



INSTITUTO DE CIÊNCIAS
E. S. A. LUZ DE QUILKOS
BIBLIOTECA
DATA 12 / 11 / 59
ALZADA



SERTUM

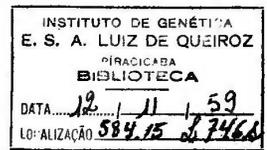
ORCHIDACEUM

Miss Drake del.

M. Gauci, lith.

Published by J. Ridgway & Sons, 169 Piccadilly 1840

Printed by P. Colver & Sons, 10, Broad Street



SERTUM

ORCHIDACEUM:

A

WREATH

OF

THE MOST BEAUTIFUL

ORCHIDACEOUS FLOWERS;

SELECTED

BY JOHN LINDLEY, PH.D. F.R.S.

PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON, AND IN THE ROYAL INSTITUTION OF
GREAT BRITAIN, ETC. ETC.

LONDON:

JAMES RIDGWAY AND SONS, PICCADILLY.

MDCCCXXXVIII.

TO
THE MOST NOBLE
WILLIAM SPENCER CAVENDISH,
DUKE OF DEVONSHIRE, K.G.
ETC. ETC. ETC.

THE MUNIFICENT PATRON OF ART,
THE PRINCELY FRIEND OF SCIENCE,
ESPECIALLY OF BOTANY,
AT WHOSE COMMAND THE NOBLE PALACE AND GARDENS OF

CHATSWORTH

HAVE BEEN CREATED, RATHER THAN RESTORED,
IN THE HEART OF THE WILD HILLS OF DERBYSHIRE,

THIS HISTORY

OF SOME OF THE MOST BEAUTIFUL

OF HIS FAVOURITE FLOWERS

IS GRATEFULLY INSCRIBED BY

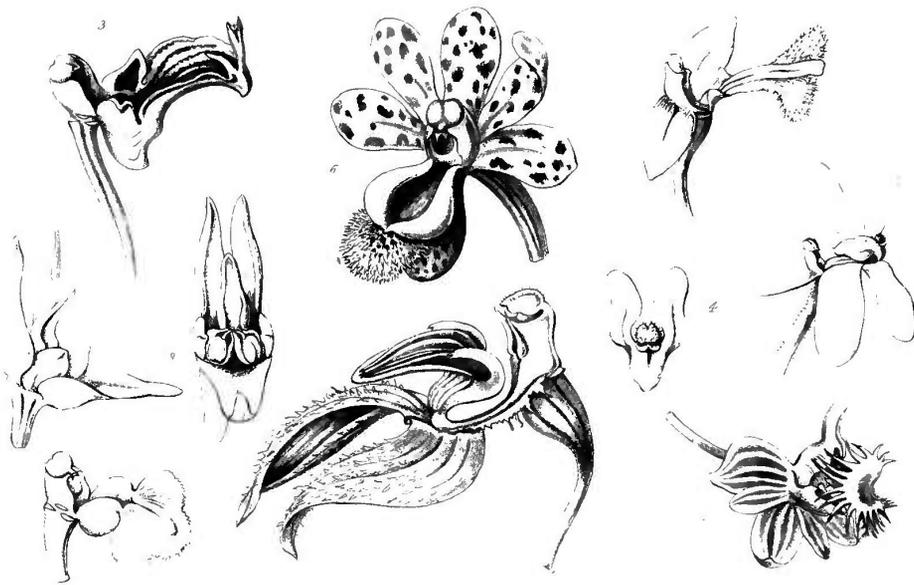
HIS GRACE'S

MOST FAITHFUL AND DEVOTED SERVANT,

THE AUTHOR.

FRONTISPIECE.

A WREATH OF EAST INDIAN ORCHIDACEÆ.



The figures here given comprehend magnified views of the flowers employed in forming the wreath selected as a frontispiece to this work. The numbers in both cases refer to those in the following descriptions.

I. MONOMERIA BARBATA.

Monomeria barbata. *Genera & Species of Orchidaceæ, page 61.*

Dendrobium tripetalum. *Wallich mss.*

All that is known of this rare and very curious plant is derived from a drawing and some imperfect dried specimens brought from India by Dr. Wallich, who found the plant in Nepal in the year 1821.

Its chief peculiarity consists in the absence of petals; a very curious and unusual circumstance in this natural order of plants. Dr. Wallich indeed represents them to be present in the form of a *Frontispiece.*

ragged line interposed on each side of the column between the upper and lateral sepals, as is shewn in the accompanying figure, No. 1; but I have not been able to make out this fact in the few and bad dried flowers brought under examination.

The plant has quite the habit of a large *Bolbophyllum*. From a large creeping scaly RHIZOMA spring at considerable intervals ovate PSEUDO-BULBS, at first covered with the ragged remains of the scales out of which they originally proceeded; each is about two inches long, and bears a single leaf. The LEAVES are rather less than a foot long, oblong, leathery, deep green, veinless, obtuse, a little downy beneath, with the channelled footstalk nearly as long as the blade. The RACEME is rather shorter than the leaf, erect, proceeding from the base of a pseudo-bulb, pale green spotted with dull purple, with about two sheathing scales below the origin of the first flowers. Each FLOWER when fully expanded is about an inch long, with the lip and upper sepal placed transversely with respect to the axis of growth. Of the SEPALS the upper is triangular, acuminate, nearly plain, dull olive green, much shorter than the two lateral ones, which are placed below the lip, a little united with each other at the base, where they are fixed upon the long foot of the column in such a way as to form a kind of blunt spur; on the outside they are very light green, smooth and dotted with light purple; on the inside they are hairy, yellowish, and irregularly spotted with bright purple. The PETALS appear to me to be wholly absent; but in Dr. Wallich's figure they are represented as two ragged lines. The LABELLUM is articulated with a very long foot of the column, horizontal, dull yellow, three-lobed, the lateral lobes being falcate and emarginate, the intermediate one ovate, with four continuous acute plates, united into pairs, parallel with its margin. The COLUMN is short, half round, extended at the base into a long slender curved foot, on which the sepals and labellum are inserted; with the two upper angles in front produced into short points. The ANTHOR is downy, one-celled, with a fleshy even crest. The POLLEN-MASSES are four, on the same plane, the two interior being the smallest, and all consolidated into a roundish oval ball, without the slightest trace of a caudicula or gland.

Fig. 1. of the above dissections represents a flower of this plant much magnified, with the back sepal cut off.

II. SACCOLABIUM ACUTIFOLIUM.

Saccolabium acutifolium. *Genera & Species of Orchidaceous Plants*, p. 223.
Aerides umbellatum. *Wallich mss.*

A pretty epiphyte inhabiting the East Indies, and at present known only from a drawing in the possession of the East India Company, of which, with all the others forming the wreath before us, I have been permitted to take copies.

Its STEMS are about six inches long, and are covered by numerous leaves, so disposed as to arrange themselves in two rows. Each LEAF is rather more than six inches long, sessile, slightly amplexicaul, oblong-lanceolate, very acute, quite flat and even, and apparently fleshy. The FLOWERS appear in small corymbs, placed on stiff peduncles, from two to three inches long, and springing

from the stem on the side opposite a leaf; they are about three-quarters of an inch in diameter. The SEPALS and PETALS are obovate, acute, spreading, yellow, and nearly of equal size. The LABELLUM is pale pink, concave at the base, where it has a rounded lobe on each side, and flat beyond the lobes, enlarging into a somewhat triangular three-lobed fringed plate.

Fig. 2. represents the column and lip of this plant, copied from the drawing above mentioned.

III. VANDA CRISTATA.

Vanda cristata. *Genera & Species of Orchidaceous Plants, p. 216.*

This species has very much the manner of growth and appearance of *Saccolabium guttatum*, but its flowers are totally different. Dr. Wallich found it in March, 1818, growing upon trees in Nepal; he also obtained it in April at Toka, near Sheopore, on which occasion it was described in his manuscripts with the following addition, "Flos exquisitæ pulchritudinis. Labelli consistentia crassissima, color atropurpureus præcipuè intus ubi etiàm holosericeus." The following is the translation of the more essential parts of the description referred to.

The SHOOTS are about as thick as the little finger, nearly simple, emitting from the sides near the base thick taper fleshy fibres, adhering to the bark of trees like *Vanda tessellata*, to which plant it bears much resemblance in habit and leaves. The LEAVES are stiff, spreading, two-ranked, imbricating each other alternately at the base, shining, channelled, keeled on the under side, very sharp edged, from five to six inches long, and one-third of an inch wide, truncated and obliquely three-toothed at the ends. The RACEMES are axillary, generally three or four on the same shoot, scarcely long as the leaves, and bearing but few flowers; (in the figure and specimens before me the peduncles are three-flowered). The PEDUNCLES are fleshy, taper, two or three inches long, having at the base a few truncated bracts, together with one broad ovate acute membranous one beneath each pedicel. FLOWERS large, fleshy, yellowish green, with a very large purple lip. SEPALS fleshy, lanceolate, spreading, rather obtuse, about half an inch long, nearly distinct; the lateral ones extended a little beyond the origin of the labellum, and adherent to the slightly extended base of the column. PETALS nearly linear. LABELLUM very thick, saccate at the base, and extended into a very short broad sharpish horn, adhering to the fleshy base of the column; with an ovate, obtuse, erect lobe on each side; upwards extended into an oblong blade, which terminates below the point in a solid short horn, and has above a crest or transverse border running into three or four irregular cylindrical processes; on the whole of the upper surface it is covered with warted lines; (on the outside it is white; inside it is strongly streaked with purple broken lines). COLUMN very short, thick, conical. ANTHER terminal, rounded, with two remote distinct cells. POLLEN-MASSSES two, globose, two-lobed at the back, (with a short elastic caudicula, and a very large rounded gland.) OVARY with six, keeled, projecting angles.

Fig. 3. represents the column and labellum, from a drawing belonging to the East India Company.

Frontispiece.

IV. CHILOSCHISTA USNEOIDES.

Chiloschista usneoides. *Genera & Species of Orchidaceous Plants, p. 219.*

Epidendrum usneoides. *D. Don Prodrum Floræ Nepalensis, p. 37.*

Aerides convallarioides. *Wallich mss.*

The lower part of the wreath, on the left hand, consists entirely of this singular plant, whose green entangled roots serve it in place of leaves, of which organs it does not appear to possess a trace. This is one in addition to the countless instances of the power with which nature adapts one part of a plant to perform the office of another, as if she delighted in displaying the endless variety of her resources. Without the green apparatus usually arranged upon the stem in the form of a leaf, a plant can no more digest its food than an animal deprived of a stomach; without the pale and succulent fibres which we call roots, a plant can no more feed than an animal deprived of a mouth; but by combining what is most essential to both organs into one, the root is made both to feed according to its proper nature, and in addition to digest like a leaf. That this is the case in the present instance is obvious; by what exact means the amalgamation of such different organs as root and leaf is effected, remains to be ascertained by some one who can examine the plant in a fresh state.

Dr. Wallich found it in 1818, growing on the trees in Nepal in many different places, and described it to the following effect. **ROOTS** consisting of numerous bundles of long, fleshy, glaucous, simple fibres. **OF LEAVES** there is no trace. **RACEMES** numerous, arising from the crown of the root; i. e. from the centre of the radical fibres, from six to eight inches long, erect, and downy. **PEDUNCLE** brownish, taper, slender, an inch long; furnished with a few alternate membranous bracts, which are ovate, amplexicaul, acute, deciduous, and densely clothed with herbaceous soft semitransparent hairs; finally passing into a flexuose rachis, which becomes clavate when old. **FLOWERS** stalked, alternate, the size and colour of Lily of the Valley, but scentless, drooping; placed on stalks half an inch long, very slender, with a broad, ovate, subcordate, and semitransparent acute deciduous bract at the base. **SEGMENTS** of the **FLOWER** oblong, obtuse, spreading; the petals broader than the others, and with the lateral sepals adhering by their whole base to a long foot, which quits the base of the column almost at a right angle. **LABELLUM** standing at the back of the flower, gibbous at the base and slightly saccate, very small, attached to the extreme point of the foot of the column; slightly tinged with pink, bearded inside, three-lobed at the apex; the lateral lobes linear, parallel, obtuse, that in the middle two-toothed and minute, or rather wanting, its place being supplied by two little revolute teeth. **COLUMN** very short. **ANTHER** terminal, deciduous, ovate, two-celled. **POLLEN-MASSES** two, rounded, two-lobed at the back, waxy, smooth. **CAPSULE** two inches long, somewhat cylindrical, pink, curved. *Obs.* The four lateral leaves of the perianth being inserted at the sides of the much elongated ascending base of the column, almost so that the sepals which are nearest the labellum cover very little of the margins of the petals, which occupy the middle of the column, may be said to be placed all in one line. The very base of the column is terminated by the labellum there only inserted.

Of No. 4. the left hand figure represents the labellum seen in front, and that on the right a single flower, both magnified.

V. SUNIPIA BICOLOR.

Sunipia bicolor. *Genera & Species of Orchidaceous Plants*, p. 179.

Aerides? *obcordatum*. *Wallich mss.*

Known only from a drawing in the library of the East India Company. It is a native of Nepal, having been collected in that province by Dr. Wallich.

It forms a small patch of ovate PSEUDO-BULBS, about as large as marbles, each of which is terminated by a narrow-oval slightly stalked obtuse LEAF, three inches in length. The RACEMES are erect, rather longer than the leaves, and originate from the base of the pseudo-bulbs; they bear about nine small ringent flowers, arranged upon a flexuose slender rachis, each of which is subtended by a lanceolate colourless BRACT, larger than the short obovate OVARY. The SEPALS are white, slightly streaked with purple, ovate-lanceolate; the two lateral ones being narrower and rather larger than the others, placed parallel with each other below the lip, and slightly adhering by their margins. The PETALS are white, ovate, bluish, rather more than twice as short as the sepals, with a faint purple streak at their base. The LABELLUM is deep purple, and articulated with a very short foot of the column; its general outline is cuneate; in the middle it is flat and fleshy, and traversed by a sunken (?) line, at the margin it is serrated, at the apex rounded and emarginate; just above the base there is on each side a small erect auricle. All these things are described from the Indian drawing above referred to.

Fig. 5. represents a magnified view of the flower, after the sepals are cut off.

VI. SACCOLABIUM CALCEOLARE.

Saccolabium calceolare. *Genera & Species of Orchidaceous Plants*, p. 223. *Botanical Register for 1838, miscellaneous matter, no. 139.*

Gastrochilus calceolaris. *D. Don Prodrromus Floræ Nepalensis*, p. 32.

Aerides calceolare. *Smith in the article Aerides, in the Supplement to Rees' Cyclopædia.*

Aerides leopardinum. *Wallich mss.*

A native of Nepal, where it was found by Dr. Wallich, growing upon trees at a place called Toka, and flowering in March. It is not conspicuous for the showiness of its flowers, but it is exceedingly pretty when closely examined; its blossoms being found to be elegantly spotted and fringed if observed with a little care. It exists in the collection of His Grace the Duke of Devon-
Frontispiece. b

shire, and flowered at Chatsworth a year or two since; having been collected by Mr. Gibson at Chirra, on the Khoscca hills, at an elevation of 400 feet, growing on trees.

The following is the substance of Dr. Wallich's description of the dried plant.

Roots tapering, thick, cylindrical, long, and smooth, as in *Saccolabium guttatum*. STEM short, thick, compressed, entirely concealed by the sheathing bases of the leaves. LEAVES close together, arranged in two rows, linear, coriaceous, smooth, a foot and more long, obliquely one or two-toothed at the point, generally rising upwards and curved to one side so as to assume a somewhat falcate appearance, thick, slightly channelled, with a convex midrib on the under side; their sheaths are short, compressed, and finely dotted with purple. CORYMBS short-stalked, solitary or twin, each consisting of from ten to sixteen flowers; with a very thick clavate peduncle an inch and half long, erect or ascending, taper, spotted with purple. FLOWERS middle-sized, yellowish-green, most elegantly sprinkled with roundish purple spots. SEPALS spreading, distinct, fleshy and stiff, somewhat obovate, obtuse, a little narrower at the base, about four lines long. PETALS rather narrower and more round. LABELLUM large, bag-shaped, twice as large as the sepals, smooth; obtuse at the bottom, truncated and almost circular at the mouth, pale yellow; with a transverse plate, of a somewhat reniform figure, inserted horizontally in front, a little below the orifice of the labellum, snow-white, yellow and spotted with purple in the middle, and bearded above with white hairs. COLUMN very short, conical. ANTHER ovate, short, obtuse, with two cells, themselves half divided into two other cells, in front extended into a long double-toothed glandular process applied to the double-toothed apex of the stigma. POLLEN-MASSSES two, globose, with a little excavation on one side, attached to a long slender caudicula.

Fig. 6. represents a single flower seen in front obliquely, and magnified.

VII. AERIDES DIFFORME.

Aerides difforme. *Wallich in Genera & Species of Orchidaceous Plants, p. 242.*

Ornithochilus fuscus. *Wallich mss.*

This is one of the most singular flowers among the many strange forms peculiar to India, and in some respects it possesses considerable beauty, though not of a high order.

It inhabits the branches of trees in Nepal, whence it was sent in March, 1818, to the Botanic Garden, Calcutta, where it flowered in the following May. No specimen of it has fallen in my way, but the Indian drawing made under Dr. Wallich's superintendence sufficiently explains its structure, especially when assisted by so detailed a description as the following, chiefly translated from Dr. Wallich's Latin manuscripts.

The plant has scarcely any stem, but consists of three or four very broad, oblong spreading LEAVES, about six inches long by two and a half broad, of a thick fleshy consistence, a rather glaucous colour; a very thin membranous margin, and an acute obliquely emarginate point. From the axils of these leaves spring one or two stiff, erect, lax RACEMES, about as long as the leaves themselves; their peduncles taper, dotted, and somewhat fleshy. The BRACTS are few, remote, lanceolate, small, acute, adnate at the base. FLOWERS scattered, rather small, sweet-scented, yellowish, very slightly

tinged with green, and streaked with dull purple, forming an oblong raceme about the length of the finger, seated upon slender pedicels about an inch in length, with a small membranous bractlet at the base. SEPALs and PETALS all turned towards the same side, spreading flat; of the former the lateral are somewhat falcate, lanceolate, prominent on their outer margin, scarcely extended beyond the column, adnate to the base of the lip; the latter are linear, shorter, obtuse. LABELLUM placed at the back of the flower, and hanging down upon it, divided in the middle into two parts; of these the lower (or hypochilium) is unguiculate, and extended in front into a long greenish yellow spur, which curves upwards and is closed by numerous white hairs, while its margin, of a dull purple, is curved inwards; the upper (or epichilium) is broad, kidney-shaped, retuse, slightly unguiculate, with an intermediate point, dull purple, with a yellow border divided into fringe-like teeth, and an acute longitudinal crest through its centre. The COLUMN is erect, thick, purplish, very short, tapering upwards into a narrow space, and extended downwards into a short foot. The STIGMA is large, oblique, and extended into a large projection from the upper edge of the anther-bed. The ANTHER is oblique, obtuse, not crested, and extended in front into a truncated plate which covers over the caudicula and gland. POLLEN-MASSSES two, round, hard, deeply two-lobed at the back, attached to a long broad caudicula.—*Note.* The structure of this singular flower is so very intricate that it is unusually difficult to describe it correctly. The lateral sepals are united below the slightly extended foot of the column, and together with the unguis of the hypochilium form a very short spur; while the more conspicuous horn-like spur is really the apex of the same part.

Dr. Wallich named the plant ORNITHOCHILUS, or Bird-bill, in allusion to the appearance of the column and anther, which together resemble very much a duck's head; I have however combined it with *Aerides*, for the present at least.

Fig. 7. is a complete flower, about three times the natural size, copied from Dr. Wallich's drawing.

VIII. SUNIPIA SCARIOSA.

Sunipia scariosa. *Genera & Species of Orchidaceous Plants*, p. 179.
Ornithidium bracteatum. *Wallich mss.*

This, the last subject in the wreath, was like all the others found by Dr. Wallich, who met with it in May, 1818, growing upon the branches of trees at Toka in Nepal, where such epiphytes are called *Sunipiang*, whence the name *Sunipia* was taken by Dr. Buchanan Hamilton; all those however which were described from that traveller's papers by the late Sir James Smith in Rees's Cyclopædia, under the genus *Stelis*, appear to have belonged to the genus *Bolbophyllum*.

A very long and minute Latin description of living specimens of this plant, by Dr. Wallich, is before me, of which I avail myself in part: with such additions or corrections as the examination of dried flowers in my herbarium renders necessary.

The shoots or RHIZOMATA are as much as a foot long, and form an entangled mass held down to the ground by numerous perpendicular roots, just as in our hardy species of *Iris*; from these spring in abundance small inversely pear-shaped PSEUDO-BULBS, which are about an inch long, and terminated

by a single leaf. Each LEAF is about four inches long, oval-lanceolate, flat, shining, firm, acutely double-toothed at the point, and at the base contracted into a short channelled petiole. The SCAPES spring from the base of the pseudo-bulbs, and are very slender, erect, rigid, brownish green, hardly thicker than a piece of twine, and clothed with a few long narrow sheathing scales. These are terminated by distichous SPIKES, which are drooping, and about six inches long. The FLOWERS are exactly alternate in a distichous manner, yellowish purple, nearly parallel with the flattened rachis, which is half surrounded below each flower by a single BRACT, dry, ovate, concave, acuminate, striated, and sometimes expanded into an ovate obtuse lobe on each side. The FLOWERS are two-lipped, much shorter than the bracts, and partially hidden by them. The SEPALs are ovate, obtuse, slightly tinged with pink; the lateral ones the largest, and placed next the rachis, at the back of the labellum. The PETALS are roundish-ovate, white, very obtuse, thrice as short as the sepals. The LABELLUM is fleshy, tinged with pink, tongue-shaped, blunt, much shorter than the sepals, and a little dilated near the base where the margins stand erect, producing something the appearance of a shoe. The COLUMN is very short, not at all extended at the base into a foot, but quite continuous with the ovary; in front it is hollowed out into a stigma, and at the summit it bears the anther.

It is from the very unusual structure of the anther that the genus derives its principal distinguishing feature. Instead of being loose in the anther-bed, hinged by its back, and opening along its under side so as to allow the pollen-masses to drop out upon the anther-bed, it is so fastened down by its face that the latter operation becomes impossible, and in order to provide for the escape of the pollen, the cells open vertically, so that when their sides are drawn asunder the pollen-masses are at once seen reposing in their places. The POLLEN-MASSES themselves are four adhering in two pairs, and according to memoranda made by me twenty years ago, for I have not seen them since, they are attached to two caudiculæ, the nature of whose connection with the stigma is not yet known.

In fig. 8. the left-hand figure represents a side view of a flower much magnified; while the right is a front view shewing the position of the pollen-masses and anthers when undisturbed.



Stanhopea Devonensis.

STANHOPEA DEVONIENSIS.

S. Devoniensis; foliis oblongis 5-nerviis utrinque acutis petiolo maculato semisulcato, labello medio quam maximè constricto, hypochilio subrotundo anticè basi gibboso marginibus carnosius dilatatis replicatis, epichilio ovato subcanaliculato apice obsolete tridentato cornubus duobus hypochilii incurvis æquali, columnæ marginibus parùm dilatatis subparallelis.

Coatzonte Coxochitl seu Lyncea. *Hernandez, thesaur. rer. med. nov. hisp. p. 266.*

Anguloa Hernandezii. *Kunth synopsis. 1. 332.*

Maxillaria lyncea. *Gen. et sp. orch. p. 151.*

This noble Mexican Orchidaceous plant flowered for the first time in this country, in the epiphyte house at Chatsworth, in the beginning of August, 1837, and certainly there never was a more beautiful sight than when it expanded its large rich leopard-spotted blossoms, in all the perfection of their singular form and deep soft colours. The full blown flowers measured nearly four inches and a half across, and emitted a very agreeable odour, resembling a combination of Chimonanthus, Heliotrope, and the perfume called Maréchal.

I cannot doubt that this was the famous Lynx flower of Hernandez, when his figure, rude as it is, and his description are considered. The flowers, he says, are of a reddish colour, but also white and confusedly dotted. He compares the roots, meaning the pseudo-bulbs, to a fig still green; the native place of the plant he describes as rocks and the trunks of trees, but he adds that it is cultivated for the sake of its beautiful flowers, which are more striking than words can describe, or the pencil imitate, with the fragrance of a lily: by which he probably meant the White Lily, a favourite Spanish flower.

From all the species of this striking genus hitherto observed, it differs, as Mr. Paxton has remarked to me, in the furrow which terminates the upper side of the leaf at the lower end not running through to the pseudo-bulb, but losing itself about half way down the petiole. Independently of this circumstance, it is distinguished from all the varieties of *S. insignis*, by its much larger flowers, and by the column never having the broad dilated margin, so conspicuous in that species; to say nothing of the very different form of the lower half of the lip, which in *S. Devoniensis*, projects at the base on the under side, instead of being drawn sharply and abruptly inwards. It approaches more nearly to *S. tigrina*, another Mexican plant, the rival of this in beauty, which is about to appear in Mr. Bateman's magnificent publication upon the "Orchidaceæ of Mexico and Guatemala," but that species has the middle lobe of the lip divided into three nearly equal portions, both the upper and lower part of the same organ very much broader, and the leaves narrower and more attenuated at the base.

In the foliage and manner of flowering of this species there is nothing particular to notice beyond the points already adverted to. The following is a description of one of the flowers.

SEPALS ovate, obtuse, a little undulated, the lateral ones united at the base under the lip, about two inches and a quarter long by an inch and a half in width; their ground colour a clear yellowish orange, richly spotted with deep, broad, reddish-brown blotches, especially in the middle where the spots run together a little. PETALS oblong-lanceolate, very wavy, acute, an inch and three-quarters long, by three-quarters of an inch in breadth, turned back at the point, of the same colour with the sepals, but with the blotches assuming the form of broken bands. LIP white, very fleshy, with a few

bright purple stains here and there, and an extremely deep purple base; the lower half (*hypochilium*) nearly globose, firmly united to the column at the base, rather prominent at the front on the under side, with excessively thick dilated margins; their anterior angle extended on each side into a long, sharp, curved, channelled horn, whose anterior edges meet at the base in a broad fleshy tubercle standing at the base of the epichilium, and closing up the entrance to the cavity of the hypochilium; the upper half (*epichilium*) ovate, channelled, obsoletely 3-toothed, slightly articulated with the lower half. COLUMN plano-convex, with the margin so little widened upwards that the two edges are almost parallel; white, spotted with crimson.

I am gratified by being allowed to name this superb plant in compliment to the Noble Duke in whose unrivalled collection at Chatsworth it first flowered. The success with which epiphytes are there cultivated by Mr. Paxton is wonderful, and the climate in which this is effected, instead of being so hot and damp that the plants can only be seen with as much peril as if one had to visit them in an Indian jungle, is as mild and delightful as that of Madeira. As to luxuriance of growth, never have they been seen in their native woods in such perfect beauty. It, therefore, affords me no little satisfaction to be enabled, by the permission of his Grace the Duke of Devonshire, to publish the following account of the management of Orchidaceæ at Chatsworth, drawn up by Mr. Paxton himself.

“The following treatment is not only applicable to the growth of Stanhopeas, and others of like habit, but an advantage in the growth of any species of Orchidaceæ (the terrestrial, and those that grow in moss excepted).

“Over the drainage hole of the pot to be used, is inverted one of a smaller size, generally covering about half the bottom of the pot, over this is carefully thrown a quantity of broken pots, sufficient to fill the former to within one-third of the top. A sufficient quantity of fibrous, moderately sandy peat, is next selected and placed on the top of the drainage, being first broken into various forms and sizes, but none of them less than a walnut; in placing these, care is taken to dispose of each, so as to leave a passage for the escape of water; this is more effectually secured by putting in, as the process of potting goes on, a few pieces of broken pots, say between every layer, more or less, according to the size of the plant; indeed, I find it an excellent plan to continue a conoction of broken pots all the way up the centre, to the bottom of the pseudo-bulbs. After the peat becomes level with the pot, the successive external layers are made fast by means of small pegs, varying from four to six inches long, these pegs run through the layers of peat, and thus secure the whole firmly together. At eight inches above the line the plant is placed on the top; the roots are carefully laid out and covered up to the base of the bulbs very carefully with smaller pieces of peat and potsherds, continuing to fasten the peat as before described, until the whole is finished, when it will be a foot or fifteen inches from the top of the pot;—small plants are not potted so high. At each shifting the plant is raised a little higher. When I commence potting a small plant it is not raised more than three or four inches at first, but as it grows larger it is progressively raised in building up as here described with peat: it does not terminate in the shape of a cone, but is carried up nearly square, being merely rounded a little at the top. Unless the plants are very healthy, but very little water is given at the roots, and in winter very little or none, the great desideratum in the cultivation of Orchidaceæ being to *preserve the roots*, which, by over-watering, especially in winter, are almost sure to be destroyed.

“The general temperature of the house ranges from 60 to 85 degrees; in the afternoon, during the growing season, it is shut up early and the paths well watered, and once or twice a week a little water is sprinkled on their heads. I find great advantage in having a tan bed in the house to plunge the large plants in, the heat from the tan circulates through the peat and potsherds, and causes the plant to grow with great luxuriance. It might be objected to this method of growing Orchidaceæ, that wood-lice would damage the plants; I have followed this plan for two years and do not know an instance of damage by them; indeed, the tan is too moist to harbour any kind of insects. In order to make this account as intelligible as I can, I will detail the manner in which a young plant was treated:—On the 20th of May last year I received a very small damaged plant of a new Stanhopea; I allowed it to get perfectly dry, it was then potted, and placed in a strong bottom heat, with a strong heat above; the plant began to grow in about a fortnight, and at the end of July had perfected a small bulb; the plant was then kept dry about a fortnight, and was again placed in a strong bottom heat, and in a temperature never lower than 70 degrees, but often amounting in the day to from 90 to 100. By the end of September it had perfected a second bulb, considerably larger than the first. The plant was again dried on a hot flue for a fortnight, and then removed into a larger pot, and elevated a little above the surface; it was again replunged into a strong bottom heat, and, by the end of December, had perfected two more bulbs, making four since its commencement. I should here observe the plant had but one bulb when I received it;—the plant was now dried for a month, then re-potted, and placed, as before, in a strong heat; about the first week in April the plant had made two more perfect bulbs, the process of drying was again gone through, and the plant replaced in strong heat;—it has on it now, August 31, nine bulbs, made in the short space of 15 months. I expect to have the plant in a state for flowering next season. This plant was cultivated with a number of other small ones, in a small house that could be kept very hot.

“I cannot conclude this statement better than by recommending those who wish to grow Terrestrial Orchidaceæ well, to attend to the following brief rules, in applying the four great elements of vegetable life, viz. air, light, heat, and water.

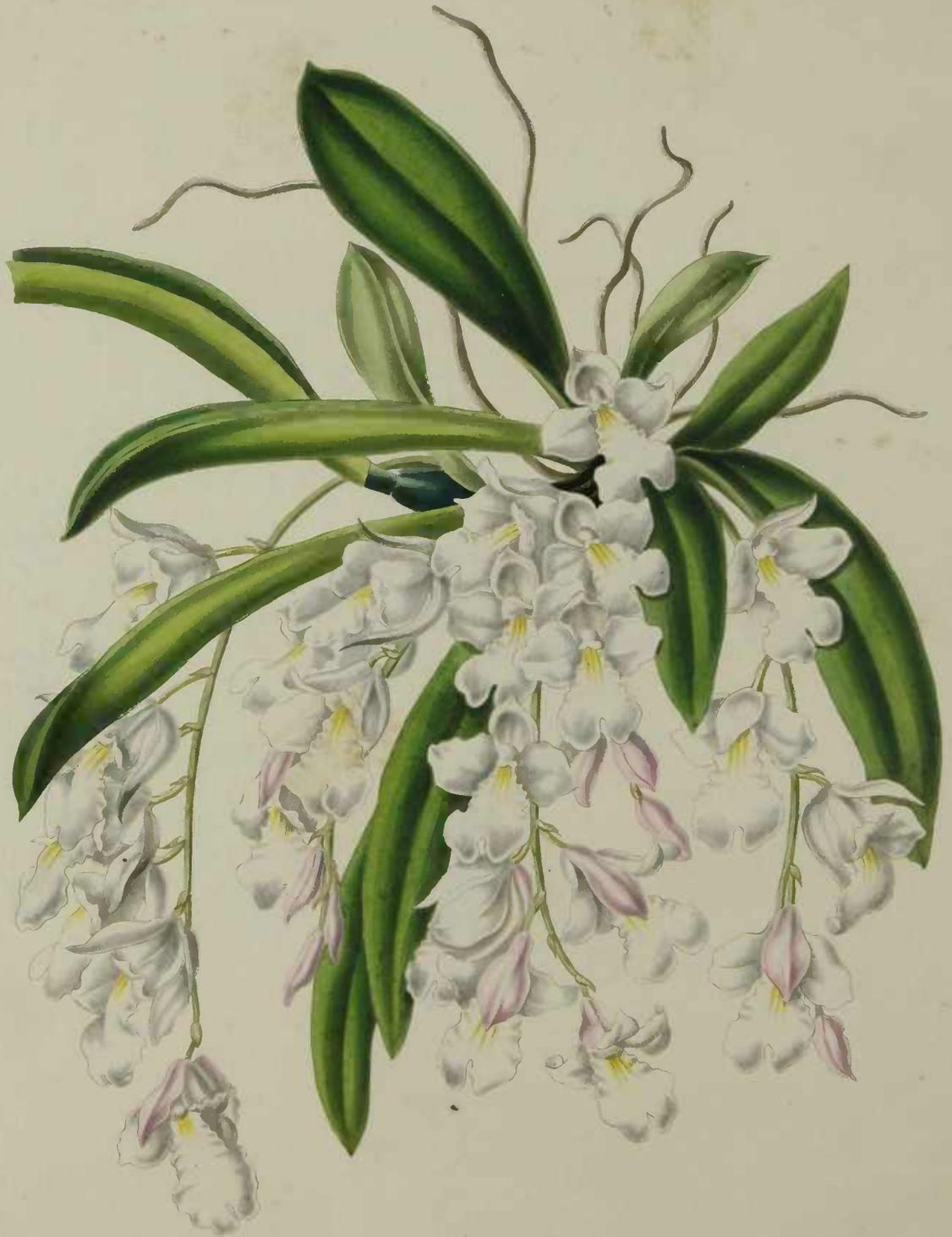
“*Air*.—Terrestrial Orchidaceæ should never have a great volume of external air admitted at once, however fine the weather may be; to prevent the house becoming too hot, a thick canvas shading should be covered over it during sunshine.

“*Light*.—The best aspect for an Orchidaceous-house is due south, and the house should be made to admit as much light as possible. In summer a thick canvas is always put on the house to prevent the bright sun damaging the plants. In winter every ray of light is advantageous to the plants.

“*Heat*.—During the growing season, Orchidaceæ require a moderately moist heat, varying from 65 to 85 degrees; in the dormant season from 60 to 75 is quite sufficient; in the season of rest the house should be kept dry.

“*Water*.—With this element more damage is done than by all the others put together. Orchidaceæ in pots should be sparingly watered in the growing season; in the dormant state little or no water should be given. The secret of growing these plants is to take care *never* to kill the old roots; when too much water is given while the plants are not in a growing state, almost all the old roots invariably perish.

“N. B. The brief account here given refers entirely to plants potted in peat soil; those grown in moss and on bits of wood require quite a different treatment.”



Burlingtonia venusta.

PLATE II.

BURLINGTONIA VENUSTA.

Burlingtonia venusta, *Botanical Register under plate 1927*.

THIS lovely flower is at present only known from a drawing made in Brazil by Mons. J. Th. Descourtilz, and forming part of a manuscript description, with figures, of Orchidaceous plants, now the property of M. le Baron Benjamin Delessert. As I have the permission of their liberal proprietor to publish such as are most remarkable in this collection, I shall have frequent occasion to avail myself of its materials, in illustration of the present work.

There is no description of *Burlingtonia venusta* among M. Descourtilz's manuscripts, which terminate at the very plate which precedes this; nothing therefore is known of its habits, or of the part of Brazil in which it was found. It is, however, so much like another plant, with a somewhat different aspect, of which a manuscript account occurs in the same work, under the title of "*Epidendre panduriforme*," and which I have formerly distinguished as *Burlingtonia fragrans*, because of its leaves being more obtuse, its racemes of flowers erect not pendulous, its blossoms always half closed with the labellum standing at the back, and the little ears at the end of the column almost obliterated, that an account of the one, these differences being kept in mind, will nearly answer for the other.

