

PAXTON'S

FLOWER GARDEN.



BY

PROFESSOR LINDLEY AND SIR JOSEPH PAXTON.

IN THREE VOLUMES.

VOL. I.

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in Ann. Gand., t. 271). An orchid from N. Grenada, with large handsome variegated flowers, and a white lip sometimes tinged with green. An old inhabitant of English gardens.

It does not appear that this was published before Professor Morren gave it the name here quoted; but it has long been known in the gardens of this country under the name of *Oncidium hastatum*. It is a true *Oncidium*, its column being short and protuberant at the base, and forming an obtuse angle with the lip. In point of value it is about equal to the *Oncidium (Cyrtorchilum) maculatum*.

3. ECHINOCACTUS RODOPHTALMUS. *Hooker*. A Mexican Hedgehog Cactus, with an oblong stem, and handsome red flowers appearing in August.

Received from Mr. Staines, who procured it from the neighbourhood of San Luis de Potosi, in Mexico. In its flourishing state it is extremely handsome, the deep red of the base of the petals forming a ring, as it were, round the densely-clustered stamens and bright yellow rays of the stigma, adding much to the beauty of the blossom. Mr. Smith gives the following account of the manner in which such plants are managed by him at Kew:—"At Tab. 4117, we have said that *Cactææ* are almost indifferent as to the kind of soil they are grown in, provided it is not retentive of moisture. The present very pretty species will thrive in a mixture of light loam and leaf-mould, containing a small quantity of lime-rubbish nodules, the latter being for the purpose of keeping the mould from becoming close and compact, a condition not suitable to the soft and tender roots of the plant. If cultivated in a pot, it must be well drained; the pot being nearly half filled with broken potsherds, and the upper layer so placed as to cover the interstices, in order to prevent the mould from mixing with the drainage. During winter, Mexican *Cactææ* do not require much artificial heat several species are, indeed, known to bear with impunity a few degrees of frost. Where they can be cultivated by themselves, we recommend that the plants and atmosphere of the house should be kept in a dry state during winter, artificial heat being given only during a long continuance of damp cold weather or in severe frost; but at no time during winter needs the temperature of the house to exceed 50° at night. In sunny days in spring the house should be kept close, in order that the plants may receive the full benefit of the heat of the sun's rays. As the summer-heat increases air should be admitted, and occasionally the plants should be freely watered, and in hot weather daily syringed ever-head."—*Botanical Magazine*, t. 4486.

4. VALORADIA PLUMBAGINOIDES. *Boissier*.—*Botanical Magazine*, t. 4487.

This is an alias of the now common *Plumbago Larpente*, which is thought by Boissier not to belong to *Plumbago*. We see very little, however, to characterise a genus in the differences pointed out, and agree with Sir W. Hooker, in thinking that if a new genus is really necessary, the plant ought to bear the older name of *Ceratostigma*.

5. METROSIDEROS TOMENTOSA. *Achille Richard*. A New Zealand Greenhouse shrub of much beauty, flowering in the summer months. Blossoms rich crimson. One of the order of Myrtle Blooms (*Myrtaceæ*).

"It inhabits," says Mr. Allan Cunningham (by whom it was introduced to the Royal Gardens of Kew), "usually the rocky sea-coast and shores of the Bay of Islands, where it is called by the natives *Pohutu-Kawa*, and is readily distinguished among other plants by the brilliancy and abundance of its flowers, enlivening the shores of the northern island with its blossoms in December. With us in the greenhouse it has attained the height of six feet, and attracted attention by its copious, compact, but spreading ramification, and the abundance and beauty of its evergreen foliage. Its blossoming this year (for the first time) was probably encouraged by planting it out, by way of experiment, in the spring, in a sheltered part of the woods of the Pleasure-ground, in a soil of rich vegetable leaf-mould. During the summer, almost every branchlet was terminated by the vivid scarlet blossoms, and it became a conspicuous object at a distance. In its native country it is described as making its first appearance on other trees, as an epiphyte. By its strong and rapid growth it soon envelopes the parent tree, its woody roots descending till they reach the ground, and there spreading to a great extent, while the main roots, by their numbers and interlacings, ultimately become so combined that they form a trunk of a singular appearance and sometimes of an immense size. The original tree dies, and its decaying trunk becomes food for the parasite; the latter in this respect resembling the fig-trees of the tropics or the ivy of this country. It is also said to form a tree without the aid of others. With us it grows luxuriantly if planted in light loam and kept in a cool greenhouse, and forms a handsome evergreen bush. The figure here represented was made from an individual that had become too large for our greenhouse accommodation. As it afforded the opportunity of testing the degree of cold it would bear, a sheltered situation amongst trees was selected, where it was planted in May 1849. During the summer it flowered profusely, presenting a very striking appearance for an out-door shrub, and continued to flourish till the first frosts; but we observe with regret, that this fine shrub will not live in the open air where the thermometer falls a few degrees below the freezing point."—*Botanical Magazine*, t. 4488.

6. OPHELIA CORYMBOSA. *Grisebach*. A half-hardy annual from the Neulgherries, belonging to the order of Gentianworts.

Of little moment. Stem a foot high, branched. Flowers pale purple, with a white eye, in corymbs. Requires peat.—*Botanical Magazine*, t. 4489.

forming bushes ten or twelve feet high. It is very handsome where there is room for it, its long narrow sabre-shaped phyllodes (leaves) having a bright colour and firm texture, and bending downward gracefully from singularly flexuose branches. The inflorescence is similarly zig-zag, much shorter than the leaves, and often forms an entangled mass of branches each of which is terminated by a yellow head about as large as the seed of the Sweet Pea.

85. *CEPHALOTAXUS FORTUNI*. *Hooker*. A fine, and probably hardy coniferous shrub, with long, narrow, deep-green distichous leaves; from the north of China. Introduced by Messrs. Standish of Bagshot. (Fig. 34.)

In the absence of a well-grown plant, little or nothing can be said of this tree, save that it is stated by Mr. Fortune to grow to a height of from 40 to 60 feet. Its branches are probably spreading or drooping, obscurely streaked or furrowed, distichous, pale brown, slender. Leaves quite distichous, alternate or opposite, close together, 3 to 4 inches long, linear, tapering a little at the base, much and gradually acuminate, one-nerved, dark full green above, paler beneath. A plant in the Bagshot Nursery stood in the open air during the last winter, without being in the least injured. As it increases from cuttings as readily as the common yew, and grows freely, we may expect to see this rare tree soon become common.—*Botanical Magazine*, t. 4499.

86. *GALANTHUS PLICATUS*. *Bieberstein*. A charming hardy bulb, from the Caucasus. Flowered in the Garden of the Horticultural Society in March 1850.

This beautiful Snowdrop, although long cultivated in gardens, is hardly known to the public. There appears to be no doubt as to its specific difference from the common species, its leaves being very much broader, and, as it were, plaited, not flat, its flowers being larger, and the green on the petals far more conspicuous. In a horticultural point of view it is a much finer thing than the old Snowdrop, just as hardy, and as easily managed.—*Journ. Hort. Soc.*, Vol. v. p. 138. *With a figure.*

87. *CEREUS TWEEDIÆ*. *Hooker*. An erect, round-stemmed, furrowed Cactus, covered with stiff spines, from among which arise handsome curved narrow orange tubular flowers, each almost 3 inches long. From Buenos Ayres by Messrs. Lee and Co. Flowered at Kew, in September, 1849.

About 1 foot to 1½ foot high, and 1 inch in diameter, of a very glaucous green hue, simple, but increasing readily by offsets at the base. The shape is cylindrical, very slightly tapering upwards, marked with many, about sixteen, moderately deep furrows perfectly straight, the ridges obtuse and even (not tubercled). Spine-tufts on the ridges close together, oval, with brown wool spines many in each tuft, four or five stouter than the rest, white, blotched with brown; of the stout ones three or four (half to three-quarters of an inch long) are nearly erect; a solitary stout one together with the other lesser ones, which are white, generally, all point downwards. Flowers rich orange-crimson, numerous, from the side of the stem, 3 inches long, curved upwards, the mouth oblique. Calyx-tube funnel-shaped, the scales remote, subulate, oppressed, lower ones ciliated with white hairs. Petals small, scarcely longer than the teeth of the calyx, acute. Stamens lying against the upper side of the tube, and there much longer than the flower; lower ones scarcely protruded. Anthers deep purple.—*Botanical Magazine*, t. 4498. Will probably be a good breeder.

88. *JUNIPERUS SPHÆRICA*. An evergreen tree from the north of China. Introduced by Messrs. Standish and Noble. (Fig. 35.)

J. sphaerica; arborea, foliis omnibus squamiformibus quadrifariis obtusis dorso foveâ circulari notatis, ramulis gracilibus tetragonis obtusis, galbulis sphaericis glaucis breviter pedunculatis.

Found in the north of China by Mr. Fortune, who describes it as a tree 30 to 50 feet in height. The young branches are four-cornered, blunt, and usually more slender than in the accompanying figure. All the leaves are minute, scaly, with a circular pit at their back. The fruit is quite round, about as large as the ball of a pocket pistol. The species differs from *J. chinensis* apparently, in not having any acicular leaves, and very decidedly in the size and form of its fruit, which is twice as large as in that species, and not at all depressed at the end, but very regularly spherical.

89. *QUERCUS INVERSA*. An evergreen Oak, from the north of China. Imported by Messrs. Standish and Noble. (Fig. 36.)

Q. inversa; sempervirens, ramis tomentosis, foliis coriaceis obovatis petiolatis cuspidatis obtusis nunc apice serratis supra glaberrimis subtus glauco-tomentosis, glandibus spicatis obovatis cupulâ brevi tomentosâ squamulosâ multo longioribus.

115. *GYNOPSIS FRAGRANS*. *Hooker*. A hothouse perennial plant, from Guatemala, with very fragrant yellow flowers, appearing in December. Stems trailing. Belongs to Composites. Introduced by Mr. Skinner. (Fig. 54.)

Stems long, climbing, perennial, with succulent branches, showing a disposition to root at their base. Leaves rather distant, on long petioles, ovate or approaching to lanceolate, acute, of a rather fleshy texture, dark green. The flower-heads are rather large, very fragrant, and form a terminal, and in the lower part leafy, corymbose raceme. A coarse soft-wooded scandent plant, having a large, thick, fleshy root, of the nature of a tuber. It grows freely in a mixture of light loam and peat or leaf-mould, and, by its rapid growth and clean habit, is well adapted for covering trellis-work in the hothouse, especially as it is not liable to be attacked by insects. It increases readily by cuttings; but these, on account of their soft, succulent, nature, must not be kept too close, or they will damp off before they produce roots.—*Botanical Magazine*, t. 4511.

116. *HOYA CORIACEA*. *Blume*. A Java climbing shrub, with the habit of *Hoya carnosa*, and umbels of yellowish flowers. A stove plant, flowering in August. Introduced by Messrs. Veitch and Co. (Fig. 55.)

Discovered by Dr. Blume in mountain woods on the western side of Java. Mr. Thomas Lobb detected it in the same island, on Mount Salak. Everywhere glabrous. Stem branched, twining, taper. Leaves on short thick petioles, which are glandular above at the setting on of the blade, which latter is almost exactly elliptical, or approaching to ovate, acute, between coriaceous and fleshy, acute or shortly acuminate, ribbed, with rather indistinct veins. Peduncles longer than the leaf, pendent, bearing a large umbel of numerous flowers, brown in the state of the bud, much paler when fully expanded. Pedicels very obscurely villous. Sepals subulate, much shorter than the corolla, which is glabrous and glossy externally, within pale tawny, and downy. The lobes triangular, acute. Coronet white, with a dark brown eye: leaflets ovate, gibbous at the base, obtuse, the apex a little curved down.—*Botanical Magazine*, t. 4518.

117. *HOYA PURPUREO-FUSCA*. *Hooker*. A remarkable twining stove plant, with small umbels of richly tinted purple and grey flowers. A native of Java. Flowers in September. Introduced by Messrs. Veitch and Son. (Fig. 56.)

Said to be common in the woods of Java. Sir W. Hooker compares it with the Cinnamon-leaved *Hoya*, and with the great-leaved (*H. macrophylla*) "but in the latter the leaf is reticulated between the nerves, the staminal crown (coronet) has the leaflets much more acuminate, and the colour of the flowers is quite different." It is a glabrous twining and branching shrub, everywhere (except the corolla) glabrous. Branches often throwing out short fibrous roots. Leaves on very thick brownish petioles, 4 to 5 inches long, exactly ovate, acute, or shortly acuminate, thick, fleshy, 5-nerved, the nerves all diverging from the base, and having a gland at the base where set on to the petiole. Peduncles axillary, shorter than the leaf, occasionally rooting, and bearing a dense many-flowered umbel. Corolla rotate, ashy-brown, downy and hirsute above, cut into 5 roundish and shortly acuminate lobes. Coronet of 5 ovate, fleshy, rich purple-brown, acute leaflets, nearly plane at the top, convex below.—*Botanical Magazine*, t. 4520.

118. *AOTUS CORDIFOLIUS*. *Bentham*. (*alias* *Gastrolobium Hugelii Henfrey*.) A pretty greenhouse leguminous shrub from Swan River, with glaucous heart-shaped leaves in threes, and large yellow axillary flowers. Introduced by Messrs. Knight and Perry.

This well-known plant, long ago published by Mr. Bentham under the name here quoted, is reproduced as a novelty in the *Gardeners' Magazine of Botany*. It is rather a nice plant, but its grey leaves are a disadvantage, and its yellow flowers are too much like those of a *Genista*. It must rank with *Pulteneas* and plants of that kind, and requires the same sort of management; that is to say, it wants to be potted in loose turfy soil, more loamy than peaty, to be grown in a brisk heat, with plenty of water applied with a syringe, in order to keep the air damp, and then when the growth is completed to be carefully hardened off. If they grow over fast the shoots will bear to be stopped; but not till the lengthening process is at an end.

119. *TROPEOLUM BEUTHII*. *Klotzsch*. A tuberous climbing herbaceous plant from Bolivia. Flowers yellow. Introduced by Messrs. Low and Co.

Found by Bridges in Bolivia. Leaves deeply cut, peltate, roundish, bright green above, pale green beneath; leaflets 5-6 obovate; divisions of the calyx elliptical, apiculate, as long as the straight spur; petals obcordate, twice as long as the calyx. Near *Tropæolum brachyceras*.—*Allgem. Gart. Zeit.*, No. 21, 1850.

120. CENTRADENIA FLORIBUNDA. *Planchon.* (*aliàs* *Donkelaaria floribunda* of *Gardens.*)

A dwarf half-shrubby plant from Guatemala, belonging to the *Mclastomads*; with numerous lilac flowers. Introduced by Van Houtte and Co.

A very pretty species, much more worth growing than the Rosy *Centradene*, now common in gardens. The leaves are long, deep green, delicately tinged with violet on the underside, and full $2\frac{1}{4}$ inches long; having a pendent position they present both surfaces to the eye. The flowers are produced in much abundance, exhibit various tints of lilac, and produce a charming effect.—*Flore des Serres*, No. 453.



with its scorpioid spikes of large yellow flowers, with five deep purple, well-defined spots at the throat. These spots, however, in the cultivated plant, are sometimes obsolete—plants were raised in the Kew Gardens from seeds sent by Dr. Fischer, of St. Petersburg. Root fusiform, woody, throwing up two or more erect, leafy, herbaceous stems, about a span or more high, downy, with short hair. Leaves spreading, somewhat hoary, soft, all sessile; those from the roots, large, obovate, oblong; from the stem, obovate-lanceolate, all rather obtuse and becoming smaller upwards. The stems terminate in a branched, scorpioid, leafy spike of large yellow flowers. Calyx, cylindrical, hairy, cut almost to the base into five, erect, linear, obtuse segments. Corolla between funnel and salver-shaped; the mouth spreading; the tube nearly twice as long as the calyx, hairy within; the limb cut into five nearly equal, rounded lobes, having a dark orbicular purple spot at the re-entering angle of each pair of lobes. Style shorter than the tube.

—*Bot. Mag.*, t. 4409.

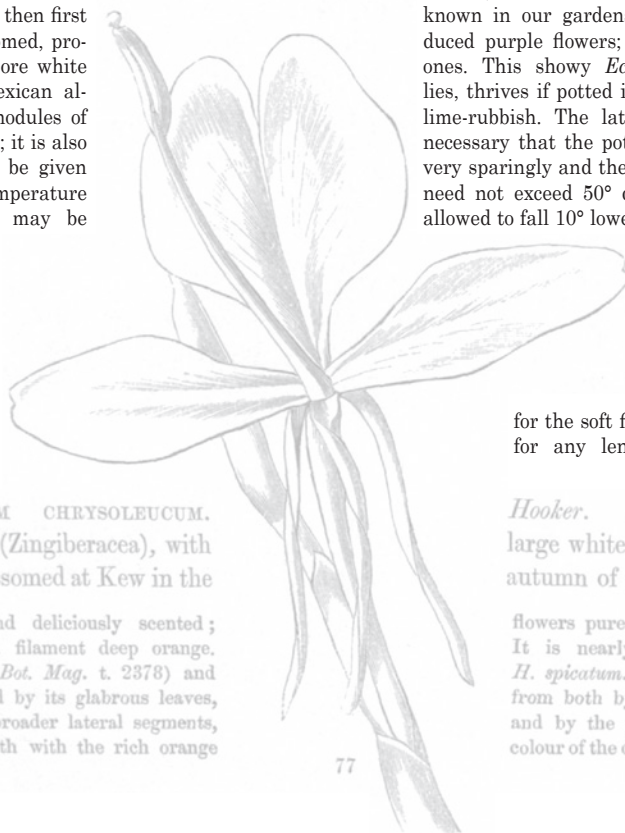
Notwithstanding the number of aliases under which this plant is already known, it is still unsatisfactorily named. It cannot with any propriety be placed in the same genus with *Arnebia cornuta*, whose style divides into 4 arms at the point, and which has 5 converging scales on the tube of the corolla near the base. It would rather seem to be an *Alkanna*, near *A. Græca*. At least it is identical in genus with *Alk. hirsutissima* from the Euphrates. We forbear, however, from disturbing the name, not possessing materials or leisure for investigating the different oriental species assembled by M. Alphonse De Candolle under the names of *Arnebia* and *Alkanna*. It was found in Persia by Major Willock, and we have recently remarked it among dried plants from the neighbourhood of Trebizond. The specimens from the former gentleman are nearly 18 inches high and loaded with flowers. M. Planchon, who has republished this plant in the "Flore des Serres," doubts its being an *Arnebia*, but throws no light upon its true genus.

158. ECHINOPSIS CRISTATA. *Salm Dick.* (alias *Echinocactus obrepandus Salm Dyck.*) A beautiful white, or purple-flowered plant, belonging to the order of Indian Figs (Cactaceæ). Native of Bolivia.

No less remarkable for the large size of its flowers than for the deeply-lobed ribs of the stem; purchased of Mr. Bridges on his return from fine species of *Cactaceæ* then first individual which blossomed, pro-following year (1847) bore white Chili, and, like its Mexican al-leaf-mould and a few nodules of of keeping the soil open; it is also In winter, water must be given should be dry: the temperature very cold weather it may be perature be maintained season advances, the the full influence of of the sun; and during be benefited by frequent which should be done however, necessary to becoming saturated, continue in a wet state *Magazine*, t. 4521.

159. HEDYCHIMUM CHRYSOLEUCUM. baceous Gingerwort (Zingiberaceæ), with Native of India. Blossomed at Kew in the

Very handsome, and deliciously scented; the disk; anther and filament deep orange. *flavescens* (*H. flavum*, *Bot. Mag.* t. 2378) and is at once distinguished by its glabrous leaves, the much larger and broader lateral segments, segments of the perianth with the rich orange *Magazine*, t. 4516.



