehiscentes, uniloculares, polysperme. Semina nidulantia, oblongo-ovata v. reniformia; perispermo copioso; cm\* bryone minuto, radicula in/era vel centrifuga\**

Classis Linneana: *Monoevia hexandria.*

Ordo naturalis: *Menispermete ver&f.ab* hisce tamen nonnihil abluens directione radice, *infera* vel centrifuga. A generibus tribus, sectionem harum foliis compositis insignitam constituentibus, distinguitur sequentibus; A *Lardizahala* Ruiz et Pavon, floribus hexaphyllis, staminibus liberis, stigmatibus sulcatis, evfnidis, baccis follicularibus\* unilocularibus, pulp& polysperms. A *Stauntonia*, De Candolle, differt staminibus baud coalitis nee aristatis; a *Bursaia*, du Petit Thouars absentid corollas (perianthii nempe foliola in nostris plantis uniformia, petaloidea vel sepaloidea) filamentorum basibus distinctis, et fructus fabriced baud drupace^ nee monospermd\* Abludit praeterea floribus mono%cis, qui in illis dioici vel polygami. Habitus generalis *Lardizabake biternata?* (in Itinere Perousii, tab. 6, 7, et 8 optimè delineate) migis adhuc, quoad folia, *Stauntonice* accedens.

Habitus: *Frutices* magn&, extensS voiubiles, gemmifereae, glaberrim&< *Folia uU term*, peltatim digitate, foliis integerrimis, coriaceis, trinerviis, petiolis omnibus utra\* que extremitate intumescens et articulatis. *Racemi* fasciculati, subcorymbosi, nudi, laxi, axillares vel ad basin ramulorum, pauciflori. *Flares* albi, extus parum purpurescentes, fragrantis\* *Bacca* magne, tumidse, purpureae, abortione saepius tribus pauciores, esculentae. Genus <onsecratim amico et praeceptoris carissimo, Frederico Ludovico Holboel, Horti Botanici Regii Hafniensis hortulano dexterrimo, botanico peritissimo, operi Hornemanni *Flora Danice Oeconomica* nuncupate aliisque contributor^ quique hortum Calcuttae ditavit thesauris seminum frequentibus, amplissimis, omniumque fertilissimis.

## HOLBOELLIA LATIFOLIA, Wall. TAB. 16.

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

Parbutt. *Gooplea*; *Baegul*

Frequens in sylvis montanis- Napalise, Cheesapany, Chandaghira, Sheopore, coet. Florens Martio-Majo. Fruct. Octobre.

*Frutex* ampla, ramosa, valde volubilis, omnibus partibus glaberrima, surgens e radice lignosa, ramosissimè. Caulis cylindricus, valde tortuosus, frequenter diametrum pollicum triuni ad quinque metiens, cortice crasso, suberoso, molli, cinereo vel flavicante, ligno cinerascente, radiato, paroso, levi. *Rami* longissimi, teretes, cinerei; juniores flagelliformes, giavici, subcirrhati. *Gemmae* magnae, ovatae, squamis obtectae: coriaceis, iatopvatis, cuspidato-acutis, diutius persistentibus et ramorum novellorum basin ambientibus. *Folia* patentia, petiolota, remotiuscula, peltatim digitala, ternata vel quinata, palmaria. *Petioles* gractes, teretes, supra plani, basi apiceque articulati et oblongo-intumescens, triquadripollicares; *partiales* illis sinuati, sed gracilioribus et brevioribus, pollicares ad bipollicares, intermedio longiore, duntaxat tribus plures laterales longitudine decrescentes, utrinque articulo-incrassati, verticillatim patentissimi. *Foliola* tria vel quinque, ovalia, acuta, rarius acuminata, nunc rotundato-acutiuscula, basi rotundata; integerrima, leviter complicata, apicem versus parumper recurvata, firmiter et coriaceae, laevissima, siccitate flavicantia, ad quinque pollicaria, quin majora, supra viridia, lucida, ad vasorum tractus leviter sulcata, basi, ad utrumque latus insertionis petioluli, notati tuberculo minuto, oblongo, glanduliformi; subtus opaca, pallida, subglabrescentia, trinervia, costa gracili elevata, nervis lateralibus in arcibus anastomosantibus, submarginales delitescens; pneterea nervi e costalateraliter progrediuntur subtransversales, breves, remotiusculi, alternantes; vense reticulate capillares. *Stipulae* nullae. *Flores* subcampanulati, nutantes, albi, semipellicem longi, valde fragrantis, dispositi in racemos simplicibus, fasciculatos, subcorymbosos, laxos, axillares, vel circum basin novellorum ramorum subsparso; petiolis breviores. *Aestivatio* valvata.—*Pedunculi* graciles, subcomplanati; *communis* pollicaris, bipollicarisve, basi saepius squamis gemmaceis aliquot circumdatus; *partiales* filiformes, subclavati, pollicares, basi articulati suffulti bracteoidi lineari, membranaceo, patula, mox decidua. *Masculi* (fig. 1, 2.) in distinctis racemis. *Foliola perianthii* parum carnosa, oblonga, exteriora obtusiuscula, interiora paullo angustiora, introrsum hamoso-acuta. *Stamina* (fig. 4, 5.) distincta, parallela, recta, contigua, oequalia, perianth in parum breviora, subclavata *vilamepta* subulata, carnosa, apice ab anthera denudata, basi extus glandula carnosa, sessili, planda, ovata, adnata; *anthera* lineares, albae, loculis angustis, remotis, filamentum dimidiae superiori parti longitudinaliter adnatis, extrorsum dehiscentibus. *Rudimenta* (fig. 3.) pistillorum tria, subulata, carnosa, intra stamina, hiscedimidio breviora. *Flores foemineae* (fig. 6, 7.) masculis parum breviores, foliolis paullo latioribus. *Pistilla* (fig. 8, 9, 10.) tria in centra floris, parallela, apicem versus leviter divergenti-recurvata. *Ovaria* oblongo-cylindrica, attenuata, foliolis perianthii interioribus opposita; intus obsolete sulcata facileque juxta longitudinem in duas valvas divisibilis, unilocularia, polyspora: ovulis parietibus undique, r. illo sulculo isto, adnatis. *Stylus* nullus, nisi apices o variorum. *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. *Bacca* (fig. 12, 13.) sessilis, nunc tres, divaricate, raro solitariae, ipici dilatatae pedunculi lignosi, parum elongati, penduli inserti, ovato-oblongi utrinque obtusi atque rotundati, pollicem longi, sesquipollicem crassi, atropurpurei, nitidae, tumidae et torosae, superficie nempe inaequali et undulata, nunc parum senulosae, latere interno inscriptae suturalongitudinali, undulata, crassiuscula, juxtaque earn plenè maturitate, a basi usque ad apicem deluscentes in valvas duas squales, folliculares, crassas; uniloculares, polyspermae. *Cortex* cariosus, tres lineas crassus, intus obtect-

tus euticulâ tenui, e granis crustaceis vel subosseis conflatâ, a carne facite separabili. *Caro* alba, mollissima, spongioso-reticulata, ab axi cylindrical solidâ, carnosa, usque ad peripheriam divisa in cellulas concentricas, horizontales, alternas, seriebus sex ad octo sibiinviceinimpositas, approximatas, septis tenuissimis, pulposis separatas, monospermas. *Semina* (fig. 14, 15, 16, 17.) valde copiosa, numero cellularum correspondentia, horizontal, centrifuga, oblonga vel rhomboidea, laevissima, atra, lucida, unguemlonga! ad basin latiusculam, rotundatam inscripta *rimâ umbilicali* lineari; apice paulo angustiora; lateribus planiusculis, margine altero convexiore, altero angustiore. *Testa* coriacea secus dorsum sceminis paulo crassior. *Integumentum interim: pellicula* tenuis, fusca! albumini aretê applicata. *Albumen* amygdalino-carnosum, album, semini conforme, extremitate umbilicali, distantia minutâ ab ipsa peripheria, exsculptum cavitate exigua, mucilaginosâ, embryoniferâ. *Embryo* brevissimus, vix lineam longus, trochleari-oblongus, niveus. *Cotyledones* duae, ovatae, obtusae, contiguae. *Radicula*, cylindrica, dimidiam embryonis longitudinem efficiens, *in/era*.

## HOLBOELLIA ANGUSTIFOLIA, WaU. TAB. 17.

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

Nomina vernacula, statio, tempus florendi, fructuumque maturatio eadem ac p̄scedentis.

Habitus omnino prioris, sed statura gracilior et minor. Tota glabra. /Saint perquam longi, viminei, valde tortuosi et volubiles, nunc radicanes. *Folia* longius petiolata quam in ilia specie; *petioli communes* foliofis saepe sesqui ad duplo longiores, supra sulcati; novella rubiounda. *Foliola* septem ad novem, in formam ovato-orbiculatam, peltatam, verticillatim patentia, lineari-lanceolata, attenuata et subacuminata, cuspidata, basi rotundata, paruniper repanda, integerrima, laevissima, lucida, coriacea, sed minus firma quam en altera specie, tripouicaria ad sexpollicaria; intermedium longius, petiolo partiali gracili, pollicari suffultum; lateralia utrinque decrescentia, breviusquepetiolata; 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. *Pedunculi* axillares, lateralesque, subfasciculati, bi- triflori, teretes, laeves, petiolis bis terve, quin pluries breviores; fructieeri valde elongati, laxi. *Fhres* (fig. 1—6.) albi, extus parum purpurascetes, suaveolentea, structurâ omnino priori aemuli; *pedicelU* ad basin bracteolâ lineari, patul^ suffulti, *Bacta* (fig. 7.) saepessime duae, oblongo-cylindricaa, pollicem crassae, tres longse, undulate, nitidae, purpureae, latere interiore debiscentes. *Semina* (fig. 8, 9.) ovato- reniformia, minora quam in priori specie; *embryo* (fig. 10.) in altera perispermi extremitate locatus, centrifugus.

## OBSERTATION.

These two shrubs are easily distinguished from each othef. 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 common petiol; 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 *Raianite*, *quinata* and *hexaphylla* (Flor. japon. p. 148 et 140) possibly belong to this genus?

### ARUM NEPENTHOIDES, Wall TAB. 117.

Caulescens, erectum, laeve, dioicum, vaginis petiolisque variegatis; *foliis* binis, peltatim quinatis, *foliolis* lauceolatis, acuminatis; *spatha* terminali, pedunculate, limbo trilobo: *lobis* lateralibus reniformibus, horizontalibus, intermedio acuto, fornicato; *elavH* spadicis obtusissimam nudi, vix exserta, basi truncato-retusa; *staminibus pistillisque sterilibus* nullis.

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

*Tuber* depresso-orbiculatum, carnosum, fuscum, undulatum, laeve, intus rufescens, vertice comosum radice longis, crassis, teretibus, pallide rubris, parum fibrillosis. *Caulis* erectus, carnosus, teres, bis usque ad quadri-pedalis, laevis, nitidus, basi pollicem ad duos crassus, *vaginis* aliquot indutus reinotis, alternantibus, oblongis, arete adpressis, obtusissimis, hinc fissis, infimis brevissimis; medio diphyllus, supernè gracilior, nudus, florifer, penne cygnet vix crassior; totus variegatus maculis parum elevatis, scabriusculis, trans versalibus et subannularibus, lateribusque striisque hinc 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, dorso ad apicem ad spithamaea, inferiora duo hinc gibbosiore; membranacea, laevissima, supra atroviridia, nitida, subtus glauca, costa elevata, nervisque gracilibus, remotis, alternantibus. *Petiolus* teres, laevis, attenuatus, foliolis duplo longior, striis violaceis medio confluentibus annulatus, basi sud, pennam cygneam crassam, infra apicem vaginae (fig. 2.) in ligulam, brevissimam, obtusissimam productam insertis. *Spatha* (fig. 1.) solitaria, terminalis, apice caulis spithamaei pedunculi in modum elevata, laevis, erecta, sex ad octo pollices longa, extus ex albo viridiuscula, pulcherrime picta; intus emaculata, fuscescens: subnervia et subavenia; dimidia inferior pars convoluta in cylindrum pollicem crassum, ornatum striis brevibus, violaceis, numerosissimis, geminatis, longitudinaliter seriatis; *limbos* patens, trilobus: *lobi* laterales orbiculato-reniformes, horizontaliter patentissimi, obtusissimi, sesquipollicares, supra convexi, fusciscentes, radiatim punctati, subtus concavi, albicantes, parallelè venulosi; *intermedius* triplo major, recte ascendens, ovatus, fornicatus, apice leviter decurvus, subacuminatus, marginibus vix repandis, baseos parum contracti lateribus recurvatis, sensimque in lobos istos laterales auriculiformes abeuntibus, dorso convexo, inscriptus lineis quinque albicantibus; latiusculis, parallelis, minimè elevatis. *Spadix* erecta, laevis, tubo spathae parum longior, apiceque leviter supra faucem elevata, dioica; mascula foeniine parum gracilior, et unacum spatha brevior; pars dimidia inferior teres, e basi ultra medium dense staminifera vel pistillifera; coeterum nuda, absque genitalibus sterilibus, uliisve appendicibus, teres, gracilis, violaceo-punctata; pars dimidia superior, *seu clava*, cuneiformi-cylindrica, alba, punctulata, laevis, obtusissima, intus spongioso-fibrosa, medio contracta, basi iterum parum dilatata, subtruncata et retusa. *Filamenta* vix numerosa, distincta, brevissima, subconica, seriebus quinque vel sex spiraliter ordinata, apice gerentia *antheras* tres vel quatuor verticillatas, nudas, globosas, uniloculares, vertice dehiscentes rimae brevi transverse; illae staminum superiorum sunt majores, violaceae, subreniformes: inferiorum vero minores, ciliis emarcescentes, flavicantes, globosae: omnes tamen pollinifera. *Ovaria* (fig. 3, 4, 5, 6.) in distincto spadice, ovato-subrotunda, numerosissima, seriebus circiter duodecim dense iuibricata, unilocularia, vertice purpurascens, continentia *ovula*

