CURTIS'S

BOTANICAL MAGAZINE,

COMPRISING THE

Plants of the Royal Gardens of Kew,

AND

OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN;

WITH SUITABLE DESCRIPTIONS;

AND

A SUPPLEMENT OF BOTANICAL AND HORTICULTURAL INFORMATION;

BY

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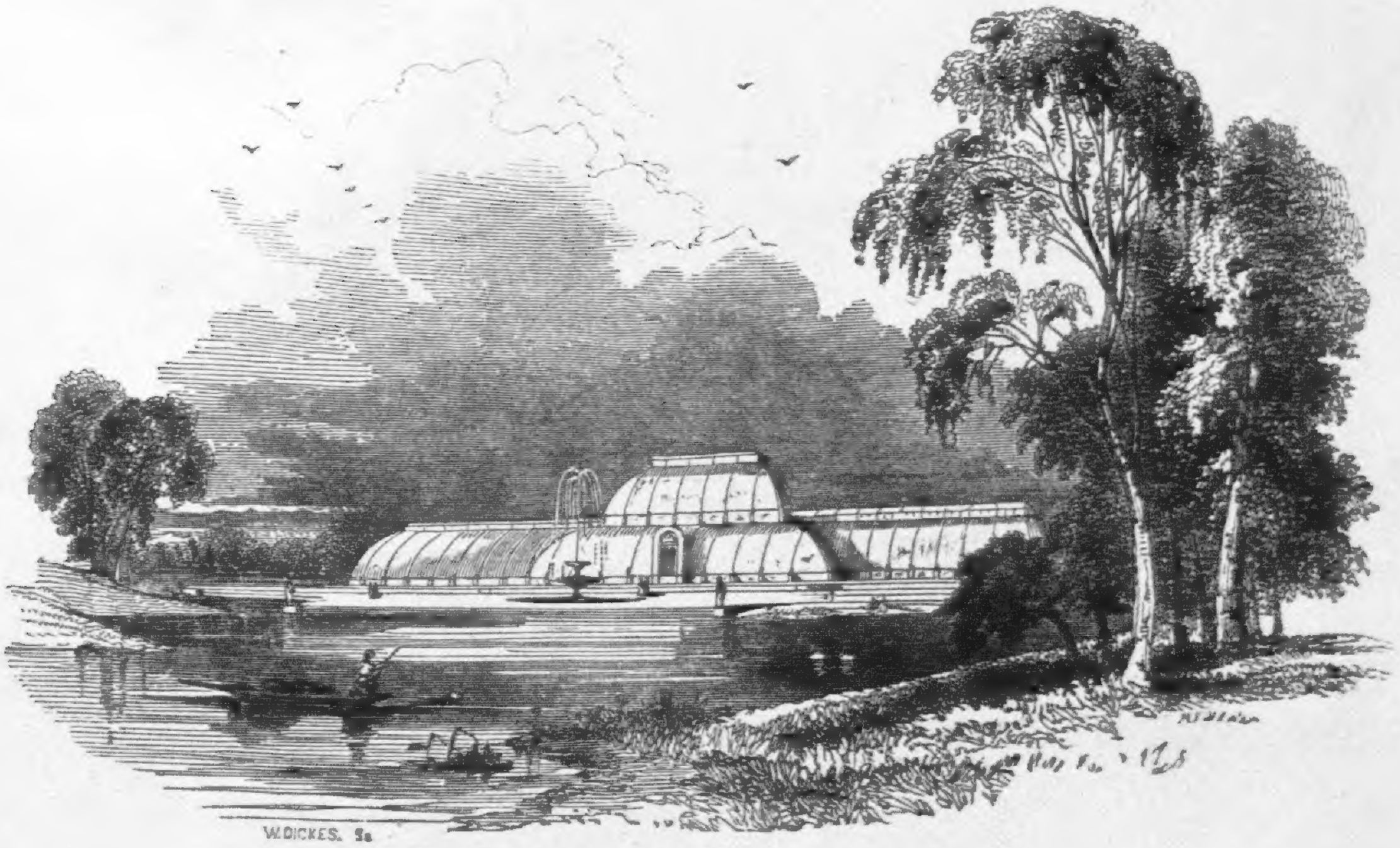
VOL. I.

OF THE THIRD SERIES;

(*Or Vol.* LXXI. *of the whole Work.*)



"Nature and Art t'adorn the page combine
And flowers exotic grace our northern clime."

LONDON:

REEVE, BROTHERS, KING WILLIAM STREET, STRAND;

1845.

TO

THE RIGHT HONOURABLE

THE EARL OF LINCOLN,

Chief Commissioner of Her Majesty's Woods, Forests, Land-Revenues, Works, and Buildings, &c., &c., &c

THE PRESENT VOLUME,

THE

FIRST OF A NEW SERIES

OF A WORK

ESPECIALLY DEVOTED TO THE ILLUSTRATION OF THE PLANTS

CULTIVATED IN THE

Royal Botanic Gardens of Kew,

IS DEDICATED,

WITH SENTIMENTS OF THE HIGHEST RESPECT AND ESTEEM,

BY HIS OBEDIENT AND DEVOTED

HUMBLE SERVANT,

W. J. HOOKER.

Royal Gardens, Kew,
Dec. 1, 1845.

Pub.by S. Curtis Glasswood Essex Jan.y 1845

TAB. 4132

LUCULIA PINCIANA.

Mr. Pince's Luculia.

Nat. Ord. RUBIACEÆ.—PENTANDRIA MONOGYNIA.

LUCULIA. *Sw.* (*Supra* TAB. 3946.) *De Cand. Prodr.* 4. *p.* 357.

LUCULIA *Pinciana;* corollæ limbo tuberculis quinque didymis*.

At the commencement of a new or Third Series of the Botanical Magazine, it is with no ordinary pleasure, that we are able to present our readers with one of the most lovely and most fragrant plants that it has been our lot to publish in any of our volumes. Much deserved praise was bestowed on the *Luculia gratissima* (TAB. 3046) by our fair correspondent who communicated that lovely shrub: but it may be said, without diminishing aught from that species, that the present far excels it, no less in the size and delicacy of its flowers, than in their powerful, yet agreeable fragrance. As a species, too, it is totally distinct from that just mentioned; the only hitherto described one of the Genus. In stature and general aspect, the two appear to accord: but the present has broader and shorter leaves, with much more compact (closely-placed) nerves, and the limb of the corolla has five pairs of prominent tubercles; one pair at the sinus of each lobe. It was raised from seeds received from Nepal by Mr. Pince, (to whom the Royal Gardens are indebted for a plant,) at his Nursery, Exeter, and is cultivated in the greenhouse. I may observe, that the specimen, figured here, is but a portion of the great compound cyme that was sent, and which would have required a folio plate to render it adequate justice.

DESCR. A *shrub*, attaining to some feet in height, much branched, the *branches* opposite. *Leaves* oval, rather than

* By which character it is at once distinguished from the only other species,

L. *gratissima;* corollæ limbo etuberculato.

4133.

W. Fitch del.t Pub. by S. Curtis Glazenwood Essex Jan.y 1. 1845 Swan Sc.

Tab. 4133

BACKHOUSIA myrtifolia.

Myrtle-leaved Backhousia.

Nat. Ord. Myrtaceæ.—Icosandria Monogynia.

BACKHOUSIA. *Hook.* et *Harv. Calycis tubus* turbinatus, inferne ovario adhærens, villosus, extus basi bracteis caducis imbricatis: *limbus* persistens profunde 5-partitus, lobis tubo longioribus patentibus corollatis (albis) petaloideis. *Petala* 5 parva, calycis segmentis triplo minora, ovato-rotundata, acuta, valde concava. *Stamina* numerosissima, corolla calyceque longiora. *Antheræ* parvæ subrotundæ. *Ovarium* tubi parte inferiore adnatum, superne liberum hirsutissimum biloculare; loculis polyspermis: dissepimento placentifero. *Ovula* plurima. *Fructus* (immaturus) siccus, coriaceus.—Frutices *Australasici, ramis teretibus nunc villosis.* Folia *opposita sessilia v. brevissime petiolata, ovato-acuminata, subcoriacea, pellucido-punctulata, penninervia nervoque intramarginali.* Flores *majusculi, luteo-albi, in cymas pedunculatas oppositas terminalesque dispositi.*

Backhousia *myrtifolia;* foliis ovato-acuminatis, nervis patentibus.
Backhousia myrtifolia. *Hook. et Harv. MS.*

This very pretty greenhouse shrub, its conspicuous petaloid calycine segments giving the idea at first sight of large corollas to the flowers, was found by Mr. James Backhouse in the Illawara district of New South Wales; and, not being referable to any Myrtaceous Genus yet described, Mr. Harvey and myself are anxious to dedicate it to our mutual friend now mentioned, who, amidst his various and arduous labors of love during a voyage to, and journeyings in, various parts of Australia and South Africa,* still found leisure to collect and to describe in manuscript many interesting plants, which his previous botanical acquirements enabled him to do with great judgment. The greater number of these specimens are placed, partly in the hands of Mr. Brown, and partly in those

* See "Narrative of a Visit to the Australasian Colonies," and "Narrative of a Visit to the Mauritius and South Africa, by James Backhouse;" works which will gratify and instruct the Naturalist as well as the Philanthropist.

of the Editor of this work. Less perfect specimens of the same plant were detected by Mr. Allan Cunningham, in a state of bud only, "South of the Colony" of N. S. Wales, and marked "allied to *Eugenia elliptica:*" and what confirms the stability of the Genus is, the discovery by Mr. Allan Cunningham of a second species* (which exists in Mr. J. Smith's Herbarium) on the Hastings' River. With regard to the present individual, it has been introduced to our gardens by Mr. Low of Clapton, to whom the Botanic gardens of Kew owe the possession of it, and there it forms a small tree-like shrub, six to eight feet high. It is readily increased by cuttings: and they flower while quite small, soon after being struck.

Descr. A small *Tree*, sixteen feet high, according to Mr. Backhouse, with slender, terete *branches*, of which the younger ones are often villous. *Leaves* opposite, on short *petioles*, ovate, acuminate, between membranaceous and coriaceous, pellucido-punctate, glabrous, or more or less villous, especially on the costa beneath, often ciliated. *Corymbs* pedunculate; *peduncles* much longer than the leaves, axillary or terminal; *branches* generally bearing three flowers. Young *flowers* more or less concealed by petaloid bracteas, which are ovato-lanceolate, caducous, falling before the flowers expand. *Tube* of the *calyx* turbinate, very villous, the lower part adherent to the small ovary, which is itself villous at the upper part: *limb* of the calyx large, deeply five-cleft, petaloid, nearly white: *sepals* ovato-lanceolate, veined. *Stamens* numerous, at the mouth of the tube of the calyx. *Petals* small, rotundato-ovate, very concave, acute. *Ovary* semi-inferior, two-celled, with receptacles on the dissepiment, with several ovules. *Fruit* immature, apparently dry and coriaceous.

* This may be called

Backhousia *riparia;* foliis elliptico-lanceolatis basi apiceque longe acuminatis, nervis oblique-patentibus.

Eugenia riparia. *A. Cunn. MS.*

Hab. Hastings' River. *Mr. Allan Cunningham.*

L.

W. Fitch del.t Pub.d by S. Curtis Glazenwood Essex Jun.y 1.1845 Swan Sc.

Tab. 4134

SIDA graveolens.

Heavy-scented Sida.

Nat. Ord. Malvaceæ.—Monadelphia Polyandria.

SIDA. *L. (Supra* Tab. 3892.) *De Cand. Prodr.* 1. *p.* 459.

Sida (Abutilon) *graveolens;* ramis tomentosis patenti-hirsutisque, foliis cordatis obsolete lobatis subangulato-dentatis utrinque velutino-pubescentibus, pedunculis axillaribus solitariis unifloris petiolum vix superantibus sub florem articulatis, calycis lobis ovatis acutis, petalis imbricatis flavis basi atro-sanguineis, carpellis plurimis pubescentibus inermibus.

Sida graveolens. *Roxb. Fl. Ind.* 3. *p.* 179. *De Cand. Prodr.* 1. *p.* 473. *Spreng. Syst. Veget.* 3. *p.* 118. *Wall. Cat. n.* 1856.

Abutilon graveolens. *Wight et Arn. Fl. Pen. Ind. Or.* 1. *p.* 56., *and in Comp. to Bot. Mag.* 1. *p.* 20. *t.* 2.

Sida hirta. *Reichenb. Icon. Exot. t.* 152. *(vix Lam.)*

S. tomentosa. *Wall. Cat. n.* 1852. *b.*

A native of the East Indies, and of Jamaica; and probably common to the tropics both of the Old and the New World: for my young friend, M. Planchon, while arranging the two extensive Genera *Hibiscus* and *Sida* in my Herbarium, was struck with the great number of species that are common to America and Asia, and even to Africa; more than Botanists in general are aware of. The present species, which is undoubtedly the *S. graveolens* of Dr. Roxburgh, the *S. hirta* of Reichenbach (if not of Lamarck), and probably as Messrs. Wight and Arnott suggest, also the *S. Indica* and *S. Asiatica* of Linnæus, has been always considered to be exclusively a native of the East Indies: but Mr. Purdie detected it growing truly wild in Jamaica: and seeds which he sent to the Royal Gardens produced plants which have blossomed in the autumn of 1844 in the stove. It is a handsome species, with soft, pale-green foliage, and yellow flowers with a deep blood-colored eye.

Descr. A moderate-sized *shrub*, four to six feet high, with very downy *branches*, and copious, soft, spreading hairs, not confined to the branches, but extending to the petioles and peduncles. *Stipules* subulate, curved, deflexed, at length deciduous. *Leaves* upon petioles about as long as themselves, cordate, acute, scarcely, or but obsoletely lobed, toothed, or subangulato-dentate, very downy, almost velvety on both sides. *Peduncles* about as long as the petioles (but variable in length,) axillary, solitary, single-flowered, articulated below the calyx. *Calyx* rather five-partite than quinquefid, the segments ovate, acute. *Corolla* rather large. *Petals* five, cuneate, erecto-patent, imbricating one another, orange-yellow, not very bright, but having a deep blood-red spot at the base of each, forming an eye around the numerous *stamens*. *Ovary* globose, hairy. *Style* with many branches. *Stigmas* small, globose. *Carpels* numerous, composing a nearly globose, depressed, downy fruit, shorter than the calyx.

Fig. 1. Pistil:—*magnified.*

Tab. 4135

HINDSIA violacea.

Large-flowered Hindsia.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

HINDSIA. *Benth.* Calycis *tubus* turbinatus, *limbus* 4—5-partitus, laciniis inæqualibus linearibus v. apice foliaceo-dilatatis. *Corolla* infundibuliformis, tubo elongato, superne paullo inflato et inter stamina intus barbato, fauce nuda, limbi laciniis 5 ovatis, æstivatione valvata. *Antheræ* lineares sub apice tubi subsessiles. *Ovarium* biloculare; *placentæ* medio dissepimento affixæ, multiovulatæ. *Styli* rami longi lineares compressiusculi papilloso-hirti. *Capsula* calyce corticata, septicide bivalvis, valvulis duris demum loculicide bipartitis. *Semina* numerosa non alata (immatura ignota).—Frutices *Austro-Americani.* Folia *opposita, petiolata, ovata v. sublanceolata.* Stipulæ *utrinque solitariæ, ovatæ, integræ v. glanduloso-dentatæ intus sæpius glandulosæ.* Flores *ad apices ramorum in cymas subfoliatas dispositi, subsessiles, speciosi; corollis cæruleo-violaceis. Benth.*

Hindsia *violacea;* molliter pubescens, stipulis ovatis, foliis lato-ovatis basi rotundatis, laciniis calycinis valde inæqualibus, majoribus supra medium foliaceo-dilatatis.

Hindsia violacea. *Benth. in Bot. Reg.* 1844, *t.* 40.

The present Genus was constituted by Mr. Bentham, and intended to include the *Rondeletia longiflora*, Cham., figured at t. 3977 of the present work. It is dedicated to R. B. Hinds, Esq., R. N., who accompanied Captain Sir Edward Belcher in his surveying voyage in the Pacific, and who is charged with the publication of the Natural History collections made during that voyage. Both the species are plants of great beauty, the present one eminently so. It is a native of the Organ Mountains of Brazil, and was imported by Mr. Veitch of Exeter (through his collector, Mr. William Lobb), who received for it the large silver medal of the Horticultural Society's Garden Exhibition, in May of the present year, 1844. The flowers are large, of an extremely handsome violet-blue color, and of long duration. It requires the heat of the stove.

Descr. A *shrub* with very obtusely angled, four-sided *branches*, slightly pubescent. *Leaves* opposite, petiolate, ovate, rather acute, entire, many-nerved, the nerves close and parallel, and these united by slender cross nerves. *Petioles* thick. *Stipules* ovate, acute, opposite. *Flowers* in a large, handsome, subsessile, cyme. *Calyx* downy, with five, erect, very unequal, spathulate segments, the shortest of them longer than the tube. *Corolla* rich, but pale, violet blue: *tube* two and a-half to three inches long, enlarged upwards, where the stamens are inserted: *limb* of five spreading, ovate segments. *Anthers* included. *Ovary* inferior, two-celled, with several *ovules* on fleshy placentæ. *Style* filiform. *Stigma* bifid; the segments linear.

Fig. 1. Calyx and Pistil. 2. Section of the Ovary:—*magnified.*

W. Fitch del.t

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Tab. 4136

BARBACENIA squamata.

Scaly-stalked Barbacenia.

Nat. Ord. Hæmodoraceæ.—Hexandria Monogynia.

BARBACENIA. *Vandelli.* Gen. Char. *Perianthium* corollinum, ovario adnatum, infundibuliforme, sex-fidum. *Filamenta* bifida, antheras dorso affixas in divisione gerentia. *Capsula* trilocularis, polysperma. *Mart.*

Barbacenia *squamata;* caudice brevi diviso basibus squamiformibus foliorum vetustorum tecto, foliis lineari-acuminatis carinatis glaucis marginibus carinaque minute spinuloso-serratis, scapo foliis breviore, perianthii glabri tubo superne sensim dilatato laciniis lanceolatis acuminatis, filamentis latissimis apice truncatis vix emarginatis anthera dimidio brevioribus.

Barbacenia squamata. *Paxt. Mag. of Bot. cum Ic.*

A singular plant, and belonging to a singular Genus of Hæmodoraceæ, of which twelve species have been hitherto known, and these, according to Martius, are confined within very narrow limits in the New World, between 14° and 23° of southern latitude; they delight in mountainous situations, growing among micaceous schist, and on rock of other primæval formations, at an elevation of from 1,000 to 5,500 feet, and in exposed, dry situations. The present seems to differ from all yet described in several particulars, and was sent to Mr. Veitch of Exeter from the Organ Mountains, by Mr. William Lobb, in 1841. From a plant obligingly communicated by Mr. Veitch to Kew Gardens, where it flowered in the stove in the summer of 1843, our present figure was taken. In the color of the flowers, and general size of the plant, it resembles *B. tricolor* and *B. tomentosa*, Mart.; but it differs from both in the absence of clothing to its leaves, in the form of the flower, and especially in the nature of the filament of the anther, which is here unusually short and broad, and can hardly be termed bifid.

Descr. *Caudex*, or *stem*, short, dichotomous, clothed with the scale-like remains of former leaves: the perfect leaves are

confined to the apex of the branches, and are from four to five or six inches long, resembling in miniature those of some *Agave* or *Yucca*, spreading, glaucous, linear-acuminate, carinate; when seen under a lens, they are beautifully marked with close parallel lines, and have the margin and keel finely spinuloso-serrate. *Scape* springing from among the terminal leaves, and shorter than they. *Perianth* of a fine orange-red; the *tube* slightly enlarged upwards, adnate with the ovary, deeply striated and marked with raised, elevated points, or minute glands: segments lanceolate, moderately spreading, about as long as the ovary. *Stamens* six, inserted at the base of the ovary; three longer than the rest: *Filaments* short, very broad, emarginate. *Anthers* linear-oblong. *Style* conical at the base, shorter than the stamens: *Stigma* clavate.

Fig. 1. Flower, segments of the Perianth being removed. 2, 3. Stamens. 4. Pistil. 5. Transverse section of do. 6. Portion of a Leaf:—*magnified.*

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Tab. 4137

TURNERA ulmifolia.

Elm-leaved Turnera.

Nat. Ord. Turneraceæ.—Pentandria Trigynia.

TURNERA. *L.* *(Supra* Tab. 2106.*)* *De Cand. Prodr.* 3. *p.* 346.

Turnera *ulmifolia;* floribus axillaribus subsessilibus solitariis, foliis ovato-oblongis rugosis acutis grosse serratis subpubescentibus, stylis staminibus subbrevioribus.

Turnera ulmifolia. *Linn. Sp. Pl. p.* 387. *De Cand. Prodr.* 3. *p.* 346. *Spreng. Syst. Veget.* 1. *p.* 940. *Sloane, Jam.* 1. *p.* 127. *f.* 4. 5.

β. angustifolia ; minor, foliis, lanceolatis, petalis angustoribus. *Willd. Sp. Pl.* 1. *p.* 1503. *De Cand. Prodr. l. c.*—T. angustifolia. *Mill. Curt. in Bot. Mag. t.* 281.

There are, in the West Indies, two striking varieties of *Turnera ulmifolia.* One is already figured in the present work, under the name of *T. augustifolia.* The much finer state, and that which is considered the type of the species, is that now given, drawn from the rich collection at Syon Gardens. Its seeds were sent over from Jamaica by Mr. Purdie, and its very showy flowers, and ample glossy foliage, were in perfection in the stove, in July, 1844. Shortly after, plants, from the same source, flowered in the Royal Botanic Gardens, and convinced us that this variety, at least, is well deserving of cultivation. It appears, however, to be a plant of short duration, and requires to be renewed from seed.

Descr. A strong growing spreading *plant*, with herbaceous *stems*, said to survive one, two, or three years, glabrous in our individual. *Leaves* alternate, on short, thick *petioles*, broadly lanceolato-oblong, acute, wrinkled, deeply veined, the margin very coarsely, almost lobately serrated, rather flaccid and pendent. *Stipules* small, subulate, deciduous. *Flowers* solitary, axillary, on a short peduncle, about the length of the petiole. *Calyx* of five, deep, lanceolate segments. *Corolla* full yellow, of five, nearly rotundate, shortly-unguiculated

petals, spreading. *Stamens* five, yellow. *Filaments* rather short: *Anthers* subulate. *Ovary* ovate, one-celled, with three parietal placentæ and many ovules. *Styles* three, erect: *Stigmas* penicillate.

Fig. 1. Pistil. 2. Transverse Section of the Ovary:—*magnified.*

Tab. 4138

SOLÁNUM macránthum.

Large-flowered Nightshade.

Nat. Ord. Solaneæ.—Pentandria Monogynia.

SOLANUM. (*Vide supra* Tab. 3954.)

Solanum *macranthum;* caule arboreo aculeato, ramis lanatis, foliis amplis late ovatis acuminatis profunde angulato-lobatis basi attenuatis subsessilibus utrinque lanatis subtus præcipue aculeatis, racemis folio multoties brevioribus subcymosis, pedicellis calycibusque 5-fidis lanatis aculeatis, corolla ampla venosa.

Solanum macranthum. *Dun. Syn. Solan. p.* 43. *Roem. et Sch. Syst. Veget.* 4. *p.* 650. *Spr. Syst. Veget.* 1. *p.* 689. *Walp. Repert. Bot. v.* 3. *p.* 88.

A native of Brazil, and has been long cultivated in the old stove of the Royal Botanic Gardens of Kew, where, planted in the border, it has attained to the height of the roof. In such a situation, it really makes a very handsome appearance, with its ample foliage, and its large pale lilac-coloured flowers, which, drooping as they do from the upper branches, are seen to great advantage from below. To those cultivators who have not space to allow its growing thus freely, cuttings may be recommended, which strike freely, and flower almost as soon as struck.—It is n. 800 of Mr. Gardner's Brazilian collection.

Descr. Arborescent, and, with us, attaining a height of twelve or fourteen feet; much more, probably, in its native country. *Branches* mostly at the top, spreading; young ones densely clothed with rusty green wool, and beset with copious, very rigid aculei. *Leaves* ample, alternate, on very short *petioles*, almost sessile, broadly ovato-acuminate, attenuated at the base, the margins deeply angulato-lobate, the lobes acute, the surface strongly marked with copious reticulated veins, downy above, more so, almost woolly beneath; the hairs stellate and stipitate, as at f. 1, the veins on both sides prickly, the aculei larger and stronger below, especially on the costa.

Racemes axillary, much shorter than the leaves, subcymose, densely woolly and aculeated. *Pedicels* as long as the calyx. *Calyx* large; *tube* broad, almost hemispherical, woolly and aculeated; *limb* of five, ovate, acute, spreading, downy segments. *Corolla* very large, sometimes three inches across, pale bluish-purple, with darker dashes and pale lines, veiny. *Stamens* nearly sessile, five, equal, the *anthers* large, uniting in a broad cone, and each opening by two pores at the apex. *Style* a little longer than the stamens: *Stigma* two-lobed.

Fig. 1. Hairs:—*magnified.*

Pl. 36.

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Swan sc.

Tab. 4139

AÉRIDES odorátum.

Fragrant Air-plant.

Nat. Ord. Orchideæ.—Gynandria Monandria.

AERIDES. *(Vide supra* Tab. 4049.)

Aerides *odoratum;* foliis flaccidis apice obtusis obliquis, racemis pendulis multifloris foliis longioribus, labelli cucullati infundibularis laciniis lateralibus erectis cuneatis rotundatis, intermedia ovata acuta inflexa, calcare incurvo. *Lindl.*

Aerides odoratum. *Lour. Fl. Cochin. p.* 525. *Br. in Hort. Kew. ed.* 2. *v.* 5. *p.* 212. *Lindl. Gen. et Sp. Orchid. p.* 239.

Aerides cornutum. *Roxb. Hort. Beng. p.* 63. *Lindl. Bot. Reg. t.* 1485.

One of the many lovely Orchideous plants of the East Indies, no less remarkable for the elegance of its spikes of flowers, than for their fragrance. Loureiro first detected it in China and Cochinchina; upon it founded the Genus *Aerides*, and says of it what is now known to be a property common to almost all Epiphytes. "Mirabilis hujus plantæ proprietas est, quod ex sylvis domum delata, et in aere libero suspensa, absque ullo pabulo vegetabili terreo vel aqueo, in multos annos duret, crescat, floreat, et germinet. Vix crederem, nisi diuturna experientia comprobassem." It was introduced to the Royal Gardens of Kew by Sir Joseph Banks from China, so long ago as 1800, and has been since sent from Dacca and Sylhet in the East Indies by Drs. Roxburgh and Wallich. It flowers during the summer months.

Descr. *Stem* branched, thick, rounded, leafy, rooting; *roots* thick, fleshy. *Leaves* subdistichous, ligulate, carinate, and sheathing below, obtuse, coriaceous. *Spike* or *raceme* axillary, drooping, many-flowered, dense, highly fragrant. *Peduncle* terete, three to four inches long, bracteated. *Flowers* very delicate, cream-colour, fleshy, spotted and blotched with purple. *Sepals* and *petals* spreading, ovato-subrotund, upper

sepal and *petals* smaller than the two lateral *sepals*. *Labellum* somewhat infundibuliform, singularly curved, the lower portion ending in a blunt, curved spur; the *limb* very concave, three-lobed, with the segments incurved and connivent.

Fig. 1. Lip:—*magnified*.

W. Fitch del.t

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Swan. Sc.

Tab. 4140

DISÉMMA aurántia.

New-Caledonia Disemma.

Nat. Ord. Passifloreæ.—Monadelphia Pentandria.

Calyx 10-lobus; *tubus* brevis subtus sulcatus; faucis *corona* duplex: *exterior* filis distinctis; *interior* filis in membranam integram dentatamve concretis. Cæt. *Passifloræ.*—Species e *Nova-Hollandia* aut *Nova-Caledonia* ortæ. *De Cand.*

Disemma *aurantia;* foliis glabris basi ovatis late trilobatis, lobis obtusis inter medio longiore, lateralibus extus appendice subauctis, bracteis setiformibus apice glandulosis a flore parum remotis, petiolis apice biglandulosis, filis coronæ exterioris lobis cal. internis subæqualibus. *De Cand.*

Disemma aurantia. *Labill. Sert. Austr. Caled. t.* 79. *De Cand. Prodr.* 3. *p.* 332.
Murucuja aurantia. *Pers. Syn.* 2. *p.* 222.
Passiflora aurantia. *Forst. Prodr. p.* 326.

The Genus *Disemma* (from δις, *double*, and σεμμα, a *crown*,) was established by Labillardière in his Sertum Austro-Caledonicum, upon this very plant, a native of New-Caledonia, and is readily distinguished, on the one hand, from *Passiflora* by the presence of the membranous, truncated crown of *Murucuja*, and, from the latter, by the outer filamentous crown of *Passiflora*. The species are all of Australian origin, and include, besides the present, *D. Herbertiana*, *D. coccinea*, and *D. adiantifolia;* the latter from Norfolk Island. The Botanic Gardens of Kew, where our figure was taken in the greenhouse in July, 1844, owe the possession of this handsome plant to T. Bidwill, Esq. It is easily cultivated in a pot, with wire-trellice, and is remarkable, like *D. adiantifolia*, for the flowers being nearly white in bud and on first expanding, gradually assuming a yellow or tawny tint, and finally becoming a brick red. The sepals have a singularly broad keel or deep wing at the back.

Descr. A twining *shrub*, with the habit of our common *Passiflora cærulea*, everywhere glabrous. *Leaves* alternate, petiolate, broad, deeply trifid; the segments oblong-ovate, rather obtuse, middle segment the longest, at the base beneath, at the apex of the petiole are two rounded *glands*. *Stipules* none, or soon deciduous. *Tendrils* axillary, simple. *Pedunncles* axillary, much shorter than the leaf, bracteated; *bracteas* small, setaceous, deciduous, distant from the flower. *Flowers* large, handsome, at first almost white, gradually becoming orange-red, and finally brick-red. *Sepals* colored, oblong, acute, concave, with a singularly broad carina or wing at the back. *Petals* scarcely half their length, oblong-obtuse, spreading. *Outer ray* of the *corona* deep red, consisting of numerous subulate, erect, or slightly inclined *filaments*, dark at their tips, united at the base: *inner* one a conical, red, plicate membrane, open at the mouth, a little longer than the outer ray. *Ovary* oval, supported, as it were, on the united portion of the filaments, which thus form a cylindrical column, nearly thrice as long as the corona. *Styles* clavate, spreading. *Stigmas* capitate. *Anthers* linear, rather shorter than the free, spreading portion of the filaments, green.


1.
2.
3.
4.

Tab. 4141

CYMBÍDIUM ochroleúcum.

Pale Yellow Cymbidium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

CYMBIDIUM. *(Vide supra* Tab. 3648.)

Cymbidium *ochroleucum;* caulescens axillis pseudobulbiferum, foliis ligulatis carinatis apice oblique emarginatis, floribus solitariis axillaribus, sepalis petalisque æqualiter patentibus lineari-oblongis subspathulatis acutiusculis, labello cucullato trilobo disco barbato. *Lindl.*

Cymbidium ochroleucum. *Lindl. Gen. et Sp. Orchid. p.* 168.

Camaridium ochroleucum. *Lindl. in Bot. Reg. t.* 844.

Ornithidium album. *Hook. Bot. Mag. t.* 3306.

This plant has a very singular mode of growth, producing its distichous flowers in a leafy spike quite distinct from the pseudo-bulbs, which themselves originate from the axils of leafy branches: and the plant has not yet had justice done to it in either of the figures above quoted, least of all in that of the Botanical Magazine; whence I have thought it deserving of being again represented. The flowers of the leafy spike open in succession, but I have never seen more than two expanded at once.

Descr. *Stem* compressed, much branched, and proliferous, bearing oblong, compressed, smooth *pseudo-bulbs*, having a long, ligulate *leaf* on each side at the base, and about three terminal leaves of the same shape. *Flowers* from the axils of the leaves of a long, proliferous shoot, or branch, which bears small, distichous, ovato-oblong, acute *leaves*, one flower in each axil opening successively from below, and bracteated; *bracteas* subulate, brown. *Flowers* white or cream-color, fragrant, rather large. *Sepals* and *petals* nearly uniform, oblongo-obovate, the latter rather narrower; all of them concave. *Lip* applied to the column, yellow, streaked transversely with red, oblong, three-lobed; side-lobes small, middle one obtuse; the disk of the lip has a broad crest, formed of

orange-colored, imbricated, soft *spines*; the spines passing towards the apex into toothed lamellæ. *Column* semi-cylindrical, curved, cream-colored, with a broad, red spot at the base. *Anther-case* conical, obtuse. *Pollen-masses* four, unequal, attached to a broad *gland* by their base.

Fig. 1. Column and Lip. 2. Column. 3. 4. Pollen-masses. 5. Inner view of the Lip:—*magnified.*

Tab. 4142

PLEUROTHÁLLIS bicarináta.

Double-keeled Pleurothallis.

Nat. Ord. Orchideæ.—Gynandria Monandria.

PLEUROTHALLIS. *(Vide supra* Tab. 3897.)

Pleurothallis *bicarinata;* "folio oblongo coriaceo planiusculo leviter carinato basi subcordato petiolo acute canaliculato univaginato breviore, sepalis linearibus æqualibus lateralibus carinatis ad apicem fere connatis, sepalis lineari-obovatis minute serratis glabris, labello obovato carnoso medio exarato denticulo inflexo utrinque prope basin." *Lindl.*

Pleurothallis bicarinata. *Lindl. in Bot. Reg.* 1839, *Misc. p.* 14. *n.* 11.

South America, but especially the Western side of the Cordillera, and the mountains of Peru and Columbia, abound in species of the curious Genus *Pleurothallis.* The present, however, is a native of Brazil, and has thence been received by Mr. Loddiges; and Mr. Gardner sent living plants of it from Rio to Woburn, which have through that source reached the Royal Gardens of Kew, where they produced their orange-colored flowers from the bosom of the solitary, elliptical leaf, in December, 1843. The species is well named by Dr. Lindley from the sharp keel on each of the lateral sepals.

Descr. *Plants* aggregated, throwing out fibrous roots from the base. *Stems* two to four or five inches long, jointed, angled, slightly tuberous at the base, clothed at the joints with sheathing scales, the lowest short, rich chocolate, broad, spotted, approximate, the upper ones more distant, elongated, pale yellow, with numerous dark-red spots. Each *stem*, or *petiole* as Dr. Lindley considers it, is terminated by a coriaceous, elliptical *leaf*, blunt at the apex, a little cordate at the base, faintly striated on the surface. From the base of this leaf, and, as it were, from a hollow or depression, the *peduncle* arises, bracteated and bearing a *spike* of orange-red *flowers*, spirally arranged, nearly as long as the leaf. *Sepals* oblong, acute, gaping, the upper sepal rather the smallest, free, the two

lateral ones conjoined almost to the apex, beneath the labellum, apiculate below the point, sharply carinated at the back. *Petals* small, linear, shorter than the labellum, appressed to the column. *Labellum* not half so large as the sepal, obovate, concave, obtuse, with an obscure tooth on each side at the base. *Column* semicylindrical, spotted with red at the base.

Fig. 1. Flower from which the Sepals are removed. 2. Front view of an entire Flower. 3. Back view of ditto:—*magnified.*

4143

by S. Curtis Glazenwood Essex Feb. 1. 1845

Tab. 4143

CRYPTADÉNIA UNIFLÓRA.

Solitary-flowered Cryptadenia.

Nat. Ord. Thymeleæ.—Octandria Monogynia.

CRYPTADENIA. *Meisn.*—*Flores* perfecti. *Perigonium* coloratum, infundibuliforme, *tubo* angusto, sursum ampliato, *limbo* 4-partito, *fauce* nuda. *Glandulæ* 8, medio perigonii tubo simplici serie adnatæ, staminibus alternæ. *Stamina* 8, alterna perigonii laciniis opposita, exserta, alterna, infra sinus inclusa, filamento per tubum adnato decurrente barbato. *Germen* uniloculare; *gemmula* unica, pendula, anatropa. *Stylus* lateralis; *stigmate* capitato. *Fructus* ..... perigonii basi persistente hirsutis inclusus. —*Fruticuli* Capenses, *ericoidei, dichotome ramosi.* Folia *opposita, decussata v. suprema quaternatim verticillata, sessilia, linearia v. subacerosa, utrinque glabra.* Flores *terminales, solitarii v. gemini majusculi, v. axillares, solitarii parvi, extus sericeo-pubescentes, intus glabri, violacei, lilacini v. rosei. Endl.*

Cryptadenia *uniflora;* foliis patulis linearibus acutis v. mucronatis subpungentibus compressis dorso acutis (rarius obtusis v. deplanatis) margine nudis summis haud latioribus, floribus terminalibus solitariis majusculis tubo bracteis superante, limbi lobis oblongis acutiusculis, tubum æquantibus v. sublongioribus. *Meisn.*

Cryptadenia uniflora. *Meisn. in Linnæa, v.* 14. *p.* 406.

Passerina uniflora. *Linn. Sp. Pl. p.* 560. *Burm. Afr. t.* 48. *f.* 1. *Lam. Ill. t.* 291. *f.* 1. *Pl. Eckl. in Un. Itin. n.* 362. *Zeyl. Pl. Cap. Exsicc. Suppl. n.* 239.

Among the handsomest of the Linnæan Genus *Passerina* were three species, the present, *P. grandiflora*, and *P. ciliata*, which, in habit, as well as in essential character, differed considerably from the others. These Professor Meisner has wisely separated from *Passerina*, and named *Cryptadenia*, from the presence of eight glands concealed within the tube of the floral envelope, and alternating with the eight stamens. All are natives of the Cape. The present species, though sufficiently known in Herbaria, is probably rare in gardens, though well deserving of a place on account of the beauty of its copious blossoms, and the long time the plant continues in blow. It has, however, been cultivated at Kew since 1759. It flowers there in the early summer months, in an airy part of the greenhouse.

Descr. A small heath-like *shrub*, with twiggy *branches*, somewhat fastigiate at the apices. *Leaves* patent, or in the younger branches suberect, linear, acute, opposite, glabrous, plane above, or slightly channelled, keeled at the back. *Flowers* solitary, rather large, handsome, lilac, terminal. *Perianth* hypocrateriform, silky on the outside; the *tube* sunk in the floral leaves, nearly cylindrical, striated upwards, downy within. *Limb* of four spreading, ovate, acute, segments. *Stamens* eight, four placed at the mouth of the tube, and a little exserted, the other four a little lower down in the tube, and alternating with them: below these and near the middle of the tube, are eight small, oblong, yellow, sessile *glands*, alternating with the eight stamens. *Ovary* oblong. *Style* elongated, inserted below the apex, thickening upwards, and terminating in a capitate, downy *stigma*.

Fig. 1. Flower. 2. The same laid open, to show the Stamens and Glands. 3. Pistil:—*magnified.*

Tab. 4144

ACHIMÉNES hirsúta.

Hairy Achimenes.

Nat. Ord. Gesneriaceæ.—Didynamia Angiospermia.

ACHIMENES. *(Vide supra* Tab. 4126.)

Achimenes *hirsuta;* caulibus hirsutis paniculatis bulbilliferis, foliis cordatis serratis hirsutis, pedunculis solitariis foliis æqualibus, corollæ limbo plano laciniis rotundatis serrulatis. *Lindl.*

Achimenes hirsuta. *Lindl. in Bot. Reg.* 1843. *Misc. n.* 103. *Tab.* 55.

This is not so gay in its flowers as the *Achimenes picta* (Tab. 4126), nor are the leaves by any means so beautiful; but there is a richness of colour in the large corollas, and a peculiar bloom, very difficult to be imitated by art, which render it worthy a place in every stove. Its nearest affinity, however, is, as Dr. Lindley, its first describer, observes, with *A. pedunculata* (Tab. 4077), "but the flowers are larger, the border is much more flat, and the colour is a deep, rich rose, instead of the clear orange of *A. pedunculata.*" Our specimen has even deeper colored blossoms (partaking of a purplish blush, or bloom) than that figured in the Bot. Register: still, it must be acknowledged that the two species have a very close affinity. It is, like the *A. pedunculata*, a native of Guatemala, and was "raised from among a mass of Guatemala Orchidaceæ bought at one of Mr. Skinner's sales." It loves heat, and flourishes in the stoves with the same treatment as other species of this lovely Genus.

Descr. *Stem* herbaceous, erect, branched, two to three feet high, terete, hairy, repeatedly and trichotomously divided, with opposite, shortly petiolate, ovato-cordate, acuminate, serrated, hairy *leaves* at the ramifications. Upper *branches*, but especially the *peduncles*, bearing in the axils of small bracteas, clusters of little *bulbilli*, by which the species may be abundantly increased, as well as by the roots. The *peduncles* are elongated, much longer than the leaves, terminal and

axillary, undivided and single-flowered, or forked and two-flowered. *Flowers* large, handsome, drooping, deep-rose red. *Calyx* having the turbinate hairy *tube* adnate with the *ovary*; *limb* of five spreading, lanceolate segments. *Corolla* with the *tube* infundibuliform, the *limb* very oblique, spreading, cut into five rotundate *segments*, of which the two upper are the smallest and more or less reflexed, all of them crenate; the mouth yellow, with red dotted lines. *Stamens* included. *Style* having an annular disk at the base, thickened, oblique. *Stigma* two-lipped.

Fig. 1. Pistil:—*magnified.*

W. Fitch. del.

Pub. by S. Curtis Glazenwood Essex March 1. 1845

Swan Sc.

Tab. 4145

ANGRÆCUM distichum.

Two-rowed Angræcum.

Nat. Ord. Orchideæ.—Gynandria Monandria.

ANGRÆCUM. *Pet. Th. Perianthium* patens. *Sepala* et *petala* subæqualia, libera. *Labellum* sessile, cum basi columnæ continuum, carnosum, indivisum, petalis multo latius; calcare recto cornuto, sæpius subcylindraceo, perianthio multo longiore, raro obconico. *Columna* nana subteres, raro elongata semiteres. *Anthera* 2-locularis, truncata. *Pollinia* 2, bipartibilia, caudicula brevi angusta, glandula, triangulari.—Epiphytæ *caulescentes*. Folia *coriacea, ligulata, apice obliqua.* Flores *solitarii v. racemosi, albi, nunc citrini, v. herbacei. Lindl.*

Angræcum *distichum;* caule imbricato, foliis distichis compressis recurvis obtusis supra canaliculatis, floribus solitariis axillaribus, pedunculis foliis subæqualibus, sepalis ovatis petalisque angustioribus secundis obtusis, labello postico oblongo concavo apice tridentato calcari tereti horizontali pedunculo breviore. *Lindl.*

Angræcum distichum. *Lindl. Bot. Reg. t.* 1781.

