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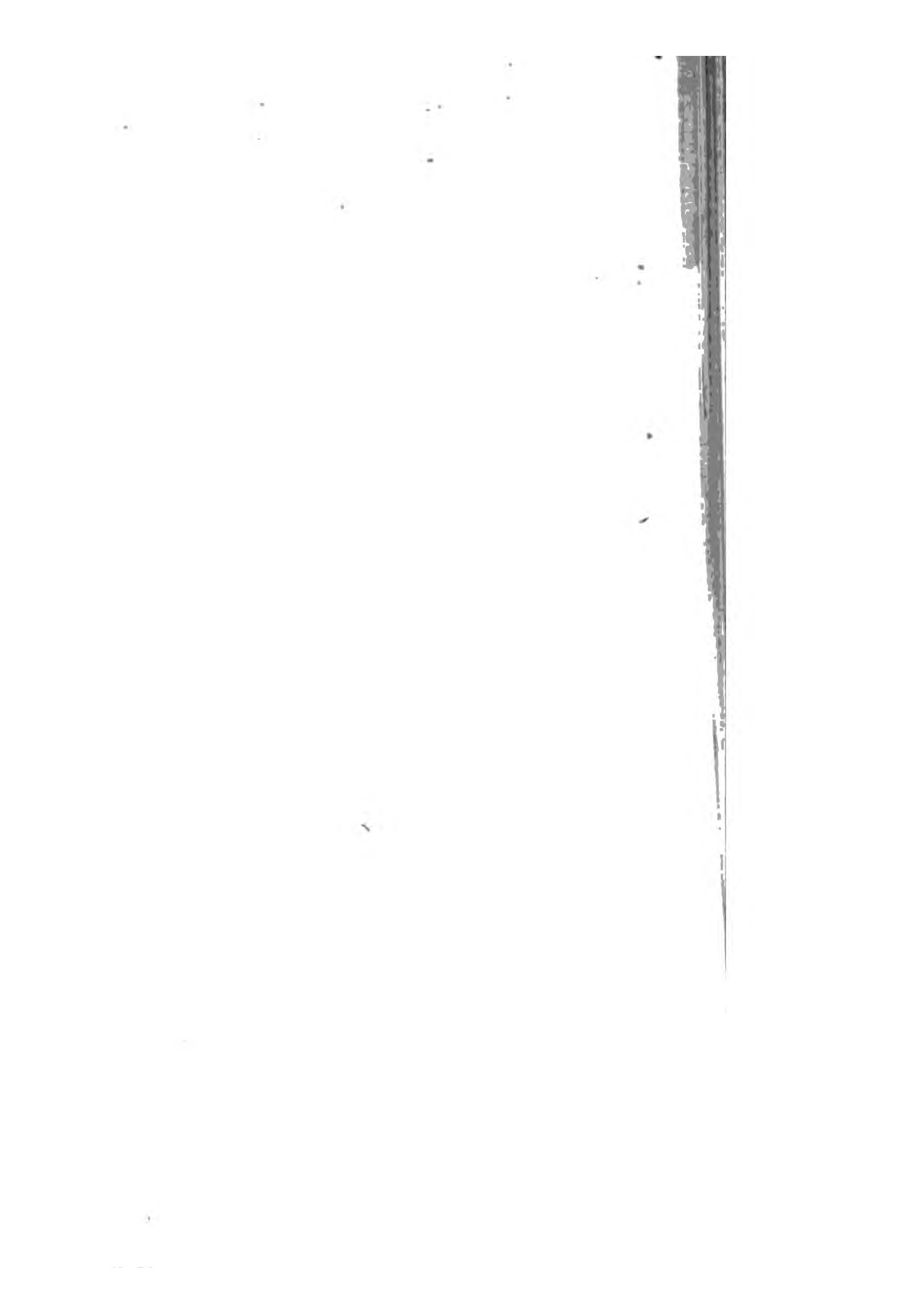
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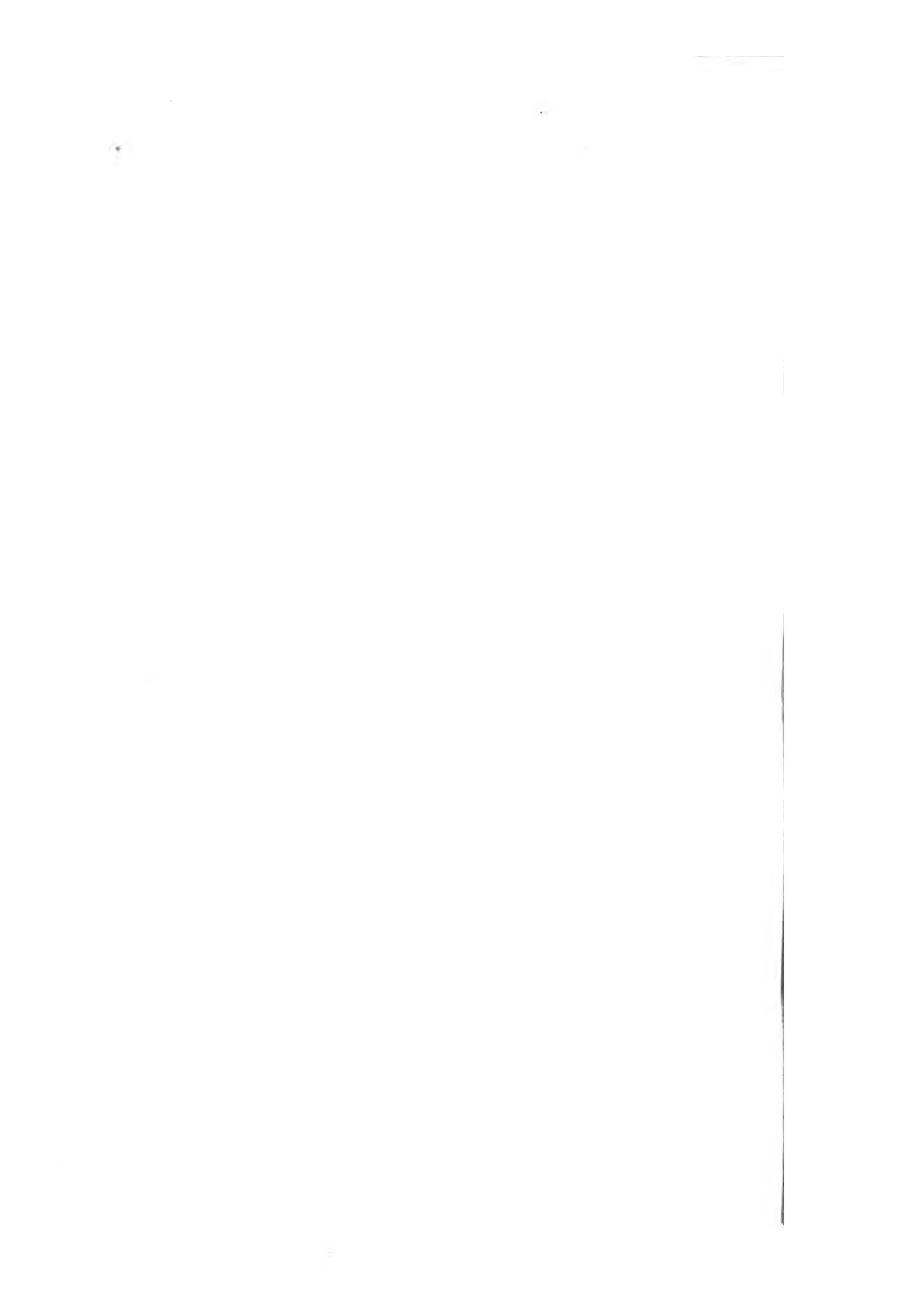
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REFUGIUM BOTANICUM  
OR  
FIGURES AND DESCRIPTIONS  
FROM LIVING SPECIMENS  
OF  
LITTLE KNOWN OR NEW PLANTS  
OF BOTANICAL INTEREST.

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EDITED BY  
W. WILSON SAUNDERS, F.R.S., F.L.S.

THE DESCRIPTIONS BY  
H. G. REICHENBACH,  
PROFESSOR OF BOTANY, AND DIRECTOR OF THE BOTANIC GARDEN AT HAMBURGH,  
&c. &c. &c.

THE PLATES BY W. H. FITCH.

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VOL. II.

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LONDON:  
JOHN VAN VOORST, 1, PATERNOSTER ROW.

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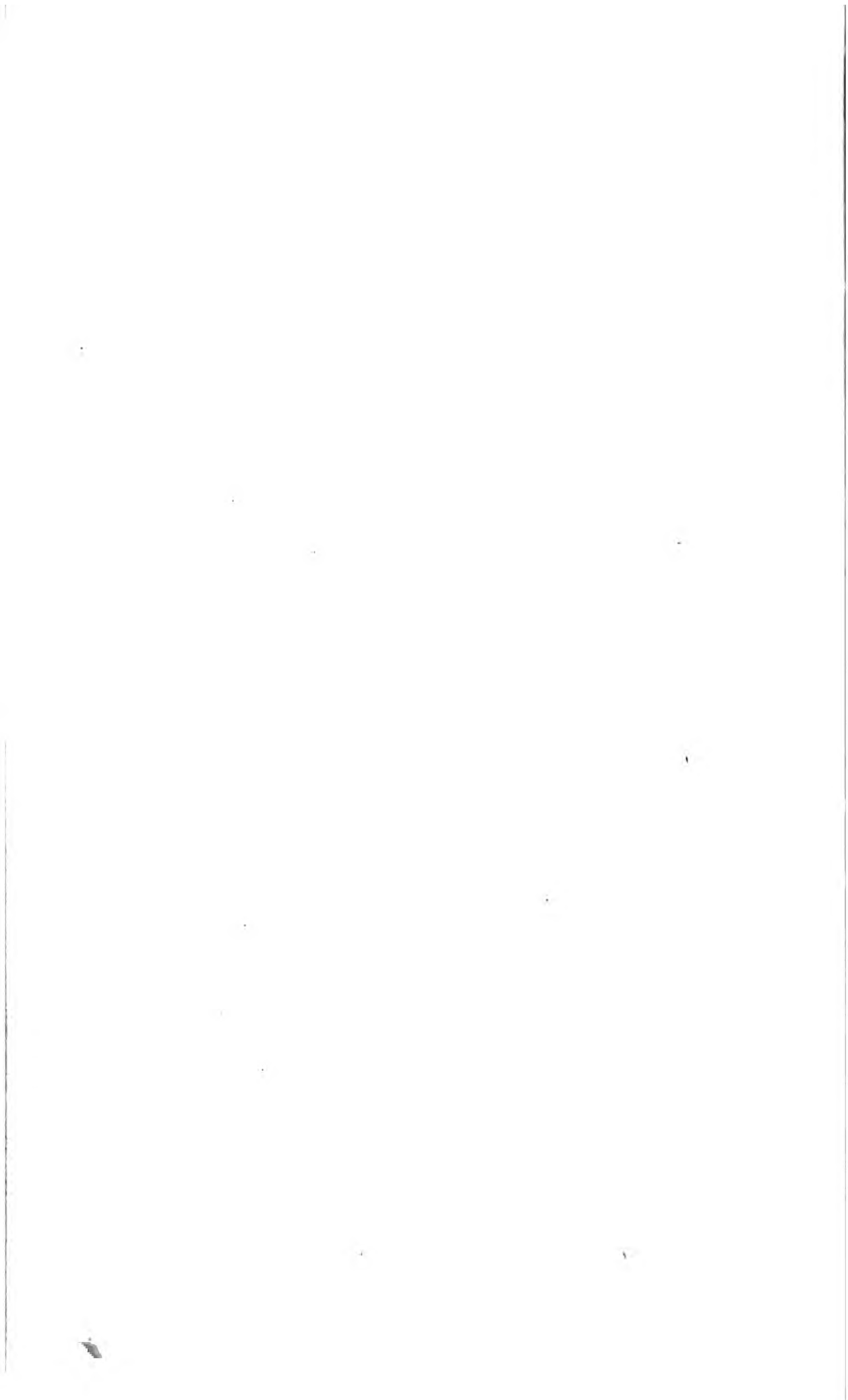
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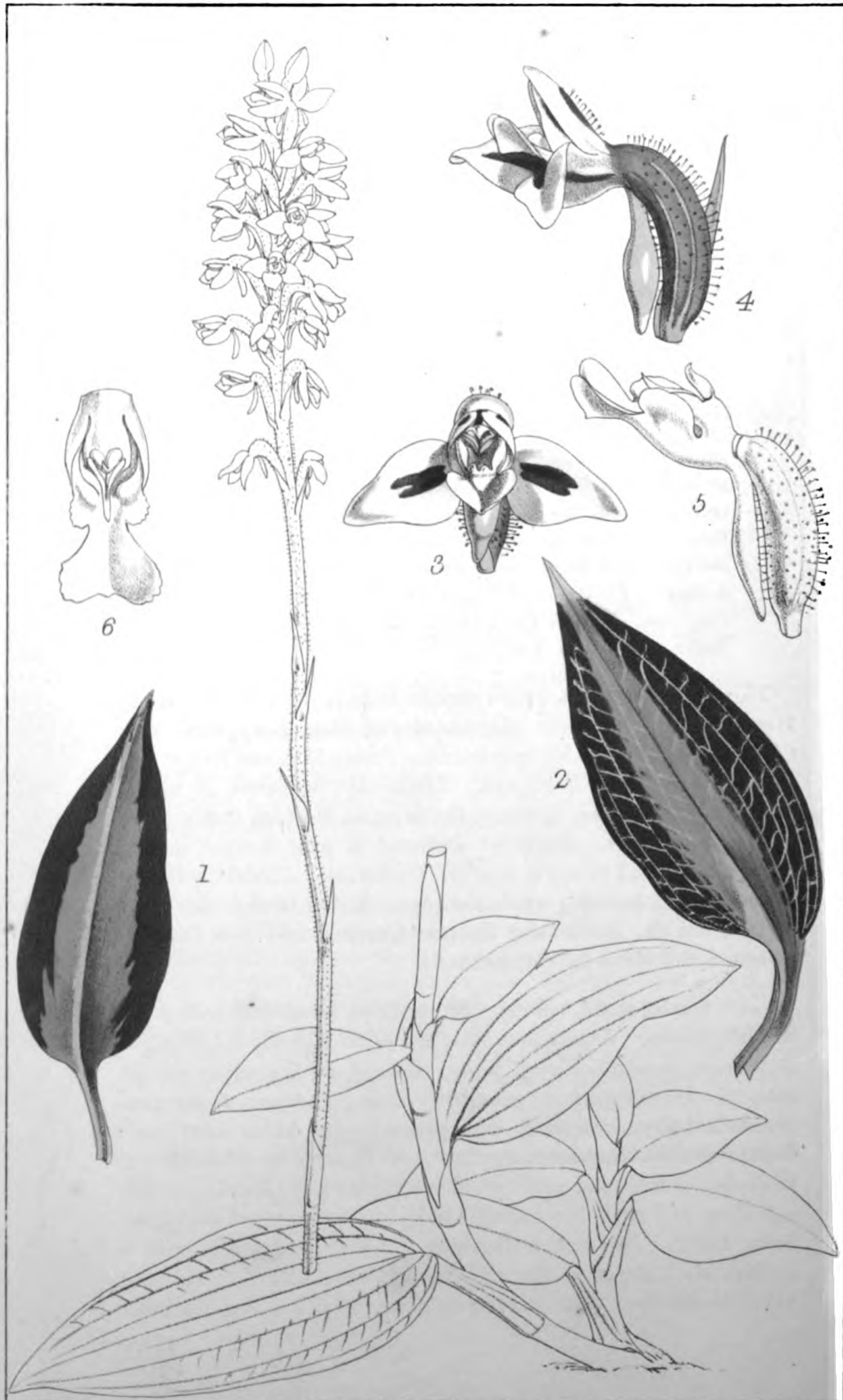












W.H. Finch, del. et lith.

J.N. Hitch, imp.

*Physurus pictus*, Lindl.

## TAB. 73.

Tribe NEOTTIACEÆ.

Genus PHYSURUS, L. C. Rich.

P. PICTUS (Lindl. Gen. s. Syn. Orchid. 504!) Caule abbreviato ascendente, foliis rosulatis petiolatis cuneato-cordatove oblongis acutis superne varie reticulatis seu argyreo-disciferis, pedunculo elongato puberulo vaginis acutis ad quinque, raceme densifloro, bracteis triangulo-acuminatis uninerviis hyalinis glandipilibus ovaria incurva glandipilia æquantibus, sepalis ligulatis acutis extus calvis, seu supra nervum medium glandipilibus, tepalis cuneato-spatulatis acutiusculis sepalo dorsali appressis, labello columnæ basi adnato trifido, laciniis lateralibus parte libera angulatis, lacinia media flabellata emarginato biloba, calcari a basi attenuato fusiformi acuto, ovarium pedicellatum subæquante, columnæ rostello triangulo bidentato.—Lindl. in Bot. Reg. 1444, 61! *Microchilus pictus*, Morren, Ann. Soc. de Gard. 1845, tab. 18! *Ophrys argentacea*, Vellozo, Flumin, ix. t. 61!

This Brazilian plant would appear to have been discovered by Herr von Martius! near Mandiocca and Boto Fogo, also near Capocabara: we saw his specimens. Prince Max von Neu Wied! found it near Rio Belmonte. Lophnath! collected it in the woods of Capocabona (perhaps the same as Martius' Capocabara) on decayed leaves. Beyrich! gathered it near Novo Friburgo. A. de Chamisso! found it near St. Catherine. Riedel! collected it near Mand (so they wrote the place on the label of the plant given from St. Petersburg Botanic Garden) and Rio Janeiro; collected also there by Gaudichaud!

*Roots* terete, acute, villous. *Stems* short, ascending, with a few rosulate leaves. *Leaves* petiolate, the *petioles* partly sheathing at their base, cuneate-oblong, acute, adorned on the upper surface with silvery net-work or a silvery disk. *Common flower-stalk* glandular-hairy, elongated, with generally five acute hairy short distant *sheaths*. *Raceme* many-flowered. *Flowers* crowded. *Bracts* lanceolate-acuminate, one-nerved, glandular-hairy outside, nearly equalling in length the curved stalked *ovary*, covered with glandular hairs. *Perigonæ* milk-white. *Sepals* and *tepals* with a median black streak in the middle, seldom reaching to the base, never to the tips, quite smooth outside, or with a few glandular

hairs on the middle lines; sepals ligulate-acute, the lateral ones broad; tepals spatulate-acute, under the dorsal sepal. *Lip* adnate to the base of column, trifid in its free protracted part; side-laciniae angulate, middle one cuneate-obovate emarginate, some with a little apiculus. *Spur* fusiform, equalling or nearly equalling the stalked ovary. *Column* short, with a protracted triangular bidentate rostellar process.

There are various settings of this vegetable gem, quite a rival of Malayan and Indian Anecochili. Sometimes all the leaves are dark green, with silver reticulations over the leaves; at other times the leaves are quite covered with a silver hue, and only the margin is dark green with some silver net-work. And then there are intermediate types. We felt so pleased with these variations, that we established a variety called *holargyrus*, with the great silver disk; and one called *reticularis*, for that with complete net-work (*Rchb. fil. in Catalog. der Orchideen Sammlung von G. W. Schiller, Hamburg, 1857; p. 59 and plate of Orchid. Brasil. inedit.*) Yet these are but transitory states, developing from reasons we do not know. Mr. Green, the able Saundersian gardener, has observed such transitions as well as ourselves.

Materials:—Fourteen specimens, including wild ones, from all named collectors, except Von Martius; sketches made since 1846; living specimens in the garden.

Tab 73. — Plant. 1, 2, two leaves, both with a silvery disk; 3, flower, front view+; 4, flower, side view+; 5, the same, with sepals and tepals cut+; 6, column and lips, seen from the back of column+.—*H. G. R. f.*

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A small but beautiful plant, with variously variegated leaves and clear white flowers. The varieties of foliage are noticed by Prof. Reichenbach, and these are all naturally produced, being from plants sent from the vicinity of Rio by the late Mr. D. Bowman. Seeing how prone the plant is to variation in the markings on the leaves, there is little doubt but many interesting varieties might be obtained, if seedlings from any of the varieties could be procured. The plant thrives well when grown in small pots, and having a mixture of light turfy loam and sand, well mixed with a little sphagnum, to root into. It should be placed in a warm shady damp part of the stove, and requires a season of rest after the growth is made.—*W. W. S.*







W.H. Fitch del et lith

J.N. Fitch imp

*Oncidium Retemeyerianum* *Rehb. fil.*

## TAB. 74.

## Tribe VANDEÆ.

## Genus ONCIDIUM, Sw.

## Section MILTONIASTRUM.

O. RETEMEYERIANUM (*Rchb. fil. in v. Mohl. and v. Schlechtendal, Bot. Zeit.* 1856, 513!). Pseudobulbo obsolete, folio carnosio basi cuneato complicato oblongo acuto seu acuminato, pedunculo longe exserto racemoso, ramulis abbreviatis distantibus nunc suppositis, bracteis lineari-triangulis dein deflexis, perigonio bene carnosio, sepalis tepalisque oblongis apiculatis, nunc æqualibus, nunc tepalis multo majoribus, labello pandurato disco postico quinque papuloso, disco antico radiato striato, columnæ alis obtusatis deflexis.

Most probably a Mexican species. We obtained the first specimen in 1856, from Bremen, out of M. Retemeyer's garden, to whom the species was inscribed. It flowered, in 1857, with M. Chantin, of Paris, bearing very long inflorescences, with short and distant lateral racemes, as they are to be found in *Epidendrum fuscatum*. At length it appeared, in August, 1866, in Mr. Wilson Saunders' garden, where we have lately seen the plant in good health.

*Pseudobulb* nearly obsolete, consisting of two or three parts, oblong, and very remarkable for its throwing out *aërial roots* from the surface of the joints, as we have ascertained in M. Retemeyer's plant. *Leaf* solitary, cuneate, oblong-acute or acuminate, more or less keeled on the inferior side, very thick, covered all over with a purplish or purplish violet hue. *Peduncle* stout, with a few distant acute sheaths, purplish with innumerable green dots. *Raceme* with three to fourteen flowers. *Bracts* acutely triangular, finally bending down so as to give the raceme a squarrose appearance, one-third to one-half of the stalked *ovary*. The *flower* is of a fleshy substance, and has reminded us of *Cotonia peduncularis*, Rchb. f. 1857 (Thwaites, 1864), probably in consequence of the very dark lip. *Sepal* oblong-apiculate or acuminate, like the *petals*, which are either nearly equal to the sepals or much broader and blunt: we have observed them all pallid yellow, with pallid chocolate-brown undulated spots round the margins or crossing over the whole; they have been observed by our artist deep horse-chestnut brown, with a few yellow rays

and lobes. The leaf is ovate-lanceolate, slightly acute, base cuneate, the base of the leaf and the sides are cuneate, the leaf is rounded, two pairs quadrangular, the leaf is slightly curved. The anterior lobe of the lip has a few tubercles. The column is short. The ovary is rounded and a slender stalk with a purplish limb. The ovary is rounded and a slender stalk with purplish spots. *Anterior lobe* of the lip is a broad transverse *antheridium* with a transverse *antheridium*. We observed a callosity, with a silicate line on each side of the lip, in the original specimen in 1847. Whether it is constant we cannot say: it has not been represented in our atlas.

The specimens out of Mr. Thunberg's garden are remarkable for their odd positions, two feet and the one bearing two developed short distant inflorescences, the terminal one having ceased to flower, the other bearing the lateral inflorescences still very young and the central inflorescence in flower. All the specimens we have seen prove the flowers to develop in long intervals one after the other, so that the case represented by Mr. Fitch, of five flowers nearly equally developed, may be regarded as a very curious anomaly, perhaps due to Mr. Green's unusual ability in growing these plants (?).

Materials for description:—The sketches of M. Retemeyer's plant, three herbarium specimens, and the recent inspection of the specimen in the Saundersian collection.

Tab. 74.—A plant, one leaf cut to show its thickness. 1, expanded flower; 2, side view of flower; 3, pollinarium, oblique side view.—H. G. R. f.

This species of *Oncidium*, so very remarkable in the colour and substance of its flowers, was sent to me from Mexico by Mons. Boucard. It does not flower freely, and is not a vigorous grower. It succeeds best in a moderate temperature, suspended on a block or in a basket near the light. It must be kept dry during the winter, but will bear a moist atmosphere when growing.—W. W. S.



and blotches. *Lip* very fleshy, constricto-pandurate, slightly acute, deep purplish violet, with the base of the calli and the sides near these yellow. *Calli* blunt, rounded, two pairs (quadrigeminous), with an interjected central one. The anterior disk of the lip has some radiating impressions. The *column* is short. The *wings* rounded, bent downwards, yellow with a purplish limb. The *infrastigmatal table* is yellow, with purplish spots. *Anthercase* conical, blunt. *Pollinia* on a broad transverse *caudicula* with a transverse *glandula*. We observed a callosity, with a sulcate line on each side of the five calli, on the original specimen in 1856; whether it is constant we cannot say: it has not been represented by our artist.

The specimens out of M. Chantin's garden are remarkable for their long peduncles, two feet long, the one bearing two developed short lateral distant inflorescences, the terminal one having ceased to flower, the other bearing the lateral inflorescences still very young and the central inflorescence in flower. All the specimens we have seen prove the flowers to develop in long intervals one after the other, so that the case represented by Mr. Fitch, of five flowers nearly equally developed, may be regarded as a very curious anomaly, perhaps due to Mr. Green's unusual ability in growing these plants (?).

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W.H. Fitch del et lith.

J.N. Fitch imp.

*Oncidium carinatum*, *Knw. and Westc.*

## TAB. 75.

Tribe VANDEÆ.  
Genus ONCIDIUM.

- O. CARINATUM, *Knw. and Westc. Fl. Cab.* ii. 1838, p. 31! Pseudobulbis ovatis compressis basi vulgo quadrifoliatis, foliis geminis superioribus laminigeris, geminis inferioribus vaginis triangulis, folio in pseudobulbo solitario cuneato-ligulato acuto, pedunculo axillari gracili longe exserto racemoso seu paniculato, sæpe viviparo, ramulis brachycladis, vaginis distantibus in parte anantha, bracteis triangulis, ovaria pedicellata longe non æquantibus, sepalis ligulatis acutis lateralibus bene latioribus, tepalis oblongis acutis seu triangulis, labello oblongo ligulato retuso bilobo emarginato, callis elevatis quadriseriatis, externis ternis, internis geminis seriatis, anticis internis vulgo maximis, insula velutina parva inter callos internos utrinque una interposita, columna trigona aptera, tabula infrastigmatica utrinque supra basin in cornu porrectum extensa, anthera rostrata.—*Leochilus carinatus*, *Lindl. Bot. Reg.* 1842, Misc. 22! *Oncidium carinatum*, *Knw. and Westc.*; *Richb. f. in Walp. Ann.* vi. 772!

This is a well-known Mexican plant, yet it is very seldom seen in collections of specimens. We have never seen any wild specimens except our own, from Zacuapan in Mexico, gathered by Leibold, unless a very imperfect one collected by Liebmann, at Tealtengo near Vera Cruz, preserved in the Museum of Copenhagen, be the same.

*Aërial roots* filiform, very thin. *Pseudobulbs* ovoid, ancipitous, with four *sheaths* underneath, two of which are triangular, the two superior articulated with oblong-ligulate acute blades. The single *leaf* on the pseudobulb is of the same shape as the highest of the infrabulbous leaves, generally greater, often of a very pale yellowish green, as the pseudobulb is usually. *Peduncles* long, even very long, terete, racemose or with short lateral branches, hence paniculated; we have observed it twisted, and also sometimes viviparous. *Sepals* ligulate-triangular, the lateral ones broader, all light copper-coloured. *Tepals* ovate-acute or quite triangular, with a deep copper-coloured limb, and some copper-coloured dots and streaks on a yellow disk. *Lip* oblong-ligulate, retuse, often emarginate, yellow; the crests white, with crimson



and some chestnut-brown streaks and spots on the disk; four series of clavate cartilaginous stalked calli, often with unequal and gyrose summits, in four rows from the base to the middle, or in rays of two or three, and often one velvety spot in the inner rows. *Column* yellowish, with a whitish *anther*, trigonous. *Rostellum* long-beaked. *Anther-case* rostrate. The *infrastigmatal table* extends towards the middle of each side in a falcate or horn-like process. *Column* wingless.

Materials :— Inspection of Dr. Lindley's type, and copy of his sketch; our own sketch; fifteen herbarium specimens.

Tab. 75.—A middle-sized plant. 1, expanded flower, front view+; 2, side view of a flower+; 3, expanded lip+; 4, another+; 5, side view of column+; 6, front view of the same+; 7, side view of the same; anther, fallen+; 8, pollinarium+.—*H. G. R. f.*

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This small species, which flowers freely, I obtained from Mr. Low, of Clapton, who imported it from Mexico. It requires the same kind of treatment as the last species, *Oncidium Retemeyerianum*.—*W. W. S.*





W. H. Finch del. et lith.

J. N. Pritch. int.

*Lockhartia verrucosa* Rehb. f.

## TAB. 76.

## Tribe VANDEÆ.

## Genus LOCKHARTIA, Hook.

*L. VERRUCOSA*, *Rehb. f. in Hambg. Gtz.* 1859, p. 53! Foliis angustis apice attenuatis, obtusatis cum apiculo, racemis lateralibus nunc addito racemo terminali, omnibus paucifloris, basi vaginatis, vaginis bracteisque ovatis acutis basi cordatis ochreatis, ovariis pedicellatis bracteas longe excedentibus, sepalis ovatis apiculatis reversis, tepalis oblongis cum apiculo, labelli quinquefidi laciniis posticis porrectis semifalcatis retusis, medianis triangulis, lacinia antica flabellata undulata bifida, callo basi lævi hexangulo depresso introrsum gyroso, callo inter partitiones medias magno quadrisulcato transversim multisulcato, columna humilia alis triangulis seu dolabriformibus hinc lobatis.—*Fernandezia verrucosa*, *Lindl. herb.!* *F. robusta*, *Batem. in Bot. Mag.* 1866, t. 5592!