qttedana erecta. *Stylus* brevissimus, columnaris, purpureus. *Stigma* orbiculato-reniforine, subpeltatum, cinerascens, pubescens. *Bacca?* (fig. 7, 8, 9, 10, et Tab. 20. fig. 6.) obovate, laeves, carnosae, coccineae, nitidae, vertice leviter retusae notatae rudimento subulato, uinuto, sphacelato styli, deorsum a pressure mutua paruni angulares, uniloculares, di- ad tetraspernae, epidermide tenuissimâ obiectae, lineas octo longae, super axin spongiosam, foveolatam, crassam, densè imbricatè in strobilum cylindrico-oblonguni, obtusum, quiuque ad sex pollices longui, duos fere crassum. *Caro* mollis, tenuis, pallida, excavata loculo amplo, laevi, aequali. *Semina* (fig. 11.) subglobosa, magnitudine grani piperis nigri, angulo nno alterove notata, dorso convexiora et subgibbosa, vertice mucrone exiguâ ab angulis confluentibus, basi que hilo crassiusculo munita, erecta, laevia, nitida, cinerea, *suffulta funiculis* brevibus, caraosis, e fuodo loculi ortis, uuo altero demum parietalibus. *Integumentuni* coriaceum, crassiusculum, intus auctum membranâ purpurascente, mucoso-carnosâ, tenuissimâ, versus hilum paruni incrassatâ. *Perispermum* (fig. 12. et Tab. 20. fig. 7, 8.) crassum, sub-carneum, album, figurâ seminis; pars peripherica, seinilineam crassa, fabricâ molliori, et colore e viridi cyaneo distincta; basi leviter retusum, vertice poro minuto, convexiusculo perforatum. *Embryo* cylindricus, rectus, vel leviter arcuatus, lacteus, totam axin perispermii, salvâ infimâ ejus parte, occupans; extremitas superior (radialis?; 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 renotata, obtusiuscula. Interstitium inter duas extremitates parum contractum, supra mediutatem lateraliter fissum rimâ (Tab. 20. fig. 10.) brevi, longitudinali, introrsum et sursum in *cavitatem gemmiferam* embryonis parvulam, centralem, perviâ. *Gemmula* (Tab. 20. fig. 11.) admodum minuta, conica, cavitate propriâ suâ inclusa, pendula, basi nerape latâ substantiae ipsâ cotyledoneae sensu accretâ, apice liberâ, directione obliqua versus rimam externam descendente, centrifuga.

## OBSERVATION:

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 Hafflesiana* 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 *Aroidete*, and by the late Mr. Richard in the whole class of *Endorrhizof* (*Monocotyledones*), was first promulgated by the former in his Prodr. flor. nov. holland. 1. p. 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 monograph on Roioa, while I was in Nipal, and to whom I take this opportunity of presenting my warmest thanks.

I ever have 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 *Aram speciosum*, Tab. 20. fig. 6, 7, 8, 9, JO, and 11. instead of Tab. 16; a circumstance, which the reader is requested to bear in mind.

AttUM COSTATUM, Wall. TAB. 19.

Acaule, laeve, dioicum ; folio solitario, teraato, foliolis semicordato-ovatis, valde acuminatis, undulatis, sessilibus, subtus nervis numerosis, parallelis, elevatis, approximatis, anastomosantibus; scapo petioli dimidium vix aequante ; spathâ cylindrareo convolute, striatâ, intus carinata, faucein appendiculatâ, limbo integro, ovato, formier to, acumine tereti, brevi, filiformi; clavâ spadiceis basi subtruncatâ, apice longissimâ, flagelliformi, descendente, spathâ fere triplo longiori.

Habkat et floret cum priore.

*Tuber* magnum, orbiculatum, parum depressum, ennosum, fuscescens, comosum, opiosum, teretibus, crassis, dilutè rufescentibus, subnudis. *Folium* unicum radicale, erectum, ternatum, amplum, uti omnes plantae partes laeve, circumscriptione trilobo-cordatum, diametrum sesquipedalem emetiens, sinu baseos profundo, lobisque fere contiguus. *Petioles* crassus, carnosus, pallidè virens, striatum lineis plurimis, parallelis, roseis, pallidis, bipedalis, basi uacuni scapo, quern sulco satis profundo, subligulato amplectit, sesquipollicem crassus, vaginatus, supernè nudus, hinc exsculptus sulco leti, margiibus obtuso, sursum attenuatus. *Vagina* duae vel tres, membranaceae, striatae, ex albo rufescentes, alternae; infima brevis, adpressa, acutiuscula; reliquae laxè ampler antes, lanceolutes, attenuato-acuminatæ, erectae, sursum liberse et leviter convolute: sunnua et iitnua, longissima, scapum excedens. *Foliola* sessilia, purpureo-marginata, undulata, in acumen lineare, fere hipoilicare desinentia, coriacea, pedalia, supra atroviridia, lucida, subtus piftidita costae basi crassissimâ extrorsum valde attenuate, nervisque innumeris, perquam approximatis, parallelis, obliquis, elevatis, parum ramosis et anastomosantibus, versus marginem arcuatis, venulaeque gracili connexis; *intermedium* ovato-ellipticum, basi attenuatum, costaque robustâ quasi petiolatum; *lateralia* patentissima, illo parum angustiora, nemi-cordata, latere interno baseos valde obliquo, subexciso, externo producto in lobum magnum, rotundatum, quadripollicarem, lobo folioli oppositi fere contiguum. *Siajms*-petiolo dimidio brevior, basi sexpollicari ab hujus parte inferiore amplexus, erectus vel obliquus, nunc subrecurvus, teres, digitum minimum crassus, apicem incrassatam versus purpurascens. *Inflorescentia* tenninalis, erecta, inodora, dioica, speciosa; inascula (fig. 1.) minor, gracilior. *Spatha* atropurpurea, extus ornata striis albis, parallelis, latis, versus apicem limbi anastomosi duplici, ab invicem parum distanti, connexis, intus costata carinis totidem angustis, attenuatis; *tubus* cylindrareo-convolutus, tripollicaris; *faux* ampla, parum obliqua, nuda, margine leviter revoluta ; *limbus* integer, ovatus, ascendens, fornicatus, apice nutans, acuta, terminata processu, vel acumine filiformi, tereti, descendente, pollicari, concolore; in mascula limbus, una cum processu isto obliquè adscendit. *Spadix* gracilis, basi inclusa, hipollicaris, teres purpurea, et maxima 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, obliquè descendens, concolor, processum spathae

longe excedens, pedale et ultra; in spadice *masculâ* (fig. 2.) basi vix incrassata, flagello quadripollicari. *Mascula*: *Jilamenta* sparsa, distantia, teretia, brevia, carnosa, terminata verticilloantherarum quinque vet sex reniformium, lutearum.—*Jbenitnot* (fig. 4) : *otaria* (fig. 5, 6, 7.) densissimè imbricata, laevia, ovata, oligospora; *stigmata* subsessilia, subtruncate.

## 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, Wail. TAB. 20.

Acaule, laeve, dioicum; *radice* repente; folio solitario, ternato, ovato-cordatis, repandis, acuminatis, petiolatis distanter nervosis, *petiolo* variegato; *scapo* brevissimo; *spatha* striatâ, ecostatâ, basi cylindræo-convolutâ. fauce nudâ, *limbo* lato-ovato, integro, fornicato, in acumen linearè, longum attenuato; *clava*, cuneatâ, apice filiformi, spathe dimidiè longiore.

Habitat in monte Sheopore. Florens sub phiviis.

*Radix* crassa, carnosa, repens, quatuor ad sex pollices longa, diametro bipollicari, squamis multis lanccolatis, membranaceis, aridis, ferrugineis oblecta, e latere inferiorè demittens longas, teretes, albicantes, ramulosas. *Folium* unicum, radicale, erectum, uti omnes partes laeve, circumscriptione trilobo-cordatum, lobis distantibus, pedale. *Petiolus* crassus, teres, carnosus, bipedalis, zonis plurimis, parallelis, radiatis, purpureis annulatus, basi tubulosâ scapum fere totum involvente, ostio obliquo, nudo. *Vagina* duse, 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, Yepanda, vix undulata, coriacea, petiolis partialibus suffulta pollicaribus, crassis, sulcatis, submarginatis; pagina superiore lucidâ, inferiore pallidâ, costâ mediocri, nervis remotis, gracilibus, parallelis. versus marginem arcuatim anastomosantibus; tenuissimè et reticulatim veïosa; lateralibus vix minoribus, semicordatis, lobis rotundatis. *Scapus* teres, erectus, albus, petiolo quater brevior, ejusque basi vaginalis; apice tripollicari exsertus, purpurascens, supernè vix dilatatus. *Injtorescentia* leviter nutans, dioica, inodora, speciosissima, purpurea, basi intus albicans, absque costis vel carinis, striis ornata usque ad apicem fere parallelè decurrentibus; *maxillæ* minor. *Tuberculum convolutum*, cylindricum, quatuor pollices longum, diametro sesquipollicari, intus albicans, extus strus rufescentibus notatus; *faux* pervia, nuda; *limbus* maximus, integer, ascendens, ovatus, sobornicatus, pedalis, palmam latus, basi intus pallidus, supernè striatus, venulosus, apice nutante attenuatus in acumen gracillimum, linearè, tripollicare, versus tubum incurvum, atropurpureum. Tota *spadix* (fig. 1.) basis oblecta organo fructificationis, absque appendicibus; *clava* digitorum fere crassa, cuneata, semi-inclusa, flava, attenuata in flagellum descendens, teres, gracile, decempollicare, purpureum, undulatum, limbo spathæ dimidiè creter longius. *laevigata*: *Jilame* longiusculis, teretibus, sparsis, approximatis; antheris precedentibus. *Foenicea* (fig. 1, 3, 4.) priwis.



## OBSERVATION.

A very superb plant, belonging to the less frequent productions of Nipal. Like bolli the preceding species it inhabits dark and shady parts of the high mountain of Sheopore, and has hitherto resisted my endeavours to make it survive a hot season in Bengal. Fig. 0, 7, 8, and 9 belong to *Arum nepenthoides*.

## CINCHONA GfcATISSIMA, Watt. frAB. 21.

*Foliis* ovato-oblongis, acuminatis, subtus ad nervos villosis; *panicula* terminali, mill\* *Mork*; *calyce* villosa, *laciniis* longis, linearibus, deciduis; *corolla* glabra, *tubo* longiusculo, cylindraceo, *lobis* subrotundis, concavis. Wall, in Roxb. flor. ind. 2. p. 154.

Crescit copiosè in rupibus subnudis Nag-Urjoon, aliisque montibus minoribus Napa\* liae; eliaro ad Bechiako et Koolakan, florens toto fere anno\* Eliam habui e montibus Pundooa, Sylhet vicinis, ubi floret Septembre.

Nomea Newarrensè et Parbutteum *Toongnusi*. Bengalense *Usookooli*.

Arbuscula ramosa, sedecimipedalis, *truncò* aequali, dianietfuñ sexpollicarem attingente, oblecto *cortice* tenui, fusco, scabro. *IAgnum* compactum, pallidum, albidum. *liamuli* oppositi, cinefei> calloso-punctati; juniores rufescentes, puberuli. *Folia* opposita, patentia, approximata, acuminata, ovato-oblonga, basi acuta, marginibus subundulata, ciliata, coriacea, quadri-adsexpollicaria, giaberrima, suprdlucida, subtus pallida ctopaca, cosld elevatd, nervisque villosis, obliquis, parallelis, approximatis, ad axillas acervulo pilorum munitis. *Petioles* teretes, pubescentes, pollicares vel sesquipollrcaves nunc rufescentes. *S\**<p</>lanceolatae, canaliculato-acuminatae, lineas quinque longae, glabrae, valde deciduae. *Partfcw/aterminalis*, sessilis, ovato-rotunda, folia superiora longitudine subaequans; *rami* decussati, incano et densè villosi. *Bractea* infra divisuras adque basin p< dicellorum oppositae, lineares, longae, caduca3. *Flores* (fig. 1, 2.) magni, speciosi, rosei, ternati, fragrantés. *Calyx* villosus, *pedicello* brevi, subcarnoso insidens, divisus in *huinias* (fig. 3.) quinque lineares, erectas, aculas, subinaequales, nunc inasquilateras, coloraias, basi leviter angustatas et subarliculatas, caducas, villosas, intus glabras, sex- ad duodecim lineas longas. *Corolla* (fig. 4.) glabra, calyce duplo longior, subcarnosa; *tubus* cylindricus, gracilis, sursum parum ainpliatu3, *fau.* pervia, nuda; *limbus* patens, tubo dimidi6 brevior, *ladniis* subrotundis, concavis, obtusis, crenulatis, basi subcordato-retusis, *Filamenta* brevissima, infra faucem; *anthers* lanceolatae, vix exsertse. *Ovarium* (fig. 5, 6.) oblongo-cuncatum, carnosum, villosum, biloculare; *ovula* super *placentam* soptalem, car. sosam dens^ imbricata; *stylus* filifonnis; *stigma* clavatum, carnosum\*, divisum in lobos duos, lanceolatos, margino revolutos. *Capsula* (fig. 7, 8.) oblongo-clavata, parum villosa, fusca, lineas octo longa, leviter compressa, apice truncata notata vestigio insertionis calycis, bilocularis, inscripta sulcis oppositis duobus, juxtaque hos usque ad basin acutam dehiscens in locula duo; *membrana exterior* carnosae, demum coriacea; *interior* chartacea. *Dissepimentum* parallelum, planum» constans membrana internautriusqueloculorum inflexa, maturitate ab apice usque ad basin in duas partes divisum, apice ostiorotundato excisum. *Placenta* lineari-oblonga, foveolata, demum libera; *locula* (fig. 9, 10.) fissura interna ab ostio dissepimenti ad basin usque longitudinaliter dehiscencia, ideoque quasi bivalvia. *Semina* (fig. 11, 12.) copiosa, minuta, cuneata, adscendentia, densè imbricata, ferruginea, rugosaet scabra, apicem obtusam versus membranula venosa, angustA, crenulat4, inaequali cincta.