The Genus *Angræcum* is peculiar to the Old World, if we except the *A. filiforme*, a native of Hispaniola, but which will probably prove to belong to a different Genus. It was founded by Du Petit Thouars, and the name derived from a barbarous word "*Angwrek*" of the Malays. Minute as are the flowers of the present species, they are identical in structure with those of the fine *A. eburneum* of Thouars. We are indebted to Mr. Loddiges, who received the plant from Sierra Leone, for the possession of the present species in the Royal Botanic Gardens of Kew, where it flowered in October, 1843.

Descr. *Stems* three to five inches long, tufted, simple or branched, clothed throughout their whole length with fleshy, oblong-falcate, obtuse, distichous *leaves*, having a groove at the thickened upper edge, which receives the sharp edge of the one above it. From the axils of these leaves arise the small, white, inconspicuous *flowers*. Each has a bractea at its base. *Sepals* and *petals* spreading, but secund, the former oblong-

ovate, the latter rather smaller, linear-oblong, all of them obtuse. *Lip* ovate, cucullate, acuminate, obscurely three-lobed, the base running out into a long, straight *spur*, as long as the straight, furrowed *germen*. *Column* very short, with a concave *stigma*. *Anther-case* hemispherical. *Pollen-masses* two, each pedicellate.

Fig. 1. Flower. 2. Front view of ditto. 3. Lip and Spur. 4. Column and Anther, with part of the Germen. 5. 6. Pollen-masses: *magnified*.

W. Fitch del.

Pub. by S. Curtis Glazenwood, Essex March 1. 1845

Swan Sc.

Tab. 4146

AÓTUS gracíllima.

Slender Aotus.

Nat. Ord. Leguminosæ.—Decandria Monogynia.

AOTUS. *Sm.—Char. Gen. Calyx* 5-fidus bilabiatus basi ebracteolatus. *Pet.* staminaque decidua. *Ovarium* dispermum. *Stylus* filiformis. *Legumen* bivalve. *Seminis* strophiola nulla.—Frutices *Australasici.* Folia *simplicia, lineari-subulata, margine revoluta, alterna, subopposita aut ternatim verticillata.* Flores *axillares flavi. De Cand.*

Aotus * *gracillima;* ramis gracilibus lævibus glabris apice minute puberulis, foliis sparsis v. subopppositis erectis patulisve anguste linearibus obtusis v. mucronulo exiguo innocuo recurvo apiculatis lævibus glabris margine revolutis supra convexis v. obsolete 1-sulcis, axillis 1—3-floris, pedicellis brevissimis calycibusque adpresse pilosis, calycis labio superiore truncato lævissime emarginato. *Meisn.*

Aotus gracillima. *Meisn. in Pl. Preiss. p.* 59.

A very elegant Swan River species of *Aotus,* introduced to the Royal Gardens of Kew by Mr. James Drummond. We have also received it from Baron Hugel, imported from the same country, to which it seems peculiar. Mr. Preiss and Mr. Drummond have both sent dried specimens. Besides its glabrous branches and foliage, it may at once be known from the old *A. villosa* (v. Bot. Mag. t. 949) by the very copious flowers, so abundant on the branches as to conceal the leaves of a great portion of the branches: thus its beauty will recommend it to every greenhouse. Only two species of the Genus were known to Professor De Candolle, and both natives of Eastern Australia; now, six others are described in the "Plantæ Preissianæ," as inhabitants of the Swan River settlement.

Descr. A rather tall-growing, slender *shrub,* with twiggy *branches,* often fasciculate at the apex of the main

* So named by Sir James Smith, from the absence of the two little bracteas, or ear-like appendages to the base of the calyx, possessed by some allied Genera.

branches, slightly pubescent. *Leaves* scattered, slender, narrow-linear, erecto-appressed, acute, or with a soft mucro, channelled above, the margin revolute, slightly and minutely silky beneath between the revolute margins; *petiole* very short, scarcely any. *Flowers* one to three in the axils of the leaves, longer than they, and so copious as to form a dense, cylindrical mass of many inches in length, of a lively yellow color, spotted with red. *Peduncle* very short. *Calyx* subcylindrical, deeply two-lipped, slightly silky; *upper lip* obliquely truncated, bifid; *lower lip* three-dentate: teeth rather small. *Vexillum* subrotund, unguiculate; just above the claw is an oblong spot, surrounded by a red line. *Alæ* obtuse, yellow. *Carina* red. *Stamens* ten; *anthers* oblong. *Ovary* ovate, very silky. *Style* a little deflexed, then curved up. *Stigma* obtuse.

Fig. 1. Flower. 2. Carina. 3. One of the Alæ. 4. Carina. 5. Calyx, Stamens, and Pistil. 6. Pistil. 7. Upper, and 8, under side of a Leaf; all more or less *magnified*.

Tab. 4147

RUÉLLIA lilácina.

Lilac-flowered Ruellia.

Nat. Ord. Acanthaceæ.—Didynamia Angiospermia.

RUELLIA. (*Vide supra* Tab. 3718.)

Ruellia *lilacina;* glaberrima fruticosa, foliis ovatis brevissime petiolatis obtuse subacuminatis subcoriaceis integerrimis, floribus axillaribus sessilibus subbinis, calycis tubo corollino triplo brevioris laciniis subulatis paululum inæqualibus, corollæ venosæ tubo elongato gracili infundibuliformi curvato, limbi lobis patentibus rotundatis subæqualibus, seminibus orbiculatis marginatis ciliatis.

The stove of the Royal Botanic Gardens of Kew is indebted for this handsome Ruelliaceous plant to Mr. Glendinning of the Chiswick Nursery: but of its native country, I regret I can learn nothing. Its fine dark and glossy foliage, with large, full lilac-colored flowers, which are produced from time to time during the greater part of the summer months, renders it well worthy of a place in the hothouse.

Descr. A low *shrub*, having attained with us a height of from two to three feet, branched, the young *branches* herbaceous, glabrous, as is every part of the plant, and smooth. *Leaves* opposite, ovate, bluntly acuminate, penninerved, quite entire at the margin, dark green, somewhat glossy, paler beneath. *Flowers* axillary, generally two from each axil, sessile. *Calyx* less than two-thirds the length of the tube of the corolla, of five deep, rather unequal, subulate, glabrous, erect *segments*. *Corolla* with a very long, curved, slender, infundibuliform *tube*, veiny and lilac above, pale and almost white towards the base; *limb* spreading, of five rounded, very obtuse, and nearly equal lobes, veined, and of a purple-lilac color. *Fruit* an oblong, two-celled *capsule*, a little longer than the persistent segments of the calyx, slightly acuminated but obtuse, containing about four orbicular, compressed, mar-

gined and ciliated seeds in each cell; and each *seed* subtended by a subulate bracket.

Fig. 1. Capsule and persistent Calyx. 2. Vertical section of the immature Capsule, showing the Seeds and Brackets. 3. Single Seed and bracket:—*magnified.*

Tab. 4148

ONCÍDIUM BICALLÓSUM.

Two-warted Oncidium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

ONCIDIUM. *(Vide supra* Tab. 4130.)

Oncidium *bicallosum;* bracteis ovatis membranaceis obtusis, labelli lobis lateralibus abbreviatis intermedio maximo transverso emarginato obcordato, crista bicallosa, tuberculis distantibus uno ante alterum posito rugosis subtrilobis, columnæ auriculis linearibus falcatim recurvis. *Lindl.*

Oncidium bicallosum. *Lindl. in Benth. Pl. Hartw. p.* 94. *Bot. Reg.* 1843. *t.* 12.

An inhabitant of Guatemala, whence it was introduced to our stoves by Mr. Skinner, who sent it to Woburn Abbey, as well as to Mr. Bateman: and it is now, with the Woburn Orchideous collection, in the gardens of Kew, where we do not find it difficult to flower. Our drawing was made in October, 1843, and the plant is now again in blossom at the time of drawing up this description in January, 1845. Dr. Lindley alludes to its close affinity with *Oncidium Cavendishianum*," so much so as to seem a mere variety of it; but it is in reality quite distinct." My own investigation would rather lead me to consider the two as forms of one and the same kind, and that the species is liable to considerable variation; the more especially as our *O. pachyphyllum*, Bot. Mag. t. 3807, is considered by Dr. Lindley a state of *O. Cavendishianum*. To me, our present plant seems to correspond better with Mr. Bateman's original figure of *O. Cavendishianum*, than our *O. pachyphyllum* does.

Descr. *Pseudo-bulbs* none. *Foliage*, as in our *O. pachyphyllum*, large, singularly thick and carinate, subcymbiform. *Peduncle* arising from a scale at the base, and therefore radical, very long, bearing a many-flowered panicle, which varies much in size and ramification. *Flowers* large, handsome, yellow, slightly tinged with green on the sepals and petals:

these are all spreading and obovato-spathulate, but not equal; the upper sepal is broadly spathulate, the lateral ones narrow; the *petals* rather larger than these, all more or less undulated, especially at the margin. *Lip* large, three-lobed; lateral lobes small, obovate; intermediate one very large, two-lobed: at the base is a raised crest, divided into two portions; the upper one with two elevated points or glands, the lower one presenting five smaller points. *Column* short, with a decurved tooth or small wing on each side. *Anther-case* hemisphærical.

Fig. 1. Column and Lip. 2. Column and base of the Lip, with the lateral Lobes:—*magnified.*

Tab. 4149

LÝCIUM fuchsioídes.

Fuchsia-flowered Lycium.

Nat. Ord. Solaneæ.—Pentandria Monogynia.

LYCIUM. *L.—Char. Gen. Calyx* urceolatus, æqualiter quinquedentatus v. irregulariter tri- quinquefidus. *Corolla* hypogyna, infundibuliformis v. tubulosa, limbo quinque- decemfido v. dentato, interdum plicato. *Stamina* 5, medio v. imo corollæ tubo inserta, inclusa v. exserta; *antheræ* longitudinaliter dehiscentes. *Ovarium* biloculare, placentis dissepimento adnatis, multiovulatis. *Stylus* simplex; *stigma* depresso-capitatum v. obsolete bilobum. *Bacca* calyce suffulta bilocularis. *Semina* plurima, reniformia. *Embryo* intra albumen carnosum periphericus, hemicyclicus.—Arbusculæ *v.* frutices, *in regione Mediterranea et in America tropica transandina crescentes, plurimi quo ad seminis structuram nondum explorati, et fortassis olim e genere expellendi;* foliis *alternis, integerrimis, interdum fasciculatis;* pedunculis *extra axillaribus aut terminalibus, solitariis, geminis v. umbellatis, rarius corymbosis;* corollis *albidis, flavescentibus, roseis, purpureis v. coccineis. Endl.*

Lycium* *fuchsioides;* fruticosum inerme glabrum, foliis oblongo-obovatis obtusis in petiolum brevem attenuatis, pedicellis aggregatis axillaribus terminalibusque unifloris, floribus nutantibus, calycibus subcampanulatis 5-dentatis bilobis seu hinc fissis, corolla tubulosa calyce ter longiore, limbo patente quinquedentato dentibus minoribus interjectis, staminibus inclusis, bacca ovato-acuminata.

Lycium fuchsioides. *H. B. K. Pl. Æquin.* 1. *p.* 147. *t.* 42. *Gen. et Sp. Am.* 3. *p.* 52. *Spreng. Syst. Veget. v.* 1. *p.* 701. *Roem. et Sch. Syst. Veget.* 4. *p.* 696. *Walp. Repert.* 3. *p.* 110.

Introduced to the Royal Botanic Gardens of Kew, and raised from seeds sent by Dr. Jameson, from Azoques, in the Quitinian Andes, where it is used by the natives for fences. Dried specimens from the same locality are now before us, bearing both flower and fruit at the same time: the fruit occupying the lower part of a branch; perfect flowers the upper. From these specimens, the fruit has been added. The figure in the "Plantes Æquinoctiales" from nearly the

* So called from the original species being a native of Lycia, in Asia Minor.

same country (" locis subfrigidis Regni Quitensis, prope Delay, Cumbe et Cuenca, alt. 1,400 hexap."), is a good representation of the plant; but the intermediate lesser teeth of the limb of the corolla are omitted, which indeed are not easily seen in the dried specimens; and the fruit is given as a small globose berry. In the Nov. Gen. Amer., however, the berry of the same plant, is, on the authority of Humboldt, described as "ovate;" so that I cannot doubt of our plant being identical with it. It flowered during a good part of the summer, and, which may be inferred from our figure, made a very handsome appearance.

Descr. A *shrub*, as cultivated by us, about five feet high, everywhere glabrous, or nearly so, unarmed. *Leaves* often fascicled, obovate, inclining to oval or oblong, very obtuse, entire, tapering at the base into a short footstalk. *Peduncles* aggregated, axillary, or supra-axillary, or terminal, shorter then the leaves, single-flowered. *Flowers* drooping, large, handsome. *Calyx* subcampanulate, five-toothed, and bursting, as it were, with a fissure on one side, or into two unequal lobes. *Corolla* thrice as long as the calyx, orange-scarlet; *tube* elongated, nearly straight; *limb* moderately spreading, five-toothed or angled, with a smaller intermediate tooth. *Stamens* inserted near the base of the corolla. *Filaments* included, downy at the base. *Germen* pyramidal, obscurely five-lobed: *Style* as long as the corolla: *Stigma* capitate. *Berry* (on native specimens) ovate, acuminate, in part surrounded by the cleft calyx.

Fig. 1. Stamens. 2. Pistil: *magnified.* 3. Capsule: *nat. size.*

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Tab. 4150

LOBÉLIA thapsoidéa.

Mullein-like Lobelia.

Nat. Ord. Lobeliaceæ.—Pentandria Monogynia.

Gen. Char. LOBELIA. *L.*—*Calyx* 5-lobus; *tubo* obconico, ovoideo vel hemisphærico. *Corolla* superne longitudinaliter fissa, bilabiata; *tubo* cylindraceo vel infundibuliformi recto; *labio* superiore sæpius minore et erecto, inferiore sæpius patente latiore 3-fido v. rarius 3-dentato. *Antheræ* 2 inferiores vel rarius omnes apice barbatæ. *Ovarium* inferum v. semi-superum, imo (in speciebus simillimis) subliberum.—Herbæ *v. rarius* suffrutices, foliis *alternis*, floribus *sæpius racemoso-spicatis*, pedicellis *axillaribus*, corolla *cærulea, alba, violacea, rubra vel ex rubro-aurea. D C.*

Lobelia *thapsoidea;* caule stricto simplicissimo pilosiusculo, foliis sessilibus superne confertis lanceolatis basi attenuatis subdenticulatis minuteque ciliatis pilosiusculis, racemo terminali pyramidali densifloro, bracteis approximatis lanceolato-acuminatis pilosis integris pedicello longioribus, calyce piloso, tubo hemisphærico, lobis acuminatis basi latis tubo corollæ dimidio brevioribus, lobis corollæ pilosæ omnibus angustis labio inf. 3-fido, antheris 2 infer. baccatis. *D C.*

Lobelia thapsoidea. *Schott in Pohl, Bras.* 2. *p.* 102. *t.* 167. *De Cand. Prodr.* 7. *p.* 380. *Cham. in Linnæa, v.* 8. *p.* 209.

Rapuntium thapsoideum. *Presl, Prodr. Lob. p.* 24.

Geniostoma Brasiliense. *Spreng. Syst. Veget.* 1. *p.* 588? *(according to Chamisso.)*

Much as the Genus *Lobelia*, L., has been reduced in amount of species by the numerous Genera that have been of late separated from it, especially *Siphocampylos* and *Tupa*, there are yet enumerated, in De Candolle's Prodromus, one hundred and seventy-three species, and many new ones exist in our own Herbarium and those of other Botanists. Among the most remarkable of the Genus for stateliness and showiness are the *L. uranacoma*, Cham., *L. exaltata*, Pohl, *L. Organensis*, Gardn., and the subject of the present plate, which so far excels the rest, as to have obtained from De Candolle the epithet of "*Lobeliarum Princeps.*" Pohl gives the height as six feet. Mr. Gardner, to whom our stoves owe the possession of this fine plant, gathered speci-

mens measuring eight feet. Of the size and beauty of its raceme and the number of the flowers, our readers can form some idea from the accompanying figure, which was made from a noble specimen, sent from the College Botanic Garden by our often-mentioned friend Mr. Mackay. The same plant is possessed by the Botanic Gardens of Glasgow and Kew. Pohl has represented the flowers blue, the artist being deceived no doubt from the appearance of the dried specimens.

Descr. *Root* perennial. *Stem* erect, herbaceous, six to eight feet high, leafy, simple, with a habit and foliage somewhat resembling those of our great *Mullein, Verbascum Thapsus* (whence the specific name), stout, obtusely angled and furrowed, within filled with a soft, white pith. *Leaves* broadly-lanceolate, attenuated below, but sessile, the inferior ones a foot or a foot and a half long, all soft and finely downy, dentato-ciliate, closely and regularly penninerved. *Raceme* very large, pyramidal, covered with rather large, densely imbricated *flowers*, so dense as to appear spicate. *Bracteas* linear-lanceolate, reflexed. *Pedicels* also reflexed when in flower, especially the lower ones. *Corolla* rose-purple, hairy, or rather silky when seen under the microscope. *Column* of *stamens* nearly as long as the corolla. *Anthers* lead-color, the two lower ones bearded. The *seeds*, which are unknown to authors, are compressed (lenticular), margined, but not broadly winged like those of *L. uranocoma*, Cham.

Fig. 1. Column of Stamens, including the Style: *magnified.*

W. Fitch. del.t Pub. by S. Curtis Glazenwood Essex April 1. 1845

Tab. 4151

GOVÉNIA utriculáta.

Bladdery Govenia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

GOVENIA. *Lindl.* *(Vide supra* Tab. 3660.)

Govenia *utriculata;* pseudo-bulbo ovato vagina ampla membranacea striata pellucida oblongo-attenuata incluso, foliis binis lato-oblongis acuminatis plicatis basi attenuatis, racemo elongato multifloro, sepalis petalisque curvatis acuminatis, labello oblongo-ovato acuto.

Govenia utriculata. *Lindl. (v. Bot. Reg.* 1839. *Misc. sub. n.* 66.)

Cymbidium utriculatum. *Sw. in Act. Nov. Ups.* 6. *p.* 75. *Fl. Ind. Occ.* 3. *p.* 1477. *Willd. Sp. Pl. v.* 4. *p.* 107. *Spreng. Syst. Veget.* 3. *p.* 724. *Lindl. Gen. et Sp. Orchid. p.* 170.

Limodorum utriculatum. *Sw. Prodr. p.* 119. *Jacq. Fragm. Bot.* 29. *t.* 32. *f.* 4.

For a long time, this singular plant, remarkable for the large, transparent, bladdery sheath surrounding its scape and the lower part of the leaves, was only known from the description of Swartz, who gathered it in Jamaica and Hispaniola. A specimen, in a very imperfect state, sent to me by Dr. Macfadyen, from the former of the two islands just mentioned, was all that Dr. Lindley had seen; and from it he made some remarks in his valuable Genera et Species Orchidearum. An allied plant communicated from Mexico (*Govenia lagenophora*, Lindl.), satisfied him, however, that our Jamaica "*Cymbidium*" was a congener, and he then, in the volume of the Botanical Register Miscellany above quoted, named it *Govenia utriculata.* The attention of our Collector, Mr. Purdie, was especially directed to the re-discovery of this plant in Jamaica, and we had soon the pleasure to receive fine dried as well as living specimens at Kew. The latter, planted in earth in a pot, flourished, and blossomed beautifully in September, 1844. The bladdery sheath seems destined to contain water for the nutriment of the plant.

Descr. *Plant* terrestrial. *Root* of large, coarse, tortuose, rather woolly fibres. From the summit of this, rises a singular,

large, oblong or oblong-ovate, inflated, membranaceous sheath, which surrounds the lower part of the scape and base of the leaves. *Leaves* two, a foot and more long, broadly oblong, acuminate, closely striated and plaited, tapering at the base. *Scape* radical, a foot or a foot and a-half long, erect, terete, bracteated; *bracteæ* lanceolato-subulate, the lower ones distant, sheathing. *Raceme*, or rather *spike*, six to eight inches long, with many cream-colored blossoms. *Sepals* and *petals* scarcely at all spreading, lanceolate, acuminate, decurved, the *petals* shorter than the *sepals*. *Lip* oblong-ovate, acute, decurved, entire, with three red spots at the apex. *Column* semicylindrical, white, with transverse reddish streaks in front. *Anther-case* acuminated. *Pollen-masses* four, with a gland and short caudicle.

Fig. 1. Flower. 2. The same, with the lateral Sepals removed. 3. Column and Lip. 4. Apex of the Column, with the Anther-case. 5. Back view of ditto, with the Anther-case removed. 6. Front view of ditto, ditto:—*magnified.*

4152.

I.

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Tab. 4152

GESNÉRIA Schiedeána.

Schiede's Gesneria.

Nat. Ord. Gesneriaceæ.—Didynamia Angiospermia.

GESNERIA. *L.* *(Vide supra* Tab. 3995.*)* *De Cand. Prodr. v. 7. p.* 526.

Gesneria *Schiedeana;* tota pubescenti-tomentosa, caule erecto suffruticoso, foliis terno- quaternove-verticillatis breviter petiolatis oblongo-lanceolatis rugosis crenatis acutiusculis subtus tomentosis, pedunculis aggregatis axillaribus 1—3-floris folio multo brevioribus, calyce turbinato 5-lobo, corolla infundibuliformi-campanulata subtus ventricosa tota velutino-villosissima, limbi brevis patentis lobis 5 subæqualibus, ovario hirsutissimo basi nectariis 5, stylo brevi hirsuto.

Gesneria spicata, β. Schiedeana. *De Cand. Prodr. v. 7. p.* 531.

This is another lovely addition to the many beautiful *Gesnerias* now cultivated in our stoves. It was sent from Woburn Abbey by Mr. Forbes, who received the roots from Mexico. It quite agrees with the *G. spicata*, β., of De Candolle (also from Mexico), and seems different, as that author suspected, from the original New Grenada *G. spicata* of Humboldt, in which the inflorescence is more truly spicate, the flowers smaller, and the corollas much less hairy. Our species is remarkable for its richly-colored blossoms, clothed with long, shaggy hairs; their color, a bright-golden scarlet; the limb variegated with red and yellow, the red arranged in broken lines. It flowered at Woburn, in November, 1844.

Descr. An erect-growing *plant*, apparently little branched, with a rounded, tomentose *stem*, tinged with red. *Leaves* generally in whorls of three, petiolate, spreading, or a little reflexed, oblong, petiolate, somewhat acuminate, crenate, rather thick, rugose, soft and downy above, more reticulated, paler and tomentose beneath: the lower leaves much larger and broader. *Flowers* copious from the axils. *Peduncles* aggregated, much shorter than the leaves, one or three-

flowered, tomentose. *Calyx* short, turbinate, tomentose, with five moderately spreading segments. *Corolla* between campanulate and infundibuliform, ventricose below, of a rich scarlet color, and clothed with long, shaggy, scarlet hairs, the limb of five, spreading, rounded, nearly equal lobes, yellow, streaked with dotted lines of red. *Stamens* included. *Ovary* clothed with copious, long, silky hairs; and, at the base, surrounded by five obtuse, large, yellow *glands*. *Style* short and thick, hairy. *Stigma* two-lipped.

Fig. 1. Pistil and Hypogynous Glands:—*magnified.*


L.

Tab. 4153

DENDRÓBIUM MONILIFÓRME.

Necklace-stemmed Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

DENDROBIUM. *Sw.* (*Vide supra* Tab. 4013.) *Lindl. Gen. et Sp. Orchid. p.* 74.

Dendrobium *moniliforme;* caulibus erectis clavatis ramosis foliosis internodiis demum tumidis, foliis distichis oblongis obtusis oblique emarginatis, floribus ex articulis supremis caulium geminatis folio longioribus, sepalis oblongis acutis petalisque ovatis striatis, labello ovato reflexo obscure trilobo basi attenuato margine serrulato, disco elevato pubescente.

Dendrobium moniliforme. *Sw. Act. Holm.* 1800, *p.* 245. *Willd. Sp. Pl. p.* 136. *Spreng. Syst. Veget. v.* 3. *p.* 738. *Lindl. Bot. Reg. t.* 1314. *Gen. et Sp. Orchid. p.* 83.

Limodorum moniliforme. *Linn. Sp. Pl. p.* 1352.

Fu Ran. *Kæmpf. Amæn. Acad. t.* 865.

A native, it is said, of China and Japan, and first introduced to Europe through the instrumentality of the Horticultural Society. The plant from which our figure was taken was sent by Dr. Wallich to the Royal Gardens of Kew. It produced its truly handsome blossoms in November, 1844, and again in February, 1845, each time the flowers continuing long in perfection. It is indeed one of the most lovely of our Epiphytes. The specific name is not at first very apparent; but is considered to be derived from the tumid internodes of the stem in age, giving the appearance of a necklace, some traces of which may be observed in our figure.

Descr. *Stem* erect, scarcely a foot high, branched and rooting; when young terete and striated; when old strongly articulated, losing the leaves, and then deeply furrowed, and swollen at the internodes, the articulations partly sheathed by the withered bases of the leaves. *Flowers* in pairs from the articulations, or from the axils of the leaves, but the flowering stems are frequently destitute of leaves. *Germen* very long,

slender, colored, pedunculiform. *Perianth* large, handsome, varied with purple and white. *Sepals* and *petals* spreading, white, the upper half purple-blush: the former oblong acute; the latter ovate, all of them striated. *Lip* small, in proportion to the rest of the flower, white tipped with deep purple, and having two purple spots on the disk. *Column* short, very decurrent, the lip articulated at the end of the prolonged base.

Fig. 1. Column, and Lip forced back:—*magnified.*

Tab. 4154

CALCEOLÁRIA floribúnda.

Copious-flowering Slipper-wort.

Nat. Ord. Scrophularinæ.—Diandria Monogynia.

CALCEOLARIA. *L.* *(Vide supra* Tab. 3255.) *Endlich. Gen. p.* 671.

Calceolaria *floribunda;* suffruticosa, ramis pedicellisque ferrugineo-pubescenti-glandulosis, foliis oppositis oblongo-lanceolatis sessilibus dentato-serratis basi latis subcordatis subamplexicaulibus gradatim acuminatis hirtellis subtus pallidioribus magisque hirsutis, corymbis terminalibus multifloris, calycibus pubescenti-glandulosis, corollis subglobosis pallide flavis pubescentibus, labiis arcte clausis, labio superiore triplo minore compresso.

Calceolaria floribunda. *H. B. K. Nov. Gen. et Sp. Am. v.* 2. *p.* 385. *Roem. et Sch. Syst. Veg. v.* 1. *Mant. p.* 160. *Spreng. Syst. Veget. v.* 1. *p.* 46. *Walpers, Repert. Bot. v.* 3. *p.* 162.

Our gardens abound in *Calceolariæ* from Chili and extra-tropical South America; but very few are known alive in this country from the tropical regions of the New World. The present handsome species is from the environs of Quito, where it was gathered by Lobb, Mr. Veitch's South American collector, and sent to him in 1843. It flowered in Mr. Veitch's establishment at Exeter in September, 1844, whence the specimen here figured was communicated. Although from within the tropics, and almost under the Line, yet, the city itself of Quito being at an elevation of 11,000 feet above the level of the sea, this will probably prove a suitable plant for the greenhouse, and perhaps may flourish in the open air in the summer months, where it cannot fail to be highly ornamental; and we should be thankful if it do not share the fate of the Chilian species, which are so hybridized, that the original native kinds are wholly lost to our gardens, and are to be found only in the Herbarium.

Descr. A suffruticose *plant*, with erect *stems*, and opposite, terete *branches*, which are clothed with short, glandular pubescence. *Leaves* opposite, three to four, or, the lower

ones, five inches long, oblong-lanceolate, sessile, submembranaceous, dentato-serrate, reticulato-venose, the base broad, subcordate and subamplexicaul, thence tapering gradually to a point, or widening only a little above the base; the upper surface is slightly hairy, the under more so and paler. *Corymbs* ample, terminal, many-flowered; the *peduncles* and *pedicels* and *calyx* clothed with short, rusty-colored, glandular hairs. *Calyx* small, four-lobed, the lobes spreading. *Corolla* pale, but rather full yellow, subglobose, but flattened, as it were, above and below, slightly pubescent; the *lips* firmly closed; the upper one-third the size of the lower, and much compressed. *Stamens* and *pistil* as in the allied species.

Tab. 4155

WHITFIELDIA lateritia.

Brick-colored Whitfieldia.

Nat. Ord. Acanthaceæ.—Didynamia Angiospermia.

WHITFIELDIA, nob.—*Calyx* amplus, coloratus, subinfundibuliformis, basi bibracteatus, profunde 4—5-fidus, laciniis lanceolatis, acutis, erectis, concavis, lineatis; bracteis sæpissime coloratis majusculis oppositis obovatis, acutis, trinerviis, appressis. *Corolla* infundibuliformi-campanulata, calyce duplo longior, tubo striis 15 elevatis, limbo bilabiato patente, labio superiore minore bifido, inferiore trifido segmentis omnibus ovatis, acutis. *Stamina* 4, didynama, fere inclusa, rudimento quinto obsoleto. *Filamenta* glabra. *Antheræ* oblongo-lineares, biloculares, loculis oppositis, longitudinaliter dehiscentibus. *Ovarium* compressum, ovatum, glabrum, biloculare, loculis biovulatis, ovulis ascendentibus. *Discus* hypogynus magnus, carnosus, cupuliformis. *Stylus* stamina vix superans, filiformis. *Stigma* parvum capitatum *Fructus* . . . . . .—Frutex *Africæ tropicæ occidentalis, subhumilis, ramosus, glaber, ramis patentibus, flexuosis.* Folia *oblongo-ovata, opposita, subcoriacea, integerrima, undulata, penninervia.* Racemi *terminales subsecundi deflexi.* Pedicelli *brachiatim oppositi, basi bracteati bracteis lanceolatis membranaceis coloratis (paribus oppositis foliaceis).* Flores *subpubescentes deflexi: calycibus corollis bracteisque calycinis omnibus lateritiis.*

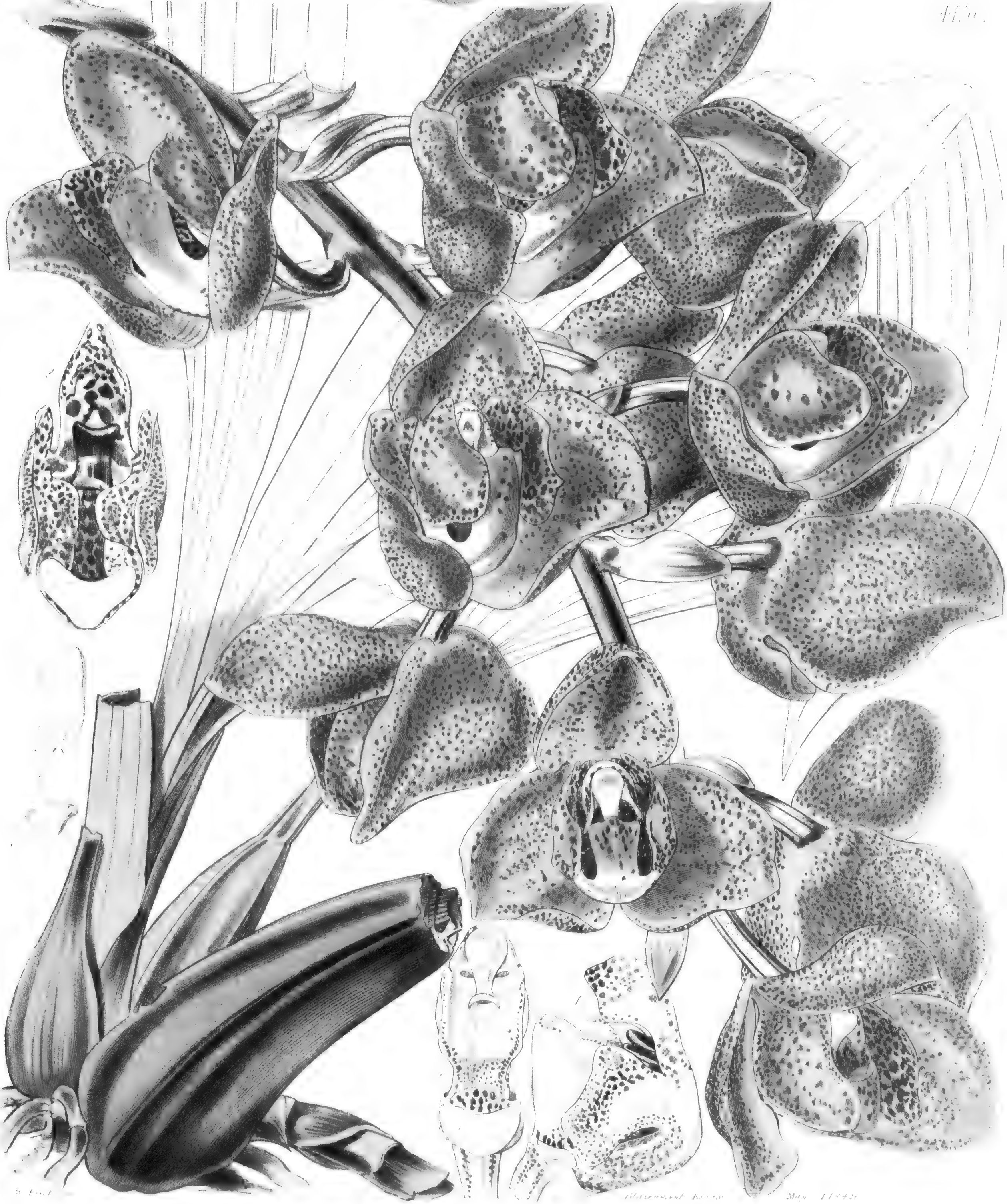
Whitfieldia *lateritia.*

Our plant, here figured, is a very desirable inmate of the stove, forming a small bushy shrub, with spreading branches and copious evergreen foliage; the branches terminated by racemes of flowers of a rather large size, of which the calyx and corolla, and often large bracteas, are of one uniform brick-red color. It is one of the many novelties brought home to Lord Derby from the interior of Sierra Leone. As a Genus of *Acanthaceæ*, I can refer it to no described one; though its affinity (yet not very close) is probably with *Geissomeria*, Lindl., and I have dedicated it to Thomas Whitfield, Esq., who, at the risk of his life, and, as we have reason to know, with much injury to his constitution, has made several voyages to, and journies into, the interior of Western-tropical Africa, and formed extensive collections of

living plants and animals. The majority of these have been sent to the Right Hon. the Earl of Derby; and the Royal Gardens of Kew have not failed to benefit by that distinguished nobleman's love and patronage of science. To this source, besides the plant now figured, we are indebted for the "*African Teak*" (or "*Oak*" as it is often called, and still unknown as to its Genus), the *Napoleonea imperialis*, the splendid *Gardenia Stanleyana, MS.* (shortly to be figured in this work), and three other species of the Genus, the brilliantly-colored *Thunbergia chrysops*," (see our Tab. 4119), and many other rarities. Our drawing was made at Kew, in October, 1844; and the same plant was still flowering in March, 1845.

Descr. A low *shrub;* with spreading, terete, rather tortuous *branches;* and opposite, evergreen, entire, ovate or oblong-ovate, subcoriaceous, waved, penninerved *leaves*. *Petioles* short, flat or slightly grooved above. *Racemes* terminal. *Pedicels* opposite (brachiate or cruciate), drooping, bracteated at the base; *bracteas* lanceolate, submembranaceous, the lowest pair leaf-like. Two other large, ovate, acute, opposite bracteas are situated at the base of the calyx, and appressed to it. *Calyx* large, colored (brick-red, like the calycine bracteas and corolla), ample, somewhat inflated, subinfundibuliform, deeply cut into four, erect, concave, acute, nerved segments. *Corolla* twice as long as the calyx, orange-red or brick-color, between campanulate and infundibuliform; the *limb* two-lipped; upper *lip* with two ovate, acute segments; lower with three spreading ones. *Stamens* and *style* included.

Fig. 1. Stamens. 2. Pistil. 3. Transverse Section of the Ovary:—*magnified.*



Tab. 4156

PERISTÉRIA Humbóldti; *var.* fulva.

Humboldt's Peristeria, or Dove-flower; tawny-flowered *var.*

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. *(Vide supra* Tab. 3479.)

Peristeria *Humboldti;* racemo elongato pendulo multifloro, sepalis subrotundo-ovatis concavis, petalis iis minoribus ovatis obtusissimis, labello subrotundo carnoso valde concavo profunde trilobo, lobis lateralibus subrotundis intus lobulo auctis, terminali oblongo-ovato obtuso canaliculato, disco appendice oblongo-quadrato utrinque dilatato retuso aucto, columna utrinque superne dilatato-alata.

Peristeria Humboldti. *Lindl. Bot. Reg.* 1843, *t.* 18.

Anguloa superba. *H. B. K. Nov. Gen. et Sp. Am.* 1. *p.* 343. *t.* 93. *Lindl. Gen. et Sp. Orchid. p.* 160.

β. floribus fulvis. (Tab. nostr. 4156.)

For this noble specimen we are indebted to Mr. Barker, in whose collection near Birmingham it flowered in June, 1843. The color is considerably different from that given by Dr. Lindley in the Botanical Register, above quoted, on which account it is here indicated as a variety. Its native country is Venezuela, where it was first detected by Humboldt: for Dr. Lindley has clearly determined that the *Anguloa superba* of that author is in reality this plant, represented in an imperfect state. It is one of the most striking among Orchideous plants, and few are more worthy of cultivation. The true *Anguloa* of Ruiz and Pavon, is ascertained by Dr. Lindley to be a very different Genus.

Descr. *Pseudo-bulbs* oblong, tapering upwards, angled. *Leaves* several from a young pseudo-bulb, broadly lanceolate, somewhat membranaceous, striated. *Raceme* a foot and a half to two feet long, pendent, arising from the base of the pseudo-bulbs; *peduncle* short, scaly. *Flowers* numerous, large, fleshy, of a tawny yellow color, dashed almost all over with spots of purplish-brown. At first the flower is irregularly globose, afterwards the floral coverings are more patent.

Sepals broad, rotundato-ovate, very concave, the lateral ones the largest, united at their lower margin, and produced or gibbous at the base. *Petals* applied to the sides of the lip, broad-ovate, much smaller than the sepals. *Lip* with a broad, thick claw, very fleshy, gibbous at the back, deeply three-lobed: central lobe ovate, obtuse; lateral lobes large, subrotund, much incurved, each having a projecting lobule at its base within. The color of the lip is a brighter yellow than the rest of the flower, and the spots are deep purple. A large, purple, oblong *gland* is situated near the base of the intermediate lobe, on the disk. *Column* short, with a projecting, rounded wing on each side. *Anther-case* rostrate. *Pollen-masses* linear-oblong, broader upwards, attached to a conspicuous *stipes*, and that to a large, somewhat lunate *gland*.

Fig. 1. Side view of the Labellum and Column. 2. Front or inner view of the Labellum. 3. Front view of the Column. 4. Pollen-masses: —*magnified*.

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Tab. 4157

CALCEOLÁRIA álba.

White-flowered Calceolaria.

Nat. Ord. Scrophularineæ.—Diandria Monogynia.

CALCEOLARIA. *(Vide supra* Tab. 3255.*)*

Calceolaria *alba;* suffruticosa resinoso-viscosa, foliis linearibus acutis remote serratis, panicula terminali foliosa, pedunculis oppositis corymbosis, corollæ clausæ (albæ) labio superiore parvo, inferiore 5-plo majore inflato compresso.

Calceolaria alba. *Ruiz et Pav. Fl. Peruv. et Chil.* 1. *p.* 19. *t.* 27. *f. b. Walp. Repert. Bot.* 3. *p.* 164.

A native of Chili; but, probably, of rare occurrence, at least, it has not, till now, been introduced to our gardens. Mr. Veitch received seeds from his Collector, Mr. William Lobb, and plants raised from them flowered in his nursery in September, 1844. From one of these our drawing was taken. It is singular in the very pale, nearly white, color of the flowers. The foliage, though narrow, is copious, and the plant has an erect and graceful mode of growth. Ruiz and Pavon's figure represents the corolla with the lips spreading: but this is probably owing to its being taken from a dried specimen. The species will, perhaps, bear our mild winters.

Descr. *Plant* apparently suffruticose, erect, branched; *branches* opposite. *Leaves* opposite, and copious fascicles of leaves arise from their axils, all of them linear, or a little broader upwards, acute, sometimes entire; but generally remotely serrated, more or less viscid. *Panicle* terminal, leafy, elongated; *peduncles* opposite, from the axil of a leaf, and each bearing a corymb of white flowers. *Pedicels* dichotomous, bearing a flower in the fork. *Calyx* four-cleft. *Corolla* white, of two very unequal lips; the upper one very small, the lower one large, both are, however, compressed, and they meet together so that the faux is quite closed.

4158.

W. Fitch del.t Pub. by S. Curtis Glazenwood Essex May 1.1845 Swan Sc.

Tab. 4158

SALPIXÁNTHA coccínea.

Scarlet Trumpet-flower.

Nat. Ord. Acanthaceæ.—Didynamia Angiospermia.

Gen. Char. SALPIXANTHA. *Hook.*—*Calyx* parvus, ovatus, 5-dentatus, basi bibracteatus. *Corolla* infundibuliformi-hypocrateriformis: tubo basi angustato cylindraceo, sursum sensim dilatato; limbo regulari patente quinquelobo, lobis retusis. *Stamina* 4, tubi parte contracta inserta: *Filamenta* subæqualia, gracilia, glabra, longitudine tubi totius: *Antheræ* oblongæ, dorso affixæ, uniloculares. *Ovarium* ovatum, disco carnoso impositum, biloculare; loculis biovulatis; ovulis adscendentibus: *Stylus* gracilis, filiformis, stamina paulo superans: *Stigma* obtusum. *Fructus* —— ?— Frutex *humilis Indiæ Occidentalis, ramosus;* ramis *teretibus glabris (ut et tota planta).* Folia *opposita, ovata, subcoriacea, integerrima.* Pedunculi *axillares, solitarii, penduli, vel terminales, terni.* Flores *sessiles decussati oppositi in spicam laxam dispositi, distantes.* Corolla *pulchra, nitida, coccinea.*

Salpixantha *coccinea.*

This curious plant, which has at first sight, indeed, little apparent affinity with the *Acanthaceæ* (Sect. *Ruelliaceæ*), was discovered by Mr. Purdie, Botanical Collector for the Royal Gardens, in the island of Jamaica, whence it was sent to the Royal Gardens. It blossomed freely in the stove during the autumn of the same year, and in the early winter of 1844–5, and made a very pretty appearance, with its gracefully pendent, scarlet blossoms, and its well-formed dark-green foliage. It appears to me to be new as a Genus; nor can I find the plant is anywhere, or under any name, described.