We knew this species for a long while only as a garden plant. It was introduced by Consul Schiller, with whom it has often flowered. We also saw it in the Saundersian collection. It comes from Guatemala, *Dr. Bernouilli!*

*Stems* cæspitose, reaching the height of a foot. *Leaves* distichous, triangular, bluntly acute, often inflexed at the apex. *Racemes* numerous, lateral or terminal, with a few flowers, often all bent to one side. *Sheaths* and *bracts* ovate-triangular, cordate, hollowed out, herbaceous, shorter than the stalked *ovary*. *Flowers* deep lemon-colour, the inferior part of lip with crimson streaks and spots, the column-wings with crimson spots, and some such streaks under the stigmatal hollow. *Sepals* ovate, apiculate, reverse. *Tepals* oblong, with a little short point. *Lip* quinquefid, the basilar *lacinia* ligulate, retuse, sometimes angulate over the anterior base, the lateral ones triangular, the anterior flabellate, bifid, crispo-undulate, furnished with an hexagonal tumour on the base, and before with a trisulcate tumour with many transverse furrows, reminding one of some pavement. *Column* short. *Wings* triangular, sometimes lobed. *Stigmatal hollow* ligulate.

*Materials*:—Six Guatemalense specimens; seven garden specimens, and many such flowers; Dr. Lindley's sketch, and my own sketches prepared at various times.

Tab. 76.—A part of a plant, one stalk cut. 1, flower, front view+ ; 2, flower, side view+ ; 3, column anterior side+ ; 4, pollinarium, oblique view+.—*H. G. R. f.*

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Like other species of *Lockhartia*, this requires a peculiar treatment to grow it well. It seems to thrive best on a block, if not allowed to get too dry at the roots ; and it will also do well, raised in pots of rough peat and sphagnum, the pots being two-thirds filled with drainage crocks. It requires the temperature of the East India house, or the warm portion of the Mexican house. The plant flowers very freely when in health, and it is well worth growing, from its neat habit and beautiful and elegant yellow pendant flowers. My plants were received from the late G. A. Skinner, to whom Orchid-growers are so much indebted. The locality where it was obtained is unknown to me.—*W. W. S.*





W.H. Ereb, del. et lith.

J.H. Fitzhamp

*Trichocentrum cornucopiæ*, Linden and Rehb. f.

## TAB. 77.

## Tribe VANDEÆ.

Genus TRICHOCENTRUM, *Pöpp. and Endl.*

*T. CORNUCOPIÆ*, *Linden and Richb. f. in Gardener's Chronicle*, 1866, p. 266 c. Foliis planis a basi petiolari cuneato oblongis acutis, apice summo tridentatis, pedunculis basilaribus racemosis unifloris, sepalis tepalisque sublatis cuneato-oblongis apiculatis, sepalo summo fornicato, labello pandurato retuso emarginato, disco crasso velutino carini sabbreviatis angulatis senis triseriatis in basi, calcari gracili flexo ovarium cylindraceum non æquante, columnæ brevis alis dolabriformibus lobatis serratis.

A very few specimens of this new species were sent by Mr. Wallis to Director Linden from Rio Negro (?). We have only seen the plant in the collection of Director Linden and W. W. Saunders, Esq. It is allied to *T. purpureum*, Lindl., but that is different, at first sight, by the very ample wide spur, two erect teeth at the base of the lip, and narrow wings, not to speak of the colour.

*Rhizome* short, very stout. *Pseudobulbs* nearly obsolete, very short, from a single joint, terete, unisulcate, one-leaved. *Leaf* oblong-acute, from a cuneate base, with three minute teeth at the end, from three to five inches long, sometimes more than one inch wide, the middle keel of the under side rounded, green, fleshy. *Peduncles* basilar, with one-flowered *racemes*. *Bract* triangular, acute, herbaceous, much shorter than the stalked *ovary*. A rudiment of the axis crowned by one or two abortive bracts. *Sepals* cuneate-oblong, apiculate, the superior one fornicate, yellowish white. *Tepals* broader, blunter, the same colour as the sepals. *Lip* connate at its base with the column, broadly cuneate, oblong-pandurate, wavy on its sides, emarginate at its free end, sometimes minutely toothed. *Disk* thickened towards the base, and bearing six triangular short *calli*, standing in three rows or only in two rows, the four intermediate ones standing close to each other. Both the surface of the lip and the calli are velvety, which becomes more conspicuous in the dried flowers. The *lip* is white, with a sulphur-coloured disk. The *keels* are reddish orange, with bright yellow radiating lines. The short *column* has



two triangular blunt serrulate *wings*, whitish, as is the column, but with purplish dots. The *anther* is oblong-acute, velvety, white, with small triangular valves of the locelli. *Pollinia* pyriform, retuse, channelled on the inferior side on a broad triangular *caudicula*, now rounded, now apiculate at the base, bearing a brown small ligulate *glandula*. We have not seen such a narrow caudicula as is represented by Mr. Fitch.

Materials : — Only two dried flowers ; inspection of the living plants with Messrs. Linden and Saunders ; sketches and descriptions made twice from the living plant.

Tab. 77. — A plant. Side view of the flower, sepals and tepals removed + ; 2, lip and spur + ; 3, column, front view + ; 4, anther-case + ; 5, 6, 7, pollinaria + (4, 6, 7, from Professor Reichenbach's sketches).—*H. G. R. f.*

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The species of the genus *Trichocentrum* prefer growing on blocks of wood to any other method of growth that they have been subjected to at Hillfield. They should never be allowed to become dry, should be kept near the light, and shaded from the mid-day sun. They do well in the Mexican house. So treated the species flower freely, and the plants appear very healthy and strong. This plant I received from the rich collection of Mons. Linden, of Brussels.—*W. W. S.*





W. H. Fitch del et lith.

*Maxillaria obscura* Lindl. & Rehb. fil.

J N Fitch imp

## TAB. 78.

Tribe VANDEÆ.

Genus MAXILLARIA, *R. and P.*

- M. OBSCURA*, *Lind. and Rehb. fil. Beit. Orch. Centr. Amer.* p. 317, tab. vi. fig. ii. iii. 4—9! Pseudobulbis densissime aggregatis, pyriformibus oblongisve, obtuse ancipitibus, utrinque fornicatis, tandem rugosis, monophyllis, foliis nunc ultra pedibus, cuneato oblongo-ligulatis, acutis, cum apiculo, superne prasinis, inferne pallidioribus costa mediana valde prominula, rugis parvis transversis apicem versus, pedunculis pauci-vaginatibus, vaginis arctis apice acutis, bractea ampliori, ovarium excedente, sepalis oblongo-ligulatis seu triangulo-ligulatis acutis, lateralibus divergentibus demum deflexis, tepalis ligulatis acutis sepalo summo adpositis seu suppositis, labello trifido, laciniis posticis semiovatis antice obtusangulis seu acutangulis, callo ovato depresso interposito, disco laciniæ oblongæ acutæ antice incrassato, columna brevi, anthera carinato galeata, glandula oblunata seu retusa. — *M. cucullata*, *Hook. Bot. Mag.* 1842, tab. 3945!

According to Sir William Hooker, the type of his figure was introduced by Mr. Henchman. It would thus no doubt be of Mexican origin. We obtained flowers with sepals a little broader from Mr. Linden, who declared they came from New Granada. The plant is easily distinguished from genuine *M. cucullata* by not having an acute glandula, nor yet such a cucullate bract.

*Roots* filiform, straight, very hard, always without any hairs. *Pseudobulbs* close together, oblong-pyriform or oblong, obtuse, ancipitous, at length much wrinkled. *Sheaths* triangular, with a scarious inner border, shorter than the one-leaved bulbs. *Leaves* even more than a foot long, coriaceous, cuneate oblong-ligulate, bluntly acute, leek-green on the upper surface, paler beneath, with an obtuse keel over the middle nerve, and some transverse wrinkles towards the tip. *Peduncles* not much exceeding the bulbs, usually with two narrow acute sheaths. *Bracts* resembling the sheaths, exceeding the stalked ovary. *Sepals* ligulate-triangular, acute or oblong-ligulate acute, the lateral ones divaricate or bent down, all lake-brown, occasionally with yellow tips. *Tepals* shorter, under or near the upper sepal, of the same colour. *Lip* dark brown, trifid; lateral *laciniæ* semiovate,

obtuse or angulate, the middle ones ligulate, bluntly acute, with a thicker disk. A ligulate blunt depressed well-marked *callus* stands between the lateral laciniae. *Column* trigonous, short. *Anther* galeate, keeled. *Glandula* retuse or crescent-shaped.

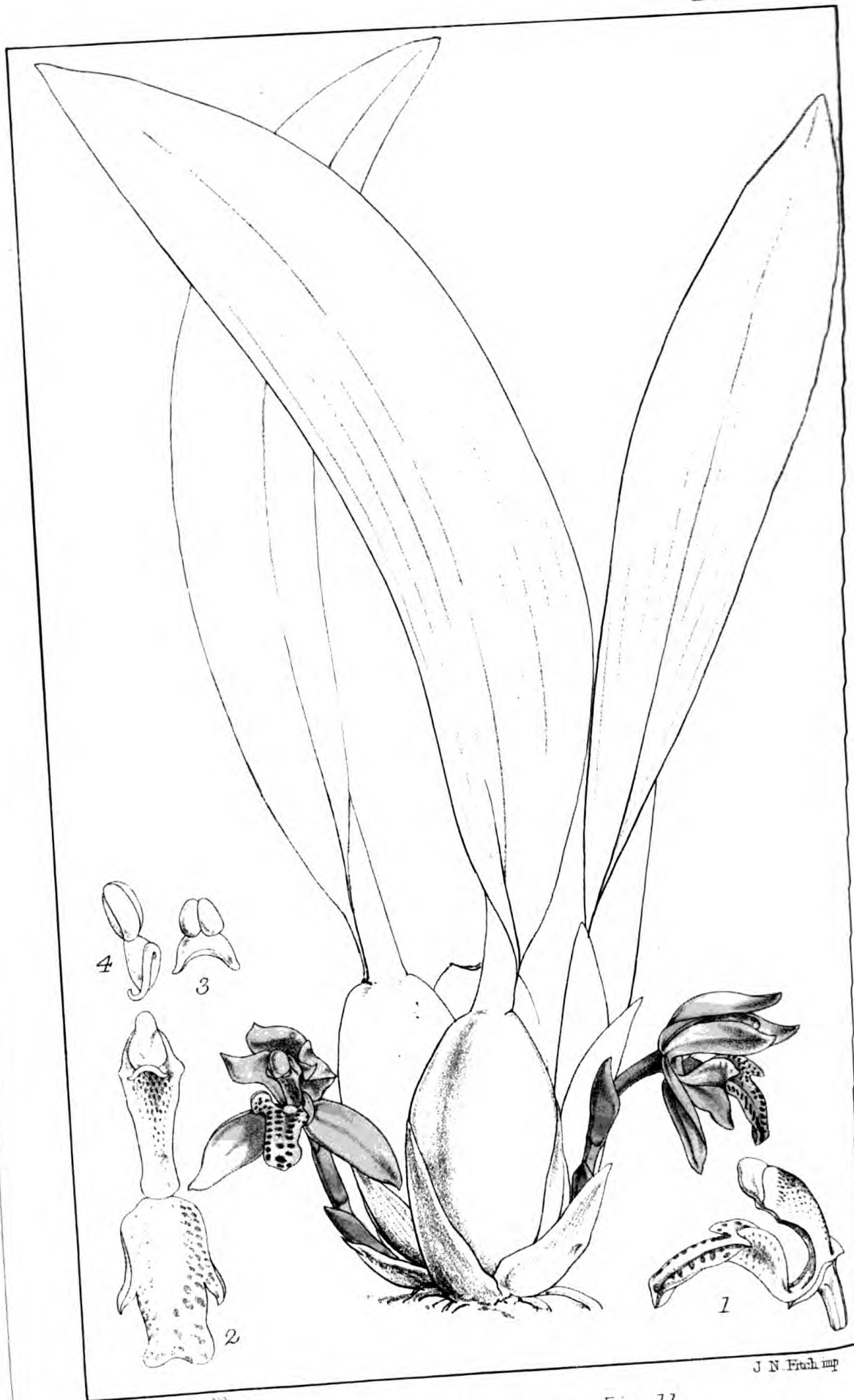
Materials:—Two flowers out of M. Linden's garden; our sketch, taken from these; description of the living plant in the Saundersian collection.

Tab. 78.—Plant. 1, oblique side view of lip and column +; 2, 3, 4, views of pollinarium +.—*H. G. R. f.*

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This free-flowering species of *Maxillaria* I obtained at one of Mr. Stevens' sales, and Mexico was stated to be its native country. It grows strongly and rapidly, either on a block or potted in rough peat and sphagnum, with plenty of drainage, and well supplied with water in the growing state. It requires the temperature of the Mexican house.—*W. W. S.*





W. H. Fitch, del. et lith.

J. N. Fitch imp.

*Maxillaria rufescens*, Lindl.

## TAB. 79.

## Tribe VANDEÆ.

Genus MAXILLARIA, *R. and P.*

- M. RUFESCENS, *Lindl. Bot. Reg.* 1835, t. 1802! 1836, t. 1848! *Var.* FLAVIDA, *Rchb. fil.* Pseudobulbis ovatis, ancipitibus, subtetragonis, deorsum lineolis sulcatis transversis exaratis monophyllis, folio cuneato oblongo-ligulato acuto, pedunculis porrectis pauci-vaginatibus, vaginis parte libera acutis, bractea subæquali, ovarium pedicellatum vix æquante, mento mediocri, perigonio bene carnosum, sepalis ligulatis obtuse acutis, tepalis cuneato ligulatis acutis, labello cuneato-oblongo trifido, laciniis lateralibus acutangulis, medianis, linea oblongata velutina inter utramque, columnæ trigonæ anthera mitriformi, glandula semilunari, perigonio flavo.

We shall have to speak of the original brown-flowered species on another occasion, a plate having been prepared. Whether this variety is a local one, or occurs among the typical species, we do not know.

*Pseudobulbs* ovate, subtetragonous, ancipitous, at length with many short small transverse impressed furrowed lines, one-leaved, more or less clothed with three or four ancipitous acute subscariose *sheaths*. The single *leaf* is cuneate, oblong-ligulate, acute, very leathery. *Peduncles* usually obliquely ascending, seldom nearly straight, with generally two acute *sheaths*. *Bracts* nearly equal to the superior sheath, not quite the length of the stalked *ovary*. *Sepals* ligulate, subacute, clear yellow, tinged outside with a brown hue. *Tepals* cuneate-ligulate, acute, clear yellow. *Lip* cuneate-oblong, trifid; the lateral *laciniæ* acutangular, middle *lacinia* ligulate, subacute or nearly retuse, the tip usually reflexed, a velvety *callus* between the lateral *laciniæ*; the colour the same as that of the other parts of the flower, but there are many small reddish brown blotches on both surfaces, and paler ones outside. *Column* trigonous, angular near the summit; also yellow, with many very small blotches. *Anther-case* mitrate, with an elevated middle ridge. *Pollinia* oblong, with smaller partitions underneath, on a triangular emarginate *caudicula* bearing a crescent-shaped *glandula*.

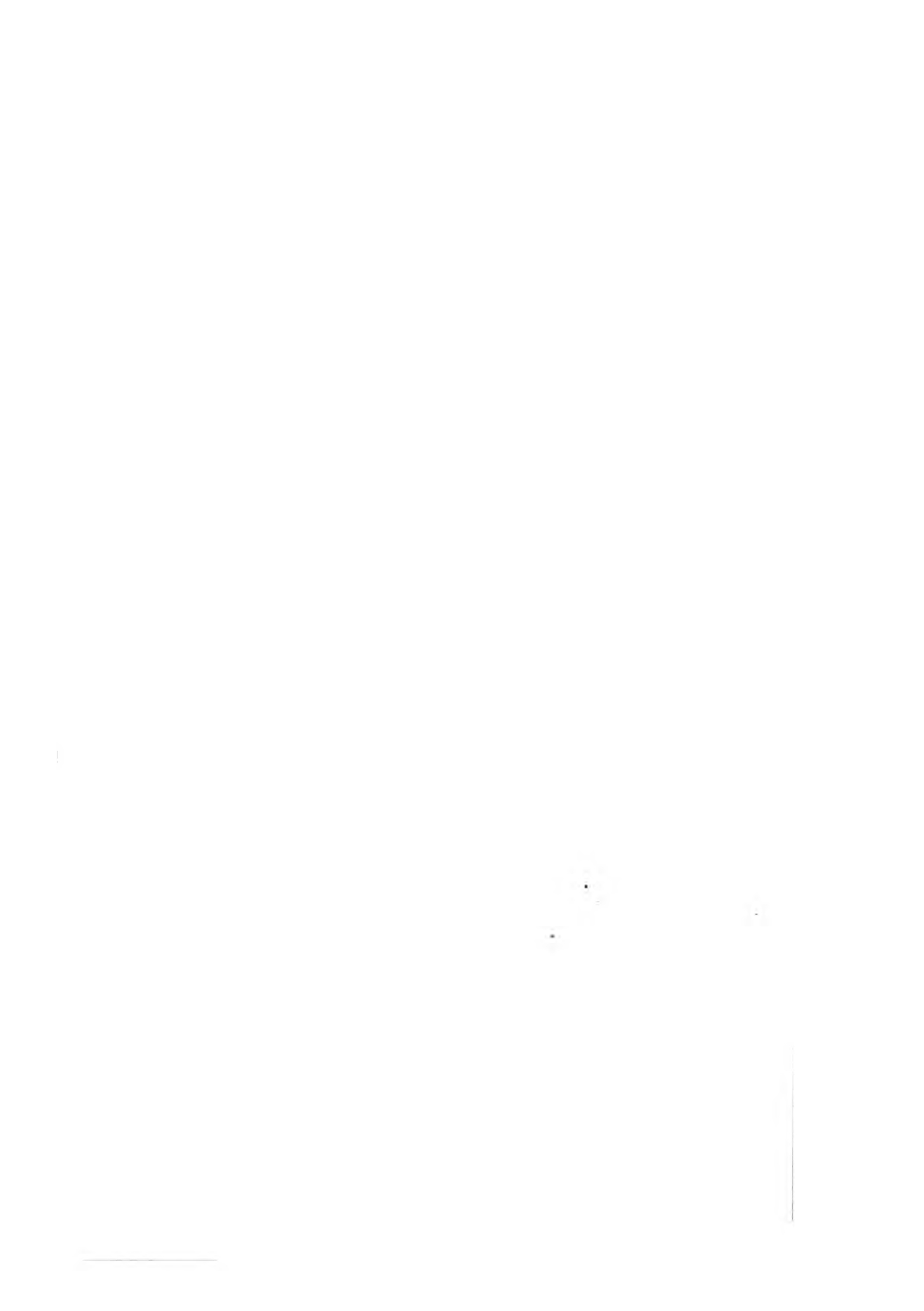
**Materials** :—Dried flowers, but only garden specimens.



Tab. 79.—The plant. 1, side view of a flower, both sepals and tepals removed + ; 2, front view of column and nearly-expanded lip + ; 3, pollinarium, front view + ; 4, ditto, side view.—*H. G. R. f.*

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This variety of *Maxillaria rufescens* I received from Mr. Horne, of Trinidad, who found it in that island. It grows freely, treated as recommended for *Maxillaria obscura*, and requires the temperature of the Mexican house, where it very regularly produces flowers.—*W. W. S.*





W.H. Fitch del et lith.

J.N. Fitch imp.

*Polystachya lineata* Rehb. f.

## TAB. 80.

## Tribe VANDEÆ.

Genus POLYSTACHYA, *Hook.*

*P. LINEATA*, *Rchb. fil. MSS.* Pseudobulbis pyriformibus, basi vaginatis, foliis geminis usque octonis, lineari-ligulatis, apice acute bidentatis, pedunculo simplici (semper?) inflorescentiam usque ancipiti, vaginis ancipitibus imbricatis vestito, pedunculo florifero crasso clavato, puberulo, racemoso, alabastris ac floribus cum ovariis calvis angulatis, bracteis minutissimis triangulo-lanceis, mento obtusangulo, sepalis oblongo-triangularibus, tepalis angustioribus linearibus angustioribus brevioribus, labello cuneato-oblongo trilobo, lobis lateralibus obtusangulis, lobo antico porrecto triangulo acuto recurvo, tumore baseos elevato conico farinaceo, toto disco farinaceo, apicem usque versus, columna trigona utrinque juxta foveam angulata, fovea oblonga.

Introduced to the Saundersian garden from Guatemala. We never saw the plant before.

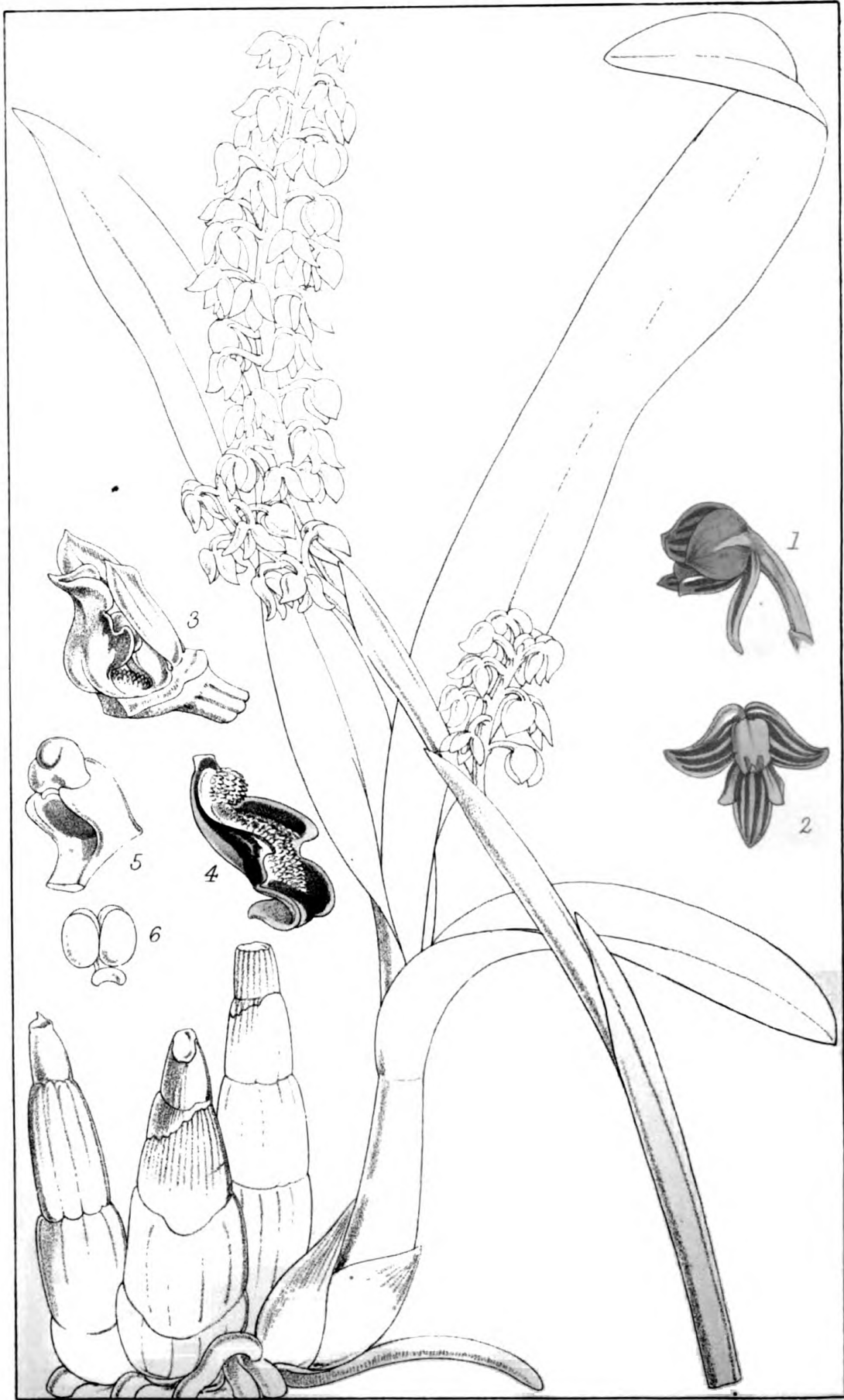
*Pseudobulbs* pyriform, furnished with sheaths. *Roots* very long, thick, deflexed. *Leaves* two to eight, linear-ligulate, minutely and acutely bidentate at the apex. *Peduncle* simple, ancipitous, with ancipitous, acute, long, imbricate sheaths, the floriferous part thickened, clothed with short hairs. *Buds* or *perigones* of the open flowers angulate with the hairless ovary, greenish, with four cinnamon linear broad lines. *Tepals* narrower, linear, acute, shorter, greenish, with cinnamon borders. *Lip* cuneate-oblong, three-lobed, the side lobes obtuse, the middle lobe longer, ligulate-acute, the apex recurved. A mealy conical tubercle at the base of the lip, and all the surface nearly to the apex mealy: this meal consists of the broken cellules of nearly moniliform hairs. *Column* short, trigonous, angulated at each side of the oblong fovea. *Anther* mitrate, with an elevated middle ridge. *Pollinia* depressed-oblong, placed in two incumbent pairs on a short broad *caudicula* with a transverse *glandula*.

**Materials** :—See following variety.

Tab. 80.—Plant. 1, flower on part of peduncle, side view + ; 2, flower, front view + ; 3, side view of a flower, sepals and tepals removed + ; 4, lip + ; 5, column, front view + ; 6, pollinarium +.—*H. G. R. f.*

I am indebted to the late G. A. Skinner for this plant, which he received from Guatemala. It succeeds and flowers freely when grown in the cool part of the Mexican house. It should be well raised above the level of the pot, to prevent the buds from rotting, which they are apt to do. It requires plenty of drainage, and not to be over-watered when growing.—*W. W. S.*





W.H. Fitch del. et lith.

J.N. Eitch imp.

*Polystachya lineata*, Richb. f. var.

TAB. 81.

Tribe VANDEE.

Genus POLYSTACHYA, *Hook.*

**P. LINEATA** (*Rchb. fl. MSS. tab. antica*), var. **ELATIOR**. Pseudobulbis conico-oblongis, elatioribus, foliis paucioribus, lato lineari-ligulatis, pedunculo crassiori, latiori, vaginis latioribus, inflorescentiis paucis lateralibus, flore ampliori.

This variety was imported from Vera Cruz, in Mexico.

Closely resembling that just described, but pseudobulbs conico-oblong, longer; leaves fewer, broad lineari-ligulate; peduncle thicker; sheaths broader; inflorescence broader, with lateral branches; flowers larger.

**Materials**:—A sketch of a little plant flowering in the Saundersian garden in last October, and the dried inflorescence, as well as the description of it, prepared at Reigate.

Tab. 81.—Plant. 1, flower, oblique view +; 2, expanded flower +; 3, oblique view of flower, sepals cut off +; 4, lip, oblique view +; 5, column, oblique view +; 6, pollinarium +.—*H. G. R. f.*

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I received this plant through the agency of Mons. Boucard. It is from some part of Mexico, probably from the vicinity of Vera Cruz. It should be treated in the same way as recommended for *Polystachya lineata* (see Tab. 80).—*W. W. S.*









W.H. Fitch, del. et lith.

J.N. Fitch, imp.

*Catasetum longifolium*, Lindl.

## TAB. 82.

Tribe VANDEÆ.

Genus CATASETUM, *L. C. Rich.*

*C. LONGIFOLIUM*, *Lindl. Bot. Reg.* 1839, *Misc.* 154! Pseudobulbo cylindraceo superne attenuato (semifusiformi), vaginis vetustis ob laminas dejectas retusis, foliis lineari-ligulatis acuminatis valde elongatis, pedunculo ex basi pseudobulbi deflexo parce vaginato laxe racemoso, bracteis oblongis acutis ovariis pedicellatis multo brevioribus, sepalis tepalisque oblongis acutis reflexis, tepalis nunc limbo inferiori denticulatis, labello cassideo oblongo-obtuso cum apiculo tumorem bisulcatum efferente, infra limbum membrana basi lata ciliata antice in seriem ciliarum exeunte, columna brevi crassa circa androclinium denticulata, utrinque juxta foveam angulo producto cornuta.—*Lindl. Sert. Orch. t.* 31! *Rechb. f. in Walp. Ann.* vi. 574! *Id. in Gard. Chron.* 1868, p. 1186 a! *Monachanthus longifolius*, *Hook. Bot. Mag.* vol. 67, t. 3019!

The discoverer of this nice *Catasetum* was Sir Robert Schomburgk, who found it in 1836, on the Ela Palm (*Mauritia flexuosa*), at the place where the spadix generally develops itself. He found it in British Guyana, in the Cannuni Creek, a tributary of the river Demerara; also very frequently at the low and marshy ground of the rivers Wironi and Wicri, tributaries of the river Berbice: there the leaves were sometimes six to eight feet long. The Macusi Indians call it Masamu; the Waraus have given it the name of Okityon. The flowers were observed of a lake-colour. Messrs. Loddiges obtained a supply of specimens. The plant was also sent from Demerara by Mr. Henry Gloster, Attorney-General of the Colony. It flowered in September, 1839, with Mr. Brocklehurst, of the Fence, Macclesfield, and with Mr. Valentine Morris, of the Retreat, Battersea, in October and November, 1839. It is well known that the plant obtained by growers and gardeners the nickname "the *Catasetum* that never flowers." We had never seen any other vestige of it than the dried inflorescence of Dr. Lindley, who was unable to give us a single flower, since all his were glued on stiff paper. We felt most agreeably surprised when, at the end of September, 1868, we found a strong healthy specimen at Hillfield House, in the Saundersian collection. In a few months it produced the

second inflorescence, the second having toothlets on the tepals where the first had none. The flowers represented earlier, in 'Sertum Orchidaceum' and the 'Botanical Magazine,' were so pallid that Sir Robert Schomburgk expressed his astonishment thereat. Mr. Green, the able gardener to W. Wilson Saunders, Esq., had succeeded in obtaining such bright lake-coloured flowers.