## OBSERVATION.

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 cròws Sometimes to a iriuch greater size than that, mentioned, above\* which is the one I have observed it to attain. The ovary and half ripe 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 dissepimento, to tiirn further inwards, penetrating almost through the fleshly 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. toe. dt. p. US.*

(*Calyx* adnatus\* quinquedentatus-. *Corolla* infundibuliformis, limbo\* quinquefidò. *Filamenta* brevissima, glabra, infra faucem adfixa; *antherice* exsertise, limbo breviores *Capsula* nuda, bilocularis, bivalvis, dissepimento ventrali contrario, demum biparlito. *Semina* platia, cincta membranA reticulata (unde'nomen), imbricata super placentam, septi commissure adnatam, demum liberam.

Classis Linnearia : *Pentandria monogynia*, sectio floribus tnonopetalis superis, cap\* sulaque biloculari, bivalvi.

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

*Habitus* Arborea excelsse, umbrose, ramulis compressis, foliis oppositis, coriaceis, stipulis glanduloso-ciliatis. *Plotes* incoilspicui, pubestichtest virides, densi, fasciculate in paniculam digesti tfermilalèm, vel in racemoc cylindricos, pedunculafos, dxillares tevtninalesve, sirtipfice3 yel parc6 ramosos. *Pedunculus* communis ^pice gerens *bracteaefH* aridam venosam lanceolatam, longe pedunculatam convexam. *Affinitas* praecipua *Jifacrocnoemo*, *Mussaendte*, *Cinchona?* atque *Exostemmati*. Differt a pflimo horum ge^ nerum slaminiibus glabris seminibusque alaiis J ii sefcuindo fructus structure et consislen- ti&; utroque vero approximatur folio bracteaive ilia singulari florali, in eo tamen abluden- le, quod ex apice pedunculi communis, nee ut in illis e basi ipsius calycis, prodeat. A posterioribus duobus generibus distinguitur capsula nuda haud bipartibili, dissepiAen- toque contrario, juxta axin in duas partes aequales dirumpente, valvulis adnatas. *Semina* insuper majora et eorum ala basi bifida; figura tandem corollà magis *Cinchona*^ *antheris* exsertis *Exoslemmaticognatum*. *Wall. Lètt.*

### UVMENOnICTYON FLACGIDUM, *Wall. I. dtp. 152. TAB. 22.*

Foliis elliptico-ovatis, suprd glabris, nitidiS; stipulis oblongis^ spathulatis; racemis axillaribus, gracilibus, laxis; capsulis oblongis.

Observavi ad desoensum septentrionalem montis Sheopore, versus basin, id sylvis densissimis, floribils capsulisque preecedentis anni vacuis onustum mense Junio. Etiam ha« bui e Noakote, eadem mense florentem.

Arbor mediocris^ umbrosa, cortice cinereo, glabriusculo. *Rami* patuli; superiores bi- vel trichdtomi, glabri; tenelli leviter compressi, basi circumdati squamulis aliquot gemmaceis, ovatis, concavis, brunneis. *Folia* Valde copiosa, versus apices ramoruiri approxiinata, patentia, ovato-elliptica, acuminata, basi attenuato-acuta, coriatea, sex- ad decempollicaria, parum undulata, glabra, nitida, juxta nervos leviter sulcata, subtus pallida, opaca, costA nervisque obliquis, eleVatis\* patallelis, pubescentibus^ ad axillas faveolatis puberulisque; reticulato-venulosa. *Petiolum* teres, crassus, glaber vel puberulus, pollicaris, apice una cum basi costce rufescente. *Stipulat* oblongee, spathulatae, obtus«, glabra, membranace©, subpetiolares, unguiculares ad pollicares, em'arcescentes, deciduse, basi parum contract®, capillaceo-venulosse, denticulis sphacelatis ciliatisc, intra basin et in axillis petiolorum

glandulis subulatis, minulis, atris, serie simplici dispositis. *Racemi* flaccidi, penduli; axillares, solitarii, foliorum circiter longitudine, graciles, cylindrici, densè obsitibus (fig. 1) approximatis, fasciculatis, ternatis vel quinatis, viridibus, pubescentibus, inodoris. *Pedunculus communis* pubescens, bipollicaris, apice instructus bractea 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* brevissimi; singuli bracteolâ minutâ, lineari. *Calycis lacinae* (fig. 2.) brevissimae, lineares. *Corolla* tubus (fig. 3.) calycis laciniis duplo longior, gracilis, villosa; limbus subplicatus, campanulatus: laciniis lanceolatis, acutis, basi membranulâ tenuissimâ unitis. *Stamina* infra fauceni 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 placeam carnosam, septalem densè imbricata; stylus capillaceus, glaber, corollâ 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 baud vidi.

## OBSERVATION.

This species comes near to my *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 pyramidalis, ore truncate, quadridentato, dentibus compressis, ciliatis; persistentibus, interstitiis nudis. *Corolla* tetrapatala. *Stamina* octo; *antherae* simplices, rectae, nudeae. *Ovarium* semiadnatum, vertice infundibuliformi-quadrilobum. *Capsula* quadrata, calyce basi cincta, apice quadrialata; quadrilocularis, quadrivalvis, polysperma; valvulae foliaceo-dilatatae.

Classis Linneana: *Octandria monogynia*.

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

Planta annua, carnosa, subsimplex ramis paucis instructa. *Folia* opposita, serrulata, pilosula. *Flores* terminales, umbellati, majusculi, rosei.—Noinen sumpsit e consistentia et figura ovarii.

## SARCOPYRAMIS NAPALENSIS, Wall, TAB. 23.

Legi in monibus vallis Nepalise majoris Shapore, Chandaghirj, a usque ad tã ambrosa, humida, saxosa. Floret Julio - Simhemra. ~~Eructus maturant Octobre et~~ Novembre.

Planta subsimplex, herbacea, erecta, laetè viridè, nunc rubicunda, carnosa, subdiaphana, glabriuscula, sex- ad duodecim pollicos alta. *Kadi* gmelip fibrosè; interdum elongata, subrepens. *Caulis* laevis, ac tetragonus, basi per anserinè crassum attenuatus, angulis scindentibus, per pares approximatis, lateribus duo oppositis itaque latioribus. *Rami* pauci, nunc alterni versus apicem caulis, erectiusculi, breves; nunc sub-

nulli. *Folia* opposite, subdrcussarctia, pefiolata, interstiiis dnplo lon<riora, bi- ad quadripollicaria, suprema mine valde approximate; magriitudine inequalia, altero nempe ejusdem paris tertio vel dimidio brevior; fere membranacca, ovata\* acuminata, basi inaequali acuta, extrorsum crenatorserrulata, scrraturis acutis, setula terminatis, supra atroviridia, lucida, setis hyalinis, brevibus, rectis consporsa, trisulcata; subtus pallidiora, srepeque purpurascencia, quinquenervia, nervis extimis gracillirnis, submarginibus; transversim venulosa, juxta iractus vasorum pilosula. *Petoli* carnosii, graciles, sulco angusto exarati, aequales, folio dimidio vel triplfe breviores, laeves. *Stipuke* nullae, nisi series transversalis ciliarum subulatarum, succulentarum, caulem inter petiolorum insertiones ambientium. *Flores* (fig. 2, 3. ideradisseccliis fig. 4.) tres ad quinque, terminates, unibellati, ratione magnitudinis plantae sat magni, rosei, irodori, glabri, suffulti pari uno vel diobus folioloriim floralium lanceolatorum, subsossilium? semipolltcarium. *Prtpfloratio* (fig. !\*) conica, imbricata. *Pedvncvli* carnosii, brevissimi, laeves, rufescentes. *Calyx* (fig. 8. idem staminibus inflexis fig. 7. idem ovario toeeundato fig 9.) carnosius, laevis, obovatus^ acutè tetragonus, persistens, ad latera convexi]sculus, ore truncato, quadrato, juxta margines scindentes, nudos leviter exciso ; angulis in dentes totidem desinentibus porrectos, compressos, verticales, patentes, apice obliquè truncatos, ciliatos setis simplicibus, hyalinis, utrinque patenssimis, duplici serie dispositis, ju\*ta angulos ipsius calycis quandoque decurrentibus. *Pelala* (fig. 4.) quatuor, ovata, carnosa, cuspidato-acuta, integerrima, patentissima, rosea, laevia, nitida, lineas quatuor emetientia, calyce duplo longiora, basi latiusculà infra ostium calycis inserta, dentibus alternantia. *Stamiha* (fig\* 5, 6») octo, petalis parum breviora, erecta, parallela, sequalia, serie simplici annulari equidistanter calyci inserta, dentibus calyciuis petalisque alternatim opposita. *Filamenta* alba, filiformia, carnosa. *Antherce* conformes, simplices, erectae, fiavae, oblongo-cuneatse, nudas et absque ullis appendicibus, basi acutius\* culee, apice leviter diktats, subbilobfi poris duobus, obliqu^ hiantibus dehiscentes, aestivatione una cum apicibus filamentorum rectè deflexae. *Ovarium* (fig. 4, 5.) ovatuui, carnosum, dimidià inferiore parte fundo calycis urctè accfetum, superiore tetragono-pyramidatum, lateribus convexum, liberum, juxta margides ope membranulaeangustissimse\* brevissimae, demum evanidae, angulis internis summi calycis adhaerens, unde cellulae parietales quatuor formantur, antheras, clauso adhuc flore deflexas, per pares recipientes; apice contractum, truncatum, quadrilobum, lobis carnosis, brevissimis, latiusculis, obtusissimi3, ciliatis minutimque crenatis, in hiatum infundibuliformem, quadrangularem conniventibus, post fecundationem ampliatis; quadriloculare; *hacula* rotunda, angulis exterioribus opposita, *ovulis* repleta sub-cylindricis, placentae axili, coivexae, sessili, carnosae adtaxis. *Stylus* bre||8; rectus, cylindricus, laevis, deciduus, vertice quadriloM ovarii basi inclusus, perque axin inde decurrens. *Stigma* parvum, convexum, puberulum. *Capsula* magnitudinis pisi communis, laevis, quadrata, excepta ipsa basi lat& libera, inferiore demidia parte obtecta calyce paullo ampliato, desiccate, membranaceo, angulis quatuor sursum valde prominentibus et porrectis notato, vertice coronata alis quatuor terminalibus, rotundato-ovatis, obtusis, levissim6 crenulatis, venulosis erectis, margine contiguus; quadrilocularis, vertice quadrivalvis: valvae triangulares, dissepimentis oppositae, alis istis seorsim terminate. *Dissepimenta* angusta, tenuissima. *Semina* crebra, parva, fusca, cuneato\* triangularia, basi acuta glabriora, verticem obtusam versus punctis minutis, elevatis papillosa, receptaculis axilibus inserta.

## OBSERVATION.

I cannot refer the plant, which has just been described, to any of the established genera of *Melastomaceep*, although I have every reason to suppose, from having communicated specimens to my inestimable friend Mr. A. B. Lambert, that it must be included among the descriptions of the new genera of that most difficult and extensive

tribe, which were presented, two years ago, to the Wernerian 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, inversed 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 from 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.

MIRSINE SEMISEKRATA, *Watt in itoxb.jtor. ind. 2. p. 294.* TAB. 21.

Arborea, crecta; foliis extrorsum acutè serrulatis, basi integerrimis | Jtòribus fasciculatis, pedunculatis stylo brevi; stigmatè dimidiato, laciniato-fimbriato.

Nomen Parbutteum et Newarrensè : *Bikes* et *Beresee*; etiam *Kalihath*.

Cominunis in omnibus fere quas visitavi Napaliae sylvis, usque ad apices inontium Chandaghiry et Sheopore, florens et fructifera tempore frigido, a Decembre ad Martium. Efiat habui c Kiimaon et Sirinagur.

*Arbor* ramosa, triginta ad quadr&ginta pedes alta, *trunco* diametrum semipedalem attingente, vestito *cortice* glabro, pallido. *Rand* cinerei, terestes, calloso-punctati; *raniuli* laeves, angulosi. *Gemmæ* terminates, graciles, conica?, punctis copiosis, resinosis, rufescentibus conspersae; *squama*? lanceolatae. *Folia* sparsa, approximata, patentiu, lanceolata, nunc lineari-lanceolata, acuminata, utrinque attenuata, coriacea, firma, triad quinquepollicaria, extrorsum, raro e basi usque ad apicem, nunc uno raodò latere cus-

pidato-serrulata; in luxuriantibus ramis quandoque rufescentia, integerrimae laevia, lucida, coispersa punctis copiosis, resinosis, pellucida, rufis, juxta marginem leviter revolutum. Jineolam huic appropinquat dispositis; costa subtus parum elevata, nervis capillaceis, obliquis, intra marginem arcuatis et reticulatis anastomosantibus. *Petiolus* brevis, vis ultra duas lineas emetens, punctatus, supra planusculus. *Stipulae* nullae, *Flores* (fig. 5.) parvi, inodori, tetrandri vel pentandri, omnes hermaphroditi vel masculis interspersi, sex ad duodecim conferti in fasciculos axillares, numerosos, rotundatos, basi amplexos *bracteolis* ovatis, deciduis, fuscis. *Pedunculi* semipollicares, graciles, filiformes, obsolete angulati, subclavati, centrales fasciculorum interdum abortivi vel nulli. *Calyx* persistens, punctis notatus copiosis, elevatis, resinosis; quinque, lanceolati, acuti, patentes, ciliati. *Corolla* (fig. 7.) rotata, erubescens, punctata, calyce duplo longior; *lacinae* lanceolatae, recurvae, dentibus ciliatis alternantes; *tubus* brevissimus. *Filamenta* brevissima, laciniis opposita, earumque basi inserta; *antherae* magnae, ovales, erectae, aurantiae, utrinque longitudinaliter dehiscentes: *Pistillum* (fig. 6, 8) punctatum, stamina parum longitudine excedens. *Ovarium* (fig. 9, 10.) ovatum, uniloculare, tri- tetrasporum; *ovula* placentae erectae, carnosae, globosae lineam circuli semiimmersae; *stylus* brevis, columnaris; *stigma* carnosum, subinfundibuliforme, 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. *Caro* mollis, pulposa. *Semen* erectum, globosum. *Putamen* crustaceum, glabrum. *Integumentum* irrembraceum. *Perispermum* cartilagineum, semini conforme, albicans, foveolatum et superficialiter ruminatum. *Embryo* longus, cylindricus, horizontalis, leviter curvus, diametrum perispermii aequans, totumque fere excurrentem. *Cotyledones* cylindricae, obtusae, intus planae; *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 carpenter's works. They eat the fruit' *Wall. he. cit.*

MYRSINE CAPITELLATA, *Wall I cit.* 395. TAB. 25.