Descr. It is a low *shrub*, branched, and glabrous in every part, the young shoots green, rounded. The *leaves* opposite, on short *petioles*, ovate, subcoriaceous, somewhat waved, entire, penninerved, dark-green, rather paler beneath. *Peduncles* axillary and solitary, or terminal, and then ternate, drooping, the lateral ones, however, terminate a two-leaved branch, or innovation, while the central peduncle springs

from the apex of the older branch. The upper part of this peduncle bears rich red-coloured flowers, arranged in a spike; the flowers decussately opposite.

Fig. 1. Corolla laid open. 2. Anther. 3. Vertical section of the Ovary. 4. Transverse ditto :—*magnified.*

Pub.by S. Curtis Glazenwood Essex May 1845

Tab. 4159

ANGRÆCUM apiculátum.

Apiculated Angræcum.

Nat. Ord. Orchideæ.—Gynandria Monandria.

ANGRÆCUM. *(Vide supra* Tab. 4145.*)*

Angræcum *bilobum;* caule brevi radicante, foliis distichis obovato-lanceolatis oblique acuminatis opacis striatis racemo pendulo lævi (everrucoso) multifloro multo brevioribus, sepalis petalisque lanceolatis patentibus, labello conformi paulo latiore calcare filiformi integro breviore, antheræ crista eglandulosa.

From Sierra Leone, introduced to our gardens by Mr. Whitfield, in 1844. I was at first disposed to consider it the same with *A. bilobum*, Lindl. Bot. Reg. 1841, t. 35; but that has semipellucid, reticulated leaves, distinctly and deeply two-lobed at the extremity, (whence the specific name), the rachis of the raceme and peduncle are warty, and the spur is dilated and emarginate at the apex. In other respects the two plants seem almost entirely to agree.

Descr. *Stem* three to five inches long, rooting, below scarred and scaly with the remains of fallen leaves, leafy above. *Leaves* distichous, spreading, four to five inches long, obovato-lanceolate, obliquely apiculate, opaque, longitudinally striated. *Raceme* axillary, on a rather short, scaly *peduncle*, drooping. *Rachis* quite smooth. *Flowers* white, or only tipped with brownish purple. *Sepals* and *petals* spreading, lanceolate, nearly uniform, the former more acuminated. *Lip* resembling the petals, but rather broader, and more suddenly acuminated; at the base extended into a very long, filiform *spur*, entire at the apex. *Column* short, subtrigonal. *Anther-case* hemisphærical, indistinctly two-lobed, with a mucronate crest at the top,—not granulated like that of *A. bilobum*.

Fig 1. Column, Lip, and Spur: *nat. size.* 2. Front view of the Column and Anther. 3. Pollen-masses:—*magnified.*

Wirth del.

Pub. by S. Curtis Glazenwood Essex May 1. 1845

Tab. 4160

DENDRÓBIUM FIMBRIÁTUM; *var.* oculatum.

Fringe-lipped Dendrobium; var. with sanguineous eye.

Nat. Ord. Orchideæ.—Gynandria Monogynia.

DENDROBIUM. *(Vide supra* Tab. 4013.*)*

Dendrobium *fimbriatum;* caulibus erectis fertilibus plerumque aphyllis, foliis lanceolatis striatis, racemis plurifloris, sepalis oblongis patentissimis integerrimis, petalis majoribus undulatis ciliato-denticulatis, labello indiviso cucullato fimbriis laceratis.

Dendrobium fimbriatum. *Hook. Ex. Fl. t.* 71. *Wall. Cat. n.* 2011. *Lindl. Gen. et Sp. Orchid. p.* 83.

Var. *oculatum;* labello fauce macula lata atro-sanguinea. (Tab. nostr. 4160.)

A native of Nepal, whence plants have from time to time been sent to our stoves by Dr. Wallich. It first blossomed in the Liverpool Botanic Garden, as stated in the "Exotic Flora:" and the flowers were of an uniform golden yellow. Our present plant, in the Royal Botanic Gardens of Kew, has a dark blood-coloured eye-like spot in the centre of the labellum, which adds greatly to the beauty of this otherwise very charming plant. This state of it, Dr. Lindley considers that of the native specimens. It flowered with us in September, 1843.

Descr. *Stems* a foot or a foot and a half long, jointed and furrowed. *Leaves*, several confined to the sterile branches, four or five inches long, alternate, striated, sheathing at the base. *Racemes* from the sterile branches, drooping, bearing five to seven large and exceedingly handsome *flowers*, of a rich golden-yellow colour. *Sepals* and *petals* very patent: the former oblong, more or less waved, entire; the latter larger and broader, waved, and ciliato-dentate at the margin. *Lip* large, cucullate, spreading at the mouth, entire, or very indistinctly three-lobed, and fimbriated, the fimbriæ themselves elegantly divided, the faux having a deep blood-red spot

on the lower side. *Column* short, but prolonged below, so as to form a spur with the bases of the lateral sepals. *Anther* hemispherical, and somewhat four-angled.

Fig. 1. Column. 2. The same, with the Anther-case separating. 3. 4. Pollen-masses. 5. Portion of the Fringe:—*magnified.*

1.

2.

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Tab. 4161

POLYSTÁCHYA bracteósa.

Bracteated Polystachya.

Nat. Ord. Orchideæ.—Gynandria Monandria.

POLYSTACHYA. *(Vide supra* Tab. 3707.*)*

Polystachya *bracteosa;* pseudo-bulbis subrotundis compressis aggregatis, folio unico petiolato oblongo-ovato acuto, racemo e summitate petioli nutanti pubescente pedunculoque bracteato, bracteis (infima foliacea) lanceolatis acuminatis concavis inferioribus florem æquantibus v. superantibus, petalis obovato-oblongis glabris, labello lato-oblongo revoluto medio longitudinaliter villoso lobo medio subrotundo.

Polystachya bracteosa. *Lindl. in Bot. Reg. Misc. n.* 102.

A native of Sierra Leone. Drawn from the Woburn Collection of *Orchideæ* in the Royal Botanic Gardens of Kew, to which it was communicated by Mr. Whitfield from Sierra Leone. Dr. Lindley observes, it is well distinguished by its downy flowers, tapering squarrose bracts, which extend down the peduncle, the lowermost one being very large and leaf-like, at least in our flowering specimen.

Descr. *Pseudo-bulbs* about an inch in diameter, suborbicular, singularly compressed, and the old ones, especially, very uneven on the surface:—from the summit arises a stout *petiole*, an inch or an inch and a half long, bearing a solitary, oblong-ovate, acute, somewhat membranaceo-coriaceous *leaf*, with a few longitudinal lines or nerves. From the base of the leaf, in a cleft at the summit of the petiole, arises the *peduncle*, bearing, at its origin, a very large, leafy bractea, and other smaller, membranaceous, but green, ones above it; these are concave, lanceolate, and much acuminate. *Raceme* many-flowered, drooping, downy. *Flowers* dull orange-yellow, bracteated: *bracteas* similar to those of the peduncle; the lower ones as long as the flowers; the upper ones pubescent. *Sepals* downy, erecto-patent; upper one oblong-lanceolate; lateral ones broadly rotundato-ovate, the base decurrent on

the long descending base of the column. *Petals* erect, obovato-oblong, glabrous. *Lip* broad, oblong, the lower half erect, and applied to the face of the column, then recurved; the disk with three pubescent lines: lateral lobes streaked with red; terminal lobe small, ovato-rotundate. *Column* very short, but the base extending downwards some way with the lateral sepals. *Anther-case* subconical.

Fig. 1. Flower. 2. Flower, with the Sepals removed. 3. Column and Lip. 4. 5. Anterior and posterior view of the Pollen-masses.

Fitch del.

Pub. by S. Curtis Glazenwood Essex June 1.1845

Tab. 4162

ECHINOCÁCTUS oxygónus.

Sharp-angled Echinocactus.

Nat. Ord. Cacteæ.—Icosandria Monogynia.

Gen. Char. (*Vide supra* Tab. 4124.)

Echinocactus *oxygonus;* subglobosus v. magis minusve elongatus vertice depresso 13—15 angularis, sinubus profundis, costis compressis sinuato-lobatis circa areolas subinflatis, areolis remotis rotundis junioribus flavido-dein griseo-tomentosis, aculeis 6—8—10 semiuncialibus subulatis rectiusculis subæqualibus patentibus, floribus (roseis) inter maximos, tubo longissimo superne dilatato squamis villosis.

Echinocactus oxygonus. *Link et Otto in Verhandl. des Pr. Gart. Vareins. v.* 6. *t.* 1. *Lindl. Bot. Reg. t.* 1717. *Pfeiff. Enum. Cact. p.* 70.

Scarcely any plant possesses more noble or more lovely blossoms than the present; and they are the more striking, from the circumstance of their being produced from so graceless and small a trunk. It is, moreover, a free-flowering plant in the month of May; and we have, while I am writing, specimens with three blossoms expanded at the same time: their duration, is, in cloudy weather at least, of two days. The species is said to be a native of South Brazil.

Descr. Our specimens are from seven to ten inches in height, subglobose, but generally a little longer than broad; hence somewhat oval, or obovate, depressed at the top; green slightly inclining to glaucous. There are from thirteen to fifteen deep furrows, with acute sinuses, and as many prominent, compressed ridges, sinuato-lobate at their edges. *Areolæ* about three-fourths of an inch apart, sunk, as it were, in the upper edge of each lobe, sphærical, woolly, with six to ten, rather short, straightish, spreading, nearly equal *spines.* It is from the areole of some of the upper lobes that the flowers spring, a span and more long, often longer than the plant itself. *Tube* very long, trumpet-shaped, greenish, with many red-brown, villous, appressed scales, which gradually

become longer and larger upwards, and pass into deep rose-colored, calycine segments, and these again into the oblong, apiculate, slightly serrated, pale rose-colored, spreading *petals*. *Stamens* pale straw-color, copious, nearly equal in height. *Style* and *stigmas* almost white.

Fig. 1. Reduced figure of a Flower. 2. Upper portion of a Plant and Flowers :—*nat. size*.

W. Fitch del.

Pub. by S. Curtis, Glazenwood Essex June 1.1845

Swan sc.

Tab. 4163

Éria Dillwýnii.

Dillwyn Llewelyn's Eria.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra* Tab. 3605.)

Eria *Dillwynii;* pseudo-bulbis oblongis lævibus di- 4-phyllis, foliis oblongis racemis subæqualibus, bracteis membranaceis oblongis obtusis reflexis, racemis erectis, petalis sepalisque erectis, labello trilobo basi trilamellato, lobo medio rotundato obtuso 5-lamellato.

From the Philippine Islands, whence it was received by Dillwyn Llewelyn, Esq., of Pennleegar, through Mr. Cuming, in whose collection it blossomed freely in March, 1843. "I send you," Mr. Llewelyn says, "a specimen of one of Mr. Cuming's *Erias*, which is valuable from the great facility with which it submits to cultivation, and the profusion with which it bears its flowers. It blossomed in my stove last year; and this season it is a beautiful object, with seven or eight bulbs, each bearing two spikes of flowers." It does not seem to accord with any described species of the Genus.

Descr. *Pseudo-bulbs* oblong, nearly smooth on the surface, dark green, clothed at the base with large, striated, membranaceous, sheathing *scales*. *Leaves* about four; from the top of the pseudo-bulb, six to eight inches long: oblong, obtuse. *Raceme* of *flowers* about as long as the leaf, remarkable for the copious, pale-colored *bracteas;* on the peduncle, as well as on the rachis, oblong, obtuse, reflexed, membranaceous. *Flowers* nearly white, or cream-colored. *Petals* and *sepals* almost erect, uniform, lanceolate, acuminate, slightly falcate; the lower decurrent with the base of the column into a blunt spur. *Lip* oblong, three-lobed, with three lamellæ reaching the whole length to the apex, or nearly so; the two lateral ones thickened, and red at the base; the intermediate lobe, besides these three lamellæ,

presents two others, and has, consequently, five lamellæ or plates. *Column* with a red blotch at the protruded base. *Anther* red.

Fig. 1. Flower. 2. Column. 3. Lip:—*magnified*.

W. Fitch del.ᵉ

Pub. by S. Curtis Glazenwood Essex June 1 1845

Swan Sc

Tab. 4164

MASDEVÁLLIA FENESTRÁTA.

Windowed Masdevallia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. MASDEVALLIA. *Ruiz et Pav.*—*Perianthium* clausum, sepalis acuminatis v. aristatis in tubum campanulatum connatum. *Petala* nana. *Labellum* nanum, oblongum, concavum, integrum, cum columna articulatum. *Columna* erecta, linearis, canaliculata. *Anthera* (hemisphærica). *Pollinia* duo, caudicula brevi.—Herbæ *foliis* Pleurothallidis, scapis *unifloris*. *Lindl.*

Masdevallia *fenestrata;* folio oblongo emarginato petiolo multo longiore cauli subæquali, floribus aggregatis, pedunculis petiolo vix æqualibus, sepalis carinatis apice connatis dorsali utrinque infra apicem libero ideoque fenestram efficiente, petalis obovatis mucronulatis, labelli trilobi lobis lateralibus subtriangularibus intermedio ovato acuto ciliato. *Lindl. MSS.*

Masdevallia fenestrata. *Lindl. ined.*

This is one of the very curious productions of nature, of which there are such frequent instances in the Orchideous plants. The plant is not only singular in color, the flowers being externally of a deep blackish blood-color, but still more singular in form, with the sepals united below and at the apex, leaving a small space much below the apex, which is open and window-like; the whole representing the head of a bird, with a perforation where the eyes should be. Our plants were sent from Jamaica by our Collector, Mr. Purdie, in 1843, and they flowered in October, 1844, and during most of the winter months, in the Orchideous House of the Royal Gardens.

Descr. *Plants* growing clustered: each consisting of a *stem*, or *petiole*, clothed with sheathing scales, and terminated by a solitary (rarely two) oblongo-elliptical *leaf*. *Peduncles* aggregated in the upper sheath at the base of the leaf, deflexed, bracteated, single-flowered. *Flower* (large in proportion to the plant) of a dark brown or blood-color: the three *sepals* united, except at a small opening below the apex;

the *apex* acute, and curved upwards: this floral covering is set obliquely on the germen, as shown at fig 1. 2. When the sepals are forced open, the rest of the flower is seen as at fig 3. *Petals* much smaller than the sepals, ovate, acute, pale purple at the edge. *Lip* oblong, acuminate, serrated at the apex, with a small lobe on each side, near the middle. *Column* semiterete. *Anther-case* hemisphærical. *Pollen-masses* two-lobed.

Fig. 1. Entire Flower. 2. Flower, with the Sepals laid open, to show the Petals, &c. 3. Petals, Lip and Column removed. 4. Column, with the Lip laid open. 5. Pollen-masses:—all more or less *magnified*.

W. Fitch del.t Pub. b. [illegible] Glazenwood Essex Jan. [illegible] Swan Sc.

Tab. 4165

EPIDÉNDRUM longicólle.

Long-necked Epidendrum.

Nat. Ord. Orchideæ.—Gynandria Monogynia.

[*Gen. Char. (Vide supra* Tab. 4107.)

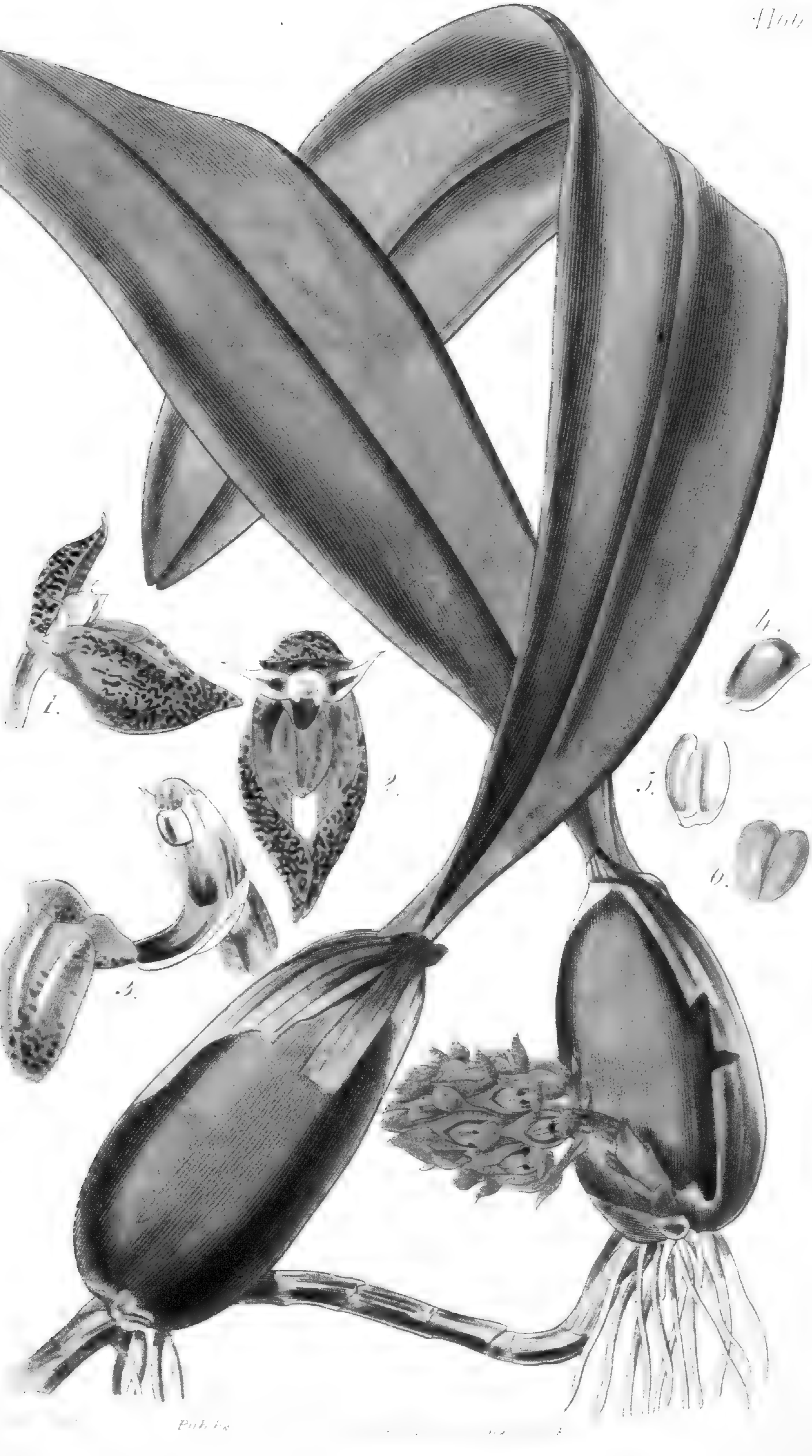
Epidendrum *longicolle;* caule erecto compresso folioso, foliis linearibus apice angustatis, floribus aggregatis terminalibus nutantibus foliis brevioribus, sepalis lineari-lanceolatis acuminatis patentibus, petalis linearibus acutis supra columnam convergentibus, labelli trilobi lobis lateralibus semiovatis acutis integerrimis intermedio lineari-acuminato paulo brevioribus, lamellis bicallosis ad basin collo ovarii elongato. *Lindl.*

Epidendrum longicolle. *Lindl. in Bot. Reg.* 1838. *Misc. n.* 49.

This, I believe, is a rare species; and, at present, in few collections. It is a native of Demerara, and blossomed in the stove of the Royal Botanic Gardens, in February, 1844. What it lacks in beauty, is made up in fragrance.

Descr. *Stems* clustered, erect, simple, rounded or compressed upwards; bare of leaves at the base, but clothed with membranous sheaths, above leafy: *leaves* linear-lanceolate, subdistichous. *Flowers* terminal, clustered, shorter than the leaves, white. *Sepals* and *petals* linear-acuminate. *Lip* combined with the column, three-lobed, with two pale yellow callosities at the base; lateral lobes large, semiovate, with a deep sinus between them, in which is the narrow, linear, acute, intermediate lobe. *Ovary* narrow, much attenuated.

Fig. 1. Column and Lip:—slightly *magnified.*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Tab. 4166

BOLBOPHYLLUM Careyanum.

Dr. Carey's Bolbophyllum.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (Vide supra Tab. 4088.)

Bolbophyllum *Careyanum;* rhizomate repente, pseudo-bulbis oblongo-ovatis lævibus membranaceo-vaginatis, folio solitario oblongo-lanceolato obtuso basi angustiore, racemo pseudo-bulbi longitudine, pedunculo perbrevi squamoso, floribus imbricatis, sepalis ovatis acuminatis lateralibus duplo majoribus conniventibus, petalis minimis acuminatis, labello ovato longe unguiculato utrinque unidentato, columna bicornuta.

Bolbophyllum Careyanum. *Spreng. Syst. Veget.* 3. *p.* 732. *Wall. Cat. n.* 1990. *Lindl. Gen. et Sp. Orchid. p.* 51.

Anisopetalum Careyanum. *Hook. Exot. Fl. t.* 149.

Tribrachia purpurea. *Lindl. Coll. Bot. p.* 41.

Pleurothallis purpurea. *Don Prodr. Fl. Nep. p.* 33.

Native of Nepal and Martaban, according to Wallich. We are indebted for living plants in the Kew Gardens to the kindness of the lamented Dr. Griffith. It is more curious than showy, and is probably rare in collections.

Descr. The *pseudo-bulbs* are between oblong and ovate, and clothed with a membranous, scaly sheath, arising, at distant intervals, from a creeping *rhizoma*. *Leaf* solitary, from the summit of each bulb, oblong-lanceolate, obtuse, coriaceous, tapering at the base. *Peduncle* short, scaly with bracteas, arising from the base of a pseudo-bulb, and terminated by a dense, ovate head or spike of imbricated *flowers*, of a yellow color, mottled and dotted with small, blood-colored spots. *Sepals* unequal, ovate, concave, the lateral ones twice or thrice the largest and connivent. *Petals* broadly subulate, yellow, with a blood-colored spot at the base. *Lip* with a long claw, ovate, reflexed, with a small lobe or tooth on each

side. *Column* short, with two teeth at the apex in front. *Anther-case* hemisphærical.

Fig. 1. Side view, and 2, front view of a Flower. 3. Column and Lip. 4. Outer, and 5, inner view of an Anther-case. 6. Pollen-masses;—*magnified.*

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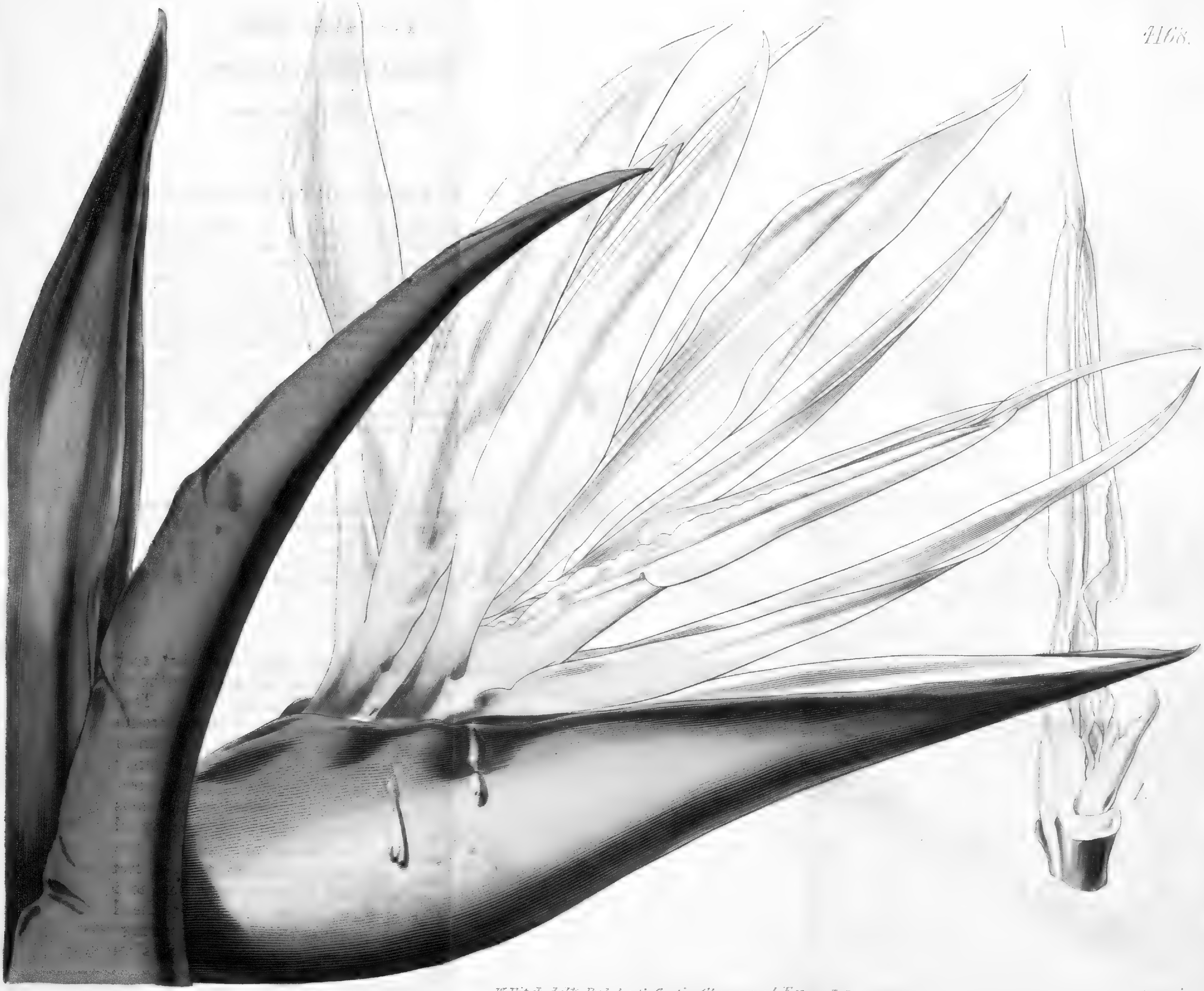

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Tab. 4167, 4168

STRELITZIA augusta.

Great White Strelitzia.

Nat. Ord. Musaceæ.—Pentandria Monogynia.

Gen. Char. STRELITZIA, *Banks et Ait.*—*Perigonii* epigyni *foliola exteriora* subæqualia, anticum carinatum; *interiora* lateralia exterioribus subconformia, inter se connata, acuminata, latere versus medium auriculata, genitalia amplectentia, posticum nanum concavum. *Stamina* 5, sexto postico abortiente. *Ovarium* inferum, triloculare. *Ovula* in loculorum angulo centrali plurima, biseriata, horizontalia, anatropa. *Stylus* filiformis; *stigma* tripartitum, laciniis linearibus. *Capsula* trilocularis, loculicido-trivalvis. *Semina* plurima, subglobosa, *funiculo* brevi, in arillum stupposum fatiscente affixa, *testa* fuliginea, lævi. *Embryo* orthotropus, linearis, in axi *albuminis* farinaceo-cornei, *extremitate radiculari* umbilicum spectante, centripeta.—Herbæ *Capenses, foliis radicalibus maximis, distichis, longe petiolatis, petiolis canaliculatis, basi dilatatis, vaginantibus; scapo radicali vaginis velato, floribus e spatha terminali obliqua erectis. Endl.*

Strelitzia *augusta;* caudice elongato, foliis longe petiolatis oblongis acutis basi cordatis parallelim nervosis basi cordatis, scapo brevissimo.

Strelitzia augusta. *Thunb. Prodr. p.* 45. *Fl. Cap. p.* 216. *Willd. Sp. Pl. v.* 1. *p.* 1190. *Ait. Hort. Kew. ed.* 2. *p.* 55. *Roem. et Sch. Syst. Veget. v.* 5. *p.* 594. *Spreng. Syst. Veget. v.* 1. *p.* 833.

A native of Southern Africa, with the other species of *Strelitzia*. Anteniqua Land, about the neighbourhood of the Pisang River, is the station given for it by Thunberg. According to the Hortus Kewensis, it was introduced to Europe in 1791 by Mr. Francis Masson, then Botanical Collector for the Royal Gardens. It is still a rare plant in our collections; not indeed that it is difficult of increase, for it sends out offsets frequently, but it requires the heat of a stove, and more space than cultivators can generally afford to give it. Thunberg describes the native caudex or trunk, as eighteen feet long; and the leaves and petioles from the summit of that probably add as many more feet to it. In the Royal Gardens of Kew, it has, including the leaves, attained a height of twenty-three feet. The flowering specimen, however, from which our present drawing is made, is

comparatively young, and its caudex short. With us, it flowered during the whole of the summer and autumn months, with a scape or peduncle infinitely shorter than the petioles, though the character in the Hortus Kewensis gives it as the "flower-stalk half the length of the leaf-stalk." Our inflorescence is almost sessile, and so it was in the larger plant which had been observed to blossom at Kew.

Descr. *Caudex* eventually attaining a height of eighteen feet, stout, six to eight inches in diameter, erect, marked with the transverse scars of fallen leaves; deep purple-color, proliferous from the sides, bearing, at the summit, a crown of distichous *leaves*, much resembling those of *Urania* or *Ravenala*. *Leaves* ample, two to three feet long, oblong, acute, cordate at the base, bright green, costate, and marked with conspicuous, transverse, parallel veins. *Petiole* four to six feet long, sheathing, and grooved at the base; upwards laterally compressed. *Peduncle* from the axil of an inferior leaf, short, bracteated; *bracteas* lanceolate, brown, more or less tinged with yellow, concavo-involute. *Spatha* broadly lanceolate, conduplicate, very acute, of a deep purple-color, generally having drops of transparent fluid, which run down from the flowers. *Flowers* several in each spatha, on short purple stalks or pedicels. Their general structure is similar to what is stated at Tab. 119 of the flowers of *S. Reginæ*, but they are larger and altogether white; and the two larger inner sepals, which unite to form the so-called "nectary," have the lobes short and obtuse. *Stamens* the same, white. *Style* and *stigma* also white; the three branches of the latter cohering into a subulate body.

Tab. 4168. Fig. 1. Inner Sepals, including the Stamens and Pistil:—*nat. size.*

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Tab. 4169

LEIÁNTHUS longifólius.

Long-leaved Leianthus.

Nat. Ord. Gentianeæ.—Pentandria Monogynia.

Char. Gen. LEIANTHUS. *Griseb.*—*Calyx* 5-fidus, 5-carinatus v. 5-alatus, lobis valvaribus planiusculis acuminatis, carinis alisve dorsalibus. *Corolla* infundibuliformis, nuda, tubi fundo tenui supra germen in faucem longiorem cum limbo 5-partito confluentem æqualem ampliato. *Stamina* 5, supra fundum corollæ inserta, filamentis elongatis inæqualibus. *Antheræ* incumbentes, immutatæ neque apiculatæ. *Ovarium* annulo basibus destitutum, valvulis introflexis semibiloculare, ovulis ipsarum margini insertis. *Stylus* distinctus, persistens, stigmate indiviso capitulato. *Capsula* bivalvis, septicida, semibilocularis, placentis margini valvarum insertis. *Semina* placentis immersa.—Herbæ *vel* frutices *Jamaicæ et Americæ centralis, cymis terminalibus, floribus albidis vel flavis, rarius cyaneis, gracilibus. De Cand.*

Leianthus *longifolius;* caule suffruticoso teretiusculo, foliis petiolatis oblongo-lanceolatis acuminatis, cymis 3—5-floris, alis calycinis lanceolato-linearibus, corollæ (luteæ) tubo gracili sensim ampliato, lobis oblongo-lanceolatis acuminatis genitalia æquantibus. *Griseb.*

Leianthus longifolius. *Griseb. Gent. p.* 196. *De Cand. Prodr.* 9. *p.* 82.

Lisianthus longifolius. *Linn. Mant. p.* 43. *Lam. Ill. t.* 107. *f.* 1. *Willd. Sp. Pl.* 1. *p.* 826. *Ker, Bot. Reg. t.* 880. *Spreng. Syst. Veget. v.* 1. *p.* 586.

Taschia longifolia. *Mart. in Don's Gard. Dict.* 4. 197.

Lisianthus erectus, foliis lanceolatus, floribus singularibus terminalibus. *Brown, Jam. p.* 157. *t.* 9. *f.* 1.

Rapunculus fruticosus linifolius, &c. *Sloane, Jam.* 1. *p.* 15. *t.* 101. *f.* 1.

A rare plant in our gardens. It was introduced, however, to Kew, as early as 1793, by Capt. Bligh, of H. M. S. Providence, and then lost to our collections till 1825, when it was published in the Botanical Register from plants in the Nursery of Messrs. Lee and Kennedy at Hammersmith. Again, it seems to have been wanting to our stoves till the summer of 1844, when it flowered in that of His Grace the Duke of Northumberland at Syon, and that of Kew, to both which places the seeds were sent by their Botanical Collector, Mr. Purdie.

Descr. A small suffruticose *plant*, two to three feet high, with opposite and downy, spreading or drooping, *branches*; and opposite and more or less downy or hairy *leaves*: the latter are two to four or five inches long, lanceolate, more or less acuminate at both ends, nearly sessile, the margin ciliated. *Peduncles* axillary, opposite, leafy, axillary, generally pendent; or they may be called flowering branches: the blossoms forming terminal, leafy, trichotomous *cymes*. *Calyx* of five, erect, close-placed *sepals*, lanceolate, acuminate, keeled and winged on the back. *Corolla* funnel-shaped, yellow, long; the tube narrow at the base, gradually enlarging upwards, and terminating in a deeply five-lobed limb; the *segments* oblong, acuminate, spreading. *Stamens* five. *Filaments* longer than the tube, thus exserted. *Anthers* oblong, acute. *Style* larger than the stamens. *Stigma* capitate, two-lobed.

Fig. 1. Calyx. 2. Pistil.

Tab. 4170

SÍDA (Abutilon) pæoniæflóra.

Pæony-flowered Sida.

Nat. Ord. Malvaceæ.—Monadelphia Polyandria.

Gen. Char. (*Vide supra* Tab. 3892.)

Sida (Abutilon) *pæoniæflora;* fruticosa, ramis teretibus pubescenti-hirsutis, foliis brevi-petiolatis late ovatis acuminatis serratis pubescentibus, basi trinerviis, stipulis subulatis deciduis, pedunculis axillaribus binis ternisve unifloris folio brevioribus pubescenti-hirsutis, calyce ventricoso basi obtuso 5-fido, segmentis ovatis acutis reflexis, petalis valde concavis rotundatis venosis, germine globoso, stylis 12—13.

This is another of the interesting discoveries of Mr. Wm. Lobb, while on a Botanical mission for Messrs. Veitch of Exeter, in the Organ mountains of Brazil. It is, indeed, a remarkable fact, and an evidence of the great variety of the Brazilian vegetation, that, although Mr. Lobb and Mr. Gardner were botanizing in the same range of mountains at the same time, each of them met with plants which the other did not find. The present species will rank in the section *Abutilon*, and along with *Sida picta*, and *S. Bedfordiana*. It flowered in the stove of Mr. Veitch's Nursery, in January, 1845, and seems new to our books, as it assuredly is to our gardens, where, indeed, it is likely to prove highly ornamental.

Descr. Probably, when fully grown, a tall *shrub* or small *tree*; the *branches* downy, mixed with hairs. *Leaves* four to six inches long, ovate, acuminate, slightly downy, conspicuously serrated, penninerved, three-nerved at the base, all the main nerves connected by slender, transverse ones. *Petiole* short, downy, with two subulate *stipules* at the base, which are soon deciduous. *Peduncles* shorter than the leaves, erect, downy, and hairy, rarely solitary, generally two to three in the axils of the leaves, single-flowered. *Flowers* large. *Calyx* downy, ventricose, and very obtuse at the base,

as it were, truncated; five-fid, with the segments acute, somewhat reflexed. *Petals* very concave, erecto-patent, nearly orbicular, on a short claw, of a red-rose-color, with pale veins. *Anthers* numerous, yellow-orange. *Pistil: germen* or *ovary*, globose, downy, and hairy. *Style* dividing into twelve or thirteen erect branches, each with a capitate *stigma*.

Fig. 1. Pistil :—*magnified.*

Tab. 4171

GOMPHOLÓBIUM BARBÍGERUM.

Fringe-keeled Gompholobium.

Nat. Ord. Leguminosæ.—Decandria Monogynia.

Gen. Char. (*Vide supra* Tab. 1533.)

Gompholobium *barbigerum;* ramis angulatis, foliis trifoliolatis, foliolis lato-linearibus setaceo-acutis, carina margine barbata, vexillo amplo petalis calyceque majore.

Gompholobium barbigerum. *De Cand. Prodr.* 2. *p.* 105.

Gompholobium fimbriatum. *Sieb. Pl. Exsicc. Nov. Holl. n.* 361. (in Herb. nostr.) *not Sm.*

One of the most beautiful of the many New Holland *Leguminosæ*, confounded by Sieber with the *G. fimbriatum*, but correctly determined by De Candolle, and named by him "*barbigerum*" in allusion to the curious, deep, beard-like fringe on the margins of the keel of the corolla; by which character it is readily distinguished from *G. grandiflorum*, and no less easily by its broader leaves and larger flowers. No exact locality is given for the plant by Sieber, nor by Mr. Fraser (in Herb. nostr.): but I possess beautiful specimens gathered at Port Stephen by Capt. Sir Edward Parry. It flowers in the greenhouse of the Nursery of Messrs. Lucombe and Pince, who appear to have been the first to introduce it alive to this country, in April, 1845.

Descr. Apparently a moderate-sized *shrub*, with twiggy, erect, glabrous, angular *branches*. *Leaves* shortly petioled, bearing three rather broadly-linear, more or less acute, often setaceous (sometimes obtuse or even retuse) *leaflets*, tapering at the base. *Flowers* copious, very large, terminal, or usually on short, axillary branches, with small leaves, which in structure resemble those of the stem. *Calyx* campanulate, of five deep, oblong, acute, segments. *Corolla* full yellow: *Standard*, or *vexillum*, very large, suborbicular, but much broader than long, hence subreniform, and considerably

larger than the rest of the petals. *Wings* somewhat deflexed, obliquely oval, obtuse. *Carina* obliquely obovate, clawed, with a remarkable, deep, woolly fringe at the apex and along the upper margin. *Stamens* ten, unequal, free. *Pistil* stipitate. *Ovary* oblong, laterally compressed. *Style* as long as, or longer than, the ovary, carried upwards: *Stigma* a mere point.

Fig. 1. Petals of the Carina. 2. Stamens and Pistil. 3. Pistil separated from the Stamens:—*magnified.*

Pub. by S. Curtis Glazenwood Essex July 1.1845

Swan Sc.

Tab. 4172

BEGÓNIA albo-coccínea.

Scarlet and White-flowered Begonia, or Elephant's Ear.

Nat. Ord. Begoniaceæ.—Monœcia Polyandria.

Gen. Char. (Vide supra Tab. 4131.*)*

Begonia *albo-coccinea ;* acaulis, foliis oblique ovatis obtusissimis subreniformibus peltatis coriaceo-carnosis sublobato-sinuatis glaberrimis longitudine petiolorum, petiolis appresso-hirsutis, sepalis 2 exterioribus rotundatis (extus coccineis), reliquis minoribus obovatis (albis), fructu turbinato trialato alis latis subæqualibus.

One of the most lovely of this beautiful Genus, which we cannot too much recommend for cultivation to all admirers of hothouse plants, blooming throughout the spring and summer months; the flowers numerous, white and coral-red. Our plants were raised in the Royal Gardens of Kew, from seeds sent from India by — Strachan, Esq., of Twickenham, Surrey.

Descr. *Stem* none; or so short, that the plant may fairly be called stemless. From a short, thick column, spring the stout, red-colored *leaf-stalks*, two to five or six inches long, terete, with scattered appressed hairs on the surface; their base sheathed with large, lax, membranaceous *stipules*. *Leaves* from two to five or six inches in diameter; in general the length being about equal to that of the petiole, quite glabrous, obliquely ovate, very obtuse, approaching to reniform, the margins slightly reflexed, sinuate, and unequally sublobate, peltate, the point of insertion excentric, and towards the principal sinus. The texture is thick, between fleshy and coriaceous. *Scapes* a foot to a foot and a half high, twice as long as, or more, than the leaves, terete, red, branched above into a many-flowered, spreading, lax *panicle*, with small *bracteas* at the setting on of the branches. *Male flowers* of four sepals; two outer and larger ones, nearly orbicular, red externally, white within: two inner, smaller, obovate, white,

sometimes tinged with blush. *Stamens* as in the Genus. *Female-flowers* with similar sepals to the male, except that the inner ones are sometimes increased to three. *Fruit* with three, broad, nearly equal angles.

W. Fitch del.

Published by S. Curtis, Glazenwood, Essex, July 1, 1845

Tab. 4173

PHYLLÁRTHRON Bojerianum.

Mr. Bojer's Phyllarthron.

Nat. Ord. Bignoniaceæ.—Didynamia Gymnospermia.

Gen. Char. PHYLLARTHRON, *De Cand.* Arthrophyllum, *Bojer*, (non *Blume*). Bignoniæ *Sp. Auct.*—*Calyx* ovatus campanulatus, breviter et obtuse 5-dentatus. *Corolla* late infundibuliformis, lobis subrotundis. *Stamina* (4, didynamia, inclusa, prope basin tubi inserta. *Antheræ* biloculares, loculis patentibus. *Ovarium* disco carnoso inserta bilocularis: *Stylus* inclusus: *Stigma* bilabiatum). *Fructus* siliquæformis, carnosus, indehiscens, plurilocularis. *Semina* non alata, verticaliter sita, pericarpio adfixa.—Frutices *seu* arbores *ex insulis Africæ Austr. ortæ.* Folia *opposita, rarius alterna, lomentacea, nempe petiolo articulato, articulis* 2—4 *late foliaceis, foliolis aut nullis aut paucis et parvis.* Rami *dichotomi.* Racemi *seu corymbi ex ultimis dichotomiis orti, foliis breviores, pluriflori.* Flores *pedicellati.* Bracteæ *sub pedicellis oblongæ. D C.*

Phyllarthron *Bojerianum;* ramis trigonis aut ancipitibus, petiolis articulatis junioribus viscosis, articulis 2 late marginatis, inferiore obovato-cuneato, super. elliptico utroque pinnatim venoso, ramulis pedunculisque compressis, racemo terminali subcorymboso-trichotomo, calyce ovato-campanulato enervio subtruncato obtuse 5-dentato. *D C.*

Phyllarthron Bojerianum. *De Cand. Prodr.* 9. *p.* 243.