*Pseudobulbs* semifusiform or cylindraneo-conical, six to eight inches high, covered with older whitish *sheaths*, bearing little blackish points. *Leaves* linear-ligulate, acuminate, glaucous, three feet long, one inch wide in the described Saundersian specimen. The sheaths soon lose their laminar points. *Peduncle* rising from some of the lowermost sheaths, strong, pendulous, dark purplish, with very few basilar *scales* and a lax-flowered *raceme*. *Bracts* oblong-lanceolate, acute, brownish purple, much shorter than the purplish stalked *ovaries*. *Sepals* and *tepals* oblong-acute or at least apiculate, the tepals sometimes serrulate on one side near the top, all purplish, sometimes washed with green. *Lip* helmet-shaped, oblong, obtuse-saccate, bluntly angled, and overlapping the base of the column with a little round edge, acute at the top of the wide opening, bearing a furrowed velvety ridge inside the said acute beak of the top, microscopically ciliate around the limb. Under the limb runs outside a fringed membrane, broad and ear-like at the back, and solved in bristles towards the middle and apex. Some little warts inside in the hollow of the lip. The *fimbriæ* microscopically muriculate. *Lip* yellowish purple outside, with numberless little yellow dots, the membrane and bristles deep purplish, the apex of the lip of the deepest violet, as is also the furrowed callosity. *Column* short, abrupt, denticulate around the *androclinium*. *Stigmatic hollow* roundish; on each side of it is an angular projecting horn: the whole body yellowish. *Anther-case* oblong, umbonate at the top, two-eared at its base, with microscopical teeth. *Pollinia* oblong, furrowed beneath. *Caudicula* ligulate. *Glandula* oblong, very large.

**Materials:**—I have seen the typical specimen in Dr. Lindley's herbarium several times; descriptions from the living flowering Saundersian plant; the described inflorescence, in a dried state, is now at my side; sketches and analyses from the living plant at hand.

Tab. 82.—The plant. A flower, side view, having both sepals and tepals cut.—*H. G. R. f.*

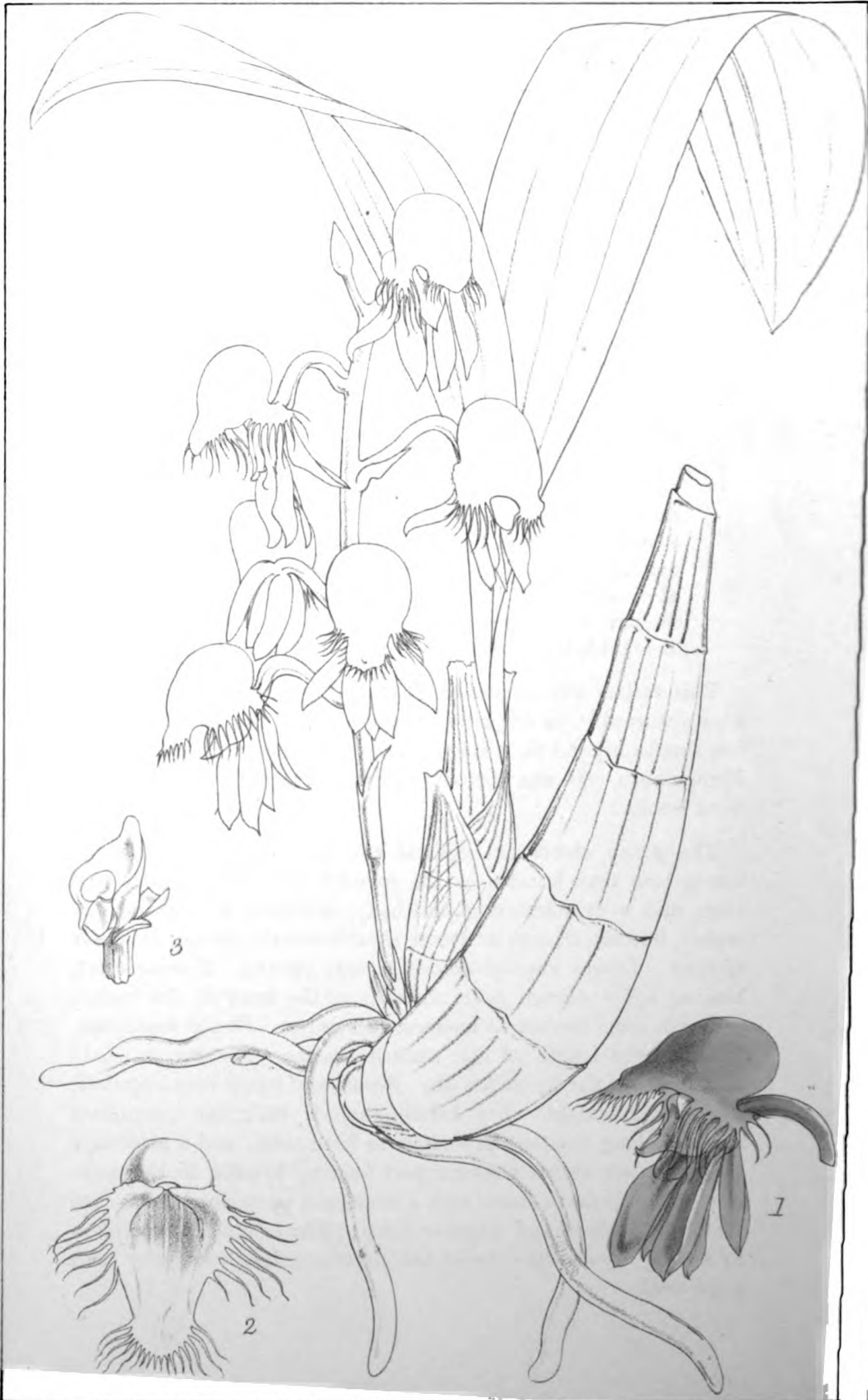
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There are no plants more remarkable among Orchids for the shape and colouring of the flowers than the species of the genus *Catasetum*; and although they are sure to attract the attention of the observer, they are not favourites with Orchid-growers, and their cultivation has been greatly neglected. They are not difficult to flower, and will grow freely when properly treated. *C. longifolium* is rare in collections: I obtained it from the Salween River, British Guiana. It thrives when grown in a basket of rough peat and sphagnum, and the pseudobulbs placed well above the rim, so that they may stand exposed to the air. The temperature of the East India house suits it well, where it should be supplied with plenty of water when growing, and as soon as the growth is completed it should have a good season of warm dry rest before it is set growing again.—*W. W. S.*









W.E. Fitch, del et lith

J.N. Fitch, imp

*Catasetum discolor*, Lindl.

## TAB. 83.

## Tribe VANDEÆ.

## Genus CATASETUM, L. C. Rich.

- C. DISCOLOR (Lindl. Bot. Reg. 1844, p. 34!) *C. fimbriatum*, Richb. f. MSS. Pseudobulbis cylindræo-conicis a vaginis triangulis apicibus dejectis retusis vestitis apice persistentius foliatis, foliis cuneato-oblongis acutis plicatis, racemo erecto supra pseudobulbi basim egrediente, vaginis in parte anantha paucis apice libero acutis, distantibus, racemo plurifloro subdistantifloro, bracteis triangulo-lanceis ovaria pedicellata nunc usque dimidio æquantibus, floribus nutantibus, sepalis tepalisque lato-ligulatis acutis apiculatisve, labello galeato exampliato, utrinque basi in fimbrias soluto, apice rotundato fimbriato, columna trigona abbreviata postice et utroque latere angulata.—*Monochanthus fimbriatus*, Hook. Bot. Mag. 1839, 3708! *C. discolor*, Lindl., genuinum recedit labello apice simpliciter acuto integerrimo seu serrulato, an sexus *Cataseti Trullæ*, Lindl. Bot. Reg. 1840, Misc. 176 ?

This variety was originally discovered by the late Mr. Gardner, who observed it on dry sandy banks beneath the shade of some low shrubs beyond the village of Apipucas, about two miles from Pernambuco. It was introduced into Consul Schiller's garden from Bahia.

The *young shoots* are conical and six-leaved. The inferior leaves lose their laminæ as the *pseudobulb* develops more and more into a cylindræo-conical body, attaining a height of six inches, but the triangular retuse *sheaths* remain, fading in course of time. *Leaves* cuneate-oblong, acute, plaited. *Raceme* erect, bearing a few distant acute sheaths at the apex of the rachis, and with some flowers at moderate distances. *Bracts* lanceolate, not half the length of the stalked *ovaries*. *Flowers* greenish, the helmet of the lip yellowish. *Sepals* and *tepals* broad-ligulate, acute or apiculate. *Lip* helmet-shaped, with flat exampliate margins, long bristle-like *laciniæ* to both sides, and a protruded broad-ligulate obtuse anterior part bearing bristles on the anterior limb. *Column* short, with a triangular posterior *lamina* over the androclinium and angular sides. The original plant differs by having the middle lobe of the lip triangular, sometimes with some teeth.

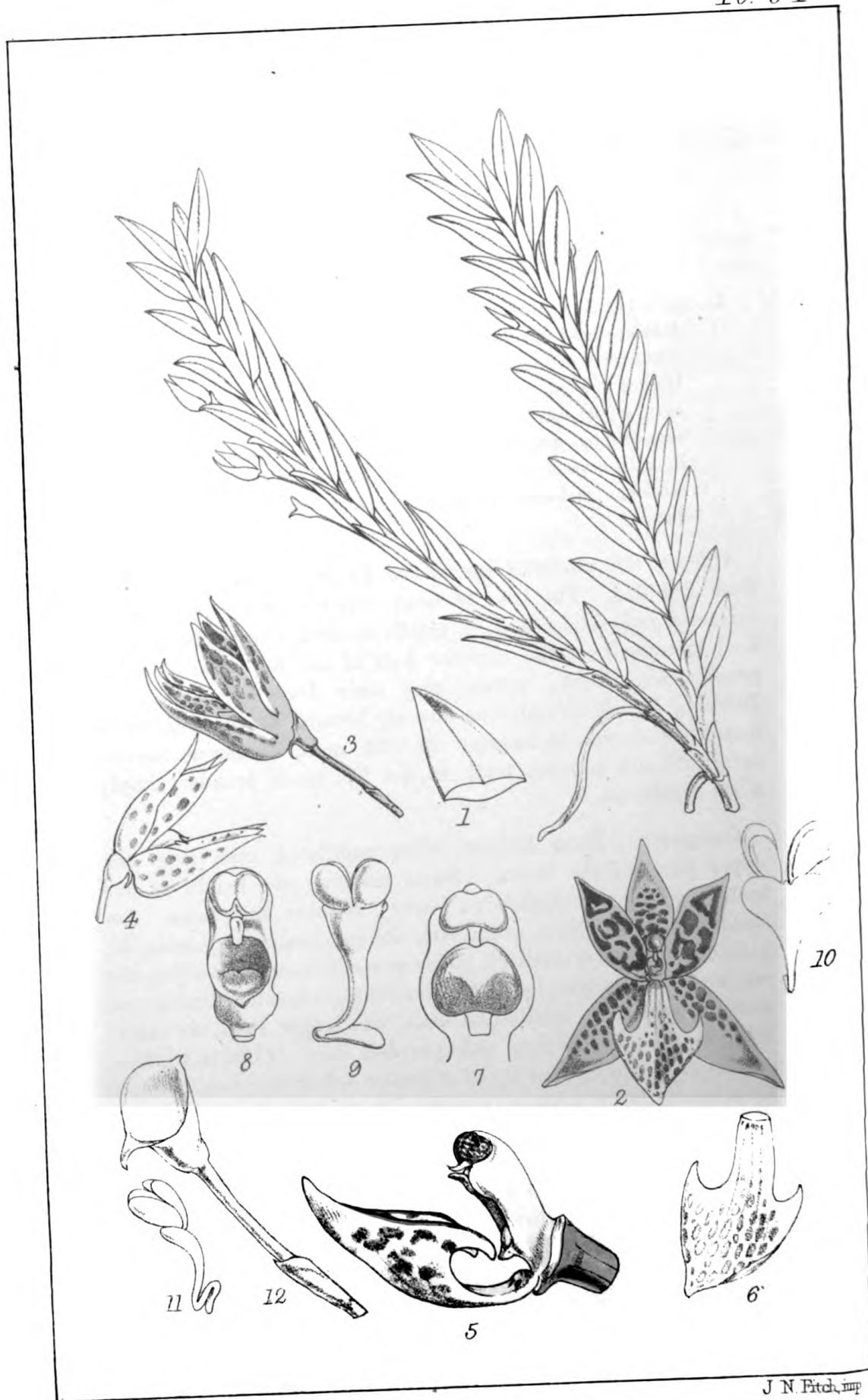
Materials:— Two dried inflorescences; sketches made from the living plant; and a description of the plant made in the Saundersian garden.

Tab. 83.—1, oblique side view of flower +; 2, expanded lip +; 3, oblique side view of column +.—*H. G. R. f.*

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This variety of *Catasetum discolor* was imported from Brazil by Mr. Low, from whom I obtained it. If treated as recommended for *Catasetum longifolium* it will do well, or it may be placed upon a block of wood or cork instead of grown in a basket.—*W. W. S.*





W.H. Fitch, del. et lith.

J. N. Fitch, imp.

*Dichæa picta*, Rehb. f.

## TAB. 84.

Tribe VANDEÆ.

Genus DICHÆA, Linn.

D. PICTA (*Rchb. f. MSS.*) Densissime cæspitosa, caulibus ancipitibus distiche dense foliatis, vaginis ancipitibus, laminis lineari-lanceolatis acuminatis obliquis, floribus axillaribus vagina stipante ochreate, bractea cyathiformi, utrinque apiculata, ovario a bractea obcelato lævi, sepalo dorsali triangulo acuminato convexo, sepalis lateralibus subæqualibus amplioribus, basi retrorsum saccatis, tepalis cuneato-ligulatis acuminatis, labello unguiculato sagittato disco omnico lævi, columna pandurato constricta, ligula inferiori foveæ oblique producta.

One of the novelties introduced by W. W. Saunders, Esq., from Trinidad. The true *Dichræa graminoides*, Rchb. f. (*Cymbidium graminoides*, Sw.!), is totally distinct, distinguished by a keel running over the superior half of the lip. The *Isochilus graminoides*, Hook., comes very near *Dichræa brachypoda*, Rchb. f., having concolorous flowers, broader leaves with more numerous nerves, a broader lip with more numerous nerves, divaricate not retrorse teeth to the lip, much broader simply acute sepals, &c.

Cæspitose. *Roots* filiform, often undulated, even from the upper parts of the stems. *Stems* reaching the height of five inches, with many distichous leaves. *Sheaths* ancipitous. *Laminæ* lineari-lanceolate, acuminate, oblique, nearly perpendicular, glaucous. *Flowers* axillary. *Flower-stalks* nearly equalling the laminæ of leaves, purplish. *Sheaths* acute, ochreate. *Bracts* cyathiform, with two bristle-like ends, one longer than the other. *Flowers* light leek-green, with purplish dots. *Column* whitish. *Anther-case* and inferior lip of *stigmatic hollow* purplish. *Upper sepal* triangular, acuminate, convex. *Lateral sepals* nearly equal, wider, saccate at the base. *Tepals* cuneate-oblong, acute. *Lip* unguiculate, sagittate, without any crest. *Column*, as seen by ourselves in half-a-dozen flowers, constricted at the base, amplified around the stigmatic hollow, and narrower above near the unbordered *androclinium*. *Anther-case* depressed, foveolate in the middle. *Pollinia* pear-shaped, depressed, in incumbent

pairs. *Caudicle* obtriangular, with a little *apiculus* between the points of insertion of the pollinia. *Caudicula* ligulate. *Stigmatal hollow* rounded, with a little lip on the middle of the inferior limb.

Materials:—A description and sketches made from the living plant in the Saundersian garden; a little specimen and three flowers in the herbarium.

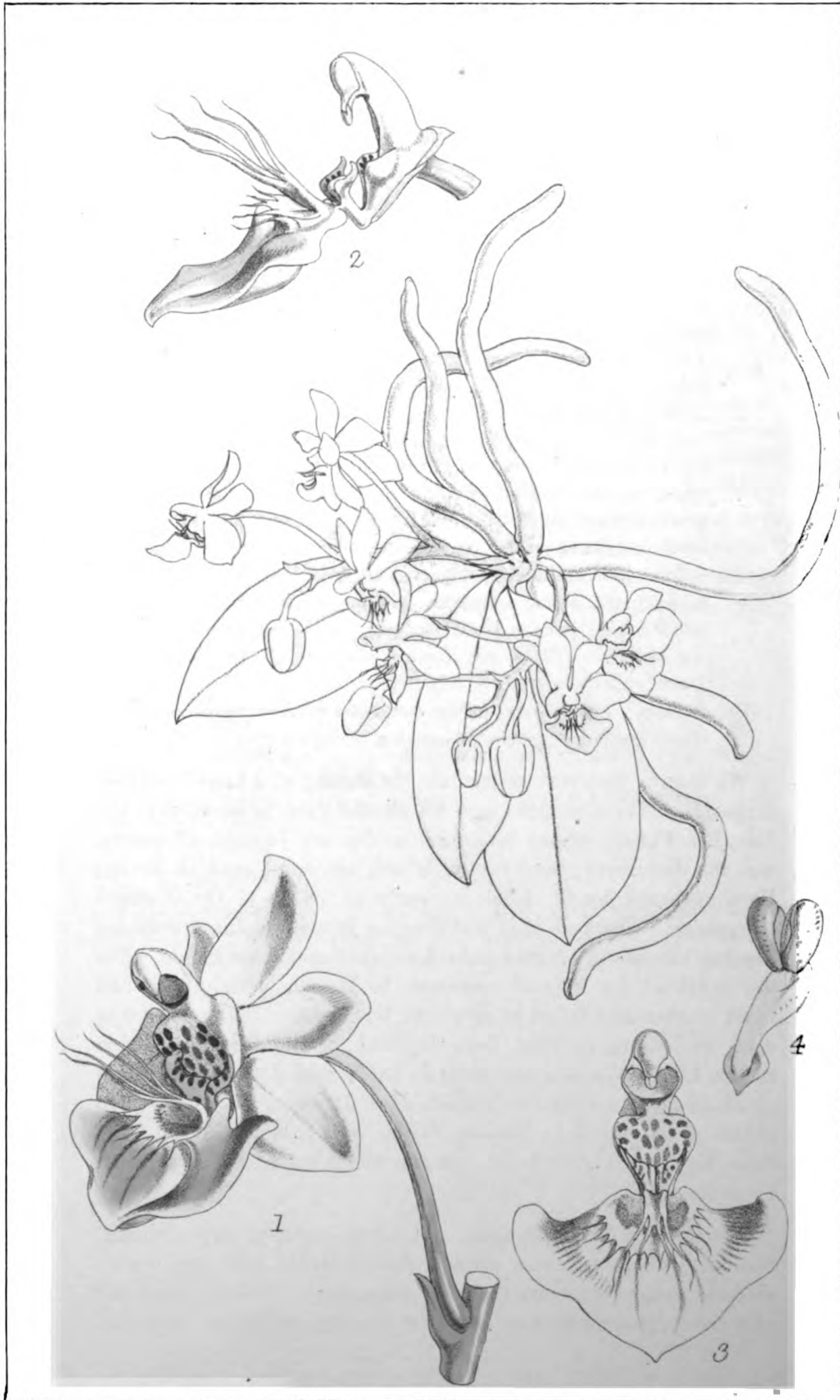
Tab. 84.—Part of the plant. 1, apex of a leaf +; 2, expanded flower +; 3, side view of flower +; 4, side view of a flower, as seen by Professor Reichenbach +; 5, side view of flower, sepals and petals removed +; 6, lip; 7, front view of column, as seen by Professor Reichenbach +; 8, front view of column +; 9, pollinarium +; 10, ditto, front view +; 11, ditto, side view +. The figures 4, 7, 10, 11, added by Professor Reichenbach f.—*H. G. R. f.*

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I received this interesting and elegant little species from Mr. Horne, of Trinidad, who procured the plant in that island. It succeeds very well in the warm part of the Mexican house, grown on a block of wood with a little moss attached, to prevent the tender roots from drying too much. It likes a light and somewhat airy situation.—*W. W. S.*







W.H. Fitch del. et lith.

J.N. Fitch, imp.

*Phalaenopsis Parishii* Rehb. f.

## TAB. 85.

Tribe VANDEÆ.

Genus PHALÆNOPSIS, Bl.

P. PARISHII (*Rehb. f. in V. Mohl. and Schlecht. Bot. Zeit.* 1865, p. 146!) Radicibus æreis ligulatis depressis lucidis, foliis cuneato-oblongis acutis bidentatis carnosocoriaceis, racemis usque septemfloris synanthiis, bracteis triangulis acutis ovaria pedicellata longe non æquantibus, sepalo summo oblongo-ligulato obtuse acuto, sepalis lateralibus semiovato triangulis extus carinatis, tepalis late spatulatis obtuse acutis retusiusculis, labelli cum pede columnæ producto angulati partitionibus lateralibus lato-ligulatis acutis intus lobuloso callosis, erectis, partitione media cordato-triangula maxima, callo ligulato erecto apice quadriseto in basi, linea callosa semiovata in denticulos soluta anteposita, columna erecta utrinque basi angulato dilatata, rostello bifido elongato, labello pulchre amethystino seu violaceo. — *Rehb. fl. Xenia Orchidacea*, ii. Tab. 156, i. 1—10!

*Var. LOBBII.* Labelli linea callosa semiovata magis tumida, toto labello albo, vitta lata longitudinali castanea utrinque.

We always feel very scrupulous in stating who has discovered a species. Three months ago we should have believed that the Rev. Mr. Parish, whose botanical merits are beyond all praise, was the discoverer; and yet he is not, the same species having been gathered by T. Lobb so early as 1845, in the Eastern Himalaya. There is only a difference in colour, his specimens bearing two broad brown bands between three white bands. We are indebted for a good specimen to Messrs. Veitch, who had most accidentally failed to give it to Dr. Lindley. The plant was sent, we believe, in 1864, from Burmah, by the Rev. Mr. Parish to Mr. Low. We saw the plant in 1865, with J. Day, Esq., and obtained flowers from the garden of J. Dawson, Esq. We also obtained flowers from Messrs. Veitch, and from the Royal Gardens, Kew. All these belong to the violet-lipped form, taken by us as the type.

*Aërial roots* broad-ligulate, extended, usually very shining. *Stem* very short. *Leaves* cuneate-oblong, acute, with two teeth: we have never seen more than two on a plant. *Peduncles* arising very freely, frequently two on a very small plant, three- to seven-

flowered, very short, not exceeding two inches. *Bracts* triangular, much shorter than the stalked *ovaries*. *Flowers* of a very firm texture, white; the disk of the *lip* deep violet or amethyst colour, the lateral partitions of lip white outside, yellow with brownish purple dots inside. The broad base of *column* white, with violet spots. *Upper sepal* oblong-ligulate, acute; *lateral sepals* nearly triangular, keeled on the middle line outside. *Tepals* broadly spatulate, blunt-acute or nearly retuse. *Lip* three-partite. *Basilar partition* cuneate-ligulate, obliquely retuse, callous inside. *Middle partition* nearly or quite heart-shaped triangular. A ligulate *callus* is terminated by four bristles: we have never seen them so long as represented by the artist. Before it stands a transverse semiovate ridge, broken up into numerous fringes: we have never seen it so long as in the figure. *Column* trigonous, extended below into a wider part. *Stigmatic hollow* more or less hexagonal, not so circular as figured. *Rostellum* beaked. *Anther* beaked. *Pollinaria* with a triangular *caudicula*, a cordiform *glandula*, and *pollinia* of unequal sizes and forms.

**Materials:**—Two wild specimens and four garden ones, together with three sketches made at various times.

Tab. 85.—The plant. 1, oblique view of the flower, with a part of the rachis +; 2, side view of flower, the sepals, tepals and base of ovary removed +; 3, front view of column and lip +; 4, pollinarium, side view +.—*H. G. R. f.*

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I am indebted to my friend Mr. J. Day, of Tottenham, whose rich collection of Orchids is so well known, for the opportunity of figuring this pretty and interesting species of *Phalænopsis*.—*W. W. S.*





W. H. Fitch, del et lith.

J. N. Fitch, imp.

*Epidendrum campylostalix*, Rehb. f.

## TAB. 86.

Tribe EPIDENDREÆ.  
Genus EPIDENDRUM, Sw.

**E. CAMPYLOSTALIX**, *Rehb. f.* (v. *Mohl et v. Schlecht. Bot. Zeit.* 1852, p. 730!) Pruinose, pseudobulbis oblongis rotundisve valde ancipitibus monophyllis, folio cuneato-oblongo acuto, spatha inflorescentiæ ovata acuta seu oblongo-lanceolata carinata, longiori, breviori, inflorescentia racemosa seu paniculata, bracteis lanceolato-ligulatis acuminatis pedicellos florum superantibus, nunc imo ovaria pedicellata æquantibus, ovariis tripteris alis undulatis, sepalis ligulatis acutis, tepalis angustioribus spatulatis acutis, labello basi adnato, ab ungue ligulato cuneato dilatato trilobo, lobis lateralibus semi-ovatis seu obtusangulo rhombeis, lobo antico æquilato obtuse bilobo retusiusculo, callo depresso supra unguem in laminæ disco in lineas ternas excurrente, columna trigona apice circa androclinium triloba, lobo medio depresso tabulari.—*E. lineatum*, *Klotzsch, MSS. in herb. Berol. et in hort. Berol.* *E. glaucum*, *Skinner, hortul. Angl.* *E. campylostalix*, *Rehb. f. Lindl. Fol. Orch. i. Epid. No. 2! Rehb. f. Beitr. Orchidk. Central Amerik. p. 32, 80!*

This species was discovered by our late friend J. v. Warscewicz. We have in our collection a splendid specimen, bearing a leaf a foot long, and a compound inflorescence with three lateral branches. It is indicated on the label as coming from Guatemala, Costa Rica, Veraguas, Chiriqui. Subsequently the plant was gathered at Dosengano, in Costa Rica, 6000 feet (May 8, 1857), by our friend Wendland! A rich series of specimens was sent from S. Jose de Costa Rica by Mr. Carmiol. The plant has been frequently imported from Guatemala. We obtained it from various gardens at Berlin, Hamburg, London. A very nice variety, with much darker colours and broad wings to the column, was sent by Dr. Pattison, of St. John's Wood, London.

The whole plant is covered with a glaucous hue. The *pseudobulbs* stand very close together, roundish or oblong, very ancipitous, with some *sheaths* of triangular shape at their base, and a single cuneate-oblong acute thickish *leaf*. The *inflorescence* comes out of an oblong or ligulate or even roundish ancipitous sheath, sometimes much developed, sometimes almost obliterated. So that the whole of the small section *Epicladium*

stands in jeopardy. In our greenhouses (for the plant is a cool orchid) we generally obtain only racemes bearing some distant triangular acuminate sheaths below, and a raceme of from four to twelve nodding *flowers*. *Bracts* triangular, acute, nearly equaling the curved flower-stalks. *Ovaries* prismatic, with undulated wings. *Sepals* thickish, ligulate-acute, greenish outside, greenish with brownish streaks inside. *Tepals* narrower, spathulate, acute, of the same texture and colour. *Lip* united at the very base of the column or quite free, cuneate, dilated towards the apex, with triangular or rhomboid lateral lobes, and a produced cuneate dilatate retuse emarginate or apiculate middle lobe: the basilar part of the lip bears a long callosity, tridentate at its apex in the middle of the lip, and generally with two furrows; it is white or yellowish white. The *column* is trigonous, usually bent back, bearing an immersed tridentate anther-bed, the central tooth being usually retuse: it is green, with some purplish spots, dots and rays. The *anther-case* is rounded.

Materials:—Living specimens in various gardens, and numerous specimens in our collection; also seen in Dr. Lindley's herbarium; numerous sketches prepared at various times.

Tab. 86.—The whole plant. 1, a flower seen from the front; 2, side view of a flower, the sepals and tepals removed; 3, expanded lip +; 4, column from the interior side +; 5, pollinaria +; 6, ditto, side view +. All the figures are due to W. Wilson Saunders, Esq., whose chaste representations are free from any artistical exaggeration.—*H. G. R. f.*

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This species, remarkable for its neat habit and very glaucous bulbs and leaves, I first received from Mons. Linden, but from what country I do not know. Afterwards I obtained it from Guatemala through the late Mr. G. U. Skinner, and more recently from Costa Rica, sent from thence by Mr. Carmiol. It grows freely in a pot or basket filled with rough peat and sphagnum, placed in the Mexican house, where it flowers regularly.—*W. W. S.*







W.H. Fitch del et hdu.

J.N. Fitch imp.

*Epidendrum paleaceum* Rehb. f.

## TAB. 87.

Tribe EPIDENDREÆ.  
Genus EPIDENDRUM, Sw.

E. PALEACEUM (*Rehb. f. in Beitr. Orchidk. Central Amerik.* p. 80!). Rhizomate repente vaginato, pseudobulbis pyriformi-ligulatis seu ligulatis subcompressis monophyllis vaginatis, foliis ligulatis apice bilobis, pedunculo vaginis acutis vestito racemoso unifloro usque plurifloro, ex caule novello pseudobulbo non evoluto, bracteis spathaceis scariosis triangulis ovaria excedentibus, ovaris muriculatis subglutinosi, perigoniis crassiusculis, sepalis triangulo-lanceis, tepalis subæqualibus, nunc latioribus, brevioribus, labello ligulato acuto seu ligulato-pandurato, ima basi rotundato, disco basilari foveato, columna trigona basi antrorsum producta, rostello tridentato, anthera vertice longitudinaliter serrata cristata, ligula deflexa serrata utrinque.—*Dinema paleaceum*, Lindl. ! *Bot. Reg.* 1846, *Misc.* 112 ! *Epidendrum auritum*, Lindl. ! *Bot. Reg.* 1843, *Misc.* 4 ! *Fol. Orchid.* i. *Epidendrum*, No. 131. *Epidendrum Lindenianum*, A. Rich, *Gal. O. Mex.* p. 42, in *Ann. Sc. Nat.* 1845 ! *Orch. Mex. inedit.* t. 111 ; Lindl. *l. c.* No. 83. *Epidendrum sarcoglossum*, A. Rich in *hort. Paris* ! *Rehb. fil. in Walp. Ann.* vi. 323 ! *et l. supra citato* ! *Cattleya micrantha*, Klotzch. ! in *hort. Jenisch.* ! *Maxillaria Boothii*, Lindl. *Bot. Reg.* 1838, *Misc.* 95 !

The original discoverers of this plant appear to be Ruiz and Pavon, from whom we possess specimens. It has been frequently gathered in Southern Mexico near Oaxaca, Talea, Zacuapan, Vera Cruz, Colipa, Mirador, as specimens from Leibold ! Ehrenberg ! Liebmann ! Linden ! Galeotti ! Jürgensen ! Schiede ! Ghiesbreght ! Heller ! show. We obtained it from Guatemala, Mazatenango ; Bernoulli ! Turalba in Costa Rica, 27.3. 1857 ; Wendland ! Surinam, woods between the Saramaca and Copinami ; Kegel ! A plant much resembling that species is *Epidendrum Ottonis*, *Rehb. f.* It grows near Caraccas and in Trinidad, also in Cuba, and is easily distinguished by its smooth ovaries, crestless anthers (often three instead of one) and smaller flowers.