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

Nomen Parbutteitum; *Syade*.

Newarrencis; *Bhoe Billoo*.

Valde communis in Nepaliae sylvis/florens et fructiferissima.

Arbor priori habitu et magnitudine similis. *Uramuli* 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, costa elevata, nervis obsolete capillaribus. *Petiolus* crassus, brevissimus, sulcatus, nunc hirsutus. *Flores* (fig. 1, 2, 3.) polygami, sessiles, viridissimi, punctis conspersi copiosis, minutis, elevatis, resinosis, fuscis, aggregati in capitula parva, rotundata, axillaria, vel lateralia ad vestigia florum delapsorum, subsessilia vel suffulta *pedicello* communi sublignoso, brevissimo, columnari, et *bracteolis* minutis, ovatis, concavis, persistentibus scabriusculo. *dehiscens* valvata. *Calyx* (fig. 4), ureolatus, dentibus quinque ovatis, aculis. *Corolla* (fig. 5.) calyce bis longior; *tubo* brevi; *laciniis* recurvatis lanceolatis. *Filamenta* brevissima, subulata;

*anthera* oblongae, erect®. *Ovariutn* (fig. C, 7.) globularc. *Stylus* carnosus, crassus, corolla bis longior, medio intumescenc, apicem versus parum curvus, basi vertici ovarii depress® parum immersft; *stigma* obfifum, obscur6, bilobum. *Mores masculi*, foemineis parum majores. *Fructus* (fig. 8.) quadumaiodo minor quam prioris speciei; coeterrum ommino similis.

OPSERTATION.

"The wood of this tree is hard and durable like that of *Myrsine semiserrata* and is used for similar purposes. The fruit is also eaten." *Wall. he. cit.*

CRYPTOCHILUS, *Wall.*

*Flores* resupinali. *Perianthii* foiiola exteriorca connata in tubum, fundoperuliferum; apice libera, dentifermia. *Labellutn* oblongum, nudum, eakaraturc, iucclusum, subsessile, basi *gynostemii* apteri clongatte adnatum. *Anthera* terminalis, decidua, bilocularis. *MasscB* pollinis octo, cereaceje, per pares fiio communi, elastico cohaerentes.

Classis Linneana: *Gynandria Monandria*.

Ordo naturalis: *Orchidearum* sectio quinta Browniana.

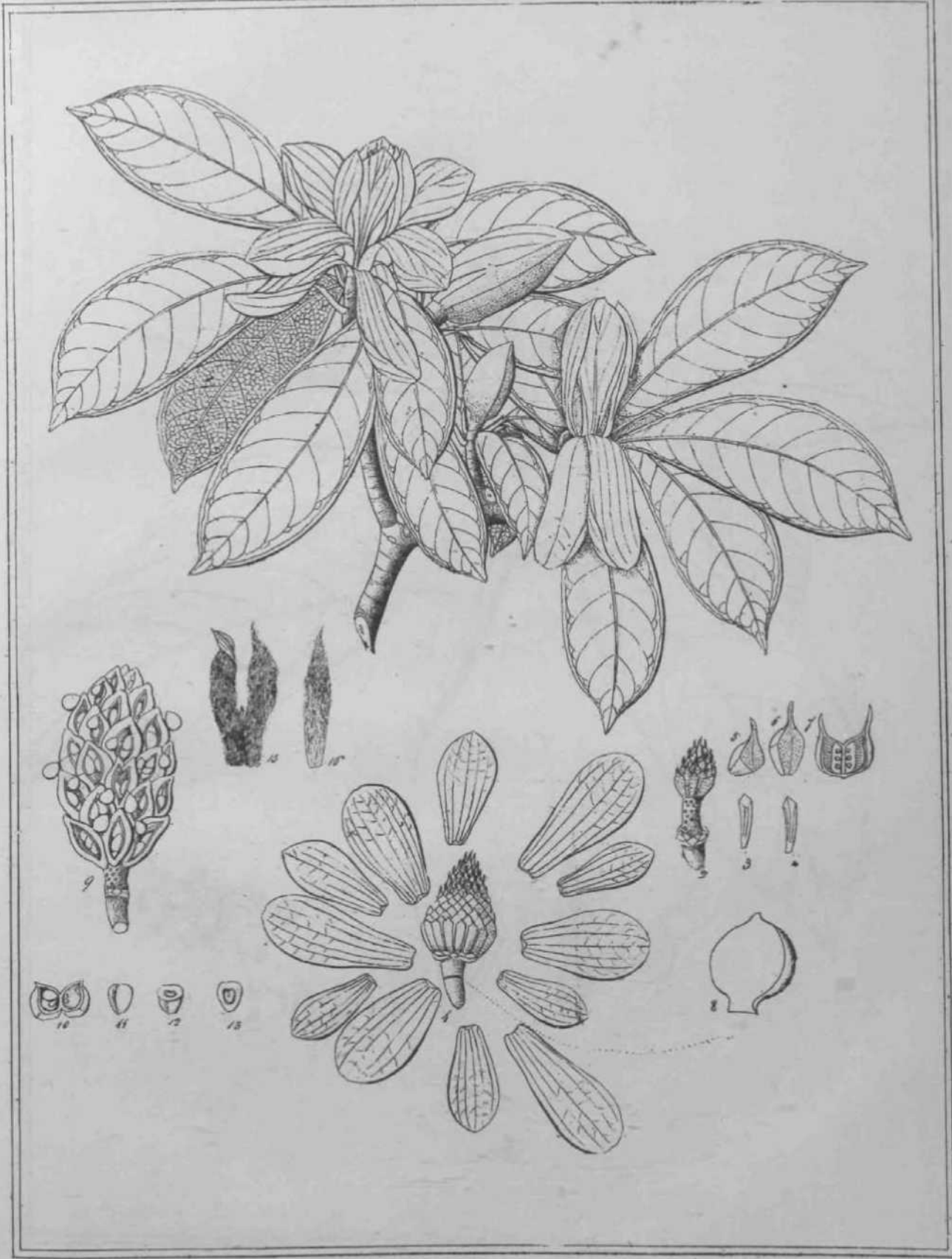
Habitus. Planta parasitica, rupicola, bulbis bifoliis, uniscapis. *JFlores* sanguinei, tubulosi, tridentati, spicati, secundi; ante antliesin dislichi.

Genus, *Masdevallim*, Ruiz et Pavon et *Stelidi*, Swartz, intermedium ; distinctum floribus tubulosis, ore tridentatis, propter foiiola perianthii exteriora, salvis ipsis apicibus, connate; iab^Ho subsessili, incluso (unde nomen) basi gynostemii elongatse adnato; massis pollinis octo ; habitu magis *Stelidi* accedeus,

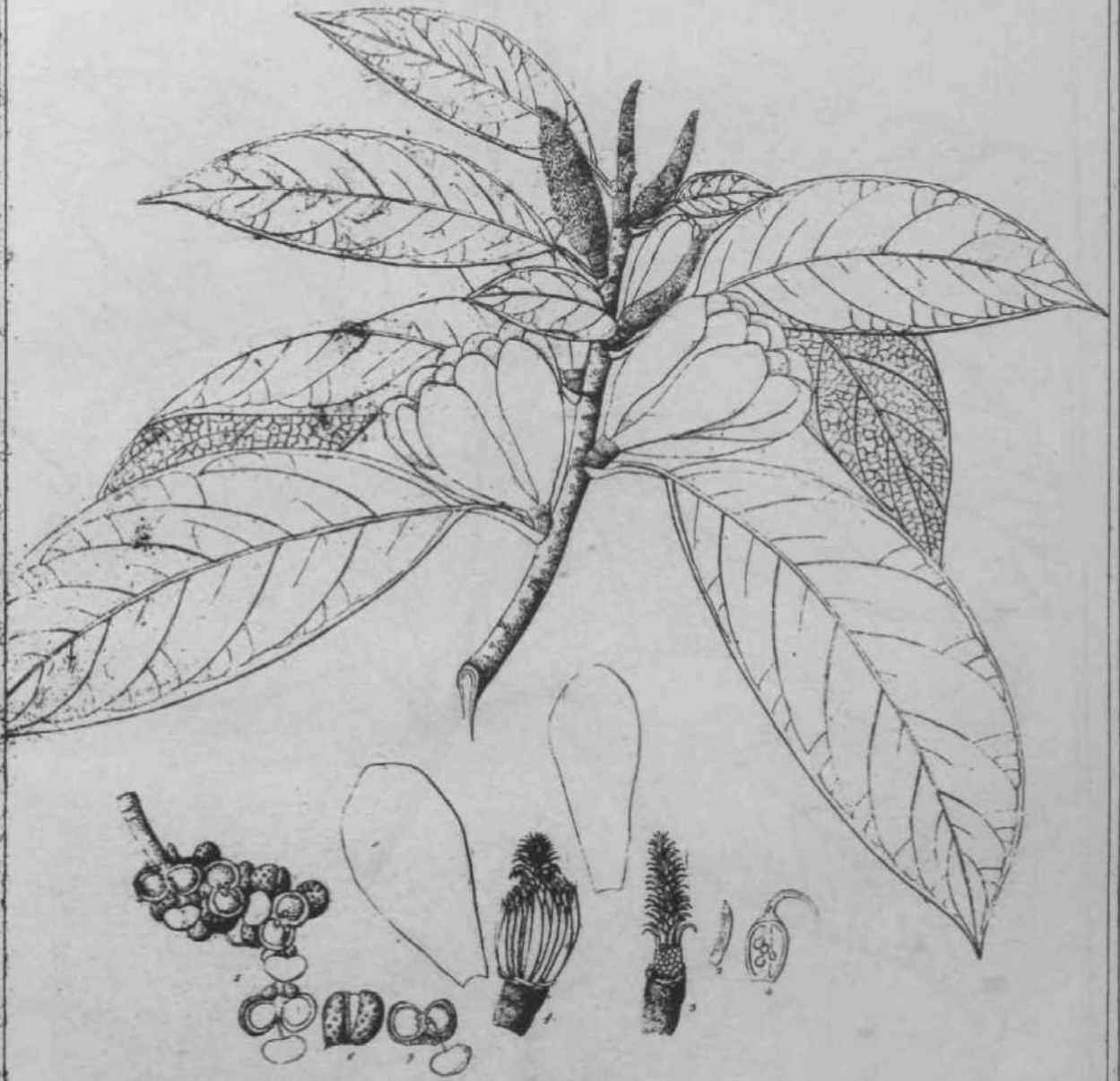
CRYPTOCHILUS SANGUINEA, *Wall* TAB. 26.

Legi in Napalia, ad caenmen Chamlaghiry, saxicolam, florenlem Junio. £ monlibus Cachar, Sylhet confinibusi misit M. R. Smith, anno 1815.

*Herba* parasitica, repens, laevis, *radiculis* fuscis, filifonnibus, ramulosis, glabris. *BuU hi* ovati, yel oblongi, pollicares, carnosi, obtusi, diphylli, nitidi, aetate nudi, vel vestigio uno alterove vaginalium emarcidarum basi circumdati; dum juniores graciles, subcaulescentes, vaginalium que induti quatuor vel quinque lanccolatis, acuminatis, complicatis, bifariis, basi imbricanlibu3, pallidis, lineatis, margine dilul6 purpureis, bi- tripollicaribus, inferioribus decrescentibus.—*Folia* duo ex apice bulbi, erecta, leviter divergentia, lancceolata, acuminata, apice minutim bidentata, basiacuta, sex- ad oculo-pollicaria, deorsum parum complicata, extrorsum plana cum snlro medio; coriacea, laevia, supri atroviridia, lucida, subtus glauca, opaca, septem-lineata, costA carihata, marginibus purpurascensibus. *Petioli* crassi, canaliculati, basi parum dilatati: exterior paullo major, margines interioris amplectens. *Scapus* ex apice bulbi, erectus, teres, carnosus, crassus, nudus, atro-purpureus, basi viridescens, longitudine foUoram, apicem versus leviter complanatus. *liacemus* terminal is, erectus, solitarius, quadripollicaris, ante florum expansionem complanatus, anceps, digitum latus; postea oblongus, secundus. *Rackis* purpurea, carnosula, planiuscula, flexuosa, demum recta. *Flores* sanguinei, inodori, carnosi, pollicares, cylindrici, approximati, ahemi, initio distichi et patentes, post anthesin secundi et adscendentes; extus pilis canis, mollibus, adpressis, geniculatis conspersi; pedicellis suffulti brevissiuis, teretibus, pilosulis, lineam longis. *Bractea* infra singulum florem solitaria, linearis, acuminata, canaliculata, unguicularis, laevis, purpurea, carnosula, parum incurva, directione floribus opposita secunda, persistens. *Perianthii foiiola* exteriora tria connata in tubum (fig. 1, 2.)