Arthrophyllum Madagascariense. *Bojer, Hort. Maurit. p.* 221. (excl. Syn. Bignonia articulata. *Desf. according to De Candolle).*

A remarkable Genus of Madagascar, and some neighbouring islands, allied to *Colea*, and named *Arthrophyllum* (from αρθρος a *joint*, and φυλλον a *leaf*) by Bojer, under a belief that the leaves themselves were jointed, or at least that the solitary leaflet was articulated upon the leaf-stalk: and such would appear at first sight to be the case with the present species, but another kind, *P. Noronhianum*, "est remarquable par ses feuilles plusieurs fois articuleés, comme celles du Nopal;" hence De Candolle is disposed to consider it an articulated petiole, without any leaf. I will not undertake to say, what is its true structure: but I may observe, that in my native specimen from M. Bojer, the older portion of the stem is

ancipitate, and almost winged, showing an approach to the winged petiole. The name *Arthrophyllum* being preoccupied by a plant of Blume, De Candolle changed the appellation to what we have here adopted. Our garden at Kew owes the possession of this rarity to that of Mauritius, where it has been introduced by M. Bojer, and long cultivated. It flowered with us in the month of August.

Descr. A small *shrub*, with a very peculiar appearance. *Branches* compressed. *Leaves* none. *Petioles* leaf-like, opposite, or alternate, biarticulate, the upper one nearly elliptical, more or less acute; the lower narrow, cuneate; both of them subcoriaceous, glabrous, penninerved, the nerves connected by a slender, intramarginal one; the younger foliage viscid. *Raceme* compound, axillary, few-flowered. *Calyx* small, campanulate, five-toothed. *Corolla* infundibuliform, rose-color, downy; the *tube* subcampanulate; the *limb* large, spreading, of five, blunt, wavy segments, with two yellow lines in the throat. *Stamens* four, didynamous, included. *Anther-cells* two, spreading. *Ovary* seated on a large, fleshy gland, two-celled, ovate. *Style* included. *Stigma* of two linear lobes.

Fig. 1. Stamens. 2. Calyx and Pistil. 3. Pistil. 4. Ovary cut through transversely:—*magnified.*

Tab. 4174.

FUCHSIA serratifolia.

Serrated-leaved Fuchsia.

Nat. Ord. Onagrarieæ.—Octandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4082.)

Fuchsia *serratifolia*; fruticosa glabra, foliis ternis quaternisve verticillatis rarius oppositis oblongo-lanceolatis acutis serratis petiolatis, pedunculis solitariis axillaribus unifloris, flore nutante, calycis tubo elongato laciniis patentibus petala obovata superantibus, staminibus exsertis stylo parum brevioribus, stigmate clavato, ovario oblongo glabro.

Fuchsia serratifolia. *Ruiz et Parv. Fl. Peruv. et Chil. v.* 3. *p.* 86. *t.* 223. *f. a.* *De Cand. Prodr. v.* 3. *p.* 38. *Spreng. Syst. Veget. v.* 2. *p.* 234.

Ruiz and Pavon have justly remarked of this, "planta dum florida perpulchra." Its flowers are among the largest and most lovely of this lovely genus, and the leaves are handsome likewise, they and the stems being deeply tinted with red. The species was imported by Messrs. Veitch of Exeter, through their collector Mr. William Lobb, who detected it in Peru, probably at Muña, where it was first discovered in moist and shady places by the original describers Ruiz and Pavon. It has been already exhibited at Chiswick, when the large silver-gilt medal was awarded to it, and other prizes in the Rooms of the Horticultural Society and the Regent's Park Garden; and the plant has excited great admiration. At present it is considered a hot-house plant; but in all probability it will be found to bear the open air during the summer months, when it will prove more ornamental than any species yet in cultivation among us. We possess fine native specimens gathered in Peru by Mathews, at Panahuanca (n. 542), and at Pangoa (n. 1168), and at Huamantanga, gathered by our friend Mr. Maclean.

Descr. A tall shrub, with its young stems rounded and deep red. *Leaves* rarely opposite, in the main or central shoot growing four in a whorl, on the side shoots three in a whorl, oblong, approaching to lanceolate, shortly petiolate, entire and rather obtuse at the base, the rest of the margins serrated, the apex acute:

their upper side is a deep or rather sattiny green, the under side pale, and, especially the petiole and costa, tinged with red. *Nerves* strong, prominent beneath. *Flowers* solitary, pendent, on peduncles which spring from the back end of the upper leaves, large, handsome. *Ovary* green, oblong. *Calyx* swollen at the base and there deep red, the long tube gradually becoming pink and paler, at length the red hue gives place to yellow-green in the four lanceolate spreading acuminated segments. *Petals* four, obovate, waved, shorter than the calycine segments. *Stamens* unequal, four longer and four shorter, but nearly as long as the calycine segments, and longer than the petals. *Anthers* oblong, yellow. *Style* rather longer than the stamens, terminated by a thick club-shaped *stigma*.

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Tab. 4175.

ACHIMENES argyrostigma.

Silvery-spotted Achimenes.

Nat. Ord. Gesneraceæ.—Didynamia Angiospermia.

Gen. Char. (*Vide supra*, Tab. 4125.)

Achimenes *argyrostigma*; pubescenti-pilosa, cauli brevi inclinato, foliis oppositis ellipticis crenatis albo-maculatis, racemis subterminalibus elongatis multifloris calycibusque piloso-glandulosis, corollæ labio superiore abbreviato bilobo inferiore concavo fimbriato, tubo extus ore ovarioque pilosis.

Among many novelties sent by our Collector for the Royal Botanic Gardens from the Sierra Nivada de Sta. Marta in New Grenada, is the accompanying highly interesting plant. The leaves are peculiarly beautiful, of a rich, velvetty, dark green, with a tinge of purple, spotted with white, as in *Begonia argyrostigma*. We will not deny that (partly from the consciousness that the plant was a true *Achimenes*), very great expectations were raised in respect to the beauty of its flowers. Their first appearance no doubt disappointed us; but as the racemes increased in length and more blossoms expanded, the plant became a general favourite and is likely to continue so, for the flowers bid fair to continue the whole summer months. They are white or cream-colour, spotted with red. The plant requires the same treatment as others of this family; and we find it best, after rearing it in in a moist and hot stove, to remove it to a cooler place; thus treated the bloom and foliage continue in beauty a great length of time. It will be readily increased, we cannot doubt, by its scaly, caterpillar-like tubers, as is the case with the original *Achimenes coccinea*, of which this is unquestionably a true congener.

Descr. *Root* branched and fibrous, bearing from the fibres long scaly buds or *tubers*, by which the plant readily increases. *Stem* herbaceous, short, somewhat branched, green, hairy, as well as the thick *petioles*. *Leaves* opposite, elliptical, obtuse, crenato-serrate, downy, of a rich deep velvetty green, marked with scattered white rounded spots. *Racemes* erect, from the axils of the upper leaves, very much longer than the leaves, glanduloso-hirsute, and

bearing flowers almost from the very base. *Pedicels* half an inch to an inch long, each with a small linear *bractea* at the base, rarely forked. *Calyx*, as well as the pedicel, pilose and glandular. *Tube* adnate with the base of the ovate hairy *germen*; the segments linear, slightly spreading. *Corolla* white, beautifully mottled with red. *Tube* rather short and gibbous at the base behind, hairy; *limb* oblique, two-lipped; upper lip abbreviated, two-lobed, with the lobes nearly entire, the lower divided into three lobes, which are rounded and fimbriated. *Stamens* four, didynamous; the white *anthers* cohering all from the base of the tube of the corolla and with a fifth abortive stamen between the two pairs. *Germen* surrounded by a deep cup-shaped ring or disk. *Style* included, curved. *Stigma* capitate, two-lobed. The *fruit* presents two parietal *receptacles* nearly meeting in the centre and having many minute *seeds* in the lower portion chiefly of the receptacles.

Fig. 1. Corolla laid open. 2. Pistil with annular cup-shaped disk. 3. Transverse section of an ovary :—*magnified*.

Tab. 41

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Tab. 4176.

PORPHYROCOMA lanceolata.

Lance-leaved Porphyrocoma.

Nat. Ord. Acanthaceæ.—Didynamia Angiospermia.

Gen. Char. PORPHYROCOMA, *Hort.*—*Calyx* 5-partitus, laciniis subæqualibus, subulatis, basi tribracteis, bracteis coloratis magnis in spicam quadrifariam digestis, exteriore majore, duabus interioribus minoribus, omnibus spathulatis carinatis. *Corolla* longe exserta, tubulosa, bilabiata, labiis subæqualibus, superiore angusto, recto, apice bifido, inferiore latiore, reflexo, trifido. *Stamina* 2, labiis paulo breviora. *Antheræ* loculis divergentibus. *Ovarium* ovatum, basi capsula immersa. *Stylus* longitudine fere corollæ. *Stigma* obtusum. *Capsula* oblonga stipitata bilocularis. *Semina* 2, in singulis loculis, orbicularia plana retinaculo subtensa.—Fruticosa. Patria —? *Folia opposita, lanceolata basi attenuata, subsessilia, integerrima.* Spicæ *terminales et subterminales aggregatæ, bracteatæ, bracteis exterioribus magnis vividi-purpureis, quadrifariam dispositis unifloris.* Flores *exserti, purpureo-cærulei.*

Porphyrocoma *lanceolata*, Hort.

For the possession of this truly charming plant we are indebted to Mr. Forkel, Gardener to His Majesty the King of the Belgians, at Brussels, who sent it to us under the above name; but unfortunately without any history, so as to leave us in the dark as to its native country, or the author of its very appropriate name, (*πορφύρα*, purple, and *κόμη*, head of hair), given in allusion to the singularly richly coloured spikes of deep purple, from within the scales of which the scarcely less brightly coloured (but more inclining to blue) flowers appear. It was exhibited in the Horticultural Society's Rooms, and excited admiration from the beauty of the blossoms which consist in the dark purple comb-like parts half covering the Lamium-like violet flowers.

It is a stove plant, and continues flowering during the spring and summer months. It may be referred to the Tribe *Echmatacanthi*, Nees, and the Sub-tribe *Justiciæ*, Nees.

Descr. Our *Plant* is about a foot high, clothed more particularly in the upper part with rather large drooping lanceolate *leaves*, quite entire at the margin, acuminated at the point, tapering at the base, but scarcely petioled, quite glabrous, dark green,

with very oblique nerves. *Spikes* aggregate, terminal, and subterminal, deeply four-angled from the opposite closely placed and imbricated *bracteas* of the richest purple colour. Each of these is spatulate, membranous, carinate, acute; and within it are two which are smaller and narrower, one on each side the solitary sessile *flower*. *Calyx* small, of five deep, almost subulate, rather unequal, erect segments. *Corolla* a good deal protruded beyond the bracts, purplish-blue, tubular, two-lipped; *upper lip* straight and narrow, two-lobed at the apex, lower one broader, bent down and three-lobed at the apex. *Stamens* two, as long as the corolla. *Anther*-cells two, divaricated yet partially parallel. *Ovary* ovate, with its base sunk in a fleshy cup. *Style* as long as the corolla. *Stigma* obtuse. *Fruit* concealed by the large persistent bracteas, unguiculate, two-celled, two-valved. Each *cell* contains two flattened nearly orbicular *seeds*, supported by a curved process or retinaculum.

Fig. 1. Calyx (including the pistil) with side bracts. 2. Corolla laid open. 3. Anther. 4. Germen and hypogynous cup:—*magnified*.

Tab. 4177.

ECHINOCACTUS MYRIOSTIGMA.

Many-spotted Echinocactus.

Nat. Ord. Cactaceæ.—Icosandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4115.)

Echinocactus (§ Asteroidei, *Salm-Dyck*) *myriostigma*; suborbicularis v. demum oblongus, profunde 5–6 sulcatus totus punctis seu pulvinulis minutis lanosis sparsis tectus, angulis valde prominentibus ad carinam planis areolatis, areolis approximatis transversis lanosis inermibus, floribus ex umbilico terminali stramineis, sepalis superioribus glabris apice sphacelatis mucronatis, petalis subuniserialibus.

Echinocactus myriostigma. *Salm-Dyck, Cact. Hort. Dyck, p.* 22.
Astrophytum myriostigma. *Lemaire, Cact. Nov. p.* 4.

One of the most singular of the singular family of *Cactaceæ*, and still considered a rarity in collections; first described by Lemaire in 1839, but from very imperfect specimens, of which even the native country was not known, but which presented such remarkable characters, independent of flower and fruit, that he ventured to constitute of it a Genus, under the appropriate name of *Astrophytum*. The flowers, however, (for we are still ignorant of the fruit) seem to present no characteristic marks to distinguish it from *Echinocactus*, and I venture to follow the Prince de Salm-Dyck in considering it to form a section of that extensive genus, which he has called *Asteroidei*. The transverse section not inaptly resembles a star-fish. We owe the possession of our specimens in the Royal Gardens to F. Staines, Esq., of San Luis Potosi, Mexico, who sent us, in the first instance, specimens a foot long; but coming in contact, as it would appear, with a "monster species" enclosed in the same case, they were bruised and eventually perished. Others were afterwards forwarded of a smaller size, and one of them here figured threw out its pretty starry straw-coloured flowers from the depression at the top of the plant in July 1845.

Descr. *Plant* eventually attaining a height of a foot and probably more, at first subrotund, in age becoming more oblong,

umbilicated at the top, the sides formed of five or six deep furrows and as many broad, projecting angles; the whole surface covered with white, scale-like dots, which when carefully examined are seen to be formed of matted and as it were interwoven hairs; the keel of the angles is not sharp, but flattened, as if cut off with a knife, and this is occupied by closely placed transversely oblong areolæ, filled with a floccose substance, but bearing no spines. In the umbilicus alone, whence the flowers appear, there are a few small brown rigid setæ rather than spines. *Flowers* aggregated at the top of the plant, rather small, of a delicate straw-colour. *Sepals* closely imbricated, oblong, tipped with a black point and a mucro. *Petals* resembling them, but longer, arranged nearly in one series, linear, acute, but not mucronate, nor sphacelate at the tip.

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Tab. 4178.

SIPHOCAMPYLOS coccineus.

Showy scarlet-flowered Siphocampylos.

Nat. Ord. Lobeliaceæ.—Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4105.)

Siphocampylos *coccineus*; suffruticosus glaber elatus, foliis ovatis acutis brevipetiolatis (nunc sublobatis) duplicato-serratis, pedunculis folio longioribus axillaribus solitariis unifloris, flore nutante, ovario oblongo-turbinato sulcato laciniis calycinis lanceolatis patentibus serratis breviore, corollæ tubo basi (infra filamentorum insertionem) angustato demum sensim dilatato curvato ore contracto, limbi vix bilabiati laciniis oblongo-ovatis acutiusculis subæqualibus incurvis.

Perhaps the most beautiful of this Genus which has yet been introduced to our stoves, and sent from the Organ Mountains, Brazil, by Mr. William Lobb, one of the botanical collectors of Mr. Veitch, in whose Nursery at Exeter it first showed its large and scarlet flowers, in June 1845. Plants were exhibited at the Chiswick Exhibition in July, which gained the same prize there, as well as in the Regent's Park Garden, as had been awarded to the *Fuchsia* before described (Tab. 4174). It is treated as a stove plant, and, cultivated by Mr. Veitch, is not sparing of blossoms.

Descr. Suffruticose in the lower part of the plant only, erect, branched, glabrous. *Leaves* petiolate, alternate, broadly ovate, acute, scarcely acuminate, occasionally slightly lobed, doubly dentato-serrate, rather strongly nerved, glabrous; *petiole* rather short, grooved above. *Peduncles* axillary, solitary, one-flowered, longer than the leaves, erect, but curved at the top, so that the flower is gracefully pendent. *Ovary* turbinate, deeply sulcate. *Segments* of the *calyx* lanceolate, serrated, moderately patent, longer than the tube or ovary. *Corolla* bright scarlet, two inches and more

long, curved; the *tube* constricted at the base, as far as the setting on of the stamens, thence the tube gradually enlarges and again becomes contracted at the mouth; *limb* scarcely two-lipped, of five nearly equal, oblong-ovate, acute, incurved *segments*. *Stamens* and *style* included.

Reeve, Bro. imp.

Fitch, del

Tab. 4179.

GOMPHOLOBIUM VERSICOLOR;

Var. caulibus purpureis.

Changeable Gompholobium; purple-stemmed variety.

Nat. Ord. Leguminosæ.—Decandria Monogynia.

Gen. Char. *Calyx* 5-partitus subæqualis. *Corolla* petalis 2 carinalibus concretis, vexillo explanato. *Stigma* simplex. *Legumen* polyspermum subsphæricum obtusissimum.—Frutices *Australasici rigiduli.* Folia *alterna composita breviter petiolata.* Fructus *intus extusque glabri.* Pedicelli florum *medio aut basi bibracteolati.* Calyces *sæpe lana subtili ciliati.* Corollæ *flavæ.* *De Cand.*

Gompholobium *versicolor;* foliis breviter petiolatis trifoliolatis, foliolis linearibus glabris margine revolutis, racemis laxis paucifloris, calycis laciniis oblongo-linearibus cuspidatis extus glabris intus pubescentibus, carina glabra. *Lindl.*

Gompholobium versicolor. *Lindl.*, *Bot. Reg.* 1839. *Suppl. no.* 62. *and Tab.* 43.

A pretty greenhouse Swan River suffruticose plant, from the rich collection of Messrs. Lucombe, Pince, and Co., Exeter, who raised it from seeds sent home by Mr. James Drummond. It derives its specific name from the circumstance of the flowers becoming paler in age. But at all times the plant is extremely beautiful and most profuse in its blossoms, if it be kept well cut in, and not allowed to send out shoots that are too long and too luxuriant. Dr. Lindley has well distinguished the species from *G. etnue* and *G. sparsum.* It varies with purple stems, as represented in our plate, and flowered in May 1845.

Descr. An upright, rather twiggy, small *shrub*; with subangular *stems* and *branches*, deep purple in our variety, glabrous, as is every part of the plant. *Leaves* alternate, nearly sessile, trifoliolate; *leaflets* linear, rather broadly so in the older parts of the plant, acute, almost apiculate at the extremity, the margins slightly recurved, costate, but with no evident nerves or veins, dark-green above, paler beneath. *Racemes* axillary (from the upper leaves), and terminal, few (2–3)-flowered; *pedicels* furnished with minute bracteoles. *Flowers* large, handsome, peculiarly beauti-

ful just before expansion, when the rich and deep scarlet of the *standard* alone is seen. *Calyx* of five deep, oblong-acute, or almost mucronate segments. *Standard* long, somewhat reniform, deep red externally, pale within, yellow in the disk and with a deep red line bordering the yellow. *Wings* also deep red. *Keel* paler below, red towards the apex. *Stamens* ten, nearly as long as the pistil. *Filaments* ten, free. *Ovary* oblong, compressed, shortly stipitate. *Style* almost as long as the ovary, curved upwards. *Stigma* obtuse.

Fig. 1. One of the alæ or wings. 2. The keel. 3. Stamens and pistil. 4. Pistil: all slightly *magnified*.

Tab. 4180.

Reeve, Bro imp

Tab. 4180.

ANIGOZANTHUS PULCHERRIMUS.

Beautiful Yellow Anigozanthus.

Nat. Ord. Hemodoraceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 3875.)

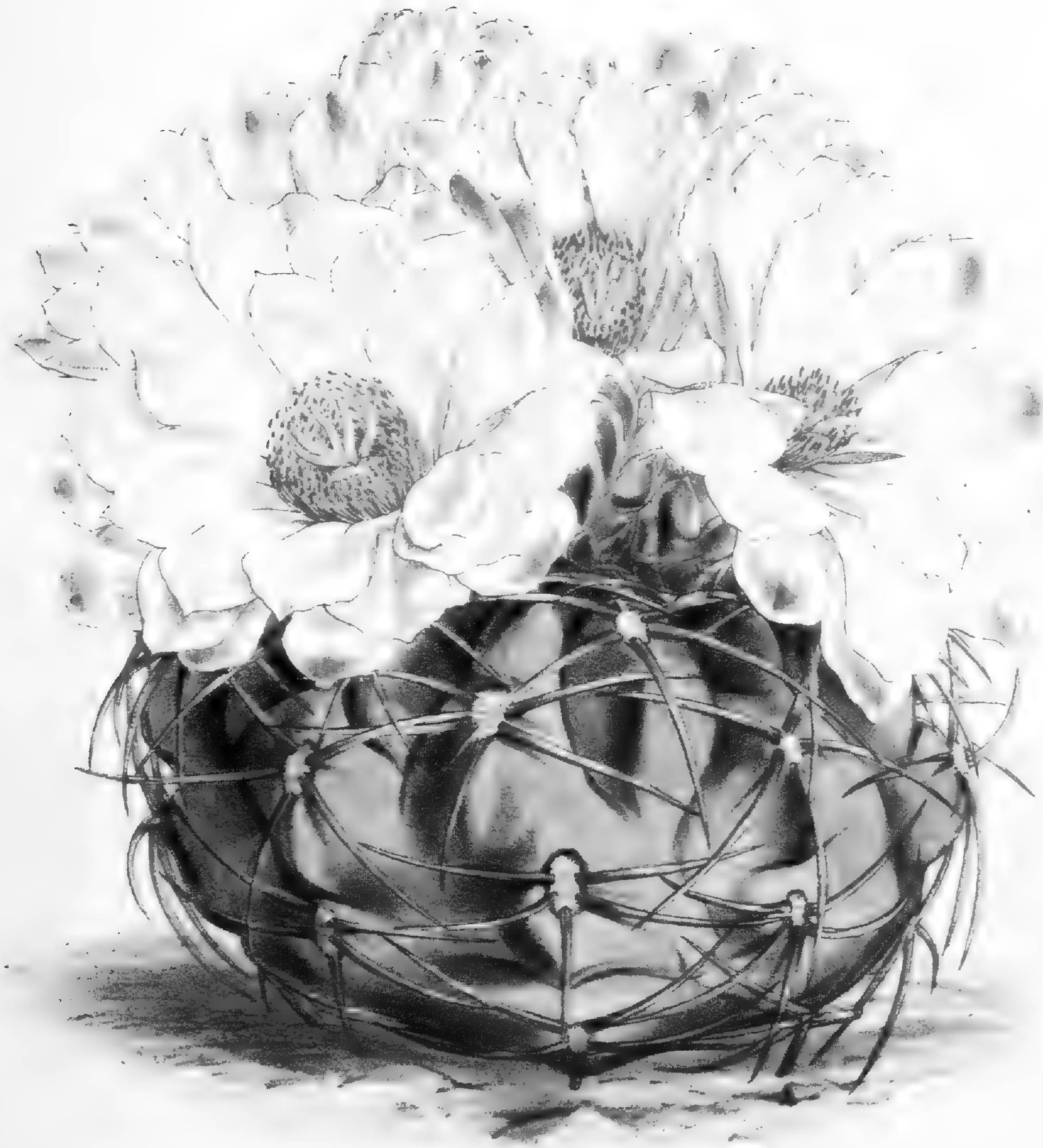
Anigozanthus *pulcherrimus;* caule elato foliisque æquitantibus lineari-acuminatis falcatis ubique tomento stellato tectis, panicula valde ramosa pilis setulosis rufis tecta, perianthio infundibuliformi pilis ejusdem structuræ flavis dense obsitis, ore valde obliquo intus glaberrimo laciniis intus tomentosis, antheris muticis.

One of the most beautiful of this fine Genus from its copious and richly coloured flowers and flowering branches; the former being bright yellow, the latter clothed with scarlet hairs, curiously branched on a yellow ground. It is a native of the Swan River settlement, where it was detected by our indefatigable friend Mr. James Drummond. From seeds sent by him it has been raised by Mr. Lowe, of the Clapton Nursery, to whom the Royal Botanic Garden owes the possession of a fine plant. It has not yet, however, as far as I am aware, bloomed in this country, and our flowering specimen is taken from a dried native specimen sent by Mr. Drummond, in which, from the nature of the plant and peculiarity of its vestiture, the form and colours are as well preserved as if seen in a living state. Perhaps in the general structure of the blossoms it comes nearest to *A. flavidus*; but the flowers are much shorter, and the panicle and leaves and clothing are all very different in the two species. It loves a light sandy soil and the protection of a good greenhouse, and will prove a highly ornamental plant to our gardens.

Descr. *Plant* 2–3 feet high. *Leaves* most numerous near the root, but smaller, remote upwards; all of them linear-falcate, acuminate, entire, equitant, clothed with a dense stellated or branched greyish tomentum, giving a hoary character to the foliage and to the lower part of the stem which is similarly invested. This stem has again the leaves becoming gradually smaller upwards, where it becomes a large flowering *panicle*, with lanceolate

bracteas at the setting on of the branches, and the branches themselves apparently clothed with a short yellow down, but which is partially concealed by copious bright red hairs or setæ, themselves beset with setulæ or lesser horizontal hairs, imparting a rich red velvetty hue to this portion of the plant. *Flowers* several on each branchlet, distichous, each subtended by a small subulate *bractea*, and of a rich yellow colour. *Pedicels* short. *Perianth* infundibuliform, curved, the mouth oblique; externally clothed, with bright yellow hairs of the same structure as those on the branches of the panicle. *Segments* spreading unequally, the two lowest being wide apart, within covered with short whitish down. *Mouth* very oblique, smooth within the tube, lined as it were with a membrane, which at the faux gives origin to the six exserted *stamens*. *Filaments* short. *Anthers* oblong. *Style* curved, exserted, as long as the stamens.

Fig. 1. Flower, slightly *magnified*.



Tab. 4181.

ECHINOCACTUS multiflorus.

Many-flowered Echinocactus.

Nat. Ord. Cacteæ.—Icosandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4124.)

Echinocactus (§ Tuberculati) *multiflorus;* depresso-globosus obscure viridis subglaucus tuberculatus vix costatus, tuberculis magnis verticaliter oblongis hemisphæricè prominentibus mammæformibus demum confluentibus superne in series subverticales irregulares dispositis, areolis ovalibus tomentosis, aculeis 5 validis reflexo-patentibus recurvatis subappressis subæqualibus, floribus numerosis (pro plantæ ratione) magnis albidis.

From the rich collection of Cactuses in the possession of Mr. Palmer, of Stockwell, near London, who obligingly sent a specimen (the one here figured), to Kew, on the eve of its blossoming. Of its native country we are ignorant, and it does not appear to be described; but on this subject it behoves us to speak with caution, for no plants are so difficult to define by words as the individuals of this now extensive family: figures, alone, can render the distinguishing characters of them intelligible. The species is remarkable for the large tubercles, strong spreading recurved and almost appressed spines, and for the copious pale, almost white, flowers, tinged with greenish-brown.

Descr. Our only specimen is of the size here represented, globose, depressed at the top, green, slightly glaucous. *Tubercles* large, irregularly placed, upper ones only in an imperfect vertical series, and those oblong or oval, very prominent, obscurely angled. *Areolæ* oval, woolly; bearing five nearly equal spines, about an inch long, diverging, but not on all sides, two opposite pairs laterally and the lower one towards the base of the plant; all are so much spread and decurved that they may almost be said to be appressed strong, of a yellowish colour, purple at the base. *Flowers* large (for the size of the plant), numerous, several opening at one time, so as to cover and conceal the upper surface

of the plant. *Calyx-scales* green, gradually enlarging and becoming petaloid, till at length they pass into the spreading, obovate, almost white *petals*. *Stamens* numerous. *Anthers* small orange. *Rays of the stigma* white, or nearly so.

Tab. 4182.

CHIRITA Zeylanica.

Ceylon Chirita.

Nat. Ord. Cyrtandraceæ. Gesneraceæ Cyrtandraceæ, Br.—
Didynamia Angiospermia.

Gen. Char. CHIRITA, *Ham. in Don's Prodr.* *Calyx* tubulosus sub 5-gonus, lobis per æstivationem subvalvatis. *Corolla* basi tubulosa superne ventricosa campanulata, limbo 5-lobo bilabiato, lobis subrotundis. *Stamina* 5, duo antherifera, 3 sterilia minima. *Antheræ* reniformes nudæ superne cohærentes 1-loculares. *Ovarium* siliquosum. *Stylus* 1. *Stigma* bipartitum lobis oblongis. *Capsula* siliquæformis bilocularis stylo terminata bivalvis, septo valvulis adnato bipartito. *Semina* 00, minuta calva subulata.—Herbæ *perennes hirsutæ Nepalenses.* Caules *simplices.* Folia *opposita sæpius disparia et basi vix inæqualia petiolata serrata.* Pedunculi *axillares oppositi bibracteati sæpius* 1*-flori.* Corollæ *magnæ rubræ aut flavæ. De Cand.*

Chirita *Zeylanica;* foliis oppositis longe petiolatis supra appresso-brunneo-sericeis obscure serratis basi obliquis, pedunculis axillaribus, floribus paniculatis trichotome divisis, bracteis lobisque calycinis ovatis, corollæ (purpureæ) tubo intus supra bilamellato infra lineis duabus elevatis hirsutis (flavis), stigmate transversim triangulari.

Of the family of *Cyrtandraceæ*, lately so admirably illustrated by Mr. Brown, and more fully described by De Candolle, father and son, very few species indeed have been in cultivation, and two of those that are at this moment blossoming in the Royal Gardens of Kew, do not appear to be anywhere described. Our knowledge of those we have (including *Æschynanthus*), will lead us to seek for more; since, like their affinities, the *Gesneraceæ* (of which, indeed, Mr. Brown considers them a group or section), they are of great beauty and easy cultivation; and they seem to abound in the East Indies, as the true *Gesneraceæ* do in the tropical parts of the New World. The generic *Chirita* of Hamilton, (written *Chirata* in Don's 'System of Gard. and Botany'), is said to be altered from the vernacular name of one of the species, and of course of Indian origin. Our present species is a native of Ceylon, and was raised from seeds sent from that island by Mr. Henderson, the scientific gardener to Lord Fitzwilliam, late at Milton, now at Wentworth. The plant strikes readily from cut-

tings and soon blossoms, flowering through most of the summer months, treated as a stove-plant.

Descr. Plant a foot and more high, slightly branched, having appressed hairs. *Leaves* opposite, petiolate, ovate, acute, entire, obliquely penninerved, with impressed veins above, prominent beneath, covered with rather close-pressed, silky-brownish hairs. *Panicle* on a *peduncle*, considerably longer than the leaves, not much, but trichotomously divided, the middle branch often single-flowered, the lateral ones again divided. *Branches* tinged with purple. *Bracteas* opposite, ovate, greenish-purple. *Calyx* large, lax, of the same colour as the *bracteas*, obtuse and oblique at the base, two-lipped; upper lip of three, lower of two deep, ovate, acuminated segments. *Corolla* large, handsome, rich purple, reddish and paler in the tube. *Tube* broadly infundibuliform, ventricose beneath. *Limb* two-lipped, moderately spreading, upper of two, lower of three nearly equally sized rounded lobes. Lower palate having two raised yellow lines. *Stamens* included, two fertile filaments angled or geniculated outside near the middle, their *anthers* reniform connate; two other *stamens* are small and abortive, and there is an imperfect rudiment of a fifth. *Ovary* linear-oblong, seated upon a fleshy disk. *Style* elongated. *Stigma* of two spreading somewhat triangular plates, white. *Fruit* long linear, siliquiform, tapering into the long persistent *style*. I have not seen it mature.

Fig. 1. Corolla laid open. 2. Pistil :—slightly *magnified*.

Tab. 4183.

HABROTHAMNUS fasciculatus.

Cluster-flowered Habrothamnus.

Nat. Ord. Solanaceæ. Trib. Cestreæ.—Pentandria Monogynia.

Gen. Char. HABROTHAMNUS, *Meissn.*—*Calyx* campanulatus, 5-dentatus. *Corolla* hypogyna, clavato-tubulosa, tubo longo, limbo 5-dentato contracto. *Stamina* 5, medio corollæ tubo inserta, inclusa; *filamenta* simplicia. *Antheræ* longitudinaliter dehiscentes. *Ovarium* biloculare placentis oblongis dissepimento adnatis, pluriovulatis. *Stylus* simplex; *stigma* capitatum, obsoletè bilobum. *Bacca* calyce cincta bilocularis. *Semina* pauca angulata, umbilico ventrali. *Embryo* in axi albuminis carnosi rectus; *cotyledonibus* foliaceis; *radicula* tereti, infera.—Frutices *Mexicani, glabri v. subtomentosi-pubescentes, pilis articulatis;* foliis *alternis integerrimis*; floribus *inæqualiter cymosis*; corollis *baccisque rubris. Endl.*

Habrothamnus *fasciculatus;* fruticosus, ramis junioribus pubescentibus, foliis breviter petiolatis ovatis acuminatis integerrimis pubescentibus penninerviis, floribus terminalibus cymoso-capitatis involucratis, involucri foliolis folia æmulantibus sed multo minoribus, calycis segmentis ovatis acuminatis, corolla urceolatim tubulosa basi attenuata ore valde constricta, laciniis ovatis acutissimis patentibus ciliatis, staminibus infra medium insertis.

Habrothamnus fasciculatus. *Endl. in Benth. Plant. Hartw.* no. 369. *Walp. Repert. Bot. Syst. v.* 3. *p.* 123. *Hartw. in Hort. Trans. Lond. N. S.* 3. *Tab.* 2. *Lindl. in Bot. Reg. Misc.* 1843. *no.* 73.

Meyenia fasciculata. *Schlecht. in Linnæa,* 8. *p.* 251.

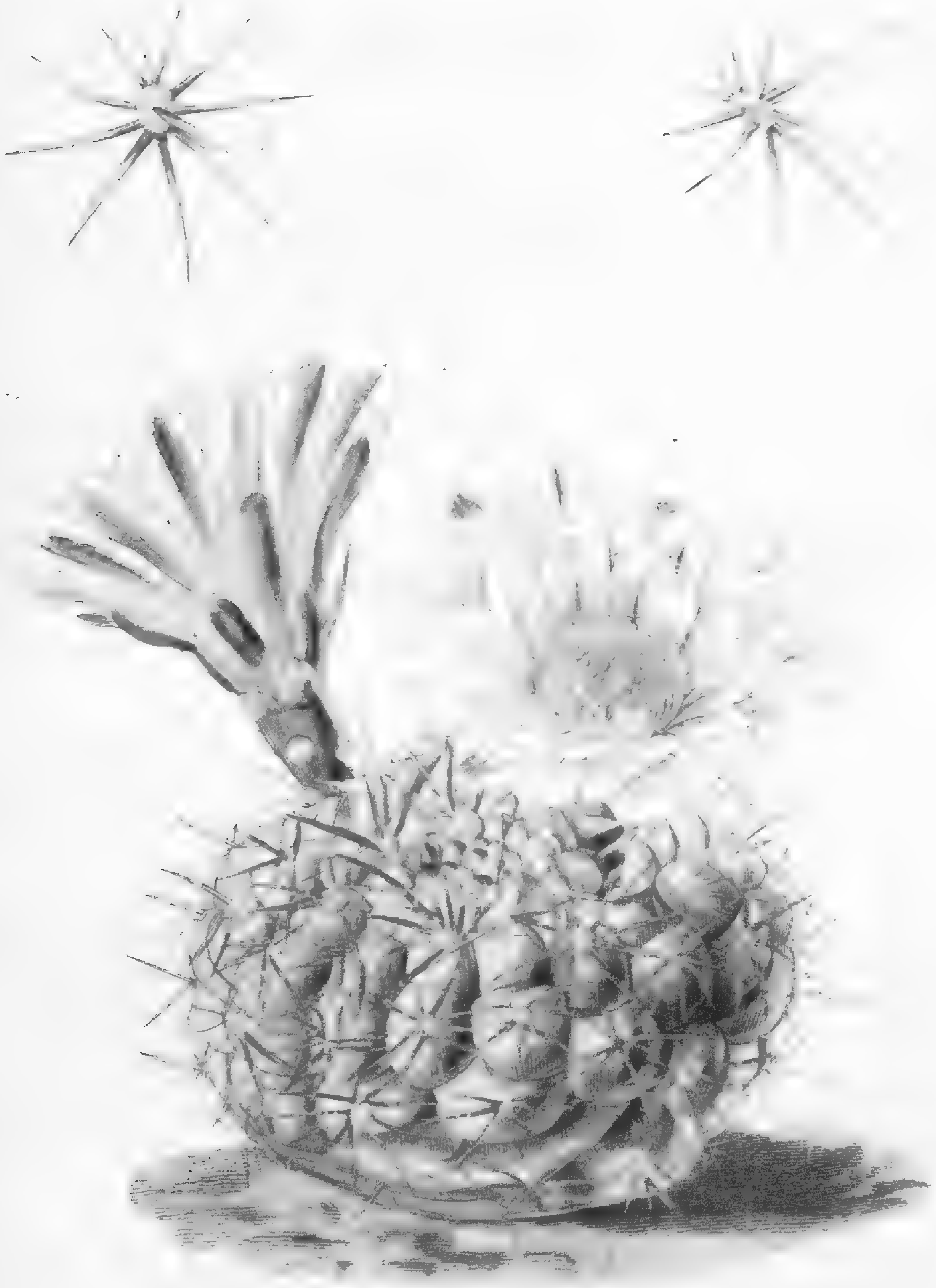
Habrothamnus elegans. *Scheidweil. in Walp. Repert. Bot. Syst.* 3. *p.* 122. *et Addend. ejusd. volum. p.* 934.

H. purpureus. *Lindl. Bot. Reg.* 1844. *t.* 43. *and Miscell. no.* 19.

A very handsome greenhouse shrub, which in its native country (Mexico) bears innumerable closely placed heads or clusters of beautiful red flowers, but of which the sample given exhibits only one such head. This was communicated by Messrs. Lucombe, Pince, and Co., from their Nursery, Exeter; they imported it, I believe, through Belgium. One has only to look at the figure above quoted in the 'Hort. Society's Transactions' to see how this plant is capable of improvement, and that figure, done from the native dried specimen, is no exaggeration over nature. Hartweg describes it as one of the gayest productions of the Mexican Flora. Our specimen was produced in winter. The generic name is de-

rived from αβρος, *gay*, and θάμνος, *a shoot*, or branch; so named from the beauty of its flowering branches.

Descr. A *shrub*, according to Hartweg, about five feet high, downy. *Branches* terete. *Leaves* alternate, on short thick red *petioles*, ovato-acuminate, waved, entire, obtuse at the base, penninerved. *Flowers* in involucrated capitate *cymes*. *Involucral leaves* three or four, resembling those of the stem, but much smaller and nearly sessile. *Pedicels* short, or none. *Calyx* small, with a short obconical *tube* and five erect ovate acuminated ciliated *segments*. *Corolla* rather a deep red rose-colour, urceolate, but much elongated and tapering at the base, constricted at the mouth; *limb* of five spreading, ovate, very acute, ciliated segments. *Stamens* included. *Filaments* inserted below the middle of the tube. *Anthers* short-oblong. *Ovary* globose, on a fleshy disk, two-celled, few-seeded. *Style* included. *Stigma* capitate, somewhat two-lobed.



Fitch, del

Reeve imp

Tab. 4184.

ECHINOCACTUS Leeanus.

Mr. Lee's Echinocactus.

Nat. Ord. Cacteæ.—Icosandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4124.)

Echinocactus (§ Tuberculati) *Leeanus;* depresso-globosus obscure subglauco-viridis tuberculis subhemisphæricis majusculis obtuse hexahedris mammiformibus confluentibus, in series irregulares subverticales dispositis, areolis ovalibus tomentosis, aculeis subgracilibus quorum subdecem patentibus rectiusculis cum unico centrali porrecta vix majore, floribus majusculis pallide flavescentibus.

Raised by Messrs. Lee of the Hammersmith Nursery, from seeds sent from the Argentine provinces by Mr. Tweedie of Buenos Ayres, in 1840. The specimen here figured blossomed in May, in the Cactus-house of the Royal Botanic Gardens of Kew. I do not meet with its description in any book to which I have access, and therefore venture, though not without hesitation, to publish it as new. It may rank near our *E. multiflorus* (supra, Tab. 4181), but is in reality very different.

Descr. A small species, globose, but depressed at the top. *Tubercles* which compose the surface rather large, hemispherical, but having about six very obtuse angles, of a rather glaucous green colour, not arranged in distinct lines or series so as to form ridges with their corresponding furrows, but placed with a good deal of irregularity, becoming, below especially, confluent and obsolete, at the top small and very numerous. *Areolæ* oval, downy, or rather woolly, producing about eleven rather slender *spines*, of which one, the central one, stands forward and is quite straight; the other ten are slightly recurved, and spread horizontally (especially on the older tubercles), most of these are nearly equal in size and about half an inch long. *Flowers* from the summit or depressed portion above, one or two moderately large. *Tube* short, covered

with green roundish or oblong obtuse *scales*, the upper ones larger, with pale edges and tips, and gradually passing into the pale sulphur or almost cream-coloured *petals*.

Fig. 1 and 2. **Areolæ with the aculei** :—slightly *magnified*.

Tab. 4185.

GARDENIA Stanleyana.

Lord Derby's Gardenia.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

Gen. Char. *Calycis tubus* ovatus sæpe costatus, limbus tubulosus truncatus dentatus fissus partitusve. *Corolla* infundibuliformis aut hypocraterimorpha, tubo calyce multo longiore, limbo per æstivationem contorto patente 5–9-partito. *Antheræ* 5–9 lineares ad faucem subsessiles. *Stigma* clavatum bifidum aut bidentatum, lobis crassis erectis. *Ovarium* dissepimentis incompletis 2–5 semi-divisum, 1-loculare. *Bacca* carnosa calyce coronata intus chartacea aut nucleata incomplete 2–5-locularis. *Semina* minuta placentis parietalibus carnosis immersa. *Embryo* albuminosus vagus.—Arbores *aut* frutices, *inermes aut spinescentes.* Folia *opposita raro verticillata, ovalia.* Flores *axillares aut terminales, plerumque solitarii, albi, demum sæpe florescentes, sæpius odori.—De Cand.*

Gardenia (Rothmannia) *Stanleyana*; glaberrima, ramis horizontalibus, foliis oblongis brevissime petiolatis utrinque acutis venarum in axillis glandulosis, floribus subsessilibus axillaribus solitariis erectis plerumque e caulis dichotomia, calycis subcylindracei tubo superne libero 5-dentato dentibus appressis, corollæ glaberrimæ tubo longissimo superne sensim ampliato angulato, limbi laciniis late ovatis obtusis cito revolutis, antheris styloque inclusis.

Gardenia Stanleyana. *Hook. MSS. Lindl. Bot. Reg.* 1845, *t.* 4.

Sent to the Right Honourable the Earl of Derby by Mr. Whitfield from Sierra Leone, and assuredly one of the most remarkable and beautiful of the plants which that gentleman has had the satisfaction of introducing to our collections. The young plant presented to us, when yet only a few months old, but placed on the table of a stove heated below by the tank-system, threw out flower-buds from most of the dichotomies of its young horizontal branches; and in the month of March 1845 no fewer than ten of the noble flowers, here represented, were expanded at a time on one and the same plant. Our drawing was made at that period, but was scarcely finished when we sent the plant, for the gratification of those who might not be able to see it at Kew, to the rooms of the Horticultural Society in London, where it did not fail to attract great attention. Unfortunately the season was unusually cold; the blossoms were materially injured in the transit, so much so that our figure would have still been unfit for publication, were it not that Messrs. Lucombe and Pince, with

a liberality common to other distinguished nurserymen, as well as to themselves, sent me from Exeter a flowering plant which we had the pleasure of presenting to them a short time before as a cutting: so freely does this species of *Gardenia* produce its charming blossoms. It deservedly bears the name of the scientific nobleman through whose means it was introduced, and in whose, as well as other collections, it has now flowered.