M. Descourtilz figures and describes *Burlingtonia fragrans* to the following effect. The roots are long, thread-like, white, contorted, surmounted by dry scales out of which spring the PSEUDO-BULBS, which are fusiform, much compressed, and each terminated by a lanceolate, stalkless LEAF; the latter is bright shining green, veinless, thick and brittle, and rounded at the point with an oblique notch. The FLOWER-STEM is radical, taper, erect or reflexed, of a greenish violet, zigzag, and furnished with a bract at each bend; the flowers grow in racemes, and are always half closed. The SEPALS are white, lanceolate, tinged externally with reddish-lilac (*violet-lilas*); the double one is undivided at the point, shorter than the lip, thicker than the upper sepal, and having at the base a triangular cavity into which the spur of the lip is inserted. The PETALS are broader, as white as snow, and parallel with the column. The LIP is larger than the other parts of the flower, narrow, and prolonged into a short spur at the base, widened upwards, broad, fringed, and heart-shaped at the upper end, gauffered as it were about the edges; its colour is pure white, but at the narrow part in the centre there is a broad golden-yellow spot which is downy, and terminated in front by three points, and has at the margin two salient lines, within which are inserted the horns of the column. The COLUMN is taper, club-shaped upwards, prolonged on each side of the stigma into a short flat horn, white, about half as long as the lip, with two short purple conical cars on a level with the apex of the anther. The ANTHER slopes backwards upon the end of the column, is hemispherical, and divided internally into two cells by a perpendicular partition; at the apex it is dilated and hollowed out to secure an oval yellowish gland, to which adheres a curved strap having two deep yellow pollen masses.

This beautiful species is remarkable for the delicious odour which its flowers exhale of Jonquil, or of some Water-lily. It grows among the topmost branches of the Cedrela, in the districts of Morro-Quémado and Macahé, and near the city of Bom Jesus de Bananal, blossoming in October.



Dendrobium nobile.

PLATE III.

DENDROBIUM NOBILE.

Dendrobium nobile, *Gen. et sp. Orch. p. 80.*

THE first knowledge that we had of this charming plant was from a Chinese drawing in the library of the Horticultural Society; and from that drawing, made in China under the eye of Mr. Reeves, the short character above referred to was taken. A live plant brought home by Mr. Reeves was presented to Messrs. Loddiges, with whom it flowered for the first time, and in great magnificence, in February, 1837.

Dendrobium is one of the handsomest of the Asiatic genera of this order, and I think *D. nobile* must be considered the handsomest of all *Dendrobia*. Its very stems are so bright and transparent that they form a beautiful object, and the effect of the bright green veins of the leaf-sheaths seen through the semitransparent skin is very striking. The flowers are unrivalled for delicacy of texture, and gracefulness of form; at first nodding as if their slender stalks were unable to sustain their weight; and then, as they disentangle their ample folds, assuming a horizontal position, with the rich trumpet-shaped lip forming an apparently solid centre, they seem purposely to raise themselves to the distinct view of the beholder.

This species is most nearly allied to *D. moniliforme*, figured in the *Botanical Register*, t. 1314, from which it differs in having a downy lip with a rounded termination, and much more obtuse as well as larger petals.

It is not known in what part of China this species is found wild. Mr. Reeves bought it in the market at Macao.

STEMS erect, clustered, light green, a foot and more high, rather compressed, with deeply furrowed joints about three-quarters of an inch long. LEAVES rather distichous, narrow-oblong, obliquely emarginate, firm, flat, obtuse; with thin semitransparent sheaths, which quite surround the stem at the base, and permanently clothe it when the leaves themselves have dropped off. PEDUNCLES ascending, 2-3-flowered, bursting through the leaf-sheaths at their back, about two inches long, with short, membranous, acuminate bracts at the base of the pedicels. FLOWERS when in bud nodding, when expanded horizontal, quite spread open, two inches and three-quarters across. SEALS broadly linear, nearly equal, obtuse, the lateral a very little lengthened at the base, pale greenish yellow tipped with rich bright purple. PETALS oblong, obtuse, rather wavy, very delicate and transparent, the same colour as the sepals. LIP rolled up, very shortly unguiculate, downy both inside and outside; in form obovate, with a deep notch on each side, separating it into three obscure lobes, of which the lateral are crisp at the edge, the central one even, rounded, obscurely cuspidate; in colour deep blood-red in the tube, pale greenish yellow at the edges and disk, tinged with purple at the end; a linear downy space passes upwards along the centre from the unguis till it loses itself in the disk.



Cymbidium giganteum.

PLATE IV.

CYMBIDIUM GIGANTEUM.

Cymbidium giganteum, *Wallich's Catalogue*, no. 7355. *Gen. et sp. Orch.* p. 163.

THIS is the most striking of all the plants belonging to the true genus *Cymbidium*, and was well named "the gigantic" when compared with other known species. It is a native of Nepal, and Kemaon, where it was discovered by Dr. Wallich in the year 1821. The accompanying plate has been prepared after a drawing made at the time of its discovery, and liberally placed at my disposal for publication by the Honourable Court of Directors of the East India Company. The plant itself may be soon expected in our gardens, if indeed it does not already exist there.

It will be observed that the spike of flowers is erect in the drawing, and it appears from the dried specimens distributed by the East India Company that this is the natural position. Otherwise, as the lip stands above the column, it might have been supposed that the flowers were pendulous, as in *Cymbidium aloifolium* and others.

LEAVES upwards of two feet long, 7-nerved, narrow, strap-shaped, thick and tough, dilated at the base, where they are pale, strongly ribbed, and closely imbricated in a distichous manner; these bases remain permanently after the leaves have dropped off them, and form a hard flattened crown to the simple, creeping roots of the plant; eventually they split into fragments, and become coarse ragged membranes. SCAPE erect, closely covered at the base with loose imbricated striated scales, changing into a spike about a foot long. BRACTS short, ovate, acute scales. OVARIES an inch and half long. FLOWERS rather closed, dull purple, tessellated, very large for the genus. SEPALS oblong, acute, erect, an inch and half long, many veined, nearly equal; the two lateral uppermost. PETALS linear-lanceolate, acute, spreading, rather shorter than the sepals. LIP oblong, tapering at the base, where it adheres to the column, complicated, 3-lobed: the lateral lobes entire, flat, narrow, the intermediate crisp, ciliated; the disk with two converging ciliated lamellæ, ending in a line of hairs that reach to the point of the lip, and bordered by two distant hairy lines on each side. COLUMN clavate, edged, smooth, with a terminal anther, which adheres firmly to the back and hardly opens in front.



1. *Cattleya bicolor*.

2. *Sophronitis grandiflora*.

STAMPED RECORD
E. S. A. LIND. 12. 1872
NO. 12
DATE _____
PAGE _____

PLATE V.—FIG. 1.

CATTLEYA BICOLOR.

Cattleya bicolor, *Botanical Register*, plate 1919 in the letter-press.
Epidendre iridée, *Descourtilz's drawings*, pl. 49, p. 105.

A very distinct Brazilian species of this charming genus. It is for the present only known from the drawings of M. Descourtilz, who speaks of it as follows :

“This beautiful plant grows at a great elevation on the trunks and branches of the largest trees, where it sometimes forms an enormous tuft. I have only found it in the neighbourhood of Bom Jesus de Bananal. Its flower endures for a great while, opens in the month of April, and exhales the sweet smell of the garden pink.

“RHIZOMA reddish, cylindrical, articulated, with short ringed segments, which put forth thick, white, shining, cylindrical, or very simple roots. STEMS radical, often pendulous, from two to three feet long, green, simple, covered completely with sheaths which are long, dry, alternate, finely striated of a dirty silver-grey colour; it bears at its summit two leaves, which are alternate, lanceolate, obtuse, very thick, veinless, of a glaucous or blueish green. FLOWER-STALKS proceeding from a compressed, broad, greenish purple spathe; the summit of the common peduncle pale green. FLOWER very large, half-expanded. SEPALS greenish brown, purple or reddish-brown, shining, striated lengthwise: the upper oval-lanceolate, pointed, convex, the lower ascending and of a similar form. PETALS thinner, spathulate, crisp, of the same reddish-brown colour as the sepals. LIP narrow, channelled at its base, which is pure white, forming a line which extends as far as the middle of the disk, where it is dotted longitudinally with purple; at the level where this white line terminates the disk enlarges, and forms a rounded blade of a bright violet, turned downwards and regularly crenelled at the edges. COLUMN very thick, broad, convex above, flat or a little concave beneath, clear white, striated lengthwise with yellow at the base. STIGMA heart-shaped, acute at the point. POLLEN-MASSSES four, yellow, lenticular, compressed, inserted laterally on a curved gelatinous thread, and lodging in four cells of the anther, which is simply white and convex.”

SOPHRONITIS GRANDIFLORA.

Cattleya coccinea, *Botanical Register*, folio 1919, in the letter-press.
Epidendre ponceau, *Descourtilz's drawings*, pl. 10, p. 27.

A most brilliant little epiphyte, found in Brazil by M. Descourtilz, upon the high mountains that separate the district of Bananal from that of Ilha Grande. It grows there in abundance upon fallen and decaying trees; its scentless flowers appear in June.

At first I took it for a species of *Cattleya*, of which it has all the habit; but upon a more attentive examination of M. Descourtilz's description and figure, I have satisfied myself that it is a distinct genus, differing from *Cattleya* in having eight pollen-masses, a pseudo-bulb rather than a stem for the leaves to grow on, and no spathaceous bract within which the flowers are engendered. In the number of pollen masses it agrees with *Lælia*; but that genus is very different in its resupinate flowers, pseudo-bulbs, and long equitant spathaceous bracts. The original species of *Sophronitis* agrees with this in colour, habit, and many other particulars, but it has the petals smaller, not longer, than the sepals: a circumstance that seems to point to a different order of development; I am, however, upon the whole disposed to agree with Mr. Bateman in referring this to the genus *Sophronitis*.

M. Descourtilz describes the plant as follows

“Roots encrusted together, long, flexuose, dead-white, fixed at the base of a short rhizoma, which is articulated like the Polypes called Isis, having on the upper part fusiform, long PSEUDO-BULBS, which are smooth but not shining, and often enveloped in a dry, wrinkled, greyish violet sheath. LEAF solitary, terminal, thick, firm, tongue-shaped, pointed, channelled at the base. PEDUNCLE simple, cylindrical, twisted, bright green, having at its base a broad sharp bract, and at its upper end two smaller opposite bracts which form a bifurcation; from their axil springs a filiform violet ovary, terminated by a broad flatly expanded flower. FLOWER with all its parts of a bright vermilion, red, or orange; the sepals narrow, ovate; the petals much broader, forming lateral wings; all streaked with deep red longitudinal lines, and having a satiny violet cast externally. LIP something like the standard of a leguminous plant inverted, clear yellow, with a broad nasturtium-coloured border and diverging veins of the same colour, cucullate at the base, slightly 3-lobed, with the middle division ovate, obtuse, and much shorter than the sepals. There are many varieties, passing from yellow-orange to the deepest cinnabar-red, but in all of them the exterior of the flower is a dead cinnabar-red, with no visible streaks or veins. COLUMN short, triangular, having two lateral white dilatations or wings, bordered by bright crimson. ANTHER convex, greenish, divided internally into four membranous cells, which are thickest at their upper half, and cover eight clear-yellow pollen masses, of a triangular form and arranged in two rows.”



W. J. Hooker del.

Brafna macrostachya.

M. Gussone det.

Publ. by J. Ridgway & Sons, 169 Piccadilly, April 8, 1836

Printed by F. & J. W. G. & Co.

BRASSIA MACROSTACHYA.

B. macrostachya; pseudobulbis compressis margine obtusis 2-3-phyllis, foliis ligulato-oblongis striatis abruptè acutis, scapo nutante multifloro, sepalis linearibus acuminatis lateralibus longissimis, labello oblongo-lanceolato acuminato petalis longiore.

No species of the genus *Brassia* hitherto discovered, can be compared for beauty with this most graceful and brilliant plant, whose long nodding racemes of flowers bend gently over the rich and verdant foliage, while the slender petals are so long, so slight, and so delicate as to be agitated by every impulse given them by the air.

Messrs. Loddiges imported it from Demerara, and the accompanying drawing has been lying in my portfolio since October 1836, when the flowers were first seen. The only species with which it is necessary to compare it is *B. caudata*, figured in the *Botanical Register*, t. 832; which differs in the following particulars. Its pseudo-bulbs are acute at the margin, not obtuse: as is represented by the sections at the lower right-hand corner of the plate; its flowers are smaller, greener, and much more mottled with deep brown; and its labellum is ovate, acuminate, and the same length as the petals, instead of being oblong-lanceolate, and longer than the petals.

If it were proposed to combine *Odontoglossum* with *Brassia* it would be difficult to point out any great objection to doing so. Their principal distinction consists in the sepals and petals of *Odontoglossum* being unguiculate, and the column winged, or bordered by a thin margin. In habit they are very similar, and if the genus had not been proposed by M. Kunth, it may be doubted whether it would be now distinguished.

A vigorous growing, rich but not deep green, epiphyte. PSEUDO-BULBS oblong, between four and five inches long, compressed, blunt, and rather extended at the edge, springing from the axils of green, carinate, striated scales, the uppermost of which have a foliaceous limb. LEAVES two or three on each pseudo-bulb, oblong-ligulate, about eight inches long and one and a half wide, acute, sometimes tumid at the base. SCAPE radical, a foot and a half long, greenish purple, terete, nodding, covered with flowers almost from the base. BRACTS ovate, scale-like, much shorter than the ovary. SEPALS linear, acuminate, spreading, pale yellow, with a very few spots of crimson; the upper about two inches long, the lower hanging down, and six inches long. PETALS the same form and colour as the sepals, curving inwards till their points cross each other, rather more than an inch long. LABELLUM rather more than two inches long, pale cream-colour, oblong-lanceolate, acute, crisp at the edge, with a few crimson spots at the base, where it is furnished with two elevated downy lamellæ, in front of which stand three horns, the lateral of which are erect and rather recurved, the middle one much smaller and pointing forward.



Zeyheri, Bot.

Cyrtorchilum stellatum

W. Bull.

Tabl. by G. Sullywood & Sons, 182, Piccadilly, April, 1858

Printed by G. Sullywood

CYRTOCHILUM STELLATUM.

C. stellatum; pseudobulbis diphyllis ovalibus compressis striatis inter squamas lanceolatas carinatas axillaribus, foliis ligulatis obtusis aveniis scapo multò brevioribus, scapo tereti erecto basi vaginato, racemo disticho multifloro, bracteis carinatis convolutis acuminatis glumaceis ovario longioribus, sepalis petalisque lineari-obovatis acutis stellatis, labello oblongo undulato acuto basi canaliculato striato, alis columnæ acinaciformibus integerrimis.

Epidendre étoilée. *Descourtilz drawings, plate 37. p. 81.*

This noble species of the genus *Cyrtochilum* is nearly related to *C. flavescens* of the *Botanical Register*, t. 1627, differing in its much larger flowers, the sepals of which are by no means acuminate, but only drawn to a sharp point; in the greater breadth of the pseudo-bulbs; in its stature being four times as great; and in the labellum being white instead of yellow. The following is the account given of the plant by M. Descourtilz in his manuscript work on the Orchidaceæ of Brazil.

“This magnificent species is dispersed through the districts of Macahé and Bananal. It flowers in September and remains in that state till the end of January. It diffuses but a weak perfume, but the beautiful spikes, which seen at a distance make it resemble a mass of verdure strewed with large stars, render it a most remarkable object.”

“RHIZOMA very thick, cylindrical, whitish, shining; provided at its lower part with numerous cylindrical succulent roots, which fix themselves upon the bark of the tallest trees, over which it spreads to the extent of many feet. PSEUDO-BULBS oval, slightly compressed, bright green, surrounded at the base with violet scales, each giving rise to two ribbon-shaped LEAVES, which are obtuse, channelled, compressed at their insertion, of a pure and brilliant green above, yellowish green below, moderately thick and not veiny. From among the dilated leaves proceeds a SCAPE, often many feet long, cylindrical, shining, whitish violet, jointed and furnished at each bend with a narrow very long sharp-pointed bract, which is acute, hollowed out, violet and transparent. FLOWERS very large, spreading open, spiked, in two opposite rows, placed upon dull green sigmoid ovaries, proceeding from the axil of the bracts, which spread from the spike and almost entirely enclose them. SEPALs three, spatulate, very acute, with a middle longitudinal furrow, straw or lemon-coloured. PETALS of the same colour, broader and rather obtuse. LIP broad, tongue-shaped, pointed, winged at the base, crisp at the edge, articulated with the column, snow white, but marked internally at the base with longitudinal streaks of a yellowish orange colour. COLUMN straight, short, of an ivory whiteness, winged on each side at the apex; the outer edge of the wings curved, the inner bounded by a deep carmine line, otherwise bright yellow, streaked with transverse blood-coloured lines. ANTHER convex, white. POLLEN-MASSSES oval, pale yellow, attached to an oblong carmine gland.”

The genus *Cyrtochilum* was originally proposed by M. Kunth in Humboldt and Bonpland's *Nova Genera et Species Plantarum* as distinguished from *Oncidium* by its convex lip, in allusion to which the name was formed. This character is however by no means sufficient to limit any groupe of species of which I have knowledge, and consequently, in admitting *Cyrtochilum* into the systematic arrangement of the order, I have found it necessary to alter its definition, and to allow it



A. *Oberonia rufilabris*.

B. *Oberonia Griffithiana*.



C. *Dymoda picta*.

PLATE VIII.

A.

OBERONIA RUFILABRIS.

O. rufilabris; foliis subfalcatis acutis, spicâ sub-verticillatâ completâ, bracteis ovatis aristatis floribus duplò longioribus, petalis lineari-lanceolatis acutis integerrimis, labello trilobo basi tuberculato sepalis longiore: laciniis lateralibus setaceis intermediâ oblongâ bipartitâ lobis acutis divergentibus.

Although it is not intended in this work to make a practice of figuring minute plants which are interesting only for their curious structure, yet the extremely remarkable forms of some species render them even more worthy of illustration than the more striking plants for which these plates are chiefly destined. Such a case is the present, where a page is occupied by figures of three microscopic Orchidaceæ, each of which is still more strangely fashioned than the other, and all so different from other plants that one might almost doubt their even belonging to the vegetable world. If the Brahmins had been botanists, one might have fancied they took their doctrine of metempsychosis from these productions; in the genera *Oberonia* and *Drymoda*, Pythagoras would have found a living evidence of animals transmuted into plants.

The genus *Oberonia* consists principally of small fleshy-leaved epiphytes, inhabiting the branches of trees in the woods of India, and having the most tiny of flowers. Fourteen species have been described, of which one only, and that the least interesting (*Oberonia iridifolia*) has been seen alive in Europe. The resemblances to insects and other animal forms which have been perceived in the Orchidaceous plants of Europe, and which have given rise to such names as Fly Orchis, Bee Orchis, Man Orchis, Butterfly Orchis, and Lizard Orchis, may be traced so plainly in the genus *Oberonia* in every species, that it alone would furnish a magazine of new ideas for the grotesque pencil of a German admirer of the wild and præternatural.

The two species now figured were discovered in the Burmese empire, by Mr. Griffith, a botanist of great reputation, from whose indefatigable zeal and exertions the greatest discoveries may be expected in the Flora of the British possessions in India. The plates have been prepared from sketches made by Mr. Griffith himself on the spot, and since compared with dried specimens collected at the same time.

Oberonia rufilabris is an almost stemless plant, hanging down from the branches on which it grows, and to which it clings by its slender thread-like roots. The FLOWERS are arranged at the lower part in whorls, but afterwards alternately along a slender simple axis, at the apex of which they open first. Each flower is subtended by a thin transparent oval BRACT, which is lengthened at the point into a very long soft transparent bristle. The SEPALS are three, ovate, acute, and light green, slightly mottled with dull red; they are of the same size, and rather longer than the PETALS; the latter are linear-lanceolate, and quite entire. The LABELLUM stands at the back of the flowers as they hang, is of a bright red colour, and firm fleshy consistence; at its base it has a large granulated tubercle or goitre which presses up against the column; near the base on each side is a slender setaceous lobe; the apex is split into two curved diverging legs. The COLUMN is very short, cuneate, with the anterior angles of the clinandrium lobed, red, and crystalline; there is a distinct ovate gland at the apex of the stigma, but it does not appear that the pollen-masses, which are four in two pairs, ever attach themselves to it.

This species is very nearly allied to *Oberonia anthropophora*, which is also a Burmese plant. That species is caulescent, not stemless, has no tubercle at the base of its lip, has the middle lobes of that organ more setaceous, and the lateral lobes broad, short, and half ovate; the spike is evanescent at the point, and finally the bracts are not so long as the flowers.

A, represents this plant of its natural size. A 1, is a highly magnified view of a portion of the spike, with half a dozen flowers adhering to it, at a part where they are not verticillate. A 2, represents the column very highly magnified, with the stigmatic gland in front, and the anther, which is crested, lying quietly at its back. A 3, is a profile of a flower, shewing the long bristle-pointed bract, the column with the anther raised up, and the great goitre at the neck of the labellum. A 4, shews the front of a full-blown flower from which the labellum has been cut off; the anther raised up, the pollen-masses lying below it, and the stigmatic gland withered up. A 5, represents the two pairs of pollen-masses.

B.

OBERONIA GRIFFITHIANA.

O. Griffithiana; subcaulescens, foliis linearibus subfalcatis apiculatis, spicâ subverticillatâ apice evanescente, bracteis ovato-lanceolatis serrulatis florum longitudine, sepalis ovatis acutis, petalis obovatis obtusis laceris glandulosis, labello cordato basi saccato apice bipartito utrinque multifido margine scabro, columnâ anticè excavatâ.

This singular plant wants altogether the brilliant colouring of the last, but its form is not less extraordinary. Figures B 3 and 4, represent this so perfectly that I may safely leave the imagination of the reader to discover with what it can be most justly compared.

The HABIT of *Oberonia Griffithiana* is very much that of the last species, but the stem is more evident. The arrangement of the FLOWERS is also the same. The BRACTS are ovate-lanceolate, acuminate, minutely toothed at the edge, and not longer than the flower. The SEPALS are like those of *O. rufilabris*, but more dingy. The PETALS are a dull greenish brown, obtuse, as long as the sepals, and not only torn at the margin into a number of coarse divisions, but covered with fleshy hairs which give them the appearance of some shaggy ear. The LABELLUM is of the same colour as the petals, except that it has more purple at the base, its edge and surface are rough, with little raised papillæ, and it is deeply divided into a number of finger-like lobes, of which the two central ones are the largest, and there are about five smaller ones gradually diminishing to the base on each side. The front of the COLUMN is singularly excavated into a sort of cup, with the anterior edge of which the labellum is joined. The pollen-masses in this and some other species has been determined by Mr. Griffith to be four, and incumbent, thus $\begin{smallmatrix} \circ & \circ \\ \circ & \circ \end{smallmatrix}$.

Fig. B. represents this species of the natural size. B 1, is a young flower-bud about to expand. B 2, is the same in a more advanced state, with the labellum just beginning to unfold, two of its lobes standing in front of the other parts like a pair of horns. B 3 and 4, are highly magnified views of

the back (4) and front (3) of a full-blown flower. B 5, exhibits a part of the front of a flower still more magnified, together with a bract: the labellum and the points of the petals are cut away, and the cup-shaped base of the column is seen below the stigmatic surface.

To these two new species of *Oberonia*, and the 14 previously known. I have the following to add.

O. anceps; caule elongato ancipiti, foliis distichis ovatis incurvis obtusis densè imbricatis, spicâ cylindraceâ densissimè imbricatâ, bracteis subrotundo-ovatis erosis, sepalis ovatis, petalis ovato-lanceolatis serrulatis, labello truncato subquadrato obscure 4-lobo: laciniis subæqualibus acutis.—Burmese empire (No. 1097) Mr. Griffith; a plant with the foliage of *Aporum anceps*.

O. brachystachys; acaulis, foliis oblongis obtusis aut apiculatis rectis racemis subæqualibus, spicâ densâ verticillatâ: verticillis multifloris, bracteis ovatis acutis floribus brevioribus, sepalis ovatis obtusiusculis, petalis obovatis serrulatis, labello cordato tripartito: laciniis cuneatis subæqualibus apice serrulatis.—Burmese empire (Nos. 697 and 778) Mr. Griffith.

C.

DRYMODA.



Perianthium valdè inæquale et irregulare. Sepalum supremum erectum, liberum; lateralia postica, cum pede longissimo columnæ connata, subrhomboidea, acuminata, sessilia, supremo pluriès majora. Petala nana, libera. Labellum cum pede columnæ articulatam, trilobum, convexum, lobo medio deflexo. Columna nana, semiteres, auriculâ longâ petaloideâ utrinque porrectâ, basi in pedem longissimum linearem canaliculatum elongata. Anthera terminalis, opercularis, cristata, bilocularis. Pollinia 4, accumbentia, glandulæ globosæ carnosæ grumosæ separabili adnascentia.—Herba minuta, epiphyta, pseudobulbosa, (aphylla?) scapis radicalibus vaginatis unifloris.

Drymoda picta.

The only knowledge I have of this most curious plant is from a sketch made by Mr. Griffith, from specimens discovered by him in February, 1835, at Mergui, in the Burmese empire. It is so entirely different from any other Orchidacea with which I am acquainted, that I am unable even to name a genus with which it may be compared. In the structure of the stigmatic gland in particular it is so peculiar that Mr. Griffith considers the plant situated on the confines of *Epidendrea* and *Vandea*.

I have seen no specimen, and it is not worth attempting to describe the plant from the sketches in my possession ; those parts which are copied in the accompanying plate sufficiently illustrate the genus. C. is a view of the whole plant in flower ; no leaves are represented in Mr. Griffith's drawings, and I presume the plant has nothing but little lenticular angular pseudo-bulbs. It will be seen that the flower is inverted, that is, that the labellum is uppermost, and between the two erect lateral sepals. C 1, shews the flower in its natural position, much magnified ; the column with its two long petal-like arms is undermost, and the long foot of the column stands over it, bearing at the apex a pair of pink and white lateral sepals, between which hangs down the deep red, fleshy, hairy labellum. C 2, represents the same flower in the position which is most frequent in plants of this order ; the back sepal and the petals are brought distinctly into view, and the upper part of the labellum is seen standing between two red and yellow arms, formed by the lateral sepals. C 3, is a highly magnified profile view of the column, with its two petaloid arms ; and just above them appears a round large yellow stigmatic gland standing in front of the anther. C 4, are the four pollen-masses seen from below, together with the large stigmatic gland to which they adhere. This gland is stated by Mr. Griffith to be opaque, clavate, rounded, always separating with the pollen masses, which, especially the inner, adhere to it very firmly ; it is composed of soft grumous matter, and is easily broken down. C 5, is a profile view of the same parts. C 6, is an exterior view of an outer pollen mass. C 7, is an interior view of the same.



High. Swartz. Bot.

Calanthe brevicornu.

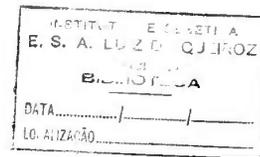
H. Swartz.

Publ. by J. Walpolean & Sons, 209, Strand, London, W. 1822.

Drawn by J. Swartz.

CALANTHE BREVICORNU

Calanthe brevicornu. *Genera & Species of Orchid. plants, p. 251.*



As yet we know little in the Gardens of the beauty of this extensive Indian genus, for neither of the two species we possess is calculated to convey an idea of the striking appearance of some of the kinds. *C. purpurea* and *Masuca* have flowers of the most delicate lilac, in *C. emarginata* and *sylvatica* they are large and purple, in *C. speciosa* orange-coloured, and in the species now represented stained and neatly striped with brownish red.

C. brevicornu is a native of Nepal, where it was found by Dr. Wallich in the year 1821. From a drawing executed under the direction of that celebrated Botanist, the accompanying figure has been prepared by permission of the Honourable Court of Directors of the East India Company.

It varies in height from nine inches to one foot and a half, and produces broad, deep green, smooth, plaited LEAVES, which gradually taper off into a sheathing foliaceous stalk, surrounded externally by several sheathing scales. The SCAPE is about the same height as the leaves, smooth, round, and with a few distant scales. The FLOWERS are racemose and generally arranged on one side of the scape, and are subtended by ovate-lanceolate, slightly downy bracts, rather longer than the pedicels. The OVARY is taper, clavate, and downy. The SEPALs and PETALS are linear-lanceolate, spreading, nearly equal, striped with bright light red. The LABELLUM, which is three-lobed, is not very much united with the column, and has a very short smooth spur; its lateral lobes are acute, and much smaller than the middle one, which is obovate, and emarginate, with two deep vertical plates, running down the middle towards the spur, and concealing a third, which is smaller, but rather longer; its colour is white, with a few reddish spots at the base. The fruit is an oblong triangular capsule, opening at the angles into three valves.

Up to the present time we can scarcely be said to possess more than two *Calanthes* in the gardens of this country; one the stately snow-white *C. veratrifolia*, and the other *C. densiflora*. Two others well worth obtaining have been imported into Flanders and Holland; with flowers and sketches of which I was three years ago favoured by M. Auguste Mechelynck, a distinguished collector of rare plants at Ghent. I presume they are natives of Java, where many species exist, but they have not been noticed by Dr. Blume. One of these called *Ambiglottis flava*, but not the species so named by the learned Botanist just mentioned, has large yellow flowers copper-coloured on the outside, on which account it may be called *Calanthe bicolor*. The other resembles *C. brevicornu* in the size of its flowers and its manner of growth, but has a snow-white labellum, and deep chocolate brown sepals and petals; the Belgian gardeners call it *C. tricolor*, but as it does not appear how the name applies I take the liberty of changing it to that of *C. discolor*.

The following technical characters will enable botanists to recognise these two species.

C. bicolor; racemo laxo pubescente, sepalis petalisque acutis, labelli trilobi columnæ omnino accreti lobis subæqualibus: intermedio cuneato apiculato trilamellato basi convexo pubescente bicorni, calcare acuto limbo duplò breviorè glabro.

C. discolor; racemo laxo pubescente, sepalis petalisque acutis, labelli trilobi columnæ omninò accreti basi pubescentis bilamellati lobo intermedio bilobo 3-carinato, calcare pubescente acuto limbo breviorè.



N. B. J. 10. - M. J. 1820. - 1821.

Schomburgkia crispata.

det. J. J. Smith.

Publ. by J. B. Baillie & Sons, 169, Strand, London, April 1, 1821.

Printed by J. Baillie.

PLATE X.

SCHOMBURGKIA CRISPA.

SCHOMBURGKIA.

Sepala et petala conformia, patentia, omninò libera, basi æqualia. Labellum difforme, membranaceum, trilobum, cucullatum, basi cum margine columnæ connatum, supra basin tumidum (intrusum): venis lamellatis. Columna marginata. Pollinia octo.—Rhizoma repens, nudum, annulatum, pseudobulbigerum. Folia coriacea. Scapi terminales vaginati. Bracteæ spathaceæ. Flores speciosi, racemosi, congesti.

S. crispa; petalis sepalis labellique lobo medio transverso obtuso crispis.

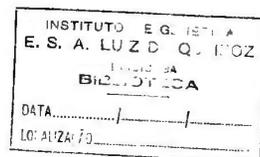
This very handsome genus seems at present to be confined to British Guayana, where two species have been discovered by the zealous naturalist Mr. Schomburgk, after whom they are named.

Schomburgkia is nearly allied to Epidendrum, from which it is distinguished by its large spathaceous bracts, by its membranous labellum adhering to the column only at the base, and having below the middle a distinctly marked prominence, which corresponds with an impression on the under side, and by having eight pollen-masses. In the latter character I trust to a drawing sent home by Mr. Schomburgk, none of the specimens of either species being in a state to shew the structure of the anther.

Schomburgkia crispa inhabits the interior of British Guayana; it was first met with on the banks of the Corentyn, but occurred more frequently afterwards near the river Berbice.

The accompanying figure has been prepared from a drawing sent home by Mr. Schomburgk, and corrected from dried specimens in my herbarium.

It has a stout round RHIZOMA, closely marked with annular scars, indicating the place of scales that have fallen off. The PSEUDO-BULBS are from four to six inches long, fusiform, rather angular from deep furrows, very hard, and covered closely for some time with firm, brownish, membranous, sheathing, sharp-pointed scales. Each pseudo-bulb bears two lanceolate, coriaceous, acute LEAVES, about nine inches long by two and a quarter broad. The SCAPE is terminal, erect, nearly three feet long, hard, stiff, completely covered with pale brown, dry, closely pressed, acuminate scales, carinate at the apex, and gradually passing into spathaceous, spreading BRACTS, which are much narrower than the scales of the stem, brown, dry, spreading, about two inches long, but shorter than the ovary. FLOWERS in a dense terminal raceme, spreading, about two and a half inches in diameter; their stalks and ovary together about two inches long. SEPALS and PETALS bright light yellow, not spotted, linear-oblong, acute, excessively crisped and undulated, of nearly the same size, texture, and colour. LABELLUM pink, with a deeper coloured apex, membranous, a little wrapped round the column, and united to its edges at the base, oblong, 3-lobed, with a prominence below the middle, and the veins crested at the junction of the middle lobe with the side ones; side lobes nearly flat, middle lobe sessile, transverse, obtuse, very much crisped. COLUMN obovate,



much shorter than the labellum, with a winged margin; and having three strong veins at its back. POLLEN-MASSSES, according to Mr. Schomburgk's drawing, eight, oval, equal in size.

The second species already alluded to has altogether the same peculiar habit, and was met with in the same country. Mr. Schomburgk states that it differs in the smaller size of the pseudo-bulbs, and in the sepals and petals being of *a rich crimson bordered by bright yellow!* Specimens of this, which I have received from its discoverer, enable me to give the following specific character:—

S. marginata; petalis sepalisque undulatis obtusis, labelli lobo medio ovato acuto plano.

Considering the facility of intercourse with Guayana it may be expected that these two noble plants, by far the finest of the order in that part of America, will not be long unknown in our gardens.



Leptotes serrulata Sch.

Leptotes serrulata.

M. Gouan, det.

Publ. by T. Dalman & Sons 169, Piccadilly, July 6, 1838

Printed by J. Goulet

PLATE XI.

LEPTOTES SERRULATA.

L. serrulata ; caule subdiphollo, foliis glaucis maculosis, labelli lobo medio oblongo-lanceolato acuminato lateralibus rotundatis serrulatis.
Epidendre ficöide. *Descourtilz drawings, plate 28. p. 63.*

This fine species is evidently distinguished from the rare *Leptotes bicolor* by its glaucous leaves, which often grow in pairs, by its flowers which are three or four times as large, by the labellum which is merely streaked with rays of purple, and by the auricles at its base being serrulated.

The following is a translation of M. Descourtilz's manuscript account of the species.

This charming plant is especially remarkable for the sweet odour of the Lilac which its flowers exhale. It is found in blossom, in the month of December, on the trunk of *Cedrela* trees, in the ancient Rocas of Brazil, where, without any sign of suffering, it survives the conflagrations that destroy so many other plants. I also found it in plenty in the district of Upper Macahé, and in that of Ilha Grande, where however it is more rare.

The STEMS are cylindrical, creeping, covered with a sort of dry, smooth membrane, of a silvery whiteness, and covering a portion of the base of each leaf. The LEAVES are cylindrical, thick, succulent, fusiform, deeply channelled on the upper side, glaucous green or bluish, dotted with violet-purple, especially underneath. There is a variety with the leaves twice as long, and falcate. The SCAPES are cylindrical, both terminal and axillary, bright purple, covered with acute alternate bracts. The OVARIES are very long, united into a drooping raceme. The FLOWER-BUDS are of a yellowish rose, protuberant at their base. The FLOWER is very large, stellate; the SEPALs ribbon-shaped, rather broad, and white as the purest enamel; the PETALS narrower and thinner, but equally white. The LIP has, at its base, two short rounded auricles; otherwise it is strap-shaped at the base with a white centre, whence there radiate numerous lines of the most brilliant lilac, and is afterwards dilated into an ovate pointed or lanceolate limb of a beautiful white.



W. B. Wood, del.

Cyrtopodium punctatum

M. B. Wood, del.

Collected by A. Reichenow in Java, 1892. Penicillaria, July 2, 1890.

Printed by G. B. Wood.

PLATE XII.

CYRTOPODIUM PUNCTATUM.

Cyrtopodium punctatum. Lindl. *Genera et Species Orchid.* p. 188. *Botanical Magazine*, t. 3507.

Epidendrum punctatum. Linn. *Sp. Pl.* 1349. Willd. *Sp. Pl.* 4. 116.