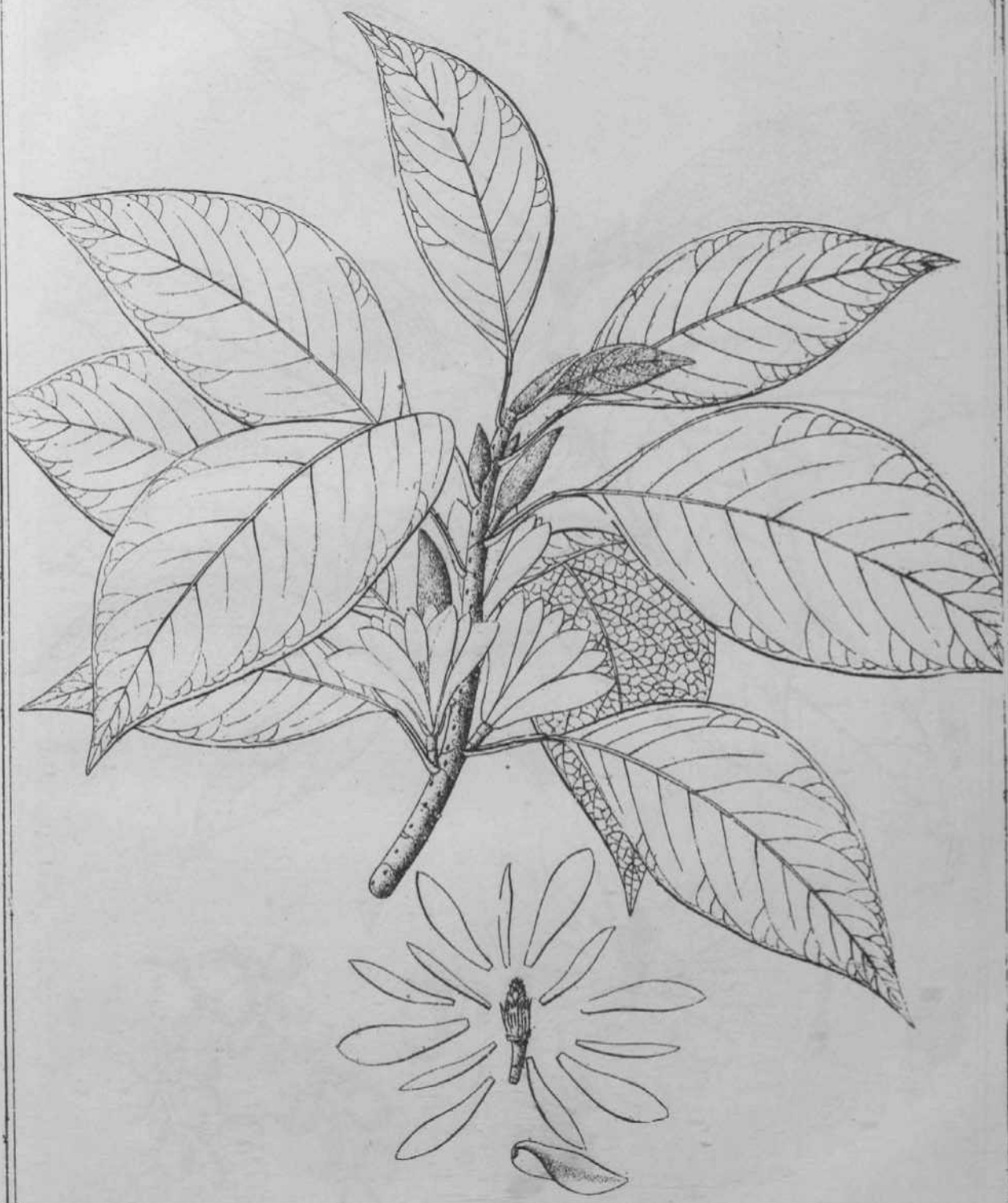




M. H. G. & Co. del.

*MAGNOLIA exelsa*, Wall.

Gussone del.



Carl Blüthgen, Calcutta

*MICHELIA Doltsopa, D'And.*

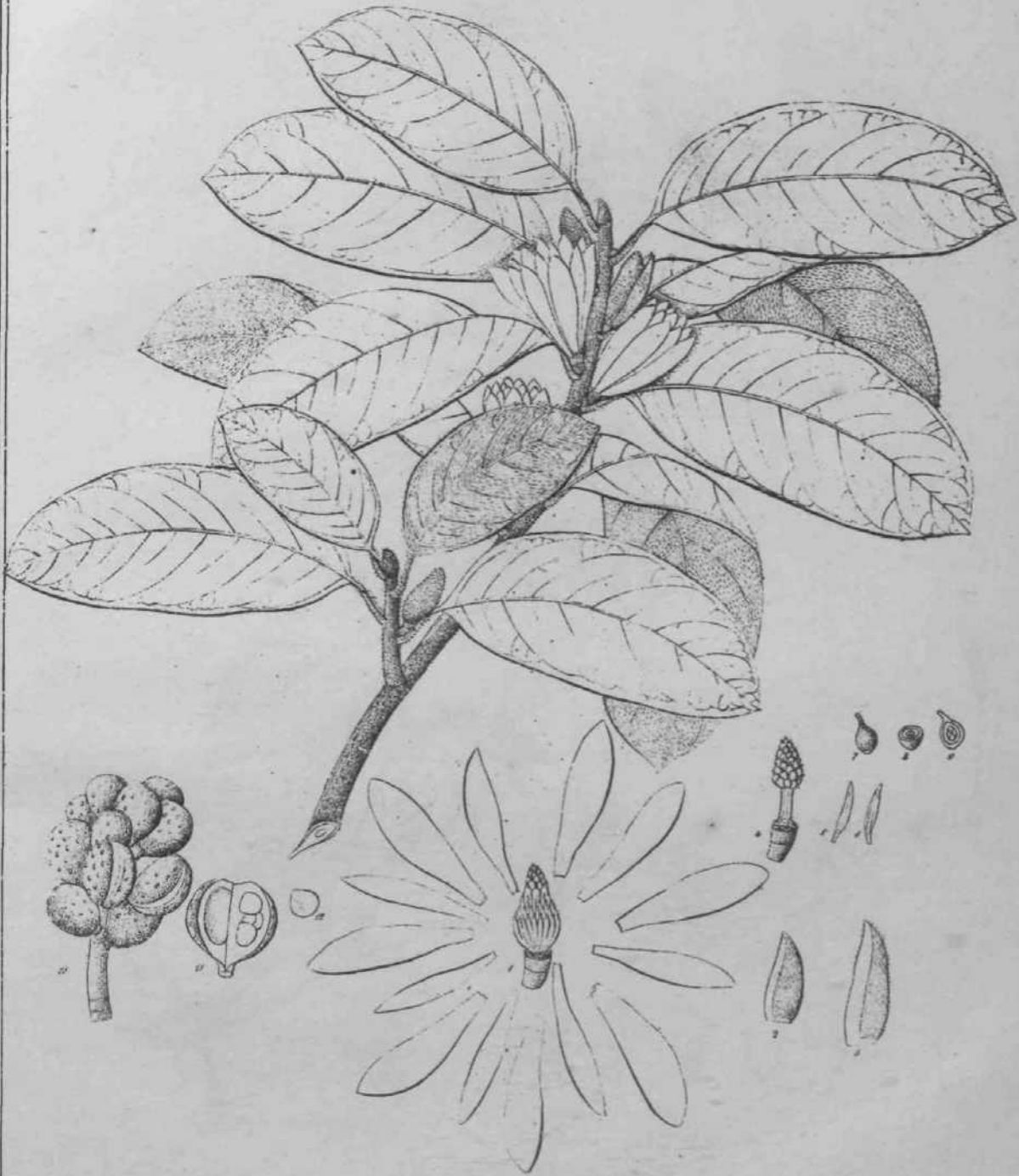
W. Woodhead del.



Wm. Fisher, New York

*MICHELIA Keapa, DeCand.*

Amsterdam 1817





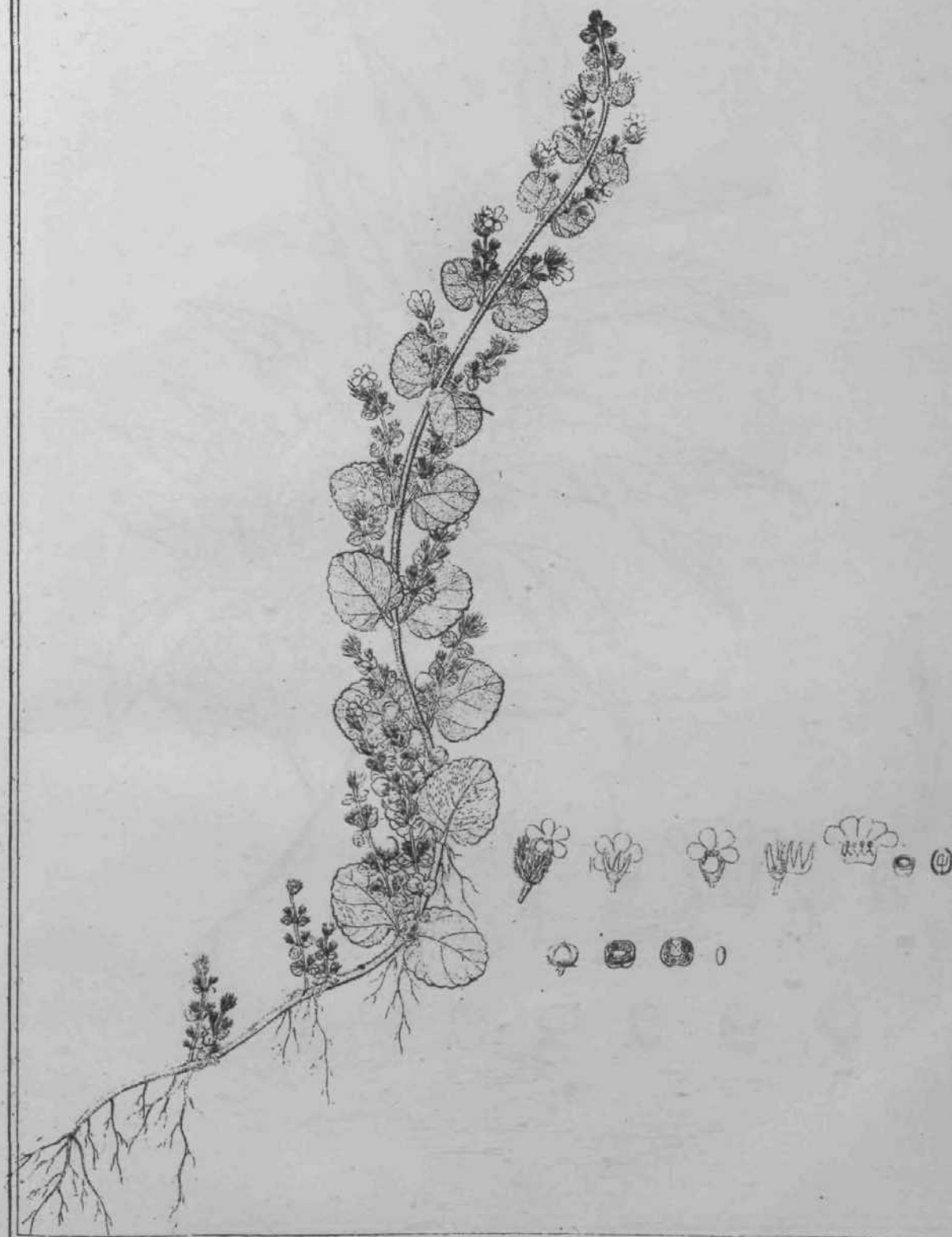


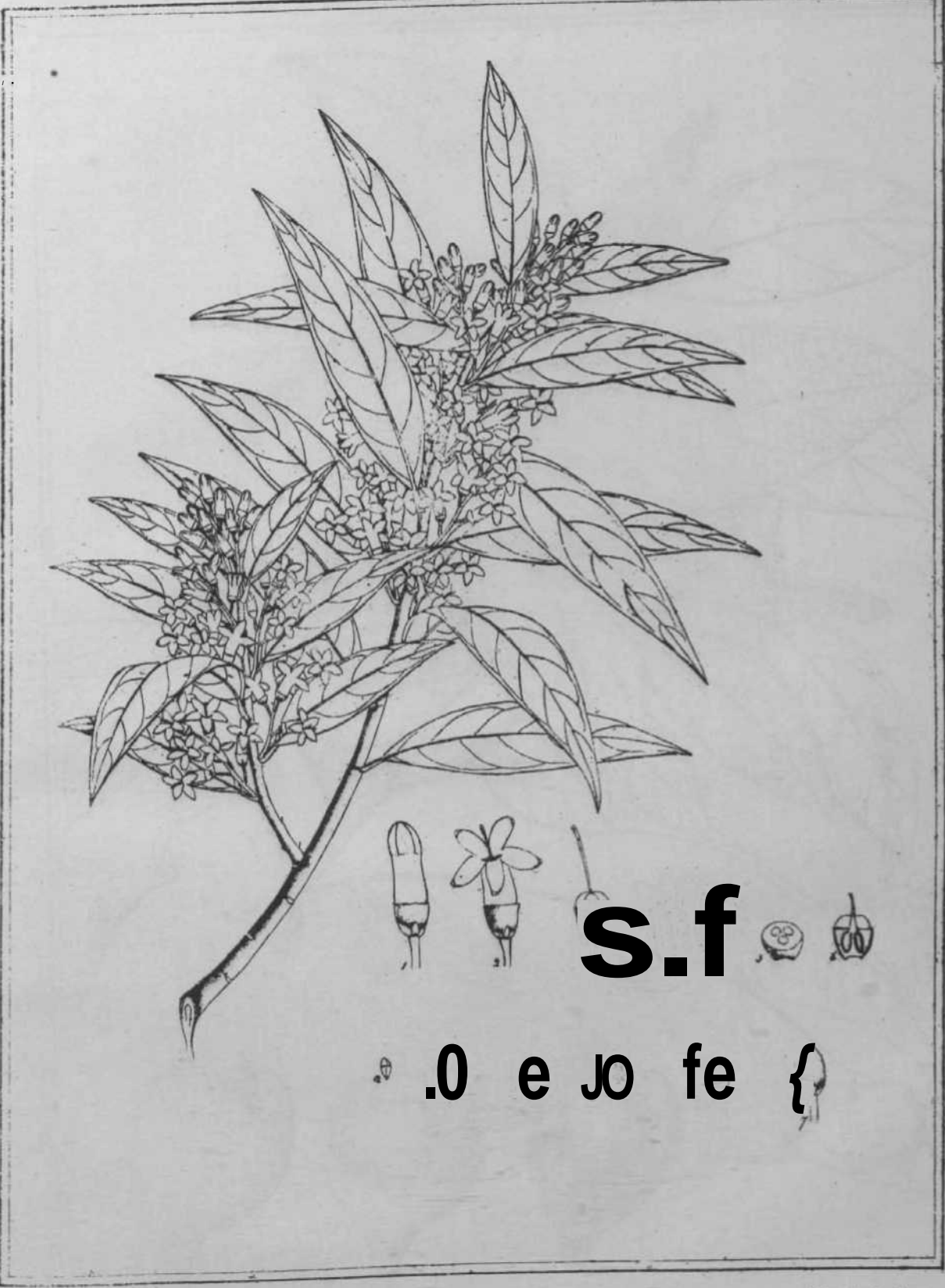


Coul. Lithographico. Pinx. Calcutta.