How closely it is allied to *Rothmannia longiflora* of Salisbury, in 'Paradisus Londinensis,' Tab. 65. (strangely separated from *Gardenia Rothmannia*, Linn., in Bot. Mag. p. 690, and there referred to *Randia*) is very evident; but, if the characters of that, as given by Salisbury, who only saw it "when all the flowers were fading," be considered, it cannot be the same; for, independent of the exserted stamens of that species, the smaller size of the corolla (five to six inches long, whereas ours is nine inches), and the very different colour of the tube, which is described as being cottony and the limb slightly cottony on both sides, will readily distinguish it. Nothing of the kind is seen in our plant.

Descr. *Plant*, now scarcely two years old, about five feet high, shrubby or almost tree-like, having a central stem throwing out horizontal *branches* on all sides and a spreading top; everywhere glabrous. *Leaves* spreading, subcoriaceous, oblong, on short petioles, acute at each extremity, quite entire, penninerved, the nerves bearing glands or swellings at their axils. *Flowers* large, handsome, powerfully fragrant, nine inches long; solitary from the upper side of the upper spreading branches, and generally from the dichotomies or from the base of a branchlet, nearly sessile, pointing upwards. Base of the *ovary* slightly attenuated into a short peduncle and bearing a few small bracteas; upper or free portion of the *calyx* tubular, with five small, erect, appressed teeth. *Corolla* infundibuliform; *tube* extremely long, slender, cylindrical, dark purple, sometimes tinged with green, dilated above and opening into a bell-shaped purple mouth, marked with raised lines without; *limb* of five broadly ovate, spreading, at length reflexed, obtuse *segments*, purple and white without, pure white within with a shade of blush near the mouth, and covered, except at the margin, with oblong dots of deep purple elegantly arranged in oblique lines. *Anthers* linear, sessile, fixed by the back to the inside of the mouth of the corolla, and, as well as the very long *style*, included. *Stigma* clavate, bifid. *Ovary* thick and fleshy, with two cells and numerous ovules on the placentæ.

Fig. 1. Stamen. 2. Calyx, ovary, style and stigma. 3. Transverse section of the ovary:—*magnified*.

4186.

Fitch, del et lith

Reeve, imp

Tab. 4186.

EXOSTEMMA longiflorum.

Long-flowered Exostemma.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

Gen. Char. *Calycis tubus* obovatus, *limbus* 5-dentatus. *Corolla* tubo tereti, limbo 5-partito, laciniis linearibus. *Stamina* filamenta nunc tubo usquè aut faucem, nunc vix basi adnata. *Antheræ* lineares exsertæ. *Stylus* filiformis apice clavatus indivisus aut bilobus. *Capsula* calyce coronata aut demum subnuda bilocularis, ab apice septicido dehiscens, mericarpiis nempè semi-teretibus seu semiovatis, commissurâ chartaceâ. *Placenta* linearis in medio cujusque loculi. *Semina* plurima retrorsum imbricata margine membranacea alata suborbiculata; *albumine* carnoso; *cotyled.* planis.—Arbores *aut* frutices *sæpius glabri*. Folia *ovalia aut lanceolata breve petiolata*. Stipulæ *utrinquè solitariæ*. Pedunculi *axillares aut terminales*. Flores *candidi aut rubentes*. *De Cand.*

Exostemma *longiflorum*; foliis lanceolatis acuminatis basi in petiolum perbrevem attenuatis glabris, pedicellis terminalibus axillaribusve, calycis dentibus tubum æquantibus lineari-subulatis strictis, corolla foliis triplo 4-plove longiore.

Exostemma longiflorum. *Roem. et Sch. Syst. Veg. v.* 5. *p.* 18. *De Cand. Prodr. v.* 4. *p.* 359. *Spreng. Syst. Veget. v.* 1. *p.* 405.

Cinchona longiflora. *Lamb. Cinchon. p.* 38. *tab.* 12. *excl. syn.* (*De Cand.*)

We received this plant at Kew, from Mr. Makoy of Liege, under the name here adopted, and though some discrepancies exist between our specimen and the figure of Lambert above quoted, yet they are too trifling to lead me to suppose the species otherwise than the same. In Mr. Lambert's representation the leaves are narrower, the flowers rather smaller, and the segments of the calyx and corolla are too short; probably occasioned by being drawn from an imperfect specimen in the Herbarium of Aublet. Lambert gives Guiana as the native country of the species; while De Candolle, on the authority of Richard, says it is indigenous to St. Domingo. Be that as it may, it constitutes a very pretty shrub, flowering freely and copiously, and the blossoms are fragrant and remarkable not only for their great length but for their change of colour, at first pure white, gradually becoming red. *Exostemma* is a genus separated from *Cinchona*, chiefly on account of its exserted stamens, whence the name ἔξω, *without*,

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beyond, and στέμμα, a *crown*. *E. longiflorum* blossoms with us in June and continues for some weeks in beauty.

Descr. A low *shrub*, in our stove about a foot and a half high, much branched; the *branches* opposite, ultimate ones short and subcorymbose. *Leaves* lanceolate, sharply acuminated, entire, tapering into a very short *footstalk* at the base, penninerved, of a texture between coriaceous and membranaceous. *Stipules* broadly ovate, acuminate, appressed. *Peduncles* axillary and terminal, short, often clustered or subcorymbose, bracteated. *Calyx-tube* purple, oblong, tapering at the base, glabrous; teeth or segments equal in length to the tube, erect, linear-subulate. *Corolla* with a very long slender *tube* nearly a span in length, cylindrical, slightly widening upwards and suddenly expanding into the five segments of the *limb*, which are one-third as long as the tube, linear, obtuse, soon reflexed. The *corolla*, green in the bud, is pure white on first expanding, at length drooping and changing to red. *Stamens* placed at the mouth of the tube and wholly exserted; about as long at the limb. *Filaments* flat, slightly dilated upwards, when they are broader than the very narrow linear *anthers*.

Tab. 4187.

TACSONIA mollissima.

Downy-leaved Tacsonia.

Nat. Ord. Passifloreæ.—Monadelphia Pentandria.

Gen. Char. *Calycis tubus* longus, *limbus* 10-lobus, faux membrana squamulosa instructa.—*Habitus* Passifloræ. *De Cand.*

Tacsonia (§ Bracteogama) *mollissima*; foliis tripartitis pubescentibus subtus tomentosis basi cordatis laciniis ovato-lanceolatis serratis, petiolis pluriglandulosis, stipulis semiovatis cuspidato-acuminatis dentatis, pedunculo unifloro, flore glaberrimo, calycis segmentis intus coloratis (roseis), nectario glanduloso ad faucem tubi.

Tacsonia mollissima. *H. B. K. Nov. Gen. Am. v.* 2. *p.* 144. *De Cand. Prodr.* 4 *p.* 334.

A worthy companion to the scarcely less beautiful *T. pinnatistipula*, figured at our Tab. 4062; and, like it, only requiring a cool greenhouse; for though indigenous in the tropics of New Grenada, yet growing at a height of nine to ten thousand feet above the level of the sea, it is evident that a temperate climate suits it best. It probably occupies an extensive geographical range at the elevations just mentioned. Humboldt found it about Santa Fè de Bogota, and Mr. W. Lobb in woods near Quito. It is from seeds sent home by the latter to Messrs. Veitch at Exeter, that the plants were raised from which the accompanying figure was taken, and these we have reason to know will soon be brought into the market.

From Mr. Veitch we have received the following particulars. "We have cultivated it in the stove, but there the flowers invariably dropped off before they had expanded. In a cool greenhouse it blooms freely, and from what Mr. Lobb has said respecting it, and from our own experience, I am inclined to think it might survive our winters here (Devonshire) on a sheltered wall, and we shall try this experiment. As a conservatory climber it is eminently beautiful and is best cultivated in a mixture of loam and peat with decayed leaves and a little sharp sand. It bids fair to strike readily in the usual manner."

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Our figure was made in August, but the plants will probably bear a succession of these lovely blossoms till the cold weather sets in. The species is nearly allied to *Tacsonia tripartita* of Jussieu; but the leaves are cordate and the segments much broader.

Descr. A long-stemmed climbing *plant*, with rounded branches. *Leaves* cordate in circumscription, deeply divided into three ovato-lanceolate, serrated segments, dark green and downy above, paler and almost tomentose beneath, reticulato-venose. *Tendrils* simple. *Stipules* rather small, semiovate, toothed, acuminato-cuspidate. *Peduncle* solitary, single-flowered, much shorter than the tube of the flower, but longer than the petiole, which latter has several glands. *Involucre* three-fid, or rather of three united bracteas at first sheathing. *Calyx-tube* very long, stout, cylindrical, green, quite glabrous (as is the whole flower), the mouth glandular at the margin; segments five oblong, obtuse, mucronate, green at the back, the margins and outlines full rose-colour. *Petals* five, oblong, obtuse, rose-colour. *Column* as long as the tube. *Filaments* exserted. *Anthers* yellow. *Ovary* oval. *Styles* dilated upwards; *stigmas* capitate.

Fitch del et lith.

Reeve imp.

Tab. 4188.

CALLIANDRA Tweediei.

Mr. Tweedie's Calliandra.

Nat. Ord. Leguminosæ. Trib. Mimoseæ.—Monadelphia Polyandria.

Gen. Char. CALLIANDRA, *Benth.*—*Flores* plerique hermaphroditi. *Calyx* campanulatus 5-dentatus v. varius 5-fidus, sæpius striatus. *Corolla* infundibuliformi-campanulata, rarius subtubulosa, laciniis striatis v. tenuiter membranaceis. *Stamina* indefinita sæpius numerosa corolla pluries longiora, basi in tubum coalita et corollæ sæpius plus minus adnata. *Legumen* lineare, rectum v. vix falcatum, compressum, in valvulas 2 lignosas coriaceas v. submembranaceas marginibus valde incrassatis, ab apice ad basin elastice dehiscens, intus uniloculare epulposum. *Seminum funiculus* sæpius brevis.—Frutices *v.* arbores *parvæ*, Americæ *calidioris incolæ, sæpius inermes.* Folia *bipinnata, petiolo rhachique fere in omnibus eglandulosis.* Stipulæ *in ramulis floriferis v. ad basin pedunculorum sæpius persistentes, subimbricatæ, foliaceæ, membranaceæ v. induratæ, in ramulis vegetioribus nonnunquam deciduæ, rarius postice in spinam ut primum reflexam mox patentem v. surrectam productæ.* Capitula *florum globosa, pedunculata v. rarius sessilia, in axillis foliorum superiorum v. in racemo terminali solitaria gemina v. rarius plura, staminibus (ultrapollicaribus) purpureis v. albis, comosa, speciosa.* Flores *centrales sæpius quam in* Albizzia *difformes, corolla elongato-tubulosa, staminum tubo longe exserto.*

Calliandra *Tweediei*: ramulis petiolisque pilosis, stipulis ovatis acutiusculis, pinnis 3–4-jugis, foliolis multijugis oblongo-linearibus acutiusculis ciliatis subtus pilosis, pedunculis petiolo longioribus, bracteolis sub flore lanceolatis linearibusve deciduis, floribus brevissime pedicellatis molliter pilosis, calyce turbinato corolla dimidio breviore, legumine sublignoso crasso dense villoso. *Benth.*

Calliandra Tweediei. *Benth. in Hook. Journ. Bot. v. 2. p.* 140. *et in Lond. Journ. Bot. v.* 3. *p.* 107.

An elegant shrub, belonging to a Genus of *Mimoseæ*, distinguished by the great length and frequently rich red colour of the stamens, whence the appropriate name *Calliandra*, Benth., (*κάλλος*, *beautiful*, and *ἀνὴρ-ανδρος*, the *stamen*). Sixty species are enumerated by Mr. Bentham in the 'London Journal of Botany,' all inhabitants of the American continent. They have, Mr. Bentham observes, the corolla of *Albizzia*, the stamens of an *Inga*, and a pod different from that of any other Genus, the valves of the pod rolling back elastically in a very remarkable manner. The present species is a native of Rio Grande and Rio Jaqury in

South Brazil, where it was detected by the indefatigable Botanist whose name it bears; found also by Mr. Sellow. From seeds sent to Lord Derby at Knowsley, plants were raised by Mr. Jennings, which produced the flowering specimens here represented, in March 1845. It has likewise been grown at Kew, where the plants flowered a little later in the season. It requires the heat of a stove and to be kept moist.

Descr. A small *tree* or in mountainous places a low *shrub*, according to Tweedie. Our plant seems disposed to trail with its branches; the younger branches are slightly villous. *Leaves* bipinnate. *Pinnæ* three to four pair, each with very numerous oblong acute *leaflets* three to four lines long, bright green, paler and slightly hairy beneath. *Stipules* ovato-scariose, brown, hairy. *Peduncle* axillary, solitary, shorter than the leaf, bearing a head of about twenty flowers. *Calyx* campanulate, rather deeply five-toothed. *Corolla* silky, pale greenish-white. *Stamens* numerous. *Filaments* long, red, monadelphous at the base. *Anthers* very small, subglobose. *Style* shorter than the stamens.

Fig. 1. Flower from which the stamens are removed:—*magnified.*

Fitch del et lith

Tab. 4189.

FRANCISCEA acuminata.

Acuminated Franciscea.

Nat. Ord. Scrophularineæ.—Didynamia Angiospermia.

Gen. Char. *Calyx* persistens, inflatus, campanulatus, quinquedentatus: dentibus æqualibus. *Corolla* hypocrateriformis; *limbus* quinquepartitus subæqualis; lobis rotundatis repandis, margine incumbentibus; *tubus* apice inflatus, incurvatus. *Stylus* apice incrassatus. *Stigma* bilobum. *Capsula* ovata, bilocularis, bivalvis, valvulis impartibilibus. *Pohl.*

Franciscea *acuminata*; ramis erecto-patentibus, foliis oblongis acuminatis ad basin parum attenuatis glabris (ciliatis), bracteis lanceolatis acuminatis calycibusque glaberrimis, floribus paucis subracemosis terminalibus. *Pohl.*

Franciscea acuminata. *Pohl, Plant. Brazil. v.* 1. *p.* 4. *t.* 3.

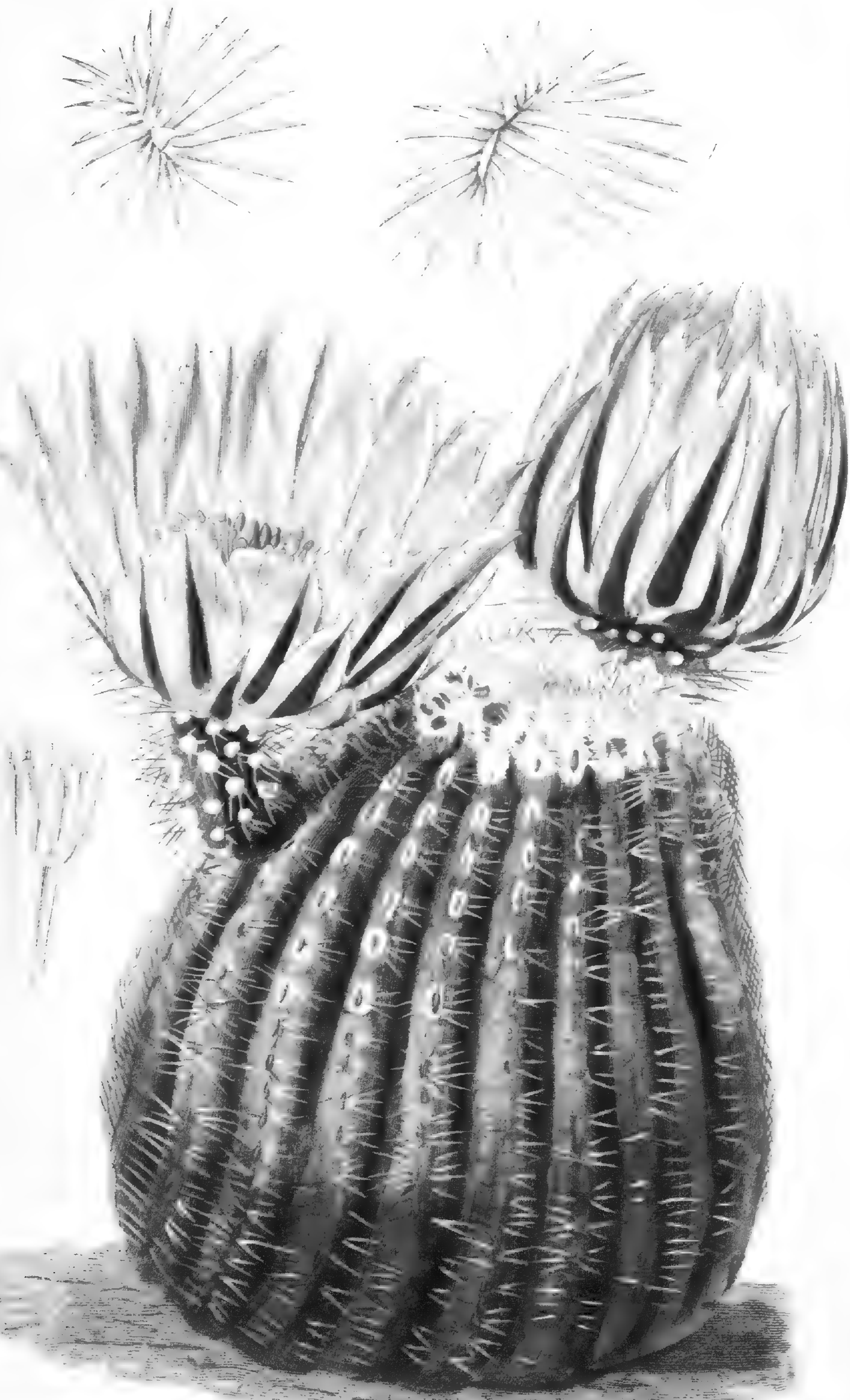
Franciscea Pohliana, *Hort.*

A handsome Brazilian shrub, native of Brazil, presented by Mr. Lowe of Clapton to the Royal Gardens of Kew, where it flowers in the stove during the months of June and July. It was received under the name of F. *Pohliana*, probably a mere garden name, which ought not to be retained, for it is assuredly the F. *acuminata* of Pohl, in the splendid work above quoted. It is a very desirable hot-house plant, wanting indeed the delicious scent of F. *Hopeana* and the handsome foliage of F. *hydrangeæformis*, but nearly equal to the latter and superior to the former in the flowers. Cuttings will strike under a bell-glass in sand, if placed on a tank-pit. Sixteen species of this genus are now described in books; but some of them are doubtful, or with difficulty to be distinguished from others. The genus is also thought not to be sufficiently distinct from *Brunsfelsia*, and Mr. Bentham has united the two in the descriptions of *Scrophularineæ* for the forthcoming volume of De Candolle's Prodromus.

Descr. A *shrub*, in our stove about two feet high, much branched, everywhere glabrous. *Leaves* alternate, on short *petioles*, subcoriaceous, oblong, acuminate, tapering gradually at the base, quite entire, obscurely nerved and ciliated at the margin. *Flowers* terminal, but generally on short branches, which are

frequently overtopped by neighbouring ones, arranged in rather few-flowered *corymbs*. *Pedicels* short, with subulate *bracteas* at the base. *Calyx* oblong-campanulate, tapering below, five-toothed. *Corolla* hypocrateriform, with the *tube* about twice as long as the calyx, slender, slightly enlarged upwards and there much inclined, so as to give an oblique direction to the *limb*, which is broad, deeply cut into five roundish, waved, spreading, deep purple segments, soon fading to a pale purple; the mouth having a white elevated *ring*. *Stamens* didynamous, included. *Pistil* also included. *Ovary* sunk in a fleshy disk or ring, ovate. *Style* nearly as long as the tube, and geniculated or bent at an angle so as to follow the inclination of the tube, a little thickened upwards. *Stigma* large, two-lobed.

Fig. 1. Pistil with its fleshy disk or ring at the base:—*magnified*.



Tab. 4190.

ECHINOCACTUS PECTINIFERUS.

Pectinated Echinocactus.

Nat. Ord. Cacteæ.—Icosandria Monogynia.

Gen. Char. *Sepala* numerosa imbricata, basi ovario adnata, in tubum brevissimum concreta, exteriora involucriformia, intima petaliformia. *Stamina* numerosa, calyci affixa, inæqualia, intima brevissima, filiformia, antheris oblongis. *Stylus* cylindricus, subfistulosus, apice multifidus. *Bacca* sepalorum reliquiis subsquamata, rarissime lævis. *Cotyledones* parvulæ.—Frutices *simplicissimi carnosi, ovati aut globosi, melocactoidei aut mammillariæformes, aphylli, costati aut tuberculati, costis tuberculis confluentibus quasi formatis, dorso aculeorum fasciculos gerentibus.* Cephalium *seu spadix nullus.* Flores *e fasciculis aculeorum ad apicem costarum orti, similes floribus* Cerei, *sed tubo vix supra receptaculum elongato. Pfeiff.*

Echinocactus *pectiniferus*; subrotundo-ovatus vertice depresso sub 20-costatus, costis elevatis submammillatis obtusis, areolis approximatis ovalibus junioribus albo-lanatis, aculeis copiosis biformibus in singula areola albis demum fuscis breviusculis compressis, exterioribus patentissimis bifariam radiantibus subpectinatis interioribus 4–6 erectis minoribus sæpe abortientibus, floribus subterminalibus, ovario oblongo superne dilatato areolato areolis albo-lanatis setoso-aculeatis, sepalis extus setosis, petalis (roseis) oblongo-lanceolatis acuminatis serratis.

Echinocactus pectiniferus. *Lemaire, Cact. Nov. p.* 25.

It is the case with this small but showy *Echinocactus* as with too many others in our collection; descriptions can give no adequate idea of the varied forms of these plants, especially as regards the nature of the costæ, the spines, and their arrangement in the areolæ, of the flowers, &c. The present species flowered in the Royal Gardens of Kew in April 1845, and was received from San Luis, Mexico, among many fine *Cacteæ* sent by Mr. Staines. So uncouth a looking trunk would hardly be expected to give birth to such large and handsome flowers. Professor Lemaire alone has described this curious plant in his "Cactearum Genera nova speciesque novæ et omnium in Horto Monvilliano cultarum, &c.," but he was ignorant of the blossoms.

Descr. *Plant*, in our specimens, about four inches high, subrotund or ovate, rather suddenly contracted above the middle, depressed and even umbilicated at the top, deeply cos-

tate, with about twenty prominent costæ, which are obtuse and somewhat mammillose at the margins; in the centre of each mammilla is an oblong, white, woolly, close-placed areola, with numerous rather short spines or aculei, whose arrangement is very peculiar. They are of two kinds; the greater number, twenty and more, are about three lines long and spread out almost horizontally in two rows, closely placed in a pectinated manner, whitish or yellowish-white, tipped with red or brown, almost united at their base, the middle ones the longest; between these two rows are a few smaller ones. *Flowers* solitary, two or more from the same crown, and springing from near the top, large for the size of the plant, very beautiful. *Ovary* oblong-cylindrical, a little expanded upwards, studded with white woolly areolæ which produce several rather soft hair-like, white spines, tipped with rose, and which appear also (but still longer and softer) on the outer segments of the perianth. *Sepals* ovate, cuspidate, yellowish-green tinged with purple, and having a broad dark dorsal purple line; these sepals gradually pass into the longer and more delicate rose-coloured *petals*, greenish at their base and serrated at their margins above. *Stamens* numerous. *Stigma* of about thirteen greenish rays.

Fig. 1, 2. Clusters of aculei. 2. Apex of style with the rays of the stigma:—*magnified.*

Tab. 4191.

IXORA odorata.

Fragrant Ixora.

Nat. Ord. Rubiaceæ.—Tetrandria Monogynia.

Gen. Char. *Cal. tubus* ovatus, *limbus* parvus 4-dentatus. *Cor.* hypocraterimorpha, tubo gracili tereti lobis longiore, limbo 4-partito patente. *Antheræ* 4 ad faucem subsessiles. *Stylus* tubo corollæ æqualis aut paulò longior (lobis nempè corollinis brevior), apice bifidus, stigmatis cruribus divergentibus aut revolutis. *Bacca* drupacea calyce persistente coronata subglobosa bilocularis. *Pyrenæ* chartaceæ intus planæ aut concavæ dorso gibbæ 1-spermæ. *Albumen* cartilagineum. *Embryo* dorsalis erectus incurvus, *cotyl.* foliaceis, *radicula* longa. —Frutices *interdum* arborescentes, *ex Asiâ, rarius ex Africâ æquinoctiali.* Folia *opposita.* Stipulæ *basi latæ apice acutæ aut in aristam setaceam desinentes.* Corymbi *terminales sæpiùs trichotomi.* Flores *coccinei rosei flammei aut albidi sæpè fragrantes. De Cand.*

Ixora *odorata;* glaberrima, foliis amplis elliptico-subovato-lanceolatis acutis coriaceis nitidis basi in petiolum attenuatis summis subovato-oblongis basi rotundatis sessilibus, stipulis late ovatis acutissimis connatis, panicula terminali ampla patente repetitim trichotome divisa, calyce 5-dentato, corollæ tubo longissimo (digitali) Caciniis oblongis demum tortis.

Pavetta gracilis. *Ach. Rich. in Mém. Soc. d'Hist. Nat. Par. v.* 5. *p.* 181? *De Cand. Prodr. v.* 4. *p.* 492?

We have been much gratified by the sight of a noble specimen of this splendid and highly odoriferous shrub. The leaves vie in size and almost in firmness of texture with those of the Indian Caoutchouc Tree (*Ficus elastica*), while the numerous flowers, of the most delicious odour, form a spreading panicle, a foot or more in diameter, with deep red-purple branches, each blossom four to five inches in length, the tube red below, white above, the white buds tipped with rose-colour, the spreading segments of the limb white, soon twisted and then changing to buff. The plant is in the possession of Messrs. Lucombe, Pince, and Co., of the Exeter Nursery, who received it from the Continent under the incorrect name of *Ixora Brunonis*, and without any indication of its locality. Fortunately I have a fine native specimen from Madagascar, showing that to be its native country. Few persons who visited the last floral exhibition of the year

1845, at the Chiswick Gardens, will fail to remember the extreme beauty and fragrance of this truly desirable plant.

Descr. A *Shrub*, in that plant from which our specimen came, about three feet high, with rounded opposite *branches*. *Leaves* opposite, ample, broadly ovato- or obovato-lanceolate, spreading, six to eight inches to a foot long, fine dark green, acute or rather acuminate, entire, penninerved, coriaceous, the lower ones tapering downward into a stout *footstalk*, the upper ones smaller, more ovate, sessile. *Stipules* broadly ovate, acuminate, closely appressed to the branches and conjoined at the base. *Panicle* terminal, large, much divided, with opposite branches, subtended by small *bracteæ*, the ultimate branches in di-trichotomous peduncles. The *flowers* in threes, sessile or nearly so, deliciously fragrant, pure white, but quickly changing to yellow-brown. *Stamens* slightly protruded beyond the contracted mouth. *Style* arising from a thick glandular ring, longer than the tube of the corolla and the stamens. *Stigma* incrassated, bifid.

Fig. 1. Calyx and pistil. 2. Ovary. 3. Transverse section of the ovary :— *magnified.*

Reeve, imp.

Tab. 4192.

HEBECLADUS biflorus.

Twin-flowered Hebecladus.

Nat. Ord. Solaneæ.—Pentandria Monogynia.

Gen. Char. HEBECLADUS, *Miers.* *Cal.* brevis, profunde 5-partitus, laciniis ovatis submembranaceis 1-nerviis venosis, persistens. *Corolla* infundibuliformis, tubo amplo calyce 2–6-plo longiore, fauce ampliato, limbo patenti-sinuato, 5-lobo, lobis acutis, sæpissime dentibus interjectis, æstivatione basi valde plicatis. *Stamina* 5, imo corollæ inserta, filamentis filiformibus, glabris, basi dilatatis, antheris exsertis, cordato-oblongis, adnatis, 2-lobis, longitudinaliter dehiscentibus, polline albido. *Ovarium* subrotundum, glabrum (disco nullo?), 2-loculare, placentis dissepimento adnatis, pluri-ovulatis. *Stylus* simplex, exsertus. *Stigma* clavato-capitatum, sub2-lobum. *Bacca* globosa, parva, calyce membranaceo suffulta. *Semina* plurima in pulpam nidulantia, compressa, reniformia, testa reticulata. *Embryo* intra albumen carnosum hamato-arcuatus, cotyledonibus semiteretibus, radicula tereti, infernè paulo crassiore, duplo longiori, hilum petente.—Suffrutices *Americæ intertropicæ;* ramulis *subdichotomis, flexuosis, teneris;* foliis *plerumque geminis,* altero *vix minori, ovatis, ellipticis vel cordatis, integris, petiolatis.* Inflorescentia *pedunculo solitario laterali cernuo, floribus* 1–2 *vel plurimis, umbellatis, rubris, flavis, vel rubro-viridescentibus.* Bacca *alba, pisi magnitudine. Miers.*

Hebecladus *biflorus;* suffruticosus, ramis glabris teretibus, foliis ovatis acutis glabris undulatis sæpe angulato-sinuatis superioribus geminatis, pedunculis subbifloris, floribus nutantibus, calyce rotato, limbo patente undulato, corollæ tubo conico cylindraceo pubescenti-piloso striato purpureo, limbi laciniis cum dentibus intermediis lanceolatis patentibus glabris.

Hebecladus biflorus. *Miers in Hook. Lond. Journ. Bot. v. 4. p. 322.*

Atropa biflora. *Ruiz et Pav. Fl. Per. et Chil. v. 2. p. 44. tab. 181 b. Spreng. Syst. Veget. v. 1. p. 698. Roem. et Sch. Syst. Veg. v. 5. p. 684. Walpers' Repert. Bot. v. 3. p. 103.*

A very pretty Solanaceous plant, with graceful drooping two-coloured blossoms; a native of the Andes of Peru, about Tarma, Canta, Culluay, &c., according to Ruiz and Pavon, and collected in the same countries by Mr. Mathews, but only recently introduced in a living state by Mr. Veitch of Exeter, through Mr. William Lobb. It flowered in Mr. Veitch's Nursery in August 1845, and from a fine specimen kindly communicated by him, the accompanying figure is taken. It only requires a good greenhouse and may easily be increased by cuttings and probably by seed. The

generic name is derived by Mr. Miers from ἤβη *down*, and κλάδος *a slender stem*, in allusion to the character of some of the species. The genus includes a very natural group of *Solaneæ*, mostly natives of Peru and New Grenada, and all from South America.

Descr. This is usually stated to be a *shrub*, but the specimen sent to me is so green and succulent, that it is probably at most suffruticose; *branches* more or less spreading, terete, glabrous. *Leaves*, the lower ones solitary and alternate, upper ones in unequal pairs, subovate, shortly petiolate, acute, sinuate, often angulato-dentate, glabrous, paler and with prominent nerves beneath. *Peduncles* axillary, solitary, forked or trifid, bearing two (rarely three) handsome, drooping *flowers*. *Calyx* glabrous, rotate, with five spreading acute waved segments. *Corolla* an inch or more long, of two colours; the *tube* conico-cylindrical, purple, hairy, striated; the *limb* of five spreading, green, narrow-lanceolate segments, with a small tooth in each sinus. *Stamens* from the base of the corolla, much exserted. *Filaments* hairy at the base. *Anthers* blue-purple. *Ovary* globose, sunk in a two-lobed fleshy disk. *Style* as long as the stamens.

Fig. 1. Calyx and pistil. 2. Corolla laid open :—*magnified*.

Fitch. del.

Tab. 4193.

LYCASTE fulvescens.

Tawny-flowered Lycaste.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. *Flores* ringentes, petalis sæpe dissimilibus, in mentum breve productum. *Labellum* medio appendice transverso integro v. emarginato auctum. *Columna* elongata, semiteres, sæpius pilosa. *Pollinia* 4, per paria caudiculæ angustæ elongatæ adnata; *glandula* parva subrotunda; rostello subulato.—Herbæ *pseudobulbosæ*; foliis *plicatis*. Scapi *erecti, radicales, uniflori*. Flores *semper speciosi bractea magna spathacea suffulti.*—*Lindl.*

Lycaste *fulvescens;* bractea herbacea ovario breviore, sepalis lanceolatis lateralibus falcatis, petalis conformibus paulo minoribus, labello oblongo laciniis lateralibus parvis acutis intermedia ovata obtusissima fimbriato, appendice carnoso emarginato.

From the rich collection of the Rev. John Clowes, of Broughton Hall, Manchester, who sent it as a species distinct from *L. gigantea* of Dr. Lindley, 'Bot. Reg.' 1845, Tab. 34. "I received it," that gentleman observes, "along with *L. gigantea* and other Orchideæ from the province of Coro, in Columbia, of Linden's collecting;" and now that Dr. Lindley has figured the *L. gigantea*, we are the better able to point out the distinguishing characters, which may be found in the much smaller size of the flowers, and especially of the bractea, and the beautifully fringed margin of the middle lobe of the labellum, to say nothing of the different colour,—here a rather pale tawny, with an orange-coloured lip, in *L. gigantea* a greenish-brown, with a red-purple lip.

Lycaste is a name recently given by Dr. Lindley to a group of *Maxillarideæ*, of which *Maxillaria aromatica*, Hook. Ex. Fl. t. 219, and *M. macrophylla*, Poepp. Nov. Gen. pl. 1. t. 64, may be considered the types, and of which he has now described ten species, all natives of Peru, Columbia, Mexico, and Guatemala.

Descr. *Pseudo-bulbs* broadly ovate, in part sheathed by membranous large scales. *Leaves* two or more from the summit of the *pseudo-bulb*, one and a half to two feet long and varying much in width, rather membranous, plicate. *Peduncles* from the base

of the pseudo-bulb, eight to ten inches to a foot long, terete, simple, single-flowered, jointed, and with sheathing *bracteas* at the joints; upper bractea at the base of the ovary, and shorter than it. *Sepals* lanceolate, two lateral ones the longest, subfalcate, acuminate, combined at the base which is retuse, the two lower ones forming there an obtuse *spur*. *Petals* smaller than the sepals, but of similar form and colour. *Lip* oblong, three-lobed, orange colour; the disk with a large emarginate, fleshy gland; the side lobes small, acute, curved upwards, middle lobe ovate, very obtuse, reflexed, its margin beautifully fringed with wavy hairs.

Fig. 1. Lip: *magnified*.

Tab. 4194.

SMEATHMANNIA lævigata.

Smooth-stalked Smeathmannia.

Nat. Ord. Passifloreæ.—Polyandria Pentagynia.

Gen. Char. SMEATHMANNIA, *Soland.* *Perianthium* duplex, utrinque 5-partitum; exterius semicalycinum persistens, interius petaloideum, marcescens. *Urceolus* simplex, membranaceus, ex ipsa basi perianthii. *Stamina* numerosa, distincta, apici columnæ brevissimæ genitalium inserta. *Styli* 5. *Stigmata* peltata. *Capsula* inflata, 5-valvis. *Semina* axibus valvarum inserta.—Frutices *Africæ æquinoctialis.* Folia *alterna, simplicia, subdentata,* stipulis *lateralibus (utrinque solitariis geminisve) distinctis, callosis.* Flores *axillares, subsolitarii,* pedunculis *quandoque brevissimis, basi bibracteolatis.* Urceolus *abbreviatus, ore denticulato.* Filamenta *simplici serie, viginti circiter.* Antheræ *incumbentes, lineares.* Capsula *chartacea.* Semina *axibus filiformibus valvularum subsimplici serie inserta, pedicellata, punctata, omnino* Passifloræ. *Br. in Linn. Trans. v.* 13. *p.* 221.

Smeathmannia *lævigata;* ramulis subsericeis, foliis oblongis grosse serratis basi in petiolum perbrevem attenuatis apice acuminatis glaberrimis nitidis, urceolo inciso intus piloso.

Smeathmannia lævigata. *Soland. MSS. in Herb. Banks. Brown, l. c. p.* 221. *De Cand. Prodr. v.* 3. *p.* 322.

A rare and remarkable genus, consisting of upright (not climbing) shrubs, with white scentless flowers, nearly allied to *Passiflora*; first made known by Mr. Brown who described three species, *S. pubescens* (Sol.) distinguished by its downy branches and its broad leaves, which are very obtuse at the base and scarcely acute at the summit; our present species; and *S. media,* which our learned friend remarks may perhaps be a variety of the present. Our specimens, both cultivated and native (gathered by Miss Turner, daughter of the late Govenor-General Turner, and by Mr. Whitfield) do not entirely agree with the character of *S. lævigata,* for the branchlets as well as the flower-buds are evidently silky, and the urceolus of the flower is both fringed at the margin, and beset with hairs on the inside. The name was given by Dr. Solander in compliment to Mr. Smeathman, an African Naturalist and Traveller, who detected the three species defined by Mr. Brown.

November 1st, 1845.

This shrub constitutes a very desirable stove-plant, with a glossy, evergreen, almost distichous leaves and white flowers, growing downwards and best seen on the underside of the branches. It was introduced by the Earl of Derby through Mr. Whitfield, and to his Lordship we are indebted for the possession of the plant at Kew. It requires the constant heat of the stove, and flowers freely, especially in July.

Descr. A *Shrub*, growing erect, with spreading *branches*, the younger ones slightly downy or rather silky. *Leaves* alternate, oblong, subcoriaceous, somewhat distichous, coarsely serrated, tapering at the base into a short *petiole*, and rather suddenly, but sharply, acuminated at the point. I perceive no distinct stipules; but on the anterior side at the base of the short petiole is a gland, probably the rudiment of a *tendril*. *Flowers* solitary, axillary on a short silky stalk bracteated at the base, curved downwards. *Bud* (*alabastrum*) ovate, silky, with short brown leaves. *Outer perianth* at length glabrous, green, with the broad edges of those sepals which have been imbricated by the others, white; *inner perianth* or oblong petals white, spreading as well as the calyx. *Nectary* or *urceolus* short, pale brown, fringed at the margin, beset with hairs within. *Stamens* and *pistil* elevated on a short thick stipes. *Filaments* (about twenty) longer than the pistil. *Anthers* oblong. *Ovary* ovate; *ovules* on five parietal placentæ. *Styles* five. *Stigmas* larger, capitate, peltate.

Fig. 1. Section of a flower, showing the stamens, pistil, and nectary. Fig. 2. Portion of the nectary, seen from within. Fig. 3. Transverse section of the ovary:—*magnified*.

Tab. 4195.

GENISTA (Teline) Spachiana.

Mr. Spach's Genista.

Nat. Ord. Leguminosæ.—Diadelphia Decandria.

Gen. Char. *Calyx* bilabiatus, *labio* superiore bipartito, inferiore 5-dentato, aut 5-lobus, *lobis* 3 infer. ad apicem fere coalitis. *Vexillum* oblongo-ovale. *Carina* oblonga recta genitalia non omnino continens. *Stamina* monadelpha. *Legumen* plano-compressum aut rarius subturgidum, polyspermum, rarius oligospermum, eglandulosum.—Frutices *floribus flavis.* *DeCand.*

Genista (Teline) *Spachiana;* ramis striatis nodosulis pilis ascendentibus pubescentibus, sterilibus apice obtusè mucronatis, floralibus pendulis; foliis omnibus 3-foliatis, foliolis ellipticis lanceolatisque, acuminatis, subtus præcipuè sericeo-hirtis, nervo medio crasso, mox supra fusco-virentibus, stipulis brevissimis angustè lineari-lanceolatis; spica terminali ovata, bracteolis linearibus tubo calycino brevioribus, labio inferiore longius 3-dentato dentibus linearibus labium superius excedentibus, vexillo rotundato profundè emarginato, medio ad apicem subpubescente, alis latis apice rotundatis glabellis, carina oblonga hirta alis subbreviore; stigmate antrorsum (versus axim) declivi, legumine hirsutissimo seminum caruncula flavicante. *P. B. Webb.*

This is a pleasing addition to the many-flowered and sweet-scented group of Canarian *Genistæ* which in early spring enliven the conservatory and greenhouse. Though a native of the Canaries, the present species was not taken up in the 'Phytographia Canariensis' forming part of the 'Hist. Nat. des Iles Canaries,' the author of that portion of the work not being able to decide on the specific value of the plant, owing to the incomplete specimens in fruit, but without flowers, which alone existed in his herbarium. It has now flowered from seeds sent by him formerly to Europe, both at Mr. Young's nursery at Milford near Godalming and at the Jardin du Roi at Paris. It has been named in honour of Mr. Edward Spach, assistant-naturalist in the latter establishment, whose learning and acute observation have so much advanced the "amiable science."

M. Spach, in his elaborate revision of the *Genistæ* just published in the Annales des Sciences Naturelles, has not discovered any character sufficiently marked to enable him to break up this extensive group into new and convenient genera. He has been con-

tent to class them under numerous subgenera. If therefore neither *Salzwedelia*, nor *Voglera*, nor any other divisions can be admitted as genera, the group of *Teline*, the types of which are *G. candicans* and *G. Canariensis* (the latter considered to be a genus by Mœnch and in the 'Phytographia Canariensis') must subside likewise into a sub-genus, though geographically most distinct, occupying almost exclusively the south-western extremity of the Old World. Nine *Telines* were described in the 'Phytographia Canariensis;' to these must be added the *Spartium virgatum* of Madeira; the present species; and another, the seeds of which were sent with it from Teneriffe, and which has flowered in Mr. Young's garden *G.* (*Teline*) *discolor*, nob.; with a fourth yet unnamed from the mountains about Tetuan; in all thirteen species, of which eight are peculiar to the Canaries, two to Madeira, and three to the western shores of the Mediterranean region.

The *G.* (*Teline*) *Spachiana*, indigenous to the high mountains of the N.W. of Teneriffe, will probably prove hardy in the climate of England. It existed for several years at Paris in the open ground, and was only destroyed by the cold of the late severe winter.—P. B. Webb.

Tab. 4196.

SCÆVOLA attenuata.

Attenuated-leaved Scævola.

Nat. Ord. Goodenovieæ.—Pentandria Monogynia.

Gen. Char. *Cal. tubus* ovario adnatus, *limbus* 5-partitus aut 5-dentatus, rariùs subinteger. *Corolla* hinc longitudinaliter fissa genitalia exserens, limbo inde secundo 5-partito, lobis alatis subconformibus. *Antheræ* liberæ. *Stigmatis indusium* ferè in omnibus ciliatum. *Drupa* carnosa aut exsucca coronata 1–4-locularis, loculis 1-spermis.—Frutices *suffrutices aut* Herbæ *perennes in Australasia, rarius in Indiâ, Senegaliâ aut insulis Caribæis habitantes.* Folia alterna, *rarius opposita, integerrima aut dentata imo subincisa.* Spicæ *aut* cymæ *dichotomæ ex axillis ortæ.* Flores *bibracteati interdum in axillis solitarii.* Corollæ *cæruleæ, albæ, rarius lutescentes.* Cor. lobi *alati sæpè fimbriati,* tubus *intus villosus,* faux *fimbrias apice capitellas gerens. De Cand.*

Scævola *attenuata;* fruticosa erecta pilosa, foliis lanceolatis dentatis, bracteis subtendentibus integerrimis, corollis intus hirsutis, marginibus supra nudis, stylis villosissimis. Br.