*Rhizome* creeping, thickish, sheathed, with single roots. *Pseudobulbs* varying from pyriform to ligulate, ancipitous, furrowed when old, with a few acute scariose nervous pallid ochre-coloured sheaths, often covered with many obscure small spots. *Leaf*

solitary, linear-ligulate, two-lobed, generally four to six inches long, but sometimes attaining a foot, usually one-third to two-thirds of an inch wide. The *inflorescence* rises from the very young bulb, when still not yet developed, and covered by its sheaths. The *rachis* bears one or two triangular acuminate keeled spathaceous sheaths. The inflorescence consists of one to four usually one-sided flowers, The *bracts* are quite like the sheaths, but browner and usually covered with more little spots. The stalked *ovaries* are wingless, nearly trigonous, covered with minute acute papillæ. *Sepals* linear-acuminate, patent, sulphur to light ochre-colour, but mostly sulphur-coloured. *Tepals* nearly equal, usually shorter, sometimes much broader. *Lip* pandurato-ligulate apiculate, with a short furrow before its base, an obtuse keel on its under surface, sometimes a revolute denticulate limb near the apex, and with transverse radiating little sulcations around the anterior margin. It is of the same colour as the sepals and tepals, but has a deeper yellow line over the disk of the upper part. We did not observe such sagittate auricles as they have been represented by the artist. The lip usually rounded at its base. The trigonous bent *column* has a tridentate androclinium and a protracted base. The *anther* is highly curious; it is trigono-conoid, having a serrate longitudinal crest on the top, and two triangular curved auricles overlapping the rounded rostellum, serrate inside: these have been very judiciously compared by the late Dr. Lindley to the head of some insect. The *flowers* are sweet-scented, the odour being compared to that of Heliotrope. Dr. Lindley has seen flowers almost white. The *stigmatic hollow* is subject to many variations.

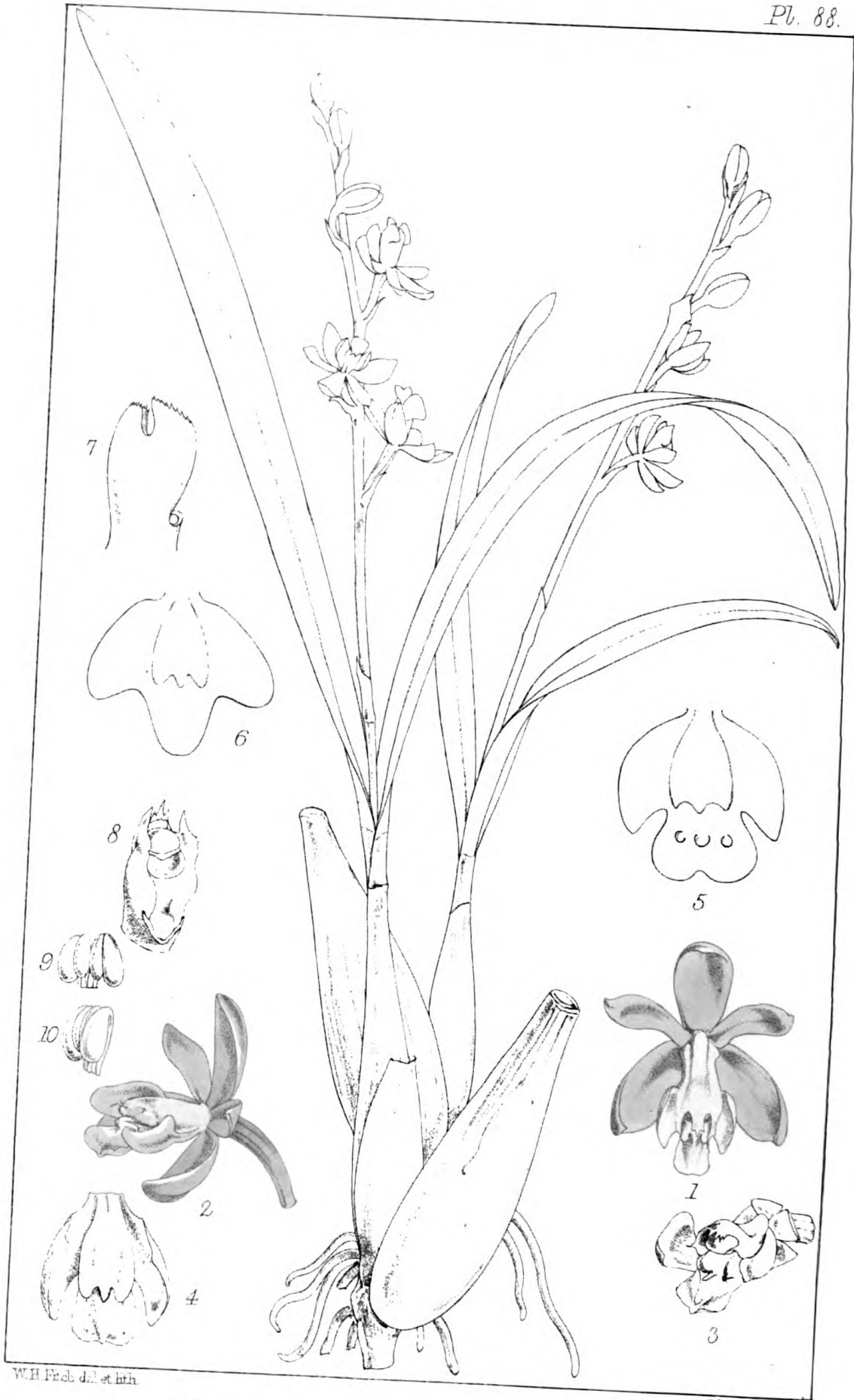
Materials:—Analyses and sketches of the habit of the plant, with descriptions made at three different times; forty-five herbarium specimens; the plant often observed in a living state.

Tab. 87.—The plant, with a poor inflorescence. 1, flower, front view; 2, the same, side view; 3, the same, sepals and tepals removed; 4, inside view of column and lip +; 5, anther, oblique side view +; 6, pollinia, seen obliquely +; 7, pollinia, side view +.—*H. G. R. f.*

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This is a species making but little show, and is easy of cultivation, if placed on a block of wood or piece of cork near the light, in the Mexican house. My specimens were sent to me from Mexico by Mons. Boucard.—*W. W. S.*





W.H. Fitch del et lith

J.N. Fitch imp

*Epidendrum ochraceum*, Lindl

## TAB. 88.

Tribe EPIDENDRÆ.  
Genus EPIDENDRUM, Sw.

*E. ochraceum* (Lindl. Bot. Reg. 1838, Misc. 15, t. 26!). Pseudobulbo pyriformi seu semifusiformi diphylo, sæpe triphylo, raro monophylo, foliis lineari-ligulatis seu linearibus acutis pergameneis, pedunculo racemoso, parte inferiori anantha paucivaginata, parte florida recta seu flexuosa bracteis triangulis herbaceis ovaria pedicellata subæquantibus, sepalis cuneato-oblongis obtuse acutis, tepalis sæpe paulo latioribus, labello supra basin columnæ adnato flabellato expanso antice trifido, laciniis lateralibus triangulis antrorsis seu rectangulis, lacinia media porrecta semiovata obtusa seu emarginata, callo a basi in basin laciniaë anticæ depresso antice tridentato, verrucis nunc antepositis, columna trigona apice trifida, laciniis lateralibus semifalcatis, antice serratis, lacinia media apice acuta seu serrulata, anteposita ligula breviori serrata, *Osmophytorum* more. — *E. triste*, A. Rich, Gal. O. Mex. 20, in Ann. Sc. Nat. 1845!

The discovery of this species would also appear to be due to Ruiz and Pavon. It appears to be very frequent in S. Mexico, near Zacuapan, Mirador, Talea, San Pedro Nolasco, Oaxaca.

We have had specimens from Galeotti (5284, 5278), Schiede, Ehrenberg, Leibold, Jürgensen, Botteri! It occurs also in Guatemala; Bernoulli! In Costa Rica; Oersted! Cartago; Wendland! It occurs oftener in collections than amateurs could wish it. They used to be frightened at what they call an ugly plant.

*Rhizome* strong, creeping, sheathed, with strong white roots. *Pseudobulbs* pear-shaped or semifusiform. *Leaves* two, seldom one, oftener three, linear-ligulate or linear-acute, of the texture of parchment. *Peduncle* racemose, with a few sheaths downward, the upper part racemose, straight or flexuose. *Bracts* triangular, somewhat boat-shaped. The stalked *ovaries* longer than the bracts. *Flowers* straight, but often nodding in dried specimens. *Sepals* oblong, bluntly acute. *Tepals* often somewhat broader, but also narrower, or equal, ligulate-acute or ligulate-obovate, pale sulphur-coloured, subsequently deep ochre-coloured. *Lip* adnate to the base of the column, dilated semiovate, now cuneate, now nearly heart-shaped at its base, trifid; lateral laciniaë triangular, with an acute or a straight angle; middle lacinia semi-

ovate, blunt or emarginate; a cartilaginous depressed cuneate-oblong callus goes out in three teeth at the very base of the middle lacinia; sometimes there are some warts on the middle lacinia, sometimes not, as we have ascertained in various years on the flowers of the same plant in Consul Schiller's collection. *Column* trigonous. *Androclinium* bordered by three laciniae, the middle one often cucullate, oblong, with toothlets, bearing, as is seen in *Osmophytum*, before it a little short broad tooth-letted membrane; the side laciniae are serrate outside. The *stigmatic hollow* is subject to many variations, transverse oblong or transverse pandurate. Both lip and column are the same colour as the sepals and tepals. The depressed *anther-case* is often orange. The *callus* is sometimes whitish. The *fruits* are pear-shaped, with three argute and three depressed costae.

The figure of the 'Botanical Register' is certainly taken from a plant flowering the first time. W. Wilson Saunders, Esq., complains, in a memorandum, that the plant we have named *ochraceum* is widely distinct from Dr. Lindley's,—that one has a triangular middle lacinia to the androclinium, a callus contracted in the middle, and three rows of warts. Plants flowering the first time are very deceptive, the buds having frequently suffered considerably from the voyage, or been formed by an indisposed plant.

We have never seen an inflorescence quite similar to the one represented in the 'Botanical Register.' Thus our correspondent is quite right. But we are right too, knowing perfectly Dr. Lindley's typical specimens, and having his own handwriting on the label of a specimen given to us.

**Materials:** — Described from living plants in Consul Schiller's garden, with the assistance of consulting our own sketches and fifty-seven specimens in our herbarium.

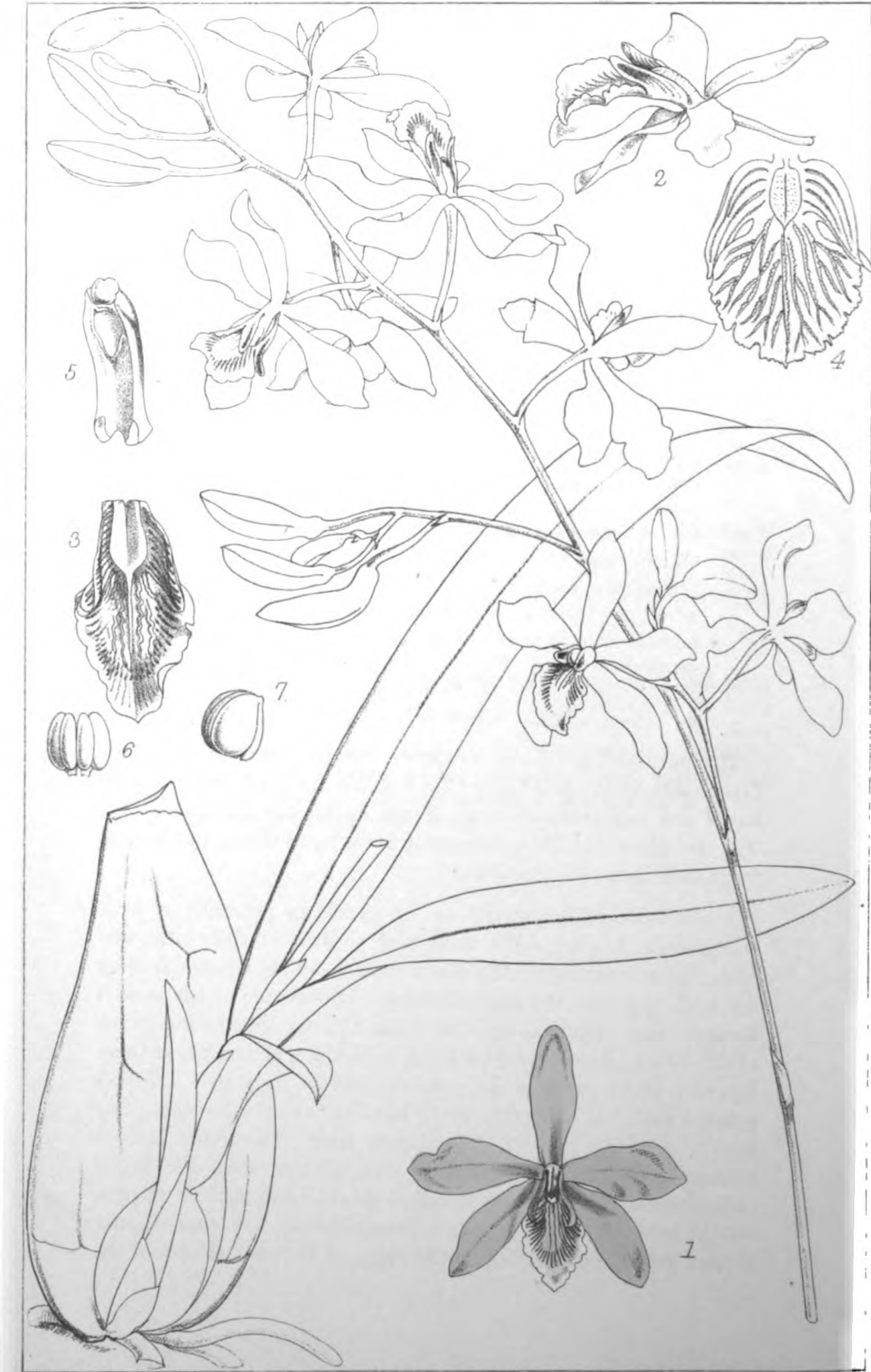
Tab 88. — The plant. 1, expanded flower; 2, side view of the flower, seen obliquely; 3, oblique anterior view of lip and column; 4, 5, 6, expanded lip; 7, column, side view; 8, the same, oblique anterior view; 9, pollinaria, viewed from above; 10, side view of pollinaria: all magnified (+). Figures 5, 6, 7, from H. G. R. f.—H. G. R. f.

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*Epidendrum ochraceum* is an interesting free-flowering species, which I received from Guatemala through the kindness of the late Mr. G. U. Skinner. It lasts in flower some time, and is not difficult to grow in a cool temperature, attached to a block of wood with a little green moss, or placed in a basket filled with peat, moss and charcoal. It is impatient of too much moisture, but does not like a dry atmosphere.—W. W. S.







W. H. Fitch, del. et lith.

J. N. Fish, imp.

*Epidendrum aromaticum*, Batem.

## TAB. 89.

Tribe EPIDENDRÆ.  
Genus EPIDENDRUM, Sw.

- E. AROMATICUM** (*Batem. Orch. Mex. Guat. t. 10!*). Pseudobulbis oblongo-pyriformibus pyriformibusve subcompressis basi paucivaginatatis apice di- triphyllis, radicibus filiformibus validis mediocribus, foliis ligulatis acutis coriaceis, inflorescentia racemosa seu (vulgo) paniculata, ovariis pedicellatis bracteas triangulas longe excedentibus, sepalis cuneato-ligulatis seu cuneato-oblongo-ligulatis subacutis, tepalis subæqualibus sæpe cuneato-spatulatis acutis, labello supra basin columnæ adnato, trifido, laciniis lateralibus angusto triangularibus acutis seu falcato triangularibus acutis, lacinia media oblongo-acuta seu rotunda apiculata crispula, callo subtiliter velutino depresso oblongo acuto sulcato nunc sessili nunc a basi abrupte in lineam brevissimam erectam basi exeunte, apice acuto in carinam excurrente; venis prope omnibus disci lacinia anticæ lamellis crispulis onustis, columna semitereti aptera, androclinio immerso limbo hinc denticulato.—*Lindl. Fol. Orch. i. Epidendrum*, No. 55; *Rchb. f. in Walp. Ann. vi. 238!* *E. incumbens*, *Lindl. Bot. Reg. 1840, Misc. 84!* (reduced by the eminent author himself).

It appears that *E. aromaticum*, Batem., was discovered in Guatemala by the late Ure Skinner or his Indian collectors. We never saw any wild specimens in any herbarium except his own. Yet the plant has been frequently introduced alive, and is very frequently seen in collections.

*Pseudobulbs* oblongo-pyriform or pyriform, generally a little compressed, bearing a few triangular sheaths at their base, and with filiform strong middle-sized roots. *Bracts* triangular, very much shorter than the stalked ovaries. Substance of the flowers stronger than membranous, but much thinner than in the group of *E. alatum*, Batem. *Sepals* cuneate-ligulate, or cuneate oblong-ligulate, blunt or subacute, greenish yellow, very pale. *Tepals* nearly equal, but often very much broader towards the apex. *Lip* adnate over the base of the column, trifid; the lateral lacinia triangular or triangular-falcate acute, shorter than the broad oblongo-ovate, circular or flabellate acute crisp middle lacinia. At the base of the lip stands a broad oblong furrowed slightly velvety callus, running out in the ridge of the central vein of the

lip. All the veins are covered with crisped keels. Colour whitish, with purplish or purplish violet radiating rays over the lateral laminæ and the middle one. *Column* semiterete, with an impressed *androclinium*, whose limb is often toothletted. *Anther-case* depressed, sometimes a little impressed at the top. *Stigmatic hollow* oblong. Colour of column whitish, with some purplish or purplish violet streaks, according to the colour of the radiating streaks of the lip.

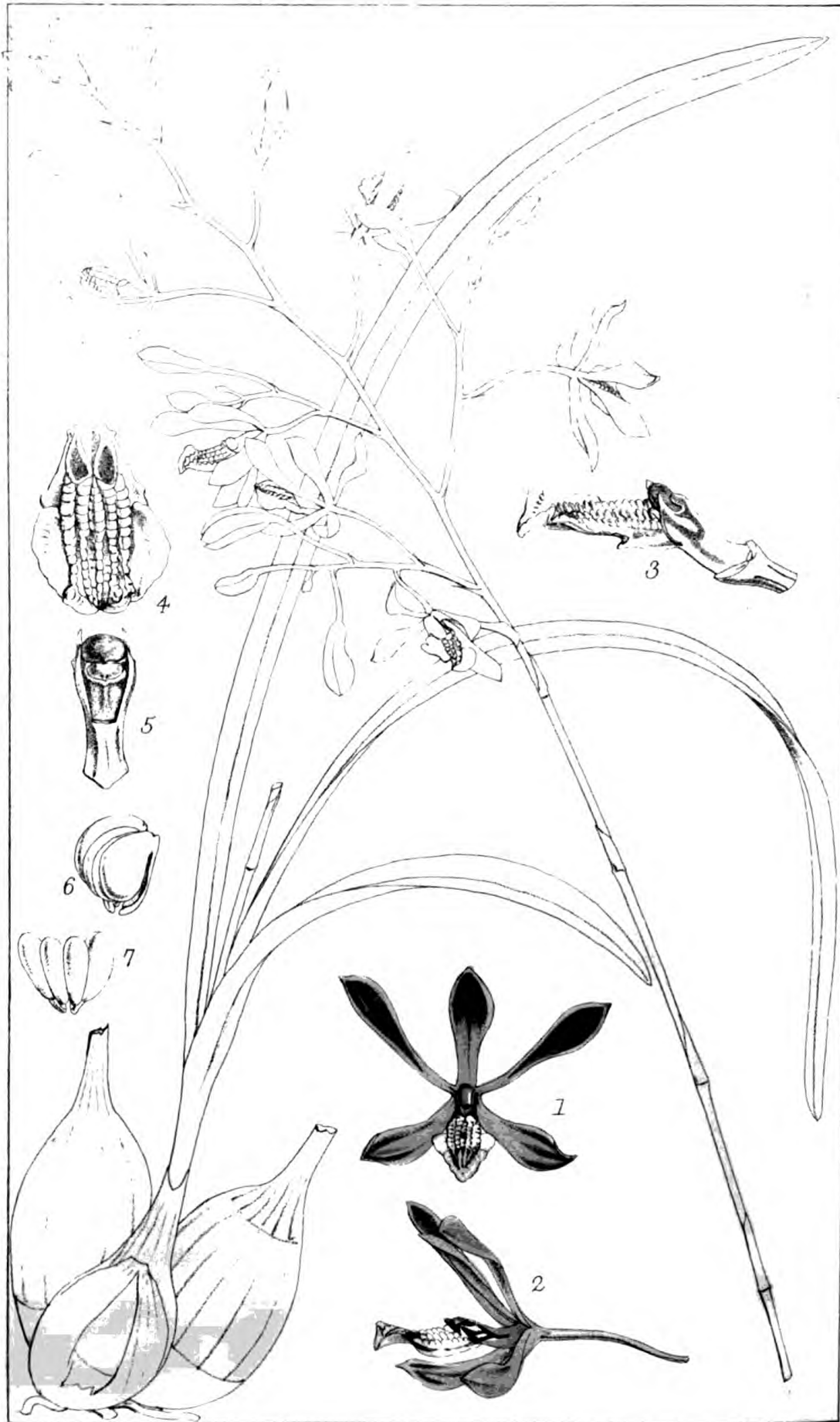
Materials : — Ure Skinner's wild specimens and sixteen garden specimens ; one specimen, out of the Jardin de l'École de Médecine at Paris, bears unusually large flowers ; others, from the Botanic Garden at Geneva, 1853, and the garden of M. Van Houtte, Ghent, are unusually small-flowered ; we saw once more, the other day, the types in Dr. Lindley's collection ; description from the living plant in the Hamburgh Botanic Garden.

Tab. 89.—A very small plant. 1, an expanded flower ; 2, side view of the same ; 3, lip of the same ; 4, expanded lip ; 5, oblique view of column, anterior and side view ; 6, pollinaria, seen from the top ; 7, pollinaria, side view : all magnified (+). Fig. 4 by Professor Reichenbach, f. —*H. G. R. f.*

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I first knew this *Epidendrum* from a specimen received from Mons. Von Houtte, of Ghent. I afterwards obtained it from Guatemala, through the Messrs. Low, of Clapton, and also from the late Mr. G. U. Skinner. It is a pretty sweet-smelling species, producing its flowers freely in the Mexican house, where it is grown suspended on a block of wood. It should be kept dry during the season of rest.—*W. W. S.*





J. N. Fitch del. et lith.

J. N. Fitch, imp.

*Epidendrum serratum* Lindl.

## TAB. 90.

## Tribe EPIDENDRÆ.

## Genus EPIDENDRUM, Sw.

E. SERIATUM, Lindl. *Folia i. Epidendrum*, No. 183. Aulizeum : pseudobulbis pyriformibus dipentaphyllis, foliis lineari-lanceolatis acuminatis, racemo seu panícula porrecto, ovariis longipedicellatis, sepalis cuneato-oblongis acutis, tepalis a basi filiformi-lineari ovatis acutis longioribus, labello oblongo-ligulato seu ligulato utrinque ante basin plicato, apice retusiusculo-emarginato seu acutiusculo, callis geminis in ima basi venis quibus carinis multiloboplicatis depressis onustis, columna apice tridentata. — *E. luteo-roseum*, A. Rich, *Gal. O. Mex.* No. 32, 1844! *E. seriatum*, Lindl. *l. c.* 1853 (sub *Amphiglottio*); *Rehb. f. Orchid. Lansbergianæ*, No. 7!

The original discoverers of this species would appear to be Ruiz and Pavon! We obtained a proof of this from E. Boissier, Esq. It was subsequently gathered by Leibold, 1841, 1842! near Zacuapan in Mexico; by Galeotti! 1840, in the province of Oaxaca, 5000! No. 5233! Linden found it near Mirador. We have also at hand good specimens from Guatemala, June, 1866, from Dr. Bernouilli! Our friend H. Wagener has gathered the same plant near Caraccas, perhaps in 1850, and it was found there also by the Consul von Lansberg!

The priority of name belongs to Achille Richard, who gave the following diagnosis: — "Pseudobulbis ovoideo-oblongis parvulis, caule 3—4-phylo, floribus parvulis luteo-roseis paniculatis, labello albido-violaceo ovali-obtuso emarginato 5-nervis glanduloso." Dr. Lindley having obtained a garden specimen from J. Bateman, Esq., was so unfortunate as to place it in a wrong section, as well as to speak of the lip as being linear, an error which arose from his specimen not being well pressed. Yet Dr. Lindley has well described the inflorescence and the flower, when Achille Richard had given such a diagnosis "that CEdipus himself would not have guessed the plant," speaking even from glandulæ, where there are none. According to our principles we have preferred Lindley's name. We are quite disposed to leave to Achille Richard the priority for all species not described later by Lindley or by ourselves, and we possess now types of nearly all his species. But we cannot feel disposed to encourage the suppression of names introduced later, where it is impossible to make out the species originally intended. It is quite a different thing with names given by older authors at a period when accuracy was not believed necessary. In Achille Richard's time the models given by some grand

writers, who gave themselves the necessary trouble and time with what they intended to make public, were fully known, and should not have been frivolously neglected, but thankfully imitated.

*Aërial roots* very numerous, quite glabrous, intricate. *Pseudobulbs* pyriform, covered when young with some sheaths which decay early, the upper one remaining longest and having lost its short lamina; older pseudobulbs swollen, with some furrows and wrinkles. *Leaves* two, frequently three, sometimes four, linear-ligulate, acute, rather thin. *Inflorescence* having the rachis clad below with some long but distant *sheaths*, not observed in good development by our artist. The sheaths no doubt gave Dr. Lindley the idea that he had to deal with an *Amphiglottium*. *Raceme* single or nicely branched, the branches more or less flexuose, which our artist has failed to observe. The *branches* usually have at their base such developed sheaths as there are on the flowerless part of the rachis. *Bracts* triangular-acuminate, much shorter than the long stalked *ovaries*. *Sepals* cuneate-oblong acute, greenish, with some brown or reddish hue inside. *Tepals* equal, but with longer and narrower claws. *Lip* adnate below the stigma, oblong-ligulate or ligulate, with a fold on each side near the base, truncate-emarginate, seldom acute, often undulated at the sides, whitish, with yellow and some violet or rosy dots; two depressed triangular or ligulate *calli* at the base. The five central veins are covered with many-lobed depressed plaited crests, conveying quite the impression of pavement. The trigonous ascendent green *column* has a trifid *androclinium*, the teeth generally being acute, but the laterals observed toothletted in the Langsbergian specimens. There are some violet streaks on the sides of the column, and the depressed *anther-case* usually is violet also.

*Materials*:—We once more observed the type in Dr. Lindley's herbarium the other day, and have at hand our own sketches, and the rich materials alluded to before.

Tab. 90.—A plant with an inflorescence. 1, front view of a flower, lip acute; 2, side view of the same; 3, ditto, the sepals, tepals and inferior part of ovary being removed; 4, lip, expanded, a very broad and emarginate one; 5, front view of column; 6, pollinaria, side view; 7, the same, front view: all magnified.—*H. G. R. f.*

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Another species of *Epidendrum* which I received from Guatemala through the kindness of the late Mr. G. U. Skinner. It has long grass-like leaves, which give the plant a peculiar appearance. It flowers pretty freely, and keeps in a healthy condition, treated as recommended for the last species (Tab. 89).—*W. W. S.*







W. F. Fitch, del. et. lith.

J. N. Fitch imp.

*Epidendrum antenniferum*, Lindl.

## TAB. 91.

## Tribe EPIDENDRÆ.

## Genus EPIDENDRUM, Sw.

- E. ANTENNIFERUM, *Lindl. Paxton's Flower Garden*, i., *Gleanings*, 234 ic 113! (labello forsan monstrose quinquedentato), *Folia i. Epidendrum*, No. 195; *Rehb. f. in Walp. Annal.* vi. 382! Amphiglottium seu potius Aulizeum, caulibus cæspitosis humilibus pauci-vaginatibus di-triphyllis, foliis cuneato-oblongis acutis geminis ternisve, pedunculo longissime exserto multivaginato, vaginis compressis acutis marcescentibus, anthesi terminali peracta ramulis lateralibus evolutis *Epidendri fuscati*, Sw., more, bracteis triangulis acutis parvis, ovariis longi-pedicellatis, sepalo summo a basi unguiculata ligulato seu ligulato, sepalis lateralibus oblongis acutis multo latioribus, tepalis linearibus summo apice spatulatis sepala in planta spontanea prope quater, in planta culta nunc vix ter, longe excedentibus deflexis, labello a basi rotundato dilatato obtuse trilobo, lobis lateralibus rotundatis, callo depresso antice tridentato in ima basi, androclinio integro.—*E. longipetalum*, *A. Rich. & Gal. in Ann. des Sc. Natur.* 1845, p. 22, et tab. ined. *Orch. Mex.* 17.

This curious plant was discovered, as it appears by Galeotti, in 1840, at Talea, near Oaxaca, in Mexico, 4000! Perhaps the discovery belongs to Jürgensen, as the high numbers above 5000 of Galeotti usually do: our plant is his No. 5238. In 1841 it was gathered on *Quercus crassipes*, H. B. K., at the foot of the Pic de Orizaba, over Calchuallo, 6—7000', by Liebmann, whose specimen was at hand, lent from the Museum of Copenhagen. We obtained two very good specimens out of Schmitz's Mexican herbarium; one has a lateral inflorescence, with leafy bracts. Though no locality is indicated, one may guess they came from the vicinity of the capital of Mexico, since the late Schmitz could not extend far his excursions from that town. Dr. Lindley, we believe, got the plant only from gardens. The two specimens he obtained came from Xalapa, Henchmann, and out of the famous garden of M. Pescatore at La Celle de St. Cloud. We have ascertained that his own specimens have a trilobed lip, not a five-toothed one, as the woodcut in Paxton's 'Flower Garden' represents. It perhaps would be justice to rest on Achille Richard's elder name, his diagnosis being quite exceptionally good, indeed almost sufficient for us to fairly

recognise the plant. The late Dr. Lindley also added, at page 84, No. 265, to Achille Richard's description, "Compare with *E. antenniferum*." And yet A. Richard rendered it quite impossible to be sure of the question, since he placed his species under *Eu-epidendrum*, which excludes any sheaths on the common peduncle. Hence we cannot restore his name, and Lindley cannot be blamed for having named the plant once more. This plant has, unfortunately for cultivators, the bad propensity of dying when it has flowered. It can never be kept in gardens, it would seem.