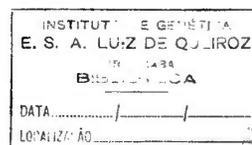
Helleborine ramosissima, cauliculis et floribus maculosis. Plum. *Plant. American.* t. 187.

Although this plant has been already figured twice before, it deserves a place in this collection, for the representations above quoted in neither case give a correct likeness of it; that in the *Botanical Magazine* seems to have been taken from a bleached specimen. The plant from which the annexed drawing was prepared was sent me from Liverpool by Richard Harrison, Esq. and about the same time I received it from Mr. Henry Shepherd who had flowered it in the Botanical Garden, Liverpool.

It is far more striking than the common *C. Andersonii*, on account of the bright, deep crimson stains with which the bracts and flowers, as well as the flower-stems, are richly variegated; but in foliage and general habit is so like it as to be hardly distinguishable when not in blossom.

The species is extensively distributed through the tropical parts of America. I have wild specimens gathered in St. Domingo by Mr. Charles Mackenzie, and others found by Deppe and Schiede in Mexico, on basaltic rocks at Malpayo de Naulinga, in the *tierra templada*, flowering in April. Mr. Gardner found it in Brazil, whence Mr. Harrison's plant was received, and it exists in Dr. von Martius's Brazilian herbarium, under the name of *Oncidium palmophilum*, *palmis aliisque arboribus parasiticum*, *sylvæ Catingas, provinciæ Bahiensis ad Rio de Contas*; no. 1965.

In STEM and LEAVES this is extremely like *Cyrtopodium Andersonii*. The SCAPE is from two to three feet high, round, branched above the middle, and finely dotted with dull purple; with a few membranous green scales, which are erect and sheathing near the base, undulated, oblong-lanceolate, reflexed, acuminate, pale yellowish green, richly spotted and banded with crimson towards and among the flowers. The FLOWERS are regularly alternate upon the simple branches of a racemose panicle, about an inch apart, and nearly two inches in diameter. The SEPALS and PETALS are spreading and a little reflexed; the former are oblong-lanceolate, undulated, acuminate, or only acute, greenish yellow, and blotched with crimson; the latter are bright yellow, of nearly the same size and form, but less undulated and rather broader, with a few crimson spots near the base. The LIP is about half an inch long, more fleshy than the other parts, shortly unguiculate, with a bright, deep, yellow ground colour, deeply three-lobed; the two lateral lobes obovate, rounded, rather wavy, and deep crimson; the middle lobe broader than long, emarginate, dull crimson and closely tuberculated at the margin; the disk is a little spotted and banded with yellow, and is covered with pale yellow granulations, which are collected into a circle in the centre, and are also a little dispersed over the unguis. The COLUMN is green.





Schomburgkia

Schomburgkia marginata.

M. Smith del.

Printed by J. Ridgway & Sons, 25, Abchurch Lane, London, E.C. 4.

Painted by J. Smith

SCHOMBURGKIA MARGINATA.

Schomburgkia marginata. *Suprà plate 10. in the text.*

When *Schomburgkia crispa* was published a few months since in this work, mention was made of a second species of the genus, of which I had received specimens from Mr. Schomburgk. I have since been so fortunate as to find a beautiful coloured drawing of this curious epiphyte, among a valuable collection of figures of Surinam plants, made by direction of my friend John Henry Lance, Esq., during his residence in that colony. From these materials I have been allowed to prepare the accompanying figure, corrected from specimens in my herbarium; and I think it will bear out the statement formerly made, that the two species of *Schomburgkia* are among the most beautiful *Orchidaceæ* of tropical America.

Mr. Lance has favoured me with the following memoranda concerning this plant.

“ This epiphyte grows abundantly near the town of Paramaribo in Surinam, in an avenue of very fine trees of a species of *Erythrina*. That tree has a very rough bark, and appears particularly favourable for the growth of all sorts of epiphytical plants, the trunk and branches being frequently covered with them. It rises from 60 to 80 feet high, and is known by the name of the Coffee Mamma, from being planted among the coffee for the purposes of shade and shelter.

“ This epiphyte is generally found springing from the first or second fork of the tree, though now and then it is somewhat higher. I do not recollect finding it in any other part of the colony, or growing upon any other species of tree.

“ I cultivated it in my garden, and it grew very tolerably on an old *Mammea americana*; but, like many others of the same class, would not flower in a pot filled with dead wood and mould; whence I conclude that in this country it will require a living tree to support it, though I have more than once seen it growing vigorously on a very large branch which had been blown down and become rotten.

“ The flower-stalk begins to appear about January or February, and is frequently four feet high, and when the whole of the flowers at its summit are blown, it is the largest and most singular looking of the *Orchidaceæ* that I observed in Surinam.

“ It seems to prefer a situation moderately shady, though in the dry season it is capable of standing a very intense heat, as the species of *Erythrina* on which it grows loses nearly the whole of its leaves at that time.”

Many living plants of this species were brought to England by Mr. Lance upon his return from Surinam; but although they were given to the most skilful cultivators of *Orchidaceæ*, they all died. In general appearance they were very like what is called the “ Spread Eagle Plant,” of which live specimens now exist in many collections, and it is not improbable that that plant, of whose flowers nothing is known, may be a species of *Schomburgkia*.



Cymbidium elegans.

Painted by J. Walpole & Sculp. by J. Smee, July 1. 1796.

Printed by P. Colnaghi.

M.S. 2000. 11.

M. Smith. 11.

INSTITUTO DE BENEFA. A.
 E. S. A. EMILIO DE OLIVEIRA
 BENEFA. A.
 BENEFA. A.



PLATE XIV.

CYMBIDIUM ELEGANS.

Cymbidium elegans. Lindl. in Wallich. Cat. no. 7354. Genera et Species Orch. 163.

A native of Nepal, where it was discovered by Dr. Wallich in 1821. The accompanying figure has been copied from a drawing in the possession of the Honourable Court of Directors of the East India Company, corrected from dried specimens.

This is much the finest of the Indian Cymbidia, as is evident from the figure. At present nothing is known of its history or structure beyond what is here represented.

The LEAVES are from one and a half to two feet long, and not more than three-eighths or half an inch wide, acuminate and very obliquely emarginate at the point; in texture they are as stout as a European Typha, and when dry, have about three principal veins on each side of the mid-rib; at the base they combine into a broad, fleshy sort of bulb. The SCAPE arises from near the base of the leaves, is about eighteen inches long, and so loaded with flowers for half its length, that it hangs down in a pendulous manner; below the flowers it is loosely covered with long, inflated, acuminate, imbricated scales, which abruptly change into small, narrow, scale-like bracts. The RACEME is from six to ten or eleven inches long, nodding, cylindrical, very compactly covered with pale salmon-coloured flowers, each rather more than one inch and a half long, and greenish before they expand. The SEPALS and PETALS form a kind of inverted cone, so little do they open; they are linear-oblong, acute, and of the same figure, but the petals are the shorter and narrower. The LIP is parallel with the column, obovate, straight, wedge-shaped at the base, divided at the point into three acute lobes, of which the middle one is the broadest and longest; it is of the same colour as the sepals, but is a little spotted with red. Along its centre there runs a double elevated line (fig. 1.) which is separated near the base into two spreading lamellæ. The COLUMN is very long, clavate, half-terete, with a convex plain anther, a little prolonged in front. (fig. 2.) The POLLEN-MASSSES are two, pear-shaped, furrowed out at the back, and planted separately upon a transversely oval gland. In this respect the present species differs somewhat from other true Cymbidia; but not sufficiently to deserve being made into a distinct genus.



M^o Swartz del.

Aerides affine.

M. Cassin del.

Pub^d by J. Redwood & Sons, 159 Piccadilly July 1, 1836

Printed by F. & J. G. Smith

PLATE XV.

AERIDES AFFINE.

Aerides affine. Wallich *Cat. no. 7316.* Lindl. *Genera et Spec. Orchid.* 239.

A. multiflorum. Roxburgh *Fl. Ind.* 3. 475.

This very beautiful epiphyte was first discovered by Dr. Roxburgh in Sylhet, where it grows and flowers during the hot season; that Botanist called it *Aerides multiflorum*, but as his *Flora Indica* had not reached England in March 1833, when the third part of the *Genera and Species of Orchidaceæ* was published, the name introduced into the latter work was Dr. Wallich's *A. affine*. The last mentioned Botanist met with it on the southern mountains of Nepal, near Sheopore.

The accompanying figure has been prepared from a drawing in the possession of the Honourable Court of Directors of the East India Company, assisted by dried specimens. Since it was made ready for publication the species has flowered in the collection of Messrs. Loddiges.

In its habit, leaves, and inflorescence, it is very like *Saccolabium guttatum*, but the racemes are more erect. The LEAVES are distichous, channelled, truncate and notched at the apex, with a sharp intermediate mucro. The FLOWERS are scentless, deep rose-colour, spotted with purple, in slightly drooping, rigid, cylindrical racemes, about nine inches long. The PEDICELS are short, and are subtended by a small, short, ovate, withering bract. The outer SEPALS are oval, obtuse, the lateral ones being shorter than the others, and the whole more fleshy than the petals. The PETALS are oblong, and very obtuse. The LIP is ovate, acute, slightly three-lobed, wavy or crisp at the edge, larger than the petals, spreading, with a curved, channelled unguis, which is prolonged into a short conical spur, just below the base of the lamina, and is bordered with a rounded membranous margin. The COLUMN is very short, semiterete, pyramidal, with a long, narrow, deflexed, bifid rostellum. The CAPSULES are oblong, about three-quarters of an inch long, with three flat or bicarinate angles, and three intermediate elevated fleshy ridges.

This is one of the finest of the East Indian Vandaceous Orchidaceæ. Unfortunately its flowers have no smell.



279 Speke del.

Cyenoches chlorochilon.

M. Bruce, lith.

Publ. by J. Wiegman & Sons, 169 Piccadilly Street, 1838

Printed by P. Colver.

CYCNOCHES CHLOROCHILON

C. chlorochilon; racemo subtrifloro suberecto, sepalis ovalibus, petalis paulo majoribus falcatis, labello subsessili obovato acuto convexo basi concavo: callo elevato transverso obtuso triangulari.

C. chlorochilon, *Klotzsch in Otto u. Dietrichs Allgemeine Gartenzeitung July 21, 1838. p. 225.*

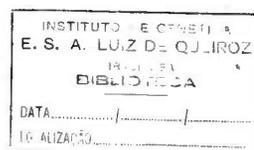
This noble species of *Cycnoches* has been introduced from Demerara by Messrs. Loddiges, in whose collection the annexed figure was taken; it was also sent to Berlin in 1836 from Maracaybo by Mr. Moritz, a naturalist in that country, from the produce of whose plants Dr. Klotzsch obtained the flowering specimen described in the work above quoted; and I have seen a flower of it in the possession of the Messrs. Rollissons of Tooting, who received it from Mr. John Youell, Nurseryman, Great Yarmouth. In every case of its blossoming three flowers were obtained, so that such may be supposed to be the number usually borne by each raceme.

In many respects it resembles the *Cycnoches ventricosum* figured in Mr. Bateman's princely work on the Orchidaceæ of Mexico and Guatemala, but it differs in the flowers being much larger, the raceme shorter and less graceful, the sepals and petals broader and not so acute, and especially in the form of the lip, which is nearly sessile, obovate and acute, not ovate and acuminate, green not white, with the broad green callosity at the base far larger and differently formed.

In the STEM and LEAVES this plant does not sufficiently differ from the two other species of the genus to require a particular description. The RACEME springs from the upper part of the stem, from among some dry, furrowed, acute, close-pressed scales, and usually bears three flowers, of a uniform yellowish green colour, nearly six inches in diameter, and by their weight bearing down the peduncle in a slight degree, so as to acquire a nodding, not a pendulous, position. Of the SEPALs the lateral ones are oblong, narrowed to the point, but not acuminate, a little longer than the labellum, at the back of which they are placed almost parallel with each other; the intermediate one is narrower, obtuse, a little spreading away from the column, whose curve it follows, except near the end, where it is somewhat recurved. The PETALS are broader than the lateral sepals, but of the same form, except that they are slightly falcate, with their concave edge next the lip, towards which they are turned, so that the flower has its parts expanded in two opposite directions: the lateral sepals, petals, and lip upwards, and the intermediate sepal downwards. The LIP stands erect at the back of the flower, is about two inches and a half long, and an inch and a quarter wide in the broadest part; in texture it is firm and fleshy; in colour it is deep green at the base, and a yellowish green every where else; in form it is widest and very convex a little above the middle, from which it is regularly ovate as far as the point: below the middle it narrows, and becomes concave with thick, round, elevated, recurved edges, and at the base it is contracted into a very short thick fleshy unguis; above the unguis, and across it, is seated a thick, green, somewhat triangular but rounded callosity, scarcely a quarter of an inch deep. The COLUMN is about an inch and three-quarters long, very slender, green, wide at the base, tapering through the greater part of its length, and flattened out at the apex, where it terminates in three narrow fleshy teeth curved over the back of the anther, the middle one being the narrowest; it bends away from the lip so gracefully, that the two taken together almost describe the segment of a circle.

The flowers are from five to eight inches in diameter, and are deliciously fragrant.

L





Wm. Sm. del.

Saccolabium ampullaceum

W. Sm. del.

Tab. 17. J. R. & S. 1833. Nov. 1. 1833.

Printed by G. S. 1833.

PLATE XVII.

SACCOLABIUM AMPULLACEUM.

S. ampullaceum; caule brevissimo, foliis crassissimis distichis ligulatis canaliculatis apice truncatis dentatis, racemis oblongis erectis foliis multò brevioribus, sepalis petalisque ovatis patentibus subæqualibus, labello angusto acuminato concavo calcare compresso pendulo duplò brevior.

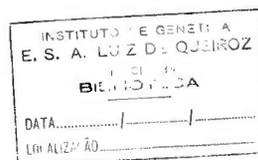
S. ampullaceum, *Lindl. in Wall. Cat. no. 7307.*

Aerides ampullaceum, *Roxb. Fl. Ind. 3. 476.*

A native of trees in the forests of Sylhet, where it was long since discovered by Dr. Roxburgh's correspondents. It was subsequently met with by Dr. Wallich, near Bemphedy, flowering in the month of May.

It is described as having a short and generally simple STEM, which, from the lower part throws out strong fleshy cord-like roots, by which the plant is bound to the tree it grows upon. The LEAVES are distichous, regularly spreading, remarkably thick, spotted with purple on both sides, ligulate, about five inches long, with the edges nearly parallel, carinate beneath, channelled above, truncated and toothed at the apex. The FLOWERS are of a deep rose colour, and grow in erect, oblong, sessile, axillary RACEMES, which are very much shorter than the leaves. The FLOWER-STALKS and OVARY together are about an inch long. The SEPALS and PETALS spread flat, and are ovate, beautifully veined, and nearly equal. The LIP is linear, falcate, twice as short as the sepals, channelled, acute, rather curved upwards at the point, with a compressed, straight, slender spur, about as long as the flower-stalk; at the base of the lip are two teeth pressed close to the base of the column, and parallel with it. COLUMN short, with a small hollowed stigma in front. ANTHER purplish, 2-celled, ovate, obtuse, with a tooth transversely curved downwards beneath the pollen-masses on each side. POLLEN-MASSSES two, globose, furrowed, with a long slender caudicula.

The foregoing description is entirely taken from Dr. Wallich's MSS. no specimen of the plant having reached me. The figure is a copy from a drawing belonging to the Honourable Court of Directors of the East India Company. I formerly supposed it to be the same as *Saccolabium rubrum*, to which I have elsewhere quoted it as a probable synonyme. I am however now satisfied that it is a perfectly distinct species, distinguished by its short erect racemes, by the form of the lip, and by the leaves being regularly distichous, not all curved to one side.





Wm. B. Wood, del.

Dendrobium carulescens.

W. B. Wood, del.

Publ. by J. B. Baillière & Co., 218, Strand, Lond. 1870.

Printed by J. B. Baillière.

DENDROBIUM COERULESCENS.

D. caerulea; caule erecto carnosio tereti, foliis oblongis obtusis emarginatis subundulatis, racemis horizontalibus 2-3-floris foliis paulò brevioribus, perianthio explanato, sepalis lineari-oblongis obtusis emarginatis lateralibus basi paulò productis, petalis latioribus oblongis apice recurvis, labello ovali subundulato utrinque pubescente apice constricto plano glabro recurvo, antherâ pubescente.
D. caerulea, *Wallich Mss.*

The species now represented has altogether the habit of *Dendrobium nobile*; when out of flower it so much resembles that species that it may be supposed to be the same. In this respect it accords with several others of the genus, such as the *Dendrobium Pierardi*, *cucullatum*, and *macrostachyum*, which can scarcely be distinguished by their foliage. When in flower it is strikingly different from *Dendrobium nobile*; perhaps it is not quite so handsome, for it wants the very rich purple of that species; but in other respects it has beautiful features of its own. The sepals and petals have a delicate tinge of very pale bluish lilac, especially on their back, and their form is more slender and graceful. Specific differences between the two are furnished by the shape of the lip and sepals, both of which are much narrower than in *Dendrobium nobile*, and the former has quite a different outline, as will be obvious upon comparison of the accompanying figure, and that at plate 3 of this work.

It was collected for His Grace the Duke of Devonshire, by Mr. John Gibson, at Nungklow, on the northern face of the Khoseea range of hills, where it grows upon rocks and trunks of trees, at an elevation of not less than 4000 feet. The specimen now figured is sufficiently beautiful with only ten flowers upon it; but Mr. Gibson states that he found it loaded with from thirty to forty flowers on a stem. The accompanying plate has been prepared from a drawing and specimens sent by Mr. Paxton from Chatsworth, where it blossomed in April 1838.

The SEPALS, which spread nearly at equal angles from each other, are about an inch and half long, and a quarter of an inch wide; they are of a delicate bluish lilac colour, tinged with deeper purple at their ends, and slightly pitted all over between the veins so as to acquire a somewhat tessellated appearance; they are all notched at the apex, and the lateral ones are slightly extended on one side into a short blunt spur. The PETALS are coloured like the sepals, except that they are rather darker, and less tessellated; they are oval, not emarginate, but undulated and curved back at their end. The LIP is very exactly oval and concave, except that it is extended into a narrow flat obtuse point, which is curved downwards; its sides are rolled round the column at the base, and then curved outwards and undulated; it is rich crimson in the middle, yellow at the edge, deep rose colour at the apex, and is covered with conspicuous pubescence every where except at the point; as the flowers fade, the yellow changes to brownish purple, and becomes marked with purple veins. The COLUMN is very short, flat, and sloped forwards in front, convex at the back; it is terminated by a peaked, purple, hairy anther.

Fig. 1. represents the column and anther, with the bases of the sepals and petals, the lip being removed. Fig. 2. is the lip unrolled, rather magnified, and seen from above.



M. Drake del.

Camarotis purpurea.

J. Smith sculp.

Bot. Beechey & Sims 162. Encad. Trav. 1. 1846.

Smith & Zeller.

CAMAROTIS PURPUREA.

C. purpurea, *Lindl. Gen. et Sp. Orch. p. 219.*

Aerides rostratum, *Roxb. Fl. Ind. vol. 3. 474.*

This beautiful and graceful plant, a native of the forests of Sylhet, was originally obtained by Dr. Wallich in April 1819, from Dr. Carey's Garden at Serampore, when a drawing was made by the artists employed in the Botanic Garden, Calcutta, from which the principal part of the materials for the accompanying figure have been taken, by permission of the Honourable Court of Directors of the East India Company.

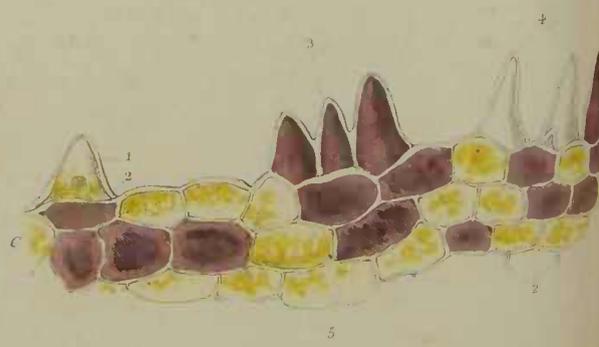
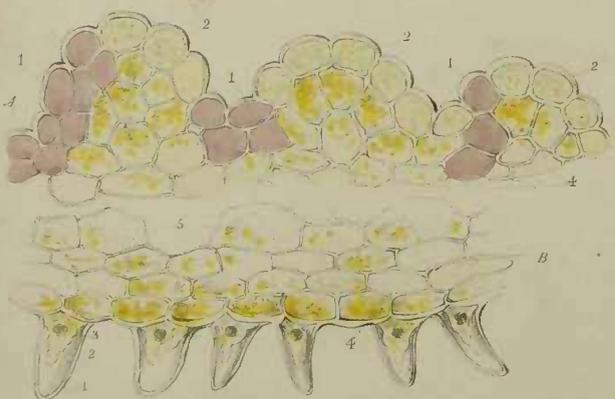
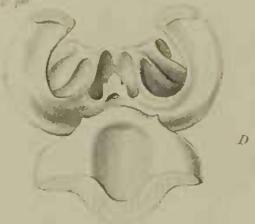
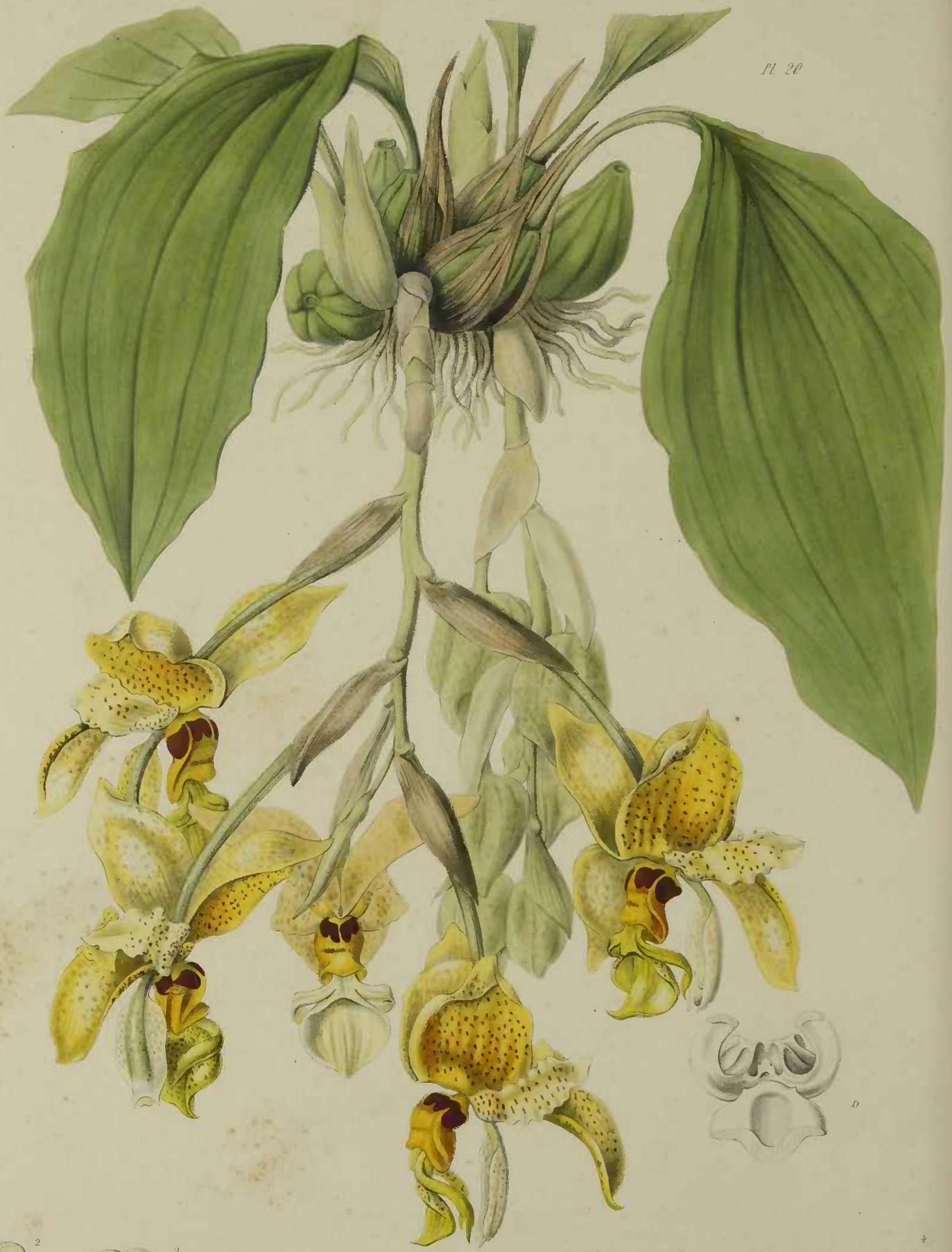
It has not yet been introduced into European cultivation. Dr. Wallich, whose manuscript account lies before me, describes it as a climbing plant, with fragrant flowers; it must, therefore, be particularly well worth inquiring for in India.

The following description is partly translated from Dr. Wallich's papers, but is altered in many respects after the examination of dried specimens.

LEAVES linear, about three inches long, and four or five lines broad, coriaceous, spreading, and slightly curved, truncated, usually obliquely, at the point with two, three, or four denticulations, at the base slightly sheathing the stem, which is two-edged. RACEMES opposite the leaves, straggling, ascending, sometimes twice as long as the leaves, sometimes much shorter. FLOWERS purple, spread open. PEDICELS half an inch long, including the ovary. SEPALs pale purple, oval, obtuse, scarcely half an inch long; the lateral united to the back of the lip, except at the point, where they diverge; they form together a single, wedge-shaped, two-lobed body. PETALS of the same shape as the dorsal sepal, but darker purple near the upper end. The LIP is narrow, channelled at its base, united at the back for more than half the length to the lateral sepals, furnished at the apex with a hollow conical chamber having a narrow oval aperture, from the anterior edge of which a short subulate process proceeds, and lies down over the orifice; in all respects of a deeper purple than the other segments of the perianth; otherwise the lip may be described as three-lobed, with the lateral lobes united by their faces except near the point, which is inflated and extended into a hollow obconical chamber, over the aperture into which the intermediate subulate lobe is inflected. The COLUMN is very short, round, with the rostellum prolonged into a conical subulate beak, emarginate at the apex, and many times longer than the column. ANTHER placed upon the back of this beak, in such a way that while it terminates the column it is almost inverted in position by the ascending direction of the beak, prolonged at the point into a thin, narrow, sharp appendage, not quite two-celled. POLLEN-MASSSES two, globose, attached to the end of a long subulate caudicula, which adheres to a dilated peltate gland.

The extremely curious structure of the lip, which is distinctly chambered at the point, is one of the principal circumstances by which this genus is distinguished among its allies. Dr. Roxburgh says, that before expansion the beak of the column is lodged in this cavity of the lip.

Fig. 2. of the dissections, represents the chamber, as the lip is viewed from above; fig. 3. shews it more distinctly, in consequence of the lip having been cut through vertically; fig. 1. is a back view of the whole flower, representing the adhesion of the lip and the lateral sepals to each other; fig. 4. shews the column, with the long beak-like rostellum and pollen-masses, &c., the anther having dropped off. In this figure the gland is erroneously represented as emarginate instead of peltate.



Stanhopea Wardii.

Publ. by J. Baillière & Son, 187, Strand, London, W. 1883

Drawn by J. Smith

STANHOPEA WARDII.

S. Wardii; racemo pendulo multifloro, sepalis lateralibus subrotundo-oblongis concavis acutis basi altè connatis, petalis lanceolatis undulatis revolutis, hypochilio sessili angusto saccato intùs tuberculato medio angustiore marginibus approximatis depressis complanatis basi connatis, mesochilio utrinque cornuto in medio sinu cornuum foveato, epichilio cornuum longitudine subrotundo-ovato acuto indiviso marginibus recurvis.

S. Wardii, *Loddiges in litt.*

The species of this genus are so easy to cultivate, and with good management they produce their beautiful and singular flowers in such great abundance, that every addition to their number becomes an object of great interest. That now figured was sent to England from La Guayra by Mr. Ward, after whom it has been named by Mr. Loddiges, to whom I am indebted for the specimen that furnished the accompanying figure. It has also been sent me by Mr. Barker of Birmingham, who obtained his plant from Messrs. Lowe and Co. of Clapton, and who speaks of its appearance as being very striking, when its flowers, eight in each raceme, first expanded.

It differs from *Stanhopea quadricornis* in the lower part of the lip not having a strong horn on each side; from *S. oculata*, in the lip being sessile, not stipitate, and a great deal shorter in proportion to the other parts; and from *S. saccata*, an unpublished species of Mr. Bateman's, in the middle segment of the lip not being 3-lobed, in the sharpness of the petals, and in the form of the horns of the lip.

I am not aware of any thing in the foliage or pseudo-bulbs which deserves particular notice, or indeed in any other part except the flower. As is usual in this genus the distinctions between the species principally consist in variations of the form of the parts of that organ. The SEPALS are a clear bright yellow, rather paler on the outside than on the inside, and strongly dotted with small scattered blotches of crimson; those in front of the flower are roundish-oblong, concave, acute, and united for some distance by the base of their anterior margin. The PETALS are of a clearer and paler yellow, and are blotched with crimson in a similar manner; they have a lanceolate form, are very sharp pointed, much undulated, and rolled back till their points overlap behind the intermediate sepal. The LIP is nearly sessile; the lower half or hypochilium is very thick and fleshy, hollowed out at the base, a little contracted in the middle, about three-quarters of an inch long, and half an inch wide; its edges are depressed, as if they were planed smooth, almost touch each other throughout, and are actually united at the base; its colour is a deep yellow-orange, with four large deep crimson blotches near the base; the middle or mesochilium is prolonged on each side into two, curved, sharp-pointed, fleshy horns, between whose bases there is a little foramen with an elevated fleshy border on one side; the upper end or epichilium is roundish-ovate, fleshy, sharp-pointed, undivided, concave in the centre, with the edges curved downwards: both it and the middle are a light yellow, delicately dotted with crimson.

The inside of the hollow base of the lip is covered over with numerous round tubercles, which give it the singularly rich and sparkling appearance of a grotto lined with purple and yellow spar. Its outside is also studded with little elevations, but they are hardly visible to the naked eye, or only

appear in the form of a fine downiness. An examination of the anatomical structure of this part has revealed some facts which deserve to be described.

Let the dissections at the bottom of the plate represent very thin vertical slices of the thick base of the lip, magnified about 500 times in diameter. *A* shews the appearance of the tubercular lining, three of the glittering callosities being cut through; they consist of cellular tissue arranged with great regularity, and there is no distinct cuticle, but the thickness of the sides of the exterior cells is greater than that of the interior; some of the cells are filled with yellow colouring matter or chlorophyll of a granular nature, others contain a red fluid (1, 1); the yellow in the cells next the surface (2, 2) is paler and less granular than that in the inner cells (3, 3); cells still further from the surface (4) gradually contain less granular matter, which appears to stick exclusively to the sides, and not to float in the interior.—*B* represents a similar view of the tissue forming the outer surface, at a part where the colour is uniformly yellow; the whole of the cells contain exclusively yellow granular matter, which becomes less dense as you proceed from the surface (4) towards the interior (5); here also there is no distinct cuticle, or layer of empty cells; the surface is covered closely with conical cells, which form the almost invisible downiness of that part.—*C* is a similar view of the same part, at a place where the colour is both yellow and purple; it is more magnified; in this case it is seen that the colouring matter is distinctly separated into separate cells, and that the colour of one does not interfere with that of the other, but that the yellow is lodged in one cell (1, 5) and the purple in others (4); the hairs themselves are sometimes filled with purple fluid, as at 3; sometimes they are almost colourless, as at 4; or they are stained yellow, by the addition of grumous matter of that colour to their interior, as at 1. At 3. it is seen that the hairs occasionally grow together at the base.

Thus it appears that the varying tints of colour which are found in flowers are not produced by colours proper to the tissue of which they are composed, or by a confused mixture of colouring matter below the surface, but are caused by different colours, separately deposited in separate cells, which are themselves uniformly colourless; I could not perceive that any of the yellow was ever developed in the purple cells, and certainly the reverse did not exist; now and then yellow colour appeared to come from the interior of a purple cell, but this I believe was owing to a purple cell being placed between the eye and a yellow cell. These facts are in accordance with what has been observed by Botanists in other cases.

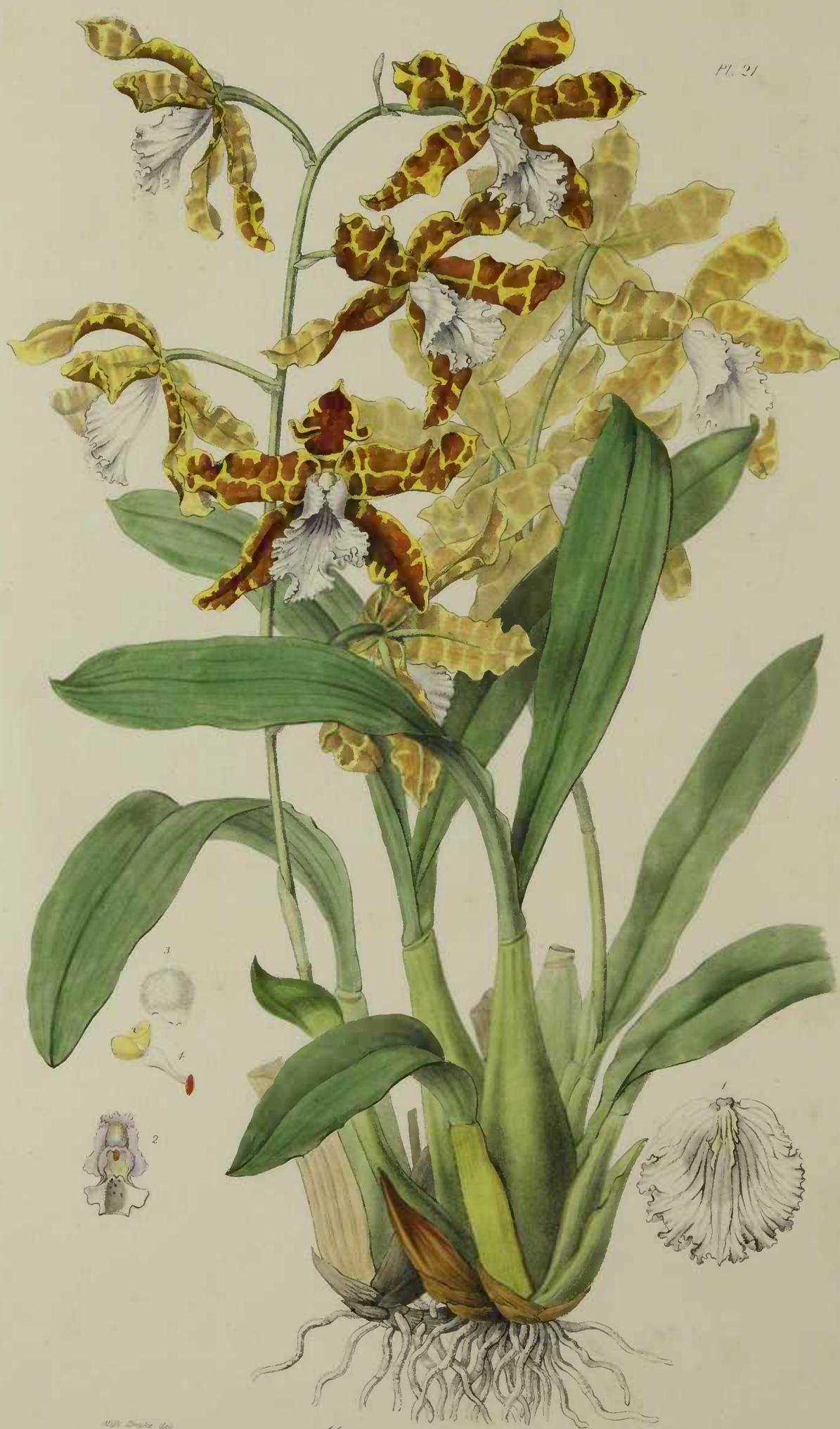
The yellow cells uniformly presented a grumous or granular appearance, in consequence of their chlorophyll being collected into irregular spherules of various sizes, but I could not succeed in detecting any amylaceous matter in the interior of the spherules. The effect of applying tincture of iodine was to destroy the brilliant orange yellow, and to convert it into that dull olive brown which usually follows the application of this agent to the resinous secretions of plants, but I sought in vain for any sign of blue in the interior of the granules. In one case, however, I remarked a small portion of the membrane of a cell stained blue, much in the same way as is represented in Link's *Icones Anatomicae*, tab. xvi. fig. 13. in the tubercle of Salep. The application of dilute sulphuric acid coagulated the yellow granules into a ball in the middle of each cell, and changed their colour to an olive green.