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Bolivia, where he had gathered them and other known in our gardens, in 1844. In 1846, the duced purple flowers; that which bloomed the ones. This showy *Echinopsis* is a native of lies, thrives if potted in light loam with a little lime-rubbish. The latter are for the purpose necessary that the pot should be well drained. very sparingly and the atmosphere of the house need not exceed 50° during the night, and in allowed to fall 10° lower, provided a higher tem- during the day. As the plants should receive the increasing warmth hot weather they will syringing over head, in the evening: it is, guard against the soil

for the soft fibrous roots suffer if they for any length of time.—*Botanical*

Hooker. A showy stove her- large white and yellow flowers. autumn of 1849. (Fig. 77.)

flowers pure white, bright orange in It is nearly allied to *Hedychium H. spicatum*. From the former it from both by the larger flowers and and by the pure white of the inner colour of the disk or centre.—*Botanical*



L. Constant. Pinx. & Zucc.

[PLATE 23.]

THE OVAL AND THE PALLID HOYAS.

(HOYA OVALIFOLIA AND PALLIDA.)

Stove climbers from TROPICAL INDIA, belonging to the Natural Order of ASCLEPIADS.

Specific Characters.

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| I. <i>THE OVAL HOYA</i> .—Leaves fleshy, narrow, oval, 3-nerved, rolled back at the edge. Peduncle rather shorter than the leaf, and smooth. Corolla fleshy, with ovate acute segments. Coronet-lobes acute, revolute at edge. <i>Left-hand figure</i> . | I. <i>HOYA OVALIFOLIA</i> .—Foliis carnosis angustis ovalibus trinerviis margine revolutis, pedunculo folio paulò breviorè glabro, corollâ carnosâ glabrâ laciniis ovatis acutis, coronæ foliolis acutis margine revolutis. <i>Fig. sinistr.</i> |
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Hoya ovalifolia: Wight and Arnott, contributions to the Flora of India. p. 37?

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| II. <i>THE PALLID HOYA</i> .—Leaves fleshy, ovate, feather-veined, turned back at the edge. Peduncle rather shorter than the leaf. Corolla fleshy, smooth, with ovate acute segments. Coronet-lobes acute, revolute at edge. <i>Right-hand figure</i> . | II. <i>HOYA PALLIDA</i> .—Foliis carnosis ovatis penniveniis margine revolutis, pedunculo folio paulò breviorè glabro, corollâ carnosâ glabrâ laciniis ovatis acutis, coronæ foliolis acutis margine revolutis. <i>Fig. dextr.</i> |
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Hoya pallida: Lindley in Botanical Register, t. 951.

FOR the knowledge of the first of these species we are indebted to the Chatsworth collection, where it flowered in June last, from among Mr. Gibson's Indian collection. Along with it is represented on the right hand the Pallid Hoya, which blossomed at Chatsworth at the same time. A comparison of the two figures will show their differences better than mere description.

The Pallid Hoya was originally observed at Syon, whence, in 1825, materials were supplied for a figure in the Botanical Register. Its origin was then unknown; but the Chatsworth plant now proves it to be a native of India, and we possess specimens from the Burmese Empire collected by

the late Mr. Griffith. It is distinguished from the Fleshy Hoya (*H. carnososa*) not only by a yellowish tint which replaces the dark heavy green of that species and by its sweeter smell, but also by the form of its leaves, which are acute and exactly ovate; that is to say, similar in figure to an egg divided longitudinally, while in the Fleshy Hoya they are as nearly as possible truly elliptical. The umbels of flowers also are smaller. In the Botanical Register the artist has made the stalk of the umbel appear far too short in an unsuccessful attempt at foreshortening.

The Oval-leaved Hoya has much the appearance of the last; but differs in its flowers being distinctly yellow instead of straw-coloured; and in the form and construction of the foliage. The leaves are about 6 inches long, in the form of a narrow ellipse, differing very little in width near either end. Instead of the veins diverging regularly from the midrib in the same way as in the Pallid Hoya, there are three principal veins which proceed together from a little above the base, giving the leaf a triple-nerved venation. So that in fact these two species belong to two different types of structure, and stand in two different sections of M. Decaisne's classification of the genus.

These charming species each require the same treatment as the Fleshy Hoya, and trained with it along the rafters of a house, grow in perfect harmony, and produce an extremely agreeable variety without occupying more room than one of them would require.

175. *CATASETUM FIMBRIATUM* (*aliàs* *Myanthus fimbriatus* *Morren in Ann. de Gand*, t. 231). A terrestrial Orchid of unknown origin, with dirty white and pink flowers. Introduced by the Belgians. (Fig. 84.)

C. fimbriatum; racemo cernuo multifloro, sepalis petalisque linearibus acuminatis lateralibus longioribus, labello plano cordato membranaceo dentato vel fimbriato basi saccato conico, dente prominente in discum.

All that is known to us regarding this plant is what we find in Professor Morren's account, published in the work above quoted. It appears to be a species of no great beauty, with the habit of *C. cernuum*, but with pink sepals and petals speckled with red, and a broad heart-shaped dirty white lip strongly cut at the edge. It is said to have obtained an extra gold medal at the National Horticultural and Agricultural Exhibition at Brussels in 1848, when we are told "Pendant trois jours plus de cent mille yeux se fixèrent sur cette étrange et admirable gynandre dont le parfum embaumait la salle." In this country people would have hardly remarked it. Two varieties are mentioned; one green and white, the other rose and yellow. It is not improbable that they are identical, their supposed differences being due merely to the mode of cultivation.

176. *MEDINILLA SIEBOLDIANA*. *Planchon* (*aliàs* *M. eximia* *Siebold*.) A handsome stove-plant from Java, belonging to the order of Melastomads. Introduced by M. Van Houtte. Flowers white and rose-colour.

The habit of this plant, and the manner in which it is to be cultivated are the same as those of our *Medinilla magnifica* (Plate 12 of the present volume). The branches are perfectly taper, or very slightly four-cornered when quite young. The leaves are deep green, triple-nerved, brownish underneath, oblong, tapering into a short footstalk. The flowers are white, of the texture of wax, in short naked divaricating panicles, with a yellowish brown calyx and deep rose-coloured stamens. It appears to be a handsome species even although it wants the brilliant bracts of the Magnificent *Medinilla eximia* of Blume is a different species. *Flore des Serres*, t. 482.

177. *PUYA MAIDIFOLIA*. *Decaisne*. A very handsome stove herbaceous plant belonging to the Bromeliads, spikes crimson and green. Native of the Caraccas. Introduced by M. Linden.

Leaves broad, thin, ribbed, resembling those of Indian corn, but apparently rather glaucous. Spike long, cone-shaped, consisting of brilliant crimson bract tipped with green. Flowers pale cream-colour about 2 inches long. *Annales de Gand*. t. 289. This takes rank by the side of the *Vriesias* and *Gusmania*, and seems well worth the having.

178. *BESSERA MINIATA*. *Lemaire*. A beautiful bulbous plant from Mexico, with scarlet and white flowers in umbels. Belongs to the Lilyworts. Introduced by M. Van Houtte.

According to M. Lemaire, this differs from *B. elegans* in having a toothed coronet, and one-celled anthers. To us, it appears to be identical with that species. According to M. Van Houtte, these beautiful bulbs, hardly known in English gardens, require no other protection than a cold frame, the sash of which is removed in summer. While growing they are watered rather abundantly, but they are kept perfectly dry in winter. *Flore des Serres*, t. 424.

179. *HAKEA CUCULLATA*. *R. Brown*. A Swan River Protead with great coriaceous leaves and pink axillary flowers, produced in April. Requires a greenhouse. (Fig. 85.)

Discovered by the late Mr. Baxter at King George's Sound. Mr. Drummond has also found flowering individuals at



192. *ARHYNCHIUM LABROSUM*. An inconspicuous stove epiphyte, with small brown and yellow flowers. Introduced by Geo. Cornwall Legh, Esq., M.P. Flowered in October with Sir Philip de Malpas Grey Egerton, Bart., M.P. Native of Tropical Asia.

ARHYNCHIUM. Epiphytum; foliis distichis, coriaceis. *Sepala et petala* explanata, libera, basi æqualia. *Labellum* sessile calcaratum ascendens carnosum, calcare vacuo, laminâ indivisâ. *Columna* nana, teres, basi haud producta, stigmatè circulari. *Anthera* subrotunda, 2-ocularis, membranacea, depressa. *Pollinia* 4, geminata, æqualia; caudiculâ subulatâ, glandulâ triangulari membranaceâ semiliberâ. *Rostellum* truncatum.

A. labrosum. Labellum carnosum, basi concavum biauriculatum, calcare ascendente obtuso vacuo recurvo, ore incrassato ferè clauso; laminâ luteâ carnosâ crassissimâ rugosâ ovali, horizontaliter fissâ, calcaris convexitati adnatâ.

For a couple of flowers of this curious little orchid, we are indebted to Sir Philip Egerton, with whom it flowered in the middle of October. It was purchased two or three years since, by Mr. Cornwall Legh, at one of Stevens's sales of East Indian Orchids; but nothing further is known of its history. It is described as a plant with the habit of a small Vanda, or of a Sarcocyle. The flowers are about an inch in diameter, placed at equal distances on a raceme. The fragment before us bore 4, about half-an-inch apart. The sepals and petals are narrow, blunt, leathery, purplish brown, spotted with dull yellow; the second smaller than the first. The lip is a hollow curved blunt horn, rising from the base of the column with its convexity upwards; on the convexity lies a flat yellow wrinkled fleshy tongue, which seems as if it consisted of two layers; at the base the lip is concave, and has on either side a short truncated ear, with which it clips the column. The column is taper, short, straight, with a nearly circular stigma.

No known genus can receive this singular plant, unless it is thrown into the crowd of Saccolabes, among which, however, it would scarcely be sought; for its thick fleshy lip is very different from the thin membrane found in that genus. Moreover it is essentially distinguished by its rostellum not being extended into a long beak, as is the case in all genuine Saccolabes and Sarcanthus. As for Sarcocyle, which it is said to resemble, that genus is quite different in the long narrow foot on which the lip is placed, as well as in the nature of the lip itself.

193. *PITCAIRNIA JACKSONI*. *Hooker*. A very handsome stove Bromeliad, with scarlet flowers. Native of Guatemala. Introduced by Mr. Jackson of Kingston.

This very handsome Pitcairnia was flowered by Mr. Jackson, of Kingston, who imported it in a very young state, among tufts of Orchideous plants from Guatemala. Its nearest affinity is probably with *P. bromeliæfolia*. Leaves a foot and more long, subulato-ensiform, striated, attenuated above and below, upper half only spinuloso-serrated, the rest entire, above dark green and naked, below clothed with a whitish floccose or pulverulent substance. Scape leafy below, pulverulent, bearing an erect raceme of handsome scarlet flowers. Pedicels bracteated, standing out almost horizontally, and, as well as the calyx, pulverulent. Calyx of three, imbricated, erect sepals, about three quarters of an inch long, red with a yellowish margin. Corolla scarlet, nearly three inches long, curved. Tropical America and the West Indian islands are the native places of the genus *Pitcairnia*. They generally inhabit dry places, where there is little or no soil. They increase by suckers, and ultimately become dense cæspitose tufts, sometimes found growing on trees. They appear able to bear a great degree of heat and drought, but in a state of cultivation they improve in appearance by allowing them a due share of moisture. This pretty species has flowered in the Orchard-house, under the influence of a moist and warm atmosphere, in which it appears to thrive. A soil composed of light loam and peat suits it. It is increased by taking off the young suckers, which root freely without the aid of a bell-glass.—*Bot. Mag.* t. 4540.

194. *ROGIERA AMENA*. *Planchon*. (aliàs *Rondeletia thyrsoides* of Gardens.) A hothouse shrub, with clusters of rose-coloured flowers. Native of Guatemala. Belongs to the Cinchonads. Introduced by Mr. Skinner. (Fig. 95.)

This, and another species resembling it, appears occasionally from among the earth and rubbish hanging to the Orchids imported from Guatemala. They resemble Viburnums, and more especially Laurustines, but with red or rose-coloured flowers. That now figured is common under the name of *Rondeletia thyrsoides*, and is a species of considerable beauty. All the parts are covered with soft hairs. The leaves are oblong, rather the broadest at the base, nearly sessile, with large ovate intermediate stipules. The flowers, of a bright rose a little mixed with yellow at the throat, are in very short compact roundish cymes terminating the young branches. The lobes of the calyx are five, obtuse, short; the corolla is salver-shaped with its five flat lobes oblong and emarginate, while the tube is slightly enlarged upwards. M. Planchon makes the following remarks upon the genus in the *Flore des Serres*, t. 442.

“By a great good fortune we are able to create at least two well defined genera from the chaos of different species

plants, consisting of the *Dendrobium amplum* of Wallich, and the *Bolbophyllum Lobbianum*, *affine leopardinum*, *Cheiri*, and *macranthum* of Lindley, the name *SARCOPHYLLUM* may be applied: with the following *distinctive* character:—

Habitus Bolbophylli. Pollinia et columna Dendrobii. Sepala coriacea, lateralia basi ventricosa. Labellum coriaceum, basi dilatatum. (Haud Bolbophyllum quod poll. 4 nec 2, et col. mutica nec cirrhata. Haud Dendrobium quod sepala et labellum coriacea basi ventricosa nec cornuta v. calcarata.)

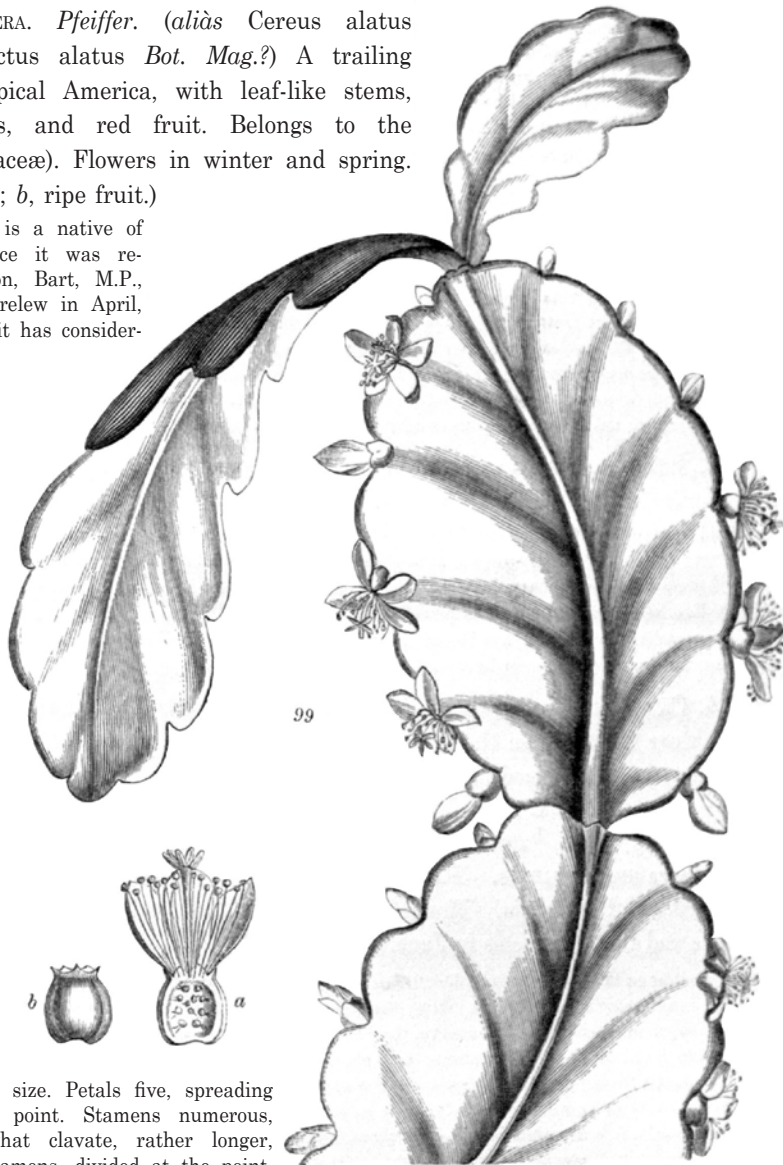
200. RHIPSALIS PACHYPTERA. Pfeiffer. (*aliàs* *Cereus alatus* Link and Otto; *aliàs* *Cactus alatus* Bot. Mag.?) A trailing succulent shrub, from tropical America, with leaf-like stems, small dirty white flowers, and red fruit. Belongs to the order of Indian Figs (Cactaceæ). Flowers in winter and spring. (Fig. 99; *a*, section of flower; *b*, ripe fruit.)

This singular little plant is a native of Rio de Janeiro, from whence it was received by Sir Charles Lemon, Bart, M.P., in 1839, and flowered at Carew in April, 1846. In its mode of growth it has considerable resemblance to some of the well-known showy species of *Cactus* with flat leaves, but on flowering it proved to be totally different. It requires a warm greenhouse or stove, and thrives very well when grown in a loamy soil with little water. Joints leafy, roundish ovate, compressed, nearly flat, hanging down, about 3 inches long and 2 inches broad, deeply crenated with a thick prominent, woody midrib, and distinct side ribs. They are of a bright green, tinged with reddish brown at the base and point, as well as along the margin, becoming, when old, of a rusty green. Flowers solitary, sessile, small, issuing from each crenature, and of a pale brownish yellow: the buds, previously to opening, being delicately tinged with pink. Sepals five,

very minute and unequal in size. Petals five, spreading ovate-oblong, obtuse at the point. Stamens numerous, filiform, erect. Style somewhat clavate, rather longer, and much larger than the stamens, divided at the point, sometimes into five, but most frequently into four lobes. Fruit a small berry about the size of a red currant, and similar in colour, with numerous small jet black seeds, embedded in the pulp.

That this is the *Cereus alatus* of Link and Otto, there can be no doubt; and consequently it is the *Rhipsalis pachyptera* of Pfeiffer; but we are by no means satisfied that it differs specifically from the *Rh. crispata* and *rhombica* of the same author, notwithstanding the white fruit of the former. We find it, however, recognised in the Prince of Salm Dyck's latest enumeration, and we bow to so high an authority.

201. ALMEIDEA RUBRA. *Auguste de St. Hilaire*. A beautiful red-flowered hot-house shrub, from Brazil. Belongs to Rueworts (Rutaceæ). Introduced at Kew. Flowers in the autumn.



206. *OPUNTIA SALMIANA*. *Parmentier*. A stove succulent from Brazil. Flowers, pale yellow Native of Brazil. Blossoms at Kew in September and October. (Fig. 101.)

This pretty and very distinct *Opuntia* is said to be a native of Brazil. Our collection is indebted for the possession of it to the Royal Gardens of Herrnhausen. It blossoms freely, and the ordinary looking stems and branches are ornamented by the variegated red and yellow and rather copious flowers in September and October. Plant small, one to two feet high, erect, branched; branches erecto-patent, cylindrical, rather of an ashy-green colour, destitute of tubercles.



obtuse at the apex. Areoles scattered, forming white downy tufts of wool, bearing six to eight unequal, brown, small aculei, the largest less than half an inch long. Flowers moderately sized, clustered at the apex of a branch. Ovary obovate, not scaly but areolated, and bearing aculei like the branches; and, what is remarkable, after the floral coverings have fallen away, often producing young plants. Sepals and petals undistinguishable; the former gradually pass into the latter. In bud the flower is red; when fully expanded the ground-colour is sulphur-yellow, streaked with red and rose-colour in the centre. The petals are obovate, and the spread of the flower about two inches. Stamens not numerous, yellow. Rays of the stigma five or six, yellow-green. This slender straggling species grows and flowers

freely if potted in light loam and leaf-mould, and placed under the full influence of the sun in summer. It should be frequently syringed in the mornings or evenings, during hot dry weather, but care must be taken that all superabundant water passes off freely, and that the soil does not remain long in a saturated state. In winter water must be given very sparingly, and the temperature of the house during the night need not at any time exceed 55°. It readily increases either by cuttings or by seeds, as also by gemmæ produced on each areole of the fruit, which ultimately form separate and distinct plants.—*Bot. Mag.*, t. 4.54e.

207. *STYLIDIUM MUCRONIFOLIUM*. *Sonder*. A greenhouse herbaceous plant, of much beauty, from the Swan River. Flowers yellow. Belongs to the Order of Styleworts. Introduced by Messrs. Lucombe and Pince. (Fig. 102.)