*BEAUMONTIA grandiflora* Wall.

Gorschrad del.





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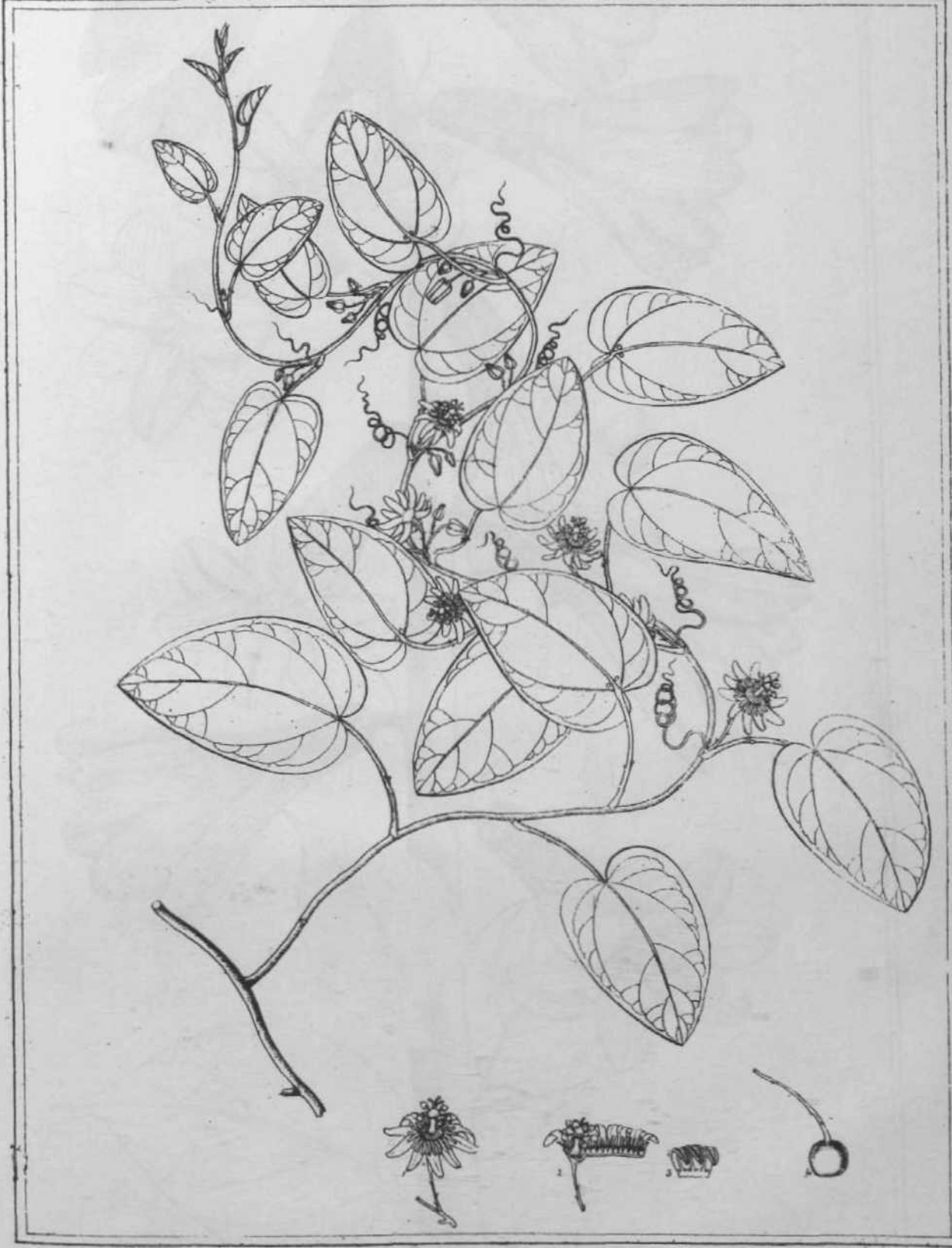




Spilargis edulis, Wall.

*SPILARGIS edulis, Wall*

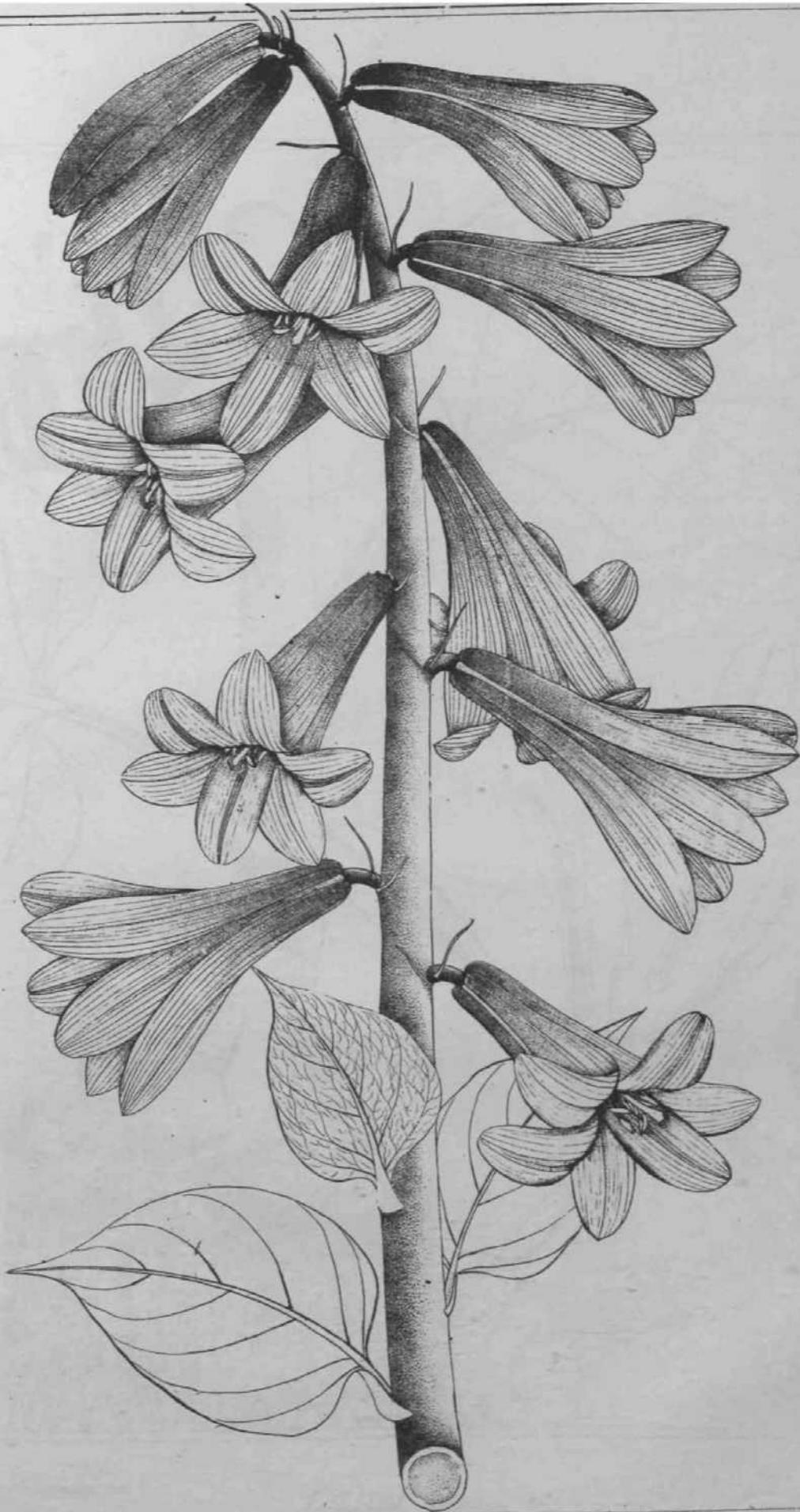
Cornuand. del.



6m Lithog. Press. Calcutta

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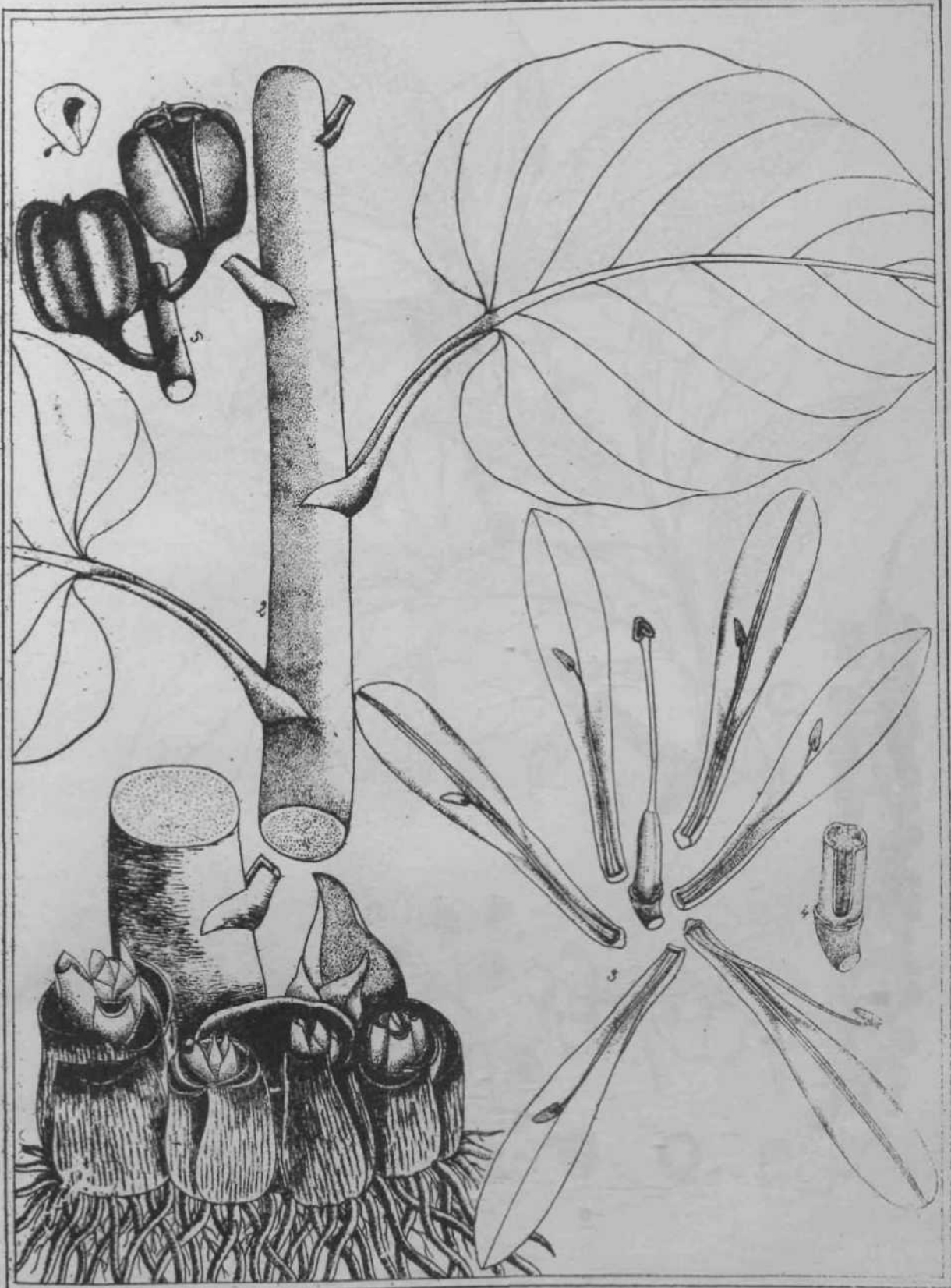
Rohmshausen. del.