While the yellow colour appeared to be entirely produced by the presence of matter in a granular state floating in colourless fluid, the purple was in many cells as uniformly caused by a purple fluid without granules; but in the deepest coloured cells, as at *C* 2, and 3, there was evidently a tendency to granulation, although, when the contents were pressed out of such cells, no distinct granules could be found. Iodine produces no other effect upon the purple than to render its colour less brilliant; but diluted sulphuric acid, without discharging the colour, renders it distinctly grumous. I do not know whether this effect is produced by the acid coagulating the purple chlorophyll, or whether it merely renders distinct and firm that which was previously semifluid and undistinguishable. I am however persuaded that the amylaceous centres, round which Professor Mohl conceives the chlorophyll to mould itself in the interior of vegetable tissue, do not exist in this instance.

It has been stated, that there is no distinct cuticle to be found in this part of the Stanhopea; that is to say, there is no membrane, composed of empty cells, which can be discovered either by tearing it off, or by a vertical section; such indeed is a general fact in petals and petaloid parts. It is probable that in these organs its place is supplied by a great thickening and development of that external homogeneous membrane, first noticed by M. Adolphe Brongniart, afterwards found by Professor Henslow, and subsequently described by myself and others. That it exists in a state of great toughness, in very delicate flowers, has lately been shewn by me in *Hydrotænia Meleagris*, and in this Stanhopea it is also present, although I did not succeed in detaching it. In general it adheres so firmly to the cells it lies upon, that it merely adds to their thickness, as is shewn at A, B, and C, and cannot be distinguished. But it also rises above the surface in the form of hairs, and then the cell itself has no adhesion to it, but appears in the form of a lax, shrivelled, internal membranous sac, as at B 2, and elsewhere in that figure; the cell however, if filled with fluid, extends so as to fill the whole cavity of the hair, as at C 3. In this latter case the membrane adapts itself to the surface of the cells, and may be distinctly seen at their angles.

Possibly the hairs of plants are generally formed in this way; namely, of homogeneous cuticular membrane, covering cells free at the sides, and only adhering to the parenchyma at the base. I am led to this supposition from comparing the hairs of Stanhopea, *Tradescantia*, *Campanula Rapunculus*, *Polystachya luteola*, and others of like nature, all of which are evidently formed upon the same plan, and in which it is probable that the phenomena of circulation may be observed. In these hairs there is always a nucleus (B 3), in the inside of a sac or cell, which latter distends when wet, and contracts afterwards, or after death, then leaving a considerable space between its sides and those of the hair (B 1). It is in this space, which, when the hair is full of life, is extremely small, that the motion of the fluids takes place, as is manifest in *Tradescantia* and *Campanula Rapunculus*. I have not, indeed, succeeded in seeing any circulation in the hairs of Stanhopea; but when they are killed by iodine the inner sac contracts and becomes more distinct, and then appear on the outside of the sac, especially between its end and the point of the hair, evident traces of a reticulation, which may be supposed to be a plexus of capillary laticiferous vessels, whose contents are coagulated by the action of iodine.

Fig. D. represents a portion of the mesochilium, with the horns and part of the epichilium cut off; this figure is given for the purpose of shewing the foramen that exists between the bases of the two horns, and the nature of which is at present unknown.



Miltonia candida, Desf.

Miltonia candida.

M. candida, Desf.

Publ. by J. Ridgway & Sons 1833 Piccadilly Sept 1st 1833

Printed by T. Agnew

MILTONIA CANDIDA.

M. candida; pseudobulbis ovatis apice angustatis diphyllis, foliis angustis racemo brevioribus, bracteis ovatis membranaceis concavis squamæformibus, sepalis petalisque oblongis æqualibus, labello subrotundo crispo circa columnam convoluto basi 5-lamellato, columnâ pubescente basi biauri, clinandrio crispo membranaceo-marginato utrinque in alam decurrente.

Miltonia candida. *Bot. Register*, 1838. *misc. no. 29*.

This Brazilian epiphyte is one of the most noble of its race, and is scarcely rivalled by any of the beautiful species of *Dendrobium* or *Cattleya*. When it first flowered, it was out of health, the specimen was in an unnatural state, and consequently the brief character assigned to it in the *Botanical Register* requires much modification.

It differs in the structure of its column and labellum in so many respects from the original *Miltonia*, that if much experience had not taught me to judge more correctly of the value of such differences among *Vandæ*, this would have been regarded as a new genus. In the first place, the bed in which the anther lies is bordered by a fringed margin, which runs a little way down the front of the column in the form of two flaps; in *Miltonia spectabilis* this is not the case, two auricles only appearing on the front edge of the column; but in *Oncidium cucullatum*⁽¹⁾, a species related to *O. Lanceanum*, and about the genus of which there can be no doubt, the anther-bed is in like manner hooded by the thinning away of the margin. This tendency on the part of a body usually so fleshy as the column, to become membranous, is met with in various degrees in many well known genera, especially in *Cœlogyne*, *Calypso*, and *Pachyphyllum*, and is always to be regarded by the systematist with some suspicion, with reference to its affording a valid mark of generic distinction, unless it exists in excess, as in *Centropetalum*⁽²⁾, a Peruvian genus, in which the column is not only entirely petaloid, except at the line which bears the stigma and anthers, but coloured like the lip, and completely convolute.

The cucullate character of the lip is another circumstance in which this species is obviously at variance with the original *Miltonia*; but the same difference is found between *Cattleya bicolor* and other species of that genus.

THE PSEUDO-BULBS are ovate with a long neck, and are each terminated by a pair of coriaceous LEAVES, which are narrow, spreading, and shorter than the raceme, which springs from the axils of the primary leaves, which surround the base of the pseudo-bulb. Each RACEME consists of five or six flowers, which are separated from each other by intervals of from one and a half to two inches, and

- (1.) *ONCIDIUM cucullatum*; pseudobulbis foliisque . . . , scapo paniculato angulato bracteis squamiformibus cartilagineis concavis acutis, sepalo supremo oblongo inferioribus omninò connatis petalisque ovalibus carnosis planis, labello cordato panduriformi apice maximo lunato transverso appendice lanceolatâ apiculato, tuberculo baseos ovato subtridentato, columnâ nanâ basi auriculis rotundatis marginatâ, clinandrio cucullato.—*In arboribus ascensus occidentalis montis Pichincha*, Jameson.
- (2.) *CENTROPETALUM*. Sepala et petala libera labello duplò minorâ. Labellum obovatum, indivisum, uudum, basi appendice parvâ excavatâ auctum. Columna petaloidea, convoluta, basi imâ labello adnata. Anthera membranacea, unilocularis. Pollinia 4, distincta, geminatim caudiculis 2 longis ascendentibus affixa.—*C. distichum*. Folia disticha, carnosâ, linearia, falcata. Pedunculi solitarii, terminales. Flores lutei ½-poll. lati. Columna denticulata. Labellum integerrimum.—*Peruvia, prov. Chachapoyas, inter lichenes*, Mathews.

hang nearly horizontally. The FLOWERS themselves are nearly three and a half inches in diameter ; their SEPALS and PETALS are oblong, rather obtuse, spreading equally, much undulated, and mottled with rich brown upon a dull yellowish ground. The LIP is white, very much undulated, rolled round the column, when spread open almost orbicular, with a small downy tubercle at its very base, and five elevated lines running from it towards the upper end ; of these lines the central and outside ones are shorter than the intermediate one ; the latter and the external lines are slightly toothed, the central one is uninterrupted. The COLUMN is short, downy, with two fleshy truncated ears at the base, and a winged crisp anther bed, which runs down in front, on each side of the stigma, in the form of two flaps. The ANTHER itself is round and hairy. Fig. 1. represents the inside of a lip, spread open ; 2. is a front view of the column ; 3. an anther ; and 4. the pollen-masses, with their caudicula and gland ; one of the pollen-masses being cut across to shew that it is excavated at the back.

As a genus *Miltonia* need only be compared with *Oncidium*, *Cyrtorchilum*, and *Odontoglossum*. It differs from the first in its lateral sepals being not only distinct, but spreading equally from the centre and not placed beneath the column ; in its lip being either flat or convolute, undivided, not lobed or indented at the sides ; and finally in the elevations at the base of the lip not being tubercles or other convexities, but simply plates following the course of the veins. With *Cyrtorchilum* it agrees in the latter character, but it differs in its lip not being tapered to the point or unguiculate, and much more developed. From *Odontoglossum* it is known by its lip not being unguiculate, nor furnished with a pair of parallel often confluent plates at the base, and by its short column.



Mrs. Drake, del.

Cattleya superba.

M. Cracca, sculp.

Printed by J. Peckham & Sons 169, Broadway, Sep 13th 1839.

CATTLEYA SUPERBA.

C. superba; foliis ovato-oblongis obtusis coriaceis marginatis caule clavato brevioribus, sepalis oblongis acutiusculis, petalis lanceolatis acutis membranaceis duplò latioribus, labelli trilobi cucullati lobis lateralibus acutis: intermedio transverso plano denticulato emarginato subunguiculato basi venis elevatis rugoso; callis duobus pone basin.

Cattleya superba. Schomburgk in litt.

Cattleya Schomburgkii. Loddiges' *Orchid.* no. 434.

This magnificent sweet-scented *Cattleya* has been found in British Guayana by Mr. Schomburgk, who sent a live plant of it to Messrs. Loddiges, and a drawing to the Linnean Society, by permission of which I am able to publish it in this work.

The plant represented by Mr. Schomburgk is inferior in size to a dried specimen sent by him to me, the stem of the latter being ten inches long, and stout in proportion. The flowers, if not so large as those of *Cattleya Mossiæ*, are, from the richness of their colours, inferior to none in beauty.

The following is taken from the account of this plant communicated to the Linnean Society by Mr. Schomburgk.

“ The species is an epiphyte. The STEM is narrow at the base, and increases in diameter upwards; it is however seldom more than two inches in circumference; when young it is covered with sheaths resembling the spathe, except in position, and so closely imbricated that the stem appears to be round; but in old specimens whence the sheaths have fallen, it is found to be compressed and deeply channelled. From the apex of the stem spring two coriaceous, elliptical, acute LEAVES, between which the peduncle makes its appearance from the midst of a large foliaceous SPATHE; the latter when young is striated and speckled, but soon dries up and becomes straw-coloured. The PEDUNCLE bears from three to six FLOWERS, each between five and six inches in diameter. The SEPALS are fleshy; the two lateral almost acinaciform, the intermediate one lanceolate, the whole terminated by a sharp greenish point. The PETALS are somewhat larger, wavy, ovate-lanceolate, toothletted towards the upper end; both sepals and petals are of a beautiful pink colour, their lower surface being paler with a bluish cast. The LIP is 3-lobed, and cucullate; the middle lobe is rounded and saddle-backed, wavy, apiculate, and along its edge denticulate, of a dark purple colour, but yellow and striated in the middle; the lateral lobes fold over the column and each other, are recurved at the upper end, deep purple on the outside becoming paler downwards, yellowish white in the inside. The COLUMN has an incurved denticulated margin, and is white tinged with pink at the base.

“ This plant appears to be peculiar to the 3rd or 4th degree of N. Lat.; it is not to be met with in the Essequibo north of the mouth of the Rupunony; from thence it is found southwards on trees which skirt the banks of the brooks and rivers which meander through the savannahs. I discovered only a few solitary specimens in the Essequibo south of the Cayuwini, and none at the equator. The Caribees call it *Oponopodoli*, or *Ducksmouth*, the Macoosees *Masame*. I venture to say that in beauty, odour, and duration, it is not to be surpassed by any orchidaceous plant; the odour in the morning and evening becomes too powerful in a confined place; its splendid flowers last from three to four weeks.”

Although only now brought into notice, the species was many years since discovered by Dr. Von Martius, who found it near Taruma on the banks of the Rio Negro, in woods at the Barra de Rio Negro, and in forests near Parà.

It is readily distinguished from all previously described species by its three-lobed lip with acute lateral segments, the middle lobe being flat, toothletted and emarginate, and by the cluster of elevated veins at the junction of the epichilium and hypochilium.

The species of this beautiful genus have not been well defined. They are with difficulty preserved as dried specimens; they have been described at various times from plants in different states, and for a small genus there is probably as much to correct or amend in the genus *Cattleya* as in any in the whole order. I therefore take this opportunity of making some observations upon this subject.

In the first place it is necessary to remove from the genus *Cattleya* *coccinea*, which is *Sophranitis grandiflora*; *C. Grahani* and *maxima*, which are *Lælias*; and *C. domingensis*, which is possibly a species of *Barkeria*.

Of the genuine species then left there are two sections, the first of which has an undivided lip; and the other a lip with three deep distinct lobes.

The *first section* consists of *C. crispa*, *labiata*, *bicolor*, *pumila*, and *Mossiaë*, with the unpublished *C. Skinneri* of Mr. Bateman, which is nearly related to the last.

Of the *second section* *C. elatior* has to be expunged, having been founded upon a bad tall specimen of *C. guttata*; *C. Perrinii* is readily known by the narrow middle lobe of its lip, and its cuniculate ovary; *C. citrina* has yellow flowers, and is otherwise well marked; *C. superba* has already been spoken of; the remainder consist of *C. Forbesii*, *intermedia*, *Loddigesii*, *ovata*, *Harrisonii*, and *maritima*. Of these *C. Forbesii* has the back sepal and the petals very narrow, the middle lobe of the lip rounded and not emarginate, and two elevated lines along the middle of the axis; *C. maritima* has small roundish ovate leaves, but its flowers have not been sufficiently examined; and *C. intermedia*, *ovata*, and *Harrisonii* are probably varieties of *C. Loddigesii*; at least I am unable to point out any positive marks of distinction between them.



W. Drake del.

Phaius bicolor.

Publ. by J. Nees & Sons, 103, Boulevard, Paris, 1858.

Printed by P. Hauss.

H. G. S. del.

PHAIUS BICOLOR.

Phaius bicolor. *Genera & Species of Orchidaceous plants, p. 128.*

It is in Ceylon, in dry pastures, on the sides of high hills near Peradenia, the village where the Botanical garden is stationed, that this charming plant grows wild, and flowers in November. It was first made known to me by Mr. James Macrae, who unfortunately died a few months after his arrival in the island, and I have since seen a drawing by Mrs. Walker, in the possession of Sir Wm. Hooker, from which the accompanying plate has been prepared.

It is probably alive in the nursery of Messrs. Loddiges, as it seems to be the only *Phaius* found in Ceylon, and it appears from their Catalogue that there is a species from that island in their vast collection.

From a fleshy knobby RHIZOMA, like that of an Iris, the leaves and flower-stems spring independently of each other. The LEAVES are about a foot and a half long, do not taper into a distinct petiole, but are rolled round each other at the base; they are plaited and very sharp pointed; at the base on the outside they are invested with green scales. The FLOWER-STEM is as much as two feet high, naked at the lower part, but at the upper end covered by large, distant, yellow and crimson flowers, which are nearly four inches in diameter. The BRACTS are large, greenish yellow, oblong, concave, and are thrown off as the flowers expand. The SEPALS and PETALS are linear-lanceolate, spreading, taper-pointed, and nearly of the same size. The LIP is very much broader, oblong, rolled round the column, much undulated at the edge, acuminate, and curved downwards at the upper end, with a pink limb and a yellow tube; at its base it is lengthened into a curved horn, which is emarginate at the point, and about one-third the length of itself. The flowers do not appear to be fragrant.

It would seem that there are two varieties of this plant; viz. that now figured with crimson sepals and petals, and a pink lip; the other with every part yellow except the lip; the latter I know only from a drawing in my library executed in Ceylon by a native artist.



1849. D. C. 20

Calanthe plantaginea.

M. Smith, del.

Calanthe plantaginea (L.) Sw. Bot. Beechey, 1847, p. 132

Smith, del.

CALANTHE PLANTAGINEA.

C. plantaginea. *Genera & Species of Orchidaceous plants, p. 250.*

The species of *Calanthe* are so very beautiful, and their cultivation so easy, as to render it quite a subject of regret that there should not be more of them in our gardens. Of at least twenty-two species, inhabiting various parts of tropical Asia, not more than five or six have been seen alive in this country, and these are not the handsomest.

That which forms the subject of the present notice was originally discovered by Dr. Wallich, whose manuscript notes are before me, and from one of whose drawings the accompanying plate has been prepared, by the permission of the Honourable Court of Directors of the East India Company.

It was found common about the roots of trees in various mountain places in the valley of Nipal, and in the forest on the summit of Mount Chandaghery, where it was beginning to flower in the month of February. The following is translated from Dr. Wallich's Latin description of the plant.

The roots are thick, white, and clustered, smooth when old, but originally covered with dense white hairs. The STEM is a creeping rhizoma, with round knobs, whence the leaves are produced. The LEAVES are ovate, acute at each end, from six to eight inches long, wavy, smooth, shining on the upper side, plaited, with five principal and several smaller veins, which project on the under side of the leaf; their STALK is about six inches long, deeply channelled, angular, gradually widening upwards. The SCAPE springs from the outside of the leaves, and is from a foot to a foot and a half high, taper, often tinged with purple; at the base it is enclosed in three or four sheathing scales, each from two to three inches long, striated, angular, and obliquely acute at the point; together these scales form a tube about three times wider than the scape. The FLOWERS are arranged in an oblong terminal raceme, from six to eight inches in length, and closely covered with rather large, pale purple, fragrant flowers, placed upon PEDICELS about half an inch long, and covered with short down like all the external parts of the flowers. The BRACTS are linear-lanceolate, about four lines long, downy, and nearly white. The PERIANTH is spread open, and pale violet; the SEPALs are lanceolate, acute, and about five-eighths of an inch long, those at the base of the labellum having one of their edges more convex than the other; the PETALS are linear, rather broadest in the middle, slightly falcate and reflexed. The LIP is naked, three-parted, with cuneate-obovate segments, of which those at the side are more obtuse than that in the middle, which is apiculate; at the base it is a little contracted, has three tubercles, and then becomes connate with the column, for the whole length of the latter; at this part it is compressed, has some reflexed hairs inside, and at the base is prolonged into a slender SPUR, which is notched at the end, pendulous, and as long or longer than the pedicel.

The fragrance of the flowers of this species is the more remarkable, because those which we have in cultivation, or of which there is any particular account, are scentless.

The figure at the bottom of the plate represents a lip, with the column to which it adheres, the spur and the ovary, a little magnified.



M.D. Drake del.

Cyrtorchilus maculatum.

L. Swartz del.

Publ. by J. Balfour & Sons, 169, Piccadilly, Geo. 1852

Printed by G. H. Colver

CYRTOCHILUM MACULATUM.

Cyrtorchilum maculatum. *Botanical Register*, 1838, misc. no. 39. t. 44. *Knowles and Westcott, Floral Cabinet*, t. 57.

Although the plan of this work is not to admit any plant of which a figure has been previously published, yet the variable appearance of the present species, and the great beauty of some of its varieties, seem to justify a deviation from the rule, especially as it is impossible to do justice to the species on a page the size of the monthly Botanical periodicals.

The specimens which first flowered had but little beauty, the colour of their sepals and petals being green, and the number of flowers inconsiderable: but there have lately appeared, among the plants sent from Vera Cruz to the Horticultural Society of London, by Mr. Hartweg, many specimens in which a rich yellowish brown is substituted for green, the size of the flowers much increased, and the whole inflorescence arranged in a large nodding panicle, instead of a few flowered raceme. Among the varieties one which is in the possession of John Rogers, Esq. Jun. of Sevenoaks, has been selected for illustration.

It is not merely its beauty that renders this species valuable; its fragrance is of the most delicate kind, resembling primroses; it is very easily cultivated, and it remains in flower a considerable time.

At Plate VII. of this work some observations were made upon the difficulty of finding a good distinction between *Cyrtorchilum* and *Oncidium*. This, and some other plants now in cultivation, having rendered it necessary that the question should be fully considered, I have been led into an extensive examination of these two genera and of *Odontoglossum*, also vaguely characterized, which has led me to the following conclusions.

Cyrtorchilum is not to be distinguished from *Oncidium* by any character derived from its column, for in this respect they are essentially the same. M. Kunth assigned his species a column winged at the margin, and not auricled, as in *Oncidium* and *Odontoglossum*; but the auricles are not found in *Oncidium corynephorum*⁽¹⁾, and scarcely in *O. cordatum*⁽²⁾, two new Peruvian species nearly allied to *Oncidium macranthum*. The convexity of the lip of *Cyrtorchilum* is not greater than is found in many common *Oncidia*, and is much less than in *O. excavatum*⁽³⁾, in which the tubercular base is excavated into a kind of niche, the opening of which looks towards the apex of the lip. Neither will the undivided margin of the lip afford a more valid mark of distinction, for independently of all other cases, I have not fewer than three unpublished species of *Oncidium* in which the lip is perfectly entire, viz. *O. cochleatum*⁽⁴⁾, *aureum*⁽⁵⁾, and *brachyandrum*⁽⁶⁾. I do not,

- (1) *ONCIDIUM corynephorum*; pseudobulbis angustissimis compressis, foliis angusto-lanceolatis acutissimis, scapo ramoso paniculato, bracteis membranaceis subrotundis obtusissimis, sepalis petalisque subrotundo-oblongis longè unguiculatis, labello sessili obovato rotundato: callis baseos depressis apice trinis latere rugosis tuberculatis, columnâ clavatâ apterâ.—*Peruvia*, Mathews (1918).
- (2) *ONCIDIUM cordatum*; pseudobulbis . . . , foliis oblongo-lanceolatis acutis coriaceis basi angustatis, scapo paniculato ramosissimo, bracteis oblongis cucullatis membranaceis obtusis, sepalis unguiculatis ovatis undulatis, petalis unguiculatis cordatis margine crispis denticulatis, labelli hastatâ unguiculati lobis angustis acuminatis appendicibus disci petaloideis, columnâ subapterâ.—*Peruvia*; *rupibus ad ripas fluminis prope Pangoa*, Mathews (1067).
- (3) *ONCIDIUM excavatum*; pseudobulbis foliisque . . . , scapo paniculato, bracteis squamiformibus membranaceis acutis, sepalis lateralibus obovatis obtusis liberis supremo concavo acuto, petalis membranaceis oblongis retusis basi angustatis, labello sessili pandurato apice rotundato emarginato sellæformi basi cordato convexo fornicatim excavato, columnæ alis retusis rotundatis.—*Peruvia, in prov. Chachapoyas*, Mathews.
- (4) *ONCIDIUM cochleatum*; pseudobulbis foliisque . . . , bracteis oblongis membranaceis obtusis, floribus densis, sepalis lateralibus semiconnatis petalis lanceolatis acutis conformibus et concoloribus, labello unguiculato concavo obovato acuto basi bilamellato tuberculo parvo infra medium tribusque denticulis interjectis, columnæ alis angustis bifidis inflexis.—*Paramo de Saragura*, Jameson.
- (5) *ONCIDIUM aureum*; pseudobulbis . . . , foliis lineari-lanceolatis acuminatis obtusis, scapo paniculato ramis flexuosis, bracteis magnis membranaceis spatibaceis, sepalis lateralibus semiconnatis petalis ovatis acutis, labello cordato cuneato rotundato unguiculato: margine unguis utrâque bidentatâ setulis quinque interjectis, alis columnæ acinaciformibus laceris.—*In montes altos prope Andimarcam*, Mathews (1068).
- (6) *ONCIDIUM brachyandrum*; pseudobulbis foliisque . . . , scapo tenui sub-biforo, sepalis lineari-lanceolatis undulatis acumi-

however, for these reasons propose the union of *Cyrtorchilum* and *Oncidium*, which I think may be distinguished satisfactorily in the following manner. *Oncidium* always has the two lateral sepals either more or less united or distinctly approximated at the base, *Cyrtorchilum* has them equally spreading; on this account my *C. Karwinskii* must be reduced to *Oncidium*, notwithstanding its entire lip, with lamellæ in lieu of tubercles at its concave base. In the second place, the lip of all true *Cyrtorchila* is narrowed towards the apex, while in *Oncidium*, except in those species where it is deeply hastate, it is dilated and rounded at the apex.

With respect to *Odontoglossum*, it was first distinguished by an unguiculate labellum adnate half-way up the face of the column, a reflexed lamina with three subulate tubercles at the base, and a column with two auricles. Of these characters the first is not found in any species I have examined, and probably arose in some mistake; the others are inconstant. Thus the reflexed lamina, although characteristic of some species is not of others; in *Odontoglossum nebulosum*⁽⁷⁾, *lacerum*⁽⁸⁾, *Hallii*, *cirrhosum*, &c. it is a conspicuous feature, but it can hardly be observed in *O. Rossii*⁽⁹⁾, and *maculatum* (or *cordatum* of the Botanical Register), and it does not exist at all in *O. Cervantesii*, which is very near *O. nebulosum*. The nature of the tubercles is also I suspect misunderstood in the species to which it is assigned; for while two teeth or setæ are common, I do not find the number three in any case except *O. lacerum*, and then it is accompanied by other characters. The presence or absence of auricles upon the column is not to be taken as a generic character, because it has already been shewn that the character is inconstant in *Oncidium*; because it is equally variable in *Cyrtorchilum*, of which *C. volubile* is really a species; and because they are absent in *Odontoglossum pardinum* (*Cyrtorchilum pardinum*, *Gen. et Sp.* 210), *nebulosum*, *Cervantesii* and *Rossii*, while they are present in *O. membranaceum*⁽¹⁰⁾, which is hardly distinguishable from the last, and in several other species.

The true characters of *Odontoglossum*, and those by which alone it can be distinguished generically from *Cyrtorchilum* and *Oncidium*, are a long column, and an entire unguiculate lip, narrowing to the point, and furnished at the base with a pair of fleshy, entire, or fringed lamellæ, in front of which stand two, or rarely three, teeth or bristles. In this view of the question, Mr. Bateman's *Cyrtorchilum bictoniense* will belong to *Odontoglossum*; while my own *Cyrtorchilum ixioides*, which I once thought would best arrange with *Odontoglossum*, will retain its original position.

In conclusion, the differential characters of *Oncidium*, *Cyrtorchilum*, *Miltonia*, and *Odontoglossum*, may now be considered settled as follows;

ONCIDIUM. Sepala lateralia labello supposita, nunc connata. Labellum planum, sæpiùs sessile, cordatum, panduratum v. trilobum, apice dilatatum, basi sæpiùs variè tuberculatum.

CYRTOCHILUM. Sepala lateralia patula, libera. Labellum planum, oblongum, sæpiùs unguiculatum, integrum vel margine dentatum, apice angustatum, basi tuberculatum villosum aut pluriès lamellatum.

MILTONIA. Sepala lateralia patula, libera. Labellum sessile, integrum, explanatum v. cucullatum, apice rotundatum, venis baseos pluriès tuberculato-lamellatis.

ODONTOGLOSSUM. Sepala lateralia patula, libera. Labellum planum, unguiculatum, ascendens, limbo reflexo diviso dentato, apice angustato; basi concavum cristâ bilamellatâ rarè fimbriatâ sæpiùs anticè bidentatâ auctum. Columna elongata, apice auriculata aut aptera.

natis lateralibus basi contiguis, petalis latioribus conformibus, labello obovato membranaceo emarginato convexo: tuberculis binis parallelis extrorsum sinuatis columnâ nanâ crassâ longioribus, alis parvis truncato-triangularibus.—*Mexico, Prope S. Jago et grande, Oaxaca*, Karwinski.

- (7) *ODONTOGLOSSUM nebulosum*; pseudobulbis diphyllis, foliis oblongis erectis pedunculo terminali erecto sub-4-flo. brevioribus, bracteis membranaceis scarioeis ovario dimidio brevioribus, sepalis membranaceis oblongis undulatis apiculatis, petalis conformibus latioribus basi angustatis, labello sessili basi cucullato carnosio limbo ovato acuto dentato: lamellis maximis rotundatis anterioribus obtusis, columnâ apterâ pubescente.—*Mexico*, Karwinski.
- (8) *ODONTOGLOSSUM lacerum*; pseudobulbis ovalibus ancipitibus, foliis lineari-oblongis in petiolum canaliculatum angustatis, racemo subpaniculato terminali, bracteis ovatis acutis squamæformibus, sepalis petalisque rhombeo-lanceolatis acuminatis, labello lacero ovato concavo apice cuspidato lamellis fimbriatis: denticulis 2 anterioribus subulatis glabris, columnâ glabrâ auriculis subtruncatis, *Peruvia*; *Casapi*, Mathews (1867).
- (9) *ODONTOGLOSSUM Rossii*; pseudobulbis ovatis cæspitosis ancipitibus monophyllis, foliis oblongo-lanceolatis scapo radicali subbifloro longioribus, bracteis membranaceis carinatis acuminatis, sepalis lineari-lanceolatis carinatis acuminatis patentibus, petalis oblongis obtusis revolutis, labello subrotundo-ovato emarginato undulato lamellis unguis confluentibus rotundatis denticulis 2 anterioribus obtusis, columnâ apterâ pubescente.—*Mexico*, Barker; legit. Ross.
- (10) *ODONTOGLOSSUM membranaceum*; pseudobulbis foliisque, scapo 2-3-flo. bracteis vaginisque membranaceis acutissimis imbricatis equitantibus, sepalis membranaceis unguiculatis lanceolatis, petalis latioribus oblongis, labello ovato obtuso lamellis unguis confluentibus rotundatis denticulis 2 anterioribus elongatis pubescentibus, columnâ pubescente apice utrinque auriculatâ.—*Mexico, ad Teozomulco, Oaxaca*, Karwinski.



M. J. Drake del.

Huntleya violacea!

M. Goussier sculp.

Publ. by J. Ridgway & Sons, 169, Piccadilly, Lond. 1838

Printed by F. Brown

HUNTLEYA VIOLACEA.

H. violacea; sepalis petalisque oblongis obtusis margine crispis, labello reniformi emarginato cristâ nudâ sulcatâ, columnâ maximâ carnosâ naviculari.

So beautiful a plant as this it is rare to find even among *Orehidaceæ*, not that its herbage is particularly rich, or its flowers very large, or their form particularly strange, but because of their soft yet intense violet, which varies from the depth of the richest sapphire to the mild iridescence of opal.

It is a native of Demerara, whence it was received by Mr. George Loddiges, who has remarked that the genus itself seems very near some of the *Zygopetala*, especially *Z. maxillare*. In fact there is nothing to distinguish *Huntleya* from them except the excessively enlarged column of that genus, and the union of its lateral sepals at their base, after the manner of *Maxillaria*; between which and *Zygopetalum*, *Huntleya* stands as it were intermediate, yet distinct.

The genus was originally established by Mr. Bateman upon a Demerara plant received from Mr. Schomburgk, and said to have sessile flowers, but of which I know nothing; except that in structure and habit it is said to resemble the *Huntleya Meleagris* of the Botanical Register, tab. 14, ann. 1839. The latter species has, at the base of the lip, a large transverse crest bordered with long yellow fringes, its column is widest at the point and slightly toothed, and its sepals and petals are stained with wine-purple veins and blotches upon a yellowish ground. It is therefore evidently very different from the present, and in fact not to be compared with it for beauty.

In this plant there are no visible PSEUDO-BULBS, but the plant consists of a tuft of LEAVES, embracing each other at the base, with which they are very distinctly articulated at from two to three inches above the base; their blade is eight or nine inches long, erect, acute, rather plaited, and between membranous and leathery in texture. From the axils of the lower leaves spring the PEDUNCLES, which are about six inches long, one-flowered, and pendulous; each has two oblong bracts at nearly equal distances, besides two others, of which one is very small, at the base of the ovary. The FLOWERS measure three inches in diameter, and are of a thick leathery texture. The SEPALs are oblong, a little curled inwards at the point, and very much crisped at the edges; the two lower are united by their bases into an inconspicuous pouch, as is shown in the right hand figure; outside they are a pale soft violet fading to white at the edges, inside below the middle they are of a much deeper and richer violet, but even this fades to white at the points. The PETALS are formed like the back sepal, and are coloured nearly the same, only more deeply and brightly. The LIP is united to the pouch of the lateral sepals by a short narrow foot, which curves upwards and dilates into the lamina; the latter is deep rich violet, kidney-shaped, with a little notch at the end, and slightly toothed; towards the base the edge is irregularly sinuous; in the middle above the foot it is excavated into a hollow like the bowl of a tea-spoon, and there it is brown; between the excavation and the violet deep border there lies a brown ridge, fleshy, and deeply furrowed on the front side, which gradually slopes forwards till it ends in a crenelled boundary. The COLUMN is as large as the lip, fleshy, very deep violet, broadest at the base, curved forwards at the apex, and probably entire at the edge, so that it looks like a portion of the head of a boat turned bottom upwards. Below the apex of the column stands the ANTHER, containing four yellow pollen-masses, attached to a narrow caudicula, and triangular gland, which are of the same violet colour as the column itself.

Mr. Schomburgk, since his return to this country, has obligingly favoured me with the following interesting account of his discovery of this plant :—

“ I discovered the *Huntleya violacea* for the first time in October, 1837, then on my ascent of the river Essequibo. The large cataract Cumaka toto, or Silk Cotton fall, obliged us to unload our corials and to transport the luggage overland, in order to avoid the dangers which a mass of water at once so powerful and rapid, and bounded by numerous rocks, might offer to our ascent. While the Indians were thus occupied, I rambled about one of the small islands, which the diverging arms of the river formed in their descent, and the vegetation of which had that peculiar lively appearance which is so characteristic in the vicinity of cataracts, where a humid cloud, the effects of the spray, always hovers around them. Blocks of syenite were heaped together, and while their black shining surface contrasted strongly with the whitish foam of the torrent, and the curly waves beating against the rocky barriers, as if angry at the boundary which they attempted to set to the incensed element, their dome-shaped summits were adorned with a vegetation at once rich and interesting. Heliconias, Tillandsias, Bromelias, Ferns, Pothos, Cyrtopodiums, Epidendrums, Peperomias, all appeared to struggle for the place which so small a surface afforded to them. The lofty mountains Akaywanna, Comuti or Taquiari, and Twasinki, recede, and, forming an amphitheatre, afford a highly interesting scene; no doubt the most picturesque of that part of the river Essequibo. I was attracted by a number of *Oncidium altissimum* which covered one of the rocky piles, and astonished me by their long stems and the bright colour of their flowers, when my attention was more powerfully attracted by a plant, the appearance of which, although different from the pseudo-bulbous tribe, proclaimed nevertheless that it belonged to that interesting family the orchideous. The specimens were numerous; and clothed almost with their vivid green the rugged and dark trunks of the gigantic trees, which contributed to the majestic scene around me. It was not long before I discovered one of the plants in flower. It was as singular as it was new to me. The sepals and petals of a rich purple and velvet-like appearance; the helmet, to which form the column bore the nearest resemblance, of the same colour; the labellum striated with yellow.*

“ In the sequel of my expeditions I found it generally in the vicinity of cataracts, where a humid vapour is constantly suspended, and where the rays of the sun are scarcely admitted through the thick canopy of foliage. I traced the *Huntleya* from the sixth parallel of latitude to the shady mountains of the Acarai chain near the equator; but in its fullest splendour it appeared at one of the small islands among the Christmas cataracts in the river Berbice; and there is a melancholy circumstance connected with the plant, which its appearance never fails to recal to my memory. Their singular beauty at this spot induced my friend Mr. Reiss, who accompanied me as volunteer during the unfortunate expedition up the river Berbice, to draw and paint it on the spot. He was yet occupied with this task when the last of our canoes was to descend the dangerous cataract. He arose from his occupation, desirous to descend with the Indians in the canoe, although against my wish, but he persisted. The canoe approached the fall—it upset—and of thirteen persons who were in it at the time, he was the only one who paid the rash attempt with his life. He is now buried opposite that island, the richest vegetable productions of which it was his last occupation to imitate on paper and in colours.

“ It appears easy of cultivation, although the first plants which I sent to England to Messrs. Loddiges appear to have perished. I was more fortunate with former transports; and I saw lately among the splendid collections of my kind friend, Mr. George Barker at Springfield, a *Huntleya* in blossom, the flower of which could boldly vie with any in their native country. A humid atmosphere and shade are the distinguishing features of their habitat.’

For the first account of it, see *Journal of the Royal Geographical Society*, vol. vi. p. 232.



Mrs. Drake del.

Oncidium sanguineum!

M. Krauss. 1839.

ONCIDIUM SANGUINEUM.