The plant thus called by Sonder does not wholly agree with this, for neither is the labellum in our plan "inappendiculate," nor can the leaves be said to be "radical." The first character is, indeed, easily overlooked in the dried plant, from which Sonder was likely to have drawn up his description; and with regard to the latter, tufted rosules of apparently radical leaves do, in several *Stylidia*, elongate into real leafy stems or branches. Again, the nearest natural allies of our plant are unquestionably *S. ciliatum* Lindley, and *S. saxifragoides* Lindley; but Sonder has separated them by nearly thirty species. The present species is very pretty and produces its copious bright tufts of flowers in August. Roots wiry, brown. Stems in our plant tufted, two to three inches long, copiously leafy. Leaves glabrous, spreading, linear-subulate, broader at the base, tipped at the point with a setaceous bristle. Peduncles terminal, solitary on each branch, a span high, above, and the pedicels and calyx clothed with slender hairs tipped with glands, so delicate as to be scarcely visible to the naked eye. Panicle roundish or oval, many-flowered, rather compact. Corolla rather bright yellow, with zigzag orange lines round the mouth. Ovary or capsule much elongated, slender, cylindrical. In summer these small weak plants should be placed in a situation where they may be maintained in a moderately moist state, without having daily recourse to the water-pot; and in winter they should be placed in a dry airy place, taking care in damp weather that no water lodges amongst the fascicles of leaves, for when this happens the plant is liable to be destroyed.—*Bot. Mag.*, t. 4533.

208. *BURLINGTONIA PUBESCENS*. A beautiful stove Orchideous epiphyte, from Pernambuco. Flowers white. Introduced by John Knowles, Esq., of Manchester.

B. pubescens; aculis, foliis coriaceis apice carinatis mucronatis, racemis densissimis pendulis, labello obovato bilobo breviter hastato laciniis erectis, cristæ lamellis utrinque 3 valde inæqualibus, columnæ basi pubescentis alis 2 minutis subulatis albis 2 oblongo-linearibus porrectis.

This beautiful novelty was exhibited at a meeting of the Horticultural Society in November last, when it received a silver medal. It formed a wide tuft of dark green rigid leaves, pouring forth from their bosom a profusion of bunches of snow-white blossoms. It had been sent to John Knowles, Esq., of Manchester, from some friends in Pernambuco, where it appears to be very rare. It is not now, however, introduced for the first time, for we have in our possession a dried specimen, communicated by the late Mr. George Loddiges, in November, 1846, at which time we named it *pubescens*, in allusion to the down on the column, which is not found in the other drooping white-flowered species. Of these species five are now known, of which two, *B. granadensis* and *fragrans*, have the bunches of flowers erect. The other three, *pubescens*, *candida*, and *venusta*, are thus distinguished:—

B. pubescens has a downy column, a lip with three yellow ridges on each side near the base, and a pair of erect side lobes, rendering it what is technically called hastate. Its flowers are the smallest of the three.

B. venusta has a smooth column, a lip in no degree hastate, with many shallow ridges on each side near the base. Its flowers are larger than in the last, and the flowers more loosely arranged.

B. candida has a smooth column, a lip very slightly hastate, with a stalk two-thirds as long as the column, and only one ridge on each side, forming a broken row of callosities. The flowers are much fewer in each bunch, but twice as large as in the last.

209. *FRANCISCEA EXIMIA*. *Scheidweiler*. A handsome stove shrub from Brazil, with large deep violet flowers. Belongs to the Linariads. Introduced by M. de Jonghe, of Brussels.

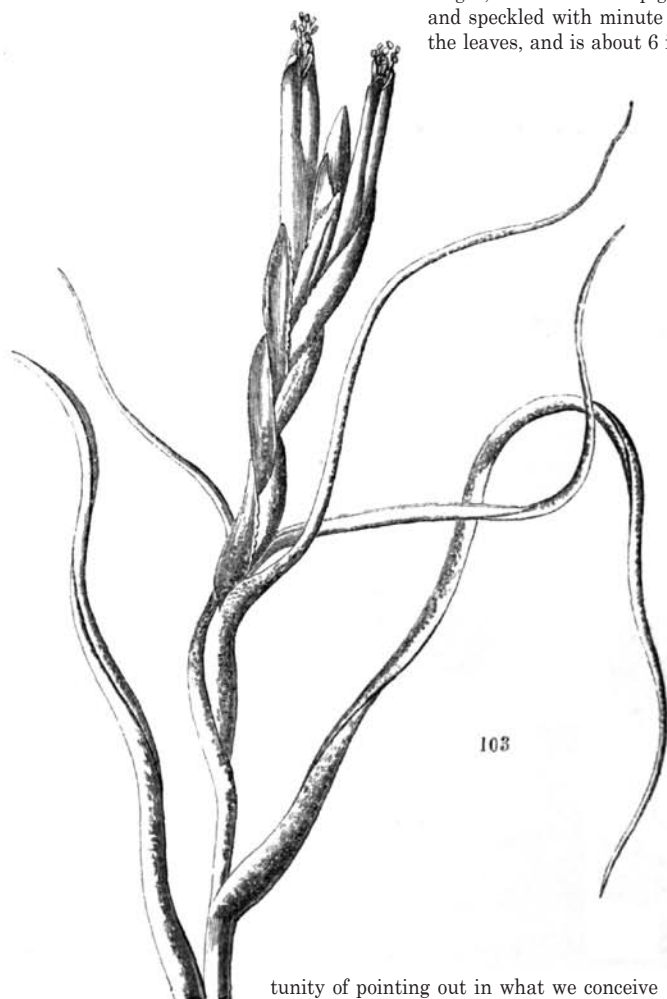
Habit of *Fr. latifolia*. Branches downy. Leaves oblong-lanceolate, not shining. Flowers terminal, about two together, very deep purple, two and a half inches across the limb.

In Belgium this *Franciscea eximia* is spoken of as the finest species of the genus yet in cultivation; and we learn also that it proves to be a free flowerer,—plants of the height of two feet and a half producing successively through the blooming season upwards of two hundred blossoms, of the size and colour represented in our plate. The first blossoms borne in Europe were produced in March, 1849; and the original plant again commenced flowering in January, 1850, and continued to produce blossoms till the end of June. Young plants are also reported to flower freely.—*Gardener's Magazine of Botany*, ii. p. 177.

210. *TILLANDSIA INANIS*. A stove epiphyte belonging to Bromeliads, with scurfy, dry, twisted leaves, and violet flowers issuing from crimson bracts. Native of the province of Buenos Ayres. (Fig. 103, a piece of the inflorescence; 104, a diminished figure of the plant.)

Commodore Sullivan, C. B., who brought it to this country in 1841, on his return from the command of the South American station, presented it to Sir Charles Lemon, Bart., M.P., with whom it flowered in March, 1846. It is a native of the interior provinces of Buenos Ayres, high up the Parana, and is stated to be greatly prized there for its delicious perfume, although at no period could Mr. Booth discover that it possessed any fragrance; and it is probable that the statement referred to *T. xiphiifolia*,—a very different species. Like the rest of its tribe, it requires the constant heat of a warm damp stove, and similar treatment to that which is usually given to epiphytal Orchids. It thrives very well when attached to a branch of any soft-wooded tree, and suspended from the roof of the stove. In winter it must be kept dry, but during the rest of the year it can scarcely have too much water. Mr. Booth describes the recent plant thus:—

“Roots numerous, round and slender, deep brown, partly adhering to the branches of trees, or spreading horizontally, as if to draw nourishment from the air. Leaves broad at the base, closely imbricated, so as to have a sort of bulbous appearance; but otherwise flexuose and recurved, narrow, much longer than the scape, spreading and twisted, with the edges so much incurved as to leave only a deep groove from one end to the other. They vary from 9 inches to a foot in length, and are of a deep green, closely covered with brownish red blotches, and speckled with minute white scurfs. The scape rises from the centre of the leaves, and is about 6 inches high, round at the base, and covered with several sheathing leaves, which closely embrace it. Near the top, it enlarges, and becomes two-sided, with moderately large oblong acuminate sheathing, imbricated bracts, of a brilliant red, tinged with brownish green at the base. The flowers, which appear to be only two in number, issue from underneath the third and fourth bract from the top. They are erect, of a purplish lilac colour, and rather more than an inch long. Sepals? Petals three, united at the base, but so arranged, from being convolute as to form a kind of tube, very slightly recurved at the point. Filaments of the same purplish colour as the petals, comparatively broad and thin, and projecting about a quarter of an inch beyond the tube. Style the same length as the filaments, but round, and of a pale colour, excepting at the extremity, which is a greenish yellow, and 3-lobed.”



several sheathing leaves, which closely embrace it. Near the top, it enlarges, and becomes two-sided, with moderately large oblong acuminate sheathing, imbricated bracts, of a brilliant red, tinged with brownish green at the base. The flowers, which appear to be only two in number, issue from underneath the third and fourth bract from the top. They are erect, of a purplish lilac colour, and rather more than an inch long. Sepals? Petals three, united at the base, but so arranged, from being convolute as to form a kind of tube, very slightly recurved at the point. Filaments of the same purplish colour as the petals, comparatively broad and thin, and projecting about a quarter of an inch beyond the tube. Style the same length as the filaments, but round, and of a pale colour, excepting at the extremity, which is a greenish yellow, and 3-lobed.”

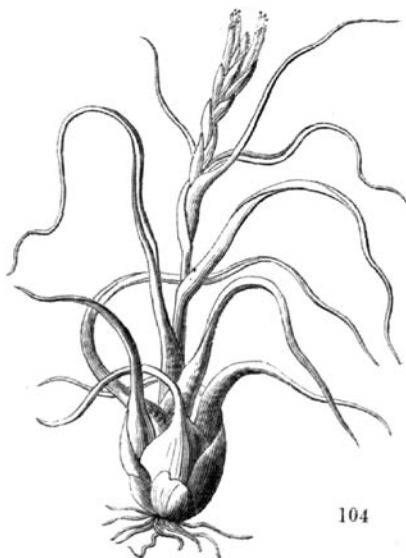
This is nearly related to the plant originally named *T. bulbosa* by Sir W. Hooker, in his “Exotic Flora,” t. 173, from a poor specimen obtained from Trinidad. But we can scarcely regard it as the same species, any more than a very handsome plant, with long spreading crimson bracts, obtained from Jamaica by Sir W. Hooker, and figured in the “Botanical Magazine,” t. 4288, under the name of *T. bulbosa* variety *picta*. There appears to be several species of *Tillandsia* possessing the peculiarity of having the bases of the enlarged leaves collected into a kind of bulb, but otherwise differing as much among each other as species of the same genus generally do. Since some are beautiful things, and very likely to reach our gardens, we take the present opportunity of pointing out in what we conceive there is the original *T. bulbosa*, whose spike has all the bracts green and fertile, with some tendency to branch. Next it stands our *T. inanis*, with a perfectly simple spike, whose bracts are coloured red, and all flowerless, except the two uppermost. Another is the supposed variety of *T. bulbosa*, already mentioned, with the upper

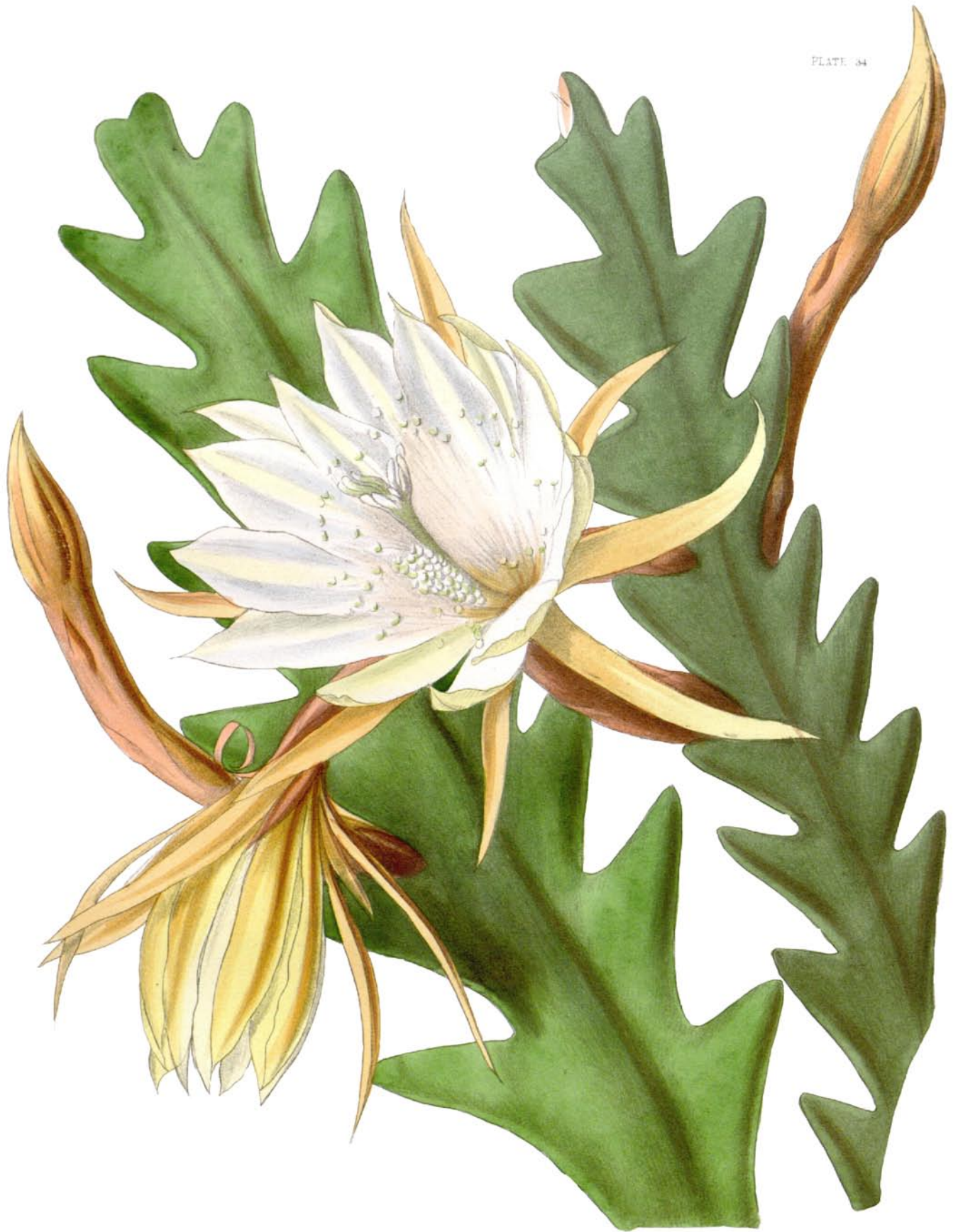
tendency to branch. Next it stands our *T. inanis*, with a perfectly simple spike, whose bracts are coloured red, and all flowerless, except the two uppermost. Another is the supposed variety of *T. bulbosa*, already mentioned, with the upper

leaves and bracts very long, deep crimson, apparently not scurfy, and a spike distinctly branched; the corolla being longer and white-edged: this we would call *T. erythræa*; we have the same species from Para. A fourth, *T. eminens*, is a St. Domingo plant, with the leaves much shorter than the spike, which is leafless, branched, and composed of numerous two-ranked crimson-keeled naked bracts; it may be compared to *T. polystachya*, although very different. A fifth is from Para, and is readily distinguished by a peculiar lumpish habit, an abundance of very coarse loose scurfs, spreading up to the very points of the outer bracts, which are not coloured, and a nearly simple spike sessile among the leaves, which, nevertheless, scarcely overtop it; this may be named *T. pumila*. For the convenience of our scientific readers, we put these distinctions into technical language:—

Folia radicalia basi dilatata bulbum simulantia.

- T. inanis*; scapo foliis breviorè, spicâ simplici basi foliosâ, bracteis viridi-purpureis lepidotis inferioribus omnibus inanibus.—*Buenos Ayres*.
211. *T. lulbosa* (Hook. Exot. Fl., t. 173); scapo foliis breviorè, spicâ aphyllâ basi ramosâ, bracteis herbaceis arctè lepidotis.—*Trinidad*.
212. *T. erythræa* (alias *T. bulbosa picta* Hooker, Bot. Mag., t. 4288); scapo foliis breviorè, spicâ ramosâ, bracteis foliaceis coccineis nudis (P) infimis spicâ longioribus.—*Jamaica; Para*.
213. *T. erninens*; scapo foliis altiorè, spicâ aphyllâ ramosâ, bracteis nudis coccineis distichis carinatis apice uncinatis.—*St. Domingo*. The inflorescence is almost that of a branched *Vriesia*.
214. *T. pumila*; scapo inter folia sessili, spicâ subsimplici aphyllâ, bracteis herbaceis coriaceis ventricosissimis laxissimè lepidotis.—*Para*. Valves of the fruit straight, and chesnut brown; not pitch black, as in *T. erythræa*.





[Plate 34.]

THE ANGLEBEARING LEAF-CACTUS.

(PHYLLOCACTUS ANGULIGER.)

A Fine Greenhouse Shrub, with White Flowers, from the WEST OF MEXICO, belonging to the Order of INDIAN FIGS.

Specific Characters.

THE ANGLEBEARING CACTUS—Branches leafy, stiff, flat, thick, pinnatifid, the lobes being nearly right-angled triangles. Flowers brown without, white within. Sepals longer than the petals. Stigmas 9-10.

PHYLLOCACTUS ANGULIGER; ramis foliaceis rigidis planis crassis pinnatifidis, lobis ferè rectangulari. triangulatis, lobis, floribus extus fuscis intus candidis, sepalis quam petala longioribus, stigmatibus 9-10.

Phyllocactus anguliger, "*Lemaire, Jardin fleuriste*, 1, 6;" according to the *Gardener's Magazine of Botany*.

THIS noble plant is nearly related to the *Cereus crenatus* of the Botanical Register, which itself stands in close affinity to the *Cereus Phyllanthus* of the Botanical Magazine, which is very different from the *Cactus Phyllanthus* of Linnæus. Of the three, the last is the least showy, but all must rank among the most striking of the white-flowered species of this great order. The present opens its flowers by day, retains them in beauty and fragrance for several hours, and yields a succession for days together; they are less white than in the other two species, on account of the dark brown tinge of the sepals; but, on that very account, the petals, which are much sharper pointed than in *C. crenatus*, are, perhaps, more conspicuously fair.

In Hartweg's meagre account of his Journey to California, this plant is first mentioned as occurring near Matanejo, a village in the west of Mexico, at no great distance from Tepic.

"The vegetation," says this collector, "as far as the small village of Matanejo, where we arrived in the evening, affords little interest at this season. The copsewood covering the sides of the ravines

is composed of deciduous leafless shrubs, only relieved by a giant *Cereus*, forming a singular tree; this generally has a single stem, two or four feet high, by eighteen inches in diameter, when it divides into numerous triangular branches, rising perpendicularly to the height of twenty to thirty feet. In May it yields a delicious fruit, called Pitaya, when it is much sought after by the natives. Leaving Matanejo early the following morning (Jan. 22nd), we soon entered a forest of oaks; here I found two species of *Epidendrum*, an *Oncidium*, *Odontoglossum*, and an *EPIPHYLLUM*, the latter, like *E. Ackermanni*, inhabiting trees. Although I have not seen it in flower, yet, judging from its broad, deeply-cut leaves, or rather stems, it will prove a valuable acquisition to that interesting tribe of plants."—*Journal of Horticultural Society*, vol. i., p. 184.

The plant called an *Epiphyllum* in this extract is what we now represent. It would seem, from its being associated with oaks, that it will require no greater protection than a good greenhouse; and, in fact, it proves to be one of the hardier species of its order. Nevertheless, like others of the leafy kind, the atmosphere of a stove is best suited to it while making its growth.