Scævola attenuata. *Brown, Prodr. Nov. Holl. p.* 583. *De Cand. Prodr. v.* vii. *p.* 508. *Spreng. Syst. Veget. v.* 1. *p.* 752. *Roem. et Sch. Syst. Veget. p.* 163.

A shrubby plant, a native of south-west Australia, first detected and described by Mr. Brown, possessing little beauty in its mode of growth or foliage, but in June and July bearing rather copious spikes of bright, but light, blue flowers, which then give it a very pretty appearance. Our plant was reared from seeds sent by Mr. Drummond from Swan River, and probably gathered to the southward of that colony, toward King George's Sound. It is cultivated in good loam and treated as a greenhouse plant, fully exposed to the open air and rains in the summer, and housed in a cool greenhouse during winter. It may be increased by cuttings.

Descr. *Shrub* one and a half to two feet high; the lower part woody, the upper and younger *branches* herbaceous, often tinged with brown, terete, hairy. *Leaves* alternate, lanceolate, somewhat rigid and fleshy, much tapering at the base, with a long dilated grooved petiole, which is still more dilated and gibbous below at the point of insertion, hairy, especially at the margin, with a few almost parallel veins, the margin entire, serrated. *Spike* termi-

nal and axillary, of several rather long, bright blue, slightly tinged with purple, sessile *flowers*, each with a bractiform leaf, and each again subtended by three lesser almost lanceolate hairy bracteas. *Calyx* with the tube oval, combined with the ovary, and crowned with an elevated truncated margin. *Corolla* hairy externally and beautifully ciliated at the margins; tube slit for the whole length above, exposing to view the stamens and pistil. *Limb* spreading, secund, of five obovate and margined lobes, waved at the margins; at their base are several pedicellated glands. *Stamens* much shorter than the tube. *Style* nearly equal to the tube in length, hairy. *Stigma* clavate; the indusium two-lipped.

Fig. 1. Flowers and branches, slightly *magnified*.

Tab. 4197.

STANHOPEA TIGRINA.

Tiger-spotted Stanhopea.

Nat. Ord. Orchideæ,—Gynandria Monogynia.

Gen. Char. *Perianthium* membranaceum, patentissimum vel reflexum. *Sepala* libera, subundulata, mole suâ ruentia. *Petala* conformia angustiora. *Labellum* liberum, anticum, ecalcaratum, carnosum, utrinque cornutum; dimidio superiore (epichilio) convexo, inferiore (hypochilio) excavato. *Columna* longissima, petaloideo-marginata. *Anthera* 2-locularis. *Pollinia* 2, elongata, fissa, caudiculâ quam glandula biloba stipitata breviore.—Epiphytæ *pseudo-bulbosæ*. Folia *plicata*. Scapi *radicales, vaginati, pauciflori*. Flores *maximi magis minusve maculati*. *Lindl.*

Stanhopea *tigrina*; hypochilio subrotundo intus lamellis glandulosis radiato, metachilii cornubus falcatis porrectis epichilii tridentati longitudine, sepalis lateralibus maximis subrotundato-oblongis petalis multo latioribus. *Lindl.*

Stanhopea tigrina. *Batem. Orchid. Mex. et Guatem. t.* 7. *Lindl. Bot. Reg.* 1839. *t.* 1.

Perhaps no Orchideous plant is more calculated to attract attention than the present, whether we consider the large size of its blossoms, their strange form and almost waxy consistence, their singular markings, or the powerful fragrance they exhale, scenting the whole stove, and almost too strong to be agreeable; but which is considered to resemble a mixture of Melon and Vanilla. The species is now not uncommon in our collections, and is said to have been introduced to them by Messrs. Low, of Clapton, from Xalapa in Mexico. Like the other *Stanhopeas* it is easily cultivated, only requiring to be suspended from a beam of the stove in a wire basket filled with Sphagnum and other mosses, through which the flower-stalks penetrate downwards and hang below the basket, the pseudo-bulbs and leaves being seen above. During the present and for several months in the summer, our plants in the Royal Botanic Gardens flowered in the highest degree of perfection, and from one of them this representation was made. It is the best marked and most distinct of all the genus.

Descr. In the *leaves* and *pseudo-bulbs* there is nothing peculiar, a general sameness prevails in them, throughout the

several species. From the base of the pseudo-bulb, the short *scape* is thrown out and hangs downwards, in an early stage wholly covered by very large sheathing membranous pale brownish-coloured imbricated *bracteas*. This *scape* bears from three to four very large *flowers*, of a form difficult, if not impossible, to convey an idea of in words. The 3 *sepals* are broadly ovate and spreading, concave especially below, the margins more or less recurved. *Petals* oblong-lanceolate, and, as well as the sepals, of a rather dingy yellow colour, mottled, especially towards the base, and spotted with dark sanguineous purple. *Lip* very large, and of a remarkable shape, divided into three portions, the lower (or hypochilium), is very concave and cup-shaped, with a large tooth at its apex, and, within, some raised radiating granulated lines. A middle portion is the "metachilium," it is short, and bears two long curved and geniculated horns, and encloses, as it were, the "epichilium," a middle lobe of the lip, which is rhomboid and three-toothed at the apex. The whole of the lip is thick and fleshy or rather of a waxy consistency, of the same general ground colour as the perianth, and more or less spotted with purple, the upper and under side however of the "epichilium" is tinged with orange. A great part of this lip is covered by the very large spathulate incurved *column*, winged at the margin, more or less spotted with purple, and bearing the *anthers* at the apex beneath. *Pollen-masses* club-shaped, attached to a curious foot-stalk.

Fig. 1. Lip :—*natural size.* Fig. 2. Pollen-masses:—*magnified.*

Tab. 4198.

RHYNCHOGLOSSUM ZEYLANICUM.

Ceylon Rhynchoglossum.

Nat. Ord. Cyrtandraceæ.—Diandria Monogynia.

Gen. Char. Calyx tubulosus 5-fidus, lobis per æstivationem valvatis. *Corolla* tubulosa, personata, breviter bilabiata, labio super. abbreviato bilobo, infer. producto semitrilobo, lobis lateralibus brevissimis. *Stamina* inclusa, 2 inferiora antheras reniformes gerentia, 2 et cum rudimento minimo 3 superiora sterilia. *Vaginula* incompleta ovarii basin cingens. *Stigma* capitatum vix divisum. *Capsula* stylo filiformi persistente superata, ovata, calyce inclusa bivalvis. *Placentæ* 2 parietales adnatæ in lamellas 2 fissiles. *Semina* parva elliptico-oblonga.—Herbæ *Indicæ annuæ glabræ aut subpuberulæ.* Caulis *succulentus.* Folia *alterna petiolata ovata basi hinc alte excisa apice acuminata.* Racemi *terminales secundiflori simplices, pedicellis solitariis 4-bracteatis.* Flores *deflexi cærulei. DC.*

Rhynchoglossum *Zeylanicum* ; corollæ labio inferiore tubo duplo breviore trifido.

A lovely little plant, sent from Ceylon by Mr. Gardner, with flowers of a bright blue, arranged in long one-sided racemes, and leaves with singularly unequal sides like those of many *Begoniæ*, and of a peculiarly tender green colour. The genus is *Loxotis*, of Mr. Brown, in Horsfield's 'Plants of Java', Fasc. 1. p. 102. t. 24., and the species there admirably figured and described, so much resembles the present one, that at first I was unwilling to consider them distinct ; but in all the many flowers I have examined, there is uniformly in our plant such a difference in the lower lip, short and broadly ovate, not twice the length of the upper lip, and much shorter than the tube ;—in Mr. Brown's *Loxotis obliqua* oblong or strap-shaped, longer even than the tube of the corolla, obscurely tridentate, that I cannot but describe the present as new. Mr. Brown was doubtful if his genus was the same with the *Rhynchoglossum* of Blume ; but De Candolle having apparently decided that point in favour of Blume's name, I follow De Candolle in adopting it. This name I presume is given from ῥύγχος a *beak*, and γλώσσα a *tongue*, from the tongue-like beak or lower lip to the flower ; a name, applicable enough to the projecting lower lip in the original species (constituting more than one half of the corolla), but not at all so to that of ours.

December 1st, 1845.

Descr. Annual, or at most biennial. *Stem* herbaceous, terete, glabrous, about a foot high, dichotomously branched; *branches* succulent. *Leaves* alternate, petiolate, obliquely ovate (one side of the leaf frequently not half the size of the other), entire, closely penninerved; *petiole* strait, half an inch to nearly an inch long. *Flowers* in long, terminal, sometimes interrupted and sometimes leafy *racemes*, unilateral, drooping. *Pedicels* short, curved, with a small subulate bractea at the base. *Calyx* rather short, hemispherico-campanulate, five-angled, five-cleft, the lobes acute, unequal. *Corolla* personate, blue, beneath paler and almost white, with a little yellow. *Tube* cylindrical, rather more than twice the length of the calyx; *Limb* two-lipped, upper lip bent back and bifid, lower lip a little reflexed, trifid; the *faux* yellow; middle lobe the largest. *Stamens* two; *filaments* arcuate; *anthers* slightly cohering. There are the rudiments of two other stamens, and a minute gland, representing a fifth stamen. *Ovary* oval, glabrous, with a large fleshy trifid gland on one side at the base; two-celled, with parietal two-lobed *placentæ* covered with many *ovules*. *Style* included. *Stigma* capitate.

Fig. 1. Flower. 2. Corolla laid open. 3. Pistil and gland. 4. Transverse section of the ovary:—*magnified*.

Tab. 4199.

REEVESIA thyrsoidea.

Thyrse-flowered Reevesia.

Nat. Ord. Sterculiaceæ, Helictereæ.—Monadelphia polyandria.

Gen. Char. *Calyx* campanulatus, 5-dentatus, æstivatione imbricata, pube stellatâ tomentosus, bracteolatus. *Petala* 5, hypogyna, unguiculata, æstivatione convoluta, callo inter unguem et laminam. *Stamina* in toro longo filiformi insidentia. *Antheræ* 15, sessiles, in cyatho capitaliformi apice tantùm pervio obsoletè 5-dentato connatæ, extrorsæ, biloculares, loculis divaricatis, intricatis, longitudinaliter dehiscentibus. *Pollen* sphæricum, glabrum. *Ovarium* sessile, intra cyathum antheriferum, ovatum, glabrum, 5-angulare, 5-loculare, loculis dispermis. *Ovula* margini loculorum unum super alterum affixa, superiore basi concavo in inferiorem incumbente. *Stigma* 5-lobum, simplicissimum, sessile. *Capsula* stipitata, lignosa, obovata, 5-angularis, 5-locularis, loculicidè 5-valvis, axi nullo. *Semina* cuique loculo duo basi alata.—Arbor (*Chinæ*) foliis *alternis exstipulatis*, *racemis terminalibus compositis*, floribus *albis*. *Lindl.*

Reevesia *thyrsoidea*. Lindl. in Brande's Journ. vol. ii. p. 112. Bot. Reg. t. 1236.

The interesting plant here represented, drawn from the stove of the Royal Gardens of Kew in July 1845, is a native of China, and was first made known to botanists through John Reeves, Esq. a gentleman long resident in Canton, distinguished for the many services he rendered to Natural History, and Botany in particular, and in honour of whom this plant is named by Dr. Lindley. Its affinity with *Helicteres* is very striking. Endlicher forms of it, with *Ungeria*, a little group, which he calls *Reevesieæ*, chiefly distinguished from *Helicteres* by the anthers being sessile. It loves a warm green-house, and seems to flower at different seasons of the year.

Descr. With us this plant is only a *Shrub*, three to four feet high; but, in its native country, it is said to constitute a tree. *Branches* rounded, glabrous. *Leaves* alternate, broadly lanceolate, subcoriaceous, acuminate, petiolate, entire, penninerved; *petiole* slender, dilated upwards. *Corymbs* terminating the branches. *Peduncles* and *pedicels* clothed with stellate pubescence. *Calyx* also stellately pubescent, campanulate, suddenly contracted a little above the base, the mouth cut into four or five unequal segments.

Petals five, clawed, white or cream-colour. *Anthers* collected into a head upon the top of a long stipes or torus; the cells oblong, opening vertically. Within these, and supported by the same torus is the *pistil*; consisting of a subglobose, five-angled, stellately pubescent *germen* or *ovary*, crowned by a sessile blunt smooth *stigma*.

Fig. 1. Calyx with the torus and anthers collected into a head, enclosing the pistil. 2. Petal. 3. Pistil :—*magnified*.

Tab. 4200.

ANTHOCERCIS ILICIFOLIA.

Holly-leaved Anthocercis.

Nat. Ord. Scrophularineæ.—Didynamia Angiospermia.

Gen. Char. *Calyx* quinquefidus. *Corolla* campanulata, tubo basi coarctata, staminifera; limbo 5-partito, æquali. *Stamina* inclusa, didynama cum rudimento quinti. *Stigma* capitato-emarginatum. *Capsula* 2-locularis, 2-valvis, valvarum marginibus inflexis, placentæ parallelæ insertis. *Semina* reticulata.—Frutices *glabriusculi.* Folia *alterna, petiolo basive attenuata cum ramo articulata, crassa, nunc glanduloso-punctata.* Flores *axillares, subsolitarii, pedunculo minutè bracteato, ad articulum sæpiùs solubili.* Corolla *alba vel flava, speciosa, tubo intùs striato, limbo quandoque* 6–8*-partito. Br.*

Anthocercis *ilicifolia*; elata, ramis virgatis, foliis obovatis spinuloso-dentatis glabris, racemis elongatis terminalibus subcompositis, corollæ laciniis linearibus tubum æquantibus, capsula oblonga calycem quintuplo superante.

Anthocercis ilicifolia. *All. Cunn. in Hook. Bot. Mag. sub tab.* 2961.

A species, in colour and general habit, nearly allied to the showy *Anthocercis littorea*; but very distinct and remarkable for its size, often six feet high, and its very long twiggy branches, leafy below, terminating in elongated compound spikes of graceful pendent yellow flowers, the inside of the widely campanulate tube of which is elegantly marked with dark blood-coloured lines. It was first detected at the Swan River Settlement by Mr. Fraser, (no. 186, of his collection), who speaks of it as general on the river banks, and afterwards sent to us by Mr. James Drummond. Seeds were given to the Royal Dublin Society by G. W. Webb, Esq., of the Commissariat department there, and these, on being reared by Mr. Moore of the Glasnevin Botanic Garden, were kindly communicated to us in a fine state of flower in July 1845. The plant requires a warm greenhouse in the winter; but in summer, during the flowering season, a cooler place, with a plentiful admission of air, will be the best suited to it.

Descr. *Root* perennial. *Stems* woody at the base, soon becoming green, glabrous, as is every part of the plant, four to six feet high, copiously branched; the *branches* leafy below, floriferous

above. *Leaves* alternate, obovate, or sometimes approaching to spathulate, edged with rather remote spinous teeth, somewhat fleshy, scarcely punctate when fresh, when dry marked on both sides with copious depressed dots; in the ultimate ramifications these leaves become gradually smaller and the *flowers* appear, forming long graceful *racemes*, the *pedicels* frequently again divided and subtended by small linear *bracteas*. *Flowers* pendent. *Calyx-tube* short, five-angular, the five acuminated small teeth appressed to the corolla. *Corolla* yellow; the *tube* bell-shaped, with greenish lines on the outside, within marked with deep blood-coloured ones, which are very conspicuous, owing to the spreading tube: *limb* of five patent linear segments, about the length of the tube, their margins reflexed. *Stamens* four, didynamous, inserted near the base of the tube, with the rudiment of a fifth; all of them included. *Anthers* large, subrotundate. *Ovary* ovate, sunk in a fleshy slightly toothed ring. *Style* rather shorter than the *tube*; *stigma* two-lobed. *Capsules* (on the native specimens) oblong, tapering, two-valved, five times as long as the calyx.

Fig. 1. Flower. 2. Stamens. 3. Pistil:—*magnified*.

Tab. 4201.

HABROTHAMNUS corymbosus.

Corymb-flowered Habrothamnus.

Nat. Ord. Solaneæ.—Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4183.)

Habrothamnus *corymbosus*; fruticosus glaber, foliis breviter petiolatis ovato-lanceolatis acuminatis integerrimis penninerviis reticulatis, corymbis terminalibus in ramos numerosos confertos breves paniculam densam foliosam quasi formantibus, calycis laciniis acuminatis patentibus, corollæ (intense roseæ) tubo superne sensim dilatato, limbi laciniis elongatis lanceolato-acuminatis demum reflexis, staminibus tubi supra medium insertis.

Habrothamnus corymbosus. *Endl. in Walp. Repert. Bot. v.* 3. *p.* 122.

Meyenia corymbosa. *Schlecht. in Linn. v.* 8. *p.* 252.

A very handsome species of *Habrothamnus*, native of Mexico, sent to the Royal Gardens of Kew by Mr. Low of Clapton, quite distinct from the *H. fasciculatus*, figured at Tab. 4183 of our present volume. It is everywhere glabrous, apparently a much taller plant, and with the corolla of a very different shape, widening upwards and then suddenly contracted, so as to have an urceolate tube; and having the segments of the corolla much longer acuminated and at length reflexed. Its growth appears to be much more rapid, and it is more easily cultivated, only requiring the protection of a greenhouse in the winter. In the summer it does best in the open air, and may readily be increased by cuttings. As far as can be judged from the description it seems to be the *Meyenia corymbosa* of Schlechtendahl.

Descr. Our *Plant* forms a *shrub* about five or six feet high, erect, much branched. *Leaves* alternate, crowded in parts, and, as it were, fasciculate, ovato-lanceolate, membranaceous, acuminate, entire, penninerved, the nervelets anastomosing. *Petiole* short. Towards the extremities of the main *branches*, copious, short, leafy, ones are produced, each of which is terminated with a corymb of pretty deep rose-coloured flowers. *Calyx* tubular, cut about half way down, into five lanceolate-subulate, slightly spreading segments. *Corolla* thrice as long as the calyx. *Tube* infun-

dibuliform, gradually tapering upwards. *Limb* of five long, tapering, and at length recurved, segments, half as long as the tube. *Stamens* included. *Filaments* inserted above the middle of the tube, with a small blunt tooth at the point of insertion. *Anthers* rotundate. *Germen* subglobose, situated on a shallow, fleshy disk. *Style* as long as the tube. *Stigma* capitate, two-lobed.

Fig. 1. Flower. 2. Corolla laid open. 3. Germen and disk. 4. Stigma;—*magnified.*

Tab. 4202.

EVOLVULUS PURPURO-CÆRULEUS.

Purple-blue-flowered Evolvulus.

Nat. Ord. Convolvulaceæ.—Pentandria Digynia.

Gen. Char. *Sepala* 5. *Corolla* campanulata aut infundibuliformis. *Styli* 2 bifidi. *Ovarium* 2-loculare, 4-ovulatum. *Capsula* 2-locularis.—Herbæ *aut* minores suffrutices, *non volubiles, pleræque intra tropicos habitantes.* *De Cand.*

Evolvulus *purpuro-cæruleus*; appresso-pilosus subincanus inferne fruticosus e basi ramosus, ramis primariis elongatis erectis secundariis patentibus gracilibus rigidis, foliis patentibus v. recurvis lanceolatis acutis parvis, pedicellis unifloris terminalibus vel lateralibus basi bracteatis, calycis laciniis parvis lanceolatis patentibus, corollis extus sericeis margine crenulatis.

A small, but most lovely little suffruticose plant, with copious flowers, at first sight not much unlike those of *Anagallis cærulea*, but borne upon erect twiggy branches with small patent or reflexed leaves, and worthy a place in every garden on account of the brilliant colour of its blossoms. Its nearest affinity, as to species, and it is certainly an undescribed one, is with *Evolvulus Arbuscula* of Poiret, according to the Bahama specimens in our Herbarium, thus named by M. Choisy, the author of the "Convolvulaceæ" in De Candolle's Prodromus; but that has still smaller and erect leaves, not tapering at the base, like those of the one now before us.—It inhabits arid rocks near the sea, in the district of Manchester, Jamaica; and caught the attention of Mr. Purdie, its discoverer, and who sent home seeds of it to the Royal Gardens of Kew, by its showy bright blue flowers.

Our figure was named from a charming specimen, belonging to His Grace the Duke of Northumberland, Syon House. A variety has bloomed at Kew, from the same country, with pale blue flowers. It was reared in the stove, and requires to be kept moderately moist. Flowers in July and August.

Descr. *Root* perennial, not very stout, throwing out branches and fibres. *Stem* a foot and a half high, quite woody below and often for more than half way up, branched from the very base; main *branches* erect, stout below, gradually tapering upwards and

bearing several wiry, slender, patent, rigid, alternate branchlets, appresso-pubescent. *Leaves* hairy in the same way, small, especially the ultimate branches, all of them patent or reflexed, lanceolate, acute, entire, the smaller ones almost linear, the larger ones tapering below, but scarcely petiolate. *Flowers* terminal on the leafy branches and pedicellate; or the pedicels are axillary and generally bracteated at the base. *Calyx* with a short *tube*, tapering below, with five rather spreading small lanceolate segments, downy with appressed hairs. *Corolla* rotate, rich ultramarine blue, with the centre white and a purple ray diverging from that up the centre of each lobe, the margin five-lobed, the lobes rounded, crenate; externally the corolla is silky. *Stamens*: five *filaments* and *anthers* white. *Ovary* ovate, two-celled, four-seeded. *Styles* white, each branched above the middle and club-shaped at the apex.

Fig. 1. Portion of a branch and leaves. 2. Outer view of a flower. 3. Inner view of ditto. 4. Pistil. 5. Transverse section of an ovary, showing the four seeds :—*magnified*.

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4175 Achimenes argyrostigma.
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4139 Aerides odoratum.
4180 Anigozanthus pulcherrimus.
4159 Angræcum apiculatum.
4145 ——— distichum.
4200 Anthocercis ilicifolia.
4146 Aotus gracillima.
4133 Backhousia myrtifolia.
4172 Begonia albo-coccinea.
4166 Bolbophyllum Careyanum.
4136 Barbacenia squamata.
4157 Calceolaria alba.
4154 ——— floribunda.
4188 Calliandra Tweediei.
4182 Chirita Zeylanica.
4143 Cryptadenia uniflora.
4141 Cymbidium ochroleucum.
4160 Dendrobium fimbriatum; *var.* oculatum.
4153 ——— moniliforme.
4140 Disemma aurantia.
4184 Echinocactus Leeanus.
4181 ——— multiflorus.
4177 ——— myriostigma.
4162 ——— oxygonus.
4190 ——— pectiniferus.
4165 Epidendrum longicolle.
4163 Eria Dillwynii.
4202 Evolvulus purpuro-cæruleus.
4186 Exostemma longiflorum.
4189 Franciscea acuminata.
4174 Fuchsia serratifolia.
4185 Gardenia Stanleyana.
4195 Genista (Teline) Spachiana.
4152 Gesneria Schiedeana.
4171 Gompholobium barbigerum.

Plate.

4179 Gompholobium versicolor; *var.* caulibus purpureis.
4151 Govenia utriculata.
4201 Habrothamnus corymbosus.
4183 ——— fasciculatus.
4192 Hebecladus biflorus.
4135 Hindsia violacea.
4191 Ixora odorata.
4169 Leianthus longifolius.
4150 Lobelia thapsoidea.
4132 Luculia Pinciana.
4193 Lycaste fulvescens.
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4148 Oncidium bicallosum.
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4173 Phyllarthron Bojerianum.
4142 Pleurothallis bicarinata.
4161 Polystachya bracteosa.
4176 Porphyrocoma lanceolata.
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4199 Reevesia thyrsoidea.
4147 Ruellia lilacina.
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4196 Scævola attenuata.
4170 Sida (Abutilon) pæoniæflora.
4134 —— graveolens.
4178 Siphocampylos coccineus.
4194 Smeathmannia lævigata.
4138 Solanum macranthum.
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4167, 4168 Strelitzia augusta.
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4145 ——— two-rowed.
4180 Anigozanthus, beautiful yellow.
4200 Anthocercis, holly-leaved.
4146 Aotus, slender.
4133 Backhousia, Myrtle-leaved.
4136 Barbacenia, scaly-stalked.
4172 Begonia, or Elephant's Ear, scarlet and white-flowered.
4166 Bolbophyllum, Dr. Carey's.
4157 Calceolaria, white-flowered.
4188 Calliandra, Mr. Tweedie's.
4182 Chirita, Ceylon.
4143 Cryptadenia, solitary-flowered.
4141 Cymbidium, pale-yellow.
4160 Dendrobium, fringe-lipped; *var.* with sanguineous eye.
4153 ——— necklace-stemmed.
4140 Disemma, New-Caledonia.
4156 Dove-flower, or Peristeria, Humboldt's; tawny-flowered *var.*
4181 Echinocactus, many-flowered.
4177 ——— many-spotted.
4184 ——— Mr. Lee's.
4190 ——— pectinated.
4162 ——— sharp-angled.
4172 Elephant's Ear, or Begonia; scarlet and white-flowered.
4165 Epidendrum, long-necked.
4163 Eria, Dillwyn Llewelyn's.
4202 Evolvulus, purple-blue-flowered.
4186 Exostemma, long-flowered.
4189 Franciscea, acuminated.
4174 Fuchsia, serrated-leaved.
4185 Gardenia, Lord Derby's.
4195 Genista, Mr. Spach's.
4152 Gesneria, Schiede's.

Plate.

4179 Gompholobium, changeable; purple-stemmed variety.
4171 Gompholobium, fringe-keeled.
4151 Govenia, bladdery.
4183 Habrothamnus, cluster-flowered.
4201 ——— corymb-flowered.
4192 Hebecladus, twin-flowered.
4135 Hindsia, large-flowered.
4191 Ixora, fragrant.
4169 Leianthus, long-leaved.
4150 Lobelia, Mullein-like.
4132 Luculia, Mr. Pince's.
4193 Lycaste, tawny-flowered.
4149 Lycium, Fuchsia-flowered.
4164 Masdevallia, windowed.
4138 Nightshade, large-flowered.
4148 Oncidium, two-warted.
4156 Peristeria, or Dove-flower, Humboldt's; tawny-flowered *var.*
4173 Phyllarthron, Mr. Bojer's.
4142 Pleurothallis, double-keeled.
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4199 Reevesia, thyrse-flowered.
4198 Rhynchoglossum, Ceylon.
4147 Ruellia, lilac-flowered.
4196 Scævola, attenuated-leaved.
4134 Sida, heavy-scented.
4170 —— Pæony-flowered.
4178 Siphocampylos, showy scarlet-flowered.
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4155 Whitfieldia, brick-colored.

COMPANION

TO THE

BOTANICAL MAGAZINE,

(NEW SERIES).

NOTICE RESPECTING THE ROYAL BOTANIC GARDENS OF KEW.

" So sits enthron'd, in vegetable pride,
Imperial KEW, by Thames's glittering side;
Obedient sails from realms unfurrowed bring
For her the unnam'd progeny of spring."
" Delighted Thames through tropic umbrage glides,
And, flowers antarctic bending o'er his tides,
Drinks the new tints, the sweets unknown inhales,
And calls the sons of Science to his vales.
In one bright point admiring Nature eyes
The fruits and foliage of discordant skies,
Twines the gay floret with the fragrant bough,
And binds the wreath round GEORGE'S royal brow."
" Sometimes retiring from the public weal,
One tranquil hour the ROYAL PARTNERS steal;
Through glades exotic pass with step sublime;
Or mark the growth of Britain's happier clime."

THE renewal of the Miscellaneous Information, under the title of "COMPANION TO THE BOTANICAL MAGAZINE," which, commencing in 1835, was carried on to the extent of two closely printed volumes, affords an opportunity of laying before our readers some particulars, which cannot fail to interest all lovers of Plants and of Horticulture, respecting the *present condition and future prospects of the Royal Botanic Gardens of Kew.*

It is generally known that considerable changes in this establishment were contemplated upwards of four years ago, when, from a private garden, belonging to the Royal Family, and maintained by funds from the Board of Green Cloth, it was liberally ceded by Her present Majesty Queen Victoria, and placed in the hands of H. M. Commissioners of Woods and Forests, with the view of its being made available

to the general good. The public, too, having since had free access to the gardens, under a few needful regulations, cannot fail to have observed the many alterations and improvements effected under the sanction of the above-mentioned Board, and must feel desirous of some particulars respecting them. It is with a view to satisfy this laudable curiosity, that the following notice is now offered.

This is not the place to enter into the full early history of the Royal Botanic Gardens at Kew, but a few statements are necessary, selected from the best authorities.

About the middle of the 17th century, the spot that now forms *the gardens* of Kew, with the residence, called Kew House, was the property of R. Bennett, Esq., whose daughter and heir married Lord Capel. This nobleman was much attached to the cultivation of plants, and is said to have introduced several new fruits and trees at Kew, which he had brought with him from France; among them, "two *Lentisks*, or *Mastic-Trees*," are recorded, for which he paid £40 (an enormous sum two hundred years ago) to one Versprit, and four white striped and variegated *Hollies*, costing him £5 a tree. In Macky's Tour through England in 1724, mention is made of the "fine seat and excellent gardens, said to produce the best fruit in England, belonging to that great statesman and gardener, Lord Capel." Kew House and Grounds then passed into the hands of Mr. Molyneux, who was Secretary to King George the Second (when Prince of Wales), and who married Lady Elizabeth Capel. He was well known as a man of literature and an astronomer, and with an instrument of his own construction, in these very grounds, Dr. Bradley made his valuable discoveries relating to the fixed stars, to record which, an inscription was ordered, by the late King William the Fourth, to be placed on the pedestal of the sun-dial, erected on the identical spot where Dr. Bradley's telescope had stood, upon the lawn, and opposite to the present palace.

The Prince of Wales, who was son to George the Second, and father of George the Third, admiring the situation, took a long lease of Kew House from the Capel family, about the year 1730, and formed the pleasure-grounds, containing nearly one hundred and twenty acres, which were finished by his widow Augusta, the Princess Dowager of Wales, who had great delight in superintending the improvements, then carried on upon a most extensive scale. "Originally, the ground was one dead flat; the soil sandy, and, in general, barren, and destitute of either wood or water. With so many

natural disadvantages, it was not easy to produce anything, even tolerable, in gardening; but princely munificence, aided by a Director, equally skilled in cultivating the earth, and in the polite arts, overcame all difficulties. What was once a desert is now an Eden. The judgment with which Art hath been employed to supply the defects of Nature, and to cover its deformities, hath very justly gained universal admiration, and reflects uncommon lustre on the refined taste of the noble contriver, as the vast sums which have been expended to bring this arduous undertaking to perfection, do infinite honor to the generosity and taste of the illustrious possessor, who, with so liberal a hand, distributes the superfluity of her treasures, in works, which serve at once to adorn the country, and to nourish its industrious inhabitants." *

At this time, Sir William Chambers was employed in decorating the grounds at Kew with temples, &c., an account of which he published in a large folio book, with many plates, dedicated to the Princess Dowager of Wales, under the title of "Plans, Elevations, Sections, and Perspective Views of the Gardens and Buildings at Kew, in Surrey, the Seat of Her Royal Highness, the Princess Dowager of Wales."

The *Physick* or *Exotic Garden*, † was also begun before the year 1759, by the Princess Dowager; for we find in that year, Mr. William Aiton, a pupil of the celebrated Philip Miller of the Chelsea Gardens, was placed in charge of the Botanical Garden at Kew; a gentleman distinguished no less by his private virtues, than for his knowledge of plants, and great skill in cultivating them. His professional abilities soon procured him the friendship of the late Sir Joseph Banks, which subsisted for life: the most curious plants were collected from every part of the world, and Mr. Aiton's care in rearing them, was evinced by his attention to the various soils and several degrees of warmth or cold, that their different natures required. The borders in the garden were enlarged for the freer circulation of air where it was needful, and the stoves improved, so as to afford the plants, as nearly as possible, the atmosphere of those climates where they originally grew. ‡

* Sir William Chambers.

† This does not appear to have been the first Botanic Garden in Kew; for Dr. Turner, the Herbalist, "one of the fathers of English Botany," had a Botanic Garden here, as well as at Wells, where he was Dean of the Cathedral.

‡ Gentleman's Magazine, 1793.

In 1783, Mr. Haverfield having been advanced to a higher office, was succeeded by Mr. Aiton in the lucrative post of superintending the pleasure-grounds and kitchen-gardens at Kew, conjointly with which he was allowed to retain his former charge.

It was about the year 1789, that His Majesty George the Third purchased Kew House, which was soon afterwards pulled down, and the furniture removed to an old mansion, known by the name of Kew Palace, once the property of Sir Hugh Portman, who is mentioned as "the rich gentleman who was knighted by Queen Elizabeth at Kew." This small but picturesque old brick dwelling, which appears to be of the date of King James or Charles I., was bought in 1781 for Queen Charlotte, and was long the favorite suburban residence of the Royal Family. Her Majesty took great interest in the increase of the collection of plants; and the late Sir James E. Smith, President of the Linnæan Society, has borne testimony to the love of Botany on the part of Queen Charlotte, when he says, "the name *Strelitzia** of Aiton, stands on the sure basis of Botanical knowledge and zeal; and that few persons have ever loved the study of nature more, or cultivated it so deeply as Her Majesty." Under such Royal auspices, and with the powerful patronage of Sir Joseph Banks, it was only to be expected that the garden of Kew should soon become celebrated all over the world. So early as 1760, the great stove was built by Sir William Chambers, which still exists, and must have been a remarkable structure for that time of day, being 114 feet long; the centre, occupied by the bark stove, 60 feet long, 20 feet wide, and 20 feet high,

* So called by Sir Joseph Banks and Mr. Aiton, in compliment to Her Majesty, the Consort of George III., as Princess of the House of Mecklenberg Strelitz. It is a plant worthy to bear so great a name; and noble specimens are usually to be seen in flower, in one or other of the stoves, during the winter months: especially that species on which the Genus was founded, *Strelitzia Reginæ*, figured at Tab. 119 of the Old Series of this work, and which has been justly described as one of the most brilliantly colored flowers in nature. The *Strelitzia augusta*, a far more stately plant of the Genus, and with larger, but very differently colored petals, has recently flowered in the conservatory of Kew, and will soon find a place in these volumes.—By the recent marriage of H. R. H. the Princess Augusta of Cambridge with the Hereditary Grand Duke of Mecklenberg Strelitz, this august name is still preserved in the family; and the amiable Princess who bears it, has, we have ample opportunities of knowing, evinced a no less lively interest in the present improvements carrying on at Kew, than her Royal ancestor did in those to which we are now alluding.

exclusive of the tan-pit; and the two ends formed two dry stoves, each 20 feet long, 18 wide, and 20 feet high.

In 1761, the Orangery was erected, also by Sir William Chambers; this is 145 feet long, 30 feet wide, and 25 feet high, and in the same year was added the very elegant Temple of the Sun, as it is called, of the Corinthian order, and some young trees were planted near, now grown to be nearly the most beautiful and ornamental in the garden, particularly an Oriental Plane and a Turkey Oak. Such an increase of plants had taken place in the year 1788, that a greenhouse for Cape plants was built, measuring 110 feet long; and another for New Holland ones, nearly the same size, in 1792.

In 1768, a catalogue of the plants in the Exotic Garden at Kew was published by Dr. Hill, under the title of "*Hortus Kewensis*," and a second edition the following year. But a far more elaborate and important work appeared, in three vols. 8vo, with some admirable plates, the "*Hortus Kewensis* of William Aiton," in 1789, giving an account of the several foreign plants which had been introduced into the English gardens at different times, amounting to 5,600 in number; and so highly was it esteemed, that the whole impression was sold off within two years. Mr. Aiton did not long survive this publication, for he died in 1793, in the sixty-third year of his age, and lies buried in the church-yard at Kew, near the graves of his distinguished friends, Zoffany, Meyer, and Gainsborough. His pall was borne up at the funeral by the most distinguished literary and scientific men of the day, by Sir Joseph Banks, Dr. Goodenough, afterwards Bishop of Carlisle, Mr. Dryander, Dr. Pitcairn, Sir David Dundas of Richmond, and Mr. Zoffany. A singular Genus of Cape plants was named after him by the celebrated Professor Thunberg, and the admirable portrait of him, which we have often seen in the library of the late Sir Joseph Banks, now in the British Museum, represents him as holding a sprig of *Aitonia* in his hand.

Mr. Aiton was succeeded by his son, William Townsend Aiton, Esq., who was no less esteemed by His Majesty George the Third than his father had been, and who, besides conducting the botanical department, and taking the charge of the extensive pleasure grounds, was also employed in the improvement of the other royal gardens and pleasure-grounds, in all which he displayed great skill and judgment and an intimate acquaintance with his profession. The voyage

of Captain Cook and Sir Joseph Banks round the world, those of Capt. Flinders and Mr. Robert Brown (*Botanicorum Princeps*) and of Mr. Allan Cunningham to Australia, of Bowie and Masson to the Cape of Good Hope and Brazil, enriched the gardens at this period with the vegetable productions of the Southern Hemisphere, to a degree which has had no parallel, before or since,—add to this, one or more collectors were, for a long period of years, employed in various other countries abroad, and the produce of their researches was deposited at Kew.

These vast accessions of plants to the garden occasioned a new and greatly enlarged edition of Mr. Aiton's *Hortus Kewensis* to be published by his son, in five vols. 8vo. (1810); "a work," as the author justly remarks, in the Dedication to the King, "rendered necessary to the public, not only by the number of valuable plants continually sent home by your Majesty's collectors abroad; but also by the influx of curious Exotics, poured into the Royal Botanic Garden of late, by your Majesty's subjects, anxious to aid, by their individual exertions, that munificent patronage which has rendered Botany a favorite pursuit among all classes of your Majesty's people." In the same Dedication Mr. Aiton acknowledges the valuable assistance he (as well as his father) received from the scientific knowledge and learning of Sir Joseph Banks and Mr. Dryander. In this second edition too, the Botanical world is indebted, for an entire revision of the Orchideous and Cruciferous tribes, to the pen of Mr. Brown. At various times, and especially during the life of His Majesty George the Third, other houses, stoves, and pits were erected as occasion required; but it must be confessed that, on the decease of that revered monarch, and of Sir Joseph Banks, whom His Majesty so much delighted to honor, and who died shortly after the King, the Botanic Garden languished and suffered from want of royal and scientific encouragement. During the reigns of George the Fourth and William the Fourth, with the exception of the few plants transmitted by collectors who were occasionally employed, and one hothouse, (the conservatory,) being erected by the last-mentioned sovereign, (and it is but justice to say this is the handsomest and most ornamental,) the Botanic Garden rather retrograded than otherwise; its funds were diminished; and matters would have been much worse, but for the truly parental affection cherished towards the establishment on the part of Mr. Aiton and the able exertions of his Assistant and Foreman (now the Curator)

in the gardens, Mr. John Smith. Throughout the country, a feeling existed, which soon began to be loudly expressed, either that the establishment should be entirely abolished, or that it ought to be placed upon a very different footing, and rendered available, as a great scientific establishment, for the advantage of the public.

Government was happily ready to respond to this latter feeling, and in 1838, the Lords of H. M. Treasury appointed a Committee to enquire into the management, condition, &c., of the Royal Botanic Gardens. The result was that in May, 1840, a "Return" was made to the House of Commons, consisting of a Report by Dr. Lindley, who, at the request of the Committee, had surveyed the Gardens, in conjunction with Messrs. Paxton and Wilson, two practical gardeners.

Strangers, or persons not well acquainted with the vicinity of Kew, have often very incorrect notions of this establishment; nor can it be wondered at that such should be the case, seeing for how long a time it was the private garden of the Royal Family, and taking into account, also, the great extent and varied nature of the grounds. We shall in few words describe them, as they existed at the period we speak of. They consist of,

1st,—The *Grounds* immediate about the *Palace of Kew*; they are of small extent, (including a waste piece, on which was begun the great edifice of Mr. Wyatt, soon afterwards pulled down,) bounded on the North side by the road and towing-path and the river, on the South and West by the Pleasure Grounds, and on the East by the Botanic Gardens.

2d,—The *Botanic Garden* proper, the present unfavorable entrance to which is on the South side of Kew Green, between the residence of H. R. H. the Duke of Cambridge and that occupied by General Sir George Quentin. It contained, at the time in question, eleven acres,* or thereabouts, of very irregular outline, bounded on the North partly by the gardens of the residences (chiefly Crown property) which stand on the South side of Kew Green, in part by the Green itself, from which it is separated by a handsome railing, and in part by the gardens of H. M. the King of Hanover; Westward by the grounds of the palace above mentioned; Eastward by the royal Kitchen and Forcing Gardens; and South by the Pleasure Ground.

* Not fifteen, as mentioned in the Report above named. That extent must, we think, have been intended to include the Kitchen and Forcing Gardens also.

3d,—The *Royal Kitchen* and *Forcing Gardens*, situated between the Botanic Gardens and the Richmond road (where is the entrance), and comprising about 6 acres.

4th,—The *Pleasure Ground*, consisting of 120 acres, an extensive and beautiful area, lying to the South of the Botanic Garden, and bounded by the Richmond road and the river. For some years, this has been thrown open twice a week to the public, during the summer months; it contains the well-known pagoda, temples, seats, and an ornamental piece of water, which was once a large lake, covering many acres.

5th,—To the South of this, and stretching between the Richmond road and the river, almost into the lower part of the town of Richmond, lies *Richmond Old Park*, or *Kew Park*, as it is sometimes called; a noble extent of pasture, interspersed with many fine trees, and distinguished by the Observatory, which was erected by George the Third, now liberally granted to the use of the British Association, and where this scientific body is carrying on an interesting series of experiments on Terrestrial Magnetism.

The Report of Dr. Lindley, mentioned above, has reference only to the 2d of these divisions; namely, the Royal Botanic Gardens, and it states that "they occupy about fifteen acres (see note supra), and contain many fine Exotic Trees and Shrubs, a small collection of Herbaceous Plants, and numerous specimens of Grasses.* Ten different stoves and greenhouses,* built at different times, as occasion required, are

* As some of these houses have already been greatly altered, and others are condemned, as unworthy of the gardens, it may not be uninteresting to record their former extent, and contents, as given in the Report.