O. sanguineum; obulbe, foliis oblongis coriaceis dorso carinatis, scapo longissimo paniculato, sepalis subrotundis unguiculatis lateralibus basi subconnatis petalisque crispis sublobatis, labelli trilobi subcrispi vernicati lobis subæqualibus intermedio retuso cuneato, cristâ ovatâ convexâ corrugatâ, columnæ alis rotundatis sublobatis, antherâ puberulâ. *Botanical Register*, 1839, *miscell. no. 68.*

La Guayra, a country of whose vegetation but little is yet known, has furnished Messrs. Loddiges with this gaily painted plant, in which we find quite a new mixture of colours for *Oncidium*. Instead of the ground colour of the flowers being a deep brownish yellow, it is here of a soft pale green; and for purple, or violet, or chocolate-coloured blotches we have a rich crimson.

In habit the plant resembles *O. carthaginense*, with which it must be arranged; it differs from it in being smaller, in having the lateral lobes of the lip nearly as large as that in the middle, in the surface of the lip being so polished as to appear as if varnished, and finally in the crest not being three-lobed, but merely oblong and corrugated.

There are no visible PSEUDO-BULBS to this plant, but the LEAVES fold up at their base, where they are enveloped in rigid brown sheaths, and after a time produce from their axil the flowering scape; they are from six to eighteen inches long, very stiff, sharp-pointed, with a sharp ridge along their back. The SCAPE is about two feet high, panicled, and bending gracefully over the leaves; it is smooth, and obscurely spotted with dull crimson; the BRACTS at the forks of the branches are ovate, and acute with a membranous edge. In all that relates to the arrangement of the inflorescence and the form of the parts it agrees with *Oncidium carthaginense*. The SEPALS and PETALS are roundish, concave, very much crested and lobed at the edge, and long-stalked, pale greenish yellow, blotched with bright crimson; the lateral sepals are very slightly united at the base. The LIP is oblong, contracted like an hour-glass in the middle, and heart-shaped at the base, by which means it is separated into three lobes, of which the lateral are very much puckered and curled, and project as far as the sides of the middle lobe, which is much less curled, wedge-shaped, rounded off at the angles, and emarginate; in form it is very much like a saddle as seen from above; in the middle it is bright crimson, and so smooth as to appear varnished; otherwise it is coloured like the other parts; the crest is ovate, very much shrivelled, blunt at the end, with an oblong central tubercle, deep crimson except on the ridges of the folds, which are much paler. The COLUMN has a pair of roundish spreading ears; and an anther that is slightly covered with down which runs down over the edges of the stigma.



Mrs Drake del.

Lelia cinnabarina.

M. Cass. lith.

LÆLIA CINNABARINA.

L. cinnabarina (Bateman mss.); pseudobulbis cylindraceo-ampullaceis elongatis, foliis binis basi discretis oblongis subrecurvis et undulatis, scapo tenui ascendente foliis multò longiore 4-5-floro, sepalis petalisque oblongo-linearibus obtusis æqualibus, labelli convoluti recurvi lobis lateralibus acutis intermedio ovali crispato: lineis 3 elevatis in axin.

The colour of the flowers of this brilliant species, and its graceful manner of growth, render it one of the most ornamental species which we possess; for it is perhaps impossible to match exactly the peculiar tints of its blossoms among the race to which it belongs. That of *Epidendrum vitellinum* and *cinnabarinum*, two species of great beauty, of which the former is in cultivation, approach the nearest; but their colours are really very different.

The species is a native of Brazil, whence it was introduced in the year 1836 by Mr. Young, Nurseryman, Epsom; and in the spring of 1837 it was exhibited in flower at one of the meetings of the Horticultural Society in Regent Street. Subsequently it has appeared in other collections; and I owe the opportunity of preparing the accompanying figure to materials supplied to me by Mr. Bateman and Messrs. Loddiges. It flowers freely in the month of April.

The PSEUDO-BULBS are from four to five inches long, erect, clustered, thickest at the base, and tapering upwards, so as to resemble a wine-flask stretched longer, closely invested with withered scales, and having at the apex one or two leaves, which are separated at the base by a considerable interval. The LEAVES are about as long as the pseudo-bulbs, of a narrow oblong figure, slightly five- or seven-nerved, and are curved downwards by their own weight. From the apex of the pseudo-bulbs springs the SCAPE, a foot or more long, very slender, green, with about three withered scales attached to it at nearly equal distances; it is unable to bear the weight of four or five flowers that spring from its end, and consequently it is bowed downwards; and as it swings in the air from among its dense foliage hanging from a bough of a tree, it must look like a many-headed reptile, watching impatiently for its prey. The BRACTS are extremely small sharp-pointed scales. Each FLOWER is seated on a stalk which, taken together with the ovary, measures about an inch and half in length. The CALYX and COROLLA are of a most brilliant yellow-scarlet; their divisions are of nearly the same size, linear, obtuse, the back sepal being straight, the two anterior and the petals being falcate in the direction of the LABELLUM. The latter (fig. 2) is of the same rich colour as the other parts, but it is gaily painted with numerous oblique bright purple veins, which lose themselves towards the points of the lateral and base of the middle lobes; it is closely wrapped round the column, except at the upper end, where it curves backwards; along the middle are three elevated lines; at its base is a passage, passing down the side the ovary, and indicating that the labellum is really calcarate, but that its spur is adherent to the flower-stalk, as in *Pelargonium*; the mouth of this passage is shewn at fig. 2, a. The POLLEN-MASSSES are eight, arranged as in the accompanying figure 1.

When this plant was first seen by me I had no opportunity of examining its pollen-masses, and took it for a *Cattleya*, of which it has rather more the habit than of the *Lælias* at that time known; but recent discoveries have shewn that there may be *Lælias* with the habit of *Cattleya*, as in this case, and *Cattleyas* with the habit of *Lælia*, as in *C. citrina*. The difference between them is not

one of habit, but of structure ; the pollen-masses of *Cattleya* being four, and those of *Lælia* eight in number.

Our gardens now contain all the known species of this most noble genus, with one exception. *L. anceps*, *albida*, *furfuracea*, and *autumnalis* have all been figured in the *Botanical Register* ; the latter also beautifully in Mr. Bateman's splendid work on the *Orchidaceæ* of Mexico and Guatemala. *L. majalis*, the Flor de Maio, has been sent alive by Mr. Hartweg from Mexico to the Horticultural Society, and has been extensively distributed. The species still to procure is the real *L. grandiflora*, the *Bletia grandiflora* of De la Llave and Lexarza, and Flor de Corpus of the people of Mechoacan. This latter is too imperfectly described to enable us to judge very correctly of its appearance ; it is however said to have large flowers, pale purple, elegant, and rather sweet ; to which is added, that they are "spithamæi ;" but whether by this expression the Mexican authors intended to say that the flowers are a span high above the ground, or a span in diameter, two very different things, there are no means of ascertaining. In the former case they would resemble *L. majalis* ; in the latter they would be much larger than any thing yet discovered. Whatever sense is to be attached to the meaning of *spithamæus*, it seems clear that *L. grandiflora*, with oblong or roundish pear-shaped pseudo-bulbs, a scape occasionally dichotomous, and amplexicaul bracts, is a very different species from any thing yet seen in our gardens or herbaria.



F. H. Schomburgk. del.

M. Smith. lith.

Sobralia liliastrum.

Pub^d by J. Redway & Sons, 169, Piccadilly, July 1, 1833

Printed by J. Gouge

SOBRALIA LILIASTRUM.

S. Liliastrum; foliis lanceolatis acutissimis vaginisque striatis glaberrimis, racemo multifloro disticho, rachi flexuosâ, bracteis ovatis acuminatis spathaceis distinctibus, sepalis patentibus angustis lanceolatis acuminatis, petalis conformibus undulatis, labello undulato crispo plicato emarginato nudo? venis flabellatis, alis columnæ maximis falcatis.

S. Liliastrum. Gen. & Sp. Orch. 177.

The genus *Sobralia* is one of the most remarkable among *Orchidacæ*, with its lofty reedy stems, large lily-like flowers, and stiff plaited leaves, which resemble those of the smaller kinds of Palm-tree. It is found in Peru, in Brazil, and in Mexico, where the species are among the most stately inhabitants of "the bush." They are thus spoken of by Pöppig, who found four species in the first of these countries. They consist of terrestrial perennial plants, with simple roots, and stems not uncommonly growing three times as high as a man, very rarely branched, thickly clothed with leaves. Their inflorescence consists of terminal racemes, which are straight or flexuose, sometimes axillary and bifid, and loaded with snow-white, pink, crimson, or violet flowers. The lip of all the species is wrapped round the column, whence it appears as if funnel-shaped, and is bordered by a lacerated fringed edge. The species inhabit dry, sunny, rocky, and very hot places, where they often form extensive thickets. A few are sweet-scented; and of some the flowers last for only a short time, (*Nov. gen. et sp.* 1. 54.)

Can any thing be conceived more beautiful than thickets of such plants as those in the accompanying plate?

The species before us was originally discovered at Bahia by Salzmann, a German collector, from whom I some years since bought a specimen marked *Epidendrum liliastrum*; it had been found in thickets in sandy places. More recently it has been met with in British Guayana, by Mr. Schomburgk, by whom the drawing from which the annexed figure has been prepared was sent to Messrs. Loddiges. The stems are stated to be from ten to twelve feet high. Mr. Schomburgk supposes that the red and white specimens belong to different species, the former being distinguished by the leaves sheathing the stem at the base, while in the latter they are flat at that part; but as I have seen no specimens which will enable me to judge of the value of this distinction, and as the flowers appear to be the same, I have not separated them even as varieties. Should it appear hereafter that the red is a different species, then the name *Liliastrum* will belong to the white species, which most certainly is that of Bahia.

For some reason unknown to me Messrs. Pöppig and Endlicher exclude this species from the genus *Sobralia*, (see their *Nov. gen. & sp.* 1. 53); but I cannot conjecture their reason for so doing; that it is a genuine species of *Sobralia* there is not the smallest doubt. This seems however to be connected with an opinion entertained by the same authors, that the genus itself is confined to the eastern side of the subandine parts of the Cordilleras of Peru; in which however they are mistaken, for perhaps the finest of the species is the *S. macrantha*⁽¹⁾ of Mexico, a plant found near Oaxaca by

(1) *SOBRALIA macrantha*; foliis ovalibus acuminatis basi planis, bracteis strobili imbricatis glabris, petalis oblongis, labello emarginato plano glabro.

Count Karwinski, with a labellum at least three inches and a half long. The same plant was found in flower in the month of July, on shady rocks near the Hacienda de la Laguna by Schiede, who reports the flower to be rose-coloured.

It is much to be regretted that all these magnificent plants should not yet have reached us alive; still more is it to be lamented that there is no probability of the Peruvian species ever arriving here, unless some zealous patron of gardening will send a collector for the express purpose of procuring them, and other precious gems of the Western Andes. They are found more especially on the rocky and shrubby summit of the ridge of Cassapillo; *S. rosea* is probably the finest of them, with its large flowers (four inches in diameter) of a beautiful pink; but *S. dichotoma* seems the favourite of the Peruvians themselves. Of the latter Pöppig speaks as follows: This perennial plant is found only on the more sterile mountain-tops, where the limestone rocks, flung over the ground in mighty ruins, are either assembled in heaps, or are separated by huge fissures, or sometimes are suspended as it were over the brink of some dreadful precipice. They there bring forth a treacherous sward of mosses and ferns, which is overrun by that dwarf, prostrate, impenetrable thicket, rich in beautiful but spiny rigid branching shrubs, which can only be penetrated by the traveller with great toil and danger; and which, as it constitutes the highest limits of arborescent vegetation, the Peruvian calls the eyelash of the forest (*la ceja de la montaña*). In such places the *Sobralia dichotoma* appears, loaded with violet blossoms, and scattering around a delicious fragrance like that of the Ten-weeks Stock. Because of its surpassing but transitory beauty the people of the country regard it as a vegetable wonder, and name it the Flower of Paradise (*flor del paraíso*).

I am happy to add that through the exertions of Mr. Schomburgk, Messrs. Loddiges have at length added the white variety of this interesting plant to our collections.*

* When this genus was published in the Flora Peruviana an entirely false account was given of the nature of the pollen-masses, which were represented as being those of the Vandeous section of Orchidaceæ; and at the publication of the third part of the *Genera and Species of Orchidaceæ* no opportunity had ever occurred to me of examining into this point of structure. Subsequently Mr. Pöppig pointed out the error, and shewed that the pollen of the genus is pulverulent.

Mr. Schomburgk, not being aware of these facts, and unable to reconcile the plant discovered by him with the supposed character of *Sobralia*, naturally regarded it as a new genus, and proposed to dedicate it to Her Royal Highness the Crown Princess of Prussia; with a view to which intention drawings were sent to Baron Humboldt for publication. In the meanwhile the beauty of copies of those drawings, sent by our distinguished traveller to Messrs. Loddiges, having attracted my attention, I begged to have them for the present work; and it was not till the eve of their publication here that I became aware that Mr. Schomburgk had wished that they should be first made known to the world in Germany. Since however neither the genus nor species is new, as had been supposed, it will be necessary to select some other plant to bear the name of Her Royal Highness; and from among his many new and most interesting discoveries, Mr. Schomburgk will have no difficulty in selecting some other equally worthy of such a dedication.



Hb. Martii del.

Aerides quinquevulnera

M. Gouan del.

Publ. by R. Ridgway & Sons, 169 Piccadilly Aug^r 1839

Drawn by P. Gouan

AERIDES QUINQUEVULNERA.

A. *quinquevulnera*; foliis ligulatis apice rotundatis obliquè emarginatis apiculo interjecto, racemis pendulis multifloris foliis longioribus, labelli cucullati infundibularis laciniis lateralibus erectis intermediâ oblongâ inflexâ denticulatâ, calcare conico incurvo.

Mr. Hugh Cuming, who has been passing some time in the Philippines, and who has investigated the Botany of those rich islands with great zeal and industry, sent the plant now published to Messrs. Loddiges; with whom it flowered in August last.

It is one of the most showy of that beautiful race which is confined to the tropical parts of Asia, and which claims for itself more particularly the name of air plants. Of these a great store, by far the largest number, inhabit the eastern parts of Asia; in the genus *Aerides* proper, for instance, out of twenty six species, sixteen are Javanese; and of them very little is known to botanists in this country. Let us hope that the labours of Mr. Cuming will by degrees make them familiar to us.

What is now represented is nearly allied to the delicious *A. odoratum* of Bengal, of which it has all the habit; but it wants the delicate fragrance of that species, and yet it has a pleasant aromatic odour; its flowers have each five purple blotches, and the middle lobe of the lip is serrated; in all which circumstances the two species disagree.

The STEM, LEAVES, and mode of growth are altogether those of *A. odoratum*.

The SEPALS and PETALS are fleshy, firm, roundish—white, with a few purple speckles near the base, and a rich crimson stain at the apex; the lateral sepals are much larger than the upper or the petals. The LIP is funnel-shaped, curved inwards at the base of its spur, which is conical and green; with its mouth it presses against the column, which is embraced by its two lateral lobes, which are white speckled with purple; the middle lobe is oblong, convex, serrated, deep crimson with a white edge, and pressed close to the anther.



Miss Drake del.

M. Cassell. lit.

Catasetum longifolium

CATASETUM LONGIFOLIUM.

C. longifolium ; foliis longissimis gramineis, racemo cylindraceo pendulo multifloro, sepalis ovatis subrotundis petalorum conformium dorso applicitis, labello urceolari a tergo incurvo : limbo truncato apiculato intùs cereaceo glabro margine fimbriato. *Botanical Register for 1839, miscellaneous matter no. 154.*

The genus *Catasetum*, including the suppressed and spurious genera *Monachanthus* and *Myanthus*, but exclusive of *Mormodes* whose obliquely twisted column separates it from these, proves to be one of which the species are numerous in tropical America, and in the adjacent countries ; almost every large importation producing some novelty belonging to the race. None however of those yet discovered can be compared for beauty with the species now figured, of which a short account has already been published in the *Botanical Register*.

It was imported from Demerara by Mr. Valentine Morris, of the Retreat, Battersea, to whom it had been sent by his friend Mr. Henry Gloster, Attorney-General of the Colony, a great admirer and cultivator of Orchidaceous plants. It has also been received by several other persons, but no one except Mr. Morris has succeeded in causing it to produce its beautiful flowers. It blossomed at the Retreat in October and November, 1839.

In its general HABIT it resembles the other species of its genus, but its LEAVES are a foot and half or more in length, not more than three-quarters of an inch broad, three-ribbed, and so weak and grassy, that they are unable to support themselves, and hang down if the plant is made to grow upright; it will be presently seen, from Mr. Schomburgk's observations, that when growing naturally the pseudo-bulbs cling to the limbs of Palms, whence the leaves hang down gracefully. The RACEMES are about a foot long, arising from the base of the pseudo-bulbs, whence they curve downwards and become pendulous ; they are so closely covered by from twenty to thirty flowers, which nearly touch each other, that they have something of a cylindrical appearance. Each FLOWER is seated upon a stalk, which, taken together with the ovary, is an inch and half long, with a small ovate herbaceous bract at its base. The SEPALs and PETALs are both shaped and coloured alike ; they are of a roundish form, tapering to the point, where they are stained with purple, otherwise they are green ; the sepals are twisted in such a manner as to be placed exactly at the back of the petals, and the whole together are placed above the horizontal line of the flower. The LABELLUM is very fleshy, somewhat cup-shaped, or rather bag-shaped, and curved backwards at its end, firm, fleshy, about an inch in diameter at the brim, of a deep rich orange running into crimson at the edge, a little rugged on the outside, very smooth and waxy in the inside ; in front it is abruptly terminated by a rich deep crimson warded border, at the sides the edge thins away into a greenish violet fringe. The COLUMN is very short, slightly extended in front into two short horns, but quite destitute of cirrhi ; at the back it terminates in a rounded manner at the line of origin of the anther.

Mr. Schomburgk informs me that this plant was first discovered by him in 1836, and sent that year to Messrs. Loddiges. " We found it growing on the Ela-Palm (*Mauritia flexuosa*) where the spadix generally develops itself ; and in consequence of the height, and the little resemblance which its long leaves bear to the general appearance of Orchidaceous plants, it had been no doubt overlooked.

" The position in which it is represented in the plate is unnatural. The rapid decomposition of vegetable matter under the tropics assists in collecting a little mould between the scars which have been left where the fronds fell off. The place of lichens, the decomposition of which was the origin

of the scanty mould, has been taken by *Tillandsiæ*, *Peperomiæ*, and other succulent plants, and among them thrives the *Catasetum longifolium*. The pseudo-bulbs adopt however a pendulous position, and the fleshy roots find in the store of black vegetable mould such abundant nourishment that a thick tuft of long slender leaves is pushed forth, and hangs down the majestic *Mauritia*, by their bright green forming a strong contrast with the sombre hue of the large bunches of scaly fruits of this splendid palm, and so increasing its otherwise interesting appearance.

“ It was first discovered in the Camuni Creek, a tributary of the river Demerara ; we found it afterwards frequently at the low and marshy ground of the rivers Wironi and Wicki, tributaries of the river Berbice, where the *Mauritia Palm* is so numerous, that it occupies large tracts exclusively.

“ Its leaves are sometimes from six to eight feet long, but I never observed in its native climate, a bunch covered with such numerous flowers as the one here represented. The flowers which I saw were of a brownish lake colour.

“ The Macusi Indians call *C. longifolium* Massamu ; the Warraus Ohityon.’



Mss. D. 200, 21

Saccolabium compressum

Bot. Beechey's Voy. 1846, p. 100, t. 1, f. 10

1846, t. 1, f. 10

SACCOLABIUM COMPRESSUM.

S. compressum; caule juniore compresso ancipiti, foliis distichis amplexicaulibus undulatis obtusis obliquè 3-dentatis, racemis cylindraceis pendulis, labelli calcaris falcato obtuso sepalis triplò longiore laminâ carnosâ minimâ dentiformi. *Saccolabium compressum*. *Botanical Register for 1840, miscellaneous matter, no. 5.*

The foliage of this plant is very handsome, when in health, and readily distinguishes it from all its kindred, not only by the tender bloom with which it is covered, but by the broad thin undulated leaves, whose base is so wrapped round the stem as to form something like ears on each side.

The flowers, though individually small, nevertheless have a graceful and pretty appearance from their drooping position, from their numbers, and from the strong contrast between their ivory white spur and the party-coloured lobes of which they otherwise consist.

It was sent from Manilla by Mr. Hugh Cuming to Messrs. Loddiges, with whom it flowered in November, 1839.

The STEM when old is round and hard, and pushes forth numerous long greenish-white powerful roots, by which the plant elings to the branches of trees; when young it is compressed, and, in consequence of the manner in which the bases of the leaves are rolled round it, appears quite thin and two-edged. The LEAVES are from six to ten inches long, sea-green, broad, strap-shaped, very wavy, obtuse, and very obliquely and unequally three-toothed at the end; at the base they surround the stem, and uniting by their margins form a short compressed sheath, through which the racemes pierce when they make their appearance; although not placed regularly in two lines, the leaves have very much a distichous arrangement. The FLOWERS are small and scentless, arranged in long pendulous RACEMES, which have about three, distant, ovate, acute, sheathing brown scales near their base; including the spur the flowers when unexpanded are something more than half an inch long, which is about the length of the very slender pedicels on which they are supported. The SEPALs are oblong, rather acute, and spotted with crimson upon a ground at first white, but afterwards yellow; the two at the sides converge round the labellum till their points touch; that at the back forms an arch over the column, and is very prominent at the back. The PETALS are similar in form, size, and colour to the sepals, but they are somewhat thinner and spread at right angles from the column. The LABELLUM chiefly consists of a long, hollow, falcate, obtuse, pendulous spur, which is perfectly free from all appendage or projection in the inside; its rim is nearly circular, obsoletely three-lobed, the side lobes being rounded, that in front more acute and fleshy. The COLUMN is very short, wingless, lengthened over the stigma into a narrow awl-shaped process (rostellum), to which the pollen-masses adhere by means of a long, ascending, slender, subulate, channelled caudicle, and a minute gland. The ANTHER is rounded, rather rugged, extended in front into a long awl-shaped beak, which turns upwards, following the course of the rostellum. The POLLEN-MASSSES are two, obovate, slightly split at the back.

Fig. 1. represents a flower seen in front, the spur being cut away; 2. is a side view of the column, and the rim of the labellum; 3. are the pollen-masses with their caudicle and gland.



Miss Drake del.

Cycnoches maculatum.

M. Peckham sculp.

CYCNOCHES MACULATUM.

C. maculatum ; racemo longissimo multifloro, labello lineari-lanceolato, hypochilio lineari, metachilio apice cornuto glandulisque teretibus elongatis genuflexis utrinque pinnatifidè marginato, epichilio lanceolato membranaceo acuto margine incurvo. *Botanical Register for 1840, miscellaneous matter, no. 8. Botanist, t. 156.*

Had such a plant as this flowered near London twenty years ago, it would have afforded subject of conversation among Botanists and the lovers of Botany for a fortnight, which is a long time for any thing to retain its interest in London ; but now, so familiar have become the faces of the strange epiphytes of the tropics, it only excites a passing glance of admiration, except among *the few*.

Surely it is one of the most curious productions of nature in her wildest mood. Did any one ever see such a flower before ? Which is the top, which is the bottom ? What are we to call that long club foot ? which is eloven too ; and what the crooked fingers dagged with blood, which spread from the middle of one of the leaves, as if about to clutch at something ? And what moreover *can* they all be *for* ? Such knotty points as these we commend most heartily to some of our German friends for their solution ; while we sink back into the accustomed prose which so much better suits the enquiries of science.

Cynoches maculatum then is a Mexican plant, imported by Mr. Barker of Birmingham, with whom it flowered in November, 1839. It has long slender STEMS, from the sides of which spring forth as many as four long graceful nodding racemes, each having about thirty flowers. In their appearance and that of the LEAVES there is little to distinguish the plant from a *Catasetum*, or other species of its own genus. The RACEMES are nearly a foot and half long, clothed at the base with numerous thin leafy scales, and hanging downwards from the sides of the stems. The stalks of the flowers are at right angles with the axis, more or less curved, and shorter than the sepals. Each FLOWER when fully expanded measures nearly three inches from tip to tip of the divisions ; they have a dull yellowish brown ground-colour on which are distributed numerous rich brown blotches in a confused manner. The SEPALS and PETALS are alike in form, size and colour, lanceolate, wavy, and spreading in a starry but rather one-sided manner. The LABELLUM is exactly continuous with the foot of the column, upon which it seems as if inserted ; its general form is linear-lanceolate ; in the middle it is white, and divided at the edge on each side into about five round fleshy crooked fingers spotted with purple ; between the front pair of which is placed a straight fleshy horn directed backwards, and greener than any of the fingers ; the upper end is thin, lanceolate, acuminate, white, with three purple spots, of which one is near the point, and the two others lower down and nearly equidistant from themselves and the margin. The COLUMN is very long, quite taper at the base, enlarged into a thick knob at the apex, purple, spotted with a lighter shade of the same ; at the back of the anther it is extended into a two-lobed horn, below which the anther is inserted upon a slender filament. The caudicula is very long, and rests upon a large round fleshy gland.

This species has also been found in La Guayra, by one of the collectors employed by Messrs. Lowe and Co. of Clapton.



Fig. M. A. Meunier del.

Miltonia Clowesii

M. Clowes, 1868

Publ. by F. Bulmer & Sons 169 Piccadilly 567, 1860

Printed by F. Bulmer

MILTONIA CLOWESII.

M. Clowesii; pseudobulbis ovalibus diphyllis, foliis ensiformibus angustis erectis scapo longioribus, racemo paucifloro laxo, bracteis minimis setaceis, sepalis petalisque lanceolatis æqualibus, labelli cordati in medio constricti apice subrotundo acuto basi lamellis 5 inæqualibus abruptis quincuncialibus auctâ.
Odontoglossum Clowesii. *Botanical Register for 1839, miscellaneous matter, no. 153.*

Among the dried specimens of plants collected by Mr. George Gardner in his early journeys in Brazil was this plant, No. 669 of his herbarium, found upon the Organ mountains, in a deep ravine. A supply sent home by that indefatigable naturalist afforded the specimen now represented, from a drawing by Miss M. A. Mears, of a plant in the valuable collection of the Rev. John Clowes of Broughton Hall, a most zealous and successful cultivator of these curious productions. It flowered in September, 1839, under the care of Mr. Wm. Hammond, the gardener to Mr. Clowes, from whom I have received the following memorandum concerning its habits.

“The pseudo-bulbs are ovate, gradually tapering into a neck, glaucous and smooth, (the old ones slightly furrowed), and are each terminated by a pair of coriaceous leaves, narrow and acuminate at the point, slightly twisting, spreading, and longer than the raceme, which springs from the axils of the primary leaves that surround the base of the pseudo-bulbs. The latter stand erect on a stout rhizoma, about one inch in length, covered with a few yellowish brown imbricated scales.

“The lip when first expanded is the most beautiful white, and afterwards changes as shewn in the drawing.”

At Mr. Hammond's wish it has been named after his master, than whom few persons can be found having a stronger claim to such a little compliment.

When I first received it from Mr. Gardner I regarded it as an *Odontoglossum*, and at the time Mr. Clowes's specimen reached me I had not seen cause to change my opinion; on which account I referred it to that genus instead of *Miltonia*, of which Mr. Clowes had correctly considered it a species. More recent information has however satisfied me that nothing must be admitted into *Odontoglossum* unless with an unguiculate lip, and consequently the name under which it was first published has to be altered.

Each RACEME bears from four to seven flowers, as much as three inches from the tips of the petals to that of the opposite sepals, seated on footstalks about an inch and a half long, and disposed in a loose manner, something in the way of a corymb when the lower flowers are removed, but in a perfect state in the usual equidistant manner. The SEPALS and PETALS are lanceolate, distinct, quite equal and uniform both in colour and form, richly spotted with brown upon a yellow ground. The LABELLUM is sessile, heart-shaped at the base, oblong, contracted in the middle, and a rich lilac up to the point of contraction; above this it expands into a roundish white rather acute extremity, which finally rolls up and becomes dull yellow; at the base of the labellum are five narrow elevated lines, abruptly cut off at the end, of which the two lateral exterior are the shortest, the two intermediate the longest, and that in the middle deeper than any, but intermediate in length. The COLUMN is erect, earless, abruptly terraced in front; with a tall obtuse cap-like anther, beyond which the small brown gland just projects.



Wm's Drake del.

Dendrobium macrophyllum.

M. Swain del.

Publ. by J. Ridgway & Sons, 169, Piccadilly, June, 1840

Printed by J. G. Sayer.

DENDROBIUM MACROPHYLLUM.

D. macrophyllum. *Botanical Register* 1839, *misc. no.* 46.

Although the Orchidaceous plants of the Philippines have not proved handsome in many cases, yet it must be confessed that this yields in magnificence of appearance to no species that have yet been discovered.

In the specimen now represented the flowers were nine inches in circumference, and they will probably be much larger; and a pair of them is produced from opposite every leaf, except the lowermost, upon all the drooping branches of the stout and numerous stems. In this respect it resembles the well-known *Dendrobium macrostachyum*, *Pierardi*, *cucullatum*, and *pulchellum*; but it is far handsomer than even the finest of them. Its flowers indeed are more like those of *D. nobile*, but they are purple all over, the leaves are full four inches long by two in breadth, and the stems are pendulous not erect.

The species was sent from Manilla by Cuming, and flowered in the possession of the Messrs. Loddiges.

At the base of the lip there is a three-lobed callosity, which lies across the channel that leads from the apex to the unguis. It is worthy of the especial consideration of Botanists that this callosity is absent in *D. cœrulescens* and *nobile*, two species to which *D. macrophyllum* approaches very nearly in many respects; for we learn from that fact that the absence or presence of such projections is not of generic importance, as it has been supposed to be. It is also to be observed that the hairy ridge which runs down the middle of the lip in many allied species is here altogether missing.



W. G. Carter del.

M. Carter sculp.

Burlingtonia rigida.

Publ. by J. R. Rulph & Sons 200 Broadway June 1846

Printed by J. R. Rulph

BURLINGTONIA RIGIDA.

Burlingtonia rigida. *Botanical Register, under plate 1927.*

One of the many fine plants inhabiting the woods of Brazil, our knowledge of which was confined to dried specimens until the enterprise of British cultivators succeeded in transferring it to our gardens. It was originally found in Brazil, near Villa nova de Almeida, by the Prince Maximilian of Wied Neuwied; it was afterwards gathered by Mr. Gardner near Rio Janeiro, forming no. 125 of that traveller's herbarium; and it has been at length procured in a living state by the Messrs. Loddiges, in whose stove it flowered some months ago.

It is a beautiful species, with a habit unlike that of any other genus hitherto discovered. It first forms a tuft of two or three LEAVES, of an ovate lanceolate form and rigid texture, whose petiole is thin, folded together in an equitant manner, and articulated with the lamina. Subsequently, in the middle of these leaves appears a short branch, in the form of a PSEUDO-BULB, oval, thin and furrowed, on whose apex arise one or occasionally two leaves, like the first in form but without the equitant petiole. The plant having advanced to this point, and succeeded in establishing itself on the branch of a tree by means of numerous fine rather stiff roots, it next produces, from the axil of one of the lower leaves, a rigid STEM, slender and as thick as a crow's quill, which rises erect into the air, forming two or three membranous sheaths upon its surface, and ceasing to grow as soon as it has acquired the length of eight or ten inches. At its apex it develops just such a tuft of leaves as that from which it sprang; and thus the plant continues to live till the period of flowering has arrived. At that time it emits from the axils of one of its lower leaves a flowering stem or SCAPE, six or eight inches long, having a few distant membranous scales ensheathing it, and bearing at the apex a very short umbel-like raceme of several large drooping white FLOWERS, delicately tinged with pink. The BRACTS are ovate, acuminate, membranous, and rather longer than the pedicels. Of the SEALS, which are shorter than the petals, the uppermost is oblong, acute, and pressed close to the back of the petals; the lowermost are united into a single piece, corresponding in form with the upper, slightly split at the point, pressed close up to the lip, and extended at the base into a short spur, which is notched at the point. The PETALS are oblong, wavy, parallel with the column and lip, rounded and spreading at the point. The LIP is considerably longer than the petals, broadly obovate, two-lobed, wavy, and narrowed at the base into a stalk, which is introduced within the spur formed by the two lower sepals; near its base it has four short wavy elevated plates, placed in unequal pairs on each side of two slightly elevated lines. The COLUMN is parallel with the base of the lip, club-shaped, tapering and hairy, and much shorter than the petals; at the upper end on each side stands a long membranous narrow ear, guarded in front by a curved tooth of considerable size. Within these teeth is stationed a glutinous circular excavation, which is the STIGMA. The ANTHER is rounded, uncrested, and abruptly cut off in front. The POLLEN-MASSSES are two, excavated at the back, and placed upon a long obovate strap or caudicula attached to a small oval gland.

When the column is deprived of all the parts that surrounded it, and so placed as to be seen in front, as in one of the figures in the accompanying plate, it bears far more resemblance to a bat's head and neck than to any part of a flower.

Travellers in Brazil report this species to have a delicious scent of violets, but I did not perceive it in Messrs. Loddiges' specimen.

To the species of *Burlingtonia* already mentioned in the Botanical Register under plate 1927, *B. maculata* has been already added in the volume of that work for 1839. I have since received an additional species with the habit of *B. rigida*; it forms no. 664 of Mr. Gardner's collections in the Organ Mountains of Brazil, and differs from that plant in its leaves being smaller, narrower and obtuse, in its flowers being smaller, and in the inflorescence being slightly panicled. These two species may be distinguished by the following characters :

B. rigida (Bot. Reg. sub. t. 1927. Sertum Orchid. t. 36.);
caule erecto ramoso tereti distanter sobolifero, foliis ovato-lanceolatis acutis, racemo simplici nutante, bracteis oblongis acuminatis, labelli bilobi lobis approximatis.

B. obtusifolia; caule erecto ramoso tereti distanter sobolifero, foliis oblongis obtusiusculis, racemo subpaniculato nutante, bracteis subulatis, labelli bilobi lobis distantibus rotundatis.



Wm. Danks del.

M. Jones sculp.

Galeandra Devoniana

Pub^d by J. Ridgway & Sons, 16, Piccadilly, June, 1846

Printed by G. Francis

GALEANDRA DEVONIANA.

GALEANDRA. (*Bauer's Illustrations of Orchidaceous Plants; Genera, t. 8. Lindley's Genera & Species of Orchidaceous Plants, p. 186. Botanical Register for 1840, t. 49.*) Perianthium patens, petalis sepalisque subæqualibus ascendentibus. Labellum infundibuliforme, indivisum v. obsoletè trilobum, calcaratum, intus lamellis (4) auctum. Columna erecta membranaceo-alata, clinandrio declivi. Pollinia 2, posticè excavata, caudiculâ brevi glandulæ brevi divergenti bilobæ adnatâ.—Herbæ terrestres, et epiphytæ, caulibus foliatis, racemis terminalibus.

G. Devoniana; caule erecto simplici tereti polyphyllo, foliis lanceolatis 3-nerviis, racemo sessili erecto multifloro, labelli laminâ ovatâ obtusâ crenulatâ lamellis 4 pone basin, antheræ cristâ carnosâ rotundatâ pubescente.

G. Devoniana. *Schomburgk in litteris.*

Among the many interesting plants sent from British Guayana to Messrs. Loddiges by Mr. Schomburgk was that now represented, concerning which I have received the following memorandum from this distinguished traveller.

“ During our peregrinations we have seen this plant no where else but at the banks of the Rio Negro, a tributary of the Amazon, where, in the neighbourhood of Barcellos, or Mariua, we found it growing in large clusters on the trees which lined the river, sometimes on the *Mauritia aculeata*, or even on the ground, where the soil consisted of vegetable mould. It was so luxuriant in growth, that some of the large clusters of stems which sprouted from a common root might have been from ten to twelve feet in circumference. When I first observed them on that pretty Palm the *Mauritia aculeata*, I considered it to be an *Epidendrum*, allied in its outward appearance to that species which you have done me the honour to call after me. We did not find either buds, flowers, or seeds when we passed the Rio Negro in April; and even on a closer inspection its appearance resembled some of the *Epidendrea*. The stems were often from five to six feet high; at the lower part almost of a purple appearance, and changing into green higher up. As already observed it is very abundant about Barcellos, and equally in the vicinity of Ilarendaua or Pedrero; I wonder therefore that it escaped Spix, when he visited the Rio Negro. Although the Rio Branco falls into the Rio Negro above Pedrero, we did not observe a single specimen in that river, nor do I think that it is in the Amazon, as it is not likely that it would have escaped Martius. As soon as I looked at it, when it was for the first time in blossom at Messrs. Loddiges, I considered it to be a *Galeandra*, and observed so much to you, who had not seen it as yet. As its flower is not only larger than the generality of its tribe, but likewise handsome, I availed myself the readier of this opportunity to request the permission of his Grace the Duke of Devonshire that I might call it in honour of him, who not only

is known as one of the most successful cultivators of this, one of the most interesting tribes among monocotyledonous plants, but of whose urbanity and condescension I have personally experienced numerous proofs since my return to Europe.’