In deference to the opinion of Prince Joseph of Salm-Dyck, we call this a *Phyllocactus* rather than a *Cereus*; for it must be owned that, if such genera as *Echinocactus*, *Mammillaria*, and *Opuntia*, deserve to be adopted, because of the peculiar form of their stems, so also must *Phyllocactus*, whose jointed stems are very different from the uninterrupted stems of the true *Cerei*. Under the former genus are now collected the following additional species, viz., *Cereus phyllanthoides* of the *Botanical Magazine*; *Epiphyllum Ackermanni* of the *Botanical Register*; *Cereus latifrons* of Pfeiffer; and *Cactus Phyllanthus* of Linnæus; to which are to be added two new species of *Phyllocactus*, viz., *stenopetalus* of Salm-Dyck, and *grandis* of Lemaire.

In strict justice, the generic name of *Phyllocactus*, now employed, and first applied by Link in 1833, ought to be surrendered for that of *Phyllarthrus*, proposed by Necker in 1791; but custom and convenience disregard the laws of dogmatists, and refuse to be fettered by maxims which, however just and useful in the main, are never to be allowed to bend to expediency.

The accompanying drawing was made in the Garden of the Horticultural Society last October.

240. *CENTROSOLENIA GLABRA*. *Bentham*. A hothouse plant from La Guayra, with pale yellow fringed flowers. Belongs to Gesnerads. Introduced at Kew. Flowers in autumn.

A plant imported through Mr. Wagener, a German collector. It forms a stove plant, and keeps up a succession of flowers with us through the autumnal and early winter months. We submitted the figure to Mr. Bentham for his opinion, as he had paid much attention to the family to which it belongs, and has published the result of his observations in the 5th volume of the 'London Journal of Botany,' p. 357, &c. That gentleman considers the plant as clearly constituting a second species of his new genus *Centrosolenia* (l. c., p. 362). Decaisne's *Trichanthe*, since published, probably in the 'Revue Horticole,' for 1848, he believes to be identical with *Centrosolenia*. If so, it must give place to the latter name, which appeared in 1846, and consequently has the right of priority. An erect plant, with a succulent reddish-brown, terete stem, a foot or more high. Leaves succulent, smooth, the lower ones six to eight inches long, opposite; each pair singularly unequal in size, one being small, lanceolate, and acuminate; the other large, ovate, tapering at the base into a stout petiole, and acuminate at the apex; the margin serrated. Corolla tubular, enlarged upwards, projected below into a short obtuse spur, the whole tube about an inch and a half long, clothed outside with a short thin down, the limb divided into five broad short lobes, of which the three lower are fringed with long thread-like laciniae; inside of the corolla smooth. Annular disc nearly obsolete, with a large posterior gland. (Mr. Fitch represents two glands,—one anterior, the other posterior, and of nearly equal size.) Ovary wholly superior, with two lamelliform, bipartite, parietal placentae. Style smooth, thick, somewhat clavate, with the stigmatic extremity rarely emarginate.—*Botanical Magazine*, t. 4552.

241. *GERANIUM THUNBERGII*. *Siebold*. A prostrate annual, with small purple flowers. Native of Japan. (Fig. 115.)

An annual, with hairy prostrate stems; leaves long-stalked, with long spreading hairs, rather fleshy, 5-lobed, flat, the lower lobes much the smallest, the others 3-lobed, and slightly serrate. Peduncles 2-flowered, longer than the leaves. Petals deep purple, undivided, obovate, larger than the mucronate sepals. Probably the *G. palustre* of Thunberg. A mere weed.

242. *ECHINOCACTUS VISNAGA*. *Hooker*. (*aliàs?* *E. ingens* *Zuccarini*.) A noble plant from Mexico, belonging to the Natural Order of Indian Figs (Cactaceæ). Flowers bright yellow, produced at Kew.

Of this singular species, Sir William Hooker gives the following account:—"One of the most remarkable plants in the Cactus-house of the Royal Gardens of Kew, and that which chiefly attracts the attention of strangers, is the subject of the present plate. It bears the name of *Visnaga* with us (*Visnaga* means a tooth-pick among the Mexican settlers, and the plant is so called because that little instrument is commonly made of its spines), and under that name, believing it to be a new species, we had described it, and it was figured in the *Illustrated News* for 1846. I had, at one time, been disposed to refer the species to the *Echinocactus ingens*, of which a brief and most unsatisfactory character is drawn up by Pfeiffer (for Zuccarini does not appear to have noticed it) from some 'dried flowers,' and a living specimen 'six inches high,' but it can scarcely be that, for the angles of the plant are said to be eight, the aculei nine in a cluster, and the petals obtuse. Our plate represents a very diminished figure of a specimen, unfortunately no longer existing, but which, in 1846, was an inmate of our Cactus-house, and apparently in nip health and vigour. Its height was nine feet, and it measured nine feet and a half in circumference, its weight a ton. After a year of apparent health and vigour, it exhibited symptoms of internal injury. The inside became a putrid mass,



and the crust, or shell, fell in with its own weight. Other lesser ones were already, and are still, in the collection and the one, from which one small flowering portion is represented of the natural size, weighs seven hundred and thirteen pounds, its height is four feet six inches, its longitudinal circumference ten feet nine inches, and its transverse ditto eight feet seven inches, its ribs amount to forty-four. All our plants were procured with great labour, and sent many hundred miles, over the roughest country in the world, from San Luis Potosi, Mexico, to the coast, for shipping, and presented to the Royal Gardens by Fred. Staines, Esq. It flowers through a good part of the year, but, in comparison with the bulky trunk, the blossoms are quite inconsiderable and void of beauty." The summit of the trunk is crowned with a dense mass of tawny wool, concerning which it is remarked, that "this wool covers the whole crown of the plant, and is a few inches deep, and we are much mistaken if it is not a tuft of this substance, taken from an *Echinocactus Visnaga*, which constitutes that botanical curiosity from Mexico, long in the possession of the late Mr. Lambert (now at the British Museum), known under the name of the 'Muff Cactus.' A small quantity taken off the plant may, by handling and admitting air within the *staple*, be distended to a considerable size. An entire mass from a good-sized plant, thus treated, might be made to assume the cylindrical form of the specimen alluded to."—*Bot. Mag.*, t. 459.

243. *ACONITUM SINENSE*.
Siebold. A hardy plant of the order of Crowfoots. Flowers deep violet, appearing in the autumn. Native of Japan. (Fig. 116; *a* represents a flower of *A. autumnale* by way of contrast.)

We have now two perfectly distinct autumnal Asiatic Monkshoods in cultivation; one the *A. autumnale*, the other *Siebold's A. sinense*. The latter forms a stem from one and a half to two feet high, slightly downy, round, with regularly 5-parted leaves, the segments of which are incised, marked with a deep middle vein, and recurved a little; the flowers few, deep violet, on woolly and glandular peduncles; the helmet hemispherical, with no visible peak. The former is similar in foliage, except that the lobes of the leaves are much longer, and quite falcate, the flowers larger, in a close erect raceme, pale violet, with a pubescent stalk, and a more compressed helmet, with a long curved peak. (This is not shown at *a*, in consequence of the foreshortening.) Either of them may be the *A. Napellus* of Thunberg. Both are distinguished from the *A. japonicum* by the deep falcate divisions of the leaves, and long racemes of flowers.



PAXTON'S

FLOWER GARDEN.



BY

PROFESSOR LINDLEY AND SIR JOSEPH PAXTON.

IN THREE VOLUMES.

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Mauritius, was formed into a genus (*Jossinia*) by Commerson, and adopted by De Candolle; but by other botanists these plants are incorporated with *Myrtus*, and apparently justly so. The present species is from Mauritius, whence it was introduced into Kew Gardens, in the year 1824, and raised from seeds. Its flowering season is November, when its myrtle-like flowers, copiously nestled among the dark-green foliage, exhale the most delightful fragrance." The present species is "a stiff, branched, bushy shrub, seven feet high, and being a tropical plant, it requires the heat of the stove. It is a robust grower, thrives in any kind of light loam, and requires to be well supplied with water during summer. Being of a clean habit, and not subject to insects, it is suited for a select collection of stove-plants. It increases readily by cuttings, which should be planted in sand under a bell-glass, and plunged in bottom-heat."—*Bot. Mag.*, t. 4558.

We regret our inability to concur in the suppression of the genus *Jossinia*, which appears to form a very natural groupe of species, conspicuous for their hard broad leaves. If that genus is to be reduced to *Myrtus*, then the latter must be augmented by *Eugenia*, and the old farrago of species will be revived. Or if *Jossinia* is to disappear in any other genus, it must surely be in *Eugenia* and not in *Myrtus*. Dr. Wight assures us (*Illustrations of Indian Botany*, II., p. 12.) that the cotyledons of *Jossinia* are leafy, and neither cylindrical as in *Myrtus*, nor amygdaloid as in *Eugenia*. We must not, however, confound the genus *Jossinia* with *Diospyros*, as appears to be the case in gardens, as the next article will show.

271. *DIOSPYROS AMPLEXICAULIS*. A stove shrub, with hard dry alternate sessile leaves, which clasp the stem by their base. Native of the Mauritius. Flowers unknown. (Fig. 139.)

D. amplexicaulis; glaber; foliis sessilibus amplexicaulibus coriaceis orbiculatis obtusis v. acutis, fructu turbinato ligneo 10-loculari 10-spermo in calyce coriaceo cupuliformi campanulato 6-lobo insidente.

An anonymous correspondent of the *Gardener's Chronicle* has sent us a leaf of what certainly is the plant now defined. He appears to have received it under the name of *Jossinia* sp., and no doubt from the Mauritius: for we find it among dried plants of that island communicated by M. Bouton. How different it is from a *Jossinia*, whose fruit is fleshy and eatable like a medlar, will be seen by the accompanying figure taken from M. Bouton's specimen. It may also be added, that in the *Jossinias* the leaves are filled with transparent dots after the manner of their race; while in *Diospyros*, as in all *Ebenads*, the leaves are dotless. It seems to be related to *D. reticulata*; but its flowers being unknown this remains uncertain.

272. *ASTER SIKKIMENSIS*. *Hooker*. A handsome hardy perennial, with rich violet and yellow flowers. Native of the Sikkim Alps. Belongs to Composites. Introduced at Kew.

Raised from seeds sent by Dr. Hooker from the alpine regions of Sikkim. It flowers in October, and enlivens the garden at that late season with its copious bright purple flowers. It is remarkable of this and of *Aster Cabulicus*, that the stems form almost perfect wood the first year, three or four feet high, in the early winter abounding in leaf-buds, but dying down with our winter to the root. Stem erect, almost woody, and fragrant, three or four feet high, purplish-brown. Leaves glabrous, lanceolate, narrowly acuminate, spinuloso-serrate, with several parallel, very oblique nerves and numerous lesser connecting ones. Corymbs large, leafy, with numerous heads, which are purple. In the open ground it has every appearance of assuming the character of a hardy perennial.—*Bot. Mag.*, t. 4557.

273. *CEREUS SUPERBUS*. *Ehrenberg*. A large, dull red-flowered plant, from Mexico, with a weak branching seven-angled stem. In the Botanical Garden, Breslau.

This is said to have the appearance of some hybrid from *C. speciosissimus*, bearing larger flowers, of a light dull cinnabar-red colour, with carmine-red stamens. The stem is weak, branched, with club-shaped divisions contracted at the base, with seven angles, purple when young; the ribs acute, crenated, with convex white downy cushions, bearing some shining nearly equal yellow prickles.—*Allgem. Gartenzeit.*, 1850, p. 233.

274. *PITCAIRNIA CINNABARINA*. *Dietrich*. A fine stove Bromeliad, with spikes of brilliant red flowers. From Brazil. Introduced by Oblendorff & Son, of Hamburg.

The leaves of this species are quite entire, smooth, and reddish underneath. The racemes are about six inches long, one-sided; the flowers quite smooth, about two inches long, of a deep rich vermilion red colour. Seems to be a very handsome plant.—*Allgem. Gartenzeit.*, 1850, p. 202.



290. ECHINOPSIS CAMPYLACANTHA. *Pfeiffer*. (aliàs *Echinocactus leucanthus Gillies*; aliàs *Cereus leucanthus Pfeiffer*.) A long-spined Cactus, from the province of Mendoza, in the state of Chili. Flowers long-tubed, large, pink, with a grey outside. Produced at Kew.

A fine and well-marked species, with handsome flowers, readily distinguished by the great length of the central spine of the areole, and by its taking an upward and inward curve, a direction to which the other radiating spines are more a less inclined. It is a native of the Argentine province of Mendoza, at the eastern foot of the Andes, where it was discovered by the late Dr. Gillies, and introduced by him to our Gardens, with many others from that region, which we fear are now mostly lost to us. It flowers in the spring and summer months. Our plants are, the largest of them, a foot high, in shape between ovate and globose, not unlike that of a pine-apple, rather acute at the top, longitudinally furrowed; ridges fourteen to sixteen, considerably elevated, scarcely compressed, obtuse; the edges slightly tubercled or lobed.—*Bot. Mag.*, t. 4567.

291. SIPHOCAMPYLUS HAMATUS. *Wendland*. A stove shrub, covered with white down, and bearing violet flowers. Native of Brazil. Belongs to Lobeliads. In the Garden at Herrenhausen.

The stem is described as six feet high; the leaves oblong-ovate or somewhat heart-shaped, with irregular callous teeth. The flowers in short dense racemes. Flower-stalks erect, as long as the corolla. Calyx with eight ribs and linear-lanceolate lobes, which are hooked backwards. The tube of the corolla narrow and slender. The whole plant is white with down.—*Allgem. Gartenzeit.* 1850, 138.

292. ECHINOCACTUS STREPTOCAULON. *Hooker*. A lumpish Cactus with numerous small yellow flowers, from Bolivia; of mere botanical interest.

“A very distinct species of the genus *Echinocactus*, if we judge from the flowers; but almost a *Cereus* in the elongated habit of the plant, which we purchased from Mr. Bridges, who had brought it from Bolivia. We find nothing like it anywhere described, and have named it from the remarkably spirally twisted character of the stem, without, however, holding ourselves responsible that this is a constant or permanent mark of distinction. It flowered in the Cactus-house of the Royal Gardens, in August 1845.”

From some peculiarity in the nature of the Cactus region of Chili and Bolivia, we find that *Cactææ* imported from these countries do not so readily conform themselves to the artificial modes of cultivation to which they are necessarily subjected in this country, as allied species from Mexico. This is more especially the case with the *Echinocactææ*. We learn that they inhabit very arid and hot places, enduring extreme drought, which is very obvious from the harsh, dry, and often dead-like appearance they present when they arrive in this country. The species now figured was introduced with many others about six years ago, by Mr. Bridges, and on enquiring of him the nature of their places of growth, and what mode he would recommend as best for cultivating them in this country, the point on which he laid the greatest stress was to *give them no water*. But we find that even harsh, dry-looking *Cactææ* are, like many other dry climate plants, capable of assuming a freer habit of growth by good treatment; the difference of the growth they make in this country, as compared with that of their native country, is so great, that the top and lower part of the same plant, if separated, might be taken as two distinct species. It is probable that many *Cactææ* from dry regions, when placed under the influence of a climate more favourable to vegetable development, will assume a different aspect, varying according to the degree of heat and moisture they receive.—*Bot. Mag.*, t. 4562.

293. TAMARINDUS INDICA. *Linnaeus*. (aliàs *T. officinalis Hooker*.) A handsome tropical tree of the leguminous order, with pinnated small leaves, and racemes of yellowish flowers. Native of both Indies.

Most authors make two species of *Tamarindus*, the Indian kind with long pods, and the West Indian with short pods: but even those who adopt this view of the subject generally raise a question of their specific identity. India is probably the aboriginal country of both, whence the species was introduced to Western India. Even in the East the Tamarinds of the Archipelago are considered the best of those of India. The Arabs called the tree “*Tamar hindæ*,” or *Indian Date*, from which has been derived the generic name *Tamarindus*. Our small Tamarind-tree, in the Royal Gardens, about fourteen feet high, whence our flowering specimens were taken, is probably the West Indian variety, and can give no idea of the general appearance of a full-grown tree, which all travellers agree in saying is one of the noblest objects in nature. “This most magnificent tree,” says Dr. Roxburgh, “is one of the largest in India, with a most extensively spreading and shady head, or coma; the bark dark-coloured and scabrous, the wood hard, very durable, and most beautifully veined.” Dr. M’Fadyen, too, observes that the tree is “very ornamental, and affords a delightful shade.” The inhabitants of the East, however, have a notion that it is dangerous to sleep under, and it has been remarked, as of our beech in Europe, that the ground beneath is always bare, and that no plant seems to thrive under its branches. Its flowers have little beauty to boast; they are insignificant and exhibit no bright colours. Our plant has not borne fruit, but flowers in the summer season, and generally, but not always, casts its leaves during our winter. The extensive use of the pulpy fruits of the *Tamarind* is well known, as are its valuable medicinal properties. In the

Cardonal and Zimapan, on mountains thinly covered with *Pinus Llaveana*. Hartweg also met with it near the hot springs of Atotonileo El Grande, but nowhere in any quantity. It is easily distinguished by its dry hard leaves and pale yellow flowers. The wood is also said to be of a lighter colour than in any other species. It grows freely when potted in a mixture of sandy loam and leaf-mould, to which is added a small portion of rough bone-dust. It may be increased like other pinnated berberies, by grafting on the common *B. Aquifolium*, either in spring or Autumn, when the young shoots are nearly hard. The chief beauty of the plant resides in its graceful manner of growth and its light airy foliage. Its flowers are pallid and not dense enough to produce a handsome effect. When in fruit its large loose panicles of deep purple glaucous berries are ornamental enough; but their acid taste belies their tempting appearance. The species is unable to bear the winters of London, without the protection of a greenhouse.

310. *EPIDENDRUM QUADRATUM*. *Klotzsch, in Allgem. Gartenzeitung*, 1850, p. 402. An epiphyte from Central America, with racemes of brownish green flowers, and a dirty white lip dotted with red. Flowered with Mathieu and Allart of Berlin.

This seems to be very nearly the same as *E. varicosum* and *Lunceanum*, if not identical. But, according to the description, the leaves are much more narrow.

311. *PITCAIRNIA FULGENS*. *Decaisne*. A stove herbaceous plant of the order of Bromeliads. Native of Guadaloupe. Flowers crimson.

Leaves spiny at the base, mealy beneath, as is the flower stem; raceme very close, with great pale green smooth bracts longer than the calyx; petals straight, two inches long, rich scarlet, linear-oblong, rounded, concave, with a crenated scale at the base. One of the Linden Collection seems to be handsome.

A handsome stove shrub, especially when its copious cymes of dense flowers are in perfection (March and April), and which are remarkable for the play of colours: the tube is yellow; the limb in bud deep rose-colour, changing when they expand to pale rose and then to white, with a yellow disc, and having a two-lobed green spot in the centre from the colour of the stigmas, which protrude a little beyond the mouth. It does not correspond with any of the many species now described of this genus; its nearest affinity is, perhaps, with *R. cordata* Benth. (*Rogeria* Planch. and Henfrey) from Guatemala, but that is nearly glabrous, and has sessile leaves, broad and cordate at the base. A moderate-sized shrub, with "very bitter bark." Branches obscurely four-sided, but compressed, younger ones and young leaves quite silky and shining. Leaves large, deep green, soft and submembranaceous when fresh, more hard and almost coriaceous when dry, ovate, acuminate, very obtuse or subcordate at the base, above in the adult foliage glabrous or nearly so, beneath and on the petioles (half an inch long) pubescent-tomentose, paler in colour, veins pinnated, prominent, beneath, a good deal reticulated, the reticulation most distinct in the dry state. Stipules deciduous from the older leaves, broad ovate, spreading, membranaceous-herbaceous, downy. Panicle downy, trichotomously divided and bearing numerous flowers, so as to form a more or less dense cyme, everywhere very downy, even the outside of the corollas. Calyx-tube small, globose: teeth five, small. Corolla hypocrateriform; the limb of five, spreading, rather wavy lobes, silky in the disc. Stamens quite included. Style a little exserted. Stigma two-lobed."—*Bot. Mag.*, t. 4579.

This is very near *R. Menechma* figured above at p. 41., no. 300, but its flowers are much larger with blunter lobes. Perhaps it is the same plant, better grown.