1. "A *Palm Stove*, 60 feet long, containing some fine old Palm trees, &c., planted in the ground."
2. "A *Stove*, 50 feet long, with a miscellaneous collection of stove plants."
3. "Ditto, 60 feet, containing ditto, and two small tanks for aquatic plants."
4. "A small span *Greenhouse*, 40 feet long, occupied by a miscellaneous collection of New Holland and Cape plants."
5. "A *Dry Stove*, 40 feet long, in two compartments, filled with succulent plants."
6. "A *Greenhouse*, 60 feet long, chiefly filled with fine specimens of Cape of Good Hope and New Holland plants, among which are some noble Banksias."
7. "A double *Propagating Pit* and *Hospital*, 35 feet long, with cuttings and sick plants in one division, Ferns, Orchideæ, and other valuable specimens in the other."
8. "A *Greenhouse*, 30 feet long, containing small Cape of Good Hope and New Holland plants."

crowded together without plan or arrangement, all heated by separate fires, producing a quantity of soot, which causes much inconvenience; they contain a great variety of rare and valuable Tropical plants, in good preservation. Besides these houses, a fine Orangery stands in the Pleasure Grounds, filled with Orange trees and other shrubs, of great size and value, and a new architectural greenhouse (that erected by William the Fourth, before mentioned). The report goes on to state that " the cultivation, on the whole, is creditable to those individuals who have had charge of the garden, considering the crowded state of the houses, and the inadequate funds allowed for its support. These causes, and the very insufficient extent of ground allotted to the garden as a National Institution for the encouragement and extension of Botanical Science, prevent its fulfilling the objects for which it was designed; neither does it seem to be useful as a private Royal Garden, being only resorted to for supplies of flowers and plants, on occasion of great entertainments at the royal palace.

" Of late years, the means of maintaining this garden appear to have been considerably reduced; one of the two collectors, who had been sent abroad in 1814 to collect seeds and plants and to communicate with similar institutions in other countries, having been recalled in 1823, and the other in 1830."

It resulted from this investigation that the whole of the Gardens, Pleasure Grounds, and Park was transferred to the department of Her Majesty's Commissioners of Woods and Forests. Mr. Aiton, on the eve of the fiftieth anniversary of his Directorship, retired from the charge of the Botanic Gardens, and the writer of the present notice received instructions from the Honorable Board of Commissioners to enter upon

9. " A *Botany-Bay house,* 110 feet long, crowded with magnificent specimens, chiefly of New Holland plants."

10. " An *old Stove,* reported to be the first house erected in the garden, 110 feet long, in three divisions, one occupied by noble succulents and other plants; the second containing a stately *Zamia pungens, Palms, &c.;* and the third a miscellaneous set of greenhouse plants, with a few forced flowers for nosegays."

11. " In addition to these, there are, in the Pleasure Ground, a fine *old Orangery,* above alluded to, 130 feet long, filled with Orange trees *Araucarias,* New Holland and other plants, of great size: and

12. In another part of the Pleasure Ground, adjoining the Arboretum, there has been recently erected an *architectural greenhouse,* 82 feet long, 42 feet wide, and 28 feet high."

the important duties of that office in the spring of the year 1841, and to make, as speedily as possible, a report to the Board, of such alterations as were deemed essential for rendering the gardens useful to the public at large and to our colonies abroad. Many useful suggestions on these heads are offered in the Report of Dr. Lindley, especially when he observes, "A National Garden ought to be the centre round which all minor establishments of the same kind should be arranged; they should be all under the control of the chief of that garden, acting in concert with him, and, through him, with each other; reporting constantly their proceedings, explaining their wants, receiving their supplies, and aiding the mother country in every thing that is useful in the Vegetable Kingdom. Medicine, Commerce, Agriculture, Horticulture, and many valuable branches of manufacture, would derive much advantage from the establishment of such a system. From a garden of this kind, government would be able to obtain authentic and official information on points connected with the establishment of new colonies: it would afford the plants there required, without its being necessary, as now, to apply to the officers of private establishments for advice and assistance.

"Such a garden would be the great source of new and valuable plants, to be introduced and dispersed through this country; it would be a powerful means of increasing the pleasure of those individuals who already possess gardens; and, what is of far more consequence, it would undoubtedly become an efficient instrument in refining the taste, increasing the knowledge, and augmenting the amount of rational pleasures of that important class of society, to provide for the instruction of which has become so great and wise an object with the present enlightened administration.

"Purposes like these could not be effectually accomplished with such a place as the Botanic Garden of Kew now is (in 1838). It would, however, prove an admirable foundation; and the facility of reaching it, either by land or water, renders it impossible to select a better site in the vicinity of the metropolis.

"To render it effective, it should be enlarged by the addition of, at least, 30 acres from the Pleasure Grounds of Kew. Considerable additions should be made to the houses; every thing should be systematically named and arranged; in short, the garden should be perfectly adapted to the three branches, of instruction, exhibition, and supply."

Other alterations of a very important character could not fail to suggest themselves to the Director on his becoming intimately acquainted with the minutiæ of the establishment, and many which it were tedious to narrate in this place.

One of the first of these was to throw open the Botanic Garden for the admission of the public on every week-day, from the hours of one to six, or, rather, till dark in summer; and even to admit any respectable individuals coming from a distance, who may not be acquainted with this regulation, at an earlier hour; and not only are the grounds, but the houses also, open to visitors; and it is almost needless to say that the number of these has been very considerable. Yet, what is peculiarly gratifying, and contrary to the anticipation of many persons, this privilege has been rarely abused. In the few cases of an opposite description, the conviction (which must be expected when trustworthy men are necessarily dispersed through the garden at their various occupations) has produced its own punishment.

Next to the facility of ingress, and consequent pleasure and instruction to the public, the enlargement of the ground was an important object. The limit of the garden was not indeed exactly defined where it met the precincts of the residence of H. M. the King of Hanover; but permission was soon granted to include within the Botanic Garden, all the ground immediately adjoining the Conservatory and the Orangery, which greatly augmented the beauty of the view, and included between 3 and 4 acres. This addition to the gardens, however, was rather to be considered ornamental than useful. Application was made by the Chief Commissioner of Woods and Forests to Her Majesty, for such an extent of land from the contiguous Pleasure Ground as might afford the means of forming an Arboretum, suited to such an establishment, and also of erecting a Palm or Tropical stove, equally worthy of the place and the nation. Her Majesty was graciously pleased to assent to this request, and a portion of the Pleasure Ground, comprising about 47 acres, and including a piece of water, was surveyed and permitted to be enclosed with a light wire fence, so as still to open the view into the rest of the Pleasure Ground, and added to the beauty of the Botanic Gardens, which may now be estimated to contain 60 acres, and the two areas are now laid into one. Thus, here is a considerable space allotted for Arboretum, if judiciously planted, and in grounds already so highly ornamental, and so furnished with well-grown trees, as to present

great inherent beauty, independently of the additional improvements which are in contemplation.

But changes now come to be noticed that have taken place within the boundary of the old ground, or original Botanic Garden: for in the same ratio that the space for hardy plants needed enlargement, so did the accommodation for tender plants; and plans were given in for those improvements, by which such a transformation is effected in the aspect of the place, that persons, who have not visited Kew Gardens for two or three years, can scarcely recognize the localities. These alterations may be best understood by a reference to the former condition of the stoves and greenhouses (as given in the note p. 8); and, at the same time, some changes will be detailed, that are yet only in contemplation.

We will suppose the visitor to enter the garden from Kew Green: he passes along an alley of shrubs, which turns at an angle close to the present dwelling of the Curator, Mr. John Smith, and after walking under a handsome specimen of Napoleon's Willow *(Salix Babylonica)* growing on the left hand (and remarkable for a conspicuous and strong root which it sent out for more than 20 feet in search of water) and a healthy young *Pinus Webbiana* on the right, he enters the Arboretum immediately opposite to a *Glastonbury Thorn*, which may often be seen in flower on or before Christmas, and does not shed its foliage till after that time, blossoming again in Spring. Near the Thorn is a handsome *Deodar*, from the Himalaya Mountains *(Cedrus Deodara)*; a *Deciduous Cypress (Taxodium distichum)*, and a rare unkown species of the Genus supposed to come from Japan; the curious and scarce *Juniperus filiformis*, unique of its kind; *Pinus macrocarpa*, *P. Coulteriana*, &c. &c. Here the visitor, attracted by the appearance of stoves, probably turns to the left, or south, rather than into the right-hand walk, which would lead more immediately to the old Arboretum, and the first object he sees on the right-hand side, opposite to a noble tree of the *Downy-fruited Maple*, (*Acer eriocarpum* of North America,) is the house to which we have been alluding, as about shortly to be removed, viz.:—
"A Palm-stove, 60 feet long, containing, among other things, some fine old *Palm trees*, planted in the ground." These Palms have greatly outgrown the house, and they are suffering extremely; but the building, which had been raised to give them more room, is old and worthless, and will be altogether demolished. In the meanwhile, preparations are making for the removal of the Palms, and of a noble *Screw*

Pine (Pandanus odoratissimus), planted in the ground, which, by digging round the roots, and limiting them within a smaller compass, will allow of being set into a great tub, and thus removed into the future Palm Stove. Besides the plants just mentioned, this house at present contains a large collection of *Ferns*; amongst them the *Tree Fern* of Van Diemen's Land *(Dicksonia antarctica)*, a fine specimen of the *Indian Dammara Pine (Dammara orientalis)*; and two still rarer ones, the *Dammara* of New Zealand, or *Cowdie Pine (D. australis)*, so valuable for masts for our navy; some miscellaneons bulbs, &c.

Following the same path for a very short distance, we come on the left to

"No. 2. A Stove, fifty feet long, filled with a miscellaneous collection of plants." At the time alluded to (1839), this, like all the other hothouses and greenhouses described in the list, was nothing more than a lean-to, presenting only a South front, with a high back-wall on the North, and heated by smoke-flues. The present erection, retaining its original position and length, has been doubled, and is converted into a span-house, giving, of course, twice the area of its former dimensions; the new glass is all sheet-glass; the heating is on the best construction, with hot-water pipes, and hot-water tanks; slate tables are placed in the centre, and broad stone shelves in the circumference; and there are pillars for climbers. It is still, assuredly, "filled with a miscellaneous collection of plants;" but these are in a highly flourishing condition, and as unlike plants cultivated with smoke-flues as it is possible to conceive. One of the shelves is, at present, occupied with a fine range of ever-flowering *Begonias*, whose highly-ornamental foliage, amid a hundred modifications, always preserves its peculiar character of obliquity, and is thence, not inaptly called, *Elephant's Ear*. The Genus, too, possesses a great advantage, in its species producing their delicate pink or white blossoms at different seasons; so that one or other kind may be seen in bloom all the year round. Here, too, are the famous *Tea Plants* of *Paraguay (Ilex Paraguayensis)*, a kind of *Holly*, affording the beverage, called *Matè* in South America, and used almost as extensively in that great continent, as the Bohea, Souchong, and Hyson, of China, are in Europe. The *Upas* or *Poison Tree of Java (Antiaris toxicodendron)*, to whose authentic virulence it has been the pleasure of poets and travellers to add many a

horrifying imaginary incident: this most valuable specimen was presented to the Royal Gardens, along with many other oriental rarities, by the Hon. the Directors of the East India Company. The *Tanghin*, or *Poison Tree* of Madagascar (*Tanghinia veneniflua*), rendered infinitely more extensively baleful than *Upas* by the execrable laws of the Malagassy kingdom (for a colored representation of this tree, and many particulars of its use in the native ordeal, as communicated by the Missionaries, see the Botanical Magazine, Tab. 2968; and Botanical Miscellany, v. 3, p. 275—291, Tab. 110). In this same house, are *Coffee* and *Chocolate* shrubs, *Black Pepper*, the *Teak of India*, the *Cow-Tree* or *Palo de Vaca* of the Caraccas, *Galactodendron utile*, (described and figured in the Botanical Magazine, Tab. 2723 and 2724), and a multitude of other rare fruticose plants. The *Telfairia pedata* (Botanical Magazine, Tab. 2751, 2), with its curiously fringed flowers, would fill the building with the lengthened branches which it throws out, if permitted to do so: the *Grenadilla* (*Passiflora edulis*, Botanical Magazine, Tab. 1989); the beautiful *Gardenia Sherbourniæ*,—these climbers, together with the *Passiflora alata*, *Allamanda cathartica*, *Echites hirsuta*, *Poivræa coccinea* and *Roxburghii*, *Petræa volubilis*, *Beaumontia grandiflora*, and *Ipomæa Horsfalliæ*, twine round the pillars.

It may be remembered by former visitors to the garden, that, in the old state of this stove, there was a gate of entrance at its west end, opening from the Arboretum into the Botanic Garden, and that from this point, a wall went off (where a *Terebinth-Tree*, and a large *Salisburia* now stand) to the back of the "old stove," and from the West termination of that again in the direction of the old Orangery: this wall formed the boundary (now pulled down) between the Arboretum and the herbaceous ground.

"No. 3. A Stove, sixty feet long, with two small tanks, for water-plants, occupied by a miscellaneous assemblage of stove plants." This remains still in the same condition as when the Report was prepared; and it is interesting, during the short time it will be permitted so to stand, to compare the state of its inmates, as to growth and vigour, with those in the building just left, (No. 2,) where the improvements in hothouse cultivation have been adopted. It is, however, intended, during the present year, 1845, to make a span-house of this, to carry it out to the length of ninety feet, joining it

to, and rendering it in every point, except as to internal arrangement, like No. 2, when it probably will form a receptacle for Orchideous plants.

"No. 4. A small Span-greenhouse, forty feet long, containing a miscellaneous collection of New Holland and Cape plants." This runs North and South, and may be entered by a door opposite the centre of the house, No. 2, and it is, as to external appearance, much the same as it originally was; but the interior arrangement and mode of heating are altered, and it is filled with *Cape Heaths* and *Epacrideæ*. Outside this greenhouse, both on the East and West sides, are low frames, warmed by a single hot-water pipe. That on the East, contains *Erythrinas*, *Alstrœmerias*, and other half-hardy herbaceous plants; that on the west side, together with a number of half-hardy *Ferns*, and other rarities, protects the rare *Beech-Trees* of Cape Horn, *Fagus Forsteri*, and *Fagus antarctica*,* the most southern trees in the world, one of which has small *evergreen* leaves; also the *Winter's Bark (Drimys Winteri)*, *Berberis ilicifolia*, the rarest and largest-flowered species of the Genus, &c.: all these were brought home by the Antarctic Expedition, under the command of Captain Sir James Ross.

"No. 5. A dry Stove, forty feet long, in two compartments, filled with succulent plants." This is a house, situated a little to the south of No. 4, and which was separated from it by a gravel walk; but the two compartments have been since thrown into one: the building has been besides doubled and converted into a span-house, heated by hot-water, and joined to the South end of No. 4, opening into it by a glass door. It is now occupied by an invaluable collection of *Cactuses* and other *stove succulents*. Among them are many species of *Cactus*, for the possession of which we are indebted to the liberality of Mr. Parkinson, late Consul-General to the Republic of Mexico, and, through the same friend, to the obliging kindness of Mr. Staines of San Luis Potosì. The "*Monster Cactus*," † with which the

* See Hooker's London Journ. of Bot. v. 2, p. 147, &c , for a full account of these two species. They are trees of great beauty, attaining a large size (Capt. Fitzroy measured the trunk of one of them, which was seven feet in diameter): they have been found already to bear our winters.

† Since writing the above, and just before going to press, the appearance of this hothouse has been materially altered by the arrival of five large boxes of *Cactuses* from Mexico, sent by the same public-spirited individual whose name is mentioned before, Frederick Staines, Esq. To make room for them, several of the taller kinds of *Cereus* had to be removed elsewhere (to

Illustrated London News has made England generally acquainted, is situated near the centre of the house: it is the gift of the latter gentleman, and sure we are that no collection in Europe possesses a more remarkable specimen of this extraordinary and grotesque family. The low platform on the west end, is chiefly occupied by the *Nopal* or *Opuntia*-tribe of *Cactus*, upon some or other of which, especially the *Opuntia cochinilifer*, the *Cochineal Insect* is extensively reared in Mexico; the opposite side presents the different species of *Cereus*, &c.; while, on the broad shelf in front, stands an immense variety of *Melocactus* and *Echinocactus*. Against the front of this hothouse, in the open air, grow some fine plants, attracting general attention, of the *Black Tea (Thea Bohea)*, the *Green Tea (Thea viridis)*, and the *Sasanqua Tea (Camellia Sasanqua)*: the latter being cultivated in China solely for the sake of its flowers, which are said to impart a peculiar fragrance and flavor, when mingled with the foliage which affords the other kinds of Tea.

Nearly opposite to the east end of this house is

"No. 6. A Greenhouse, sixty feet long, chiefly occupied by fine specimens of *Cape of Good Hope* and *New Holland plants*; among which are some noble *Banksias*." Of all the

the Conservatory), that the space might be occupied with others of that family, before whose magnitude even our hitherto *Monster Cactus* has shrunk into comparative obscurity. The latter will not, however, escape notice, and may be recognized by the name and inscription it bears, "*Echinocactus Stainesii*," from San Luis, Potosì, presented by F. Staines, Esq.; weight 235 lbs." There may now be seen two other individuals of the same species; one nearly the same size, with peculiarly red spines; the other bearing pale spines, but considerably taller than any of those just mentioned.

The Monster, however, of the collection, though quite a different species, and we may assert without disparagement to other *Cactus* collections, the most astonishing plant of that tribe which has ever been sent from the New World, is that to which the name is attached, "*Echinocactus Viznaga*, weight 713 lbs." It would occupy too much space here, to detail the many difficulties and obstacles which attended the uprooting of this gigantic plant, and transporting it in a waggon, drawn by eight oxen, for a distance of three hundred leagues, over mountains, and along the worst possible roads, ere it reached the coast, whence it was shipped for Britain. The omission of this narrative, is the less to be regretted, since it is fully given in the Gardeners' Chronicle of March 1st, 1845. Suffice it to say, that this *Echinocactus* is a perfectly distinct species, and that *Viznaga* is an appellation given to it, and other thorny *Cactuses*, by the Spaniards, from the use to which their numerous, strong, starry spines are applied. *Viznaga*, or *Visnaga* is the name for the spiny rays of the umbels of *Daucus* (or *Ammi*) *Visnaga*, and it means a *toothpick*; these *Cactuses* affording that useful little article by wholesale, and without any artificial preparation.

changes that have yet been made, this edifice presents, perhaps, the most important. The house was good of its kind before, save in the mode of heating, and in the shelves or stands which supported the plants. It has now been doubled, converted into a span-house thirty-two feet broad; while, extending North from this addition, a new wing is attached, sixty feet long, and forming a span twenty-two feet in breadth. The whole interior is neatly fitted up, with stone shelving, and hot-water pipes, while copious concealed tanks (as in our other new and improved houses) are added for the purpose of catching and preserving a large body of rain water; and it is glazed with sheet glass. This extensive, but simple structure, is filled with a perfectly unique collection of *Banksias* and other *Proteaceous* productions of Australia. Coming, as many of these plants do, from the Southern Hemisphere, they preserve their natural habits, and a large proportion of them, especially the *Banksias*, may be seen, bearing their curious flowers in the winter, and the *Leguminosæ* during our early spring months, when the fragrant *Acacias* are in the highest perfection. It is now in contemplation, during the coming summer (1845), to add another wing to this house, on the South side, corresponding with that on the North; the whole building then will be in the form of a cross, one hundred and fifty-two feet long.

"No. 7. A Double Propagating Pit, or Hospital, thirty-five feet long, with cuttings under bell-glasses and sick plants in one division; Ferns, Orchidaceous plants, and some other valuable specimens, in the other." To reach this house from the one just described, the visitor must follow the path from the eastern door of the last house (n. 6), and proceed to the South, passing compartments of herbaceous plants, on the right, among lawn, and *the famous Chili Pine (Araucaria imbricata)*, which was brought to England in the year 1792, by Mr. Menzies, the surgeon of Capt. Vancouver's voyage, comes into view. It is, perhaps, not generally known that the seeds of this Pine are eaten in Chili, as those of the *Stone Pine* are in Italy, or as Almonds are with us. The Commander of the voyage and some of his officers were dining at the table of the Governor of Chili, and a dish of these kernels was served for dessert, when the surgeon of the expedition, Mr. Menzies, requested permission to plant, instead of eating, his portion, which was accordingly done, and five of the seeds having germinated on board ship, were presented to the Royal Gardens of Kew on the return of the expedition. The *Chili*

Pine in question is the finest of these, and has already produced its remarkably large, almost globose, yet infertile cones. Though the tree is in perfect health, it does not, however, assume with us that striking pyramidal form which distinguishes it on the mountains of Chili; but a cutting, taken from it, and planted at Dropmore, the seat of the late Lord Granville, is now become a handsomer specimen than its parent, and grows in the natural manner so peculiar to it. Near the *Araucaria*, on the West, is a splendid specimen of the *Weeping Birch* of Scotland; while, closer to the walk, in concentric circles, with brick edging round the beds, is the *Grass collection*, and a noble *Hop-Hornbeam Tree* (*Ostrya vulgaris*). Turning to the left, in a recess which includes the *British Garden*, we arrive at the house under consideration, having a low span roof. In external form it is unaltered; but, inside, the division which made it a double house is removed, the whole fitted up with slate shelving, tanks, and hot water pipes, and it contains the chief part of the tropical Orchideous collection, intermixed, however, with many rare *Ferns*; among these the *Acrostichum (Platycerium) grande*, from Australia, the gift of Mr. Bidwill, particularly claims attention;* and no less two other plants, kept under glasses, the "*King-plant*" of Ceylon, *Anæctochilus setaceus* (see Bot. Mag. t. 4123), which has rich velvety leaves, covered, as it were, with a net-work of golden lace, and the equally rare *Pitcher-Plant of New Holland, Cephalotus follicularis* (Bot. Mag. t. 3118 and 3119), with its curious pitchers, as the name implies, each terminated by a *lid*. This, as may at once be seen, is a very distinct thing from the more common Pitcher Plant of Ceylon (*Nepenthes distillatoria*), and it belongs to a widely different family.

"No. 8. A Greenhouse, thirty feet long, in which are small Cape of Good Hope and New Holland plants." This is a small, neat building, near, but not next to, No. 7, attached to a dwelling occupied by one of the gardeners, in very good condition, and not easily capable of improvement. At this time it is filled with *Mesembryanthemums* and other South African succulent productions, requiring a greenhouse temperature.

* There is an excellent representation of this grotesque and rare Fern published in the second volume (p. 181) of the "Voyage of the United States' Exploring Expedition," as it may be seen growing on the branch of a tree in the garden of our friend, Alexander M'Leay, Esq., at Sydney, New South Wales.

Returning from this house, and continuing in the path some way to the West, leaving the *Hop Hornbeam* on one side and a noble *Sophora Joponica* on the other, you turn into the main walk of the herbaceous ground, and come to

"No. 9. A Botany-Bay House, one hundred and ten feet long, crowded with magnificent specimens of New Holland and other plants, especially the former." This edifice also remains *in statu quo*, and contains at this time a very mixed collection; mainly, however, from South Africa and Australia, and many of them very grand specimens, particularly those from New Zealand, many having been presented to us by the Rev. William Colenso, of the Church Missionary Society in that island. The oldest and largest individuals, however, are the gift of Capt. Sir W. Symonds, Surveyor General of the Navy. Among them may be seen the New Zealand Pine (*Dammara australis*), of which the long, straight trunks are so valuable for spars of ships; the graceful *Dacrydium cupressinum*; the peculiar-looking *Phyllocladus trichomanoides*, and other forest-trees of that singular group of Islands. There is a striking character in the hue of the New Zealand trees, which must give a sombre aspect to the forest when chiefly composed of them.

This building is very much out of place in its present position, and will be taken down as soon as a more suitable range for greenhouse accommodation shall have been elsewhere erected.

"No. 10. An old Stove, reputed to be the first house built in the gardens, one hundred and ten feet long, in three divisions; one containing noble specimens of succulent and other plants; the second, a stately *Zamia pungens*, Palms, &c.; and the third, a miscellaneous set of greenhouse plants, together with a few forced flowers for nosegays." This was indeed the first, or among the first houses erected by Sir William Chambers, and is that alluded to at p. 4 supra, where, however, its length is given by Sir William Chambers at one hundred and fourteen feet. Its antiquity is indicated by the large, massy, wooden beams, which, if the edifice were allowed to remain, would yet outlive many of the more modern wooden structures. The walls, however, have, in part, given way. It stands condemned, and will be pulled down, as soon as we are provided with the needful accommodation for its fine inmates. The contents are still nearly of the same kind as described by Dr. Lindley, and have suffered exceedingly

for want of more space, and a more wholesome atmosphere in the winter.

The above ten houses are all that are catalogued in Dr. Lindley's Report. He alludes to the brick pits attached to many of them "on the outside," and to "a damp pit for raising seedlings;" the former are, generally speaking, removed, as alterations take place in the houses; for they are very unsightly, and the glass suffers much from the fall of snow and ice from the roofs above during the winter; and the latter is so changed, that we shall, in continuing the catalogue, call it

No. 13. This "Damp Pit" was a deep frame or brick pit, forty feet long, with a single row of lights, facing the South, situated immediately in front of the dry stove, No. 5, and is now raised and doubled, by a span roof, and fitted up with tables and shelves, and iron pipes, and iron tanks, and is one of the completest and most useful moist stoves in the establishment. In it a great number of our rarest tropical plants are kept, till such time as they are fit for the larger stoves. Here are, at this period, some fine young *Bread-fruit Trees*; the hitherto almost unknown (to Naturalists) *Teak of Africa*, often called *African Oak;* the almost as little known *Napoleonea imperialis;* a large-flowered new *Gardenia* (*G. Stanleyana*, Hook.), and other treasures of Western Africa, brought over by Mr. Whitfield, and presented by the Earl of Derby; the curious *Lace-Bark Tree*, and the equally singular aquatic *(Pistia Stratiotes);* the splendid *Clerodendron speciosissimum*, &c., &c.

Another moist stove we shall designate as

No. 14. It is situated in the recess of the garden, above mentioned, near the British Garden, and between the houses, Nos. 7 and 8, and is a low building fifty feet long, with a double span roof, divided transversely into two compartments, heated by iron pipes and tanks, and designed for a Propagating House and Hospital for tropical plants, to which it is admirably adapted. Many or most of the new importations are lodged for a while here, seeds are raised, and cuttings struck. The crowded state of the Orchideous house (No. 7) requires that several of the Orchideous plants should be removed into this one; but it is only a temporary measure. As the contents are not, in general, stationary, it is hardly needful to speak of them; but I may observe that, at the present period, it contains many interesting Orchideous and other

plants, lately received from our Collector, Mr. Purdie, from Jamaica and Santa Martha; some fine young *Tree Ferns*, also from Jamaica, the kind gift of Mr. Wilson; and many other rare and interesting plants, but which are soon to be removed to other stoves.

The houses now described, are all that are contained in what was considered the Botanic Garden proper, at the period of my being placed in charge of the establishment: but in the adjoining palace grounds, two of the finest houses had long been occupied with plants under the care of the Director, and they are now included within the boundary. I allude to the "*Orangery*" and the "*Conservatory*;" unquestionably, two of the finest plant-houses at present existing at Kew. The first of these, we shall call

No. 11. The "Orangery." To arrive at this from the old stove, n. 10, above described, we proceed from the western end, past a stone tank, the *Aquarium*, for hardy water plants; and taking the right hand turn, the handsome structure in question comes into view. This is already briefly alluded to, supra p. 5. It was erected by Sir William Chambers, in 1761, and is one hundred and forty-two feet long, thirty feet wide, and twenty-five feet high. In the back shed, are two furnaces to heat flues, laid under the pavement. It was, until 1841 filled chiefly with Orange Trees, which were then (with the exception of a few reserved as specimens) removed to Kensington Palace, and their places supplied by trees and shrubs, which were becoming too large for the other greenhouses. Amongst them, may be seen an invaluable collection of the more tender *Coniferæ;* the superb *Araucarias—excelsa, Cuninghami, Brasiliensis; Pinus longifolia*, &c., &c., &c.; noble specimens of *Camellias, Rhododendron arboreum*, and a great number of New Holland trees and shrubs. Well as this house may have served for an Orangery, there is not light enough for greenhouse plants generally, notwithstanding that two large windows have been lately constructed (one at each end), at the suggestion of Mr. Aiton, and three windows or ventilators at the back. To render this house efficient, it should be doubled, and covered by a double span glass roof.

Proceeding from the East end of this structure, and inclining to the North, we came to

No. 12. The "Conservatory," as it is usually designated; spoken of in Dr. Lindley's Report, as the "Architectural Greenhouse, in the pleasure ground, adjoining the Arboretum,

eighty-two feet long, forty-two feet wide, and twenty-eight feet high." This handsome edifice was removed hither from Buckingham Palace by His Majesty William the Fourth, in the year 1836, and is heated by innumerable coils of small pipes fixed by Mr. Perkins. For some years, it was occupied by greenhouse, and chiefly fine specimens of New Holland, plants; but, as the removal of the Orange Trees from the Orangery gave us more greenhouse accommodation, this building was converted into a stove, and it is now filled with an extensive collection of *Palms*, and other large *Monocotyledonous plants*, especially *Bromeliaceæ*, *Aroideæ*, *Agaves*, the *Sugar Cane*, the *Papyrus*, tall plants of *Dragon's Blood* (*Dracæna Draco*), and a great variety of *Dicotyledons* inhabiting tropical countries: noble *Euphorbias*, some large *Cacteæ*, *Zamias* and other *Cycadeæ*, &c., &c. On the more particular contents of this house it is needless to dwell, as the greater number will be shortly removed to more suitable houses.

It will thus be seen that the existing number of plant-houses is fourteen, exclusive of pits and frames. We have much to say yet on the garden ground generally, but the writer cannot but feel that with the many changes which are at this moment (June, 1845) in progress,—the formation of a new entrance and new grand walk (the Victoria Walk, accompanied by a flower-garden) at the head of Kew Green, and of a great Palm-stove, and of a more extended sheet of water than the garden yet possesses,—the description of this ground and of these improvements will be better undertaken when the works are more advanced, and when we trust to be able to lay a plan of the entire grounds, and a correct view of the great Palm-stove before the public.

In the mean time, we are not without matter of interest for the subscribers to the "Companion to the Botanical Magazine." Our excellent friend and neighbour, Frederick Scheer, Esq., a former historian of Kew Gardens,* has kindly sent us a translation of the account published by Dr. von Fischer of the Imperial Botanic Garden of St. Petersburg, hitherto, we believe, the most extensive and one of the best conducted of any in Europe. This we shall hasten to lay before our readers.

* "*Kew and its Gardens:* by Frederick Scheer, Esq., 1840;" in which Mr. Scheer has shown himself to be a warm friend to the Gardens, and intimately acquainted with them and the adjoining village.

A BRIEF ACCOUNT OF THE IMPERIAL BOTANIC GARDEN AT ST. PETERSBURG.

By the Director, Dr. von FISCHER.

(With a Plan. Tab. I.*)*

The Imperial Botanic Garden is one of the many striking features of St. Petersburg, well worthy the attention of the visitors of the northern Metropolis. Like everything to be seen there, it is on a gigantic scale, the lines of houses extending to a length of nearly three-quarters of an English mile. The translator of the following account, furnished by Dr. Fischer to the Horticultural Journal at Berlin, has had recently the advantage of seeing this garden, and can bear testimony to the extraordinary beauty of the establishment and the perfection to which botanical cultivation has been carried under the direction of that able gentleman, whom he is proud to call his friend, and who is, in fact, the friend of every liberal man in Europe connected with botanical pursuits. It may not be amiss to remark, that though the severe winters of St. Petersburg are the cause of many difficulties, yet these find, in a great measure, compensation, in the immense quantity of solar light and warmth, which the plants enjoy during the prolonged days of the short summers, accelerating the growth and maturity of vegetation in a surprising degree. A large sum of money has been lately granted (as much as £20,000) by his Majesty the Emperor, to improve and further extend this princely establishment.—*F. S.*

The Imperial Botanic Garden is an important testimony of Peter the Great's creative genius. His comprehensive mind fostered not only those sciences to which he inclined most, but attended to whatever was useful. By an Imperial Ukase, dated the 11th February, 1714, he ordered the garden to be established on one of the islands, formed by the Delta of the Neva. It was, like most early Botanic Gardens, originally intended to serve for the culture of medicinal plants. On that account, and also because the government depôt of drugs was situated in its immediate neighbourhood, it obtained the name of the "Apothecary's Garden," as the island, on which both establishments were situated, retains to

this day the name "Apothecary's Island." How long the garden was exclusively limited to the growth of medical plants, is not known; all early records having been lost in a fire, on the 5th June 1837, which consumed the government drug establishments, and the archives of the medical department. It would appear, however, from an inventory of the gardens, dated in 1743, that, in that year, there were already two divisions, one being devoted to medical, the other to botanical purposes. Documents of later dates, do not enable us to trace a clear history of the garden down to the year 1823, when it was entirely remodelled. Large sums of money had certainly been granted for its maintenance and improvement, but it had not reached the perfection of other distinguished botanical establishments, though the few old rare and fine plants remaining in 1823 proved, that, if not rich in species, it yet contained much that was remarkable. It is probable, that part of the plants collected by Pallas found their way thither, although the majority fell to the share of the Academy of Sciences, which had its own Botanic Garden, subsequently ceded to the military school of Paul, near the Obuchow Bridge. It is probable that during the direction of Professor Stephan, our garden was very rich in Siberian plants.

In the mean time, experience proved that medicinal plants grown in latitude 60° North, in a richly manured soil, lost all medical properties; this species of culture was, therefore, gradually abandoned, government having recourse to its large Medicinal Garden at Lubry, in the Ukraine, altogether better suited for such purposes.

In 1822, Count Alexis Rasumowsky, the founder and owner of a large Botanic Garden, at Gorenka, near Moscow, died. Count Victor Kotshubey, Minister of the Interior, wishing to retain the treasures of that collection (now likely to be dispersed), in Russia, conceived the plan of bringing all the plants to the Apothecary's Garden at St. Petersburg, and of re-organizing that establishment altogether. His Imperial Majesty the Emperor approved of the proposals of the Count, and Dr. Fischer was accordingly instructed to draw up plans for re-modelling the garden and for the construction of additional houses, and to proceed to Moscow, with a view of purchasing the plants which had been under his management since 1804: that purchase, however, was not concluded, the sum asked being too high. It also became apparent, that the transport through Russia to St. Petersburg, whether by land

or canal, would be very expensive, as well as injurious to many plants, and the idea of carrying the tenants of that old and splendid garden to St. Petersburgh was abandoned. In the interim, one of the old houses had been rebuilt, and another had been put in order for the expected arrivals. On the 22d March, 1823, Dr. Fischer was appointed Director of the *Imperial Botanic Garden* (that was ordered to be its future name), and the establishment was placed under the immediate care of the Minister of the Interior; the foundations of the new houses, the plans of which had been approved of by the Emperor, were laid on the 26th June, 1823, and the erections were carried on so vigorously, that by the fall of the year 1824, every thing was ready for the reception of the plants obtained in the intervening period. The requisite funds were liberally furnished by the Home Department. At this time the number of species, including annuals, amounted to about fifteen hundred. It was necessary to obtain plants for the new houses and borders; much, existing in St. Petersburgh, was purchased, and in August, 1823, the gardener, F. Falderman, recommended as head gardener by the Horticultural Society of London, brought with him a large collection, partly purchased, partly obtained as gifts from Kew, Chiswick, Chelsea, Edinburgh, Glasgow and Liverpool. The same autumn, Her Majesty, the late Empress-mother, added a valuable collection from her gardens at Pawlowsk; and thus our houses were soon filled with no less a number than twenty-four thousand plants. It is delightful to record the eager liberality which supported our endeavours in this good cause.

During the subsequent winter, seeds, amounting, through the contributions of many kind correspondents, to fourteen thousand eight hundred and eighty-four sorts, were sown, and prospered beyond expectation. Plants were, however, still wanting to fill the most lofty houses. The money originally granted for the projected Moscow purchase, say 100,000 Roubles (about £4,000 sterling) was therefore devoted to the obtaining of what we had been disappointed in getting from the Gorenka Gardens. Dr. Fischer proceeded in May, 1824, on a journey to visit the most celebrated gardens of other towns, and saw those of Dorpat, Konigsberg, Berlin, Hamburg, Bonn, Dyck, Louvain, Brussels, and Enghien. What had been bought at Paris, or bestowed by the liberality of the administrators of the *Jardin des Plantes*, was sent by way of Havre to Cronstadt, under the care of a gardener brought out for that

purpose. In Great Britain every garden of note was visited, and Dr. Fischer universally received proofs of good will from the managers, to whom our new establishment became indebted for most valuable additions. The purchases in England amounted to about 40,000 Rs., or £1,600, and the presents received ought to be valued at even more than that sum. Mr. Goldie, well known from his travels in North America, was entrusted by Dr. Fischer with the care of these treasures on the voyage from London to St. Petersburgh. In the mean time, a choice selection had arrived from the Royal Gardens at Berlin. The total increase of plants thus obtained was fourteen thousand five hundred and ninety-eight, in eight hundred and eighty-eight genera, and three thousand two hundred and thirty species, of which about four hundred perished on the way. The total number of species in the garden was at this time about ten thousand.

This splendid collection, brought together at so much expenditure of labor and money, ran, almost immediately, the risk of being totally destroyed, in a few minutes time, by the fearful inundation which visited St. Petersburgh on the 19th November, 1824. The waters, cooled down to the freezing point, rose to the height of fifty-two inches in our houses, upset stands and pots, and flooded and damaged what did not perish with cold. The extreme height of the flood fortunately lasted but a few minutes; the waters subsided as rapidly as they had advanced, and, with some inconvenience, we were able to set foot the same evening into the houses. The flues had not been much injured, and, after many vain attempts, we succeeded in lighting the fires. It took fully six weeks to get the houses properly dried; and after a couple of months, when order had been restored, we counted the extent of our loss, and found it to amount to quite one-fifth of the collection.

Since 1824 we have increased our stock of plants by every possible means. Collectors have been dispersed, whose labours procured us many rare specimens. The expenses were defrayed by His Imperial Majesty. Turtschaninow visited Eastern Siberia; Szovits the North-west of Persia, Armenia, Carabog, and Circassia; Hohenacker Circassia, Carabog, and Talysh; Niever a part of Kamschatka; Wiedeman Natalia; Baron Wrangel caused the Russian colonies on the North-west coast of America to be examined; Tshernich was our collector in California; Riedel and Lushnath visited the province of Rio Janeiro, where they had a temporary garden to grow plants for the return of the Russian vessel from Kam-

Garden Street

Apothecary Street

Karpowka River

Neva River

Bridge

PLAN
of the
IMPERIAL BOTANIC GARDEN
at Petersburg

1 Sash : 7 feet English 100 feet English

schatka, to carry them home; and, lastly, Schrenk, who, after a voyage along the shores of the Arctic Sea, made four excursions during four summers, in company with Mr. Meinshausen, in Songery as far as the frontiers of China and Independent Tartary. For many living plants, the garden is indebted to Messrs. Gebler, Kyber, Steven, Weinmann, and others.

The garden continued till 1830 under the Minister for the Interior; but, as a proof of special favor, His Majesty caused it to be transferred in that year to the Ministry of the Palace, accompanied by a considerable increase of means for its annual support, obtained from the Emperor through the influence of the chief of that department, Prince Wolchonsky. Thus the garden has been gradually advanced towards an equality with similar establishments elsewhere.

EXPLANATION OF THE PLAN, TAB. I.,

which shows the garden to be an irregular quadrangle of somewhat beyond 20 Russian acres* (dessatines) containing 48,350 square fathoms, each fathom being 7 feet English measure. On the South and East it closely approaches branches of the river Neva; on the West is the Apothecary's Street; and on the North, with the northern front of the garden, the Garden Street.

a. is the chief entrance from the Newka, or Little Neva.

b. New houses, described below.

c. Old houses, used for the growth of the necessary ornamental plants; on its northern side a large hall has been added, containing part of the Herbarium and specimens appertaining to the Botanical Museum.

d. Wooden dwelling houses for the official gardeners and laborers.

*d.** A large wooden house on stone foundation, the residence of the Director. A large hall, occupying the centre of this structure, contains the Library and part of the Museum.

e. Ground for out-door perennials and biennials. This ground is enclosed with a quick hedge of Siberian White Thorn (*Cratægus sanguinea*, Pall.) well suited for northern latitudes, where the ordinary White Thorn will not live.

f. Vacant space intended for the Russian flora.

* About 54 English acres.

g. Enclosed ground for the growth of such vegetables as will succeed in the latitude of St. Petersburgh, 60° N.

h. Arboretum for trees and shrubs capable of enduring our winter.

*h.** A row of black Poplars *(Populus nigra)* reported to have been planted by Peter the Great in person, and of the same age as the garden itself.

i. Nursery of young trees.

m. Underground pipes, leading the water of the Neva into

n. A canal, supplying the necessary water, and dividing the garden into two nearly equal parts.

*n.** Small reservoirs of water.

o. Flower-borders.

p. Avenues of trees dating from the first establishment of the gardens.

The same Plan at *b.* exhibits the new houses, built in three parallel ranges, facing S. S. E., and connected at the ends, so that the whole may be passed in winter without exposure to the open air. The North range measures 686 feet English, the other two 672 feet each. These buildings are of brick, with iron roofs; and to the North side of each a wide gallery is attached, partly as protection against the cutting winds, partly to serve as storehouses, &c. In some of these passages, plants dormant during winter find shelter. The North range contains chiefly less tender plants; the middle tropical; and the southern consists of two warm and three cold houses. Plants of the same natural families have been placed together as far as practicable, especially in the greenhouses; but strict adherence to this system is impossible, because the size, difference of temperature, and other circumstances require frequent removals and cause disturbances of such arrangement. In many cases the plants have been put in the borders to promote their development and grow them as nearly as possible in their natural form.

The main entrance (A.) from the Garden Street leads into the house No. 1, the North front of which is a portico or peristyle ornamented with appropriate *bas reliefs.* This entrance is only opened on great occasions.—(B.) Ordinary entrance through the gardens; the front is not finished. It is a roomy hall, heated in winter, serving as place of meeting for gardeners and laborers to agree on their daily arrangements, for the watch and other conveniences. A book is kept here, in which visitors are requested to enter their names.

This vast collection of houses consists of

No. 1. A conservatory 32 ft. high. Plants chiefly in borders. Large species of *Heteromorpha arborescens*, *Fuchsia arborea* (*corticata ?*), *Ilex Perado*, etc., are conspicuous. This house, like several others, has a flat dark roof, it being apprehended at the time of its construction, that with a glass roof so large a house could not be kept sufficiently warm.

2. A house, 28 ft. high, intended for the lofty trees indigenous or acclimatized in the south of Europe, it accommodates, however, several species from other regions. Thus its centre is occupied by a large *Laurus Camphora*, probably the oldest tenant of the garden. In the east end of this house *Magnolias* are planted; in the west end a few *New Holland Trees*. A *Parrotia Persica* may be mentioned as one of the more remarkable plants of the house.