That it is a Galeandra there is no doubt; but it renders it necessary to modify the essential character of that genus, concerning whose true marks of distinction the present is a favourable opportunity for making a few observations.

When Galeandra was first proposed I had imagined that the original species, *G. Baueri*, might be combined with the *Eulophia gracilis* of the Botanical Register, and a third Sierra Leone plant, by the funnel-shaped undivided lip, the crested anther, and the peculiar form of the gland to which the pollen-masses are attached. But while experience shews that these characters are in fact essential to the genus Galeandra, it also teaches us that they are also in part unimportant, and that it is requisite for them to be combined with other peculiarities in order to constitute a really good genus. Of the characters to be rejected the crested anther is the principal; of those to be added, the presence of four parallel plates upon the lip, and a terminal inflorescence, appear essential. The *Eulophia gracilis* will in that case be excluded from the genus Galeandra, and so perhaps will *G. extinctoria*, both which require further examination in order to determine whether or not they are to be stationed definitively in the genus *Eulophia*.

With regard to that genus, *Zygopetalum*, and some others nearly allied to Galeandra, they involve some very difficult enquiry, for which sufficient materials have hardly been as yet accumulated.

To the genus Galeandra, in its restricted sense, I have one species to add; a grassy plant about two feet high, with long narrow leaves, small pink flowers, and tubers in size and form resembling the corms of a *Crocus*. Mr. Schomburgk found it in abundance in the Savannas, adjacent to the River Berbice; and Dr. von Martius met with it in Brazil, in fields near Almeirim in the Province of Para. It may be distinguished thus:

G. juncea; tuberosa, caule stricto paucifolio, foliis linearibus acuminatis trinerviis longè vaginantibus, racemo erecto multifloro, labelli laminâ denticulatâ obsolete trilobâ rotundatâ lamellis 4 pone basin contiguis juxta medium incurvis exinde in tribus serrulatis confluentibus.



Calasietum laminatum.

Coll. by J. Redway & Sons 1853. Drawn by J. Smith 1854.
Printed by J. Smith

CATASETUM LAMINATUM.

(*The Variety with spotted flowers.*)

C. laminatum; labello lanceolato basi saccato apice marginibusque incurvo basin versus fimbriato per axin lamellâ unicâ carnosâ altâ integrâ v. denticulatâ basi bilobâ instructo, columnâ cirrhatâ.

C. laminatum. *Lindl. in Ann. nat. hist. vol. 4. p. 384. Bentham, Plantæ Hartwegianæ, p. 72.*

Var. 1. maculatum; labello, columnâ petalisque purpureo-fusco maculatis.

Var. 2. eburneum; labello eburneo columnâ petalisque immaculatis.

In the general aspect of this plant before flowering there is little to distinguish it from *Catasetum tridentatum*; but its flowers are marked by many striking peculiarities.

The INFLORESCENCE is a nodding many-flowered raceme, proceeding from the base of the pseudo-bulbs. The SEPALS are narrowly lanceolate and acuminate, of a greenish purple colour, which varies in intensity in different specimens; the uppermost is pressed close to the petals, the two side ones are turned back till they touch each other. The PETALS are thin, pale pink, stained with dull purple, rather broader than the upper sepal, with which they are parallel, so as to form a kind of arch over the column, but not touching it; sometimes however they separate, and fall backwards towards the lateral sepals, or simply spread away from the column. Such was the case in the specimen that furnished the accompanying drawing; so that this plant has at one time the arrangement of parts found in the abolished genus *Myanthus*, and at another a disposition peculiar to itself.

The LIP is altogether of a new form in this genus. It has a lanceolate outline, and is hollowed at its base into a deep pouch; its edges and point are curved inwards, and along the margin, towards the base, it is bordered by a fine fringe of slender hairs. From the front edge of the pouch to nearly the apex is carried a fleshy plate, planted perpendicularly upon the lip, and from four to five lines deep, which, next the pouch, divides into two lobes, but otherwise is perfectly entire except on the upper edge, which in some varieties is unequally toothed. In colour this part is variable; in the specimen now figured it was pale greenish pink, spotted with dull but deep purple; and in a plant that flowered in the Garden of the Horticultural Society, at the time that this article was going through the press, it was of the purest ivory white, eventually changing to cream colour. The COLUMN is spotted in the variety with a spotted lip, and nearly plain in that with the white lip; in structure it is like *C. maculatum*.

The only Botanists who have found this plant wild were Count Karwinski, whose specimens exist in the Royal Herbarium of Munich, and Mr. Hartweg; in both cases it was observed in the neighbourhood of Oaxaca. By the latter it was sent to the Horticultural Society, who have distributed it extensively. The specimen now represented was the first that flowered in this country, and was drawn in the stove of Messrs. Loddiges.



Mrs. Drake, del.

Oncidium pectorale.

J. C. Smith, del.

Pub. by J. Macgway & Sons, 169, Piccadilly, June 1849.

Printed by F. Colver.

ONCIDIUM PECTORALE.

O. pectorale; pseudobulbis ovatis compressis sulcatis diphyllis, foliis oblongis obtusis papyraceis scapo a basi paniculato brevioribus, sepalis lateralibus semi-connatis petalisque obovatis majoribus undulatis, labelli lobis lateralibus nanis intermedio maximo convexo undulato bilobo, cristâ ovatâ depressâ acuminatâ margine verrucosâ tuberculisque numerosis in frusti formâ ordinatis circumdatâ, columnæ alis truncatis.

The woods of Brazil, teeming with plants of beautiful form, rich colour, and singular structure, have furnished this, the handsomest of the yellow *Oncidiums*. I am indebted for my knowledge of it to James Wentworth Buller, Esq. of Downes near Exeter, from whom I received a specimen and drawing in April, 1840, with the following memorandum:

“I have ascertained that it was imported from Rio de Janeiro, and it seems to me to resemble in habit the *O. Forbesii* which I received at the same time, but in the structure of the leaves it approaches closely to *O. flexuosum*. The pseudo-bulbs are also furnished with leaves at their base as well as at their point, which is the case with *O. flexuosum*, but I apprehend not uniformly the case with all *Oncidiums*. It seems to me also that the anther, which forms as it were the termination of the column and surmounts the stigma, (in which there is a considerable secretion of honey), is more fully developed than I have observed it to be in the flowers of other *Oncidiums*; and in this respect the flowers remind me of an effect I formerly observed in that of *Peristeria elata*. My gardener accidentally bruised the anther of one of the flowers in measuring them with a carpenter's rule, and I observed that the flower drooped immediately, and died in the course of two days. The other flowers are as fresh as on the day in which they first expanded, and I hope to preserve them in full beauty for a month longer by keeping the plant in the shade.”

The arrangement of the tubercles at the base of the lip is represented in the figure at the left-hand corner of the plate. It is difficult to describe, and may be compared for general appearance to an old-fashioned ladies stomacher, studded with little knots; hence the name.

The circumstance alluded to by Mr. Buller is a singular phænomenon common in the whole *Orchidaceous* order. He found that when the anther was disturbed the flower quickly died. This was not because the anther was removed, but because in removing the anther the pollen was brought into contact with the stigma, and thus the act of fecundation was accomplished. In general, from the absence of insects, or of those other disturbing causes to which *Orchidaceæ* are exposed in their native places, the pollen cannot come into contact with the stigma, and so long as this is prevented the flowers of many species will retain their freshness for weeks, as if in expectation of that event for which they were created. But as soon as the act of fecundation is accomplished, that is to say, from twelve to twenty-four hours after the pollen touches the stigma, the flowers collapse, the bright colours become dim, the ovary begins to enlarge, and the beauty of the flower is gone.



1. *Diethonea umbricata*.

2. *Maxillariaburnea*?

Printed by J. G. Shaw & Sons, 102, Strand, London, W.C.2. Printed by J. G. Shaw & Sons, 102, Strand, London, W.C.2.

Painted by J. G. Shaw

DIOTHONEA IMBRICATA.

- D. *imbricata*; caulis articulati internodiis fusiformibus sulcatis basi squamis imbricatis, foliis linearibus apice retusis aut emarginatis denticulo interjecto, pedunculis terminalibus 2-3-floris paritèr imbricatis, labello ovato acuminato sepalis petalisque conformi.

The two plants which form the subject of the accompanying plate are represented from drawings brought home from Guayana by Mr. Schomburgk, who has favoured us with the following account of their native situations.

“ The *Diothonea* was met with on the high mountain chain between the 65th and 66th meridian, and the 4th parallel of latitude, at an elevation of 6 to 7,000 feet above the sea. The summits of those elevations are thickly covered with two species of lichen, the *Cladonia rangiferina* and *reticulata*, the white colour of which conveys entirely the supposition that the ground is covered with snow. The thermometer stood frequently in the morning at 57° F., and this decrease of heat became sensible to our body, and communicated to the nose a reddish appearance. This, connected with the snow-white lichens, powerfully reminded us of a winter landscape. And, indeed, the stunted trees, with grey tortuous branches and their foliage, would have assisted to make the picture more perfect, if numerous *Orchidaceæ*, conjointly with green mosses, had not clothed the branches and trunks of trees. Indeed it was the *Orchidaceæ* alone which gave the vegetation a tropical aspect—neither Palms nor *Heliconias* nor *Uranias* were to be seen. The *Diothonea*, with its bright red blossoms, looked beautiful among the tufts of mosses and white lichens, and I was so delighted with meeting this pretty plant, which grew in such abundance at these heights, that I collected it again and again, although I knew how little chance there was of bringing a specimen alive to England; for I had yet to cross upwards of 1,500 miles by water and land before I could reach the sea coast of Demerara.

“ I have already observed that it grows in tufts and among the moss which clothes in such profusion the trunks and branches of trees in that situation. Mosses are generally found in humid places, and here, where every thing bore the stamp of dryness, this profusion of mosses and lichens was surprising. The former covered the ground to such a thickness that on sitting down one might have fancied oneself reclining on the softest cushion. Among the moss on the ground I observed numerous specimens of *Sobralia liliastrum* and *Evelyna*. Mosses it appears do not always require humid atmosphere, nor *Sobralias* a sandy soil and sunny situation. I need not say how surprised I was to meet the *Sobralia* again at Esmeralda among the ridge of heaped up blocks at a short distance from the village, and which is called Caquire. I found numerous specimens growing in the vegetable soil, which had collected between the blocks. *Duida* is, however, of the same formation as *Roraima*, in the vicinity of which I found the first *Sobralia liliastrum* in Guayana. We discovered the *Maxillaria* near Mount Maravaca, which belongs to the same sandstone-formation. It grew in abundance on trunks and branches of trees at a height of about 5 to 6,000 feet

above the sea, where a humid atmosphere was prevailing. Maravaca is about thirty miles in a N.N.E. direction from Esmeralda.'

The genus *Diothonea* differs from *Isochilus* only in having the lip united to the column, by an intervening membrane, and it therefore bears the same relation to that genus, as is borne to *Epidendrum* by *Encyclium*. It may therefore be regarded as either a distinct genus, or a mere form of *Isochilus*. The original species, however, collected by the late Colonel Hall in the valley of Lloa, on the western face of the Cordilleras of Peru, has a lip very different in form from the other divisions of the perianth, and both have a strong double callosity at the base of the fore part of the lip; in the true species of *Isochilus*, on the contrary, the lip has either one tubercle only at that part, or none at all.

Fig. 1. represents the column and lip of this plant.

Neither this nor the following species have yet appeared in our gardens.

No. 2.

MAXILLARIA EBURNEA.

M. eburnea; pseudobulbis ovatis sulcatis monophyllis, foliis lineari-oblongis acutis subcoriaceis in petiolum canaliculatum angustatis scapo erecto unifloro vaginato longioribus, vaginis distantibus acutiusculis, sepalis explanatis lateralibus triangularibus elongatis supremo petalisque lanceolatis, labello ovato-oblongo leviter crenulato callo unico acuto per medium et duobus lateralibus sejunctis multò minoribus, columnâ apice uncatâ cardine dentato.

This plant is one of the most genuine species of a genus that seems to require reconsideration; but among whose numerous forms no good marks of division have hitherto been found.

It must be a plant of considerable beauty, for its flowers are nearly five inches from tip to tip of the lower sepals, and of the purest white. Some of the leaves in my wild specimens are as much as fifteen inches long, and are remarkable for the long channelled stalk into which they taper at their junction with the pseudo-bulbs; their texture is more papery than leathery.

The nearest relationship of the plant appears to be with *M. grandiflora*, which is said to have compressed 2-leaved pseudo-bulbs, and a lip plaited transversely at the base.

Fig. 2 *a* represents the column, with its long foot, from which the sepals and petals have been cut away. Fig. 2 *b* shews the lip with the three callosities upon its surface.



Calasetum saccatum.

Bot. Beechey, Bot. Beechey, Bot. Beechey, 1841

Painted by G. S. Gardner

CATASETUM SACCATUM.

C. saccatum ; sepalis lanceolatis patentibus dorsali petalisque fornicatis, labello subrotundo abruptè acuminato fimbriato medio saccato: ostio contracto reniformi posticè dentato, columnâ cirrhatâ. *Lindley in Botanical Register*, 1840, *misc.* 179.

This species is one of the handsomest of the singular genus to which it belongs, the colours of its large flowers being much brighter than is usual among the race. For its introduction to this country we are indebted to the Messrs. Loddiges, who procured it from British Guayana.

In FOLIAGE it is so little different from others that it cannot be distinguished by any describable marks. The FLOWER-STEMS are from a foot to fifteen inches high, and each bears seven or eight flowers, full four inches in diameter; at first they grow erect, but towards the point they bend down gracefully, as if beneath the weight of the flowers. The SEPALS are lanceolate, equal, spreading, inside deep purple, spotted with yellow, outside tinged with yellow. The PETALS are of the same form and nearly the same size, but are thinner in texture, more spotted with yellow, and at first form an arch over the column, but, after the flower has been for some time expanded, they spread back even more than the dorsal sepal. The LIP is of a most irregular form, and rich yellow, thickly sprinkled with crimson dots; in form it is roundish ovate, with a contraction on each side, and a gradual tapering to the point; all round it is bordered by long firm fringes; in the middle is a callous perforation, kidney-shaped in front, slightly two-lobed and warted at the back; this perforation opens into a small bag-shaped chamber, which projects below the underside of the lip. At first the lip is flat; but it soon turns back at the point, so that at last it is bent in the middle at almost a right angle, and hides the conical chamber already described.



Catasetes versicolor

Catasetes versicolor

Catasetes versicolor

Lin. Sp. Pl. Agnesi in Hort. Puccinly. Mart. 1761.

Printed by D. Colver.

CALANTHE VERSICOLOR.

C. versicolor; foliis oblongo-lanceolatis erectis concavis 7-9-nerviis scapo apice pubescente brevioribus, racemo denso pyramidato, labelli columnæ brevi accreti trilobi lobis lateralibus ovatis nanis intermedio cuneato bilobo multò majore basi trituberculato secus lineam mediam verrucoso, calcare glabro ovarii pubescentis longitudine.

All the species of *Calanthe* are handsome, and well deserving introduction to our gardens; none among them however seems to excel in beauty the subject of the present figure, which flowered in September 1840, in the collection of His Grace the Duke of Northumberland at Sion. It is a native of the East Indies, whence it has also been sent from the Botanic Garden, Calcutta, to the Horticultural Society.

The plant has much the habit of *Calanthe veratrifolia*. The LEAVES are very broad, rather concave when in great vigour, and as much as a foot and a half long. Among them rise the stout noble SCAPES, round, here and there furnished with a sheathing scale, smooth near the ground, but downy over all the upper portion. The FLOWERS are quite smooth, of a deep rich violet, very beautiful for some time after opening, but fading at last into a dirty buff. The SEPALS are ovate, acute, spreading, and rather larger than the PETALS, which have the same form, but are a little curved back at the tips. The LIP adheres by the base to the whole edge of the column, which is unusually short; it is three-lobed; the side lobes are half ovate, obtuse, and much smaller than the middle lobe, which is obovate, almost wedge-shaped, and deeply split; along its middle runs a line of warts, which terminate next the column in three much larger oblong tubercles. The SPUR is curved, but little thickened towards the end, and about the same length as the downy ovary.

The side figure on the right hand represents the lip and ovary, with the sepals and petals cut away.



Marillaria Brockhuistiana

Publ. by J. Ridgway & Sons, 169 Piccadilly, April 1841.
Printed by J. Warren.

HOULLETTIA BROCKLEHURSTIANA.

HOULLETTIA. (*Adolphe Brongniart in Annales des Sciences Naturelles, vol. 15. new series, p. 37. Lindley in Bot. Reg. 1841, misc. p. 47.*) Perianthium patens, sepalis sub-liberis: petalis paulo minoribus, unguiculatis. Labellum cum basi columnæ continuum, patens; hypochilio angusto, basi excavato quasi bilabiato, apice utrinque in laciniam producto, lobulo nano interjecto; metachilio nullo; epichilio angulari dilatato cum hypochilio articulado. Columna erecta, arcuata, clavata, semiteres, labello paulò brevior. Anthera bilocularis depressa. Pollinia 2, posticè fissa, caudiculâ lineari-lanceolatâ in glandulam acutam elongatâ, nec infixâ.—Herbæ epiphytæ, pseudobulbosæ, Americæ æquinoctialis, foliis solitariis plicatis. Scapi radicales, erecti, apice racemosi. Flores speciosi, luteo-fusci, bracteis parvis nec spathaceis.

H. *Brocklehurstiana*; foliis longipedunculatis, racemo 6-7-floro, sepalis oblongis petalisque apice rotundatis, hypochilii laciniis lineari-lanceolatis reflexis, epichilio ovato-triangulari subhastato angulis lateralibus acuminatis.

Maxillaria? *Brocklehurstiana.* *Lindley in Botanical Register, 1841, misc. no. 27.*

This singular plant has in many respects the character of *Maxillaria*, and so much resembles *M. Warreana* in habit, that I had intended to consider it one provisionally, until I could examine with the necessary care the whole of those genera which constitute a division of *Vandææ*, to which I propose to assign the name of *Maxillaridæ*. For this reason the accompanying plate, which has been engraved for some months, bears a different name from that at the head of this page.

Recently, however, a plant has flowered in the Garden of Plants at Paris, which, if not the same species as this, must be very near it, and to which Mons. Adolphe Brongniart has given the name of *Houlettia*, after Mons. Houlet, a zealous French Gardener, who found it on trees in the Corcovado. I therefore at once adopt the genus, without waiting for further information.

In some respects no doubt it approaches *Stanhopea*, also a *Maxillaridous* genus; but it has a totally different habit, and the hypochilium (lower half of the lip) is not concave, on the contrary it is flat, with a funnel-shaped hollow at its base. Its genuine affinities however cannot be usefully discussed till the whole subject of the supposed species of *Maxillaria* is brought under review.

The FLOWERS are full $3\frac{1}{2}$ inches in diameter, and spread out so as to form a somewhat concave perianth richly spotted with brown upon a cinnamon-coloured ground. In texture they are leathery and firm. The SEPALS are oblong, rather obtuse; the lateral being very slightly united at the base, and somewhat larger than that at the back. The PETALS are rather shorter, much narrower, obovate, and narrowed at the base into a claw. The LIP consists of a hypochilium or lower, and an epichilium or upper half, with no intervening portion; it is continuous with the base of the column, and rather

shorter than the lateral sepals. The *HYPOCHILIUM* is narrow, flat, spotted with brown, and hollowed out next the foot of the column into a kind of two-lipped funnel; from its anterior end spring two long linear-lanceolate taper-pointed appendages, which turn back towards the column, reaching almost half way up it; just at the junction of the hypochilium and epichilium, and between those appendages is a minute reflexed fleshy tooth, such as is found in the same situation in *Stanhopea*. The *EPICHILIUM* is broader than the last, with which it is articulated; in colour it is a deep rich violet; in form it is somewhat triangular, with curved sides, and at the lower angles it is extended into a very narrow acuminate appendage, so that upon the whole it has sometimes the form technically called hastate. The *COLUMN* is curved, rounded at the back, slightly concave in front, thicker at the upper than the lower end. The pollen-masses are two, deeply two-lobed at the back, and planted on the end of a long narrow caudicula, which runs into an acute gland in such a manner that the two are completely blended together. The solitary withered flower, which alone I have had the opportunity of examining, prevents my describing those parts more exactly.

It appears that the credit of first introducing this noble plant from the Brazils is due to J. H. Wanklyn, Esq., of Crumpsall House, near Manchester. It was first flowered by T. Brocklehurst, Esq., of the Fence, near Macclesfield, to whom I am indebted for the drawing, by Mrs. Powell. Mr. Thomas Appleby, the gardener at the Fence, informs me that he has cultivated it in a basket suspended in the Orchidaceous house; but he thinks it will succeed better in a pot treated like a *Maxillaria* or a *Peristeria*.

Fig. 1. represents the column and lip, after the surrounding parts have been cut away; 2. is a pair of pollen-masses, with their caudicula and gland, seen from above; 3. is the same viewed from below.



M. J. 1840. 16

M. J. 1840. 16

Ophrys foliosa

Ophrys foliosa, Linn. *Fl. Suec.* 1: 127. 1753.

Painted by J. Smith

ORCHIS FOLIOSA.

Orchis foliosa. Solander's mss. in Mus. Brit. *Lowe primitiæ Floræ Maderensis*, p. 13. *Botanical Register*, t. 1701. *Lindley Genera and Species of Orchidaceous plants*, p. 264.

Although contrary to the practice I have hitherto observed, of admitting into the present work no plants that have been figured elsewhere, I trust to be excused for introducing the subject of the present plate as a most noble example of the beauty of plants nearly approaching to the Orchises of our own pastures.

This species is not uncommon in our gardens, and is treated successfully as a greenhouse plant. It is a native of Madeira, where, according to the Rev. Mr. Lowe, it inhabits woods and thickets. It is usually no handsomer than the wild *O. latifolia*, to which it in fact approaches very nearly; but under skilful management it grows three feet high, and produces such magnificent pyramids of flowers as are now represented from the conservatory of William Wells, Esq. of Redleaf. I possess a wild specimen from Madeira, for which I am indebted to Dr. Leman, but it bears no kind of comparison for vigour with that before us.

It grows further to the southward than any species of *Orchis* properly so called, with the exception of *Orchis Canariensis*, which occurs in the Canaries, on the rocky ridges, called Los Organos, above the valley of Orotava, and is known by its shorter bracts, thicker spur, and truncate lip.

Fig. 1. gives a view of the general appearance of the plant; 2. shows the lip, column and spur.



Van Swabe del.

M. Beauv. sculp.

Epidendrum vitellinum.

Printed by G. Leitch & Co. at the Edinburgh Press, 1841.
Printed by G. Leitch.

EPIDENDRUM VITELLINUM.

Epidendrum vitellinum. *Lindl. gen. and sp. of orchidaceous plants, p. 97. Botanical Register, 1840. t. 35.*

This plant has been already figured in the *Botanical Register*, from a small pallid specimen produced in the garden of George Barker, Esq. of Birmingham. Yet I venture to add it to this collection; for who could recognize the gorgeous species on the opposite page, in the starveling just alluded to?

Epidendrum vitellinum is undoubtedly the handsomest of its genus, not yielding to even such a plant as *E. Skinneri*, when it is in a state of perfect health; a condition in which I regret to say no one has seen it in this country. Let me hope that the accompanying faithful representation, taken from specimens gathered by Mr. Hartweg on the Cumbre of Totontepeque, at 9000 feet above the level of the sea, and in which nothing is in the smallest degree exaggerated, will rouse the possessors of it to exertion, and induce them to give it the care its singular merits entitle it to.

In what is known of its habits in its native country we possess the key to its proper management, and the explanation of any failure that has accompanied its cultivation up to the present time. It is, strictly speaking, an alpine plant; rooting among Lichens, *Jungermannias*, and other inhabitants of a cool moist climate; and never exposed on the one hand to a higher temperature than 75°, nor on the other to one lower than 45°, but undoubtedly, in its season of rest, enduring as small an amount of heat as that. Indeed the circumstance, mentioned by Humboldt, that at the elevation of 9000 feet on the mountains of Mexico, there are found Dog Roses and Strawberries, mixed with Pepperworts (*Peperomia*) and the *Manita* (*Cheirostemon platanoides*), indicates with some accuracy the kind of climate enjoyed by *Epidendrum vitellinum*.



Mss. Drane del.

M. Ponce sc.

Epidendrum phaeniceum

Edw. & Sons. 169. Roubilly Del. 1847

Printed by P. Goussier

PLATE XLVI.

EPIDENDRUM PHŒNICEUM.

Epidendrum phœniceum. *Botanical Reg. for 1841, number 120 of the miscellaneous matter.*

This is one of the few Orchidaceous plants yet imported from Cuba, where no doubt there are great numbers to reward the search of the collector. It has been introduced by Messrs. Loddiges.

Beautiful as it is, it approaches very nearly to the dingy *Epidendrum adenocarpon* of La Llave and Lexarza, which is the same as Mr. Bateman's *E. papillosum*; and differs principally in the structure of the lip, which in this species has two distinct elevated plates at its base, ending abruptly, without throwing out any runners into the main surface of the lip; while in *E. adenocarpon* there are no plates, but the whole base of the lip below the column is thick and fleshy, whence diverge five slender radiating veins, the central of which is thickest.

The PSEUDOBULBS are large, roundish-ovate, 2-leaved. The LEAVES are oblong, narrow, erect, somewhat twisted. The SCAPE is much longer than the leaves, paniced, erect, all over rough with minute asperities, from two to three feet high. The FLOWERS are scentless. The SEPALS and PETALS are of a leathery texture, deep purple, slightly mottled with green specks, obovate-lanceolate and widely spreading. The LIP is nearly an inch and half long, of the clear bright violet of *Cattleya labiata*, with deep crimson veins and stains; its side lobes are paler, erect, oblong, ovate and wavy at the point where they are turned backwards; the middle lobe is nearly round, deeply emarginate, with two elevated plates just below the column.



Saccolabium Blumei.

Blume, Bot. Blijden. 1825. t. 1. p. 10. f. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

SACCOLABIUM BLUMEI.

Saccolabium Blumei. *Lindley in Bot. Reg. 1841, misc. 115.*

Although this plant has much resemblance to the common *Saccolabium guttatum*, it is in reality very different. That species is a native, as it would seem, exclusively of the continent of India, this of Java. That has long slender racemes, this short broad ones. That a leaf with the point irregularly truncate, this a leaf rather acute, and terminating in a kind of mucro. That has a lip of an oblong ovate form, this has a lip broadest at the end and deeply emarginate. Finally, the flowers of this are twice as large as those of *Saccolabium guttatum*, and differently coloured, there being no spots, but the sepals and petals having each a streak of violet below their points, and the lip a broad lilac stain everywhere except at the point, which is white.

At one time I thought this species might be the *Rhyncostylis retusa* of Blume, because it is the only Javanese plant I have seen which could be mistaken for *Saccolabium guttatum*; but upon examining the dried specimens brought from the Philippines by Cuming, I find another still more like that species than the present, and with the "folia apice bifariam retusa" which Blume assigns to his plant, but which do not occur in the species before us.

These three plants, namely, the true *Saccolabium guttatum*, the *S. Blumei*, and the Manilla plant, which may be named *S. macrostachyum*, and which is a most noble species with a stem as thick as the barrel of a musket, and a raceme as long as a field officer's plume, may be distinguished in the following manner.

1. *S. guttatum* (L. p. 220. *Sarcanthus guttatus*, Bot. Reg. 1443); foliis longis canaliculatis inæqualiter truncatis arcuatis racemis cylindraceis densifloris æqualibus, sepalis ovatis, petalis duplò angustioribus, labelli calcare compresso truncato-conico laminâ ovato-oblongâ glabrâ dorso subcostatâ, capsulis oblongis hexagonis.—*The Peninsula of India.*
2. *S. Blumei* (Lindl. Bot. Reg. 1841. misc. 15. Sertum Orch. t. 47.); foliis longis canaliculatis arcuatis acutis mucronatis racemis pendulis densifloris obtusis æqualibus, sepalis ovatis, petalis oblongis duplò angustioribus, labelli calcare compresso obtusiusculo laminâ oblongâ rotundatâ ciliatâ emarginatâ utrinque costatâ.—*Java.*
3. *S. macrostachyum* (*Rhyncostylis retusa*, Blume Bijdr. 286. ?); foliis longis ligulatis apice rotundatis emarginatis racemis pendulis longissimis multifloris brevioribus, sepalis oblongis, petalis duplò angustioribus, labelli calcare compresso obtuso laminâ oblongâ unguiculatâ obtusâ.—*Philippines, (and Java?)*



Oncidium Barkeri.

Painted by J. B. Sowerby, del. by J. B. Sowerby, 1844.

Printed by J. B. Sowerby.

ONCIDIUM BARKERI.

Oncidium Barkeri. *Lindley in Botanical Register for 1841, no. 174 of the Miscellaneous matter.*

Of the great genus *Oncidium* most of the species have flowers sufficiently large and gaily coloured to render them plants of striking beauty : but among them are a few pre-eminent in this respect, and of these the species now figured may be regarded as one of the finest. In the size of the flowers it is only equalled by *O. Papilio*, *Insleayi*, and a few Peruvian species ; in the brilliancy of the yellow lip it is not inferior to *O. bifolium*, while the rich spotting of the sepals and petals is only equalled by *O. Papilio* itself.

At present the species is of the rarest occurrence, having only flowered in the collections of Mr. Barker, who imported it from Mexico, and of Mrs. Lawrence of Ealing Park.

Its PSEUDO-BULBS are exactly oval, compressed, blunt-edged, with a furrow or two passing down each side. The LEAVES are small for the size of the plant, two to each pseudo-bulb, of an oblong-lanceolate form, with a long sheathing striated footstalk, which is distinctly articulated in the middle. The SCAPE is terminal, a very unusual circumstance in *Oncidium*, with about three sheaths on the part which supports the flowers. The LATTER are disposed in a simple curved RACEME, and are from five to seven in number. The SEPALs and PETALs are alike in form and colour, linear-lanceolate, wavy, spreading or turned back : the lateral very slightly adhering at the base ; they are covered with deep rich brown spots and bands on a pale cinnamon-coloured ground. The LIP is pure yellow, without a single spot, much paler on the under side, and longer than the sepals ; its middle lobe is very large, broader than long, slightly pointed at the apex, which nevertheless curves inwards in the manner usual in this genus ; it is distinctly stalked ; the lateral lobes are flat, oblong, truncated with rounded angles, and not more than a third the breadth of the middle lobe. The CREST (fig. 1.) consists of an anterior tubercle, which is slightly three-lobed and hollowed out in front, and of a depressed two-lobed elevation immediately behind it. The COLUMN is unusually short, pale yellow, with a pair of rounded oblong wings.

At Plate XXV of this work an attempt having been made to distinguish on more satisfactory grounds than before the genera *Cyrtorchilum* and *Oncidium*, I now feel bound to state that the examination of more species, and a very full revision of these and the neighbouring genera, has satisfied me that the reasons assigned in the place referred to are unsatisfactory, and that *Cyrtorchilum* cannot be longer regarded as having a claim to stand as more than an artificial section of *Oncidium*. It will be remembered that this genus was established by Messrs. Humboldt and Kunth, in their *Nova Genera et Species Plantarum*, upon two species with stalked petals and an undivided lip, characters certainly very striking in several Peruvian and other species. But there are so many insensible gradations by which the form of the petals and labellum varies in the numerous forms of *Oncidium*, that those distinctions cannot be maintained, and all others substituted in lieu of them have equally failed when applied to practice. In the attempt, too, to modify the character of *Cyrtorchilum*, species have been introduced which would be more properly stationed elsewhere ; these are

Cyrtorchilum ixioides and *pardinum* which are rather *Odontoglossa*, and *C. flavescens* and *stellatum* which are better placed with *Oncidium Russellianum* in *Miltonia*.

For the purpose of putting this matter in as clear a light as I can, and because of the enormous increase of the genus *Oncidium* itself of late years, from 38 species in 1832 to 101 in 1842, together with the many repetitions of the same species under different names, now scattered through many books and many places, I have been tempted to draw up the following abstract of the genus, in doing which an opportunity has been taken of entirely remodelling it.

ONCIDIUM. *Svartz.* **L. p. 196.*

SECT. I. CYRTOCHILUM. Labellum integrum basi angustatum nec auriculatum nisi longè unguiculatum.

Sepala v. petala manifestè unguiculata subcordata. (*Cyrtorchilum*. *H. B. K. L. p. 210.*)

1. *O. undulatum* (*Cyrtorchilum undulatum*, *H. B. K. L. p. 210.*); "foliis calycinis ovatis, undulatis, patentibus."—*N. Grenada.*—Flowers brown, spotted with white and yellow. Lip pink outside, yellow within, variegated with red and white spots. Scape as high as a man.

2. *O. flexuosum* (*Cyrtorchilum flexuosum*, *H. B. K. L. p. 210.*); "foliis calycinis undulatis reflexis, exterioribus spatulatis, interioribus obovatis."—*N. Grenada.*—Lip ovate, acute, convex, crested with tubercles at the base. Scape several feet high, much branched, with triangular ramifications.

3. *O. corynephorum* (*Lindl. sert. orch. sub t. 25. Cyrtorchilum volubile*, *Poppig nov. gen. &c. 1. 35. t. 61.*); pseudobulbis angustissimis compressis, foliis angusto-lanceolatis acutissimis, scapo ramoso paniculato, bracteis membranaceis subrotundis obtusissimis, sepalis subrotundo-oblongis longè unguiculatis, petalis angustioribus lanceolatis acutis reflexis, labello sessili obovato rotundato: callis baseos depressis apice trinis latere rugosis tuberculatis, columnâ clavatâ alis inflexis.—*Peru.*—The twining scapes are from 15 to 20 feet long. Flowers two inches in diameter. Sepals violet. Petals white, tinged with rose. Lip deep crimson above the middle. Notwithstanding the difference between this character and Poppig's figure I have no doubt it is the same plant as his.

4. *O. tigrinum* (*Llave. L. p. 203.*); pseudobulbis ovatis ancipitibus 2-3-phyllis, foliis lanceolatis, scapo paniculato, sepalis petalisque oblongis obtusis emarginatisque, labello longè unguiculato reniformi emarginato: ungue bilamellato, columnæ alis 3 lateralibus bilobis acuminatis intermediâ dorsali obovatâ serratâ unguiculatâ.—*Mexico* (*Flor de Muertos*).—Scape panicked. Flowers an inch and half in diameter, smelling of violets, spotted like a tiger's skin. Lip yellow, not spotted.

* * *Sepala et petala basi angustata.*

† *Sepala lateralibus disjuncta.*

5. *O. maculatum* (*Cyrtorchilum maculatum*, *Lindl. in Bot. Reg. 1838. t. 44. B. Mag. t. 3886. Sertum Orchidaceum, t. 25.*); pseudobulbis ovatis compressis subangulatis diphyllis basi foliosis, foliis latè ligulatis acuminatis striatis apice obliquè emarginatis, scapi bracteis brevissimis squamiformibus, sepalis petalisque carnosissimis obovato-lanceolatis acutissimis, labello membranaceo oblongo apiculato utrinque dentato lamellis duabus ad basin et corniculo utrinque, alis columnæ falcatis integerrimis.—*Mexico and Guatemala.*—Flowers very sweet, yellowish-green, spotted with brown. Lip white. Grows on oaks only, in the temperature of 65° to 70°. Several varieties are known. The most remarkable are—1. *Russellianum*, *Bot. Mag. t. 3880.*; and 2. *parviflorum*, *Bot. Reg. 1841. misc. 87. labello subhastato laciniis lateralibus majoribus.*

6. *O. graminifolium* (*Cyrtorchilum graminifolium*, *Lindl. in Ann. Nat. Hist. 4. 384. Feb. 1840. Oncidium Wrayæ*, *Hooker in Bot. Mag. t. 3854. Feb. 1841.*); foliis lineari-ensiformibus acutissimis erectis racemo subpaniculato brevioribus, labello obovato integerrimo basi 5-lamellato, columnæ alis parvis rotundatis.—*Mexico.*—Much like *O. maculatum*, but differs in the form of its lip, its very narrow leaves, and smaller flowers. The lip is yellow and wedge-shaped, with rounded angles.