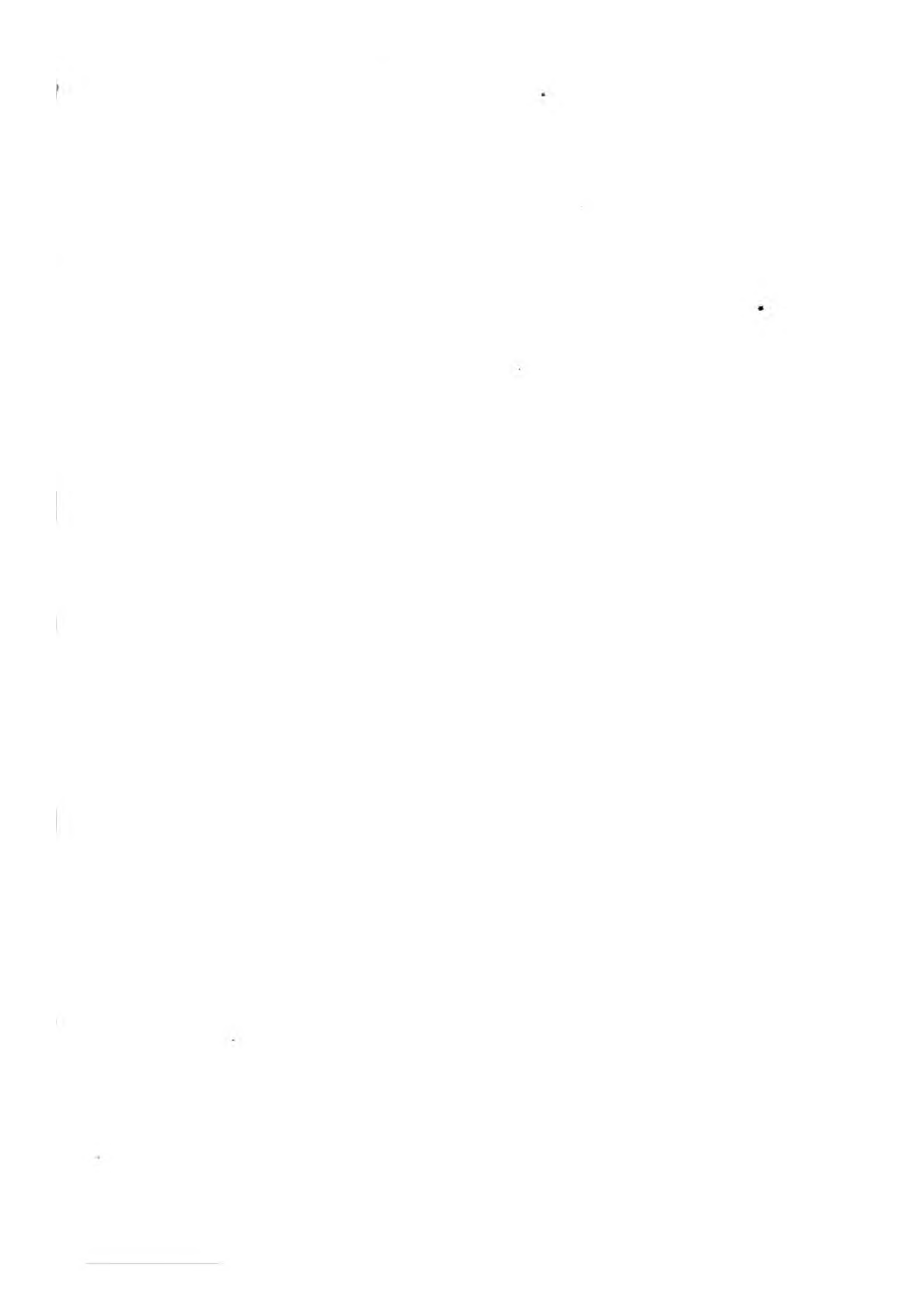
*Stems* short and cæspitose, with some soon fugacious decaying triangular sheaths. *Leaves* two to three, oblong-acute, rather thick, very nervose on under side when dried. *Peduncle* very long, covered with ancipitous acute sheaths. *Raceme* terminal, and when it is decayed some lateral racemes appear. *Bracts* triangular, a third the length of the long stalked ovaries. *Upper sepal* ligulate, blunt or acute, sometimes much narrower at its base; *lateral sepals* much broader, ovate-acute; all olive-green with a brownish hue, or "whitish rose-colour" according to Galeotti. *Tepals* linear, spatulate at the end, much longer than the sepals and hanging down, greenish. *Lip* rounded at its base, broad, with three blunt triangular lobes and a depressed callus on its base, bearing in front three short teeth: it is greenish and reddish brown. *Column* clavate, with an entire *androclinium*.

**Materials:**—Four herbarium specimens; we saw in all only seven specimens; we never saw the plant alive.

Tab. 91.—The plant. 1, anterior view of a flower; 2, the same, side view; 3, expanded lip; 4, side view of lip; 5, column, anterior view; 6, pollinaria, upper view; 7, pollinaria, side view: all magnified.—*H. G. R. f.*

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A rare and remarkable species of *Epidendrum*, known by its long narrow pendent tepals. It grows without difficulty in the Mexican house, fastened on a block of wood, with a little moss and kept near the light. It should never be allowed to get dry. My specimens were obtained from the Messrs. Low, of Clapton, who received them from Mexico.—*W. W. S.*





W H Fitch del et lith.

J N Fitch imp

*Hexadesmia crurigera* Lindl.

## TAB. 92.

## Tribe EPIDENDREÆ.

## Genus HEXADESMIA, Brongn.

- H. CRURIGERA, Lindl. Bot. Reg. xxx., Misc. 4, 1844! Dense cæspitosa, caulibus a basi tenui teretiuscula, in pseudobulbos fusiformes dilatatis, foliis linearibus apice minute bidentatis solitariis geminis ternis, pedunculo capillaris basi vaginato, apice racemoso, racemo bi-, trifloro erecto, ovariis longi-pedicellatis bracteas bene superantibus, mento obtusangulo magno, sepalis oblongo-lanceolatis acutis, tepalis nunc latioribus, labello cuneato flabellato flexo antice nunc crenulato, apice retuso bilobo, lobo altero alteri imposito, columna gracili semitereti, fovea cordiformi seu elliptica parva.—*Hexopia crurigera*, Batem. MSS. apud Lindl. l. c. *Hexadesmia divaricata*, Hort. Paris! *H. crurigera*, Lindl., Rchb. f., *Xenia Orchidacea*, i. p. 168, tab. 59! i. 1—3; *Beit. Orchid. Centr. Amerik.* p. 55, 89!

This plant is described as coming from Guatemala. Perhaps the garden specimens we observed in Consul Schiller's and Mr. W. W. Saunders' stoves came from there. They were received from the late Mr. Skinner, who sometimes also introduced Costa Rica plants. The very numerous specimens in our herbarium are from Costa Rica, Cartago, 5000'; Irusa, 8—9000', Oersted! Cartago, 22.3, 1857, Wendland! Nice small specimens are collected by Ruiz and Pavon! The plant does not occur among Dr. Bernouilli's rich Guatemalense collections. A flower given to us by Dr. Lindley is marked "Guatemala."

The plant forms dense tufts, the *bulbs* rising near one another from the thin *rhizomes* and the thin filiform flexuose *roots*, now and then rough on their surfaces. The fusiform *pseudobulbs*, now compared with shanks, have a much thinner *stalk*, and consist of from two to three joints. The very base of the stalk is generally thickened in a little bulbous pyriform mass. The inferior *sheaths* soon lose their articulated triangular laminar apex. *Leaves* generally two, occasionally one or three, linear, with an equally or unequally bidentate apex, of a very firm texture, light green. *Inflorescence* terminal, straight, racemose, bearing two, three or only one flower. The *peduncle* is thin and firm. *Bracts* triangular, acute, nearly half the length of the whitish stalks to the thicker green *ovaries*. The *chin* of the flower is blunt and very

prominent. *Sepals* oblong-acute, white. *Tepals* nearly equal, generally broader, more obtuse, equally white. *Lip* ascending from the base and bent down with the anterior part, cuneate-flabellate, two-lobed at the apex, the one overlapping the other, white, with a greenish or yellowish disk. *Column* trigono-clavate, white, with a violet or purplish back and front, under the round or reniform or elliptical *stigmatic hollow*. *Androclinium* immersed, bearing a depressed *anther-case* with six *locelli*. Each of the two *pollinaria* bears on the upper end two pollinia bent inwards, and the lower end one also bent inwards.

Materials: — The types of the Lindleyan herbarium, very numerous specimens in our own collection, and the living plants in the collections of W. Wilson Saunders, Esq., and Consul Schiller; numerous sketches made at various times; a type from Dr. Lindley himself.

Tab. 92.—The plant. 1, side view of flower; 2, anterior view of flower; 3, oblique side view of flower, the sepals and tepals removed; 4, front view of pollinarium; 5, side view of pollinarium: all magnified.—*H. G. R. f.*

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A very interesting and curious Orchid, producing its flowers very freely. My specimens were sent to me from Guatemala by the late Mr. G. U. Skinner. The plant will thrive on a block of wood or cork with a little moss, and grown in the temperature of the Mexican house. During the season of rest it must be kept moderately dry.—*W. W. S.*







W. H. Fitch del. et lith.

J. N. Fitch imp.

*Ponera amethystina*, Rich. f

## TAB. 93.

## Tribe EPIDENDREÆ.

Genus PONERA, *Lindl.*

*P. AMETHYSTINA*, *Rehb. f. MSS.* Radicibus filiformibus minutissime granulatis deflexis, pseudobulbis aggregatis stipitatis articulis octonis seu novenis, stipito primum vaginate, parte maxime ipsa seu internodio maximo ligulato filiformi subcompresso obtusangulo transsectione elliptico, foliis geminis lineari-ligulatis apice bilobis, pseudobulbis novellis ex axilla unici folii, sympodiis in de quasi moniliformibus, articulis sibi invicem suppositis, racemis subumbellato terminalibus, bracteis lanceis acutis scariosis, ovariis pedicellatis longe exsertis, mento obtusangulo retrorso, sepalis tepalisque ligulatis subacutis apicem versus nunc dilatatis, labelli unque lineari, lamina hastata trifida refracta laciniis lateralibus subquadratis divaricatis, lacinia media emarginata retusiuscula, columna gracili utrinque sub fovea cornu assurgente obsagittata, rostello deflexo emarginato.

Sent from Santa Fé de Veraguas, by the late Mr. Skinner, to W. Wilson Saunders, Esq., being one of the novelties obtained by the efforts made to obtain materials for the 'Refugium.'

The species stands near *Ponera stellata*, *Rehb. f. (Scaphyglottis stellata, Lindl.)* Yet that has quite linear leaves, very short side lobes to the lip, and an acute middle lobe. The two horns of the column would appear to be strictly divaricate. We have examined once more the Lindleyan type we possess, and in October, at Kew, saw the type of the Lindleyan herbarium.

*Roots* thin, filiform, hanging down, with very small granulations on the surface. *Pseudobulbs* standing close together, stipitate, consisting of eight or nine joints; the principal part, forming the greater portion of the bulb, is ligulate-fusiform, compressed, obtuse-angled, elliptical in cross-section, bearing two linear-ligulate bilobed *leaves*, and between them the terminal *inflorescence* arising from the axil of one of those leaves and forming a new axis, so that one may find three bulbs standing one over the other. There are *sheaths* on the bulbs, forming a series of distichous scales under the larger joint: these, when young, have articulated acute *laminae*, which fall away very early. A young shoot consists of a number of such distichous sheaths and of leaves. The inflorescence is a short umbel-like or sub-

corymbose raceme. *Bracts* lanceolate, acute, scarious, one-nerved. Stalked *ovaries* much exerted. *Chin* obtusangular, retrorse. *Sepals* and *tepals* ligulate-subacute, sometimes dilated towards their apex, whitish with some purple and green. *Lip* with a linear equal *claw*, and a refract trifid hastate *lamina*. *Lateral lacinia* of the lamina nearly quadrate or obtusangular; the *middle lacinia* retuse emarginate; the lip light purplish, with some darker purplish veins. *Column* slender, trigonous, purplish, bearing on each side of the *stigmatic hollow* an ascending subulate or trigonous *arm*. *Rostellum* deflexed, emarginate. *Anthercase* depressed, deep purplish; four *pollinaria* bent inwards, bearing a confluent bifid *caudicula*.

The artist has observed a hollow at the base of the column, and a similar one at the base of the claw of the lip. We had not the opportunity of seeing any such things in the fresh flowers, nor can we see such in the carefully expanded dried flowers we have at hand. Yet such ornaments are developed in some *Poneras*, and they may perhaps only be developed in older specimens. We have frequently observed that the first flowers obtained in our stoves are very often not so fully developed as those we obtain from fully-established plants.

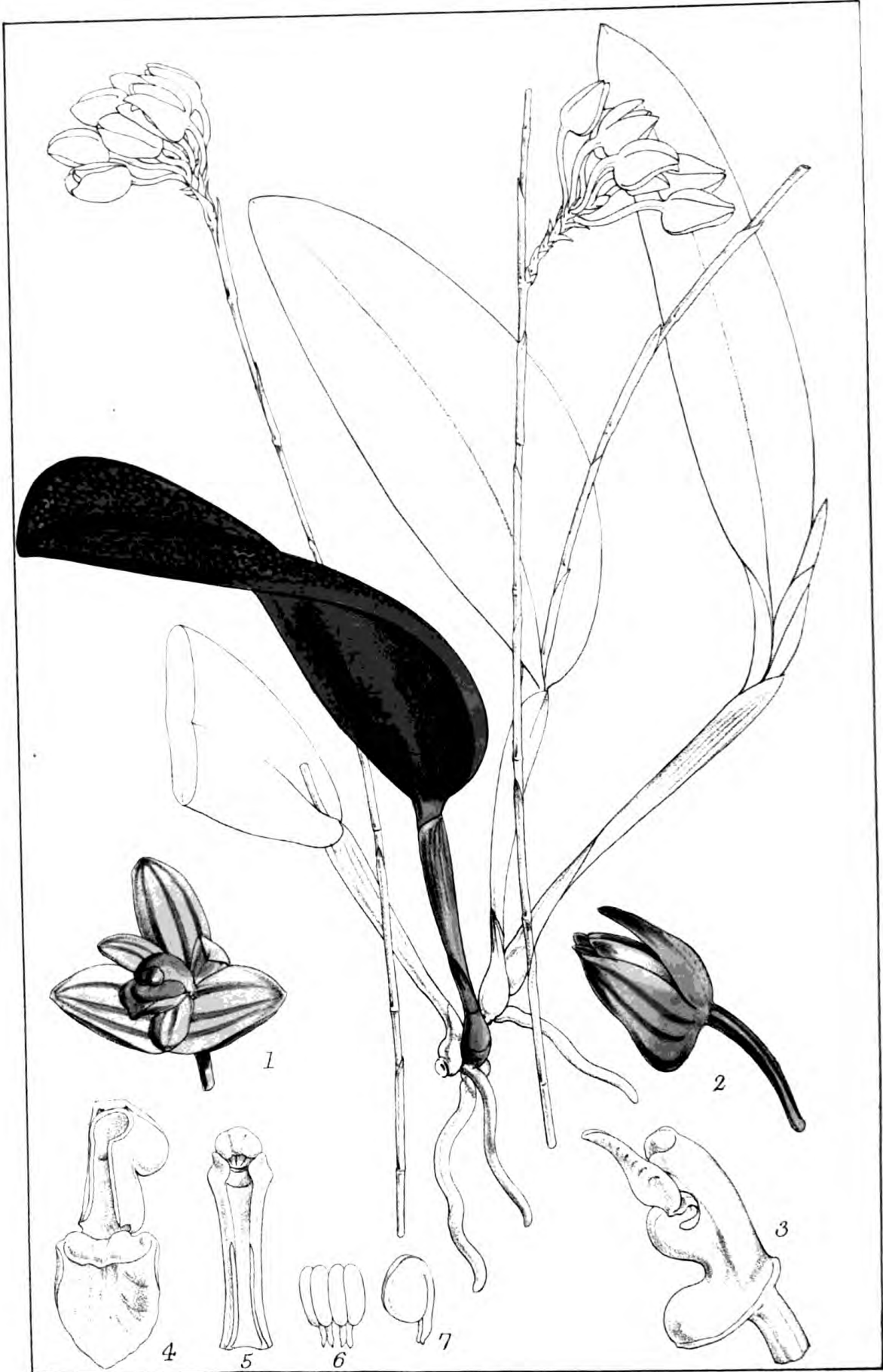
**Materials:**—Sketches and descriptions from living plants; one dried specimen: all taken from the single living plant we know of, that in the Saundersian collection.

Tab. 93. — A plant. 1, side view of a two-flowered raceme; 2, front view of expanded flower; 3, lateral view of flower, both sepals and tepals removed; 4, oblique view of lip; 5, column, front view; 6, pollinaria, seen from above; 7, side view of the same: all magnified.—*H. G. R. f.*

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This rare Orchid, with very small flowers and curiously formed stems, I obtained from Santa Fé de Veraguas, through the kindness of the late Mr. G. U. Skinner. It thrives, and flowers regularly in the Mexican house, grown on a block of wood, and abundantly supplied with moisture during the growing season. During rest it must be kept moderately dry.—*W. W. S.*





W. H. Fitch del et lith

J. N. Fitch imp.

*Hartwegia purpurea*, Lindl.

## TAB. 94.

## Tribe EPIDENDREÆ.

## Genus HARTWEGIA, Lindl.

H. PURPUREA, Lindl. Bot. Reg. 1837, sub 1971! Caulibus secundariis a basi tumida in pseudobulbos cylindraceos seu extensoriiformes sulcatos a squamis vestitos extensis monophyllis, folio a basi rotundata imo subcordata triangulo seu lanceo, acuto, valde coriaceo-carnoso, pedunculo longissime exserto multi-articulato, articulis a vaginis nervosis prope tectis, apice racemoso, post racemi terminalis anthesin nunc ramulis lateralibus racemigeris paniculato, bracteis triangulis ovaria pedicellata longe non æquantibus, mento obtusangulo, sepalis oblongo-triangulis obtuse acutis, sepalo supremo angustiori, tepalis lineari-ligulatis obtusis, labello usque ad medium cum columna connata, ima basi saccato, dein sigmoideo, parte libera cordato-triangula seu ovato-triangula, ima basi involuta, lobulato plicata, columna trigona arcuata, apice paulo seu alis dolabriformibus dilatata. — *H. purpurea*, Lindl., var. *angustifolia*, Bot. Reg. 1843, Misc. 58!

A highly interesting genus, standing near *Hexisea*, Lindl., but well distinguished by the base of the lip and column. It was discovered by, and named in honour of, Hartweg, the excellent traveller of the Royal Horticultural Society. It has frequently been found in various parts of S. Mexico, by Schiede! Ehrenberg! Jürgensen! Leibold! Galeotti! We obtained it from Guatemala through Dr. Bernoulli!

*Rhizome* short, annulated, with some whitish flexuose roots. *Pseudobulbs* rounded at their bases, then cylindrical or cylindrical-infundibular, with some ribs covered with sheaths. *Leaf* very leathery, fleshy, of very various forms, heart-shaped, rounded, rarely subcuneate at its base, obtriangular or nearly oblongo-lanceolate, acute, mottled with whitish green on a dark green surface. *Peduncle* very long, even two feet long, much articulated, the joints covered with ancipitous acute sheaths. *Inflorescence* a terminal raceme, followed by some lateral racemes in very strong individuals, exactly as in *Epidendrum fuscatum*. *Bracts* triangular, much shorter than the purplish stalked ovaries. *Flowers* amethyst-colour. *Chin* blunt. *Sepals* oblong, the lateral ones broader at their base. *Tepals* ligulate, acute. *Lip* half-

connate with column, hollowed out at its base in a blunt sac, and then bent inwards. The free *lamina* is oblongo-triangular or cordato-triangular, involved and with lobed plaits at its base. *Column* trigonous. *Androclinium* trilobed. *Side wings* occasionally much developed. *Stigma* transverse, covered by the dependent *rostellum*. *Anther-case* and *pollinaria* as in *Epidendrum*.

Materials :— My sketches, the oldest one made in 1844 ; living specimens in the Botanic Garden ; and copious dried specimens (twenty-seven).

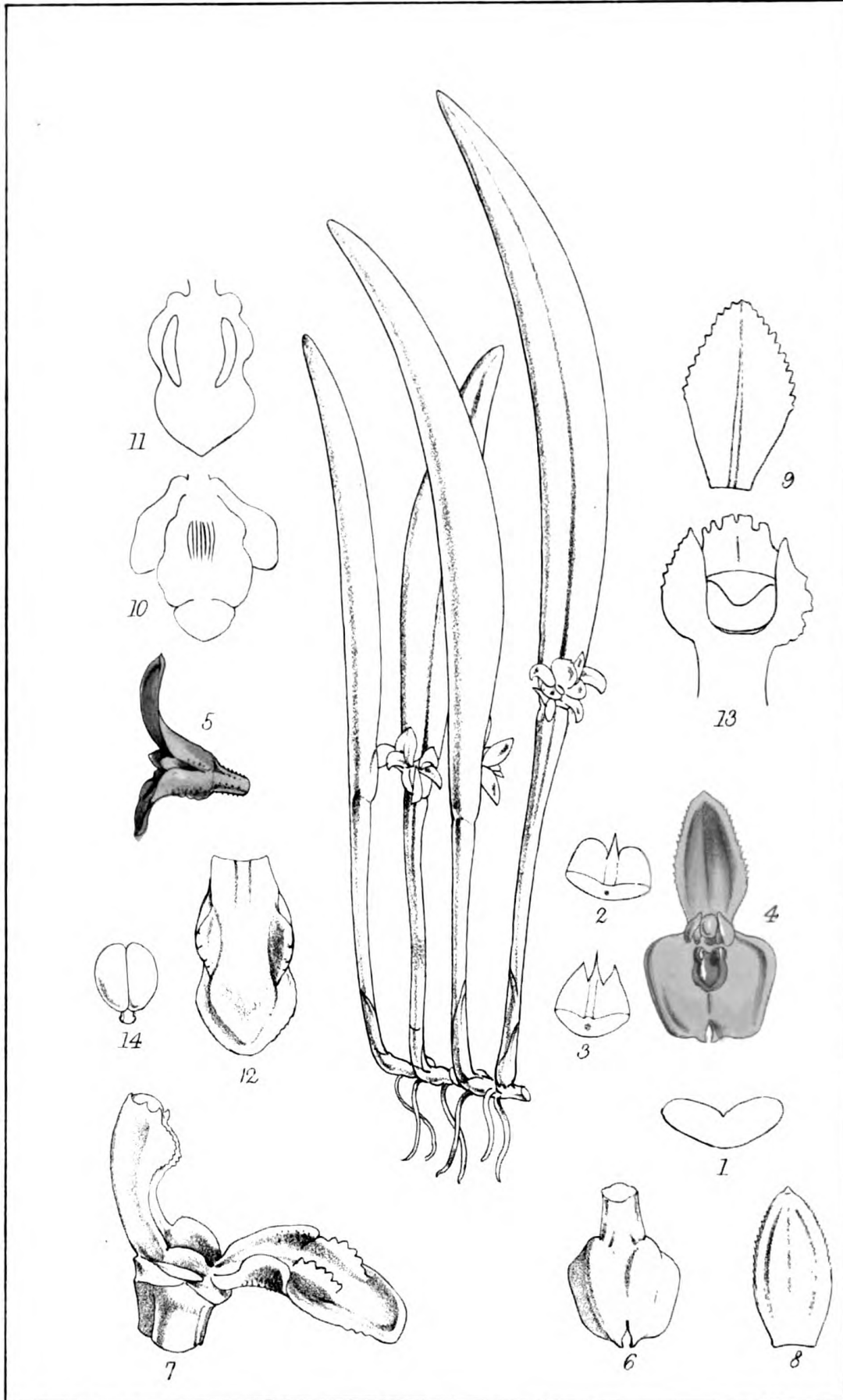
Tab. 94. — A plant. 1, oblique anterior view of a flower ; 2, side view of a flower ; 3, the same, both sepals and tepals removed ; 4, the lip, the superior part cut away from the column ; 5, column, front view, the lip removed ; 6, pollinaria, upper view ; 7, the same, side view : all magnified.—*H. G. R. f.*

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A beautiful little plant, with richly spotted leaves. Its small bright rosy purple flowers are produced on thin stems, sometimes two feet or more in length, and are to be found on the plant at all seasons of the year. It is very easy of cultivation when placed on a block of wood, or in a small basket filled with charcoal, peat and sphagnum. It requires a cool temperature. My plants were obtained from Guatemala through the late Mr. G. U. Skinner.—*W. W. S.*







W.H. Fitch, del. et. lith.

J.N. Fitch, imp.

*Pleurothallis bilamellata*, Rehb. f.

## TAB. 95.

## Tribe MALAXIDÆ.

## Genus PLEUROTHALLIS, R. Br.

P. BILAMELLATA, *Rehb. f. in v. Schlechtendal, Linnæa*, xxii. p. 830. Dense cæspitosa, caule secundario trigono, demum quinque-sulcato, folio cuneato ligulato-lineari lanceo dorso infra nervum medium obtusangulo transsectione subtrigono, valde crasso, apice angustissime tridentato, dentibus lateralibus nunc obliterated, floribus aggregatis paucis, ovario subpapuloso, sepalo summo oblongo-lanceo, seu ovato-ligulato obtuso seu apiculato, limbo nunc ciliatulo papuloso, sepalis lateralibus connatis cuneato transverso-oblongis seu subquadratis apice minute bifidis, supra nervos medios extus carinatis, tepalis oblongo rhombeis antice denticulatis, labello a basi subcordata seu humerato dilatato trifido, laciniis lateralibus rhombeis extrorsis, lacinia antica porrecta cuneato-oblonga obtuse-acuta, carinis geminis oblique elevatis semiovatis seu semiquadratis integris seu lobulatis, seu crenulatis a regione antebasilari in discum anticum seu medium, columna trigona, dorso carinata, androclinii limbo membranaceo denticulato integro seu trifido, lacinia postica retuso lobulata, laciniis lateralibus semiovatis acutis. — *Pleurothallis bilamellata*, *Rehb. f. Lindl. Folia*, ii. *Pleurothallis*, No. 58! *P. obscura*, *Rich. Gal. Orch. Mex.* p. 17! *Lindl. loc. c. sub P. angustifolia*, No. 89!

We obtained the living plant from gardens at Berlin, Hamburg, London, Reigate, out of the Botanic Gardens, the collections of Messrs. Schiller, J. Day, W. Wilson Saunders. But among all the numerous Mexican collections we have obtained or had lent, the plant has only occurred once. Mirador; Liebmann! Herb. of Copenhagen. Yet all the garden specimens had been stated to be Mexican. Now, as to *Pleurothallis obscura*, A. Rich., Gal., there has been no specimen used at all for the diagnosis, "Folio lanceolato acuto; floribus obscure brunneis 2—3 ad basin folio." It is described from out of Galeotti's sketches, now in our hands. The plant agrees pretty well as to the leaves, yet the flowers are smaller, deep chocolate-brown in lieu of cinnabar-red, and the lip is represented entire. Neither Galeotti's own private collection, now in my possession, nor Achille Richard's herbarium, contain any materials; yet Galeotti's sketches were very nice, but without any analytical details, nor would he appear to have much cared whether the lip was entire or trifid. The figure shows four stems, two without flowers, one with two flowers, one

with two buds. We are at a loss to understand how Achille Richard indicated two to three flowers.

*Rhizome* creeping, with membranous, nervose, dense sheaths. *Roots* very numerous, thin, bent and flexed, beautifully green when young. *Secondary stems* with few narrow sheaths, trigonous, at length with five or three furrows. *Leaf* cuneate-ligulate, with three very sharp teeth at the apex, nearly trigonous; the side teeth of the leaf are sometimes obliterated. *Flowers* one to three, very thickish, bivalvate, bright cinnabar-red. The *superior sepal* oblong-ligulate or ligulate, apiculate, now with minute *papillæ* on the sides, three-nerved; *side sepals* connate, very broad, sometimes oblong or nearly quadrangular, bifid at the tip or only bidentate, with keels over the middle nerves outside. *Tepals* much shorter, rhomboid-lanceolate, toothletted towards the apex, one-nerved. *Lip* cuneate-oblong, slightly acute or obtuse, trifid; the *lateral lacinie* rhomboid or semi-ovate. The *lamellæ* in the disk are sometimes short, sometimes so long as to reach nearly to the apex of the lip, but never to the base; they are semi-ovate or semi-oblong, crenulated, lobed or entire. The trigonous *column* is usually keeled over its back, and bears a membranous border around the *androclinium*, either equally toothletted or nearly entire, or trifid with semi-ovate acute lateral parts, and an erose central part. The *pollinia* are coherent by a viscid cellular mass.