337. *Calceolaria tetragona*. *Benth.* A broad-leaved greenhouse shrub, with loose corymbs of large pale yellow flowers. Native of Peru. Belongs to Linariads. (Fig. 170, *a*, natural size of flowers; *b*, a diminished figure of a branch.)

This was exhibited by Messrs. Veitch, at the last great exhibition of the Horticultural Society. It forms a compact evergreen bush, with pale green, broad, oblong, blunt, entire leaves, from three to four inches long; which, in a wild state, are frequently (always?) covered with a glutinous exudation. The flowers are among the largest in the genus, pale yellow, with a very large yellowish-green calyx, consisting of blunt, spreading, oblong sepals. In habit it is wholly distinct from all those previously in cultivation, and may probably become, in the hands of skilful hybridizers, the parent of an entirely new race of *Calceolarias*. It seems to be a true shrub; the foliage is much better than that of other garden species, and the large flowers only want brilliancy and gay marking to be very beautiful objects.

338. *Sedum kamtchaticum*. *Fischer and Meyer, Ind. Seminum in Horto Petropolitano; Walpers' Repertorium*, ii. 262. Received from Dr. Fischer, in June, 1844, and said to have been collected by Dr. Schrenk on the Chinese limits of the South of Soongaria.

This is a handsome herbaceous plant, with bright yellow flowers like those of *Sedum Aizoon*, which it much resembles in habit. The leaves are obovate and toothed at the upper half only, but they narrow in a wedge-shaped manner to the



base. They are red edged, and the stem has also a strong stain of that colour; most of them are alternate, a very few only near the summit being opposite to each other. It is a hardy perennial, requiring a light soil and dry situation. It is easily increased by cuttings any time during the summer or autumn, and flowers from June to August. It proves to be a fine showy plant for Rockwork, where it blooms freely and remains long in succession.—*Journal of Hort. Soc.*, vol. i.

339. *ROSA FORTUNIANA*. A scrambling evergreen hardy shrub, with large solitary flowers, and ternate or quinate leaves.

Native of China. Introduced by the Horticultural Society. (Fig. 171.)

R. Fortuniana (Banksiana), ramis scandentibus glabris, aculeis parvis falcatis distantibus, foliolis 3-5nive ovato-lanceolatis nitidis argutè serratis, floribus solitariis, calycis tubo hemispherico nudo sepalis ovatis indivisis.

Among the roses introduced by Mr. Fortune, for the Horticultural Society, is one which does not appear referable to any known species. It is a scrambling shrub, with slender branches, sparingly armed with small falcate prickles. The leaflets are ovate-lanceolate, finely serrate, thin, bright green, shining on both sides, and usually in threes, sometimes in fives. The stipules are small, subulate and deciduous as in the Banksian roses. The flowers grow singly on short setose peduncles; have a hemispherical naked calyx tube, and ovate undivided sepals, and are double white, with their petals loosely and irregularly arranged in a mass about three inches in diameter. That it is not a Banksian rose is proved by its solitary flowers and prickly stems; that it is no variety of *R. sinica*, is shown by its weaker habit, and the total absence of spines from its calyx-tube. Can it be a mule between the two? The plant has not much beauty, so far as the flowers are concerned, but its rapid growth, straggling habit, and evergreen leaves, render it extremely well suited for covering walls, verandahs, or rustic work in gardens.



now enabled to show that it is not only really a *Dendrobium*, but one of a most remarkable and brilliant nature. It was imported from Tillicherry.

At the end of long slender stems, clothed with short black hairs, appear rich orange-coloured flowers in pairs. Their sepals and petals are linear, concave, obtuse, curved like so many horns, the petals being broader at the base than the sepals, and the lateral sepals forming a very short obtuse chin. The lip is linear-lanceolate, 3-lobed, the lateral lobes being extremely short, with three wavy elevated lines running through the middle lobe from end to end. The plant is near Wallich's *Dendrobium angulatum*, with which it may be contrasted by the following character :—

D. villosulum (Endendrobium) caule erecto nigro-villoso, foliis linearibus acutè et obliquè bilobis, pedunculis bifloris, sepalis petalisque acuminatis recurvis obtusis lateralibus in mentum breve connatis, labello lineari-lanceolato trilobo 3-lamellato lobis lateralibus nanis.

349. *EREMOSTACHYS LACINIATA*. *Bunge*.
A fine showy hardy perennial from the Caucasus, with large yellow flowers. Belongs to Labiates. (Fig. 176.)

Radical leaves deeply pinnatifid with oblong-lanceolate or linear lacerated segments. Flowering stem 4-6 feet high, bearing whorls of large yellow flowers, seated in shaggy white calyxes, and supported by sessile blunt broad many-lobed green bracts. It is a common inhabitant of the eastern side of Caucasus, and of the adjoining countries, where it is found on dry hills. Its great fleshy roots are evidently adapted to such situations only. In a wild state it is not half the size of the cultivated plant, nor are its leaves half the breadth : but at the same time the flowers seem to be larger and more conspicuous. The plant appears intended by nature to resist even a Persian summer. The accompanying figure was made in April last in the Garden of the Horticultural Society, where it had been raised from seeds received from the Imperial Botanic Garden at Petersburg. It proves to be a hardy perennial, with large spindle-shaped roots, and a stem from four to six feet in height. It is rather difficult to cultivate in the open border on account of the large fleshy roots suffering in winter from excess of moisture, but it succeeds tolerably well if grown in pots during the winter, and kept nearly dry in a cold pit or frame. It thrives in a light rich sandy loam, and flowers in May or June. It is only to be increased by seeds, and the plants are two or three years before they bloom. Care must be taken that, in potting or planting, one-third of the fleshy roots are left above ground, otherwise they soon perish.

350. *PITCAIRNIA MONTALBENSIS*. *Linden*.
A handsome scarlet-flowered hot-house perennial, belonging to the Natural Order of Bromeliads. Native of New Grenada. Introduced by Mr. Linden.

In the *Allgemeine Gartenzeitung*, May 3, 1851, this fine plant is said to be of Mexican origin, having been discovered by Mr. Linden's collectors Funk and



Schlim. But as those travellers were employed in N. Grenada, the statement seems to be a mistake. It has long linear-lanceolate leaves, which are smooth on both sides and shining, and spiny-toothed at the base; the scape is as long as the leaves, covered with a fine wool as well as the slender bracts. The spike is about 3 inches long, the corolla $1\frac{1}{2}$ to 2 inches long, and scarlet-red. It would seem to be a species of some interest to cultivators.

351. *RHAMNUS CROCEUS*. *Nuttall*. A half-hardy evergreen shrub, from California. Belongs to the Order of Buckthorns. Introduced by the Horticultural Society. Flowers green.

Raised from seed received from Hartweg in January, 1848, and marked "a dwarf evergreen shrub, near the sea shore, Monterey."—A small evergreen bush, first described by Mr. Nuttall, who found it in bushy hills and thickets near Monterey, and who describes it as "A much branched thorny shrub, with yellow wood; the whole plant imparted a yellow colour to water. Leaves about half an inch long, lucid, when dry of a bright yellowish-brown beneath: petioles about one line long. Fascicles 2-6 flowered: pedicels as long as the petioles. Sepals ovate, with one middle and two marginal nerves. Stamens nearly as long as the sepals. Ovary ovate. Styles often distinct below the middle. Fruit greenish or yellowish, usually (by abortion) one-seeded. Seed with a longitudinal furrow on one side."

In the garden it proves to be a neat small-leaved evergreen, which, if hardy, would be a useful shrubby plant; but near London it is tender. It flowers in June.—*Journal of Hort. Soc.*, vol. vi.

352. *EURYBIA ALPINA*. A hardy evergreen shrub, from New Zealand, belonging to the Order of Composites. Flowers dirty white. Introduced by Messrs. Veitch. (Fig. 177, a diminished sketch; 1, a cluster of flowers of the natural size.)

E. alpina (*Argophyllæa*) *fruticosa densa, ramis angulatis subtomentosis, foliis alternis petiolatis coriaceis oblongis acutis dentatis supra glabris subtus pallidis adpressè tomentosis, capitulis densè paniculatis, involucris villosis tomentosisive.*

In this instance we have a further proof of the hardness of some of the evergreen Australian vegetation, especially in the Order of Composites. *Swammerdamia antennifera* is now becoming a common evergreen; and Messrs. Veitch produced this in full flower, or rather past flower, at the May meeting of the Horticultural Society, from the open nursery at Exeter. It forms a stout bush, with angular strong branches, and firm, leathery, evergreen leaves, from 2 to $2\frac{1}{2}$ inches long, deep green on the upper side, pale and somewhat hoary beneath. They are much concealed by the large quantity of dirty white flowers, which as they go off greatly diminish the neatness of the plant, especially as the florets drop off and make way for a dirty brown pappus, which becomes very conspicuous.

We find this plant among dried specimens collected in New Zealand by Mr. Bidwill, at the elevation of 8000 feet above the sea in the northern island. He describes it as a shrub 6 feet high, and believes it to be the same as a coast plant of which he also sent home specimens. The latter has larger, thinner, longer leaves, much more tapering to the base; but may nevertheless be only a lowland form. The species is nearly allied to *E. furfuracea*, a New Zealand species with scurfy entire leaves, and also to the New Holland *E. argophylla* or Musk Tree.

353. *PITCAIRNIA EXSCAPA*. *Hooker*. A handsome hot-house perennial, with crimson flowers, belonging to Bromeliads. Native of New Grenada. Introduced by Messrs. Jackson and Son.

This very curious and rather handsome *Pitcairnia* was detected, as an infant plant, among some Orchidaceæ purchased from New Grenada, by Mr. Jackson of the Kingston Nursery, Surrey. They were carefully reared, and our figure represents two of them in a flowering state. The species is remarkable for the great length of the very attenuated leaves, and no less so for the sessile and densely bracteate spike of red flowers. I can nowhere find such a species described. It belongs, as far as the structure of the flowers is concerned, to the same group as *Pitcairnia suaveolens*, Lindl., figured in Botanical Register, t. 1069, that is to say, where the petals have a certain twist, occasioning their apices to point one way, and there is, moreover, a curvature there, giving a galeated character to these petals. We possess, from New Grenada, two other stemless and scapeless (or nearly so) *Pitcairnia*s, and there, too, the bracteas



are mixed with black spines but in those the spines themselves bear short spreading spines on the sides. Stemless or nearly so. A kind of pseudo-bulb is formed at the base of the plant, sheathed by the dilated, dark brown bases of the outer leaves. The leaves, therefore, may be said to spring from the root, and are, many of them, full three feet long, like those of a coarse *Carex*, linear, carinated externally and gradually attenuated into a very long narrow point, quite entire, glabrous, a part of the upper margin of the sheath being alone ciliated, rather strongly so. From the centre of these leaves appears a nearly sessile, ovate head of flowers, in part concealed by numerous bracteas, imbricating each other; the inner ones longer, narrower, yellowish-green, glabrous, the outer brown, broader, and hairy or cobwebby these bracteas are intermingled with a few strong, acicular, almost brown spines. Calyx quite concealed by the bracteas, yellow-green: sepals lanceolate, acuminate, hairy. Petals red, curved and galeate, bearing a notched scale at the base within. Stamens shorter than the petals. Ovary superior, trisulcate. Style elongated. Stigmas three, twisted. This plant requires a warm stove, and thrives in any kind of light open soil not retentive of moisture. Care must be taken not to water it too copiously. The old roots of this species, like those of many of its allies, after a time lose their vitality, and, by their continued increase, become a nidus of support to the succeeding young roots; but in cultivation it is advisable occasionally to turn the plant out of the pot and divest it entirely of the old roots, at the same time cutting away the lower part of the caudex, which will also be found to be dead. The plant on being repotted will soon emit young roots, and show a more vigorous growth. It is increased by offsets, and our plant shows at this time the appearance of producing perfect seeds.—*Bot. Mag.*, t. 4591.

354. *SPIRÆA DOUGLASII*. *Hooker*. A very fine hardy shrub, with deep rose-coloured flowers. Native of Oregon. Belongs to Roseworts. (Fig. 178.)

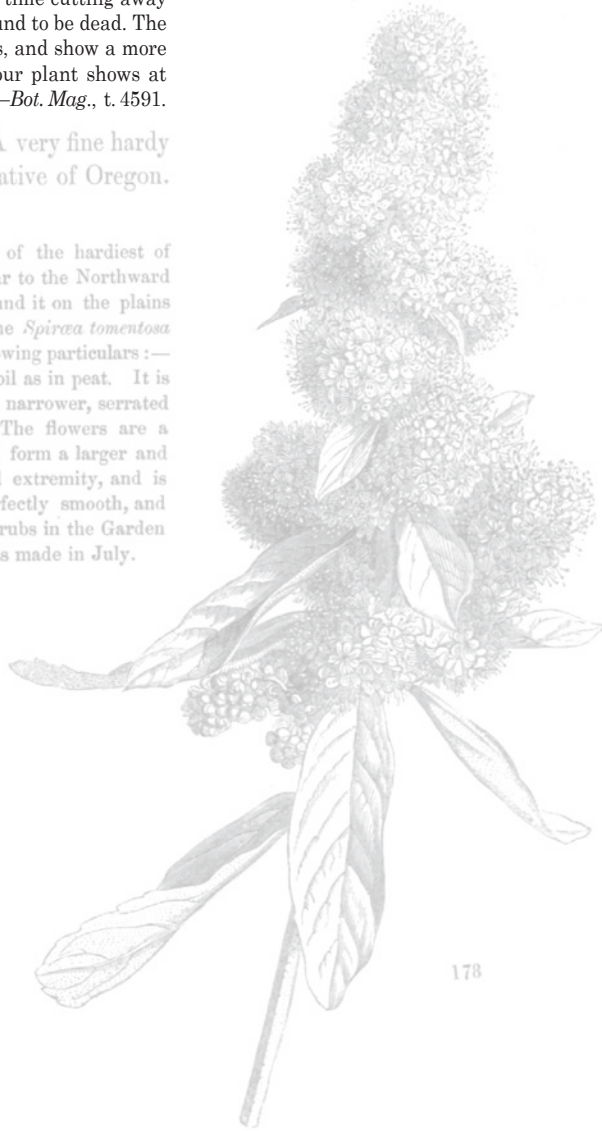
This brilliant addition to our Shrubberies is one of the hardiest of the North American Flora, naturally growing as far to the Northward as the straits of St. Juan de Fuca. Douglas found it on the plains of Oregon. In general appearance it resembles the *Spiræa tomentosa* of the United States, from which it differs in the following particulars:— It grows as well, if not better, in common garden soil as in peat. It is twice as robust a plant. Its leaves are longer, narrower, serrated not crenate, and white not brown underneath. The flowers are a deeper rose colour, and therefore handsomer, and form a larger and closer panicle, which always terminates in a round extremity, and is not taper-pointed. Moreover the carpels are perfectly smooth, and not buried in long down. It is one of the best shrubs in the Garden of the Horticultural Society, where our drawing was made in July.

355. *ACACIA GRANDIS*. *Henfrey*. A New Holland shrub, of the Leguminous Order, from the Swan River Colony. Flowers in yellow balls, in the spring.

This seems to be in no respect different from Mr. Bentham's *A. lasiocarpa*, published years ago, as far as can be ascertained from the materials laid before the public. It may be described in popular terms as a good variety of *A. pulchella*, with larger and more copious balls of flowers.

356. *EPIDENDRUM CORIIFOLIUM*. *Lindley*. A greenhouse epiphyte, native of Central America. Flowers green. Introduced by the Horticultural Society.

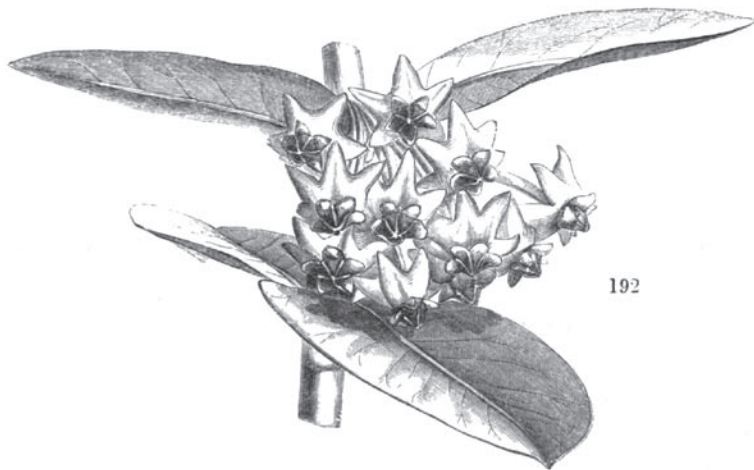
This singular plant is, in all its parts, of a tough, thick, leathery texture, and is generally glazed, as it were, with a shining exudation. The narrow stiff leaves are blunt, about six inches long,



silky hairs, and divided into five sharp triangular lobes. The carpels are quite smooth. Mr. Fortune has lately sent this from the northern part of China, but it was long since obtained for the Horticultural Society by Mr. Reeves, one of whose dried specimens is now before us.

382. HOYA CUMINGIANA. *Decaisne*. A stove scandent shrub, with dense flat leaves and short axillary umbels of greenish-yellow flowers. Native of the Philippines. Blossoms in May and June. Introduced by Messrs. Veitch and Son. (Fig. 192.)

At one of the exhibitions in the garden of the Horticultural Society this novelty was produced by Messrs. Veitch and Son. It is an erect bush with closely packed decussating sessile cordate leaves, very slightly downy beneath, and of a somewhat parchment-like consistence. The flowers are destitute of gay colours, the principal tint being yellowish-green, relieved by a coronet of rich purplish brown. It is very distinct from any of the other species in cultivation, and before flowering would not be taken for a Hoya at all.



383. CATHCARTIA VIL-

LOSA. *J. D. Hooker*. A beautiful annual (?) from Sikkim-Himalaya, with large yellow flowers. Belongs to Poppyworts. Introduced at Kew.

The following is Dr. Hooker's character of this new genus:—Calyx diphyllus, foliis æstivatione imbricatis, caducis. Corollæ petala 4, subrotunda, hypogyna, decidua. Stamina 25-30, hypogyna: filamenta filiformia gracilia; antheræ terminales, oblongæ, biloculares, loculis latere longitudinaliter dehiscentibus, connectivo interposito. Ovarium cylindraceum; 5-6-sulcatum, uniloculare. Ovula numerosa, in placentas filiformes 5-6 intervalvulares demum liberatas, anatropa. Stigma amplum, sessile, hemisphericum, carnosum, ovario latius, persistens, 5-6-radiatum, radiis lamelliformibus. Capsula erecta, stricta, siliquiformis, teres, unilocularis ad apicem, infra stigma persistens, fere ad basin 5-6-valvis, valvis linearibus: placentis filiformibus liberis ad apicem stigmati unitis. Semina numerosa, ovalia, compressa, scrobiculata, strophiolata, subcristata.—Herba annua vel biennis ex Himalaya orientali, pilis longis fulvis patentibus villosa. Caulis teres, subsimplex. Folia inferiora, radicalia præcipue, longe petiolata, cordata, subpalmatis seu pedatis 5-loba, lobis lobulatis, foliis superioribus sessilibus, supremis pinnatifido-lobatis. Pedunculi terminales axillaresque. Flores cernui. Calyx hirsutus. Petala flava, magnitudine Papaveris Rhœadis. Antheræ aurantiacæ. Stigma viride.

“ Found in Sikkim-Himalaya by Dr. Hooker, and reared in the Royal Gardens from seeds sent by him in the winter of 1850-1. It flowers in June, and may be treated as a hardy annual: the seeds ripening in July. The long, shaggy, fulvous hairs and bright yellow flowers give it a handsome appearance. In its foliage it differs remarkably from any of the *Papaveraceæ* with which I am acquainted, and no less in the fruit. It has the stigma of *Papaver*, while the mode of dehiscence corresponds rather with that of *Roemeria*. We cannot question its forming a new genus, which is named by Dr. Hooker in compliment to J. F. Cathcart, Esq., B.C.S., late Judge of Tirrhoot, who during a residence at Darjeeling devoted his whole time to the illustration of the botany of that neighbourhood, and superintended the execution, by native artists, at his own expense, of a collection of upwards of 700 folio-coloured plates of Himalayan plants. These drawings, which are of great botanical value, and embrace a multitude of new plants and others of the greatest beauty and rarity, are, by the liberality of their possessor, placed at Dr. Hooker's disposal for the illustration of the Botany of Sikkim. This new Papaveraceous plant was raised from seeds, received last year from the elevated regions of Sikkim-Himalaya. It appears to be a perennial rooted plant, but we must await the result of next winter, in order to know whether it is sufficiently hardy to bear the open air of this climate. Hitherto we have kept it in an airy frame, where it has flowered and produced perfect seeds. In summer it may be planted out in the open air in a cool shady place; but at the same time care must be taken that it does not remain long saturated with moisture, for, on account of the soft and villous nature of the leaves, a continued excess of moisture may cause them to damp off.”—*Bot. Mag.*, t. 4596.