7. *O. filipes* (*Cyrtorchilum filipes*, *Lindl. in Bot. Reg. 1841. misc. 72. t. 59.*); scapo longissimo simplicifiliformi apice ipso paucifloro, sepalis petalisque lanceolatis conformibus acutis planis, labello cuneato bifido apice dilatato basi dente porrecto subsimplici subtuberculato aucto, columnæ alis minimis cuneatis truncatis.—*Guatemala.*—This has a very slender stem, above two feet long, perfectly simple, on the extreme point of which are four or five flowers about the size of those of *O. maculatum*.

8. *O. mystacinum* (*Cyrtorchilum mystacinum*, *Lindl. in Bot. Reg. 1838. misc. 38. 1839. t. 62.*); pseudobulbis ovalibus compressis corrugatis monophyllis basi polyphyllis, foliis ligulatis acutis planiusculis carinatis scapo ramoso multò brevioribus, bracteis lan-

ceolatis pedunculis duplò brevioribus, sepalis petalisque ovatis acuminatis, labello unguiculato sub cordato obovato-lanceolato-repando plano apice reflexo medio pubescente basi obsolete lamellato, columnæ alis multifidis.—*Peru.*—Flowers bright yellow, whole coloured.

9. *O. emarginatum* (*Meyer, L. p. 206.*); "foliis lanceolato-linearibus obtusis emarginatis, floribus terminalibus, labello obovato integerrimo, gynostemii alis ovato-subrotundis."—*Essequibo.*—Caulis spithamæi, sulcati. Folia 2-2½-poll. longa. Flores parvi, purpurei, punctis argenteis notati. Sepala oblongo-lanceolata, acuminata, inferiora 2 paululum breviora, oblonga, acuta. Labellum obovatum, basi attenuatum, integerrimum, planum, supra tuberculis rugiformibus notatum. Columna brevis, apice alis 2, parvis, patentibus erectis, rotundatis instructa.

†† *Sepala lateralibus connata.*

10. *O. brachyandrum* (*Lindl. Sertum, sub t. 25.*); pseudobulbis foliosis, scapo tenui sub-bifloro, sepalis lineari-lanceolatis undulatis acuminatis lateralibus basi contiguis, petalis latioribus conformibus, labello obovato membranaceo emarginato convexo: tuberculis binis parallelis extrorsum sinuatis columnâ nanâ crassâ longioribus, alis parvis truncato-triangularibus.—*Mexico.*—Sepals and petals brown and yellow. Lip apparently white.

11. *O. concolor* (*Hooker in Bot. Mag. t. 3752.*); pseudobulbo ovato diphylo, foliis ligulato-lanceolatis racemo erecto brevioribus, sepalis petalisque lanceolatis conformibus; lateralibus semiconnatis, labello unguiculato ovato obtuso emarginato medio constricto basi bilamellato longiore, columnæ alis rectis truncatis.—*Brazil.*—Flowers pure yellow, without any spots.

12. *O. cochleatum* (*Lindl. Sertum, sub t. 25.*); pseudobulbis foliosis, bracteis oblongis membranaceis obtusis, floribus densis, sepalis lateralibus semiconnatis petalisque lanceolatis acutis conformibus et concoloribus, labello unguiculato concavo obovato acuto basi bilamellato tuberculo parvo infra medium tribusque denticulis interjectis, columnæ alis angustis bifidis inflexis.—*Quito.*

13. *O. acinaceum*; pseudobulbis ovalibus 2-3-phyllis, foliis oblongis basi angustatis racemo volubili multò brevioribus, sepalis linearibus patulis obtusis, petalis obovatis triplò majoribus reflexis, labello obovato emarginato repando ultra medium 4-lamellato, columnæ alis maximis acinaciformibus.—*Peru, on tres, flowering in April.*—A drawing of this, by Mr. Mathews, exists in Sir W. Hooker's herbarium. It is a most remarkable plant, with pale lilac flowers, whose lip and column-wings alone are stained with bright crimson. The stem is about 1½ foot long, or longer, and the raceme itself, of which half a dozen flowers only are shewn in the figure, twines round small sticks.

14. *O. obovatum* (*Presl, reliq. H. 1. 99.*). Pseudobulbus 4-poll. Folia ignota. Scapus terminalis, pedalis, erectus, vaginis membranaceis albidis vestitus, apice paniculatus. Panic. simpl. pat. 4-poll. Bract. lineari-lanc. acut. membr. inferiores ½-poll. long. Perianth. erecto-patens. Sep. lin. lanc. acut. æq. 5 lin. longa. Labell. æquilong. obovat. integr. erecto-patens, basi supra cristatum. Columna apicem versus alata, apice 3-dentata, dente medio in rostrum rotundatum prolongato.—*Mexico.*—Known only from Presl, whose habitat is possibly wrong. If the scape is really terminal, this plant can hardly be an *Oncidium*.

SECT. II. EUONCIDIUM. Labellum basi auriculatum, indivisum v. 3-lobum.

† *Sepala v. petala manifestè unguiculata subcordata.* Macranthium.

* *Sepala lateralibus disjuncta.*

15. *O. macranthum* (*L. p. 205.*); pseudobulbis ovatis, foliis oblongis obtusis, racemo volubili, sepalis cordatis oblongis obtusis undulatis unguiculatis, petalis æqualibus conformibus paulò latioribus et brevius unguiculatis, labello hastati laciniis lateralibus subfalcatis intermediâ acuminatâ æqualibus cristâ trilamellatâ; lamellis apice confluentibus utrinque dentibus duabus runcinatis, columnæ alis rotundatis.—*Guayaquil.*—Flowers three or four inches across. Sepals purplish-brown, tipped with yellow. Petals bright yellow. Lip purple, with a white crest.

N. B. In the following references, *L.*, followed by a page, always signifies *Lindley's Genera and Species of Orchidaceous plants.*

16. *O. cordatum* (Lindl. Sertum sub t. 25.); pseudobulbis, foliis oblongo-lanceolatis acutis coriaceis basi angustatis, scapo paniculato ramosissimo, bracteis oblongis cucullatis membranaceis obtusis, sepalis unguiculatis ovatis undulatis, petalis unguiculatis cordatis margine crispis denticulatis, labelli hastati unguiculati lobis angustis acuminatis appendicibus disci petaloidis, columnâ subapterâ.—*Peru.*

17. *O. serratum*; pseudobulbis ovalibus diphyllis, foliis erectis rigidis acutis basi angustatis canaliculatis paniculâ pauciflorâ brevioribus, sepalis serrato-crispatis dorsali reniformi lateralibus multo longioribus obovatis patentissimis, petalis ovatis acutis serrato-crispatis conniventibus, labello multo minore hastato: laciniis acutis intermediâ lineari obtusâ medio constrictâ lateralibus acuminatis 3-plo minoribus, (cristâ depressâ crenulatâ), columnæ alis subulatis ascendentibus.—*Peru.*—This singular plant has only been found by Ruiz and Pavon, among whose drawings at Lima it was found and copied by Mr. Mathews, who sent the figure to Sir W. Hooker. The flowers are represented of a cinnamon brown, with the tips of the petals yellow. The lateral sepals are more than an inch and three-quarters long; the petals measure an inch and quarter, and the dorsal sepal is nearly an inch and half across.

** Sepala lateralia connata.

18. *O. crispum* (Lodd. L. p. 197. Bot. Reg. t. 1920.); pseudobulbis oblongis sulcatis rugosis diphyllis, foliis lanceolatis coriaceis acutis, scapo sub-simplici multifloro, sepalis recurvis undulatis obtusis lateralibus semiconnatis, petalis duplò majoribus oblongis undulatis unguiculatis, labelli lobis lateralibus cornuformibus recurvis nanis intermedio maximo unguiculato subrotundo-cordato undulato, cristâ duplici serie deltoideâ dentatâ, columnæ alis rotundatis denticulatis carosis.—*Brazil.*—Flowers large, brown, with a yellow spot at the base of the lip. Scape sometimes with fifty or sixty flowers.

19. *O. Forbesii* (Hooker Bot. Mag. t. 3705.); pseudobulbis ovalibus sulcatis monophyllis, foliis lanceolatis coriaceis, scapo paniculato multifloro, sepalis oblongis obtusis unguiculatis lateralibus semiconnatis, petalis obovatis duplò majoribus, labelli lobis lateralibus auriculatoformibus intermedio maximo flabellato, cristâ tuberculis 5 carosis æquidistantibus, columnæ alis parvis dentatis.—*Brazil.*—Resembles *O. crispum*, but is much more beautiful, having the petals edged with bright yellow, and some of the sepals barred with the same colour. The plant has a large panicle and gay appearance; but the ground colour of the flowers is much browner than in the figure in the Botanical Magazine. The bidentation of the wings of the column is a variable circumstance, but the appendages of the base of the lip are constantly as represented and described by Sir Wm. Hooker.

†† *Sepala v. petala basi angustata.* Heteranthium.

* FOLIA PLANA.

‡ Tetrapetala; sepalis lateralibus connatis.

¶ *Macropetala*; petalis sepalis lateralibus evidenter majoribus.

20. *O. pectorale* (Lindl. Sertum, t. 39.); pseudobulbis ovatis compressis sulcatis diphyllis, foliis oblongis obtusis papyraceis scapo basi paniculato brevioribus, sepalis lateralibus semiconnatis petalisque obovatis majoribus undulatis, labelli lobis lateralibus nanis intermedio maximo convexo undulato bilobo, cristâ ovatâ depressâ acuminatâ margine verrucosâ tuberculisque numerosis in frusti formâ ordinatis circumdatâ, columnæ alis truncatis.—*Brazil.*—Flowers large, very showy. Sepals and petals orange-brown, spotted with yellow. Lip bright yellow, with orange-brown tubercles.

21. *O. Martianum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbis, foliis, scapo erecto paniculato, sepalò supremo petalisque obovatis obtusis concavis lateralibus linearibus acutis brevioribus, labello bilobo reniformi: laciniis lateralibus rotundatis nanis, cristâ falcatâ compressâ utrinque tuberculis 3 linearibus (1) suffultâ, alis columnæ denticulatis subquadratis angulis rotundatis.—*Brazil.*—A beautiful yellow species, with a scape two feet high: it resembles in general appearance *O. ampliatum*.

22. *O. macropetalum*; pseudobulbis ovatis compressis, foliis ligulatis acutis canaliculatis falcatis paniculâ laxâ erectâ multiflorâ brevioribus, sepalis lineari-lanceolatis acuminatis lateralibus semiconnatis, petalis obovatis rotundatis labello ferè æqualibus, labelli trilobi laciniâ intermediâ lunatâ lateralibus rotundatis paulò brevioribus sinu serrato, cristâ basi trilamellatâ apice trilobâ tuberculis quibusdam interjectis, columnæ alis linearibus obtusis.—*Brazil.*—This is Mr. Gardner's no. 4359, a species with much the habit of *O. flexuosum*. The lip and petals appear to be pure yellow; the sepals are spotted with brown.

23. *O. ciliatum* (L. p. 200. Bot. Reg. t. 1660.); pseudobulbis ovatis compressis monophyllis, foliis complicatis lineari-oblongis obtusis scapo erecto flexuoso apice paucifloro pluries brevioribus, sepalis undulatis lineari-oblongis obtusis: anteriore bilobo, petalis obovatis crispis, labello æqualiter tripartito sepalis brevioribus: laciniis obovatis sinibus suis latissimis fimbriatis, cristâ 5 cornu posticè divergentibus anticè collateralibus tuberculis quibusdam interjectis, columnæ alis ovatis acutis.—*Brazil.*—Scape usually five or six inches high and simple, but sometimes branched and two feet high. Sepals and petals orange-brown and yellow. Lip yellow. Flowers in September, in low woods, surrounding the table-land (plateaux) of the neighbourhood of Bananal.

24. *O. fimbriatum* (L. p. 199.); pseudobulbis, foliis, scapo, sepalò supremo obovato fornicato inferiore 2-partito acuminato labello subæquali, petalis obovatis undulatis sinuatis, labelli laciniâ intermediâ subrotundâ apiculatâ lateralibus linearibus ascendentibus, cristâ tuberculis fimbriatâ posticè cuneatâ truncatâ anticè divergentibilobâ, columnæ alis ovatis apice corrugatis, clinandrio fimbriato.—*Brazil.*—Flores lutei; sepalò et petalò sanguineo maculata; labellum unicolor. Crista posticè ochracea, anticè sanguinea.

25. *O. cornigerum* (L. p. 199. Bot. Reg. t. 1542.); pseudobulbis oblongis sulcatis monophyllis, foliis ovalibus acutis sessilibus scapo simplici decumbente paucifloro brevioribus, sepalò supremo petalisque obovatis concavis undulatis obtusis: inferioribus minoribus angustioribus basi tantum connatis, labelli lobis lateralibus linearibus rigidis erectis intermedio obovato subrepando undulato, cristâ anticè verrucosâ truncatâ posticè lamellâ crenatâ transversâ bicorni, columnæ pubescentis alis linearibus obtusis porrectis.—*Brazil.*—Flowers in a small close panicle, yellow and brown. This is very near *O. pubes*, but wants the hairy processes of the anther, and has the lateral sepals almost separated to the base.

26. *O. pubes* (L. p. 199. Bot. Reg. t. 1007. Bot. Mag. t. 3926. *O. bicornutum*, Bot. Mag. t. 3109.); pseudobulbis subcylindricis 1-phyllis, foliis lanceolatis subcostatis, paniculâ simplici multiflorâ subsecundâ, sepalis obovatis obtusissimis fasciatis: anteriore bidentato, labello pandurato cuneato utrinque bicornuto, cristâ duplici: posteriore depressâ transversim rugosâ anticè bicorni: anteriore cordatâ (anticè obsolete 3-dentatâ dente medio submembranaeaeo fornicato: lobo lineari canaliculato utrinque è regione cristæ ante, rioris dependente), columnæ pubescentis alis linearibus truncatis antherâ pubescente anticè appendicibus duabus ascendentibus villosis auctâ.—*Brazil.*—The flowers are sometimes greenish, and sometimes bright yellow, more or less banded with red brown. It occurs in thin forests, surrounding the table-land near Bom Jesus de Bananal, flowering in the month of May.

¶¶ *Micropetala*; petalis sepalis lateralibus subæqualibus et similibus.

27. *O. bifolium* (Sims Bot. Mag. t. 1491. Bot. Cab. t. 1845. L. p. 197.); pseudobulbis oblongis diphyllis, foliis lanceolatis patentibus planis, scapo simplici cernuo racemoso laxo multifloro, sepalis (quorum lateralia semiconnata) petalisque obtusis concavis undulatis, labelli lobis lateralibus nanis obtusis recurvis intermedio maximo subunguiculato reniformi plano bilobo repando, cristâ medio interruptè callosâ utrinque tuberculis linearibus patentibus munitâ, columnæ alis rotundatis.—*Monte-Video.*—Raceme simple, pendulous. Flowers very large, with a bright yellow lip.

28. *O. nubigenum* (L. p. 197.); pseudobulbis 1-2-phyllis, foliis lanceolatis acutis, scapo simplici erecto paucifloro (3-10), sepalis lateralibus rectis semiconnatis petalisque oblongis acutis undulatis, labelli lobis lateralibus nullis intermedio subrotundo subsexlobo, cristâ trituberculatâ compressâ, columnæ alis rotundatis carosis.—*Quito.*—Scape erect. Flowers the size of *O. bifolium*, purple. Grows only on the west side of the ridge of Assuay, plentifully at the height of 11,000 to 14,000 feet.

29. *O. viperinum* (L. p. 197.); foliis lineari-lanceolatis acutis planis, scapo simplici cernuo flexuoso racemoso denso multifloro, sepalis lateralibus basi connatis divaricatis petalisque latioribus lanceolatis undulatis recurvis acutis, labelli lobis lateralibus obsolete denticulatis semisagittatis intermedio subrotundo-reniformi plano subbilobo, cristâ medio tuberculatâ basi et apice bicorni, columnæ alis parvis rotundatis.—*Uruguay.*—Resembles *O. bifolium*, differing in the acute, spreading or recurved petals, in the lower sepals being united only at the base, in the form of the tubercles of the crest, and in the flowers being more closely arranged.

30. *O. cucullatum* (Lindl. Sertum, sub t. 21.); pseudobulbis foliisque, scapo paniculato angulato bracteis squamiformibus cartilagineis concavis acutis, sepalò supremo oblongo inferioribus omninò connatis petalisque ovalibus carosis planis, labello cordato panduriformi apice maximo lunato transverso appendice lanceolatâ apiculato, tuberculo baseos ovato subtridentato, columnâ nanâ basi auriculis rotundatis marginatâ, clinandrio cucullato.—*Peru.*—Flowers apparently purple, with small spots.

31. *O. barbatum* (L. p. 200. Coll. Bot. t. 27.); pseudobulbis oblongis compressis monophyllis, foliis lineari-oblongis coriaceis obtusis emarginatis, scapo flexuoso paniculato, sepalis lanceolatis undulatis acutis: duobus inferioribus basi connatis divergentibus, petalis conformibus obtusis, labello transverso sepalis brevioribus: lobis lateralibus obovatis intermedio minimo bilobo; disco barbato, cristâ depressâ trilobâ lobo medio tricenato, alis columnæ brevibus rotundatis.—*Brazil.*—Apparently lost from our gardens, although formerly cultivated by Sir W. Hooker. Sepals and petals are brown and dotted. Lip yellow with a sanguine-spotted disk. Scape slender, two feet high.

32. *O. isopterum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbis ovalibus compressis diphyllis, foliis angustis canaliculatis recurvis scapo apice paniculato flexuoso quadruplò brevioribus, sepalis acutis supremo fornicato lateralibus semiconnatis divaricatis, petalis obovatis reflexis, labelli laciniis lateralibus brevibus angustis obtusis intermediâ transversâ angulatâ bilobâ, cristâ tuberculosâ, columnæ alis 4 subæqualibus rotundatis.—*Brazil.*—A very small species, resembling *O. flexuosum*. It inhabits elevated open places on the Serra de Gram Mogol.

33. *O. confragosum* (Lindl. in Bot. Reg. 1838. misc. 92.);

pseudobulbis . . . , scapo simplici glaucescente apice nutante, sepalis ovatis acuminatis undulatis lateralibus semiconnatis, petalis majoribus oblongis undulatis acutis, labelli lobis lateralibus nanis recurvis intermedio unguiculato altè bilobo subangulato reniformi: disco maximo digitato confragoso, columnæ alis rotundatis denticulatis. — *Mexico*. — The flowers are of the same colour as *O. stramineum*, for which the species might be mistaken upon a casual examination; the colour is a very delicate straw, faintly spotted with pale purple.

34. *O. aureum* (Lindl. Sertum, sub t. 25.); pseudobulbis . . . foliis lineari-lanceolatis acuminatis obtusis, scapo paniculato ramis flexuosis, bracteis magnis membranaceis spathaceis, sepalis lateralibus semiconnatis petalisque ovatis acutis, labello cordato cuneato rotundato unguiculato: margine unguis utroque bidentato setulis quinque interjectis, alis columnæ acinaciformibus laceris. — *Peru*. — Flowers apparently with a yellow lip and green sepals and petals. Inhabits the lofty mountains of Andimarcha.

35. *O. Insleyi* (Barker in Bot. Reg. 1840. misc. 21. Bateman Orch. Mex. t. 21.); pseudobulbis ovatis compressis diphyllis, foliis erectis coriaceis oblongo ensiformibus subundulatis apice recurvis racemo paucifloro erecto rigido brevioribus, sepalis petalisque oblongis subæqualibus undulatis infimis basi connatis, labello obovato retuso basi sagittato disci tuberculo apice depresso dilatato bilobo utrinque in medio unidentato lamellæque unicâ retrofractâ auto, columnæ alis cirrhatis. — *Mexico*. — Flowers similar in size, colour, and spotting to those of *O. Papilio*, but in their form quite different, and produced upon a stiff erect spike. It is among the finest of the genus, with rich orange and brown spotted flowers, full three inches in diameter.

36. *O. maculosum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbis ovalibus compressis, foliis lanceolatis acutis, scapo stricto maculoso apice paniculato, sepalis ovalibus acutis reflexis lateralibus basi connatis, petalis oblongis obtusis, labello maximo basi pubescente obsolete quadrilobo reniformi: laciniis lateralibus minimis auriculæformibus, cristâ oblongâ e tuberculis pluribus digitiformibus constante, columnæ alis falcatis integerrimis. — *Brazil*. — A fine species in the way of *O. bifolium*, but with an erect slightly branched raceme. It has flowered with Mr. Barker of Birmingham.

37. *O. varicosum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbis oblongis subtrigonis diphyllis, foliis rigidis spatulato-lanceolatis scapo gracili pyramidalis subsimpliciter racemose ter brevioribus, floribus distantibus, petalis sepalisque quorum lateralibus semiconnatis acutis reflexis, labello maximo subrotundo obsolete quadrilobo: lobis lateralibus rotundatis, cristâ posticè tridentatâ fornicatâ anticè cuneatâ varicibus venarum in posticis confluentibus circumdatâ, alis columnæ rotundatis denticulatis. — *Brazil*. — A very fine species, with large spreading compound racemes. The flowers appear to be whole-coloured.

38. *O. flexuosum* (Sims in Bot. Mag. t. 2203. L. p. 199.); pseudobulbis ovalibus compressis 2-phyllis, foliis oblongo-lanceolatis, striatis, paniculâ ramosissimâ multiflorâ: ramis ascendenticibus, sepalis oblongis obtusis, petalis obovatis undulatis, labelli laciniâ mediâ transversâ rotundatâ subquadrilobâ basi truncatâ lateralibus auriculæformibus, cristâ posticè pulvinatâ anticè in lobos 3 laceros divisâ utrinque tuberculatâ, columnæ alis rotundatis. — *Brazil*. — Flowers in a large panicle, bright yellow, with small spots.

39. *O. unicorn* (Lindl. Bot. Reg. misc. 76. K. & W. Flor. Cab. 2. p. 143. *O. monoecrus*, Hooker in Bot. Mag. t. 3890.) pseudobulbis ovalibus compressis diphyllis, foliis oblongo-linearibus recurvis, racemo composito ramis divaricatis rectiusculis, sepalis lateralibus in unum concavum emarginatum connatis, petalis obovatis undulatis, labelli lobis lateralibus nanis intermedioque emarginato rotundatis, disco basi transversè elevato anticè cornu ascendente compresso subfalcato acuto, alis columnæ angustis obsolete. — *Brazil*. — A pretty little species, with a compound straggling raceme of small pale yellow flowers. The singular horn on the lip, to which it owes its name, distinguishes it from all species previously described.

‡‡ Pentapetala; sepalis lateralibus omnino disjunctis.

¶ *Micropetala*; petalis sepalis lateralibus evidenter majoribus, aut longioribus.

40. *O. Papilio* (L. p. 203. Bot. Reg. t. 910. Bot. Mag. t. 2795. Bot. Cab. t. 1086.); pseudobulbis subrotundis compressis rugosis monophyllis, foliis oblongis coriaceis obtusis maculatis, scapo perennante debili ancipiti articulo apice paucifloro, sepalis petalisque linearibus longissimis basi angustatis, sepalis lateralibus revolutis undulatis labello longioribus, labelli laciniâ intermedia oblongâ emarginatâ subrotundâ crispâ basi valde angustâ lateralibus rotundatis, cristæ glandulis formam ranae cubantis referentibus, columnæ alis serratis. — *Trinidad*. — The handsomest of the genus.

41. *O. onustum* (L. p. 203.); foliis linearibus complicatis falcatis, scapo simplici, racemis cernuis secundis multifloris, sepalis omnibus liberis, labello bilobo transverso: lobis lateralibus linearibus apice subdilatatis, callo baseos oblongo cochleato anticè appendiculatâ tuberculiformi instructo, alis columnæ 2 integerrimis. — *Panama and Columbia*. — Flowers apparently whole coloured.

42. *O. ampliatum* (L. p. 202. Bot. Reg. t. 1699.); pseudobulbis subrotundis ancipitibus rugosis maculatis diphyllis, foliis oblongis

coriaceis planis subundulatis scapo paniculato-brevioribus, sepalis omnibus liberis, labello bilobo subrotundo transverso: laciniis lateralibus brevissimis, callo baseos 5-lobo: lobis lateralibus patentissimis planis truncatis intermediis teretibus centrali compresso, alis columnæ cuneatis dentatis reflexis, pseudobulbis subrotundis compressis, foliis planis oblongo-lanceolatis, scapo erecto apice ramoso. — *Panama and Guatemala*. — A noble species, of which there are two varieties, one much larger than the other. According to Mr. Skinner it is from Costa Rica, on the sea shore in the Gulf of Nicaya; and also found throughout the coasts of Nicaragua, and in the Escuintla, 15 leagues from Guatemala; climate 80° to 85°; flowering in February.

43. *O. excavatum* (Lindl. in Sertum, sub t. 25. Bot. Reg. 1839. misc. 150.); pseudobulbis . . . ; foliis oblongo-ligulatis . . . , scapo paniculato, bracteis squamiformibus membranaceis acutis, sepalis lateralibus obovatis liberis supremo concavo acuto, petalis membranaceis oblongis basi angustatis, labello sessili pandurato apice rotundato emarginato sellæformi basi cordato convexo fornicatâ excavato cristâ tuberculatâ, columnæ alis oblongis rotundatis. — *Peru*. — This has yellow flowers, spotted with brown, and is easily known by the base of the labellum being very convex, a little hollowed out in front, and excavated with a deep pit on the under side.

44. *O. stramineum* (Lindl. Bot. Reg. 1838. misc. 63. 1840. t. 14.); ebulbe, foliis crassis carnosis ovato-lanceolatis acutis dorso rotundatis scapo paniculato rigidi erecto brevioribus, sepalis subrotundis unguiculatis concavis liberis integerrimis, petalis duplò majoribus oblongis obtusis emarginatis margine crispis, labelli lobis lateralibus oblongis carnosius acutis margine revolutis basi columnæ proximâ nectariferis intermedio reniformi plano emarginato longioribus, tuberculis disci 4 geminatis, columnæ alis carnosius linearibus obtusis elongatis genuflexis decurvis. — *Mexico*. — Leaves short, fleshy, stiff. Flowers in a dense panicle, pale straw-colour, with a few dark dots on the lip.

¶¶ *Micropetala*; petalis sepalis lateralibus subæqualibus et similibus.

☞ Labellum unguiculatum: *i. e.* subintegrum basi angustatum etsi unguis ipse deest; nunc apice trilobum.

45. *O. lunatum* (Lindl. in Bot. Reg. t. 1929.); pseudobulbis oblongis compressis 1-2-phyllis, foliis angustè oblongis planis obtusis scapo brevioribus, scapo racemose, sepalis petalisque spatulatis retusis, labello pubescente lunato basi piloso: laciniis lateralibus minimis inflexis, cristâ lineari apice depressâ utrinque bidentatâ dentibus glanduligeris, alis columnæ cuneatis integris, clinandrio posticè dentato. — *Demerara*. — A pretty little species, with a white crescent-shaped lip, blotched with dull orange, and white sepals blotched with deep orange.

46. *O. gracile* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbis ovatis compressis diphyllis, foliis lanceolatis acutis brevibus, scapo gracili apice racemose 3-6-floro, sepalis linearibus lanceolatis, petalis paulò latoribus, labello cuneato emarginato basi auriculato lamellis duabus linearibus cristato, columnæ alis oblongis integris. — *Brazil*. — The scape of this species is about a foot high, with from three to six rather small flowers at the end. The leaves are not more than two inches long, and the pseudobulbs about one-third that length. The lip is yellow, the remainder of the flower reddish brown and green. Its native place is the dry ferruginous rocks of Villa Rica.

47. *O. globuliferum* (H. B. K. L. p. 202.); "bulbo subgloboso, foliis oblongis brevissimè mucronatis, scapis simplicibus subunifloris, foliolis calycis subæqualibus crenulato-undulatis, labello subreniformi apice emarginato-bilobo, gynostemio apice alâ crenulatâ cincto?" — *Popayan*. — Flowers red, spotted. Lip very large, with small lateral lobes.

48. *O. pumilum* (L. p. 205. Bot. Reg. t. 920. Bot. Cab. 1732.); pseudobulbis nullis, foliis rigidis ovalibus obliquis, paniculâ erectâ thyrsoideâ foliorum longitudine, sepalis petalisque obovatis incurvis, labello subrotundo trilobo: lobis ovatis obtusis intermedio paulò minore, disco callis duobus longitudinalibus sinibus loborum oppositis cristato, alis columnæ integerrimis, caudiculâ sagittatâ. — *Brazil*. — Flowers the smallest in the genus, yellow, in a close erect branching panicle.

49. *O. Korwinshii* (Lindl. Sertum, sub t. 25. *Cyrtorchilum Korwinshii*, Bot. Reg. sub t. 1992.); scapo paniculato, sepalis petalisque oblongo-lanceolatis apiculatis, labello obovato rigido ecristato venis centralibus incurvantibus lamellatis, margine columnæ serrato, caudiculâ obovatâ. — *Mexico*. — A noble species. Flowers 2½ inches in diameter. Sepals and petals blotched with brown, upon a yellow ground.

50. *O. microchilum* (Bateman in Bot. Reg. 1840. misc. 193.); pseudobulbis lenticularibus brevibus monophyllis, folio ensiformi carinato carnosissimo acuto quam scapus erectus versus apicem paniculatus quadruplò brevior, sepalis liberis lateralibus longis unguiculatis petalisque oblongis subundulatis retusis, labello subrotundo cordato tridentato sepalis duplò brevior, cristâ subrotundâ 5-crenatâ dente intermedio labelli parùm brevior, columnæ nanæ alis oblique truncatis. — *Guatemala*. — A most distinct and remarkable species; the smallness of its lip, which is not half so long as the lateral sepals, being a singular feature. The leaves are about eight inches long; the flowers the colour of *O. crispum*.

♂ ♀ Labellum panduratum: *i. e.* medio constrictum basi angustius.

51. *O. pictum* (H. B. K. l. t. 81. L. p. 201.); pseudobulbus ovato-oblongo, foliis longè petiolatis lineari-oblongis acuminatis, scapo paniculato multifloro, sepalis lineari-lanceolatis unguiculatis petalisque latioribus obtusis undulatis, labelli lobis lateralibus rotundatis nanis intermedio transverso retuso undulato, cristâ 7-8-tuberculatâ, columnæ alis obsolete nunc in subulam productis. —*Popayan*.—This differs from *O. altissimum* in its more compact panicle, larger flowers, obsolete anther-wings, and apparently in the much less spotted flowers.

52. *O. altissimum* (Swartz. L. p. 200. Bot. Reg. t. 1851.); pseudobulbus subrotundis compressis ancipitibus, foliis ensiformibus carinatis acutis scapo decurvo multò brevioribus, racemo simpliciter basi tantum composito, sepalis petalisque labelli longitudine lineari-lanceolatis undulatis, labello apice dilatato bilobo medio constricto basi auriculato, cristâ novemtuberculatâ depressâ, columnæ alis rotundatis abbreviatis undulatis. —*West Indies*. —Flowering stems sometimes 13 feet long. Lip bright yellow. Sepals and petals brown and yellow.

53. *O. Baueri* (L. p. 200. *O. altissimum*, Bot. Reg. t. 1651.); pseudobulbus oblongis compressis leviter ancipitibus, foliis lato-lanceolatis acuminatis scapo erecto multò brevioribus, racemo composito, sepalis petalisque labelli longitudine lineari-lanceolatis undulatis, labello apice dilatato emarginato medio constricto basi auriculato, cristâ novemtuberculatâ depressâ, columnæ alis elongatis truncatis utrinque acutis. —*Panama and Continent of Tropical America*. —Nearly allied to *O. altissimum* in the structure of the flowers, but very different in its manner of growth, and well distinguished by its truncated column-wings.

54. *O. sphecelatum*; pseudobulbus elongato-ovatis ancipitibus a latere planiusculis, foliis longis ensiformibus apice recurvis, scapo stricto racemo composito multifloro, sepalis petalisque lineari-lanceolatis undulatis labello æqualibus, labello medio constricto basi auriculato apice dilatato rotundato bilobo, cristâ depressâ pubescente a latere dentatâ apice trilobâ, columnæ alis elongatis truncatis erosis sphecelatis. —*Mexico and Guatemala*. —Of this there are two varieties; *a. minus*, with smaller flowers, and the inflorescence compound only at the base; and *β. majus*, with brighter yellow flowers, and the inflorescence compound as far almost as the apex, when the plant is in good health. This species seems to vary in the form of the lip, some of the specimens being almost exactly panduriform.

55. *O. citrinum* (Lindl. in Bot. Reg. t. 1758.); pseudobulbus ovato-oblongis compressis, foliis ensiformibus rigidis scapo simpliciter brevioribus, sepalis petalisque labelli longitudine lineari-oblongis undulatis, labello cordato utrinque introrsum arcuato apice dilatato subreniformi, cristâ 8-tuberculatâ pubescente, alis minimis triangularibus sursum evanescentibus. —*Trinidad*. —Flowers bright yellow, with faint traces of greenish blotches on the sepals and petals.

56. *O. ensatum* (Lindl. in Bot. Reg. 1842. misc. 15.); pseudobulbus subrotundis compressis, foliis ensiformibus strictis carinatis, paniculâ longissimâ multiflorâ, bracteis membranaceis acutis canaliculatis, sepalis petalisque lanceolatis acuminatis subundulatis (olivaceis luteo-marginatis), labello (luteo) reniformi emarginato basi auriculato (disco olivaceo), cristâ pubescente subseptem-tuberculatâ tuberculis elongatis, columnæ alis emarginatis utrinque acutis. —*Guatemala*. —A plant with singular long sword-shaped erect leaves, and a panicle like that of *O. altissimum*. The flowers are yellow in the lip, and on the border of the segments, but olive-brown in the middle of the lip and the face of the segments.

57. *O. reflexum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbus ovatis sulcatis monophyllis, foliis angustè lanceolatis acutis, racemis subcompositis longis multifloris, sepalis petalisque lineari-lanceolatis undulatis acutis reflexis labello æqualibus, labello reniformi emarginato: laciniis lateralibus rotundatis vix intermediâ angustioribus, cristâ depressâ tridentatâ apice bicorni leviter pubescente, columnæ alis magnis falcatis dentatis. —*Mexico*. —A beautiful species related to *O. altissimum*. It is distinguished from *O. pelicanum* by its smaller flowers having the lip no longer than the sepals, and by the lateral lobes of the lip being about as broad as the middle lobe.

58. *O. pelicanum* (Martius, Bot. Reg. 1840. misc. 216.); pseudobulbus ovatis sulcatis monophyllis, foliis angustè lanceolatis acutis, racemis subcompositis multifloris, sepalis petalisque lineari-lanceolatis undulatis acutis reflexis labello multò brevioribus, labello reniformi emarginato: laciniis lateralibus rotundatis intermediâ multò angustioribus, cristâ glabrâ basi convexâ tunc quinquentatâ apice bidentatâ, columnæ alis magnis oblongis denticulatis apice acutis. —*Mexico*. —Very closely akin to *O. reflexum*, from which it differs principally in the sepals and petals being less blotched, in the lateral lobes of the lip being smaller in proportion to the intermediate segment, and in the tubercles of the crest, which is smooth, not downy, being rather differently arranged. The name has doubtless been given in allusion to the column, which is not unlike a pelican pecking her breast.

59. *O. nebulosum* (Lindl. in Bot. Reg. 1841. misc. 175.); pseudobulbus ovalibus ancipitibus nebulosis diphyllis utrinque 3-costatis, foliis angustis chartaceis paniculâ angustâ brevioribus, sepalis liberis petalisque lanceolatis undulatis patentibus, labello multò brevioribus, labelli lobis lateralibus nanis rotundatis inter-

medio subrotundo bilobo, tuberculo sulcato tridentato utrinque unidentato, columnæ elongatæ alis acinaciformibus denticulatis. —*Guatemala*. —A species with the appearance of *O. reflexum*, but readily known by its clouded pseudobulbus. The flowers are large, rather pale yellow, with faint spots of brown at the base of the lip, and on the sepals and petals.

60. *O. funeum* (Llave. L. p. 201.); pseudobulbus subrotundis depressis hyalino-virescentibus diphyllis, foliis lanceolatis spithamæis, scapo tenuissimo simplici elongato, sepalis petalisque æqualibus patulis apice reflexis, labello carnosio convexo emarginato cristâ tuberculis variis denticulisque. —*Mexico*. —Known only from the description of La Llave. It is said to be used by the people of Michuacan as an ornament of their tombs. The lip is described as yellow, the segments of the flower as olive-brown spotted. The leaves are a span long.