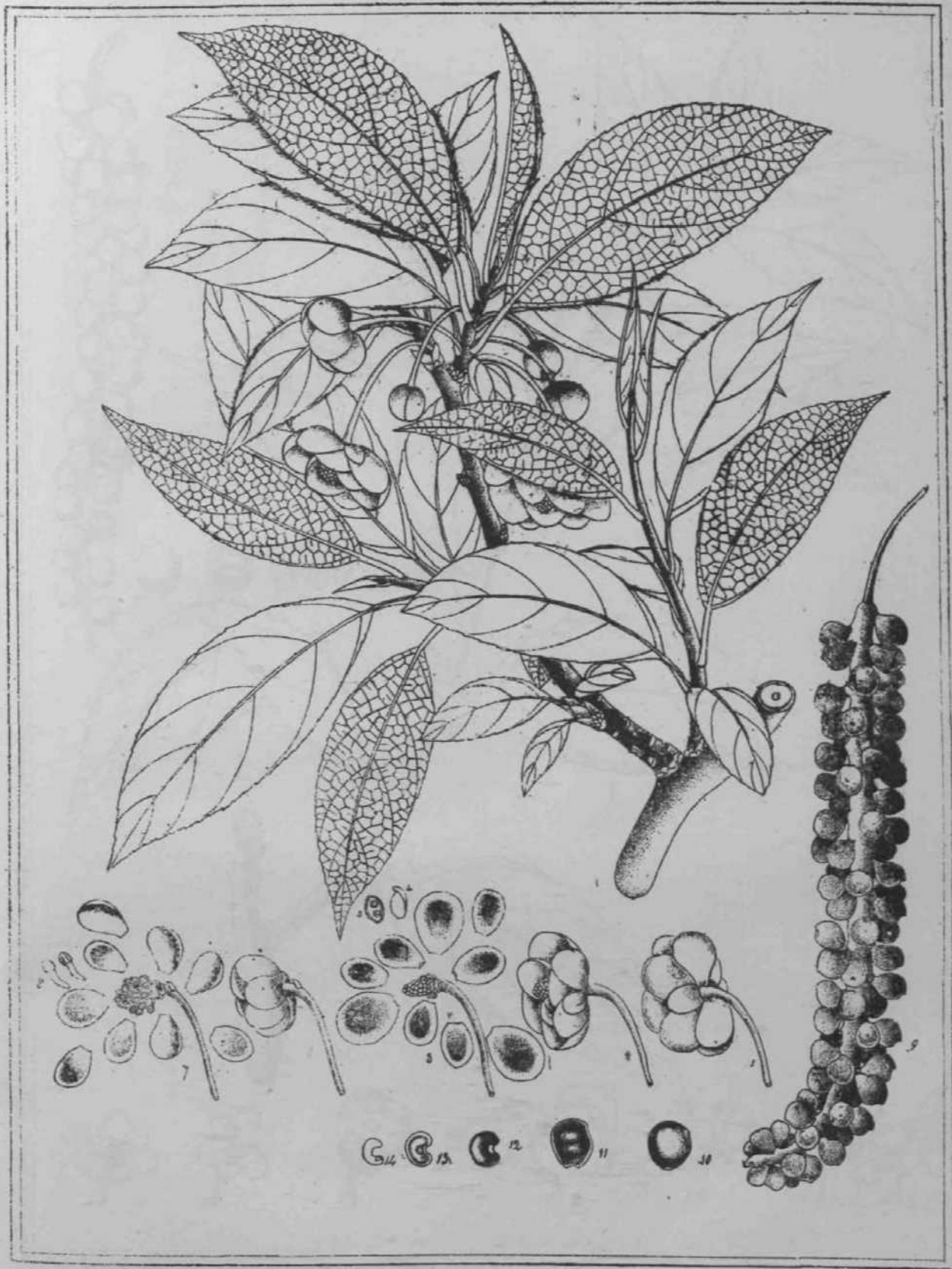
Des. Estlin, Hort. Calcutta

*LILIUM giganteum*. Wall.

H. A. S. del.



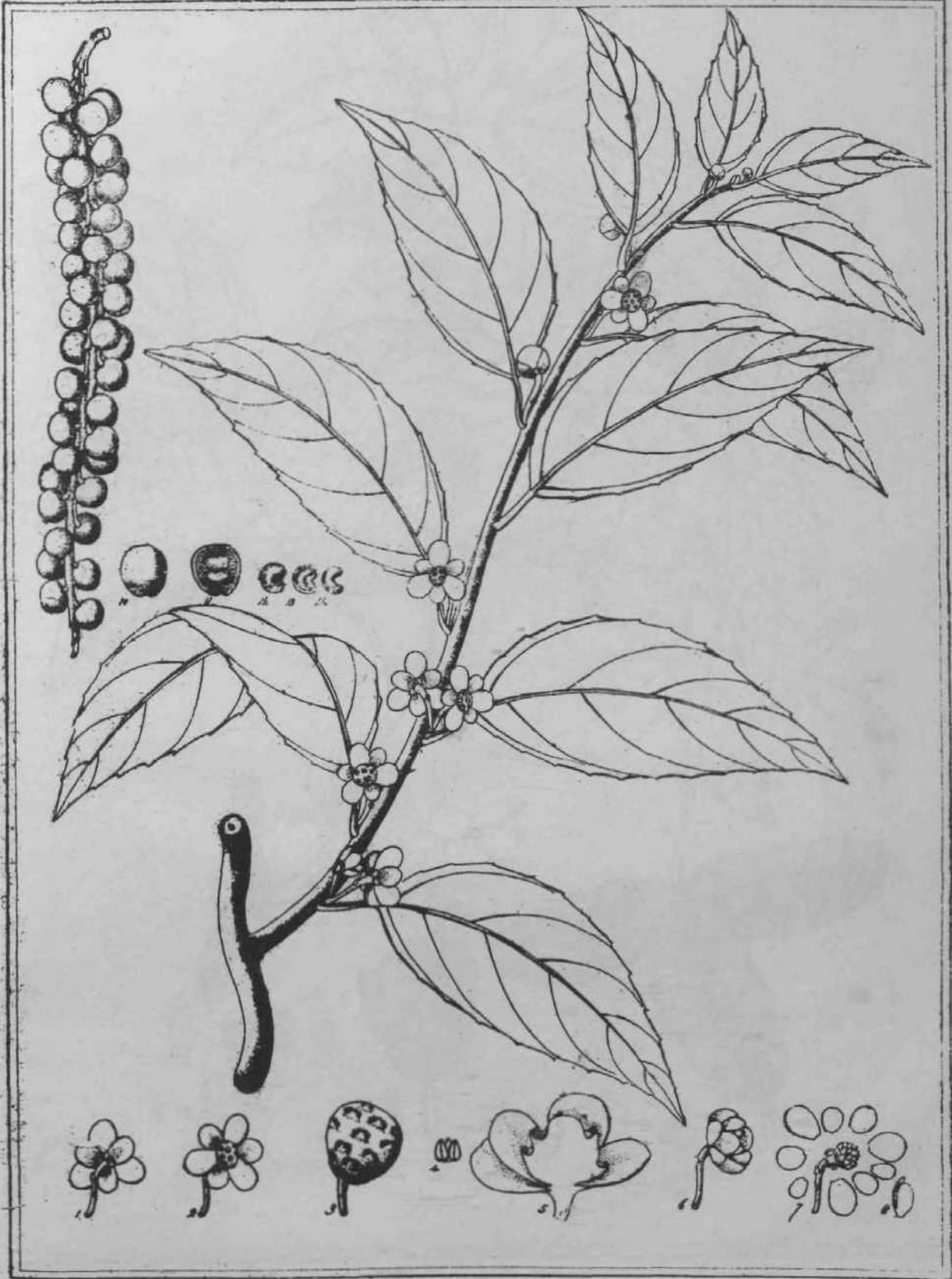




Bot. Beechey, 1844, p. 10, t. 1, f. 1.

*KADSURA grandiflora*, Wall.

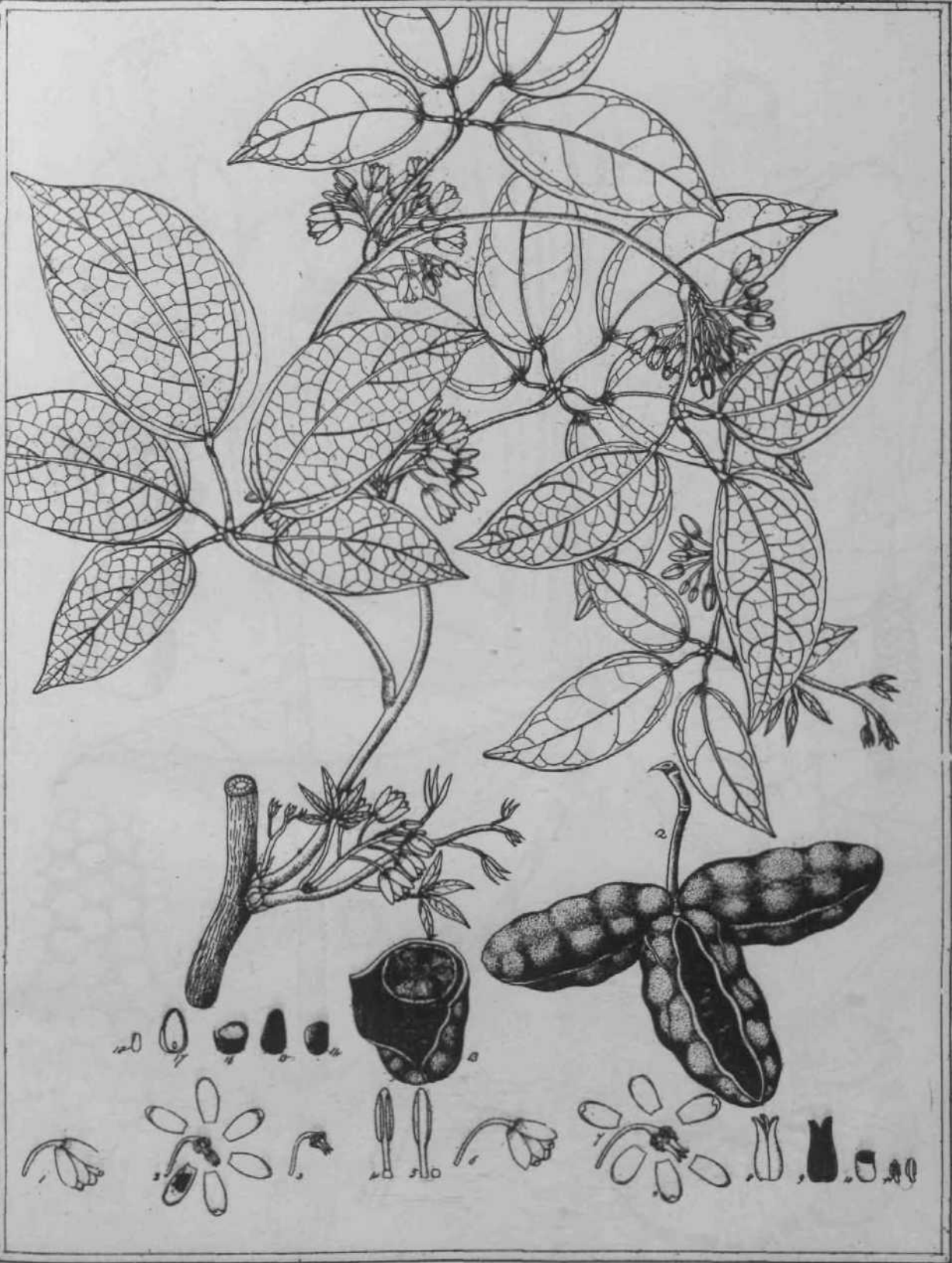
Griseb., Bot.



Carl F. Meyer, Bot. Garden, Calcutta

*KADSURA longipes* Wall.

Caricatured, etc.