[PLATE 62.]

THE HYBRID CRENATE CACTUS.

(PHYLLOCACTUS SPECIOSISSIMO-CRENATUS.)

A Garden Hybrid Greenhouse Shrub.

THE following is the history of this beautiful production. It happened that the *Phyllocactus crenatus* was in flower in the Garden of the Horticultural Society at the same time as a very fine variety of *Cereus Speciosissimus* belonging to Lady Antrobus. It occurred to Mr. Gordon to touch the former with the pollen of the latter. In due time a fruit was formed, and *Phyllocactus crenatus* became the mother of a batch of seed which has produced the race of hybrids of which the annexed is a figure.

The seedling selected for representation is probably the finest of the crop, but all the seedlings are much alike, chiefly varying in the deeper or paler colour of their flowers. The effect of the cross has been to form a mule with the stems and in some respects the flowers of *crenatus*, and with the colour, even as far as the well-known violet tinge, of *Speciosissimus*; so that the father gave colour and changed somewhat the form of the flowers, while the mother gave general habit.

It is evident that the Cacti mule freely. Many are in our gardens of uncertain origin. Sir Philip Egerton is celebrated for the success with which he has mixed them at Oulton Park, and the present case shows that great results may be thus obtained; for this is an example of undoubted beauty. We would, therefore, suggest the advantage of carrying these experiments much further. Why not cross the *Mammillarias* and *Echinocacti* with *Cereus* and *Phyllocactus*? Very singular productions might thus result. But above all why not cross the hardy *Opuntias* with the brilliant species of our hothouses. Some *Opuntias* will stand our winters without any protection near London, and there is no physical reason why they should not become the parents of a race of hardy and very ornamental Cacti, although they have no beauty themselves.



[PLATE 65.]

THE LONG-LEAVED BROMELIA.

(BROMELIA LONGIFOLIA.)

A Hothouse Perennial from GUIANA, belonging to the Natural Order of BROMELIADS.

Specific Characters.

THE LONG-LEAVED BROMELIA. Leaves very long, scurfy, with spiny teeth, curved backwards, and extended into a long, linear, bristle-shaped point. Spike globose, nearly sessile, many-flowered. Bracts oblong, roundish, serrulate, with a sharp abrupt point, covered with white meal. Sepals linear-lanceolate, somewhat spiny, mealy, rather more than half as long as the petals.

BROMELIA LONGIFOLIA; foliis longissimis farinosis spinoso-dentatis recurvis in apicem longum linearem setaceo-acuminatum productis, spicâ globosâ subsessili multiflorâ, bracteis oblongis subrotundis serrulatis cuspidatis albo-furfuraceis, sepalis lineari-lanceolatis subspinosis furfuraceis petalis via duplò brevioribus.

Bromelia longifolia: Rudge, Plantæ guianenses, p. 31, t. 49.

FOR this very fine Bromeliad we are indebted to Mr. Henderson of the Wellington Road Nursery, who exhibited it at the meetings of the Horticultural Society in August last, as the *Tillandsia* _____, of some manufacturer of Garden names. It is a true Bromelia, and was long since published in the work above quoted, with a figure in outline made from a dried specimen collected in Guiana by Martin.

Leaves from 14 to 2 feet long, narrow, channelled, tapering to a fine point, coarsely spiny-toothed, white beneath, greyish green, and smooth on the upper side, gracefully curving away from the centre. Head of flowers like a rich rose-coloured cone, standing on a short stalk, with a few narrow crimson spiny bracts at its base, powdered with a white meal. The proper bracts are broadly ovate, concave,

cuspidate, finely serrated, as long as the flowers. Ovary inferior, smooth, shining, sharply triangular, with six placentæ standing in pairs near the inner angles of three double partitions. Sepals keeled at the back, narrow, acuminate, slightly serrated, somewhat mealy. Petals not quite twice as long, erect, pink, obovate, apiculate, naked at the base. Stamens six, equal, as long as the petals. Style somewhat protruded, with three short slightly twisted stigmas.

The species is one of the prettiest of its race, which we are glad to perceive is gradually coming into favour among gardeners. For brilliancy of colour the Vegetable Kingdom hardly produces anything equal to that of many species of Bromeliads; witness the *Vriesias*, *Æchmeas*, *Pitcairnias*, and *Billbergias* already in cultivation.

PAXTON'S

FLOWER GARDEN.



BY

PROFESSOR LINDLEY AND SIR JOSEPH PAXTON.

IN THREE VOLUMES.

VOL. III.

LONDON :
BRADBURY AND EVANS, 11, BOUVERIE STREET.
1853.



[PLATE 73.]

THE RETUSE ECHEVERRIA.

(ECHEVERRIA RETUSA.)



A handsome winter-flowering Greenhouse Succulent Plant, from MEXICO, belonging to the Order of HOUSELEEKs.

Specific Characters.

THE RETUSE ECHEVERRIA. Caulescent. Leaves obovate, spatulate, finally scattered, glaucous, when old retuse and somewhat crenated; those of the stem linear-oblong, entire, free at the base. Panicle small, dense, divaricating, somewhat corymbose, with few-flowered branches. Sepals narrowly ovate, acute, unequal, much shorter than the corolla. Petals acute, keeled, gibbous at the base.

ECHEVERRIA RETUSA; caulescens, foliis obovato-spathulatis demum sparsis glaucis; vetustis retusis crenulatis; caulinis lineari-oblongis integerrimis basi solutis, paniculâ parvâ densâ divaricatâ sub-corymbosâ ramis paucifloris, sepalis anguste ovatis acutis inæqualibus corollâ multò brevioribus, petalis carinatis acutis basi gibbosis.

Echeverria retusa: Lindley, in Journ. of the Hort. Soc., vol. ii., p. 306.

THIS is by no means so well-known a plant as its usefulness should have rendered it, seeing that it was published almost five years since in the *Journal of the Horticultural Society*, with the following account

“It was raised from seeds, received from Mr. Hartweg in February, 1846, and said to have been collected on rocks near Anganguco, in Mexico. A dwarf species, not unlike a contracted form of *E. Scheerii*. Its leaves are originally closely imbricated, but are never truly rosulate, and by degrees separate as the stem lengthens; they are broad at the point, but acute when young; when old become extremely blunt and irregularly crenated, as well as bordered with purple. The flower-stem is from nine inches to more than a foot high, and bears at the very summit a compact panicle of handsome crimson flowers, covered with a delicate bloom, and orange-coloured inside. It is a pretty

greenhouse, half-shrubby species, growing from one to two feet high, and thriving vigorously in a light mixture of sandy loam with leaf-mould and plenty of sand. It is easily increased by the leaves, and flowers freely from November to April, that is to say, throughout the winter.”

No plants are better suited to window gardens than these Echeverrias, all the species of which blossom the whole winter long, will thrive in soil of any sort, are not very impatient of either heat or cold, dryness or dampness, and which are so varied in colour, form, and manner of growth, as to form of themselves variety enough for such a space as the recess of a window affords. One of the most singular is the *Pachyphytum bracteosum* of Klotzsch, which does not appear to be in any way distinguishable from the genus.



[PLATE 74.]

THE THYRSE-LIKE BILLBERGIA.

(BILLBERGIA THYRSOIDEA)

A Stove Perennial, from BRAZIL, with rich crimson bracts, arranged in a cone, belonging to BROMELLADS.

Specific Characters.

THE THYRSE-LIKE BILLBERGIA. Leaves erect, broadly strap-shaped, obtuse with a point, uniformly concave, spiny-toothed, about as long as the scape. Bracts ovato-lanceolate, acuminate, collected into a cone or spike like a thyrse in form. Calyx covered with white mealiness. Petals obtuse, much longer than the calyx.

BILLBERGIA *THYRSOIDEA*; foliis erectis lato-ligulatis obtusis cum acumine æqualiter concavis, spinoso-serratis scapo sub-æqualibus bracteis ovato-lanceolatis acuminatis in strobilum aggregatis, spicâ thyrsoideâ, ovariis albo-farinosi, petalis obtusis calyce multò longioribus.

Billbergia thyrsoidea: Martius in Römer and Schultes Sp. Plant., 7., 1261.

A PLANT with the manner of growth and appearance of a Pine Apple, except that the leaves are wholly destitute of a mealy or glaucous covering, but are a clear bright green. Leaves loosely arranged, rather wavy, with small prickly serratures, and a short abrupt point. Bracts rich crimson, very regularly arranged in an oblong obtuse cone, or thyrse, not mealy. Flowers rather larger than the bracts, and of nearly the same colour. Sepals oblong, obtuse, smooth, rather shorter than the closed-up straight erect petals. Stamens six; three free, and opposite the sepals; three united to about the middle of the petals which have at the base a pair of half ovate scales, the outer edge of which is coarsely toothed. Ovary covered with a fine white loose mealiness, which is composed of minute oval loose cells filled with air; three-celled, with numerous anatropal ovules having an elevated raphe, a crested chalaza, and a large secundine projecting beyond the orifice of the primine; the stigmas are three, and convolute.

Such are the characteristic marks of this very beautiful stove plant, originally found by Martins on rocks near Rio Janeiro, and recently imported by NI. de Jonghe of Brussels. For the opportunity

of figuring it we are indebted to Mr. Henderson of the Wellington Nursery, St. John's Wood. It requires to be managed in the same way as a Pine Apple.

It is most nearly allied to the Pyramidal *Billbergia* figured in the *Botanical Magazine*, t. 1732, and in the *Botanical Register*, t. 203 and 1181; but that plant has glaucous taper-pointed leaves, and very large spreading flowers, conspicuous for the white mealiness of the calyx.



[PLATE 77.]

THE MOREL BILLBERGIA.

(BILLBERGIA MORELIANA.)

A very fine Stove Perennial, from BRAZIL, belonging to the Natural Order of BROMELIADS.

Specific Characters.

THE MOREL BILLBERGIA.—Leaves strap-shaped, channelled, blunt, banded with white, as long as the stem, with some spiny teeth near the base. Stem smooth, clothed with large loose petaloid distant scales. Raceme many-flowered, recurved, nearly smooth. Bracts coloured, finely scaly at the back, longer than the fascicled flowers. Sepals oblong, obtuse, mucronate, with a membranous margin, smooth, as well as the ovary. Petals revolute, much longer than the sepals. Stamens projecting far.

BILLBERGIA MORELIANA; foliis ligulatis canaliculatis obtusis albo-fasciatis versus basin spinoso-dentatis cauli æqualibus, caule glabro squamis magnis petaloideis laxis distanter vestito, racemo multifloro recurvo glabriusculo, bracteis coloratis dorso minutissimè lepidotis floribus fasciculatis longioribus, sepalis oblongis obtusi mucronatis membranaceo-marginatis ovarioque lævibus, petalis revolutis calyce multò longioribus, staminibus longè exsertis.

Billbergia Moreliana: Adolphe Brongniart in "Portefeuille des Horticulteurs." Revue Horticole, iii., 82.

ONE of the most charming of the Bromeliaceous Order, and among the easiest to cultivate. Its flaming rose-coloured bracts contrast finely with the deep clear violet of the petals, and appearing on drooping racemes above a foot long, produce an unusual as well as most brilliant effect.

The species appears to be a native of Brazil. It was originally published by Prof. Adolphe Brongniart in the *Portefeuille des Horticulteurs*, a work we have not seen. Shortly afterwards it was mentioned in the *Revue Horticole* in the following terms:—

“This magnificent Bromeliad is cultivated by M. Morel, a zealous amateur, possessing the most beautiful collection of Epiphytes in Paris. In its leaves, the species which we describe reminds us of

certain *Tillandsias* destitute of spiny teeth; but the flower-stem, turned back, branching, and furnished at the upper end with large bright rose-coloured delicate and semi-transparent bracts, covered with a white mealy powder, immediately distinguishes it. From the axil of these bracts spring the flowers, which are slightly irregular, of a pure violet colour, rendering this species one of the most beautiful ornamental plants of our hot-houses. M. Morel cultivates it in baskets, hung up, and filled with peat earth covered with *Lycopodium*, which retains the freshness of the soil, and at the same time indicates the moisture of the house."

We find no other notice of the plant. The specimen now represented was flowered in the garden of the Horticultural Society, where it had been received from M. Keteler, of Paris, in 1848, as a fine variety of *Billbergia zebrina*. In February last we observed it in flower with Messrs. E. G. Henderson and Co., of the Wellington Nursery, St. John's Wood, who obtained it from M. Morel himself.

As to *Billbergia zebrina*, of which it has been supposed to be a variety, it is enough to observe that the ovaries and sepals of that plant are closely coated with white meal, and the stamens twice as long as in the plant before us, to say nothing of the leaves of *Billbergia zebrina* being spiny to their points, and the bracts by no means so richly tinted.



Stenandrium del. & zinc.

[PLATE 80.]

THE MANY-SPIKED BILLBERGIA.

(BILLBERGIA? POLYSTACHYA.)



A handsome evergreen Hothouse Perennial, Belonging to BROMELIADS, from BRAZIL.

Specific Characters.

THE MANY-SPIKED BILLBERGIA. Leaves channelled, with spiny teeth, curved back at the point, inflated at the base, shorter than the scape. Spike conical, many-ranked, mealy. Bracts roundish, acuminate, closely imbricated.

BILLBERGIA? *POLYSTACHYA*; foliis canaliculatis spinoso.dentatis apice recurvis basi ventricosis scapo brevioribus, spicâ conicâ polystachyâ farinosi, bracteis subrotundis acuminatis arcuè imbricatis.

OUR knowledge of this beautiful plant is very imperfect. A specimen in flower was exhibited by M. de Jonghe, of Brussels, at one of the Meetings last year in the Garden of the Horticultural Society, as a new species of *Billbergia*. Having been afterwards removed we had no opportunity of describing it, and are only now able to make it known by means of a coloured drawing which accompanied the specimen.

It is no doubt a Brazilian plant, and seems nearly related to Lemaire's *Billbergia rhodocyanea*, another charming species, figured in the *Flore des Serres*, vol. iii., p. 207, with long loose stiff spiny-toothed crimson bracts, bright blue corollas, and broad blunt dark green leaves banded with white. That plant flowered with Mr. Van Houtte, but has not appeared in our gardens.

smaller petals and the other parts of the flower. When opened, they appear to be carinate, and exhibit the remarkable fleshy protuberance peculiar to the genus, at the base of each, and which in this species is about the length of the sepals, curved, deep green. The inner petals are curiously formed, being fiddle-shaped, broadest near the point, which is obtuse and a little elongated, and supported for half their length by a small slender thread cohering to the lower part of the stamens, and attached at the base opposite the sepals. Stamens closely surrounding the style; the lower half of each is slightly angular and fleshy, with an uneven surface; the upper part is capillary, bearing the anthers on the top. Style long, slender, and compressed, pale green, with a comparatively broad and thin angular point." The fruit is an oblong, cylindrical, fleshy, violet pod, about an inch long, and contains numerous kidney-shaped black seeds on two opposite parietal placentae. Its fleshy indehiscent fruit constitutes the generic peculiarity by which it is separated from *Dielytra*.

504. *IMPATIENS FASCICULATA*. *Lamarck*. (*aliàs* *Balsamina fasciculata De Cand.*; *aliàs* *Impatiens setacea Colebrooke*; *aliàs* *I. heterophylla Wallich*; *aliàs* *Balsamina heterophylla Don.*) A neat succulent tender annual, with solitary axillary pale flesh-coloured flowers. Native of Ceylon.

Seeds of this pretty Balsam were sent by Mr. Thwaites, from the hilly country of Ceylon, to the Royal Gardens of Kew, where the plants blossomed in the summer of 1851. The name *fasciculata* is not a very appropriate one; for though some of our wild specimens have the peduncles in opposite pairs, and hence appearing somewhat fasciculate, other specimens are not, and our cultivated plants had them invariably solitary in each axil. The genus or family is described as being destitute of stipules; but in the present species, unnoticed as far as I am aware by authors, yet figured by Dr. Wight's artist, is a remarkable deflexed and very conspicuous spur at the base of each side of the leaf and decurrent with the stem, which I can look upon in no other light than as a stipule. The plant is found in a great part of the continent of India, as well as in Ceylon, appearing all over the Peninsula in marshy grounds, decorating them, as Dr. Wight says, with its large showy pink flowers. Colebrooke gathered it in Sylhet; Mr. Griffith in Khasiya; and Drs. Hooker and Thomson along the whole Himalayan range. Requires the same treatment, in every respect, as *Impatiens cornigera*; and being of the same nature, will be difficult to retain as a garden plant, otherwise than by yearly importing fresh seeds from Ceylon.—*Bot. Mag.*, t. 4631.

505. *PITCAIRNIA FUNKIANA*. *Dietrich*. (*aliàs* *Puya Funkiana Linden.*) A charming hothouse perennial, with yellow and white spikes of flowers. Belongs to Bromeliads. Inhabits the Andes of Merida.

P. caule folioso tenuè tomentoso, foliis elongato-lanceolatis integerrimis glabris nudis nitidis, vaginis tenuè tomentosis, racemo terminali pyramidato, bracteis ovatis acuminatis calycem subæquautibus, petalis rectis apice acutis subrecurvatis basi nudis, stylo longitudine petalorum.

This beautiful plant is now in flower in the garden of M. Nauen, of Berlin. Its blossoms are white and surrounded by a calyx and bracts of a yellow colour; it is cultivated in M. Linden's garden, in Brussels, under the name of *Puya Funkiana*, and is to be found under the same name in his catalogue (No. 5, 1850). A closer examination, however, has shown that the plant is not a *Puya*, but a *Pitcairnia*, for the former has the ovary free and not joined to the calyx, whilst the latter, as also the plant in question, has the ovary united at its base with the calyx. This species was found by Messrs. Funk and Schlim, in the deep moist valleys of the higher Andes of Merida, and was sent by them to M. Linden's establishment, and on this account we have retained the specific name proposed by the latter gentleman, in honour of the discoverer. The species belongs to the first subdivision of the genus, having its petals naked at their base, not furnished with scales. This species, like most Bromeliads, is cultivated in a hothouse, and requires a soil composed of equal parts of leaf-mould and loam, mixed with some kind of rounded sand. During the period of vegetation, plenty of water should be given, but in such a manner that all excess may run off, and therefore a layer of stones, or some such material, should be placed at the bottom of the pot. A temperature of 59° to 65-75° Fahr. is required in winter, and a more shaded or sunny place in the hothouse in summer suits this as well as other species. Bottom heat is not required, as the plant grows vigorously on the shelves of a hothouse. The plant is very handsome, and well worthy of notice. Its price is, according to M. J. Linden's catalogue, fifteen francs.—*Allgem. Gartenzeit.*, Oct. 25, 1851.

506. *CANNA WARCZEWICZII*. *Dietrich*. A handsome hothouse perennial, belonging to the Order of Marants. Flowers scarlet. Native of Central America. Introduced by M. Von Warczewicz.

C. foliis ovatis vel ovato-oblongis cuspidato-acuminatis glabris margine cauleque coloratis, germine subgloboso papilloso colorato, calycis phyllis lanceolatis obtusis coloratis rore glauco adpersis, labio superiore corollæ limbi interioris bipartito, laciniis obverse lanceolatis obtusis, labello revolutò anguste spathulato obtuso apice emarginato, stylo lineari.