61. *O. retusum* (Lindl. in Bot. Reg. sub t. 1920.); pseudobulbus . . . foliis lineari-lanceolatis, scapo paniculato divaricato, sepalis petalisque subæqualibus spatulatis retusis subcarnosis, labelli lobo medio reniformi bilobo lateralibus paulo majore, cristâ e lamellis 5 brevibus tuberculos 6 elongatos circumdantibus, columnæ alis maximis acinaciformibus dentatis. —*Peru*. —A beautiful species with deep chestnut and yellow flowers, and a yellow lip. Its mode of growth is that of *O. Baueri*.

62. *O. ramosum* (Lindl. in Bot. Reg. sub fol. 1920. *O. Batemannianum*, Kn. and Westc. Fl. Cab. 3. 183. t. 137.); pseudobulbus ovatis polyphyllis, foliis ensiformibus acutis, scapo apice ramosissimo paniculato, sepalis angustis acutis supremo erecto fornicato lateralibus unguiculatis angustioribus, petalis oblongis subundulatis, labello subrotundo bilobo basi auriculato, cristâ tuberculis 5-3-creuatis obtusis, columnæ alis rotundis integerrimis. —*Brazil*. —This has gay pale-yellow flowers in a branched panicle, upon a scape five feet high, and in its native state the inflorescence is very large. Several finger-like streaks of brown radiate from the base of the tuberculated crest, whose elevations are disposed in two tiers, the upper consisting of five short wavy ridges, and the lower of two with a truncated four-lobed tubercle between them. I do not see how *O. Batemannianum* differs so far as the figure and description enable me to judge. Nothing is said of the native country of that plant.

63. *O. Harrisonianum* (Lindl. p. 202. Bot. Reg. t. 1569. *O. pallidum*, Lindl. in Bot. Reg. 1840. misc. 108.); pseudobulbus obcordatis compressis marginatis, foliis acutè carinatis convexis oblongis cæsiis, scapo erecto paniculato, sepalis petalisque oblongis obtusis liberis, labelli auriculis rotundatis lobo intermedio cuneato-obovato emarginato angustioribus, disci basi glandulosi appendice 5-partitâ: laciniis coriutis æqualibus pubescentibus, columnæ alis brevissimis obliquè truncatis. —*Brazil*. —A very pretty plant. The leaves are sea-green like those of *Maxillaria Rollisonii*; the panicle is almost a foot long, and the flowers are in colour similar to *O. divaricatum*.

64. *O. digitatum* (Lindl. in Benth. Pl. Hartweg p. 94.); pseudobulbus ovalibus nitidis compressis diphyllis, foliis lineari-oblongis patulis obtusis, scapo stricto racemoso-paniculato, ramis lateralibus paucifloris, sepalis liberis petalisque oblongis planis, labello ovato bilobo basi auriculato, cristâ pentadactylâ digitis filiformibus ascendentibus intermedio integro lateralibus bipartitis, columnæ alis acinaciformibus denticulatis. —*Guatemala*. —Near *O. leucochilum*, like which it has a white lip; the numerous finger-like processes of that organ readily distinguish it.

65. *O. leucochilum* (Bateman in Bot. Reg. sub t. 1920. Orch. Mex. t. I.); pseudobulbus ovatis sulcatis, foliis ensiformibus recurvis solitariis geminisque, scapo longissimo paniculato, sepalis petalisque oblongis obtusis subæqualibus patentissimis, labello reniformi altè bilobo utrinque emarginato: laciniis lateralibus retusis nanis, cristâ 3-corni basi utrinque dentatâ, columnæ alis acinaciformibus dentatis. —*Mexico*. —A noble species, with the habit and stature of *O. Baueri*. Flowers greenish, banded with crimson; lip pure white, changing to yellow. Mr. Skinner says, "it inhabits countries, the temperature of which is not less than 55°, or more than 70°." He recommends it to be well watered from June to September every afternoon; and, from October to May inclusive, to be only slightly watered every evening at sundown, to resemble the dews of its native country, which are not so heavy as people represent them in Europe—the region being high, and very different to a coast climate. "In December, 1839, the thermometer in Guatemala, at six o'clock in the morning, in the open air, for three days, averaged 36° Fahr. and yet this species continued to shoot its young stems."

66. *O. Barheri* (Lindl. in Bot. Reg. 1841. misc. 174.); pseudobulbus ovalibus compressis parum angulatis diphyllis, foliis angustis erectis membranaceis manifestè petiolo vaginante articulatis racemi cernui simplicis pedunculo terminali brevioribus, sepalis liberis petalisque lanceolatis undulatis æqualibus patentibus, labelli lobis lateralibus parvis subquadratis intermedio transverso apice inflexo vix emarginato, tuberculo oblongo basi 2-dentato apice obsolete trilobo anticè excavato, columnæ alis brevibus rotundatis. —*Mexico*. —A fine species, with very large flowers of a clear but pale yellow on the lip, and rich brown spotted sepals and petals. The lip is of unusual size, being more than an inch and a half across. It is readily known by its short leaves having a distinct articulation, with a sheathing petiole nearly an inch long. The raceme is simple, drooping, of five or six flowers, and altogether a foot long.

67. *O. olivaceum* (H. B. K. L. p. 202.); "bulbo ovato-oblongo, foliis oblongo-lanceolatis, pedunculo simplici multifloro, foliolis calycis carnosus reflexis, labello trifido: laciniâ intermedia subreniformi emarginatâ, gynostemio basi alis rotundatis instructo apice cucullato."—*Popayan*.—Leaves three or four inches long. Scape one to two feet high. Petals oblong-acute, shorter than the sepals. Lip very large, with the middle lobe crenulated, fleshy pink, an inch broad, narrowed at the base, with a conical yellow crest; the lateral lobes obliquely ovate, wavy, distinct, spotted with red, from four to five lines long.

68. *O. lanceanum* (Lindl. in Hort. Trans. vol. ii. n. ser. p. 100. t. 7. Bot. Reg. t. 1887.); ebulbe, foliis oblongis acutis planis substriatis carnosis, scapo racemoso composito erecto rigido racemulis confertifloris, sepalis petalisque conformibus oblongis obtusis carnosus concavis margine undulatis, labelli lobo medio dilatato subcuneato integerrimo basi hastato: lobis lateralibus semi-ovatis, cristâ trilobâ carnosâ juxtaque elevato proclivi, columnæ alis carnosus rotundatis, antherâ cristatâ.—*Surinam*.—Flowers large, very fragrant, with greenish sepals and petals blotched with crimson, and a violet lip.

69. *O. carthaginense* (Swartz. L. p. 201. *O. luridum*, Lindl. Bot. Reg. 727. *O. l. guttatum*, Lindl. Bot. Reg. 1839. t. 16. *O. intermedium*, Kn. and West. Fl. Cab. t. 60.); ebulbe, foliis oblongis acutis rigidis carnosis, scapo paniculato multifloro, sepalis undulatis: supremo unguiculato obtuso cochleato, petalis obtusis undulatis lobatisve, labelli lobis lateralibus nanis recurvis intermedio subrotundo-reniformi emarginato multo majore, cristâ trilobâ carnosâ lobis tuberculatis intermedio acuto elongato, columnæ alis carnosus obliquis rotundatis repandis, antherâ pubescente, glandulâ postice biaristâ, pollinibus sessilibus.—*West Indies and Tropical America*.—The plants, whose names are here collected, are so many forms of the same species, which varies extremely in the size and colour of its flowers. Its petals are sometimes nearly flat, and in other cases are contorted and lobed in a remarkable degree.

70. *O. sanguineum* (Lindl. Bot. Reg. 1839. misc. 68. Sertum, t. 27. *O. Huntianum*, Hook. Bot. Mag. t. 3806. *O. carthaginense*, Link, Klotzsch & Otto, ic. t. 6. *O. roseum*, Lodd. cat. ed. 2. no. 1318. *O. luridum Henchmannii*, K. & W. Fl. Cab. 3. t. 97. *O. Henchmannii*, Lodd. cat. ed. 2. no. 1323.); ebulbe, foliis oblongis coriaceis dorso carinatis, scapo longissimo paniculato, sepalis subrotundis unguiculatis petalisque crispis sublobatis, labelli trilobi subcrispis vernicatâ lobis subæqualibus intermedio retuso cuneato, cristâ ovatâ convexâ corrugatâ, columnæ alis rotundatis sublobatis, antherâ puberulâ.—*La Guayra*.—A singular species, with the habit of *O. carthaginense*, but with straw-coloured flowers, stained with crimson blotches. There are many varieties in cultivation.

71. *O. bicallosum* (Lindl. in Benth. Pl. Hartweg, p. 94.); bracteis ovatis membranaceis obtusis, sepalis liberis obovatis concavis, petalis oblongis obtusis, labelli lobis lateralibus abbreviatis intermedio maximo transverso emarginato subcordato, cristâ bicallosâ, tuberculis distantibus uno ante alterum posito rugosis subtrilobis, columnæ auriculis linearibus falcatis recurvis.—*Guatemala*.—This has so much the habit of *O. Cavendishianum* as to seem a mere variety of it, but in reality is a quite distinct species. The flowers are fully two inches in diameter, which is four times the size of *O. Cavendishianum*; they appear in a dwarf erect raceme, not panicle; they are of a rich yellow, with the sepals and petals bordered with cinnamon colour; the labellum has two very small lateral lobes, and for its crest it has two distinct tubercles, the posterior double, the anterior three-lobed, and the two separated by a considerable space. The flowers are moreover slightly scented, which is not the case with *O. Cavendishianum*.

☞ ☞ ☞ Labellum trilobum; i. e. laciniâ mediâ quasi unguiculatâ v. quam basis (hypochilium) angustiore.

72. *O. Cavendishianum* (Bateman Orch. Mex. & Guat. t. 3. *O. pachyphyllum*, Hooker in Bot. Mag. t. 3807.); ebulbe, foliis carnosis strictis acutis basi complicatis scapo paniculato brevioribus, sepalis obovatis obtusis supremo fornicato, petalis subæqualibus oblongis obtusis valde undulatis, labelli trilobi laciniis lateralibus unguiculatis rotundatis intermedia majore reniformi profundè emarginatâ, cristæ tuberculis 2 ad basin 2 a fronte lamellæ elevatè rotundatè sitis, columnæ alis linearibus decurvis inflexis.—*Guatemala*.—A most noble species, with panicles of large flowers, having greenish sepals and petals, and a bright clear yellow lip.

73. *O. trulliferum* (Lindl. in Bot. Reg. 1839. t. 57.); pseudobulbis elongatis ovalibus compressis 2-3-phyllis foliis ovalibus ferè æqualibus, scapo radicali rigido semel ramoso, sepalis lateralibus distinctis superioribus petalisque obtusis concavis, labelli lobis lateralibus nanis rotundatis intermedio trulliformi serrulato, cristâ verrucosâ medio depressâ lævi anticè dente ascendente serrato apice appendiculato, columnæ alis integerrimis ovatis obtusis.—*Brazil*.—Flowers yellow, spotted with red-brown, in a small close panicle.

74. *O. hyalinobulbum* (Llave. L. p. 204.); "bulbis lenticularibus subhyalinis; foliis lineari-lanceolatis; scapo filiformi flexuoso; floribus insectiformibus resupinatis; laminâ labelli lanceolatâ; gynostemio cuneiformi longè rostrato."—*Mexico*.—The leaves are said to be grassy, and two growing on each pseudobulb; the flowers membranous, almost transparent, with equal sepals and petals; the lip is very large, yellow, three-parted, with

three tubercles at the base; the side lobes are wedge-shaped and roundish, the middle one ovate, acuminate, pendulous.

75. *O. echinatum* (H. B. K. L. p. 206.); "bulbo oblongo; foliis oblongo-lanceolatis, pedunculo paniculato multifloro; labello trifido basi bialato, gynostemio alato rostrato, rostro elongato ascendente; capsulâ glandulosâ echinatâ."—*West of Mexico*.—Leaves an inch and half or two inches long. Scape a foot long.

76. *O. divaricatum* (L. p. 205. Bot. Reg. t. 1050. Bot. Cab. t. 1212.); foliis oblongis obtusis apiculatis concavis coriaceis margine sæpè fissis, scapo paniculato divaricatissimo, sepalis petalisque obovatis obtusis æqualibus, labelli crenulati cordati lobis lateralibus rotundatis intermedio subcordato rotundato emarginato majoribus, cristâ pulvinatâ pubescente 4-lobâ, columnæ alis rotundatis integerrimis.—*Brazil*.—Panicle very much branched and straggling. Flowers sometimes yellow and brown, sometimes whole coloured, of a dull copper. Inhabits trunks of the highest trees, in elevated mountains of the Serra das Argoas, in the district of Ilha Grande, flowering in February.

77. *O. pulvinatum* (Lindl. in Bot. Reg. 1838. misc. 115. 1839. t. 42.); paniculâ ramosissimâ divaricatâ, sepalis obovatis lateralibus liberis, petalis conformibus acutis, labelli lobis subæqualibus intermedio bilobo undulato lateralibus crenatis rotundatis crispis, cristâ pulvinatâ villosissimâ, columnæ alis rotundatis.—*Brazil*.—A fine plant, resembling *O. divaricatum*, with a panicle eight or nine feet long, perhaps a variety of it.

78. *O. hians* (Lindl. in Bot. Reg. 1838. misc. 124.); sepalis petalisque æqualibus ovalibus obtusis leviter concavis, labello angusto auriculato medio contracto apice bilobo, callo disci bilobo utrinque dentato carnosus papilloso erecto columnâ parallelo eique longitudine æquali, alis columnæ carnosus acutis vix falcatis.—*Brazil*.—I have only seen flowers of this little species. They are small, yellow and brown, with a large white erect crest, as long as the column, and resembling the four fingers of the hand, a little hollowed out and closed up.

79. *O. raniferum* (Lindl. in Bot. Reg. sub t. 1920. 1838. t. 48.); pseudobulbis ovatis sulcatis diphyllis, foliis lato-linearibus acutis scapo paniculato brevioribus, sepalis petalisque oblongis acutis patulis, labelli laciniis lateralibus triangularibus intermedia cuneatâ emarginatâ, cristâ depressâ medio constrictâ: dimidiâ posteriore quadratâ basi utrinque callosâ medio tuberculatâ anteriore triangulari apice emarginatâ utrinque foveatâ, alis columnæ integris.—*Brazil*.—A small yellow-flowered species, with the lower half of the lip chestnut-coloured. Its panicle is repeatedly branched, and is sometimes viviparous.

80. *O. panduriferum* (H. B. K. L. p. 203.); "foliis lanceolatis, pedunculo paniculato multifloro, calycis foliolis subæqualibus undulatis unguiculatis, labello panduriformi apice emarginato, gynostemio apice alâ quinquelobâ cincto."—*New Grenada*.—Leaves seven or eight inches long. Scape about four feet long. Flowers orange-coloured when dry.

81. *O. incurvum* (Barker in Bot. Reg. 1840. misc. 174.); pseudobulbis ovatis ancipitibus utrinque tricostatis diphyllis, foliis ensiformibus acutis, scapo elongato racemoso-paniculato, sepalis lineari-lanceolatis undulatis liberis, petalis conformibus incurvis, labelli laciniis lateralibus rotundatis nanis intermedia subrotundâ concavâ acutâ, cristâ ovatâ depressâ dimidiâ inferiore lineatâ superiore tricostatâ, columnâ apterâ.—*Mexico*.—A pretty species, with pale pink flowers mottled with white. It has at first sight the appearance of *O. ornithorhynchum*, but it wants the bird's-beaked anther, and the column-wings of that species. Its panicle is long, narrow, and about three feet high.

82. *O. ornithorhynchum* (H. B. K. L. p. 204. Bateman Orch. Mex. t. 4. Bot. Reg. 1840. t. 10.); pseudobulbis ovatis diphyllis, foliis ensiformibus recurvis scapo paniculato brevioribus, sepalis lineari-oblongis undulatis reflexis omnino liberis, labelli panduriformis lobis lateralibus acutis intermedio bilobo, cristâ e lamellis 5 crenatis apice rostratis constante, columnæ alis cuneatis dentatis, stigmatè longirostrato.—*Mexico and Guatemala*.—Shady damp places where the temperature varies between 68° and 75° are the natural stations of this species.

83. *O. heteranthum* (Pöppig n. gen. etc. 1. 34. t. 60.); scapi paniculati ramis racemosis divaricatis, floribus sterilibus astylis minutis, perfectorum sepalis oblonge spatulatis planis, labello quadrangulari apice lateribusque emarginato, cristâ multituberculatâ, columnæ alis ultra medium decurrentibus magnis semisagittatis serratis, antherâ rostratâ.—*Peru*.—Leaves about three, small, narrow, on slender pseudobulbs. Panicle a foot and half long. Flowers apparently yellow. Remarkable for a mixture of perfect and sterile flowers on the same branches. The details of Pöppig's figure are very faulty.

84. *O. pergamenum* (Lindl. in Benth. Pl. Hartw. p. 93. Bot. Reg. 1842. misc. 7.); pseudobulbis ancipitibus lucidis costatis diphyllis, foliis patentibus pergamenis oblongis acutis undulatis, panicula longissima divaricata, sepalis liberis petalisque lanceolatis acuminatis undulatis patentissimis, labello trilobo basi latiore, laciniis lateralibus cordatis undulatis medio subemarginatis intermedia emarginata apiculata paullo latiore quam longa, cristæ tuberculis 5 aggregatis obtusis supremo trilobo subpubescentibus, columnæ alis triangularibus acutis.—*Guatemala*.—Has very thin pseudobulbs, sharp-edged and somewhat furrowed on each side. The leaves are in pairs, from five to six inches long by one and a half to two inches wide, of a thin parchment-like texture, oblong, narrowing down to their base and sharp-pointed. The

flowers are in a weak loose panicle, about two or three feet long, and have much the appearance of *O. Baueri*. The sepals and petals are narrow, sharp-pointed, wavy, and brown tipped with yellow; the lip is all yellow, except a dull brown on each side of the base of the middle lobe. The lip is in form like that of *O. Wentworthianum*; that is to say, it is broader at the base than the apex, which is transversely oblong, with a small point in front. The wings of the column are small, short, and curved like a bird's bill, with a few obscure toothings on the upper edge.

85. *O. Wentworthianum* (Bateman in Bot. Reg. 1840. misc. 194.); pseudobulbis nebulosis oblongis compressis aciculis diphylis, panicula angusta elongata ramulis 3-floris, sepalis liberis petalisque oblongo-lanceolatis acutis, labelli cordati laciniis lateralibus rotundatis grosse crenatis intermedia multo brevioribus; intermedia ungue basi lato apice angustiore lateribus rectis lamina reniformi denticulata basi ipsa labelli duplo angustiore, cristâ 5-dentata denticulis 2 anticis aucta, columnæ alis erosis brevibus.—*Guatemala*.—The flowers are richly stained with crimson upon a yellow ground. They form festoons of considerable length, and are much used in adorning altars. The beautifully mottled pseudobulbs distinguish it from all others, except *O. nebulosum*. In habit it is never half the size of *O. Baueri* and *O. altissimum*, though it rivals them in the length of its stems; neither does it ever form compound lateral branches from the spike.

86. *O. Suttoni* (Bateman in Bot. Reg. 1842. misc. 8.); pseudo bulbis ovatis compressis sulcatis diphylis, foliis linearibus gramineis sæpe scapo æqualibus, scapo simplici v. ab ipsa basi paniculato angusto ramulis 3-5-floris, sepalis petalisque lineari-lanceolatis planis, labello oblongo basi auriculato angustiore, tuberculo cristæ 7-9-dentato, columnæ alis triangularibus.—*Guatemala*.—The grassy leaves, often as long as the erect panicle, although sometimes much shorter, give this a peculiar appearance; the sepals and petals are a dull olive-brown without any spots, except at the point, where they are yellow, while the lip has also but one dull olive-brown spot occupying the centre of the base. The triangular form of the wings of the column will readily distinguish it from *O. pergamenum*, which has also the lip broadest at the base, and entirely different leaves.

87. *O. deltoideum* (Lindl. in Bot. Reg. t. 2006.); pseudobulbis oblongis compressis sulcatis 2-3-phyllis, foliis lineari-lanceolatis canaliculatis, scapo paniculato ramis multifloris flexuosis divaricato, sepalo supremo unguiculato obovato lateralibus longioribus spathulato-lanceolatis apice revolutis, petalis latioribus obovatis crispis, labello deltoideo angulis rotundatis, cristâ tuberculata serie subduplici tuberculorum juxta basin et quatuor versus apicem majoribus distinctis biseriatis minore interjecto, columnæ alis maximis acinaciformibus.—*Peru*.—Panicle erect, much branched and compact at the top of the scape. Flowers whole coloured, yellow, with only a few red spots on the lip. All the green parts are slightly glaucous.

88. *O. serpens* (L. p. 204.); caule repente tortuoso filiformi ad nodos radicante pseudobulbifero, foliis oblongo-lanceolatis acutis pedunculis bifloris brevioribus, sepalis petalisque obovatis obtusis planis æqualibus, labello oblongo obtuso medio constricto basi bilamellato, columnâ marginatâ apice membranacea cucullatâ, alis obsolete.—*Peru*.—A small creeping plant.

* * FOLIA EQUITANTIA.

89. *O. iridifolium* (H. B. K. L. p. 202. Bot. Reg. t. 1911.); foliis ensiformibus brevibus equitantis, scapo simplici subbifloro, sepalo supremo obtuso lateralibus acutis collateralibus, petalis obtusis undulatis majoribus, labelli maximi lobis lateralibus parvis subrotundis unguiculatis: intermedio multo majore subrotundo bilobo utrinque versus apicem emarginato, cristâ depressâ 5-lobâ apice truncatâ, columnæ alâ crenulatâ circumdante.—*Mexico, Surinam, New Grenada, and Brazil*.—A small species with singularly large flowers for its size otherwise. The fruit is large, and has six large transparent wings. In Brazil it occurs exclusively on branches of the Orange and Lemon, flowering in April, choosing in preference dry places exposed to the sun.

90. *O. urophyllum* (Lodd. cat. ed. 2. no. 1381.); foliis equitantis margine plano apice acutissimis, scapo longo pendulo paniculato, sepalis linearibus acuminatis lateralibus ad apicem ferè connatis, petalis obovato-subrotundis apiculatis, labelli lobis lateralibus brevibus convexis obtusis intermedio unguiculato reniformi emarginato, cristæ tuberculis 2 uno ante alterum trilobis, columnæ alis maximis acinaciformibus rotundatis.—*Brazil*.—Flowers bright yellow, in a slender delicate panicle, as much as four feet long. Centre of the lip and base of the petals reddish brown.

91. *O. triquetrum* (R. Brown L. p. 205.); foliis triquetris cultratis acutis, scapo simplici 5-floro, sepalis acutis anticis connatis, petalis multo majoribus, labelli lobo medio ovato indiviso lateralibus rotundatis, cristâ nullâ, columnæ alis falcatis bilobis.—*Jamaica*.—Flowers purple and white; the lip with a few deeper spots.

92. *O. putchellum* (Hook. Bot. Mag. t. 2773. L. p. 206. Bot. Cab. t. 1984. Bot. Reg. t. 1787.); foliis acutè triquetris carinatis subfalcatis integris, scapo confertissime multifloro subcernuo, se-

palis cymbiformibus acuminatis lateralibus connatis, petalis ovatis undulatis acutis, labelli lobis lateralibus rotundatis intermedio subrotundo sessili retuso v. emarginato subæqualibus, cristâ trilobâ anticè 1-callosâ, alis columnæ acinaciformibus denticulatis.—*Jamaica and Desevara*.—This species has the habit of *O. variegatum* and tetrapetalum, from both which it is readily distinguished by the large lateral lobes of its labellum, and the cymbiform upper sepal. Its crest is also essentially different, consisting of three narrow, nearly equal, collateral elevati calli, in front of which is placed a short tubercle. Its flowers are pure white, with a little orange about the crest of the lip. The column is pink.

93. *O. Lemonianum* (Lindl. Bot. Reg. t. 1789.); foliis compressis acuminatis suprâ sulcatis, scapo stricto paucifloro, sepalis parvis spatulatis omnibus liberis, petalis oblongis undulatis, labelli laciniis lateralibus linearibus abbreviatis intermedia maximâ reniformi bilobâ: lobis dentatis ungue brevi margine denticulato, columnæ alis subquadratis truncatis oblique unidentatis.—*Cuba*.—Flowers yellow, with small dots of crimson on the lip and petals.

94. *O. variegatum* (Swartz. L. p. 198.); foliis oblongis acutis complicatis falcatis margine cartilagineo-serrulatis, scapo multifloro simplici v. paniculato, sepalis obtusis: lateralibus in unum cucullatum integrum connatis, petalis obtusis sublobatis, labelli lobis lateralibus ovatis obtusis recurvis intermedio reniformi undulato bilobo minoribus, cristâ trilamellatâ, columnæ alis acinaciformibus integris.—*St. Domingo, Cuba*.—This is distinguished from *O. tetrapetalum* by its broader serrulated leaves, and its acuminate not obtuse sepals. It is also a much larger plant.

95. *O. tetrapetalum* (Willd. L. p. 198. *O. pauciflorum*, L. p. 198.); foliis lanceolatis acutis falcatis carinatis complicatis integris, scapo simplici v. paniculato multifloro, sepalis petalisque lanceolatis acuminatis: inferioribus in unum connatis cymbiforme labelli longitudine apice divergenti-bilobum, labelli lobis lateralibus linearibus intermedio reniformi unguiculato emarginato, cristâ bis ter-tuberculatâ, alis columnæ magnis acinaciformibus denticulatis.—*Jamaica*.—A small species, with olive-brown flowers, whose lip is pure white, except in the middle. The crest consists of six blunt tubercles in two series, one resting on the other.

* * * FOLIA TERETIA.

96. *O. Cebolleta* (Swartz. L. p. 206. Bot. Reg. t. 1994.); foliis radicalibus teretibus subulatis, scapo paniculato rigido glutinoso, sepalis petalisque obovatis acutis concavis unguiculatis, labelli laciniis lateralibus obovatis retusis intermedia reniformi undulatâ emarginatâ, cristâ unidentatâ truncatâ basi tuberculosâ, alis columnæ parvis carnosissimis.—*Mexico*.—Of these there are several varieties, one of which has the back of the lip covered with crimson spots, and another has no spots at all.

97. *O. longifolium* (Lindl. Bot. Reg. 1841. misc. 56. 1842. t. 4.); foliis teretibus longissimis diffusis, scapo erecto dense paniculato, sepalis petalisque apiculatis obtusis concavis, labelli lobis lateralibus patentibus oblique oblongis subquadratis intermedio obovato bifido basi angustato minoribus, tuberculo basi depresso anticè tricorni glabro, columnæ alis subulnatis brevibus rotundatis.—*Mexico*.—This forms dense panicles, three feet long, of very large and showy yellow and brown flowers. Its leaves are often three feet long, and hang down or spread upon the ground instead of standing stiff and erect.

98. *O. ascendens* (Lindl. in Bot. Reg. 1842. sub t. 4.); foliis erectis junceis scapo stricto paniculato æqualibus, sepalis petalisque obovatis obtusis concavis, labelli lobis lateralibus nanis erectis intermedio reniformi emarginato, tuberculo ovato 7-dentato, columnæ alis linearibus integerrimis incurvis.—*Guatemala*.—This has much the habit of *O. Cebolleta*, but the linear wings of the column, the small erect lateral lobes of the lip, and the many-toothed tubercle distinguish it at once.

99. *O. brachyphyllum* (Lindl. in Bot. Reg. 1842. sub t. 4.); foliis crassissimis brevibus erectis acutis, paniculâ laxâ pauciflorâ, sepalis petalisque obovatis acuminatis longè unguiculatis, labelli lobis lateralibus patentibus ovalibus acutis intermedio reniformi emarginato longioribus, tuberculo tricorni subverrucoso, columnæ alis subulnatis brevibus rotundatis.—*Mexico*.—This has very short stiff leaves, and small panicles, not above 18 inches high.

100. *O. nudum* (Bateman in Bot. Reg. sub t. 1994.) foliis teretibus, sepalis petalisque subsessilibus rotundatis acutis concavis, labelli lobis lateralibus linearibus recurvis intermedio obovato emarginato, cristâ callis 3 linearibus in fronte lunulâque crenatâ convexâ ad basin.—*Caraccas*.—Sepals and petals green, spotted with brown. Lip very long, pure yellow.

* * * Species whose station is unknown.

101. *O. Lindenii* (Lodd. cat. ed. 2. no. 1326.).—*Mexico*.—The habit of this plant is that of a small specimen of *O. carthaginense*; its labellum is, as I learn from Mr. Loddiges, of an intense black chocolate colour; and the flowers appear in a simple zigzag spike, which continues to grow after the flowers have fallen off. It is no doubt a very distinct species, but not having seen it in flower I cannot determine its position in the genus.



Miss Drake, ac.

M. Gussé del.

Disa grandiflora.

Pub^d by J. Redway & Sons, 169, Piccadilly, Dec. 1841

Printed by P. Colver.

DISA GRANDIFLORA.

- Disa grandiflora.* *Linn. Suppl.* 406. *Swartz, Act. Holm.* 1800, p. 210. *Thunberg, Fl. Cap. ed. Schultes,* p. 7. *Ker in Brande's Journal,* vol. 4. p. 205. t. 5. f. 1. *Botanical Register,* t. 926. *Lindl. Gen. & Sp. Orch.* p. 347.
- Satyrium grandiflorum.* *Thunb. prodr. fl. capens.* p. 4.
- Disa uniflora.* *Bergii Plantæ Capenses,* p. 348. t. 4. fig. 7.
- Orchis africana flore singulari herbaceo.* *Raii Historia Plantarum,* vol. 3. p. 586.
-

I trust I may be excused for closing this work with the noble plant now represented, even although it is not figured for the first time; for all the previous delineations fail entirely in doing it justice.

It is the finest Orchidaceous plant found at the Cape of Good Hope, and we may almost add in the world; whether we regard the large size of its regal flowers, or the brilliant colours by which they are accompanied. The magnificent specimens from which the accompanying drawing has been made were sent in a dried state from the Cape by Mr. Harvey, who remarks that the specimen is the largest he ever saw, the stem being two feet and a half high, and the flowers five inches and a half from tip to tip of the expanded sepals.

It occurs in various parts of the Colony, but principally on Table Mountain, where it is so common, according to Mr. Harvey, that every stream is literally bordered with it in March. Sir John Herschel tells us, that the temperature of the situations where it is found is *occasionally* as low as $31\frac{1}{2}^{\circ}$, and also occasionally as high as $96\frac{1}{2}^{\circ}$. Its habitat is on the margin of pools of standing water, the drainage of the boggy slopes of the Mountain, wherein its roots are immersed. These are dry or nearly so in summer. In such localities it is of course frequently involved in the dense mist of the clouds, which, even in the hottest months, often cover its habitation for a week or a fortnight uninterruptedly.

Alas! that I must add that it has hitherto proved uncultivable. It occasionally indeed is imported, and in the year 1825 it even flowered at South Lambeth near London, in the garden of Mr. William Griffin, a zealous and well-known collector of bulbous and other plants. But it soon disappeared, and no other English specimen seems to have been put on record.

In the absence of all certainty as to the mode of cultivating this plant, some speculation may be indulged in. We would then advise those who are in communication with the Cape, to proceed as follows.

We should procure the roots immediately after the leaves are withered; we should pack them in moist moss, and so transport them to Europe. On their arrival here, we should preserve them in the same state in a cool greenhouse till the month of February, at which time we should plant them in sandy well-drained peat and transfer them to the stove. As soon as the roots begin to grow we should water them, gently, for the first time, and we should then force them in the manner usual with Orchidaceous plants, keeping them in a hot damp atmosphere. There, and under such circumstances, it is to be presumed they would flower. During the whole of the growing season we should keep the plants in the same house, until the leaves were fully formed and the flowers expanded;

thereupon we should immediately transfer them to an intermediate house, (half stove half greenhouse) until the leaves were withered. Subsequently to that period we should keep them in a cold shaded frame, just moist and no more, till the beginning of winter. Up to the beginning of February we should just keep them from frost in a cold conservatory—and as soon as February arrived we should begin again to treat the plant as at first. In addition to all this, we should keep the pots in pans full of water during all the time that the plants are in rapid growth.

Is it not worth the while of some one of our great Amateurs to try this experiment?

INDEX TO THE PLATES.

AERIDES AFFINE	15	HOULLETTIA BROCKELHURSTIANA	43
——— QUINQUEVULNERA	30	HUNTLEYA VIOLACEA	26
——— DIFFORME <i>Frontisp.</i>			
BRASSIA MACROSTACHYA	6	LÆLIA CINNABARINA	28
BURLINGTONIA RIGIDA	36	LEPTOTES SERRULATA	11
——— VENUSTA	2		
CAMAROTIS PURPUREA	19	MAXILLARIA EBURNEA	40
CALANTHE BREVICORNU	9	MILTONIA CANDIDA	21
——— PLANTAGINEA	24	——— CLOWESII	34
——— VERSICOLOR	42	MONOMERIA BARBATA <i>Frontisp.</i>	
CATASETUM LONGIFOLIUM	31		
——— LAMINATUM	38	OBERONIA RUFILABRIS	8
——— SACCATUM	41	——— GRIFFITHIANA	8
CATTELEYA SUPERBA	22	ONCIDIUM SANGUINEUM	27
——— BICOLOR	5	——— PECTORALE	39
CHILOSCHISTA USNEOIDES <i>Frontisp.</i>		——— BARKERI	48
CYCNOCHEUS CHLOROCHILON	16	ORCHIS FOLIOSA	44
——— MACULATUM	33		
CYMBIDIUM GIGANTEUM	4	PHAIUS BICOLOR	23
——— ELEGANS	14		
CYRTOCHILUM STELLATUM	7	SACCOLABIUM BLUMEI	47
——— MACULATUM	25	——— AMPULLACEUM	17
CYRTOPODIUM PUNCTATUM	12	——— ACUTIFOLIUM <i>Frontisp.</i>	
		——— CALCEOLARE <i>Frontisp.</i>	
 		——— COMPRESSUM	32
DENDROBIUM CÆRULESCENS	18	SCHOMBURGKIA CRISPA	10
——— NOBILE	3	——— MARGINATA	13
——— MACROPHYLLUM	35	SOPHRONITIS GRANDIFLORA	5
DIOTHONEA IMBRICATA	40	SOBRALIA LILIASTRUM	29
DISA GRANDIFLORA	49	STANHOPEA DEVONIENSIS	1
DRYMODA PICTA	8	——— WARDII	20
 		SUNIPIA BICOLOR <i>Frontisp.</i>	
EPIDENDRUM PHENICEUM	46	——— SCARIOSA <i>Frontisp.</i>	
——— VITELLINUM	45		
 		VANDA CRISTATA <i>Frontisp.</i>	
GALEANDRA DEVONIANA	37		

DIRECTIONS TO THE BINDER.

The Wreath enclosing "Sertum Orchidaceum" will face the title-page.

Next the title-page follows the Dedication.

Next the Dedication come the sheets with the signature *Frontispiece*.

Then follow the Plates from I. to XLIX. in their order, with the letter-press to face each.

Last is taken the Index.



ORIENTAÇÕES PARA O USO

Esta é uma cópia digital de um documento (ou parte dele) que pertence a um dos acervos que fazem parte da Biblioteca Digital de Obras Raras e Especiais da USP. Trata-se de uma referência a um documento original. Neste sentido, procuramos manter a integridade e a autenticidade da fonte, não realizando alterações no ambiente digital – com exceção de ajustes de cor, contraste e definição.

1. Você apenas deve utilizar esta obra para fins não comerciais. Os livros, textos e imagens que publicamos na Biblioteca Digital de Obras Raras e Especiais da USP são de domínio público, no entanto, é proibido o uso comercial das nossas imagens.

2. Atribuição. Quando utilizar este documento em outro contexto, você deve dar crédito ao autor (ou autores), à Biblioteca Digital de Obras Raras e Especiais da USP e ao acervo original, da forma como aparece na ficha catalográfica (metadados) do repositório digital. Pedimos que você não republique este conteúdo na rede mundial de computadores (internet) sem a nossa expressa autorização.

3. Direitos do autor. No Brasil, os direitos do autor são regulados pela Lei n.º 9.610, de 19 de Fevereiro de 1998. Os direitos do autor estão também respaldados na Convenção de Berna, de 1971. Sabemos das dificuldades existentes para a verificação se uma obra realmente encontra-se em domínio público. Neste sentido, se você acreditar que algum documento publicado na Biblioteca Digital de Obras Raras e Especiais da USP esteja violando direitos autorais de tradução, versão, exibição, reprodução ou quaisquer outros, solicitamos que nos informe imediatamente (dtsibi@usp.br).