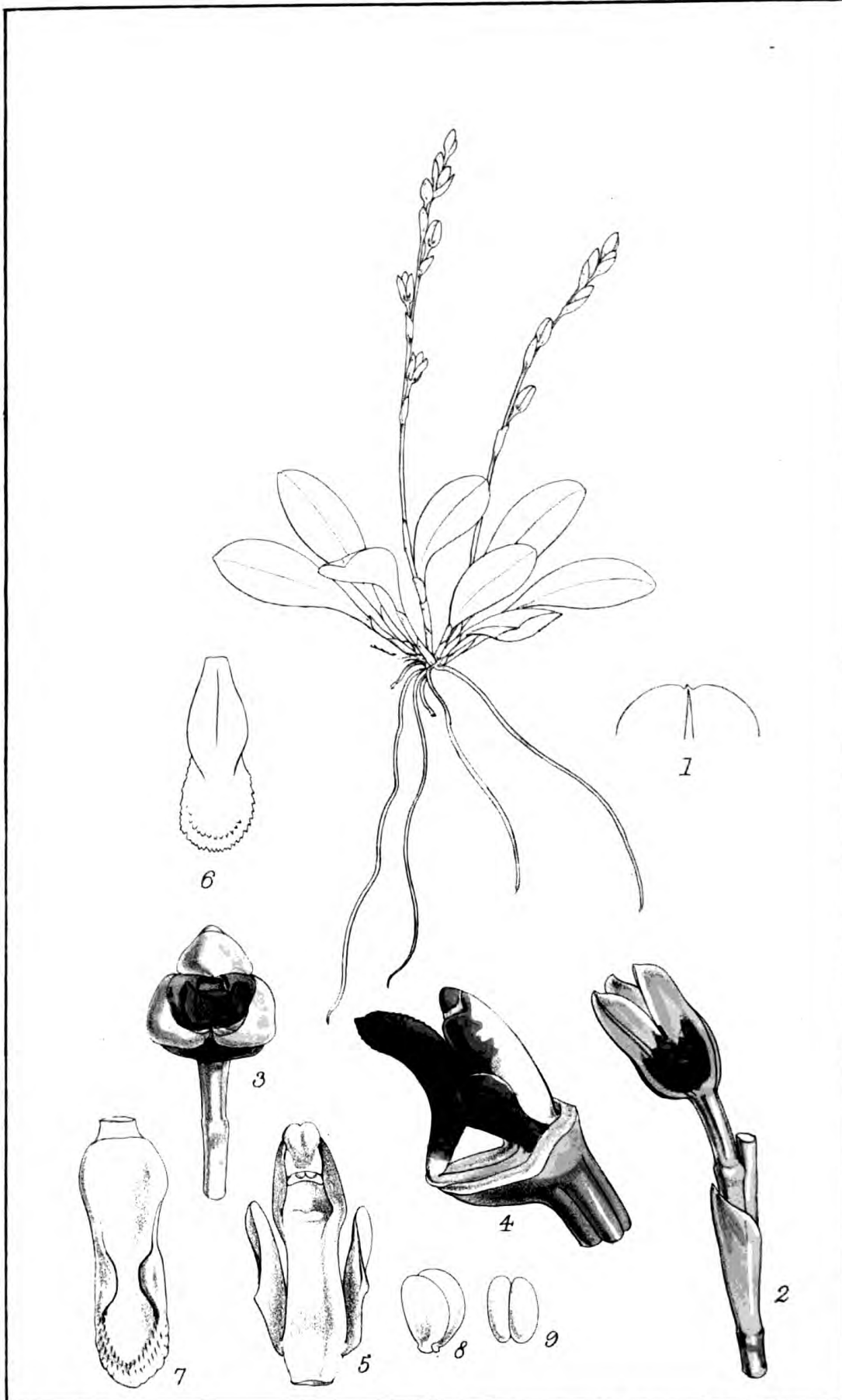
**Materials:**— Five sketches made at various times; seven herbarium specimens; a description of the living plant, prepared at Reigate, October, 1868.

Tab. 95.— The plant. 1, cross section of a leaf; 2, unusual form of apex of leaf; 3, usual form of the same; 4, front view of a flower; 5, side view of a flower; 6, inferior side of a flower; 7, side view of a flower, without sepals and tepals, the lip being bent down; 8, superior sepal; 9, tepal; 10, 11, 12, various lips; 13, front view of a column; 14, pollinarium: all magnified. All drawn by W. Wilson Saunders, Esq., except the figures 2, 3, 9, 10, 11, 13, added by Professor Reichenbach, f.—*H. G. R. f.*

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A very free-flowering species of *Pleurothallis*, with thick rigid leaves. It seems to thrive best when grown on a small block of wood placed near the light, and, like most of the smaller species of this genus, it should not be allowed to become dry at any time. I received my plants from Mexico through Mons. Boucard. The temperature of the Mexican house suits the plant well.—*W. W. S.*





W.H. Fitch del. et lith.

J.N. Fitch imp.

*Physosiphon punctulatus* *Rehb. f.*

## TAB. 96.

## Tribe MALAXIDÆ.

Genus PHYSOSIPHON, *Lindl.*

*P. PUNCTULATUS*, *Ichb. f. in v. Mohl. & v. Schlechtendal Bot. Zeit.* 1866, p. 385. Caule secundario brevissimo, cæspitosus, folio spatulato apice subinæqualiter bilobo cum apiculo interjecto, carnosissimo, pedunculo tenui capillari folium bene excedente minute ac distanter nigro-punctato pluri-vaginato, vaginis ochreatis acutis, bracteis ochreatis ovaria pedicellata non æquantibus, perigonio externo tubuloso, sepalis per nervos medios extos carinatis, medium usque fissis, laciniis oblongis obtuse acutis, tepalis brevissimis ligulatis apice retusis cum apiculo in medio (nunc simpliciter acutis?), labello a cuneata basi medio trifido, laciniis lateralibus semi-quadratis, lacinia antica oblonga, carnosissima papulosa, columnæ androclinio apice trilobo lobis lateralibus obtusis, lobo medio retuso emarginato.

We were astonished to find, in 1865, this little insignificant plant with S. Rucker, Esq., West Hill, Wandsworth, in his magnificent collection. We had a second time the pleasure of seeing it in October and November, 1868, in the garden of W. Wilson Saunders, Esq.

A cæspitose plant. *Aërial roots* filiform, long, flexuose, shrivelled. *Secondary stems* very short, with two or three brown nervous sheaths, the superior one being the wider. *Leaf* cuneate-oblong, blunt, with two obtuse edges and a very small apiculus at the top, very fleshy, fornicate, furrowed at the inner base. The cellules containing *rhaphides* are very conspicuous on the under side. *Peduncle* filiform, at length bent down, much longer than the leaf, with many distant acute sheaths, racemose at the summit. *Bracts* ochreate, oblong, acute. *Sepals* erect, connate to the middle, very fleshy, equally split in three oblong retuse lobes, with a little mucro at their end, and keels running over their middle line outside, greenish yellow or honey-coloured, with a deep violaceous or purplish spot at each of both sides under the union of the dorsal and the lateral sepal. *Tepals* cuneate, obtuse, nearly retuse, with a little apiculus, deep purplish violet, three times shorter than the sepals. *Lip* ascending, curved, ligulate, obtuse, with minute acute warts at its end and

also underneath, and an oblong angulate keel on each side, running in the disk, deep purplish violet, more purplish near the base. *Column* slender, arched, bearing an erect limb around the *androclinium*, white with purplish angles. *Rostellum* retuse, hanging over the transverse *stigmatic hollow*. *Anther-case* mitrate, obtuse, whitish with a violet summit. *Pollinia* two, with a cellulous combining matter in place of a caudicula.

Materials :— A sketch and description, prepared at Kew, from the Ruckerian specimen, and the same prepared at Reigate, in the Saundersian house, in October, 1868; two herbarium specimens.

Tab. 96.— The plant. 1, apex of the leaf; 2, one flower, with the bract and a part of the rachis; 3, front view of a flower; 4, side view of a flower, the outer perigone being removed; 5, anterior view of a column, with tepals viewed in front; 6 & 7, lip; 8, side view of pollinia; 9, front view of the same: all magnified. The figures 1 and 6 added by Professor Reichenbach, f.—*H. G. R. f.*

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A very delicate and interesting little Orchid, native of Bogota, from whence it was obtained by Mons. Linden, of Brussels, who sent it to me. It should be grown on a small block of wood with a little green moss, and kept moist at all times. Its roots are very thin and wire-like, perishing soon if exposed to a dry atmosphere.—*W. W. S.*







W.H. Fitch del. et lith.

J.N. Fitch. imp.

*Pelexia triloba*. Lindl.

## TAB. 97.

## Tribe NEOTTIACEÆ.

Genus PELEXIA, *Poit. & L. C. Rich.*

*P. TRILOBA* (*Lindl. Gen. & Sp. Orch.* 483!) Radice fasciculata, fibris cylindraceis acutis villosis, foliis paucis rosulatis longius petiolatis, lamina cuneata oblonga acuta, caule florido multo brevioribus, caule vulgo bipedali usque quadripedali, vaginis oblongis acuminatis basi arctis superne laxis, infimis approximatis, medianis distantibus, pilis infra quibusdam sparsis, superne approximatis, racemo elongato multifloro, floribus anthesi haud ita approximatis, bracteis ligulatis acuminatis quinquenerviis, basi sæpe oblique insertis, ovaria brevissima seu non pedicellata subæquantibus, ovariis subcalvis, sepalo summo abbreviato ovato acuto, sepalis lateralibus triangulo-falcatis in cornu cylindraceo-extinctoriiforme antice altius fissum coalitis, tepalis cuneato-oblongis acutis, labello ligulato, apice attenuato acuto, ante apicem utrinque acutangulo, disco papulis quibusdam clavatis, columna libera clavata, androclinio antice rotundato cum apiculo, lateribus immarginato, fovea supposita obsemilunata seu triangula, anthera oblonga, per dorsum carina obtusata, polliniis geminis oblongis, utrinque ex lobis seriatis fissis, caudicula brevi alte fissa, glandula oblonga acuta obscura.

When Dr. Lindley published the plant he was not aware of its habitat: "I have often received this plant from garden collectors, but never with any intimation of its native country, which, however, is no doubt Tropical America." Whether the area of the plant is a wide one I cannot say. I have at hand a specimen collected by Riedel, sandy places of woods, Restinga Tijuca, in Brazil, Aug. 1833! Mr. Weddel's No. 510! gathered near Rio, would appear to be the same. Probably the plant is to be found in many other places, but our knowledge of terrestrial Orchids is very poor, since they are now-a-days generally totally neglected by collectors. The plant in the Saundersian collection came from Rio. In former times it was frequently met with in German collections, but I feel great doubts whether there may now be a single plant in all the gardens of the Continent.

*Root* fascicled, with cylindrical, acute, very hairy fibres. *Leaves* few, three to four, with long, channelled stalks, cuneate-oblong, acute, beautifully green, and of a thickish texture. *Common flower-stalk* cylindrical, with some adpressed acute sheaths, the inferior ones approximate, the superior distant, with a few scattered hairs below and a large number between the flowers. *Inflorescence* racemoso-spicate, the pedicels being only well developed in the lower part. *Flowers* not very crowded, but very numerous, of a uniform green. *Bracts* ligulate, acuminate, five-nerved, very often unusually oblique at their base, nearly equal to the ovaries. *Ovaries* nearly or totally hairless. *Upper sepal* short, ovate, acuminate. *Lateral sepals* triangular-falcate, expanded into a cylindrical horn, slit very deeply on the anterior side. *Tepals* cuneate-oblong, acute. *Lip* ligulate, attenuate, lanceolate before the angular lateral lobes, with some pimply hairs on the disk. *Free column* clavate. *Androclinium* rounded, with a small point in the middle and no borders on the side. *Stigmatic hollow* crescent-shaped or triangular. *Anther* oblong, with a blunt keel over the ridge. *Pollinia* two, each consisting of lobes. *Caudicle* short, deeply slit. *Glandule* oblong-acute, dark.

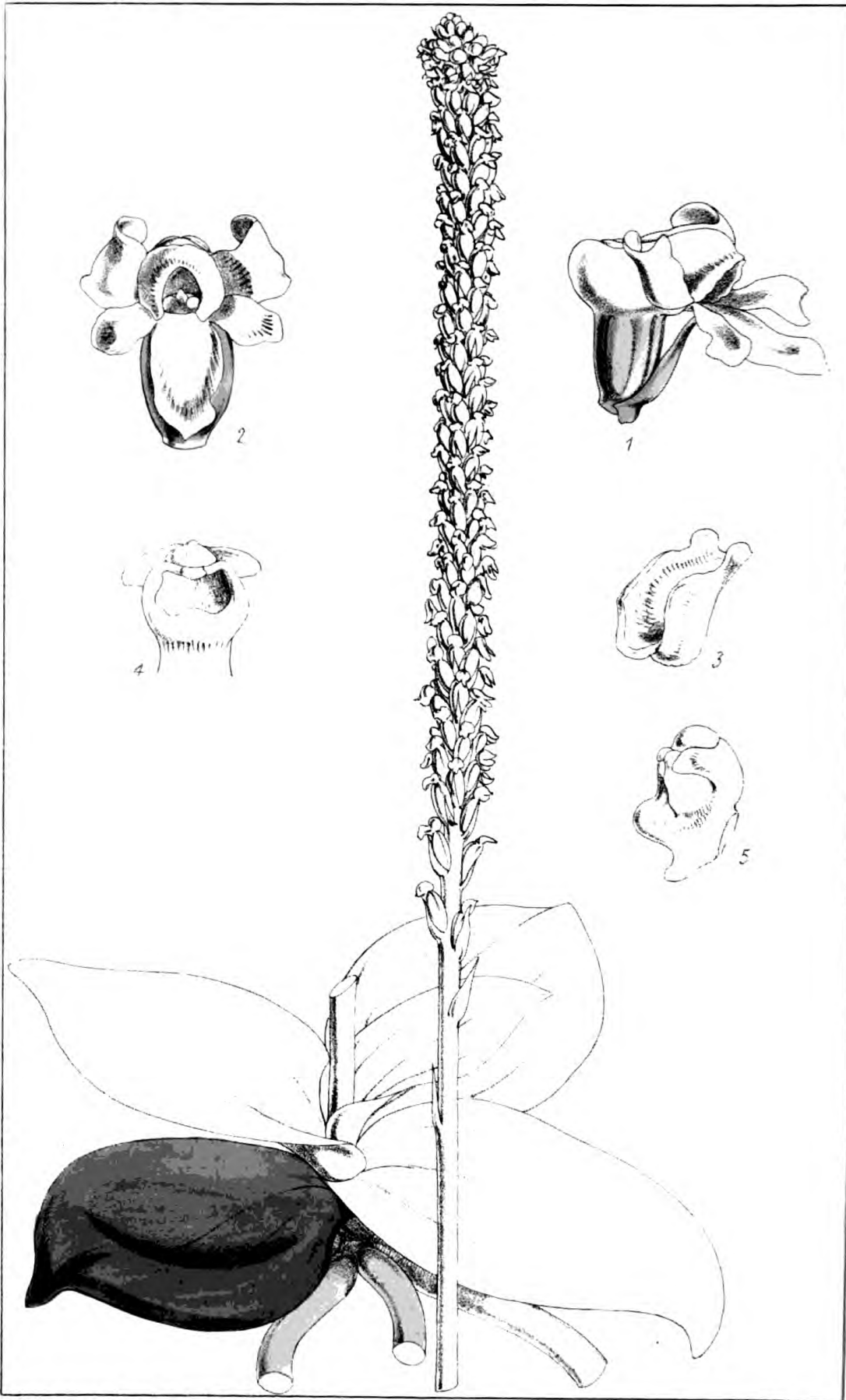
*Materials*:—Two analytical sketches prepared from fresh flowers; twelve herbarium specimens.

Tab. 97.—Upper and lower part of the plant. 1, front view of a flower +; 2, side view of a flower +; 3, part of flower; sepals, petals cut, except a part of the spur to show the places where the lip is adherent, as is usual in the genus +; 4, column +; 5, pollinarium, added by Rchb. f.—*H. G. R. f.*

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My specimens of this plant I received from Rio Janeiro, collected there by the late Mr. D. Bowman. The plant is of easy cultivation and flowers freely, potted in spongy peat with a little loam, and well drained. It should be grown in a damp, shady, cool stove.—*W. W. S.*





W.H. Fitch del. et lith.

J.N. Fitch imp.

*Prescottia densiflora*, Lindl.

## TAB. 98.

## Tribe NEOTTIACEÆ.

## Genus PRESCOTTIA, Lindl.

P. DENSIFLORA (Lindl.! *Ann. Nat. Hist.* vi. 1841, p. 52! *Gen. & Sp.* 455!)

Radice fasciculata, foliis rosulatis cuneato-oblongis acutis de-crescentibus, pedunculo parce vaginato, squamis inferioribus vaginatis acutis fissis, superioribus sessilibus ligulatis acutis, spica cylindracea elongata, bracteis ovatis acuminatis seu tri-angulis trinerviis ovaria æquantibus, ovariis crasso-turbinatis, sepalo dorsali oblongo acuto, sepalis lateralibus subæqualibus basi coalitis subsaccatis, tepalis ligulatis acutis, labello saccato basi superiori utrinque juxta columnam auriculato, columna crassa brevi, auricula extrorsa retusa utrinque juxta antheram. —*Decaisnea densiflora*, Ad. Brogn. in Duperrey, *Voyage Coquille*, 192, t. 139!

This species was collected in St. Catherine, Brazil, in the Voyage de la Coquille, and appears to be much rarer than the *Prescottia micrantha*, Lindl., which is very common in herbaria. I have one specimen from Pabst! gathered also at St. Catherine. Mr. Linden introduced it from St. Catherine, and had it in flower in May, 1866. I may add that in the spring of 1872 I was favoured by W. Wilson Saunders, Esq., with a very gay and interesting monster of the same plant. It was an inflorescence simulating *Encomis*, all the upper bracts being expanded into a beautiful crown or coma of broad and short leaves, closely imbricated one on another, like the leaves of some *Semperviva*.

*Root-fibres* fasciculate. *Leaves* rosulate, cuneate-oblong, the upper ones smaller, somewhat glaucous. *Common flower-stalk* glabrous, with some distant *sheaths*, and a very dense long *spike*. *Bracts* ovate, acuminate, or triangular, three-nerved, as long as the thick turbinate *ovaries*. *Dorsal sepal* oblong-acute; *lateral sepals* nearly alike, but connate in a sacciform pouch at their base. *Tepals* ligulate, acute. *Lip* saccate, with a wide opening and a small rounded auricle at its base at each side of the column. *Column* stout, with an extrorse retuse *auricle* on each side of the anther. *Pollinia* four, powdery, with a small round *gland*. The small flowers are whitish, with rosy tips to the sepals.

Materials:—One wild and one garden specimen; a sketch made from the living plant; and Dr. Lindley's analysis.

Tab. 98.—Plant, with cut common flower-stalk; 1, flower, side view +; 2, flower, seen from front side +; 3, lip +; 4, column, anterior side +; 5, column, side view +.

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The closely-packed flowers of this interesting species of *Prescottia* form a cylindrical spike about five inches long. I received the plant without locality from Mons. J. Linden, of Brussels. It flowers freely when treated as *Pelexia triloba*: see Tab. 92.—*W. W. S.*







W.H. Fitch del. et lith.

J N Fitch imp.

*Odontoglossum ringens*, Rehb. f.

## TAB. 99.

Tribe VANDEÆ.

Genus ODONTOGLOSSUM, H. B. K.

O. RINGENS, *Rchb. f.* Pseudobulbo oblongo ancipiti diphylo, foliis ligulatis acutis pergameneis, panícula fractiflexa multiflora, sepalis oblongo-ligulatis acutis, lateralibus labello suppositis, tepalis oblongis acutis limbo valde crispatis, labello pandurato antice latiore crispo acuto, callo obsellæformi a basi in discum, utrinque basi semiovato serrulato, antice tridentato, carinula antice interposita, columna clavata, alis prope obsolete pone limbum foveæ productis, dentibus oblongis geminis sub fovea.

This species appears to have been found only by Pearce in Peru. I have obtained it from the nursery of Messrs. Veitch. I was, however, not so fortunate as our artist, who saw the flowers of the most beautiful yellow. My flowers were pallid or sulphur-coloured, with brown blotches on the tepals, small short brown blotches on the sepals (not observed by Mr. Fitch), and some violet streaks at the base of the lip. It is very interesting that the position of the parts of the flower reminds one of *Oncidium phymatochilum* or *ochmatochilum*. The flowers are as large as those of a good variety of *Odontoglossum læve*. The tepals, however, are very crisp at their border.

*Pseudobulbs* oblong, ancipitous, two-leaved. *Leaves* ligulate, acute, parchment-like. *Panicle* zigzag, many-flowered. *Sepals* oblong-ligulate, acute, the lateral ones bent under the lip and usually reflexed at their tips. *Tepals* oblong-acute, very wavy in their limb. *Lip* pandurate, broader towards the reflexed acute tip, with a saddle-like callosity from the base to the disk and a serrate border towards the base, and two to three teeth in the anterior part and a small keel between the two. *Column* clavate, with nearly obsolete scarcely perceptible *wings* near the borders of the *stigmatic hollow*, and two tooth-like blunt lobes beneath it.

Materials:—A beautiful herbarium specimen sent in 1867 by Messrs. Veitch; and sketches and description, both made from the living plant.

Tab. 99.—Part of inflorescence and plant; 1, front view of lip and column +; 2, pollinarium, side view +.

—

I am indebted to the Messrs. Veitch for allowing me to figure this plant. It was sent to this country from Peru by Messrs. Veitch's energetic collector, Mr. Pearce.—*W. W. S.*





W H Fitch del. et lith.

J N Fitch imp.

*Trichopilia rostrata*, Rehb f

## TAB. 100.

## Tribe VANDEÆ.

Genus TRICHOPILIA, *Lindl.*

**T. ROSTRATA**, *Rchb. f.* Pseudobulbo lineari-ligulato ancipiti squamis basilaribus punctulatis, apice monophyllo, folio cuneato oblongo ligulato acuto, pedunculo bifloro, bracteis oblongo-ligulatis obtusis punctulatis, ovario pedicellato multo brevioribus, sepalis et tepalis cuneato-linearibus acutis, vulgo bis tortis, sepalis lateralibus basi connatis, cum ovario paullo angulatis, labello flabellato apicem versus trifido, laciniis lateralibus obtusangulis, lacinia antica brevi obtusa rhombea seu transverse bilobemarginata, fovea in ima basi, foveis duabus retrorsum triangulis, columna breviuscula, androclinii lacinia postice ligulata ciliata fimbriata, rostello erecto bicuspidato, fovea stigmatica rotundula sublobulata, antheræ rostro angulato, de corpore antice obtuso assurgenti, polliniis discretis, caudicula bicuspidata.

This species is very distinct in the upper part of the column from *T. oicophylax*, *Rchb. f.* It has whitish green sepals and tepals and many orange-coloured streaks on the disc of the lip, which is whitish. I have known it since 1866, when Mr. Low brought very satisfactory and well-developed specimens, stating that it was imported from New Grenada. I obtained lately a plant from Director Linden, which I saw growing at Brussels. It came also from New Grenada, and is most probably the same species. It was, however, very small, and had all the defects which the first flowers of recently-introduced plants bear, alas! so often.

*Pseudobulb* linear-ligulate, ancipitous. *Basilar sheaths* triangular, scariose, brownish, with many small black-brownish dots. *Leaf* cuneate, oblong-ligulate, acute, single on the pseudobulb. *Flower-stalk* two-flowered. *Bracts* oblong-ligulate, blunt, with small brownish dots, much shorter than the pedicelled *ovary*. *Sepals* and *tepals* linear-acute, commonly twice-twisted, the lateral ones somewhat connate at the base and very often at an angle with the *ovary*. *Lip* flabellate, trifid towards the apex; *lateral lacinie* obtuse-angled; *middle lacinia* rhomboid, obtuse-angled, one

obtuse-angled excavation before the adhesion to the lip, and on each side one triangular excavation. *Column* short; posterior laciniae of *androclinium* ligulate and ciliato-fimbriate; *rostellum* straight, bicuspidate. *Stigmatic hollow* rounded, with lobes on its under margin. *Anther* with a keel forming an outspringing angle over the blunt body. *Pollinia* distinct. *Caudicle* with two angles at its cohesion with the pollinia.

Materials:—Two herbarium specimens; sketches and description from fresh specimens sent by Mr. Low; description of the living plant in the Saundersian garden.

Tab. 100.—Plant bearing only a young leaf; 1, lip +; 2, column, side view +; 3, column, anterior view +; 4, front view of anther-case and stigmatic hollow +; 5, anther +; 6, pollinarium +. The figures 4 and 5 added by Rchb. f.

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I procured this pretty and elegant *Trichopilia* at the Messrs. Stevens' Sale Rooms, and it was stated that New Grenada was its native country. It requires a cool, damp, shady stove, and should be grown in spongy peat and sphagnum, with the pots drained two-thirds their depth by crocks. It flowers freely.—*W. W. S.*







W. H. Fitch del. et lith.

J. N. Fitch imp.

*Amblostoma tridactylum* Fchb. f

## TAB. 101.

## Tribe VANDEÆ.

Genus AMBLOSTOMA, *Scheidw.*

- A. TRIDACTYLUM, *Rehb. f. in Walp. Ann.* vi. 485. Rhizomate repente, caulibus fusiformibus, vaginis scariosis albidis apice retusiusculis seu acutis, laminis evolutis ad quinque, vaginis foliorum verorum arctis, laminis lineari-ligulatis apice oblique rotundatis, nunc cum apiculo, racemo seu panicula nutante, vaginis supra folia nullis, floribus (saltem in speciminibus meis) distantibus, bracteis triangulis acutis, ovariis pedicellatis multoties brevioribus, sepalis oblongis obtuse acutis seu obtusis, tepalis cuneato-ligulatis, labelli adnati lamina trifida, lacinia media anguste triangula recta, laciniis lateralibus falcatis seu ligulatis retusis, limbo externo involuto, callo depresso trifido in basi disci, cruribus lateralibus obtusangulis, crure medio lanceo-acuminato usque versus apicem lacinie mediae progrediente, columna crassa conica, androclinio lobulato, anthera reniformi quadriloculari, polliniis sphaericis, per paria collateralibus in caudiculis linearibus, glandula triangula, antice plus minus emarginata.—*Epidendrum tridactylum*, Lindl.! *B. Reg.* xxiv. Misc. 81; Lindl. *Folia Epidendrum*, p. 90, 91, No. 290. *Amblostoma cernua*, *Scheidw. in Otto & Dietrich, Allg. Gartz.* 1838, 383; *Rehb. f. Xenia*, i. p. 137. *Sarcadenia gracilis*, *Brongn.!* in *Hort. Paris.*

Mimicry is often very curious. Here we have a plant which plays *Epidendrum* with such success that even our most acute Dr. Lindley was deceived, though, indeed, if he had conceived the idea of looking at the pollinarium, he would have seen what Ad. Brongniart and the writer of these lines stated. I suspected that the *Epidendrum micranthum*, Lindl.! was another species. It appears, however, to be a genuine *Epidendrum*. It was compared in its habit, by Dr. Lindley, with *E. tridactylum*. There is, however, a second species from Bolivia:

AMBLOSTOMA DENSUM. Caule crasso late vaginato, foliis oblongo-ligulatis obtuse acutis, inflorescentia paniculata erecta densiflora, sepalis (atropurpureis) oblongis obtuse acutis, tepalis spathulatis acutis, labello trifido, laciniis lateralibus divaricatis lineari-ligulatis obtusis, lacinia media porrecta triangula brevi,

callo trifido in basi disci, lacinulis lateralibus obtusangulis, lacinula media acuminata, androclinio subintegro.

It is very curious that our plant was stated, both in England and in Belgium, to come from Mexico; yet the wild specimens we have at hand come from the Organ Mountains, where the late Gardner! found them in dense tufts on large trees (No. 626). It is striking that I never found a single specimen among the numerous Mexican Orchids I had in my hands. I am, however, far from denying the statement of the gardeners; for, if some indications have proved quite wrong, many others rejected before by botanists proved finally correct. The first plants flowered in Europe with Stephen Cannon, Esq., of Stratford Green, and Mynheer van der Maelen, in Belgium, the unfortunate gentleman who was honoured by the dedication of ugly *Maelenia*, a monster of *Epidendrum (Cattleya) Forbesii*. Later it appeared in the Jardin des Plantes at Paris, where it was well recognized as a *Vandea* by M. Brongniart. Then we had it in Consul Schiller's collection at Hamburgh; in the English collections of W. Wilson Saunders, Esq., the Lord Bishop of Winchester, and S. Rucker, Esq.; yet it appears that the greenish yellow flowering plant, with its orange anther and callus, never lives long in our gardens.

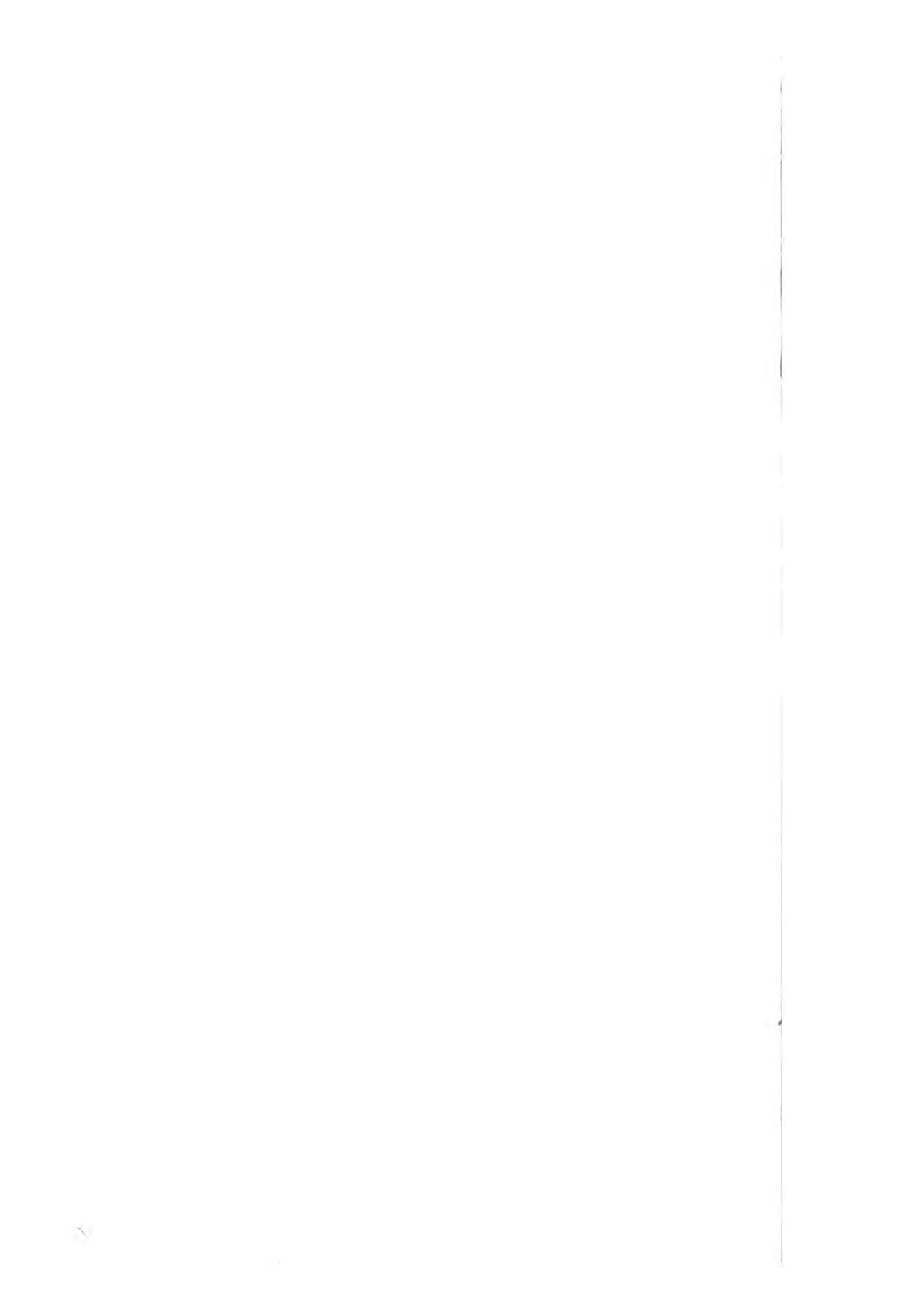
*Rhizome* creeping. *Pseudobulb* fusiform, with scariose whitish afterwards brownish *sheath*. Developed *leaves* generally five, distichous, linear-ligulate, obliquely rounded, with an apiculus. *Raceme* or *panicle* nodding. *Flowers* distant from one another in all specimens I ever saw, but represented as very dense by our artist. *Bracts* triangular, very much shorter than the stalked *ovaries*. *Sepals* oblong, bluntly acute or quite blunt. *Tepals* cuneate ligulate. *Lip* adnate, with a trifid blade; *lateral laciniae* falcate, with involved outer limb; *middle lacinia* narrow, triangular, straight; a depressed trifid *callus* at the base of the lip, with obtuse-angled lateral teeth and a long acute middle tooth going towards the apex of the middle lacinia. *Column* conical. *Androclinium* lobed. *Anther* reniform, quadrilocular. *Pollinia* globose, adhering in collateral pairs to two linear *caudicles*. *Glandule* triangular, often emarginate on its anterior sides.