This is one of the many plants discovered by M. Von Warczewicz, who brought its seeds with him from Central America. Specimens in flower may be seen in several gardens, as, for example, in those belonging to M. Mathieu, and M. Dannenberger, of Berlin. There is no doubt that it is a new and hitherto undescribed plant. It is very

In addition to these, others no doubt remain unexamined among South American collections, exclusive of the following :—

Doubtful Species.

11. *N. laxiflora* Westcott, in the *Phytologist*, i. 54 ; perhaps the same as *N. aromatica*.
12. *N. orbicularis* Richard & Galeotti ; a Mexican plant that we have never seen.

517. *KLUGIA NOTONIANA*. De Candolle. (*aliàs* *Wulfenia Notoniana Wallich* ; *aliàs* *Glossanthus Notoniana Brown* ; *aliàs* *Glossanthus malabarica Klein* ; *aliàs* *Glossanthus zeylanica Brown*.) An annual weedy plant, with deep blue flowers. Native of Ceylon. Belongs to Gesnerads.

The genus *Klugia* of Schlechtendahl in *Linnaea* (1833), the same with *Glossanthus* of Klein (1835) and of Brown, was founded on a Mexican plant ; but a congener, if not congeners, are found in India : the present is one of them, remarkable for the great obliquity of the base of the leaf, and the brilliant colour of the blue flowers. Our living plants were received from Ceylon, through the kindness of our valued friend Mr. Thwaites, of the Botanic Gardens, Peradenia. Hence we suspect it may be the *Glossanthus zeylanica* of Mr. Brown, l.c., without description. It is, however, certainly the *Wulfenia notoniana* of Dr. Wallich, and consequently *Glossanthus notoniana* of Mr. Brown, and *Klugia notoniana* of De Candolle, whose name we here adopt. It is abundant in the Neilgherry hills, and flowers in the stove in September. A soft-stemmed tropical plant, of low decumbent habit, and producing roots from the under side of the stem. It is at this time growing and flowering freely in a warm stove. A mixture of light loam and peat-soil suits it, and it appears to love moisture ; it is, however, liable to suffer by an excess of moisture in the atmosphere of the house in the winter, and more particularly towards the spring, as by that time its powers have become exhausted and it is apt to damp off.—*Bot. Mag.*, t. 4620.

518. *ACANTHOSTACHYS STROBILACEA*. Klotzsch. (*aliàs* *Hohenbergia strobilacea Schultes*.) A curious perennial, with very narrow spiny leaves, like the Pine Apple, and a short prickly cone of yellow flowers in orange-coloured bracts. Belongs to Bromeliads. Native of Mexico. (Fig. 56.)

According to Mr. Otto this comes from the southern provinces of Brazil, where it was first found by Martins, and afterwards by Sello. It flowers in the stove in June and July, in equal parts of sand and decayed vegetable mould. A second species is *Hohenbergia (Acanthostachys) capitata*, also from Brazil. One of the great peculiarities of this genus is its having its ovules in pairs only, and not in crowds on the edges of an axile placenta; it is inferior-fruited, like *Ananassa* itself. The leaves are very long and narrow, thick, curved, prickly, channelled, and scurfy. The scape is long, simple, mealy, and bears at the base of the prickly spike (or cone) a pair of very long channelled leafy spathes.—*See Link, Klotzsch, and Otto's Icones.*



Flowers axillary, with pentagonal solitary or twin peduncles, calyx glabrous; the tube one-third as long as the subulate segments, which are one-third shorter than the glabrous corolla; limb of the corolla ciliate; stamens much exerted, hairy; style very short, included within the tube of the calyx.

A glabrous shrub with round greenish stems and thick broadly lanceolate acuminate stalked leaves, without evident veins, but having beneath a prominent purple costa, and a corresponding channel above; the margin almost entire when fully grown, but having a few glandular teeth-like projections when young; four inches long, an inch and a half broad, on petioles half an inch long, deep green above (sometimes obscurely dotted with dull purple), dull reddish purple beneath. Flowers axillary, with minute bracts at the base of the glabrous distinctly pentagonal peduncles, which are longer than the petioles. Tube of the calyx prismatical, nearly as long as the peduncles, and three times shorter than the subulate segments of its limb, glabrous and purplish throughout. Corolla one-third longer than the calyx, the green tube widening upwards slightly curved, the limb oblique with roundish ciliated segments, marked within with three converging chocolate-brown bars, which meet within the border and form an angular figure on each segment. Stamens half as long again as the corolla, hairy above. Style half as long as the tube of the calyx, straight, the stigma forming a groove at the scarcely expanded apex. Ornamental owing to its coloured foliage. This is the *A. atrosanguineus* Hort. (not of Paxton's Bot. Dict., which is stated to have dark red flowers). It may also be the *A. atropurpureus* Hort. Van Houtte (Walp., Rep. V., 521), but the leaves in our plants are scarcely spotted except by accidental discoloration, and the flowers of Van Houtte's plant are not described.

522. *ÆSCHYNANTHUS MARMORATUS*. Leaves oblong-lanceolate (or obovate-lanceolate or ovate), acuminate, scarcely toothed, obscurely veined; flowers axillary, calyx puberulous, the tube obsolete; segments of the limb subulate-aristate; corolla glabrous, twice as long as the calyx; the limb ciliated; stamens exerted, hairy above; style nearly equalling the tube of the corolla, densely villous.

A smooth shrub with round green stems and broadly lance-shaped acuminate variable leaves which are fleshy, the obscure veins pallid green on both sides, with deep green intervening above, and reddish purple below; they are three and a half inches long, and an inch and a half broad, stalked, and obsoletely glandular-toothed when young. Flowers axillary, on pentagonal peduncles as long as the petioles. Calyx clothed with scattered hairs, divided almost quite to the base, the segments subulate-aristate, purplish, and about half as long as the corolla. The corolla has a curved tube widening upwards, and an oblique limb of roundish ciliated segments, the tube green, the limb blotched with chocolate-brown. Stamens much exerted, hairy in the upper part. Style nearly as long as the tube of the corolla, thickened and glabrous below, densely villous above, terminated by an expanded transversely grooved stigma. The marbled leaves give the plant an ornamental character.

This is the *A. zebrinus* of English gardens, and is probably the *A. zebrinus* Hort. Van Houtte (Walp., l.c.) It cannot, however, be the *A. zebrinus* of Paxton's Bot. Dict., for that is stated to have scarlet flowers.

Both this and *A. discolor* are evidently nearly related to *A. purpurascens* Hasskarl; but, independently of other differences in the foliage and flowers, *A. discolor* is at once distinguished by its very short style, and *A. marmoratus* by its obsolete calyx-tube.

523. *BESCHORNERIA TUBIFLORA*. Kunth (*aliàs* Fourcroya tubiflora Kunth & Bouché) An Aloe-like greenhouse perennial, belonging to Amaryllids. Flowers greenish-brown. Native of Mexico.

Imported from Mexico to the Royal Gardens of Kew, where it produced its Agave-like blossoms in a cool greenhouse in February 1852. Professor Kunth considers the genus to be intermediate between *Littæa* (Agave, sect. 2) and *Furcraea*, differing from the latter in habit, from the former in its included stamens, and from both in the tubular flower. Stemless. Leaves radical, tufted, spreading and more or less recurved, linear, sword-shaped, very much acuminate, eighteen inches to two feet long, thickened and narrowed and triangular at the base, minutely striated, glaucous-green, beneath rough to the touch, and when seen under the microscope mucronated on the nerves, and sharply denticulated at the margin. Scape erect, in our plant four feet high, bearing a many-flowered erect raceme. Flowers fascicled, drooping two to four from the top of a blunt tooth or swelling, bearing a large purple-coloured, ovate, membranaceous bractea. Pedicels shorter than the bractea, green, terete, bearing each a subulate bracteole at its base. Perianth divided to the top of the ovary, into six green, spatulate, nearly equal segments (brownish-purple externally), erect and approximating into a tube, the apices only spreading. Stamens six, equal, erect, rather shorter than the perianth; filaments subulate; anthers linear-oblong, pale green. Style dilated and six-angled at the base; stigma small, three-lobed.—*Bot. Mag.*, t. 4642.

524. *ECHINOCACTUS LONGIHAMATUS*. Galeotti. A glaucous ribbed succulent plant with very long recurved spines and large yellow flowers. Native of Mexico. Blossoms in July.

A fine and handsome species:—remarkable in the very prominent ridges, the large and regularly arranged spines, the central one very long, flattened, and hooked at the end, and handsome in the size and colouring of its flowers, both in the bud and when fully expanded. It is a native of Mexico, and appears to have been introduced to our collections by M. Galeotti.—*Bot. Mag.*, t. 4632.

inter se inæqualibus, petiolatis, grosse serratis, ciliatis, supra sparsim pubescentibus, subtus nervoso-hirsutissimis; corymbis in apice ramulorum axillaribus, longissime pedunculatis, folio subtriplo longioribus, 4—5-floris; calycis laciniis ovatis, acutis, obsolete trinerviis, utrinque germineque dense pilosis, tubo corollæ lanato, 4 duplo brevioribus, post anthesin patentibus; corollis maximis, virescentibus, purpureo-maculatis, limbi lobis patentibus, rotundatis, intus glabris; filamentis styloque hirtis; stigmate incrassato; seminibus longissimis, scobiformibus; disco epigyno annulari, obsolete 5-crenato.

This climbing bush, of which plants were sold for 6s. each by Messrs. Ohlendorff & Sons, in Hamburg, in 1845, was discovered by M. C. Moritz in the snowy mountains of Merida (Venezuela), who sent seeds of it to the above-named gentlemen; dried specimens of it, collected by Mons. Bonpland, were in the Herbarium of M. Kunth, but the country whence they came did not appear. The plant is from a foot and a half to two feet high; the leaves from four to seven inches long, and from one and a half to three inches broad; the flowers are bell-shaped, pendulous, three inches long, and nearly two inches in diameter, woolly outside, smooth inside. There are now twelve species of this well-limited genus, and of these one half come from the West India islands—one is from Brazil, two from Peru, one from Columbia, and two from Central America. The flowers are all more or less bell-shaped, hairy on the outside, with five distinct lobes to the corolla, yellowish or greenish, and spotted with dark red purple. The fifth pollen cell, which M. Von Martius supposes, in his description of the genus, to be abortive, is absent from all the species which I have had the opportunity of examining.—*Klotzsch, in Allgem. Gartenzeit., Jan. 17, 1852.*

531. ECHEVERIA. BRACTEOSA. (*aliàs* Pachyphytum bracteosum *Link, Klotzsch, & Otto.*) A glaucous succulent undershrub. Native of Mexico. Flowers green and red. Belongs to the Order of Houseleeks. Blossoms in January and February. (Fig. 261.)

This very fine species was sent to the Royal Botanic Garden, Berlin, in 1838, from Mexico, by Mr. Charles Ehrenberg; but we have not remarked it in English collections. Dr. Klotzsch, in publishing it in his *Abbildungen*, compared it with the genera Cotyledon and Pistorinia, from which it is very different, and overlooked that of Echeveria, forming it into a new genus, which he called Pachyphytum. It is, in fact, nothing whatever more than an Echeveria with a large fleshy calyx. The whole plant is covered with a thick glaucous bloom. The leaves grow in rosettes at the end of a short fleshy stem, are flat, obovate, obtuse, almost a quarter of an inch thick. From amongst them rises a slender leafless peduncle, clothed with narrow spatulate deciduous fleshy scales, and bearing at the end a recurved, one-sided, close raceme. The sepals are oblong, erect, united at the base into a short cup, rather unequal, and considerably longer than the dull red petals. It probably exists in our gardens among the Mexican Echeverias that have not yet flowered.

532. STROBILORACHIS GLABRA. *Link, Klotzsch, & Otto.* (*aliàs* Strob. prismatica *Nees; aliàs* Ruellia prismatica *Vellozo; aliàs* Harrachia macrothyrsus *Martius; aliàs* Justicia imbricata *Pohl.*) A hothouse shrub, with green cones of bracts and pale yellow flowers. Native of Brazil. Belongs to Acanthads. (Fig. 262.)

This plant has something the habit of an Aphelandra. The leaves are oblong-lanceolate, acuminate, convex, wavy bright green. The flowers are arranged in four-cornered, cones, four or five inches long, formed of strongly keeled, ovate, green bracts, from within which appear pale yellow bilabiate corollas, having a truncate two-lobed upper lip, and a three-lobed lower lip, the middle lobe of which is broader and more blunt than the laterals. The species is by no means infrequent in continental gardens, to which it was introduced from Berlin. Its native place appears to be damp shady places on the Corcovado Mountain in Brazil, and in many similar places near Rio Janeiro. We are at a loss to understand upon what principle the name first given to the plant by Dr. Klotzsch was altered by Professor Nees von



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[Plate 86.]

THE LONG-LEAVED PUYA.

(PUYA LONGIFOLIA).

A Stove Herbaceous Plant, supposed to come from the CARACCAS, belonging to the Order of BROMELIADS.

Specific Characters.

THE LONG-LEAVED PUYA. A bulbous, stemless plant. Leaves of two forms; the external spiny, leathery, narrowly pinnated, with a long awl-shaped point; the internal grass-like, smooth, much longer than the spike. Bracts nearly smooth, shorter than the calyx. Sepals linear-lanceolate, keeled, shorter than the petals, which are rolled into a tube split on one side.

PUYA LONGIFOLIA; bulbosa, acaulis, foliis biformibus, exterioribus spinosis coriaceis angustè pinnatis apice longo subulato interioribus gramineis lævibus spicâ pluries longioribus, bracteis glabriusculis calyce brevioribus, sepalis lineari-lanceolatis carinatis petalis in tubum hinc fissum convolutis duplò brevioribus.

Puya longifolia: Morren, in *Annales de la Société Royale de Gand*, vol. ii., p. 483, t. 101.

A SPECIMEN of this plant was sent to us in March last by Messrs. Weeks & Co. of the King's Road, with the flowers in the pallid state now represented. Since the plate was prepared, we have discovered that the species has been figured in the work above quoted, and that the flowers are, when in health, as deep in tint as the most scarlet Tillandsia. In Professor Morren's plant, the outer leaves were moreover broader and nearly pinnatifid, not cut down to the middle, as in ours. The account which he gives of it is this.

"This new kind of *Puya* possesses the coral-red brilliancy of the flowers of its congener, the *P. Altensteinii*, but its spike is much smaller. It has the habit and appearance of the *P. heterophylla* of Lindley (*Botanical Register*, 1840, t. 71), which it resembles in the bulbs, which do

not flower; but in all other respects it is different. The leaves are much longer, linear, and are often as much as a foot and a half in extent curving down around the plant, and even doubling by their own weight. The spike consists of very long straggling flowers, by no means collected into a capitate spike. The corolla of *P. heterophylla* is rose, this is as red as the richest coral; one might say that the scarlet of the bracts of *P. Altensteinii* is here transferred to the corolla, which in that species is dazzling white. The form of the nectarial scales is also different in *P. heterophylla*.”

It is uncertain when this plant came into our gardens; all that was known about it to Prof. Morren was that it was introduced into Belgium in 1843 by government collectors of plants, and he thought it highly probable that it came from Mexico. But then he adds, that it is also very probable that it came from either La Guayra or the Caraccas, where Messrs. Funck, Linden, and others had been employed.

It is strictly a stove species, demanding the treatment of Tillandsias and similar plants. It is probable that it would look best if grown like an epiphytal Orchid, which would allow the long narrow leaves to hang down without risk of being bruised or broken.

colour, which is deepened by the greyness of the underside. From amongst this foliage the numerous yellow and carmine flowers peep out. The flower itself measures, with the spur, about one and a half inch in length. The calyx and spur are brick-red, inclining to carmine and running into pale green, the former at its base, and the latter at its point.—*Maurer, in Allgem. Gartenzeit., Dec. 13, 1851.*

541. *BESCHORNERIA YUCCOIDES*. A very fine half-hardy perennial from Mexico. Flowers green, among deep red bracts. Belongs to Amaryllids.

B. Yuccoides; foliis radicalibus crassis rigidis lato-lanceolatis acuminatis suprâ lævissimis subtus tactu scabris margine minutissimè cartilagineo-serrulatis, scapo racemoso subpaniculato, bracteis amplis coloratis maculatis, floribus glabris tripolli caribus pedunculatis fasciculatis.

The original species of this genus, *Beschorneria tubiflora*, has no distinct stem, but produces its erect scape from the midst of a tuft of linear radical leaves, which taper into a long fine point, and are rough at the edges with very minute toothings; they are from fifteen to eighteen inches long, by from four to six lines wide, stiff and dark green. This we learn from Kunth. In the species now published, the leaves are broad and thick, like those of *Yucca aloifolia*. The scape rises gracefully to the height of six or seven feet, with a few lateral branches; it is smooth, blood-red, obtusely angular, and clothed at every internode with large membranous ovate crimson bracts. The flowers grow in fascicles of from two to four each, on pedicels from half an inch to an inch long, from which they very readily disarticulate; when full-grown they are two and a half inches long above the articulation. The ovary is clavate, acutely triangular, three-celled, with numerous horizontal ovules in a double line. The sepals and petals are green, distinct, but formed into a tube, and nearly alike in form and texture, narrowly oblong, channelled, obtuse, with a thick rib at the back; the former are more channelled and narrower than the latter; both are yellow at the point, and become ruddy at the back honey is secreted in abundance from near the base, when the flowers are open; but they never spread much at the end. The stamens are six, equal, inserted into the base of the sepals and petals; the filaments are quite straight, and awl-shaped at first; after a time they acquire a sigmoid form near the base in consequence of not being able to extricate themselves from the flower as they lengthen. The anthers are versatile, linear, two-celled, arrow-headed at the base, and contain a pale greenish pollen; the pollen-grains usually adhere in fours, or a smaller number, are smooth, spherical, and have a distinctly pitted surface; placed in water they quickly burst their outer shell, when the inner sac will escape in the form of a free transparent globe. The style is continuous with the free triangular apex of the ovary, is slender, three-cornered, and terminates in a papillose three-lobed stigma, from which drops of honey exude some time before the flower expands.

The scape of this plant contains a great quantity of singularly tough woody tubes and spiral vessels, lying in the midst of very firm colourless transparent cells. The sides of the cells, and of the woody tubes also, are very conspicuously marked with short oblong bars or roundish specks upon the inside of their walls. In the presence of iodine the tissue becomes pale yellow, but the bars and specks undergo no change; they are, therefore, not protoplasm; are they deposits of siliceous matter?

The three genera, *Agave*, *Furcraea*, and *Beschorneria*, are nearly related but satisfactorily distinguished. In *Agave* the filaments are folded down before expansion; in the other two they are straight. Then *Furcraea* has short filaments, with a great dilated base; while in *Beschorneria* the stamens are long, and taper gradually from base to apex. The plant before us flowered the other day at Abbotsbury, in the garden of the Honourable W. F. Strangways.

542. *ILEX LEPTACANTHA*. A handsome, hardy, evergreen shrub, from the North of China. Introduced by Mr. Fortune.

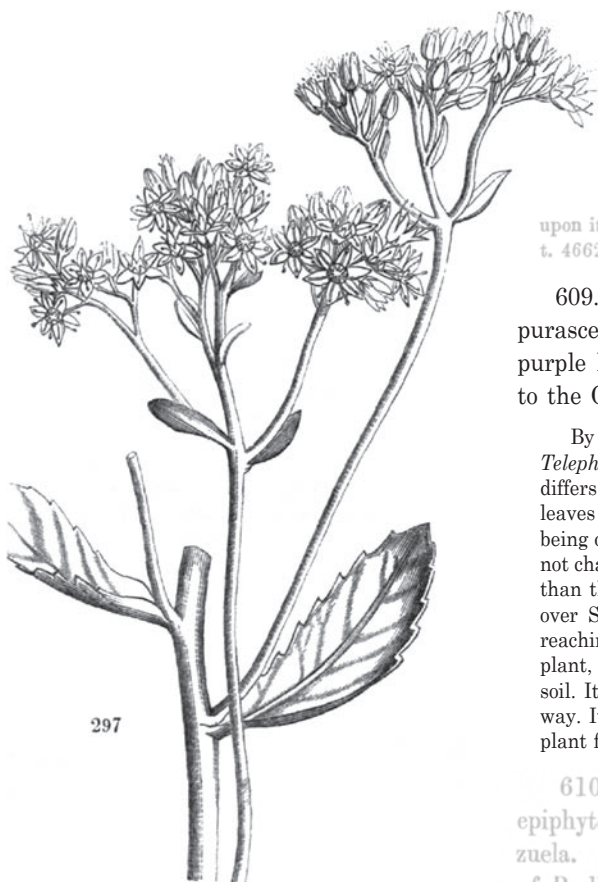
I. leptacantha; foliis ovali-oblongis acuminatis breviter petiolatis æqualiter spinoso-dentatis dentibus gracilibus.