3. Large New Holland house, 30 ft. high. Besides the plants its name indicates, others have found shelter in it, more particularly some large specimens of *Araucaria Braziliensis*, and two very old plants of *Rhododendron arboreum*, dating from the introduction of the species into Europe. In the eastern borders Cape plants of large size, namely *Plectronia ventosa*, *Rhus glauca*, several *Royenæ*, *Cunonia Capensis*, etc., are growing. There are double lights, to avoid the necessity of other coverings.

4. The eastern end of the north range, 14 ft. high, contains *Proteaceæ*, *Casuarineæ*, and large *Ericaceæ*; amongst them are some very large specimens of *Banksia*, *Cunninghamia*, *Macrostachya grandis*, and others.

5. This house, coinciding in height with the preceding, contains young and low *Coniferæ*, Cape plants, except Proteaceæ, Liliaceæ, Geraniaceæ, and Succulentæ. The garden is somewhat poor in South African plants, and the *Coniferæ* leave much to desire, because with our climate many will not grow in the open air, and in pots and tubs they never succeed to perfection.

6. The centre of the middle range, entirely devoted to tropical vegetation, is formed by this house, 32 ft. high; everything it contains is placed in the borders. Unfortunately the vigorous growth of the plants outstrips the capacity of the house. *Caryota urens* and a *Maximiliana* touch the ceiling, a *Hernandia sonora*, *Coccoloba pubescens*, *Livistonia Borbonica* and others, soon will. To prevent the loss of these and many other valuable plants this house must be raised and a glass roof added. It was not expected that tropical plants would grow so luxuriantly, and the height of 32 ft. was thought more than sufficient. Experience has proved the contrary.

7. Contains *Palms* and *Monocotyledones* requiring much room. The house is 30 ft. high. The entire stock of large *Palms*, *Cycadeæ*, and *Pandaneæ* is about one hundred species.

8. Also 30 ft. high, with a double glass roof, as have also Nos. 9, 10, and 12, giving thus great warmth with abundance of light. Here are large *Bananas*, several *Palms*, *Carolinea*, *Pterospermum*, *Brownlovia*, etc.

9. Height 28 ft. The plants are in the borders. In the eastern part are *Succulentæ* and arborescent *Liliaceæ* from tropical Africa and America, planted amongst rocks ; in the other half are specimen plants of the *Monocotydelones* cultivated in the garden. Amongst these are a large *Elate sylvestris*, several specimens of *Sabal umbraculifera* and *Blackburniana*, old *Pandani* and *Cerei*, reaching to the roof of the house.

10. Twenty-nine feet high. Tropical plants corresponding with its height. Fine specimens of *Gustavia*, *Genipa*, *Meliaceæ*, and *Bignoniaceæ* are conspicuous.

11. Twenty-nine feet high. This house forms the east end of the middle range ; it has a hot-water apparatus, and contains in two borders chiefly *Monocotyledones*, such as large specimens of *Musa Cavendishii*.

12. Height 26 ft. Tropical plants as in No. 10, too high for the stoves of the south range.

13. The centre of the south range, 28 ft. high. Large *Chinese* and *Japan* plants, as *Camellia*, *Thea*, *Magnolia*, *Nandina*, etc., planted in borders. The glass roof is supported by pillars and slants towards the north, admitting light from both sides. The top is double glass. Here is a large *Magnolia fuscata*, 12 ft. high, and stem 7 inch. in circumference near the ground.

14. Greenhouse, 18 ft. high, containing plants from the south of Europe, the Canaries, and Madeira, with *Gerania* and *Pelargonia*.

15. Corresponding with the preceding, with hardy plants from Chili and isothermal countries of America, and such *Camelliæ* and *Rhododendra* as find no room elsewhere.

16 and 17. Both 14 ft. high. Intended for young tropical plants. No. 17 contains hardly any but Brazilian plants, amongst which many as yet unnamed. Of those named we may mention *Geonoma Schottiana* and *pauciflora*, *Bactris caryotifolia*, *Theobroma Cacao*, *Gonyshia oliviformis*, *Metternichia principis*, *Metrodorea*, *Raddisia*, etc. In all these houses are shelves near the windows for young plants requiring most light.

Four houses, all 14 ft. high, connect the north with the middle range on the east side ; they are divided by glass partitions into

compartments, of which the most northern contain southern *tropical Ferns*, the next *Succulentæ* (*Aloe*, *Agave*, *Fourcroya*, *Dasylyrion*, and *Bromeliaceæ*); the last, which is not divided from the Banksia-house (No. 4), contains similar plants from temperate climes, planted among rocks.

The eastern connection between the middle and south range, 12 ft. high, protects herbaceous perennials during winter; in spring it is used for sowing seeds in pots.

A similar connecting gallery between the middle and southern range on the west side serves for the protection during winter of *Liliaceæ* and *Oxalideæ* of temperate climes.

The western connection between the middle and north range, 14 ft. high, and heated by hot water, consists of three houses, for *Orchidaceæ*, *Aroideæ*, *Dorsteniæ*, *Begoniæ*, and *Scitamineæ*. Epiphytal *Orchidaceæ* and *Bromeliaceæ* are grown on oak blocks and in cork baskets.

The gardens being as yet without a proper Aquarium, aquatic plants cultivated here in boxes lined with lead and cement.

At (c) on our plan is a small conservatory for hardy plants of the same height with the western division of the middle range, furnished at both ends with glass doors leading to the enclosed spaces between the houses, and allowing of easy communication without exposing the plants, removed there in winter, to the cold.

All these houses are only suitable for plants of considerable height, and it was found necessary to add a line of very low ones for the culture of young and tender plants requiring much light and the proximity of glass. This range of low houses has been built in the southern court (E), and in connection with the eastern range. They are span-houses numbered, with the light north and south, and two of them are chiefly used for New Holland and South American tender plants; in another is a very considerable collection of *Cacteæ*; and the northern side of it serves, with the assistance of a steam-apparatus, as a propagating house.—Finally, there is at No. 18 a small separate house of high temperature, serving partly as a hospital for diseased plants, and partly as a reception-house for new arrivals.

D and E are the two courts surrounded by the above-mentioned buildings. In north court (D), hardy plants are placed during summer between live hedges, and a good many herbaceous Plants and *Cerealia* are grown here. The southern court (divided by the line of low houses) contains frames and warm boxes, mould-heaps, and other needful accessories; along the whole of the southern range the plants contained in the same, likely to bear the open air in summer, are put out during the warm season.

Means for acquiring a thorough knowledge of the plants introduced or cultivated have been abundantly provided. Besides the *Herbarium* and *Library* there are considerable collections of *woods* and *fruits*. Unfortunately, want of room has prevented the proper arrangement for practical study of many of these materials.

The *collections* of Langsdorff, during his travels at the cost of the Imperial Government and under the auspices of the minister for foreign affairs, in the Brazils, ceded by the kindness of Count Nesselrode to the Gardens, constituted the foundation of the Herbarium. It has since been greatly enlarged by the collectors already mentioned, and also by presents and purchases. Amongst purchases the Herbarium of Mertens of Bremen ranks foremost, rich both in genera and species, forming in fact the basis of our collection; and it is admitted to be classic and of high authority as regards the flora of Germany and the *Algæ*. Other collections from Schrader at Gottingen, Schumacher of Copenhagen (rich in plants of Vahl), Eschholz (who collected on the voyage of circumnavigation in the Rurick), Poiteau (Guyana), Stephan (Siberian plants), Wunderlich (Southern Volga), Riedel (the flora of most parts of Brazils, which he visited before joining Langsdorff), and others, have been obtained, as well as presents from Bode, Lady Crichton, Gebler, Hartweg, Sir William Hooker, Jenish, Kapherr, Koch, Kyber, Peters, Rieder, Siniavin and Steven, and further additions were made by parties who travelled on behalf of the Garden, already enumerated, to which however, Kolenati and Karwinski must be added.

Before 1833 the Garden had neither collections nor library. The latter was begun by the purchase, ordered to be made by His Majesty the Emperor, of the library of the late Councillor of State, Stephan, in 1824, and soon afterwards the botanical portion of the library of Count Alexis Rasumowsky, rich in presentation copies (*exemplaires de luxe*) was added. Since that time an annual grant of 6000 roubles, or about 260*l*. sterling has been devoted to purchases, besides which many splendid additions have been made by his Imperial Majesty. The library is confined to botanical and other works of natural science, academical transactions and periodicals, and voyages and travels connected with Botany. The number of volumes is now 6000. There is also a large number of coloured drawings of old and new plants that have flowered in the Garden, drawn by the ingenious artists Matthes, Stoll, and Satory. A portion of these drawings will now be published.

Since 1835, a catalogue of seeds, matured in the garden, with

notices appended of remarkable plants enumerated in it, has annually been printed and sent to all correspondents; and we may hope that with our abundant means, due diligence on our part and continued liberality on that of our friends, this Institution will not fail to be worthy of the Russian Empire, where science in all its branches is so much cherished and means for its promotion always readily granted.

* * * * *

The preceding account of the Botanic Gardens at Petersburg, and our enquiries into the origin and progress of our own, naturally suggest the wish of knowing something of other similar establishments, and we should be glad to receive communications of this kind from the gentlemen under whose care they may be at present. We can hardly expect that accounts consuming much time and labour should be furnished, and our purpose would in fact be best served by enabling us to publish, in a short form, brief sketches of the principal botanical gardens in and out of Europe; a kind of synopsis of the history of botanical Horticulture. The details we should like to have furnished might perhaps be—

1. Date of first establishment.
2. Extent of ground.
3. Number and kind of houses.
4. Annual expenditure, and source from whence derived.
5. Names of eminent men connected at any time with the establishment.
6. Remarkable plants first cultivated, introduced, named, or now particularly conspicuous.

and any other notice of striking importance.

Such information we hope will be readily furnished, and we would have pleasure in publishing it. It would mutually be a labour of love, and in the permanency which we flatter ourselves to give to it in our pages, it would have its own reward. We also hope, that other publications, both here and abroad, will give currency to our wish and promote its accomplishment. It is satisfactory to state, that gentlemen connected with embassies and consulates are everywhere willing to forward papers concerning such matters, free of expense, which, as in days of yore, so even now, fair Science can ill afford to defray.

NOTICE RESPECTING THE PRESENT STATE OF BOTANY AND BOTANIC GARDENS IN PORTUGAL.

(*In a Letter to Sir William Hooker, from* Dr. Scouler, *Professor of Natural History in the Royal Dublin Institution.*)

We consider that, even after the labours of Brotero, the complaint of Linnæus may still be repeated respecting the botanic riches of this kingdom, contrasted with our very imperfect information respecting it. The history of Botanic Science in Portugal is, unfortunately, a very brief one; especially as the country has produced only two botanists of European reputation. The earliest Portuguese work, in any way relating to the vegetable kingdom, is by Garsia de Horto, a Professor of Medicine in the University of Coimbra. He resigned his Chair in 1534, visited India and China, and published at Goa his work on the Species of the East, a work whose merit caused it to be translated into most of the European languages. Thomè Oynes, an apothecary at Leyria, also wrote on the same subject, about the beginning of the sixteenth century; and another and still more valuable work appeared about this time from the pens of Pero Magalhàes de Gondavo, the friend of the poet Camöens, on the history of the Provinces of Brazil, then called Santa Cruz. This rare but most judicious book, contains notices of many of the most valuable vegetable productions of Brazil, and discusses the capabilities of that fine region, and the vast resources it would yet open to Portugal, in a spirit of sound and enlightened judgment far in advance of his age or countrymen.

The earliest catalogue of Portuguese plants was by Gabriel Gaillez, who wrote about 1670, and dedicated it to the celebrated Duke of Schornhurg, who afterwards fell in Ireland. It resembles Threlkeld's on the plants of Ireland, compiled a few years later; only it is very inferior even to that very meagre book. Gaillez' work is merely a list of names, and often the same species is indicated several times. To use the expression of Linnæus "it would require another Œdipus to divine the plants indicated by Gaillez." A second edition of this work was edited by Vandelli in 1780.

We possess nothing else from the pen of a Portuguese Botanist until the energetic administration of Pombal, which seems to have

infused a portion of its life into every kind of pursuit. Both Brotero and Correa de Serra were educated during this period, and may truly be pronounced the first and as yet the only eminent botanists which Portugal has produced. Concerning Brotero we need not say anything at present; but we may remark that, at least in our opinion, Correa de Serra ranks higher as a philosopher. His residences at London, Paris, and Washington have rendered his name familiar to the naturalists of Europe and America. Besides his botanical papers, with which the scientific public is acquainted, he is known to his countrymen for other valuable labours. He was an active coadjutor to the Duke of La Foez, in founding the Academy of Sciences, and also published many works on the literature of Portugal, and illustrating its history. Although an *Abbé* and *Ecclesiastic*, yet such was the spirit of the times, that he was obliged to reside chiefly in foreign countries.

It were easy to add to the list of Portuguese botanists the names of Loureiro, Padre Leander, Vellozo, and even others less known, but such statements would be of small interest to the public. It is perhaps more necessary but less agreable to mention, that while the eminent men of the last generation have passed away they have left no successors, and probably, at the present day, Portugal is as destitute of original talent in natural history as she was before the reform of her literary institutions, about the middle of the last century. The devastations of the French, followed up by so many political changes and civil wars, may in part account for this; but we suspect the cause lies deeper, and depends on the slender emoluments and very small number of situations open to scientific men. Another circumstance is the want of a reading public, or of anything like a general taste for natural history; thus rendering the task of scientific authorship a ruinous undertaking: and as the educated classes understand French, the necessity for native books is not felt. Connected with and depending upon this, it is a curious fact that while many individuals may be found, who have a theoretical knowledge of natural history, derived from books, a practical acquaintance with it is very rare. Few are at the pains to herborize or to study the structure and productions of the earth, by excursions to the mountains.

With respect to the present state of Botany we may also mention the following circumstances. There are, or rather we may say *were*, two Botanic Gardens in Portugal; one at Ajuda near Lisbon, and the other at Coimbra. The situation of the garden of Coimbra is highly beautiful, and indeed it would be difficult to find any but delightful places on the Mondego. The ground

is laid out in the French taste, and the quantity of glass which they possess is very small. This garden was commenced by Brotero, while Professor at Coimbra, when it appears to have been in a flourishing state, and it continued a respectable establishment under Brotero's successor Dr. Neves; but since 1834 it has obviously been quite neglected. At present, even including weeds and the lichens and mosses growing on the trees and stones, we do not think it contains a thousand species.

The Royal Garden, Menagerie, and Museum of Ajuda, were placed under the superintendance of Brotero, when he was removed from Coimbra. There is now no menagerie, and the garden is also in a neglected condition, although not to the degree of that of Coimbra. Under the care of Brotero it was said to possess 4000 species; now they cannot exceed 1200. The glass is of no great extent; a matter of, however, less importance in Portugal than England. The Aquarium is very large and well adapted for aquatic productions. Many of the plants have their names attached, which was done by Dr. Welwitsch when he had charge of the garden.

On the other hand, indications are not wanting of some progress in the right direction, as exhibited in a taste for horticulture. Horticultural societies are about to be formed, both in Lisbon and Oporto, and there are some individuals who cultivate different tribes, such as *Cacteæ*, &c. Indeed there is not a country in Europe more admirably adapted for the lover of flowers; for here many of the choicest productions of Africa and Brazil may be raised in the open air. The *Date-palm*, *Dragon-tree*, *Bananas*, and *Cacti* stand the winters of Portugal, and thus may afford some idea of the multitude of useful and ornamental plants which might be introduced into this fine country.

But the re-establishment, which will afford most hope to the botanist, is the Garden at Lumiar, the property of the Marquis of Fayal (son of the Duke of Palmella), and situated about five miles from Lisbon. Lumiar has been recently purchased by the Marquis and is still under process of repair, but bids fair to possess the richest collection of plants, whether native or introduced to Portugal. Even at present a visit to the grounds is highly interesting, and especially as there are some fine old plants from tropical regions, which are completely naturalized. The mixture of *Clerodendron fragrans*, *Polygala myrtifolia*, *Bamboos*, *Bananas*, the *Goa Cypress*, *Dracænas* of gigantic size, *Araucaria Braziliensis* (twenty feet high), *Cereus Peruvianus* (twenty-five feet high, one and a half foot in circumference), with the trees and shrubs of the north and south of Europe, afford to him, who has visited

India and Brazil, a strange and grotesque association, filled with many recollections to the travelling botanist. The utility of such undertakings is much greater in Portugal than with us, for there public spirit and good example are more needed, and we trust the Marquis of Fayal will fill in his country the post of the Dukes of Bedford and Devonshire among ourselves.

This establishment is also fortunate in being under the care of Dr. Welwitsch, the only person we met with in Portugal who is equally familiar with the theory and the practice of Botany, and as well acquainted with *Algæ* and *Mosses* as he is with flowering plants. Dr. Welwitsch is also minutely versed in the Portuguese Flora, and an inspection of his herbarium shows how rich that is, and how many species remain to be added to the work of Brotero. Even in the class of Ferns we were indebted to Dr. Welwitsch for the *Cheilanthes pteroides* and *Pteres palustris*, which are not in Brotero's list*. It is to be desired that Dr. Welwitsch should furnish us with a new "*Flora Lusitanica*," for which he is so well qualified by his knowledge of the country, his literary acquirements, and knowledge of the science.

NOTICE OF THE LIFE AND WRITINGS OF DR. FELIX AVELLAR BROTERO, PROFESSOR OF BOTANY IN THE UNIVERSITY OF COIMBRA, AND AUTHOR OF THE 'FLORA LUSITANICA.'

(*Communicated by* Dr. Scouler, *Professor of Natural History in the Royal Dublin Institution.*)

The Faculty of Philosophy of the University of Coimbra, although it has not existed for more than sixty-three years, has been inferior to no literary institution, with respect to the eminence of its Professors and the reputation of its students.

There is much to admire in the zeal with which the different branches of philosophy have been cultivated among us since the reform of 1772 was carried out by Drs. Vandelli and Dalla Bella. Emulation arose on the part both of teachers and pupils, which was attended by a corresponding progress of knowledge. The Government rewarded those who distinguished themselves and

* In the north of Portugal we found, in one day, the following plants unnoticed by Brotero; *Saxifraga umbrosa* and *leucanthemifolia* (La Perouse), *Potentilla nivea*, and the *Davallia Canariensis*, supposed to be peculiar to Cintra, grows abundantly at Oporto and even further north, at Braga.

afforded them liberal allowances that they might visit the most enlightened nations of Europe*.

The character of the Faculty of Philosophy was well sustained in the literary world, it maintained an active intercourse with the most eminent foreign academies, so that the Portuguese name, formerly so distinguished for bold nautical enterprises and profound geographical science, (at a time when all Europe, except Italy, was plunged into barbarism), again arose to notice, after so many years of disgraceful indolence.

Among the eminent Professors may be named Dr. João Antonio Monteiro, whose profound knowledge of Mineralogy obtained for him the praise of Haüy, and Dr. Sobral, a zealous chemist; but he incurred the dislike of the French, who set his house on fire and thus destroyed his unpublished manuscripts. Dr. Barjona was another able chemist; he maintained, in his 'Thesis,' the compound nature of water, several years before its analysis by Lavoisier. This philosopher was also Professor of Mineralogy and Zoology, and by his labours the objects in the Museum of the University were classified and named, and a complete catalogue of the whole collection was drawn up.

Among the Botanists we may mention Dr. Antonio Jose das Neves, author of a small work entitled "Circa *Stipæ, avenaceæ, aristam*, atque *Cinchonam braziliensem et alias Observationes.*" He was expelled from the Chair of Botany and the care of the Botanic Garden in 1834, and died in the following year. He was highly esteemed by Brotero, and since his expulsion the Botanic Garden has fallen into complete neglect†.

* This notice of Brotero is translated and abridged from an account of his life by Senhor Gusmao, and published in his '*Revista Litterarea*' of Oporto (No. 83, 1843). The reform alluded to was introduced by the celebrated Marquis of Pombal, and carried into operation under his auspices by the Italian Naturalists Vandelli and Dalla Bella. The Faculty of Philosophy includes what we understand in England by the term Natural History, when taken in its most extensive signification. That the reform was absolutely necessary is proved by the fact that, down to the reform of Pombal, physical science was nearly unknown in the University of Coimbra, and the Professors lectured on substantial forms and absolute accidents.

† In 1836 the University of Coimbra, in a Report presented to the Legislative Chambers, informs us that "the Botanic Garden, which had been once flourishing, has suffered great decay, which impeded the teaching of Botany, and that it was almost ruined during the usurpation (of Don Miguel)." The truth is that Dr. Neves and his able gardener, before their expulsion, delivered over to Dr. Bandeira and Marques, all the objects in the garden, and the inventory shows that a great many plants had been added. After the dismissal of Leite, the intelligent gardener, an inefficient person was substituted, who brought everything into confusion. When the establishment was committed to Dr. Jose de Sa, he wished to discharge the incapable man and recall his predecessor, but this could not

Felix Avellar Brotero was born in Lisbon in 1745. We are ignorant of the history of his early youth, but have reason to believe that he received an excellent education. The accuracy and elegance with which he wrote his Latin works, the correct diction of his Portuguese, added to the copious historical notices with which he enriched them, prove that he possessed high intellectual powers, improved by well directed literary training.

Desirous of further instruction he visited France in the year 1778. When he settled in Paris he was thirty-three years of age, and well qualified, in his literary attainments, to profit by the advantages afforded in that celebrated school*.

The study of the natural sciences, especially of Botany, occupied all his attention, and he soon gave evidence of the progress which he had made in this department, by publishing at Paris, in 1788, his "*Compendio de Botanica, ou Nocões Elementares desta Sciencia segundo os melhores Escriptores Modernos, expostos na lengua Portugueza.*" This well written work was the first, and is still the only elementary botanical one, in the Portuguese language. The preliminary discourse, on the origin, progress, and present state of Botany, called forth the approbation of Link, a distinguished German writer, always severe in his remarks on Portuguese affairs.

Besides the above-mentioned work, Brotero, while residing in Paris, entered upon several other literary undertakings, and among them a valuable English and Portuguese Dictionary. He was also the writer of the learned corrections and all the nomenclature of the *Thesauro de Meninos*, written in French for Blanchard and translated into Portuguese and published in Lisbon in 1817†.

be accomplished. Such is Senhor Guzmao's account of the matter, and either the Professor or the University is much to blame, for when we visited the Garden in March last, it was in a miserable condition and barely deserved the name of a Botanic Garden.

* This is a most unfair statement on the part of the biographer. From this and the preceding paragraph one would be apt to conclude that Brotero travelled from choice, or perhaps even at the expense of the Government, while the reverse is the fact. After the fall of Pombal, a party, hostile to all improvement, came into power, that viewed men of science with jealousy and dislike, and let loose the Inquisition upon them. The celebrated mathematician and poet, J. M. de Nascimiento, fortunately escaping from the individual who was sent to apprehend him, fled to France, where the two botanists, Brotero and Correa de Serra, were also obliged to take refuge.

† We have again to complain of the unaccountable mystery in which Senhor Gusmao envelopes the most interesting incidents in the life of Brotero. The very circumstance of such a man, residing in France, during so important a period of human life as that comprehended between thirty-three and forty-five years of age, and spending his time in compiling dictionaries and such works as the 'Child's Treasury (Thesauro de Meninos), plainly shows that he supported himself by his literary labours during an exile of twelve years.

During his residence abroad he improved his time by travelling, and explored the greater part of France and Belgium, and on other occasions he visited the north of Italy and undertook a journey to England. The period of his residence in Paris was not exclusively devoted to Botany, though this was his favourite pursuit; but he availed himself of the opportunity to profit by the instructions of such able teachers as Vicq-d'Azyr and D'Aubenton. After finishing his studies at Paris he took his degree of doctor of medicine at Rheims.

In the year 1790 Brotero returned to Portugal, whither his reputation as a botanist had preceded him, and attracted the notice of the queen, Donna Maria the First, so that, after a short time, he was appointed Professor of Botany and Agriculture to the University of Coimbra, and Superintendant of the Botanic Garden. On the 25th of February 1791, the Faculty of Philosophy was incorporated, in the same manner as that of Mathematics had been in the preceeding reign, and Brotero was, of course, admitted a member of this body. He filled the situation of Professor of Botany for twenty years, and in the discharge of his duties was careful, not only to instruct his pupils in theoretical knowledge, but by frequent excursions in the beautiful district around Coimbra to infuse into them a taste for practical Botany.

The brief vacation which the statutes of the University allow to the Professors* was employed by Brotero in botanical excursions to different parts of the kingdom. At that time all Europe, with the exception of Portugal, had been explored by botanists, and with the same exception every country had its Flora, and the deficiency here was the more to be regretted, as the reputation of our botanical treasures had long excited the curiosity of Naturalists, and drew forth from Linnæus such epithets as the "*terra felicissima*," and "*India Europæa*." Portugal, in the meanwhile, possessed nothing better than the *Viridarium Lusitanicum* of G. Grisley, which the great Swedish naturalist characterised most justly as a *miserrimum opus*. It is true Tournefort had visited Portugal, and in his *Institutiones Rei Herbariæ* had given notices of some of its plants, but without figures or descriptions. In 1788, Domingos Vandelli published a *Floræ Lusitanicæ et Brasiliæ Specimen*, leaving all that regards Brazil to be executed by the eminent botanist Vellozo. This, however, was a feeble attempt, and far below the importance of the subject, and it was reserved for Brotero to accomplish the wish of Linnæus and to fill this void in the science, by publishing (in 1804) his '*Flora Lusitanica*.'

* The Professors are occupied in teaching during nine months of the year.

The impatience with which Linnæus looked for such a work may be best expressed in his own words when writing to Vandelli:— "Anne ullus sit in toto Regno pulcherrimo, qui possit orbe lite- "rato dare genuinam Floram Regionis? Bone Deus! quam pul- "chrum et desideratum opus præstaret illo, qui ejusmodi Floram "sisteret?"*

The author of the Flora was not one of those men, who, after giving proof of talents, are content to remain satisfied with the reputation thus acquired. Twelve years after the publication of his Flora, Brotero showed farther evidence of his activity, by presenting his '*Phytographia Lusitanica*' to the lovers of Botany. This is a splendid work, not only from the labour bestowed on it by the author, but from the high finish of the plates and beauty of the typography, which render it deserving in every respect of the illustrious person to whom it is dedicated (Dom. Joao VI.). The dedication and preface merit to be read for their purity and elegance, and are worthy of the age of Augustus. The composition of the *Phytographia* occupied much time, from the numerous researches requisite to ensure accuracy and value. It consists of two volumes folio, of engravings and descriptions of many of the rarer and more interesting plants of Portugal†.

The learned author of the 'Phytographia' also promised the public a '*Specimina Vegetabilium*,' which was never published. It appears, however, that he translated several scientific works into Portuguese, and also wrote many botanical memoirs, some of which were transmitted to the Linnæan Society. In 1817 he published a small volume on the *Natural History of the Pines*, entitled '*Historia Natural dos Pinheiros e Abetos*,' 1 vol. 8vo; also the zoological nomenclature of the '*Tableau Elementaire*' of Cuvier, which had been translated by the Surgeon Antonio d'Almeida. We possess no information respecting his other writings.

* Grisley, alluded to in this paragraph, wrote about the year 1680. His book is a mere list of names, and the same plant is sometimes mentioned under two names. It indicates, however, some new and interesting plants, such as *Ophioglossum Lusitanicum* and *Drosophyllum Lusitanicum*. A second edition, with the Linnæan names, was published in 1780 by Vandelli; "Miserrimum opus, cujus plantas Œdipus sit qui intelligat." Linn.

Vellozo was a Franciscan Friar, and a native of Brazil; he died at Rio de Janeiro in 1812, in the 69th year of his age. The composition of his '*Flora Fluminensis* occupied him for twenty-five years, and it was published at the expense of the Brazilian Government in 1827, the editor being Senhor Antonio d'Arrabida, Bishop of Anemuria. The work consists of eleven volumes in folio of engravings and a few pages of text.

† The '*Phytographia*' is no doubt an excellent work, but the colder temperament of the north will not express itself so strongly in its praise as the ardent and patriotic Portuguese biographer.

The esteem in which Brotero was held by foreigners is honourable to his country; his works were sought after and even solicited through the intervention of Portuguese ambassadors, and they procured for him an extensive correspondence. In short, the literary history of Portugal presents few characters of greater distinction, and there was hardly any scientific society of which he was not a member.

After fulfilling for twenty years the duties of Professor at Coimbra, he was removed to Lisbon, to superintend the Royal Garden and Museum of Ajuda. He died there on the 5th of August 1828, after acquiring the character of the Portuguese Linnæus, and rendering his country many services, for which his only recompense was the paltry decoration of the Order of S. Bento d'Avis.*

ON THE MAKING OF CHINESE PAPER.

(*Translated from the 23rd Vol. of the* "Pun Tsavu Kang Muh.")

In antient times, bamboos were connected together, and letters burnt into them, to form books; and hence the several characters employed to denote papers and documents are formed partly with the letters for "bamboo." In the time of the Tsin and the Han dynasties letters were written upon silk cloth; and hence the names for silk and cloth are component parts of the character used for paper. In the time of the Emperor Ho Te (A.D. 100), Tsac Lun began to take the bark of trees, old silk of different kinds, fishing-nets, and hemp, and boil them to rags and make paper of them, which was employed throughout the whole of the empire.

Another authority says, the people of Shuh, on the western side of China, use hemp or linen to make paper; the people on the east, in Fokeen, use tender bamboos; the people of the north, the bark of the mulberry; others use the rattan; some, mosses or lichens; some the straw of wheat or other grains; some the

* The biographer, although abundantly verbose, appears extremely embarrassed and difficult to comprehend; of this we have already had examples. While in Portugal, we were informed by an intelligent gentleman, that, after the first revolution, Brotero was a member of the Cortez. If this was the case, it may explain the neglect complained of in the last paragraph. The Garden of Ajuda, near Lisbon, is in a wretched condition, although not nearly so bad as that of Coimbra, which we believe is owing to the fact that only a brief period has elapsed since Dr. Welwitsch resigned the superintendence of it.

Coccoon of the silk worm; and others the bark of the choo-tree (syn. of kuh) the *Broussonetia*.

SHA CHE, OR CRAPE PAPER.

This paper is brought from among the mountains of Nanking, in the province of Tkwang Se. In spring, during the first and second moons, they take the bark of a tree called kuh muh (*Broussonetia papyrifera*) and having pounded it, throw it into a stone reservoir of pure water, where they leave it to steep till it is fit for use. They then take it out with the sediment, and pouring it into cow-skin glue boiled with water, they stir all together and taking up this mixture with a mould of bamboo screen of the size required, they put it out in the sun to dry, and it becomes crape paper.

The Chinese paper, called touch-paper (or paper fuel), is made at the village called Peih Keang, a few miles from Canton, of the variety of bamboo called lang.

At the beginning of summer, during the 4th and 5th moons, the young sprouts of the bamboo are cut off just as the leaves are beginning to grow, and having been beaten flat, are thrown into a lime pit to steep for about a month. They are then taken out, washed clean, and dried in the sun, after which they are pounded small, passed through a sieve, and laid up. The kernel of the longan fruit (*Dimocarpus Longan*) is also used, being pounded small, dried in the sun, and passed like flour through a sieve. When making the paper, this powder is put into clean water, stirred about, then taken up with a mould made of bamboo screen, and the water left to run off. It is afterwards applied to a heated wall to dry, and the paper is then complete. For coarser or finer paper a coarser or finer mould is used.

The person, who made the drawings, says, the bamboo is cut into lengths of about three feet, tied up in bundles of seventeen each, and laid into running water, where it remains six months. It is then put (in the same bundles) into pits made in the ground, mixed with quicklime made from the shells of the *Venus Sinensis*, pressed down with weights and left for six months longer. The bundles will have been thus soaked for twelve months; they are then taken out, cut into short lengths, put into one of the usual Chinese pounding mills, and beaten down into a pulp, being stirred occasionally, so as to present a new surface; about four hours labour will break it down. The pits contain 2000 bundles of seventeen pieces each, weighing about 24 catty or 32 pounds.

KANG YUCCA PAPER.

During the fourth moon, at the close of spring and commence-

ment of summer, the bamboo shoots are cut off when about six or seven inches thick, and thrown into a lime pit to steep for about a month. They are then taken out, washed clean, and bleached every day till they are of the purest white; after which they are dried in the sun, pounded small and passed through a very fine sieve, and the finest and whitest part of the powder selected for use. To this is added the best white cotton of Loo Chow ten times bowed (or bolted), the very light cotton which is uppermost being used.

Rice water made from the whitest rice being mixed with these two ingredients, the whole is taken up with a mould made of bamboo screen of the size required and then applied to the heated wall to dry. This forms the whitest and finest *Kang Yucca* paper.

THE IVORY-PALM NUT (PHYTELEPHAS MACROCARPA.)

A very beautiful vegetable substance, closely resembling ivory, has for some years been employed in England by turners and workers in wood and ivory, for the manufacture of heads of canes, umbrellas, thimbles, &c., and toys of various kinds; and rounded nuts about the size of a large medlar, with one end turned off to show the albumen (that portion which so much resembles ivory), are sold in shops and bazaars as the fruit which affords this very singular material. Ruiz and Pavon, and Humboldt discovered the plant which produces these nuts in several parts of Peru, and have described its botanical characters, the two former correctly, as a Palm (*Phytelephas macrocarpa*), the latter as of the family of the Screw-Pines (*Pandaneæ*). From the banks of the Magdalena in Columbia, the seeds or nuts have for some time constituted an important article of commerce into Europe, to be used as ivory. The turner again, employs the chips and shavings for a very useful purpose, for they are sold for making blanc-mange. The rarity of this Palm, and a desire to possess it in the stoves of the Royal Botanic Gardens of Kew, induced the Director to send a Botanical Collector, Mr. Purdie, to the Magdalena, for the purpose of introducing the plant alive to Europe. Mr. Purdie has been successful. The pages of the Supplement to the Botanical Magazine will shortly contain several particulars of Mr. Purdie's mission to New Grenada. At present we must content ourselves with giving extracts from his last letter, giving the account of his visit to the locality of this Palm, or "*Tagua*," as it is called by the natives, and we are happy to add that germinating seeds and living plants safely reached the Royal Gardens in October, 1845.—ED.

Ocaña, July 1845.

Since writing to you last, from Santa Martha, I have travelled hither, over a scorched, and, but for the palms which it presents, most uninteresting plain, between five and six hundred miles in length. Such a trying journey I never had. Two or three slight attacks of fever excepted, I have however been pretty well. At the village of Semaña, seventeen leagues from hence and near the great River Magdalena, I entered the mountains by the Paroquia del Carmen, and there saw the "*Tagua*," for the first time. Rising gradually between two ranges of mountains, of no great elevation, I reached Ocaña, situated in an undulated amphitheatre of grassy hills, those in the distance are seen to be covered with primitive forests. Some of these hills are 1500 feet higher than the city, which is itself built at an elevation of 2500 feet, and contains about 6000 inhabitants. The temperature is most delightful, and I noticed here, for the first time in this part of the world, small gardens attached to the irregularly placed dwellings. Apples are cultivated with tolerable success, and on the surrounding hills a sufficiency of wheat is grown to supply the town with bread, of somewhat inferior quality. The weather was bad when I first arrived, and prevented my herborizing for a while. I have found it necessary to purchase mules for my journey to Bogota. The hire of each such animal is forty-five dollars, to go direct, and the purchase money is fifty dollars for a cargo mule, and from a 100 to 150 for a saddle-mule, but as I was already provided with the latter, I saved that expense; and though the people are very difficult to deal with, I accomplished the purchase of the necessary number, at about 200 dollars.

I spent about fifteen days on the mountains round Ocaña, and from the peculiarly marshy nature of the soil I found a species of *Befaria*, growing over at this elevation; I have sent plants of it in the glass case. Two gigantic forest-trees belonging to the genus *Cinchona* (*Quina rosa* and *Quina clava*) abound in the virgin woods, and are showy and highly fragrant; but two kinds of *Siphocampylos* are the most striking things I have found, one particularly fine. You will find growing specimens of them in the box; also small individuals of a remarkable *Balanophora**, often

* This is, indeed, a very remarkable Balanophorous plant, and different as the appearance of these fine and perfect specimens are from the *Ombrophytum Peruvianum*, Poepp. in Nov. Gen. et Sp. Plant. Peruv., &c., vol. ii. t. 155, I have yet satisfied myself that the two plants are the same or very closely allied species; differing, if the description alone be attentively considered (irrespective of the figure), only in our plant being diœcious; while Poeppig's is monœcious.

attaining a foot in height and five or six inches in diameter, and called *Cardon de la Cordillera*. Its colour is of an Indian red, with the rigid bracteas completely covering and concealing the flowers, even in their most perfect state; it is common on the summit of the range in moist places. I also detected another singular plant, allied to *Balanophora*, but a perfectly distinct genus, of which I have only three specimens not yet dry.

A showy species of *Salvia* was found and a beautiful *Begonia*, so much like a *Fuchsia*, both in habit and inflorescence, that I at first took it for one, some of the best kinds of which it rivals in splendour, and has the great advantage of being reported to bear flower all the year round; plants, and a few seeds of it are sent, with two species of *Achimenes*, new to me; one of them was in flower, of dwarf habit with showy white flowers; you will receive roots of both. Of *Orchideæ* I have but few, as may be expected in so open a country as I have passed through. Nos. 1 and 2 are fine and highly fragrant.

Having received intelligence of the things I had sent up the river (to save land-carriage), to the Puerto Maconal de Ocaña, three days journey from this and on the banks of the Magdalena, I proceeded, carrying what plants I had collected, in order to secure growing specimens, seeds &c., of the celebrated *Phytelephas*, which I ascertained to abound on the other side of the range facing the Magdalena. On my road to that place, one day's journey from hence, I reached La Lagunata, a small settlement, where in the evening I beheld some plants of the *Tagua*. On enquiring of my host I found that I was in a good locality for procuring this remarkable plant and accodingly remained some days.

The *Phytelephas* is a dicecious Palm, not robust, never forming a Caudex†, and has generally from fifteen to twenty pinnated

The genus is probably not really distinct from *Lophophytum*, Schott and Endlicher, Meletr. t. 1. Of the Peruvian species the author remarks, that it is called "Mays del Monte" by the Indians, and that it is cooked and eaten as Fungi are; that, after showers, it springs up at the roots of trees with wonderful rapidity; but that it soon, by continued rains, becomes corrupted or is destroyed by innumerable minute insects. A second and smaller species is also noticed, but not described, by Poeppig.

† This account is a little at variance with that of Ruiz and Pavon, who describe the *Phytelephas macrocarpa* as having a short caudex, which they make the only distinguishing specific distinction between it and their *Phyt. microcarpa*. But the size of fruits in our plant forbid the idea of its being the *P. microcarpa*. In the 'Voyage de la Bonite, Botanique' I am informed that some recent livraisons contain figures of several supposed species of *Phytelephas*, chiefly determined by the fruits or nuts; and it is possible that this may form one of the new species; but I have not that portion of Freycinet's work at hand to compare them.

leaves, from fifteen to twenty feet long, of a light green colour, particularly graceful in their aspect. In old leaves the midrib is flattened; in young, but fruit-bearing ones, it is round. The aspect of both sexes is the same, except that the male plants produce a distinct spatha, the female none; or, if it does, it is only perfect in an early stage, afterwards torn into shreds. The male flowers and the spatha are produced from the axils of the inner leaves, and are recurved outwards. The extraordinary heads of fruits are seen around the base of the plant (one plant frequently bearing six at a time); the heads resting on the ground, or lodged between the leaves, on a footstalk so short as to be buried among the bases of the leaves, and of which the fibre is extremely tough. Each is composed of three to five, but generally four, large nuts, wedged in and firmly knit together, of a roundish, but more or less angled, form, depressed at the top, and there covered with conical or pyramidal woody-fibrous protuberances, from half an inch to an inch or more long; the whole forming a compact mass or dark-coloured head, whence the name given to it by the colonists "*Cabesa del Negro*," the form not only representing the head of the negro, but the fibrous protuberances the coarser hair. The styles, of the female flower, I find to be concentrated to a point, terminated by a long stigma, four to five inches long, and again divided in as many points (of about half an inch in length) as there are seeds or cavities in the cluster. At a very early stage these cavities contain a watery fluid of a sweetish taste, which gradually diminishes in quantity as the fruit advances to maturity. The leaves are employed to thatch houses, and the whole of the village of the Paroquia del Carmina and the houses, generally, in this district, are covered with it. This, however, arises from the great number of this kind of Palm in the neighbourhood; for there are many other species of Palm whose leaves are far superior for this purpose. Enclosing the fresh mature seeds is a yellow, sweet, and oily pulp, which is collected in the proper season (October) and is called "Pepa del Tagua," which I am informed is sold by the Indians in Ocaña at one rial per pound. A spoonful of this, with a little sugar and water, makes the celebrated "Chiche de Tagua," said to be the most delicious drink in the country, but it is slightly drastic in its effect. The fluid, although containing much oil, does not become rancid, but keeps for months, in a crude state, without losing flavour or quality. The Palm itself grows in the greatest abundance in dense shaded woods, at an elevation of from one to three thousand feet, along the mountains facing the Magdalena. I do not think it is to be found in the hot plains. In the season of its ripe fruit it is said

to scent the whole country with a delicious odour. All kinds of wild animals, such as wild hogs and turkeys are very fond of its fruit. Fresh and good seeds of it are very easily detected by the bright yellow colour and by the fresh tooth-marks of the animals of the woods, which feed upon the sweet yellow pulp above mentioned. Snakes of a very venomous kind are abundant among these stemless palms, so much so, indeed, that the men I had with me found it necessary to dislodge them with a long stick before they dared approach them. We killed several, which were not particularly formidable in their appearance, but deadly in their nature. A cross, decorated with flowers, and a few loose stones, near one of the Taguelis (Tagua woods) mark the grave of a person who died in a few hours from the bite of one of them, and, as may be supposed, the inhabitants of the district live in great dread of them.

I leave this in four days for La Cruiz Bucaramanna. From that place it is my intention to go to Pamplona, the highest town of New Grenada, where snow frequently falls. I then return to Bucaramanga, that being the direct road to Bogota; and as the whole of the journey is "Tierra fria" I expect it will afford me many good plants.

I shall be glad to know how the consignment arrives. The glass case is filled with Tagua plants and the bottom covered with seeds. There is also a separate box of fresh seeds. Should they not arrive safely, I can procure another collection on my return down the river. I am therefore anxious to learn how they succeed as soon as possible. The roots of the two species of *Achimenes* I trust will reach you in a living state, if not, it is worth going out of my way to collect more. Should I receive no instructions from you on my arrival at Bogota, I shall make the best use of my time in some direction till I do hear. I am still of opinion that the Province of Antioquia would produce some good collections. You may expect the boxes of plants and glazed case by the packet which takes this letter."

(Signed) "WILLIAM PURDIE."