*Materials*:—Two pages full of analytical sketches made at various times from the living flowers; six herbarium specimens.

Tab. 101.—A plant. 1, side view of flower + ; 2, expanded flower + ; 3, side view of flower, sepals and tepals cut, showing the adhesion of the lip ; 4, dorsal view of column and lip (the side laciniae are represented unusually obliquely retuse, so that they have the appearance of being one-toothed in the middle) ; 5, column, anterior view, cut from the lip + ; 6, pollinarium + ; 7, side view of ditto +.

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A free flowering plant when treated as recommended for *Trichopilia rostrata* (Tab. 100). I am indebted to the Royal Horticultural Society for a fine and well-grown specimen of this plant.—*W. W. S.*







*Lycaste leucantha* Klotsch.

## TAB. 102.

Tribe VANDEÆ.

Genus LYCASTE, *Lindl.*

**L. LEUCANTHA**, *Klotzch in Otto & Dietrich Allgemeine Gartenzeitung*, 1850, p. 402. Radicibus adventitiis crassis filiformibus subterraneis, junioribus supra apicem pulchre pilosis, vaginis vestientibus geminis quaternisve triangulis mox scariosis, caule juniori arete imbricantibus, pseudobulbo compresso pyriformi ancipiti, demum utrinque costis geminis usque quinis, superficie omnino lævi, minime adeo rugulosa ac in *Lycastide macrophylla*, Endl. Pöpp., foliis evolutis quaternis quinisque cuneato-oblongis acuminatis plicatis, costis inferne prominulis quinis, foliorum cicatricibus in pseudobulbo vetere minute apiculatis, pedunculis viridibus seu atro-purpureis solitariis seu pluribus, ex axilla vaginæ veteris pseudobulbo bene evoluta, usque spithamæis, vaginis ochreatis acutis, bractea vaginata acuminata nervosa, ovarium vulgo longe excedente, mento acutangulo brevi, sepalis oblongis acutis extus paullo glutinosis viridibus, tepalis cuneato-oblongis obtuse acutis brevioribus latioribus albis nunc flavo irroratis, labello cuneato-oblongo trilobo albo sulphureo suffuso, lobis lateralibus obtusangulo abruptis, lobo medio ligulato seu ovato seu oblongo lobulato velutino, callo depresso semi-oblongo in disco inter lobos laterales, columna trigono-clavata, antice pulverulento-velutina, anthera obtuse conica velutina, velo supra-stigmatico integerrimo, polliniis obtusangulis, caudicula lineari, glandula cordata.—*Rchb. fil. Beitr. Centr. Am. Orch.* p. 29, Tab. IV., i., ii. 1—6; *Walp. Ann.* vi. 603. *Lycaste leucoflavescens*, *Hort. Angl.*

The *Lycaste leucantha* was discovered by J. de Warscewicz in Costa Rica. It has flowered since in many continental gardens. It would appear to have been sent recently to England. We obtained it in Hamburgh Botanical Garden from Mr. Carmiol, one of whose plants is just flowering (Jan. 1869).

*Adventitious roots* filiform, hairy towards the point, usually subterraneous. *Sheaths* beneath the pseudobulbs three to four, seldom only two, triangular, soon scariose, imbricate in the young shoots. *Pseudobulb* compressed, pyriform, bluntly two-angled, at length with two to five blunt ribs on each side, quite smooth



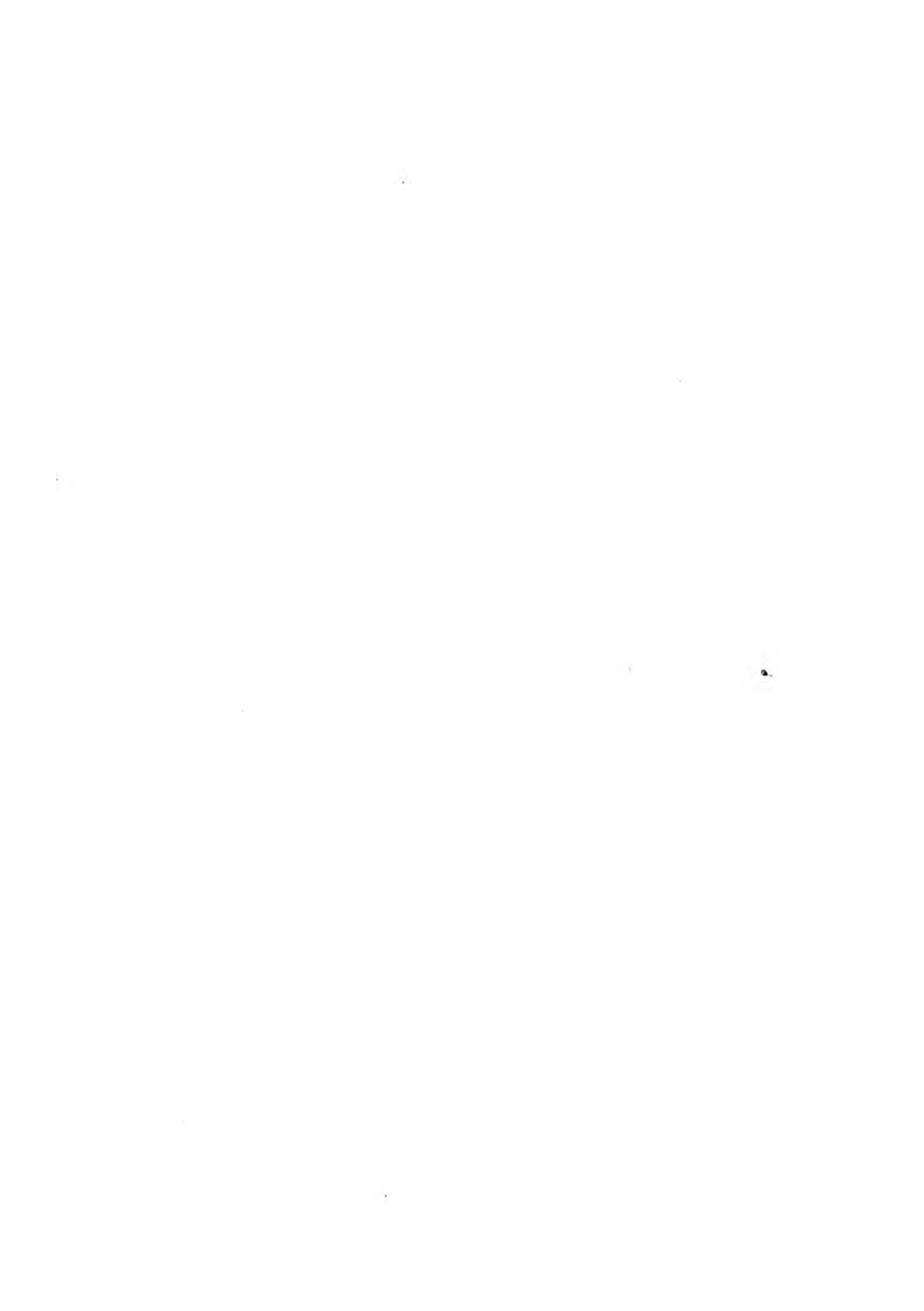
on each side, never rugulose as are the pseudobulbs of *Lycaste macrophylla*, Endl. Pöpp. Developed upper *leaves* four or five, cuneate, oblong-acuminate, plaited, with five prominent ribs; cicatrices of fallen leaves with some little spiny processes. *Flower-stalks* greenish or purplish, single or several in the axils of old sheaths when the pseudobulb is fully developed, of various lengths, usually reaching a span length, with ochreate, acute, distant *sheaths*. The *bract* like the sheaths, but more scariose and usually longer than the stalked *ovary*. *Chin* acute-angled, short. *Sepals* oblong, acute, viscid outside, green. *Tepals* cuneate-oblong, blunt, acute, shorter, broader, white, often with a yellowish hue. *Lip* cuneate-oblong, trilobed; *lateral lobes* obtuse-angled, abrupt; *middle lobe* ligulate or ovate or oblong lobulate; velvety, white and yellowish; a depressed ligulate or semi-oblong callosity in the disc between the lateral lobes. *Column* trigono-clavate, velvety under the stigmatic hollow; the *rostellar process* above it quite entire, or cut out for the caudicle, protruded. *Anther-case* blunt, velvety. *Pollinia* obtuse-angled, depressed. *Caudicle* linear. *Glandule* heart-shaped.

**Materials** :—Several analytical sketches made at various times; ten herbarium specimens, but not a single wild one.

Tab. 102.—Plant. 1, side view of flower, sepals and tepals cut; 2, lip; 3, column, anterior side +; 4, pollinarium, side view +.

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This is an old plant in my collection, having been procured several years since from Mr. Masters, of the Exotic Nursery, Canterbury. It flowers freely grown in a cool, damp house, potted in spongy peat and sphagnum, and well drained.—*W. W. S.*





W.H. Fitch del. et lith.

J.N. Fitch imp.

*Maxillaria nasalis*. Rehb. f.

## TAB. 103.

Tribe VANDEÆ.

GENUS MAXILLARIA (*R. Pav.*), *Lindl.*

*M. NASALIS*, *Rehb. f.!* *Beitr. Cent. Am.* p. 104! Pseudobulbo late oblongo ancipiti a vaginis foliatis stipato, apice monophyllo, folio cuneato ligulato obtuse acuto ultra pedali, pedunculis solitariis, vaginis nonnullis increscentibus ancipitibus, bractea ampla scariosa subacuta, ovario a bractea tecto multipunctato, sepalis valde carnosiss, ligulato-acuminatis, tepalis brevioribus ligulatis acutis, labello ligulato, medio trifido, laciniis laterali-bus angulatis medianis, lacinia media producta ligulata acuta hinc undulata, callo tumido oblongo viscoso inter lacinias laterales, columna clavata.

The original discoverer of this plant appears to be the late unfortunate L. Schlim, Director Linden's half-brother, who found it near Lasita, in New Grenada: it is his 1752! Some time ago Mr. Tucker, Mr. S. Low's traveller, found it in Costa Rica, as did also Mr. Endres; finally it appeared in the Saundersian collection. It is most peculiar, and among all the herd of *Maxillarias* there is but the *M. proboscidea*, *Rehb. f.*, from Venezuela that can be compared to it. The flower is yellowish green. I found the sepals with little brown spots in the Saundersian collection. The sepals are likewise adorned with many brown streaks and spots near the base. The lip is purplish brown, with a yellow border. The column yellow, with a purplish base. The representation made by Mr. Fitch is very faithful in all particulars as well as in the total representation.

*Pseudobulb* broad, oblong, ancipitous, with long sheaths bearing leafy laminæ. One long *leaf* on the top of the pseudobulb cuneate-ligulate, blunt, acute, more than a foot long. *Flower-stalks* solitary, much shorter than the leaf, with several imbricate sheaths and a similar broad, scariosa, wider, acute *bract*. *Ovary* thick, with many brown dots. *Sepals* very fleshy, ligulate-acuminate. *Tepals* shorter, ligulate, acute. *Lip* ligulate, trifid in the middle; *lateral lacinia* angular; *middle lacinia* long, spreading, ligulate, acute, undulated on its limb. *Callus* thick, oblong, viscid between the lateral lacinia. *Column* clavate.

**Materials:**—One rich specimen from Schlim; a flower given by Mr. Low; a flower out of the Saundersian garden; a very rich specimen (whole plant with two flowers) from Mr. Endres; description of the living plant and fresh flower made at Mr. Saunders's residence.

Tab. 103.—The plant. 1, side view of the flower, sepals and tepals cut +; 2, expanded lip +; 3, front view of column +.

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This is a plant with many long leaves, large pseudobulbs, and few flowers, produced singly. It is easy of cultivation, treated as recommended for *Trichopilia rostrata* (Tab. 100). I received the plant from the Messrs. Veitch, who procured it from Costa Rica.  
— *W. W. S.*





W.H. Fitch del. et lith.

J.N. Fitch imp.

*Maxillaria Cepula*, Rehb. f.

## TAB. 104.

## Tribe VANDEÆ.

Genus MAXILLARIA (*R. Pav.*), *Lindl.*

*M. CEPULA*, *Rchb. f. in Seemann, Bonplandia*, iii. 216. Brevis-  
caulescens, rhizomate valido ascendente, vaginis amplis dis-  
tichis triangulis castaneis numerosis, pseudobulbos distantes  
efferente, pseudobulbis subteretibus nunc pyriformibus hinc  
sulcatis, vulgo pagina superiori ubi rhizomati appressis foveato-  
impressis monophyllis seu diphyllis, foliis carnosis semitereti-  
bus, superne foveato-impressis obtuse acutis, ima basi compli-  
catis, pedunculis a vaginis scariosis triangulis dense distichis  
vaginatis, bractea ampliori ovarium pedicellatum excedente,  
mento obtusangulo mediocri, sepalis lanceolato-triangulis  
acutis, tepalis ligulatis obtuse acutis, apice reflexis subbre-  
vioribus, labello cuneato oblongo antice trilobulo, lobis late-  
ralibus subsemirhombeis, nunc denticulatis, lobo mediano  
porrecto semioblongo, hinc antice retuso seu emarginato,  
columna apice bene clavata, anthera mitrata, pollinibus per  
paria incumbentibus in caudicula lata juxta glandulam trans-  
versam dilatata.—*Maxillaria madida*, *Lindl. Bot. Reg.* xxiv.  
1838, *Misc.* 74. *M. crassifolia*, *Herb.* (not *Rchb. fil.*) *MSS. in*  
*herb. Lindl.*

I begin with an explanation why I prefer my name of later date to the older one of Dr. Lindley. His plant was described "foliis subplicatis." Now a plant with plaited leaves would have such leaves as an *Anguloa*, a *Lycaste*, or a *Catasetum*. Dr. Lindley compared it, indeed, to *Maxillaria acicularis*, but the matter became only more unintelligible in this way. When I proposed the name for the plant, I had not the least idea of its being identical with *M. madida*, nor could I guess it.

The plant itself is a great curiosity. The very dark pseudo-bulbs and leaves are blackish green, and have nothing of the liveliness of a plant. They present the appearance of being made from zinc and painted with mineral colours. The flowers are sometimes dark brownish, sometimes more yellowish, the tips of the sepals, tepals, and lip, as well as the callus of the lip, often, even generally, of a much darker colour. There occur also



sometimes purplish spots on the flower. It has been frequently imported from Brazil, as it appears from Rio Janeiro. It came generally to the great disappointment of amateurs. It was also gathered by Sello, the excellent Prussian traveller (locality unknown), and by Dr. Eugen Warming near Lagoa Santa.

Very shortly caulescent. *Rhizome* very strong, with distichous triangular chestnut-brown sheaths. *Pseudobulbs* distant, nearly terete or pyriform, with some furrows when they get older, when they are incumbent on the rhizome, and leave a hollow; they are generally two-leaved, but occur also one-leaved. *Leaves* fleshy, semiterete, impressed or channelled on the inner side, folded together at the very base. *Flower-stalks* sheathed by membranous triangular sheaths, imbricate one over the other. *Bract* wider and larger, longer than the stalked *ovary*. *Chin* obtuse-angled, moderate-sized. *Sepals* lanceolate-triangular, acute. *Tepals* ligulate, bluntly acute, reflexed at the ends, a little shorter. *Lip* cuneate-oblong, three-lobed; *lateral lobes* nearly half-rhomboid, serrate or toothed; *middle lobe* porrect, semioblong, retuse or emarginate. *Column* clavate. *Anther* mitrate. *Pollinia* incumbent in pairs on a broad *caudicula* getting broader above the transverse *glandule*.

Materials:—Several descriptions from the living plant in the Hamburgh Garden and in the Saundersian garden; analytical sketches; specimens in spirits; ten herbarium specimens.

Tab. 104.—Plant, one leaf cut to show its thick structure. 1, flower with bract +; 2, flower, both sepals and tepals cut +; 3, lip +; 4, lip +; 5, column, anterior view +; 6, anther +; 7, pollinarium +; 8, ditto, posterior view +; 9, ditto, oblique view. Figures 4, 6, 7 and 8 by Prof. Rehb. f.

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A very remarkable *Maxillaria*, with orange-brown flowers. The plant is from Brazil, and was presented to me by Lady Dorothy Nevill, to whom I am much indebted for this and various other very interesting plants. It flowers freely treated as recommended for the *Trichopilia*, No. 100.—*W. W. S.*





W H. Fitch. del. et. lith.

J. N. Fitch. imp.

*Ornithidium densum*. *Reichb. f.*

## TAB. 105.

## Tribe VANDEÆ.

Genus ORNITHIDIUM, *Salisb.*

- O. DENSUM, *Rehb. f.; Seemann, Bonplandia*, iii. 217. Caulescens, caule rectiusculo dense vaginato, vaginis demum cinnamomeis, pseudobulbis oblongis seu ligulatis ancipitibus monophyllis, nunc valde distantibus nunc approximatis, antiquioribus semper lateralibus, folio cuneato oblongo-ligulato seu ligulato, apice obtusato emarginato, floribus in axillis vaginarum fasciculatis, pedunculis tenuissimis, vaginis quibusdam arcte acutis paleaceis, bractea paleacea cupulata apice ampliata seu arcta, ovarium pedicellatum non æquante, sepalo dorsali ligulato acuto fornicato, sepalis lateralibus oblongo-ligulatis acutis sublongioribus, labello suppositis, tepalis ligulatis acutis brevioribus, labello ungue immobili columnæ affixo trifido, laciniis triangulis parvis basilaribus erectis, lacinia ligulata acuta mediana, callo transverso semilunato inter lacinias laterales, fovea nectarifera postposita, columna clavata, juxta foveam sæpius excisa, rostello subproducto, anthera mitrata, polliniis sphericis seu subsphericis postice fissis per paria incumbentibus, caudicula ligulato-lineari, glandula ovali.—*Maxillaria densa*, *Lindl. B. Reg.* xxi. 1836, tab. 1804.

This species appears to be exclusively Mexican. I have at hand wild specimens from S. Pedro Nolasco, Jürgensen, 895! Mirador on oaks, Galeotti, 5121! Liebmann, 1842, 1843! Heller! Misantla in arboribus, Schiede! Zacuapan, Leibold! Ehrenberg! The glomerate copious flowers are greenish whitish, with some purple around the anther, and a white lip, with a purplish disk.

*Stem* erect, with many sheaths, finally turning brown. *Pseudobulbs* oblong or ligulate, ancipitous, one-leaved, now very distant from the developed length of the internodes, now approximate, the older ones always lateral. *Leaves* single, the only developed ones on the pseudobulbs oblong-ligulate or ligulate, blunt or emarginate at their apex. *Flowers* in the axils of the sheaths, fasciculate. *Flower-stalks* very slender, with some narrow acute paleaceous sheaths. *Bract* paleaceous, broadened at the apex, or narrow, not reaching the length of the stalked ovary. *Dorsal sepal* ligulate-acute, fornicate. *Lateral sepals* oblong-ligulate,

acute, somewhat longer beneath the lip. *Tepals* ligulate-acute, a little shorter. *Lip* with immobile claw ascending from the foot of the column, trifid; *lateral lacinia* triangular, erect, small; *middle lacinia* ligulate, acute; a transverse crescent-shaped *callus* between the lateral lacinia, behind it a nectarifluous hollow. *Column* clavate, often excised near the stigmatic groove; *rostellum* lengthened. *Anther* mitrate. *Pollinia* spherical, with a slit behind on their base, incumbent in pairs. *Caudicle* ligulate. *Glandule* ovate.

Materials:—Various sketches from living flowers; the living plant in Hamburgh Botanic Garden; nineteen herbarium specimens.

Tab. 105.—Plant. 1, flower, with peduncle, side view +; 2, flower, front view +; 3, flower, side view, sepals and tepals cut; 4, lip, seen obliquely +; 5, column, front view +; 6, pollinarium, oblique side view +.

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The flowers of this *Ornithidium* are produced abundantly upon healthy plants, and have a pleasing effect. It grows freely when placed on a block or potted in spongy peat, and requires a cool stove treatment. I received plants of this species from Trinidad, and I procured it also from a collection said to be from Vera Cruz.—*W. W. S.*





W.H. Rch. del. et lith.

J.N. Fitch imp.

*Zygosepalum rostratum*. *Rchb f.*

## TAB. 106.

## Tribe VANDEÆ.

Genus ZYGOSEPALUM, *Rehb. f.*

- Z. ROSTRATUM**, *Rehb. f. in de Vriese. Kruidk. Archief, 1857, Walp. Ann. vi. 666.* Rhizomate scandente, radicibus crassis undulatis lævigatis densissime intricatis onusto, vaginis distichis scariosis triangulis acuminatis vestito, vaginis summis *Ornithidii* more pseudobulbos nunc æquantibus, foliis pseudobulbos stipantibus vaginiferis, lamina cuneata oblongo-lanceolata acuminata papyracea, nervo medio inferne bene prominulo, pseudobulbis vetustis ligulatis ancipiti-pyriformibus depressis utrinque ancipitibus, junioribus lævibus, veteribus rugoso-sulcatis monophyllis, folio a basi cuneata ligulato oblongo-lanceolato acuminato, nervo medio prosiliente, nervis reliquis utrinque obscuris, pedunculo ex axilla vaginæ summæ stipantis, vaginis ternis, vagina summa elongata, unifloro usque trifloro, bracteis lanceolatis acuminatis ovarium pedicellatum bene excedentibus, bractea fatua breviori, alabastro a basi lata ampla abrupte rostrato apice rostri ascendente infra medium abrupto, sepalis tepalisque lanceolatis acuto-acuminatis hinc undulatis, apice nunc reflexis, labelli lamina oblonga apiculata seu transverse ovata obscurissime subtriloba acuta, callo in ima basi utrinque dilatato, antice nunc denticulato, seu subintegro sellæformi, columna trigona apice utrinque obtusangulo-dilatata, circa antheram fimbriato-serrulata, anthera conica in apicem longum subulatum extensa, polliniis depresso-pyriformibus per paria incumbentibus, quadrigeminis, caudicula pandurata antice emarginata, glandula emarginata supposita.—*Zygopetalum rostratum*, *Hook. Bot. Mag. 2819.*

This highly ornamental species was originally introduced from Demerara by Parker. It was also found there by Schomburgk! (No. 502!). Later it was observed in Surinam, not very far from Paramaribo, by Kegel, who sent living specimens to Mr. Van Houtte, from Focke, and a drawing, by Wullschlägel! whose dried specimens are at hand, as well as Splitgerber's! who observed it on trunks of trees (No. 748!). Mr. Wallis, who sent many living specimens to Mr. Linden, observed it near Para on









W. H. Fitch del. et lith.

J. N. Fitch imp.

*Chondrorrhyncha fimbriata* Rehb. f.

## TAB. 107.

## Tribe VANDEÆ.

## GENUS CHONDRORRHYNCHA, Lindl.

C. FIMBRIATA, *Rchb. f. MSS.* Ebulbis, foliis cuneato-oblongis seu cuneato-lanceolatis acutis, pedunculis erectis unifloris vaginatis, bracteis geminis, inferiore triangula, superiore angustiore, perigonio membranaceo pellucido tenuissimo, mento obtusangulo, sepalis ligulatis acuminatis, nunc margine undulatis, tepalis oblongis apiculatis, hinc margine denticulatis seu crenulatis, labello a cuneata basi flabellato oblongo trilobo seu hastato oblongo-triangulo bilobo, toto margine undulato fimbriato, callo depresso, ambitu triangulo antice bidentato in disco, carina angustiore seu latiore inclusa in linea media, callis parvis numerosis uniseriatis antepositis, columna clavata, utrinque sub androclinio prono subperpendiculari angulata, anthera vertice obtusata ligulata acuta, valvis posticis bene servatis, polliniis ligulatis obtusis, per paria incumbentibus, posticis duplo brevioribus, caudicula quadrata, glandula triangula.—*Stenia fimbriata*, Linden & Rchb. f., *Gardn. Chronicle*, 1868, p. 1313!

Among the *Maxillarias*, *Stenia*, Lindl., was long well known, both for its very peculiar pollen apparatus and for the immobility of its lip. When I described the new species, I was in great doubt whether I had to place it under *Stenia* or under the very little known genus *Chondrorrhyncha* of our lamented Dr. Lindley (*Orch. Lind.* p. 12), which had been thought to stand near *Trichopilia* by its acute author. The very great difference in the chin and the different callosity induce me to think that it is better, in the actual state of our knowledge, to keep *Chondrorrhyncha* apart from *Stenia*.

There may be a third species, viz. the "*Chondrorrhyncha?* Rchb. f. in Seemann, *Bonplandia*, iii. 67." My friend Wagener stated that it had violet flowers. I am, however, unable to point out any difference in the dry flowers. Yet one must consider that by their extraordinary thinness they are nearly as disagreeable objects for examination as dry flowers of *Utricularia*. Our species has pallid green flowers, according to a memorandum of Mr. Wallis appended to a very honest sketch. In his plant the

tepals had also some small spots at their base in an oblique row. Fresh flowers I obtained from Mr. Linden, and those I saw in the beautiful Saundersian collection were very pale sulphur-coloured, with brown spots at the base of the column, and were much streaked at the base of the lip. Our artist was more fortunate, since he saw the colours much brighter.

The plant was gathered near Ocaña, in New Grenada, by Mr. Wallis; before him by Mr. Schlim, who found it in company with *Chondrorrhyncha rosea*. I have also obtained specimens gathered there by Mr. Blunt, sent by Mr. Low, and by Mr. Rözl, given by Mr. Ortgies. Wagener's specimens are doubtful, as I have mentioned before. There is no doubt that the plant is very curious, nor that it will have disappeared in a very short time from all our collections. Mr. Van Branteghem, of Brussels, the skilful grower of cool Orchids, informs us it is very difficult and capricious.

Bulbless. *Roots* very numerous, thick, forming a sort of nest. *Leaves* cuneate-oblong or cuneate-lanceolate, acute. *Flower-stalks* upright or nearly so, one-flowered, with three distant *sheaths*, much shorter than the leaves. *Bracts* two, the lower one fertile, much broader and longer than the upper one, but much shorter than the stalked *ovary*. *Perigone* membranaceous, pellucid, very thin. *Chin* obtuse-angled. *Sepals* ligulate acuminate, now and then undulated at their margin. *Tepals* oblong apiculate, with finely toothed margins. *Lip* cuneate at the base, flabellato-oblong, three-lobed, or hastate oblong-triangular, bilobed, fimbriate and undulate on the whole of the margin. At the base of the lip stands a triangular callous wall, with two teeth on the anterior apex, a broader or narrower keel in the middle line, and numerous small *calli* outside of these. They have not been observed by the artist. *Column* clavate, bearing on both sides of the *androclinium* an angle (not observed by the artist). *Anther-case* ligulate, blunt at the top, acute at the base, with well-preserved small *valves* on its lower side. *Pollinia* ligulate obtuse, incumbent in pairs, the superior much longer. *Caudicle* quadrate. *Glandule* triangular.

Materials:—A sketch, with analysis, made from the living plant, observed several times in flower, in the gardens of W. Wilson Saunders, Esq., and Mr. Linden; nine herbarium specimens, excluding those of Wagener.

Tab. 107.—Plant. 1, expanded lip + ; 2, column, oblique view + ;  
3, 4, pollinaria +.