That this plant is an *Ilex* seems to be proved, in the absence of flowers and fruit, by its being readily grafted upon the common Holly. It has very handsome foliage; the leaves being six inches long by two inches wide, of a very uniform oval figure, bordered regularly with distant slender spiny teeth. It is a good deal like the Nepal *I. dipyrrena*, but that plant seems to have much more coriaceous leaves; in this plant they are of about the texture of a Portugal Laurel.

543. *MEDINILLA SIEBOLDIANA*. *Planchon*. A beautiful stove shrub, with rose-coloured flowers. Belongs to Melastomads. Native of the Eastern Archipelago. Introduced by M. Van Houtte.

A native, it is said, of the Moluccas, whence it appears to have been introduced to the Belgian gardens by M. Van Houtte, and through that channel to our stoves in England. It forms a handsome shrub, with large dark green leaves, and drooping racemes, of waxy rose-coloured flowers, having dark purple anthers. Our increased intercourse with the Malay Archipelago has been the means of adding considerably to our knowledge of the species of this fine genus. Twenty-four species are enumerated in Walper's *Repertorium*, and eleven additional ones are given in the *Annales* of the same author—thirty-five in all. Most of them are described in Blume's *Mus. Bot. Lugd. Bat.*, a work of great value to the student of the botany of the Dutch possessions in the Malay Islands. With us this species flowers in the spring, and continues long in blossom. Our plant is between three and four feet high, shrubby, with the stem and opposite branches quite terete; the branchlets only are here and there seen to have an indistinct angle. At the nodes of the stem

perhaps in the moist and mountainous parts of India generally. Our gardens are indebted for seeds of this to Mr. Thwaites, the able superintendent of the Botanic Garden at Peradenia, who sends it to us from Adam's Peak (No. 436 of Mr. Thwaites' dried collection), and Mr. Gardner's specimens (No. 159 of his collection) are from Newra Ellia, at 6000 feet of elevation. We had, many years ago, received Ceylon specimens, without any particular locality, from Mrs. General Walker. Our plants flowered at the Royal Gardens, in a moist but not very hot stove, in the early summer of the year after the seeds were sown; and, small though the blossoms are, yet their deep tawny orange-colour, stained with red, and the numerous long bright petioles, together with the ample foliage, render this a handsome plant. Our plants attain a height of from two to three feet; in their native country they are probably much taller. The stem is erect, straight, as thick as, or thicker than, one's finger, purplish. Leaves mostly at the top of the stem, below them are the scars of many fallen ones; they are crowded, alternate or scattered, large, five to six inches long (some of our native specimens measure nearly a foot), ovate, much and gradually acuminate, pilose on both sides, dark green above, paler beneath, closely penninerved; the margin everywhere serrated, the serratures mucronate; at the base the margin is fringed with long soft bristles, tipped with a gland, and is gradually attenuated into the long, stout, bright, red leaf-stalk upon which are a few scattered glandular setae. Peduncles axillary, aggregated (often densely crowded), much shorter than the petioles, single-flowered, having minute bractees at the base. Flowers small for the size of the plant, deep tawny-orange, stained with red. The upper sepal is oblong, convex, red, terminated with a long claw-like point. The lower one, or labellum, is cucullate, the mouth ending in a sharp recurved acuminate point, like the mouth of a beaver; the spur is short, hispid, with a few long bristles, singularly incurved almost upon itself, and swollen and didymous at the apex.—*Bot. Mag.*, t. 4662.



609. *SEDUM PURPUREUM*. *Link.* (alias *S. purpurascens* Hort.) A hardy herbaceous plant, with purple leaves and flowers. Native of Russia. Belongs to the Order of Houseleeks. (Fig. 297.)

By many writers this is regarded as a mere variety of *Sedum Telephium*, and their opinion is probably correct. It only differs in being pervaded by a very deep purple tint, and in the leaves being wedge-shaped and narrow at the base, instead of being oblong and rounded at the base. The petals also are flat, not channelled at the point, and the stamens are rather longer than the petals. It grows naturally in middle Russia, and all over Siberia, whether in the Altai, the Ural, or the Baical, reaching even to Kamtchatka. In cultivation it is a hardy plant, growing eighteen inches in height in any good light rich soil. It is increased by dividing the old plant in the ordinary way. It flowers in August. It is a rather showy and desirable plant for rock-work in summer.—*Journ. of Hort. Soc.*, vol. vii.

610. *RESTREPIA NUDA*. *Klotzsch.* A stove epiphyte, belonging to Orchids. Native of Venezuela. Flowers white. Introduced by M. Allardt of Berlin.

Restrepia nuda; caulibus secundariis caespitosis, basi vaginatis teretibus; foliis carnosis solitariis acutis planis versus basin attenuatis; floribus pedunculatis paucis nudis; perigonii foliolis 2 candidis rubro striatis elongato-lanceolatis acuminatis, supremo trinervio, inferiore 4-nervio, interioribus basi lanceolato-dilatatis candidis, margine denticulatis, dorso acumineque setiformi purpureis; labello purpureo elongato-obovato acuminato margine fimbriato ima basi auriculato; gynostemio clavato.

Stems two to three inches long, caespitose. Leaf leathery, shining, three to four inches long. Flowers solitary, one inch and a half long. Sepals white striped with red, an inch long, three to four lines broad; petals ten lines long.—*Allgem. Gartenzcit.*, Aug. 28, 1852. The pollen-masses not being mentioned, it is uncertain whether this is a *Restrepia* or a *Pleurothallis*.

At the base of each leaf is a pair of stipules, which gradually lose their thin extremities and change into soft fleshy conical prickles. The flowers are very pale blue, produced in great abundance in dense corymbs at the end of very short stiff lateral branches. This shrub is among the most easy of plants to grow, and seems indifferent to climate or soil. It is increased by cuttings of the half-ripened wood, placed in sand under a hand-glass in a north aspect about the end of August. It is, however, best propagated by layering in the autumn. It flowers in June. It may be added that with the single exception of *C. cuneatus*, a white-flowered species of little beauty, all the Californian Ceanothuses prove to be hardy near London. It is only requisite that they should not be placed in soil which keeps them growing till late in the year, but that their wood should be well ripened. In the *Botanical Magazine* Sir William Hooker, in speaking of *C. rigidus*, observes that—"The North-west American Ceanothuses are particularly deserving of cultivation in the open ground; but it may require a Devonshire climate to bring them to the state in which they are at Bishopstowe, as just announced to me in a letter, dated 27th May, 1852, of the Bishop of Exeter:—"The

Ceanothus divaricatus is now in its highest beauty: the largest plant is eighteen feet high, eighteen feet wide, twelve feet deep (i. e. from back to front), covered with thousands of the beautiful thyrsoid flowers, so that the leaves are hardly visible. *C. rigidus* blossomed about six weeks ago; *C. dentatus* is now in full flower; *C. papillosus* is just coming into flower; *C. aureus* will not blossom before August."—*Journ. of Hort. Soc.*, vol. vii.



628. *EUGENIA? APICULATA*. *De Candolle*. An evergreen half-hardy shrub, from Chili. Flowers white. Fruit deep purple. Belongs to Myrtleblooms (*Myrtaceæ*). Introduced by Messrs. Veitch & Co. (Fig. 305.)

This is a plant with much the appearance of the common Myrtle. The branches are clothed with rusty hairs. The leaves are roundish ovate, sharp-pointed, downy on the under side when young, but quite smooth and deep green when old. The flowers, which are solitary and axillary, consist of four white concave petals uneven at the edge, outside which stand four leafy round sepals. The fruit is a spherical purple berry, the size of that of the common Myrtle, with a pair of extremely minute bracts at the base, and crowned by large green sepals. It contains from one to two fleshy seeds, enclosed in a thin tough skin, with a long thick cylindrical radicle folded down upon the outside of a pair of plano-convex cotyledons, which are either flat or more or less folded

together. It is an exceedingly pretty shrub for the milder parts of England. But to what genus does it belong? The seeds, which are very like those of *Vicia Faba* on a small scale, correspond with no generic character yet published. According to De Candolle the seeds of *Myrtus* have a bony shell and a curved embryo with long semicylindrical cotyledons; to *Eugenia* is assigned an embryo with consolidated cotyledons and a very indistinct straight radicle; *Jambosa* has the radicle enclosed between the cotyledons. With none of these will the plant before us agree: yet we cannot believe that it is a new genus. It is better to suppose, what can hardly be doubted, that the generic characters of the fleshy-fruited *Myrtaceæ* are greatly in need of amendment.

629. *TILLANDSIA STRICTA*. *Botanical Magazine*. A hothouse epiphyte with blue flowers. Native of Brazil. Belongs to Bromeliads.

This is a small Pine-Apple-like plant, about six inches high when in flower. The leaves are very narrow, channelled, mealy, stiff, terminating in a long drawn-out point, and curved backwards till their ends are below the base of the plant. The flowering stems are shorter than the leaves, curved downwards, clothed with small green leaves resembling those below them. The flowers are collected into oblong cones, formed of shining, naked, roundish ovate,

convex, imbricated bracts, the lower of which have a leafy point. Two varieties were observed, one with bright rose-coloured bracts and blue flowers, the other with greenish bracts and white flowers. Among the less important inhabitants of the stove this may be regarded as a useful little plant, growing best in a warm moist air, attached to a block of wood, where it flowers in August.—*Journ. of Hort. Soc.*, vol. vi.

630. *Echeveria quitensis*. *Lindley*. (*aliàs* *Sedum quitense Humboldt and Kunth*.) A very pretty half-hardy succulent plant. Native of Peru. Flowers deep red. Belongs to the Order of Houseleeks. Introduced by Isaac Anderson, Esq. of Edinburgh.

A bright green smooth succulent plant, forming stiff erect stems about six inches high, clothed by imbricated spatulate leaves, with an almost circular base attached to the stem only by one bundle of fibro-vascular tissue. The flowers are in stiff close erect racemes, shorter than the lower bracts, which resemble in form the leaves, but taper less to the base. Sepals five, longer than the pedicel, equal, linear, acuminate, rather shorter than the corolla, which forms a scarlet five-sided pyramid, opening very slightly at the end into five acuminate lobes. Of the ten stamens, five stand in furrows of the petals, and five are distinct. This is evidently an *Echeveria*, as De Candolle surmised, and not a *Sedum*. During the summer it does very well on rock-work out of doors, but it is probable that it should be treated as a greenhouse shrubby succulent plant, requiring the same kind of soil and treatment as *Echeverias*. It is easily increased by cuttings, and seeds, which it ripens abundantly. When grown out of doors, though pretty, it is not a very striking plant. It flowers in August. How it will look in a greenhouse is not ascertained as yet.—*Journ. of Hort. Soc.*, vol. vii.

631. *Vincetoxicum japonicum*. *Morren and Decaisne*. (*aliàs* *Cynanchum flavescens Siebold*.) A hardy herbaceous plant from Japan. Flowers pale yellow. Belongs to Dogbanes. (Fig. 306.)

A herbaceous plant, with a slight tendency to climb. The whole surface soft with down. Leaves roundish, oblong, mucronate, nearly sessile. Flowers few, pale greenish-yellow, in nearly sessile cymes, with slender pubescent flower-stalks. A perennial, supposed to be hardy or half-hardy, growing best in the peat border, and increased by division of the roots when in a dormant state. It is, however, of no kind of horticultural interest. It flowers in July and August.—*Journ. of Hort. Soc.*, vol. vii. We figure this just for the sake of showing what sort of things are sometimes sent to this country as new and valuable *Garden* plants.



solitariis longis laxifloris, floribus nutantibus subsecundis coccineis, pedicellis pollicaribus basi bractea parva lineari stipatis, calycis laciniis linearibus integris stellatim patentibus tubum obovatum 2-3-plò superantibus, corollae laciniis linearibus tubi angusti dimidium excedentibus, antheris glabris inferioribus 2 apice pilis liberis barbatis.—*Planchon*.

A decidedly twining habit, leaves with a twisted stalk and a long raceme of pendulous flowers, remarks M. Planchon, distinguish this from all the other *Siphocampyls* in cultivation. Mr. Linden, who introduced it to Europe, says that it was discovered by his collectors, Messrs. Funck and Schlim, several years ago, near Galipan, in the province of Caraccas, at the height of 5000 feet above the sea. Mr. Van Houtte adds that, like many other climbers, this will not flower till it has arrived at a considerable size; a fault, however, recompensed by the great quantity of flowers that follow the age of barrenness. It should be planted out in a warm conservatory, in a rich soil, and its stems trained to a trellis. It strikes from cuttings very unwillingly; but it may be expected to be on sale by March, 1853.—*Flore des Serres*.

638. *SENECIO CONCOLOR*. *De Candolle*. A handsome greenhouse herbaceous plant. Native of the Cape of Good Hope. Flowers rich purple. Belongs to Composites. Introduced by Sir Charles Hulse, who received the seeds from Colonel G. Buller.

We have little doubt that this fine showy perennial is that which De Candolle meant by his *S. concolor*, from Tulbagh and the Kat River mountains, although in cultivation it scarcely produces any of the hairs to which his specific character points. It is evidently a near relation of the old *Senecio speciosus*. The root-leaves are spatulate, lanceolate, long-stalked, sinuated towards the base and toothed; the leaves next above them are oblong and stalked; the highest are sessile, and slightly stem-clasping and downy at the edges; all are more or less incised. The stem grows about two feet high, and forms an open corymb scantily clothed with foliage. The flower-heads have a rich purple colour throughout, with a diameter of nearly two inches, most of which belongs to the rich purple ray. It requires to be treated like Cape Pelargoniums, grows freely in a mixture of loam, peat, and leaf mould, and is increased from seeds. It is a very handsome plant, in the way of a "Cineraria," and may prove useful for bedding out during the summer. Flowers in August and September.—*Journ. of Hort. Soc.*, vol. vii.

'339. *HOYA FRATERNA*. *Blume*. A hothouse climbing plant from Java. Flowers buff-coloured. Belongs to Asclepiads. Introduced by Messrs. Veitch.

A very fine new and very distinct species of *Hoya*, first detected in Java by Blume, and since by Mr. Thomas Lobb, and sent by him to his employer Mr. Veitch, in whose stove at Exeter it has grown very vigorously, and yielded it very handsome flowers during a great part of the summer and autumn. Some of the leaves measure a foot in length: our coloured figure is taken from a portion of the plant yielding smaller foliage; but these leaves are remarkable no less for their great size than they are for their firmness and thickness, and the very indistinct remote pinnated nerves, scarcely seen except when the leaf is held between the eye and the light, or when the leaves are dried for the herbarium; then the shrinking of the parenchyma brings the veins more distinctly into view, and shows them to be pinnated, anastomosing, and slender. The petioles and costa beneath are peculiarly thick. The upper side of the corolla, disc excepted, is downy, or between silky and velvety, and of a pale yellowish buff-colour, but five stains or spots are seen radiating from the centre towards the sinuses, which are always wet and clammy, which clamminess appears to be due to a flow of honey from beneath each of the leaves of the crown or nectary, and give a rich brown tone of colour to the whole umbel of flowers. It was named *fraterna* by Blume, on account of its affinity to *H. coriacea*, from which it is however abundantly distinct. A climber, with terete stems and branches, rooting near the insertion of the petioles, bearing opposite leaves, on rather short but very thick petioles; varying from six inches to a foot in length, singularly thick, and firmly fleshy, subcoriaceous, elliptical, very glabrous and even, the margins recurved, the apex rather acute, the base emarginate or subcordate, dark green and glossy above, pale and opaque beneath, where the midrib is very broad and prominent; lateral veins scarcely at all visible except the leaf be held between the eye and the light, when they are seen to be pinnated, distant, slender, anastomosing towards the margin. Peduncle much shorter than the leaves, moderately stout, thickened at the base, bearing at the apex a dense umbel of rather large, brownish red flowers. Sepals five, oval, concave. Corolla rotate, pale buff, with five red brown blotches, five-lobed, the lobes triangular, silky, reflexed. Leaflets of the corona pale buff, rotundato-ovate, thick, fleshy, concave above, with a blood-red spot at the base, grooved beneath.—*Bot. Mag.*, t. 4684.

640. *ALSTROMERIA PLANTAGINEA*. *Martius*. A very fine herbaceous plant, with rich bell-shaped flowers of deep orange, lined with yellow, tipped with green, and spotted with dark brown bars. Native of Brazil. Belongs to Amaryllids. Introduced by M. de Jonghe. (Fig. 309.)

A. plantaginea; herbacea 1—1½ pedalis flore excepto glaberrima, foliis ad apices ramorum sterilium confertis in ramis fertilibus plus minus inter se approximatis aversis lineari-lanceolatis (3—4 poll. longis) apice sphacelato acutiusculis margine integro pellucido lævibus 5—7-nerviis paginâ sursùm spectante lucidâ lætè viridi alterâ pallidiore supremis pseudo-verticillatis inæqualibus pedicellis multò brevioribus, umbellâ terminali 6—8-florâ, pedicellis (3-poll.

647. ECHINOPSIS CRISTATA. *Salm-Dyck.* (*aliàs.* *Echinocactus obrepandus Salm-Dyck.*) A very fine succulent plant, with large straw-coloured flowers. Native of Bolivia.

This, as well as the purple-flowered variety of it, were imported by Mr. Bridges from Bolivia (not Chili, as stated by Mr. Smith in *Bot. Mag.*, under t. 4521). The latter is already figured in the plate just cited, and we scarcely know which is the more striking of the two. The purple-flowered variety has the advantage in the colour of the flower, but the present kind produces the largest blossoms; the petals are broader in proportion to their length, a cream-white gradually passing into the greenish purple of the outer sepals. The spines in the present variety are more slender, less curved, of a paler colour, but tipped with a darker brown. In other respects the two plants correspond.—*Bot. Mag.*, t. 4687.

648. HEDYCHIMUM FLAVESCENS. *Loddiges.* (*aliàs.* *H. Roxburghii Siebold.*) A handsome and fragrant stove plant, native of India. Flowers pale yellow, in August. Belongs to Gingerworts. (Fig. 311.)

A stout plant, about four feet high, with a great fleshy rhizome. Leaves about fifteen inches long by five inches broad, covered on the under side with long silky hairs. Flower-spike erect, a foot long, covered with brown hairs. Outer bracts rather distant, two inches long, with a short leafy revolute point, and closely covered with rusty hairs at the edges; rolled round a very short spike of five flowers, surrounded by membranous, nearly-smooth bractlets. Ovary and long tubular calyx shaggy with brown hairs. Tube of the corolla smooth, slender, four inches long; its three outer petals linear and revolute; of the pale yellow three inner, the lateral are unguiculate, spathulate-lanceolate, acuminate, slightly toothed; the lip is unguiculate, deeply two-parted with half-oval divisions, about half the length of the bright orange-coloured filament. The flowers emit a very agreeable spicy fragrance. It requires to be potted in a rich loamy soil and to be placed in the dampest part of the stove while in a growing state; afterwards it should be removed to a cooler and drier place to bloom; after flowering it should be dried gradually, and rested for about a month. It blossoms in September. It is a very fragrant plant, and rather showy, but remains only a short time in bloom. There is no doubt about its being the *H. flavescens* of the Botanical Cabinet; but I should have thought it to be also *H. villosum* of Dr. Wallich, if that plant had not been described as having five linear petals, whereas here three only are linear and two broad spathulate-lanceolate.—*Journ. of Hort. Soc.*, vol. vii.