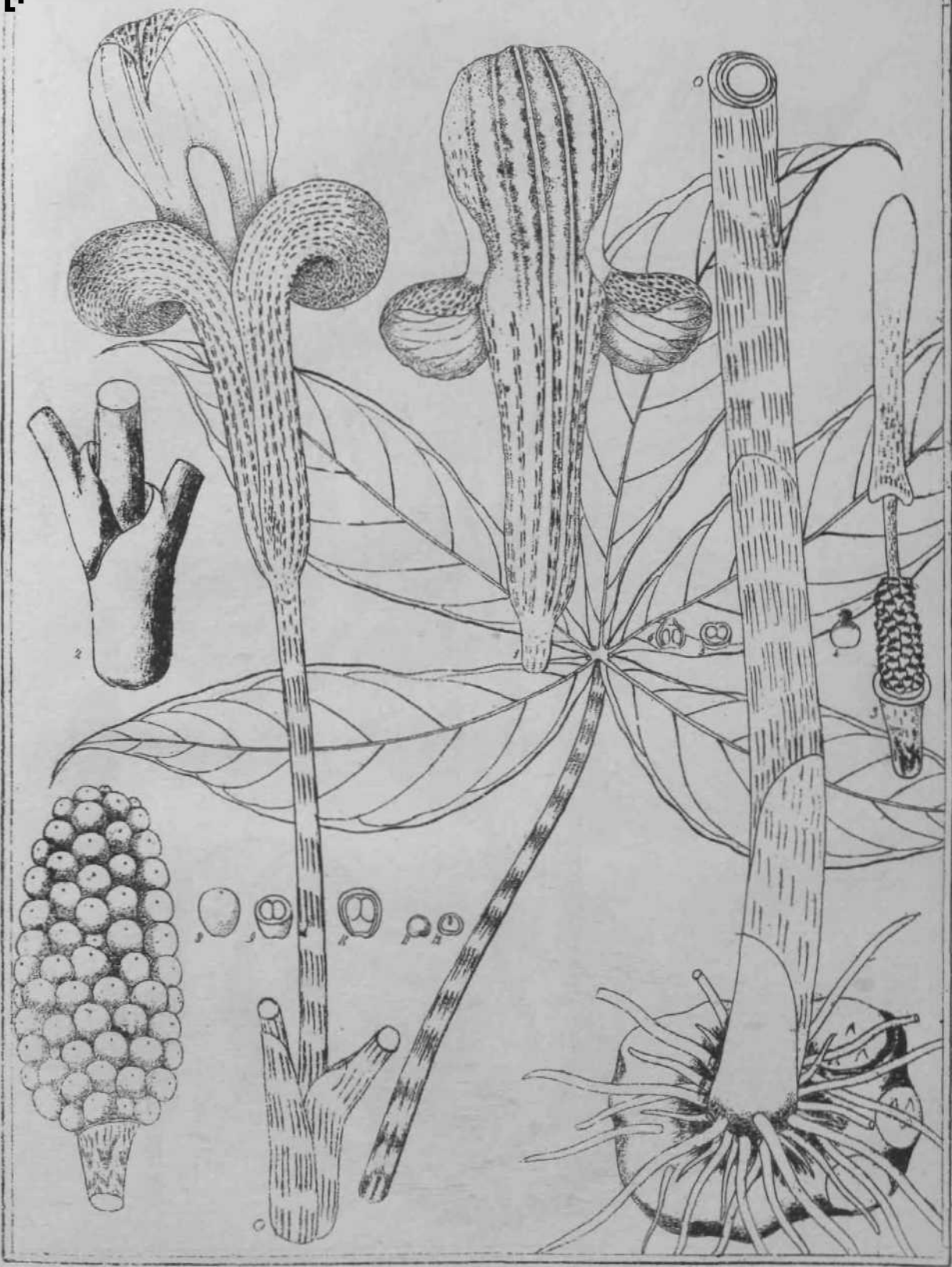


C. L. L. lithographia. Præs. Calcutta.

**HOLBOELLIA** *latifolia* Wall.

G. S. S. del.

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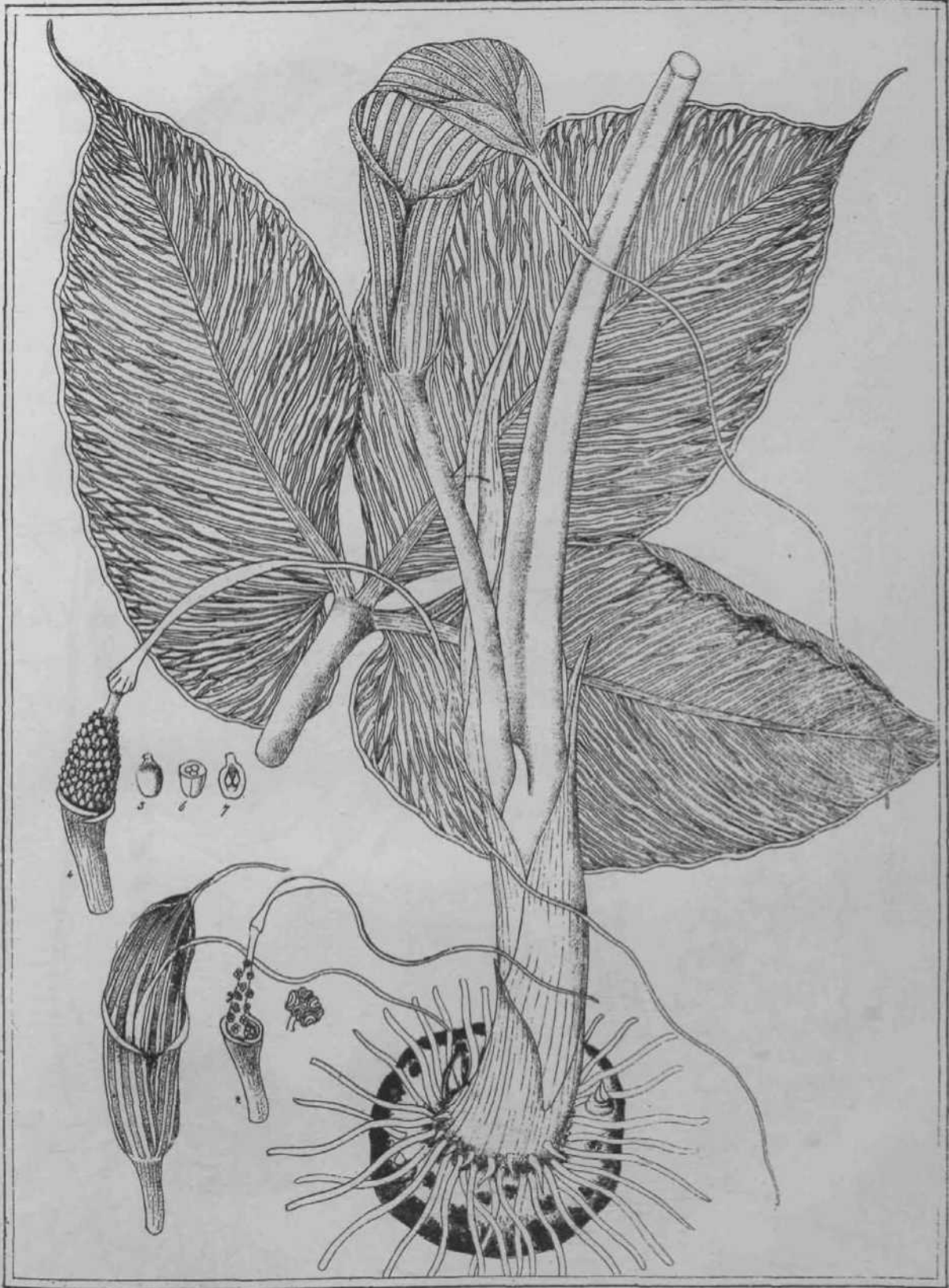


*Arisaema speciosum* (L.) Schott.

*Arisaema speciosum* Willd.

Coverham, del.







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Genl. Lithographische Press, Co. Inc. etc.

*CINCHONA gratissima*, WALL.

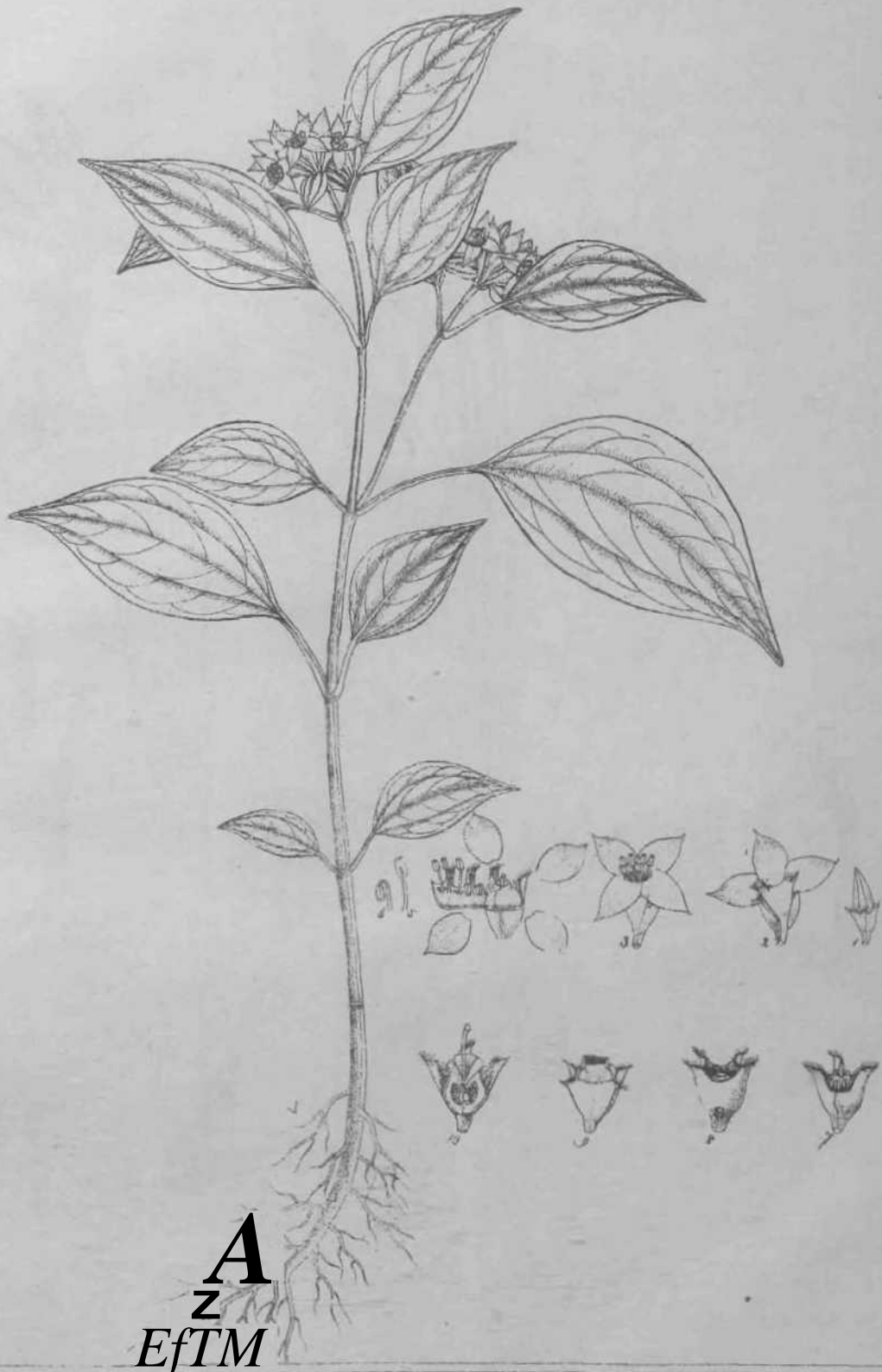
Kraus, f. v. d. del.



Geol. Lithographic Press Calcutta

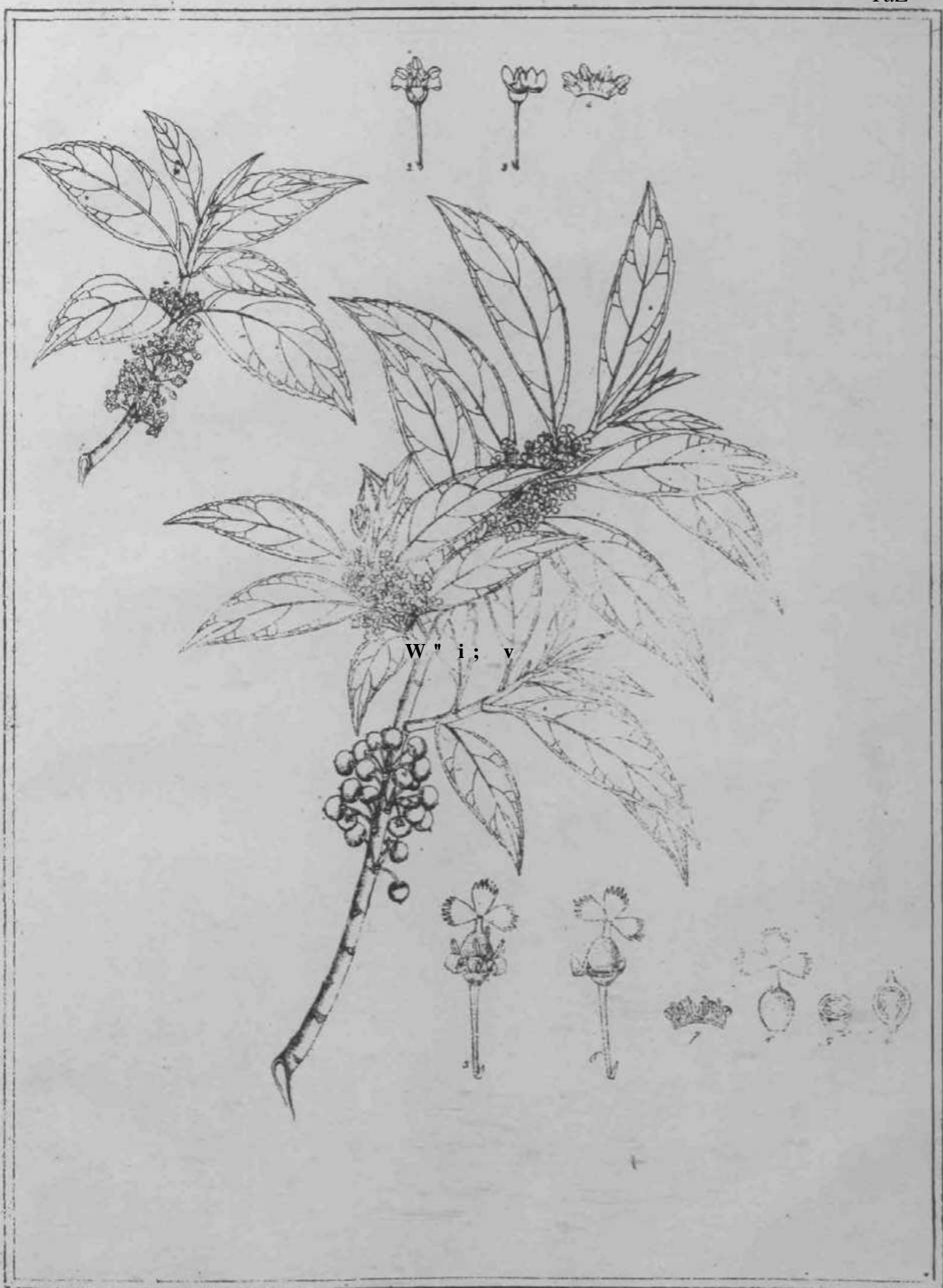
*HYMENODICTYON flexuosum* Wall.

W. H. Jones del.



**A**  
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**EfTM**





1177. *Myrsine* Pres. *Calcutta*.

*MYRSINE semiserrata, Wall.*

*Richardson del.*



V-SMZ17J *capitata* Walk

*Flora Australis*