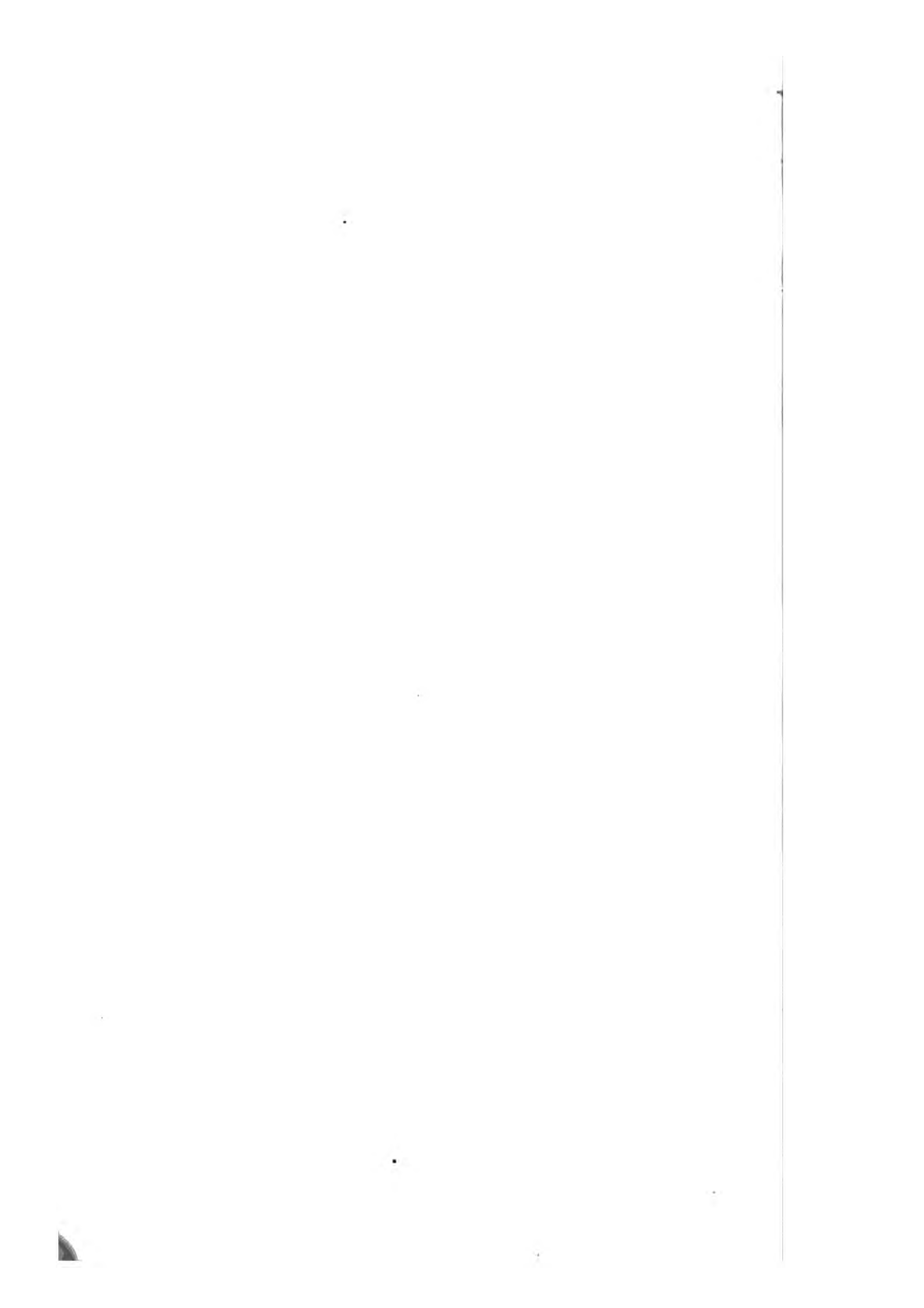
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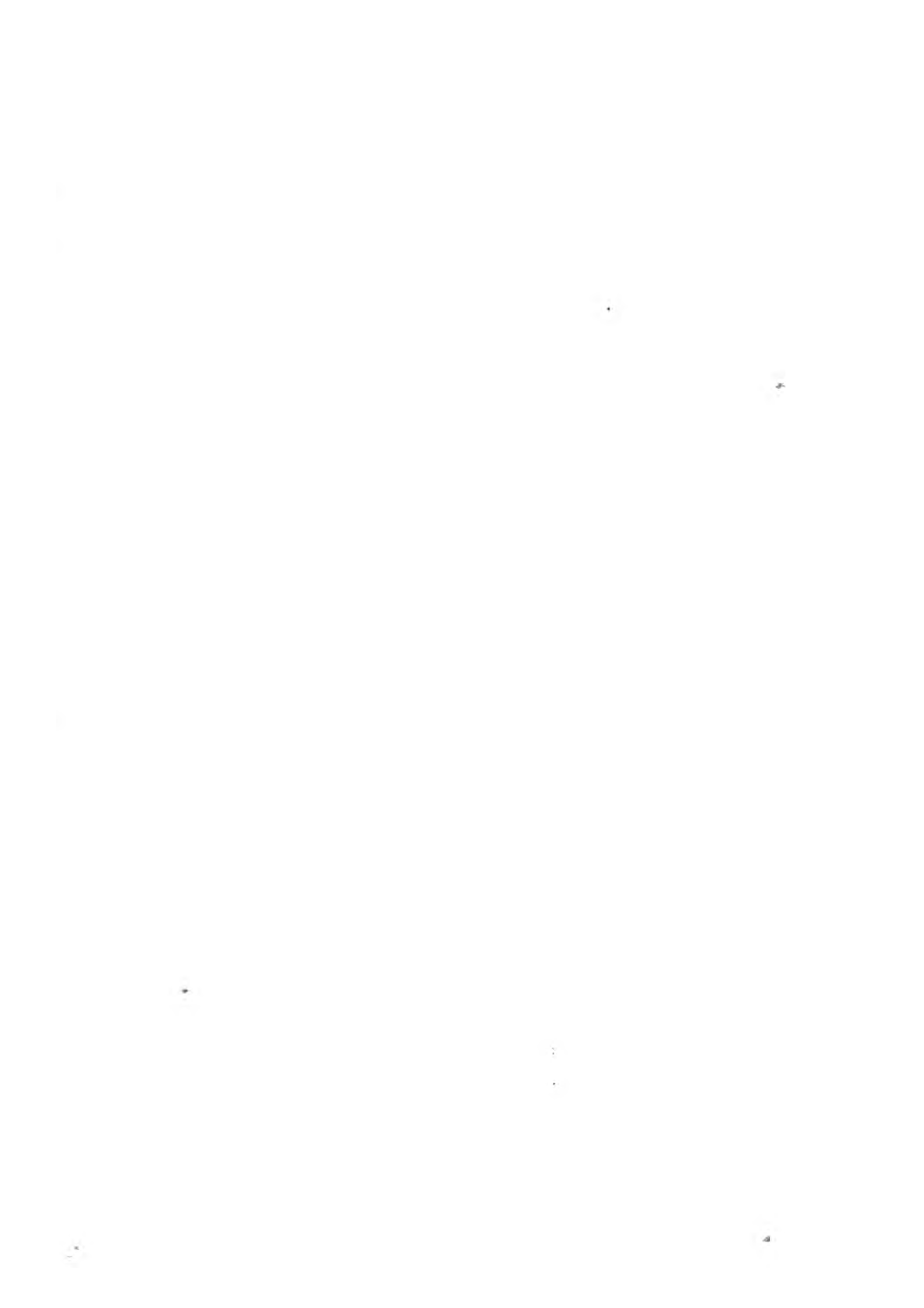
This beautiful and elegantly flowering plant was sent me by Mr. Linden, of Brussels, who procured it from Peru. Placed in a cool damp shady house it grows freely, and produces its flowers very regularly, when potted in spongy peat and sphagnum and carefully drained.—*W. W. S.*



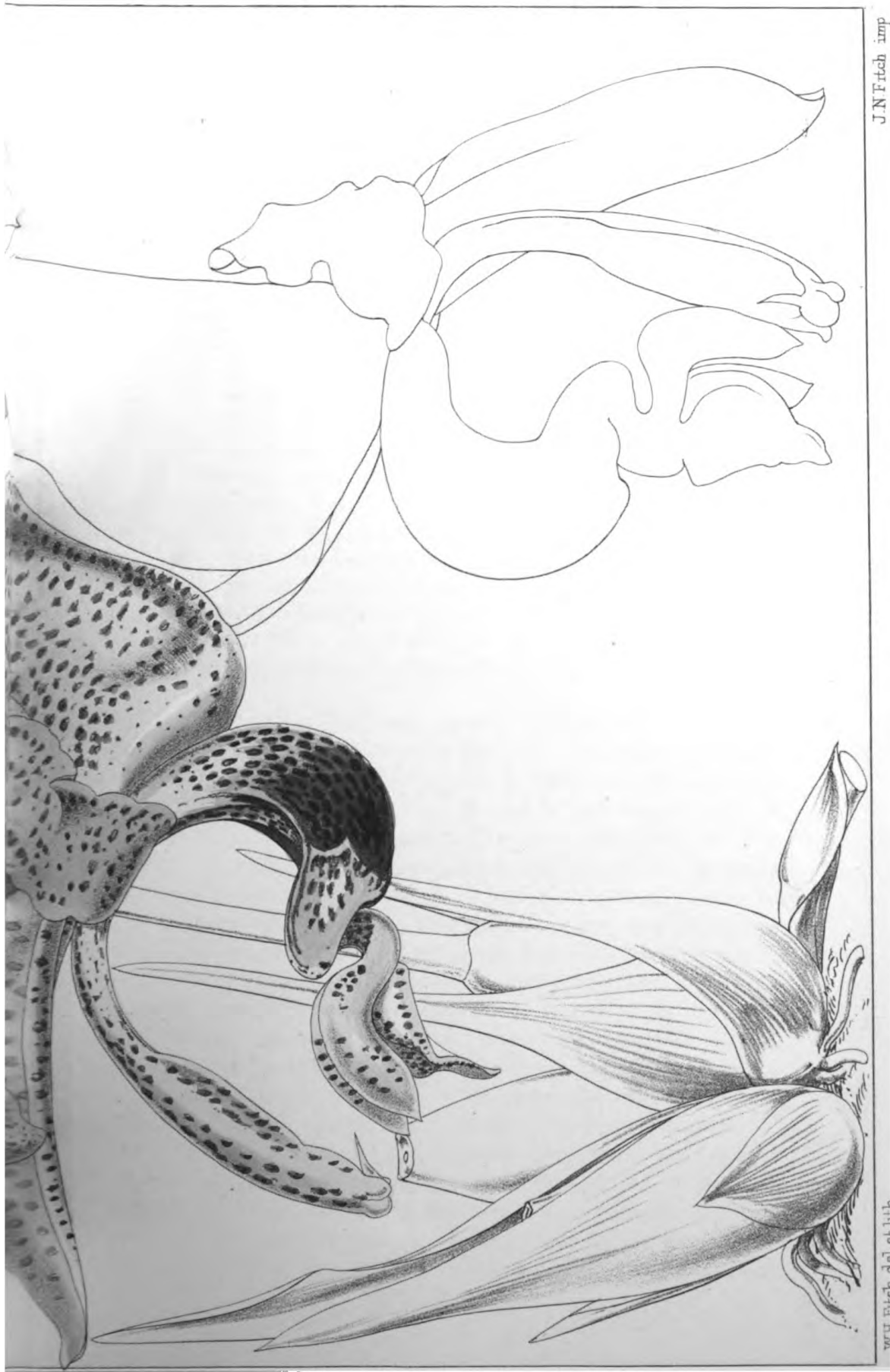








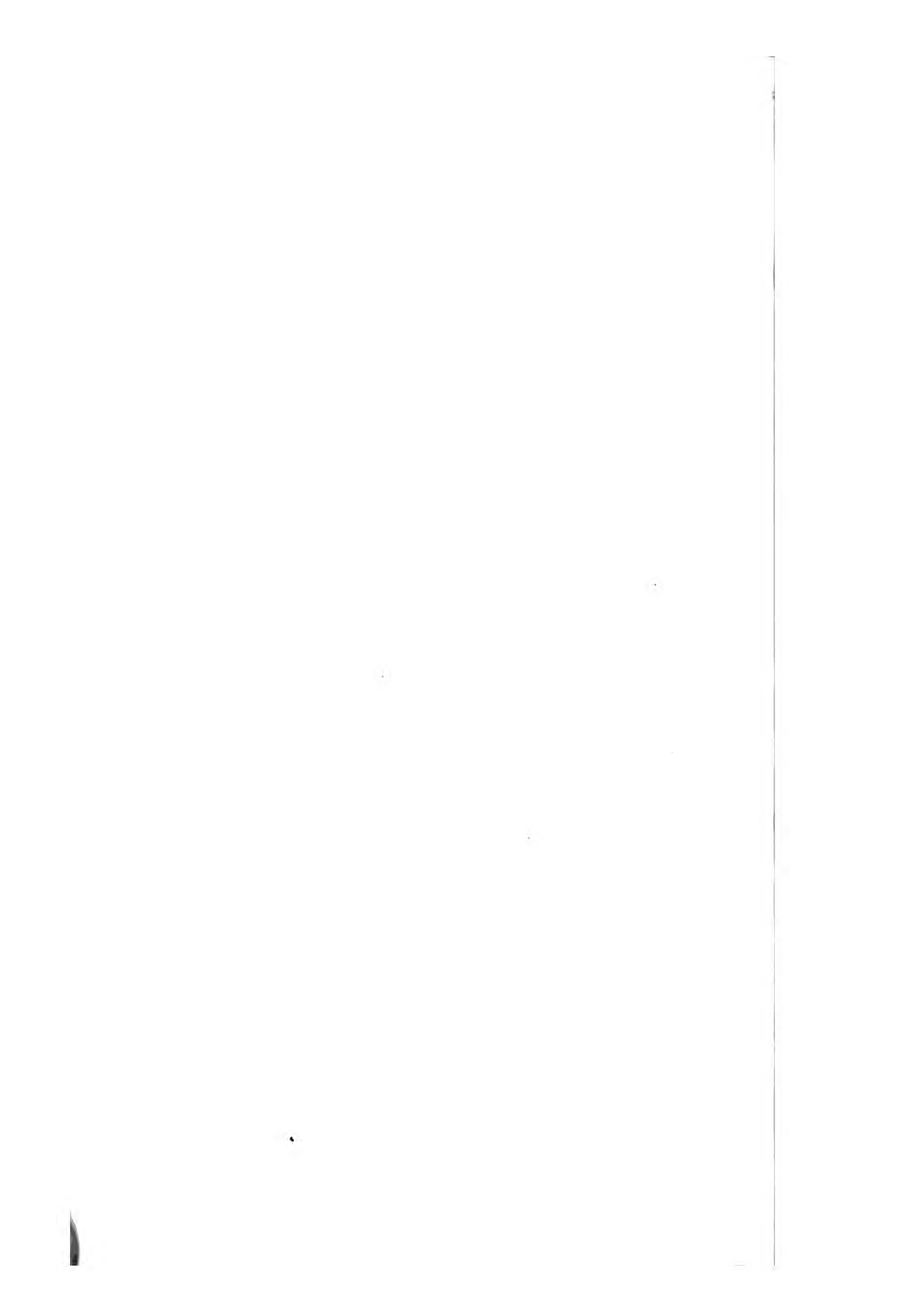




J.N.Fitch imp

W.H. Fitch. del. et lith.

*Stanhopea platyceras. Rehb f.*



## TAB. 108.

Tribe VANDEÆ.

Genus STANHOPEA, Frost.

- S. PLATYCERAS, *Rchb. f. Gardn. Chron.* 1868, p. 7. Pseudobulbo conico monophyllo a vaginis increscentibus stipato, folio longe petiolato cuneato oblongo acuto, pedunculo crasso abbreviato bifloro plurivaginato, bracteis amplis latis, quam ovaria bene brevioribus, flore illi *Stanhopea Haselowiana* æquali, sepalis oblongo-triangulis, tepalis late linearibus acutis, labelli hypochilio late cymbiformi, canali clauso, pectore obtusato producto transverso, a basi caput usque oblique tricarinato, carina media cum interna utrinque canalem efficiente, pectoris fovea pariete superiori dense papulosa, ungue epichilii brevi, lamella parvula superne, epichilio ovato acuto utrinque angulato, cornubus late semilunatis brevibus planis, columna longa, ante basin arcuata, ceterum recta, alis mediocribus ab apice ad medium, alulis triangulis erectis, glandula postice bicurvi.

“This is a very interesting novelty, though, as I well know, *Stanhopeas* are not in fashion in England. Its large flowers are like those of *Stanhopea Haselowiana*, to which the possessor very well compared it, yet it has not the same long narrow claw to the epichilium. It stands nearest *Stanhopea grandiflora*, *Rchb. f. (Bucephalus, Lindl., Jenischiana, Kramer)*, but has a two-flowered inflorescence and very broad short and quite peculiar horns to the mesochilium. No doubt this species proves once more that it was not right to divide *Stanhopeas* according to their lax or dense inflorescences. The flower is nankeen-coloured, spotted with purplish dots and circles of small points, while on each side of the hypochilium stands one large brownish purple spot. *Stanhopea platyceras* was introduced from New Grenada by Messrs. H. Low & Co., and has just flowered with J. Day, Esq.” These were my remarks made in the ‘Gardener’s Chronicle.’ I have only to add that I got the same plant from Mr. Linden, who had obtained it from New Grenada, through Mr. Wallis. It differed, however, in having the sepals only simply nankeen-coloured, without any dots or circles. The tepals were alike. The hypochilium was of a brown colour; the mesochilium and

epichilium pale yellowish white, with a little purplish hue on the upper borders of the horns. The plant would appear to be very rare.

*Pseudobulb* conical, one-leaved, covered by its sheaths. *Leaf* with a long petiole, cuneate-oblong acute. *Flower-stalk* thick, short, two-flowered, with several sheaths. *Bracts* ovate-triangular, shorter than the ovaries. *Flower* as large as that of *Stanhopea Haselowiana*. *Sepals* oblong-triangular. *Tepals* broadly linear acute. *Lip*: *hypochilium* broadly cymbiform, channel quite narrow, breast blunt, transverse, three keels on each side, inner side of breast with many warts; claw of *epichilium* short, with a small blade; *epichilium* ovate-acute, with an angle on each side; *horns* half crescent-shaped, short, very flat. *Column* long, arcuate at its base, straight above. *Wings* middle-sized from the top to the middle; small wings at the top straight. *Glandule* with two shanks.

**Materials**:—Sketches from the fresh flowers sent by J. Day, Esq., and by Mr. Linden; two dry flowers in the herbarium and one flower-stalk.

Tab. 108.—Representation of plant; one flower seen in front.

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My friend Mr. W. Marshall kindly supplied me with this beautiful *Stanhopea*. Its native country I do not know. Like most of the *Stanhopeas*, it flowers freely placed in a damp shady cool stove and grown in a basket packed with sphagnum and peat. When at rest the plant should have but little water.—*W. W. S.*







W. H. Fitch del et lith.

J. N. Fitch imp.

*Sarranthus laxus, Robt. fil.*

## TAB. 109.

## Tribe VANDEÆ.

Genus SARCANTHUS, *Lindl.*

*S. LAXUS*, *Rchb. f., Bot. Zeit.* 1866, 378! Caule abbreviato crasso oligophyllo, densifolio, vaginis brevissimis purpureo-punctatis, laminis abbreviatis oblongis inæqualiter seu æqualiter obtuse bilobis, valde carnosus, inferne per nervum medium carinatis, maculis guttisque purpureis plurimis, racemo elongato plurifloro laxifloro lævi, bracteis minutis, floribus carnosulis, sepalis oblongis obtuse acutis, tepalis lineari-ligulatis obtuse acutis, labello crasso deflexo, laciniis posticis erectis lobulatis, lacinia media triangula apiculata excavata, calcaris conico, carina de fundo calcaris per lineam mediam usque in basin lacinia mediæ ascendente, ibi retusa, medio altiore, columna gracili arrecta, rostello ornithorrhyncho, polliniis sphaericis bipartitis in caudicula lineari sessilibus. Flores sordide albidi. Labellum kerмесinum, basi ac calcare albis. Folia prasina, inferne purpureo-lavata ac maculata.

This species appeared at the Royal Gardens at Kew in 1865, when I saw it in full flower. It is a discovery of the collector for the Rev. Mr. Parish, and may be gathered in the neighbourhood of Moulmein.

*Stems* very short. *Sheaths* of leaves with purplish spots. *Leaves* close together, few, short, keeled, very thick, oblong, equally or unequally bluntly bilobed or bidentate, keeled on the under side, and with numerous purplish spots. *Raceme* (according to the artist, also branched, which may be), long, many-flowered, lax, hairless. *Bracts* very small. *Flowers* somewhat fleshy. *Sepals* oblong blunt acute. *Tepals* linear-ligulate blunt acute. *Lip* thick, bent down or forward; *lateral lacinia* erect oblong, lobed; *middle lacinia* triangular apiculate, hollowed out; *spur* conical, a keel from the base of the spur on the middle line ascending to the base of the middle lacinia, where it is retuse, highest in the middle. *Column* slender, arcuate, with a long beaked *rostellum*. *Pollinia* two, bipartite, with a single linear *caudicle*. *Leaves* leek-green, clouded with dark violet-purple beneath. *Flower-stalks*

dark purplish. *Sepals, tepals, column and spur* whitish; *anterior lip* amethyst-colour.

**Materials:**—Inspection of the living plant at the Royal Kew Gardens; sketches prepared in the Kew Herbarium; description prepared there, and a few dried single (!) flowers.

Tab. 109.—Plant. The leaves are represented to a surprising extent. 1, side view of flower +; 2, front view of flower +; 3, side view of lip, slit +; 4, pollinarium +. Fig. 3 given by Professor Reichenbach.

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This pretty species of *Sarcanthus* should be grown upon a block in the East-India house. It likes heat and moisture, with moderate ventilation. The figure was drawn from a specimen which flowered in the Royal Collection at Kew.—*W. W. S.*





W.H. Fitch del. et sculp.

J.W. Fitch sculp.

*Saccolabium micranthum*: Lindl.

## TAB. 110.

## Tribe VANDEÆ.

## Genus SACCOLABIUM, Bl.

## S. MICRANTHUM, Lindl. Gen. &amp; Sp. Orch. 220! ("Wall. Cat. 7300").

Planta ratione generis mollicula, caule paucipollicari usque spithamæo radicante, foliis latius angustius ligulatis inæqualiter obtuse bilobis, nunc obscure crenulatis cum apiculo, racemis porrectis axillaribus ima basi ananthis, ceterum densifloris parvifloris, bracteis triangulis uninerviis, ovariis pedicellatis multo brevioribus, hinc margine minute erosulis, sepalis oblongis obtuse acutis, tepalis oblongis acutis duplo minoribus, labelli laciniis lateralibus abbreviatis quadratis erectis, lacinia media ligulata antice dilatata minute denticulata trilobula seu emarginata bilobula, callo magno tumido integro seu emarginato ante ostium calcaris cylindræo-conici obtusi, columna brevi crassa, androclinio vix marginato, rostello simpliciter acuto, anthera transverse ovata seu triangula, semper postice rotundata, antice acuta seu apiculata, polliniis subsphæricis latere externo fissis, caudicula late triangula seu ligulata, sub polliniis utrinque obtusangulo dilatata, glandula triangula seu triloba. Ovaria viridia purpureo aspersa. Sepala et tepala et calcar rosea. Labellum intense purpureum uti anthera. Columna pallide rosea.

This little plant was gathered by Dr. Wallich's collectors in Nepal and Silhet. It appears to be spread very widely over the continent of India. My specimens from herb. Falconer! (distr. at Kew, 1864). Tenasserim ex hb. Lindl.! Bootan, Griffith! Darjeeling, June and July, 1868, Mann.! (narrow-leaved variety). It appears to have appeared first in Europe in the excellent collection of Messrs. Loddiges! I have observed it very frequently in the garden of Consul Schiller and the Hamburgh Botanic Garden. There was at Consul Schiller's garden a very pallid variety with scarcely any purple on the lip. I have also obtained a spike that represented a *var. fasciata* at its apex, mimicking, it may be said, a *Celosia*, yet to a very small degree. Director Linden introduced it from Assam.

The plant is unusually soft for its genus. *Stem* a few inches up to a span high with beautiful *aërial roots*. *Leaves* ligulate, unequally bilobed, the lobes now and then minutely crenulate, with a small point in the sinus between the two. *Racemes* bent forward or hanging down, without flowers at the very base, crowded with small flowers in the other parts. *Bracts* triangular, one-nerved, much shorter than the stalked *ovaries*, now and then minutely toothed at their margin. *Sepals* oblong, bluntly acute. *Tepals* of nearly the same shape, smaller, shorter. *Lateral lacinie* of *lip* quadrate, short, upright; *middle lacinia* ligulate, much broader, three-lobed or emarginate bilobed at its anterior part, with many small toothlets; at its base before the mouth of the spur a great tumid, sometimes emarginate, *callus*. *Spur* cylindrical-conoid, blunt, shorter than the blade of the lip, a little compressed, entirely free from any callosities, septa, &c. *Column* short, stout; *androclinium* with a very minute border; *rostellum* acute; *anther* transverse ovate or triangular, rounded at the base, acute on the anterior side; *pollinia* nearly globose, slit on the lower outside; *caudicle* ligulate or ligulate with two obtusangular dilatations below the pollinia; *glandule* blunt triangular or blunt three-lobed. *Ovaries* green with a purplish hue. *Sepals*, *tepals*, *lip* and *column* rosy. *Lip* and *anther-case* dark purple.

Materials:—Frequent inspection of Dr. Lindley's types; my own sketches and descriptions made at various times from the living plant; twenty-six herbarium specimens.

Tab. 110.—The plant. 1, side view of flower +; 2, front view of ditto +; 3, side view of ditto, sepals and tepals cut +.

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A very pretty and interesting species of *Saccolabium*, with good foliage and long spikes of small pink and roseate flowers. It should be treated as recommended for *Sarcanthus laxus*, Tab. 109. I received my plant, which grows freely, from Mons. J. Linden, of Brussels, marked as coming from Assam.—*W. W. S.*







W.H. Fitch del.

Fitch imp.

*Epidendrum Xipheres* Rehb. f.

## TAB. 111.

Tribe EPIDENDREÆ.  
Genus EPIDENDRUM, Sw.

E. XIPHERES (*Rehb. fil. in Van Houtte, Flore des Serres*, ix. 98! *Seemann, Bonplandia*, ii. 89! *Walp. Ann.* vi. 334!) Radicibus mediocribus lævibus undulatis deflexis, pseudobulbis ovoideis seu pyriformibus, vaginis junioribus distichis ochraceis, limbo brunneo, cito in fibras solutis, monophyllis seu diphyllis, foliis linearibus optime mucronatis, telæ cartilagineæ, canaliculatis, nervo medio in dorso prominulo, usque octo pollices longis, vix tres lineas latis, pedunculo elongato lævi, parce minuteque vaginato, apice distanter racemoso, paucifloro, bracteis triangularibus brevissimis, ovariis cum pedicellis hyalino-papillosis, sepalis ligulato-linearibus acutis, tepalis angustioribus basin versus valde attenuatis, labello sublibero unguiculato trifido, laciniis lateralibus ante basin exsertis linearibus acutis, lacinia media unguiculata trulliformi seu subcordiformi, margine crispula, linea mediana ex lineis ternis incrassatis minutissime punctulato-furfuraceis, in disco unguis confluentibus excavatis, venis lateralibus incrassato-elevatulis, columna gracili trigona medio constricta, androclinio minuto tridentato. Sepala brunnea ego vidi, lineis extus supra nervos cinnamomeis; tepala brunnea, labellum et columna flaveola. Artifex noster sepala brunneo-aurantiaca, tepala magis flavida pinxit.

I obtained this species in 1853 from Messrs. Booth at Ham-  
burgh: "imported from Peru." I never saw anything more of it  
until 1868, when I finally found a plant and a sketch at Mr.  
Saunders's, Hillfield House, Reigate, the plant having been  
obtained from New Grenada. It is always a great satisfaction for  
an author to see a plant, established long since, but which has  
not been observed for some time, at last reappear.

*Roots* middle-sized, hairless, undulated, deflexed. *Pseudobulbs*  
ovoid to pyriform when young, with distichous ochraceous *sheaths*  
with brown borders, soon resolved into fibres, one or two-leaved.  
*Leaves* linear, very conspicuously mucronate, of a cartilaginous  
texture, canaliculate, the middle nerve prominent on the back,  
reaching to eight inches in length, scarcely three lines broad.

*Flower-stalk* longer than the leaf, very thin, with a few short distant sheaths, racemose at the summit. *Bracts* triangular, very short. Stalked *ovaries* with numerous hyaline rounded warts. *Sepals* ligulato-linear, acute. *Tepals* narrower, attenuated near the base. *Lip* nearly free, unguiculate, trifid; *lateral laciniae* spreading out above the base; *middle lacinia* unguiculate, trowel-shaped or nearly cordate, crisp at the margin, middle line from three thickened contiguous lines, with a scurfy mealy surface, confluent over the claw and having there a groove. *Column* slender, contracted in the middle. *Androclinium* with three teeth. I have seen the *sepals* brown, with cinnamon lines over the nerves; *tepals* brown; *lip* and *column* yellowish. The artist has represented the Saundersian plant with brownish orange *sepals*, and too yellow *tepals*.

Materials:—My old original sketch and the poor specimen; inspection of the Saundersian plant, 1868.

Tab. 111.—The plant. 1, flower, side view +; 2, lip +; 3, column and part of ovary +; 4, column, front view +; 5, 6, pollinaria +.

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A neat, interesting, and very distinct *Epidendrum*, received from Santa Martha, and collected by Mr. Weir. It does well in a warm part of the Mexican house, placed upon a block or grown in a small pot. During the season of rest it should be supplied very moderately with water.—*W. W. S.*





W.H. Fitch, del. et lith.

J.N. Pritch, imp.

*Epidendrum polyanthum* Lindl.

## TAB. 112.

## Tribe EPIDENDREÆ.

## Genus EPIDENDRUM, Sw.

**E. POLYANTHUM**, Lindl. *Gen. & Sp. Orch.* 106! *Folia, Epidendrum*, No. 187! *excl. var. B. Walp. Ann.* vi. 379! Caule basi tumido subbulboso, ceterum teretiussculo valido exaltato distiche folioso, foliis cuneato-oblongis acutis seu cuneato-ligulatis acutis, pedunculo longe producto ancipiti vaginato, inflorescentia terminali, dein inflorescentiis racemosis lateralibus, basi bene vaginatis vulgo decurvis, nunc geminis ternisve collateralibus, bracteis minutis, ovariis scabris, sepalo dorsali cuneato-oblongo ligulato obtuse acuto, sepalis lateralibus paulo latioribus, obtusioribus, tepalis filiformibus, apice paulo dilatatis, labelli adnati laciniis posticis semiovatis extus paucidentatis seu semiovatis integerrimis, nunc retrorsum valde semicordatis, lacinia antica lineari-ligulata obtuse biloba, lobis nunc paulo divergentibus, callis obtusangulis geminis ante columnam, carinis radiantibus ternis antepositis, androclinio minute lobulato.—*Epidendrum polyanthum*, Lindl. in *Bat. Orch. Mex. Guat.* Tab. 34! (labello energetice dentato-angulato). *Epidendrum bisetum*, Lindl. *Bot. Reg.* 1841, Misc. 148! *Epid. funiferum*, Morr. *Ann. Gand.* iv. 211, t. 198! *Epid. (Spathium) colorans*, Klotsch! *Allg. Berl. Gartenz.* 1851, 250! Sepala equidem semper vidi ochraceo-brunnea, tepala alba, labellum ochraceum, callis albis, columnam viridem, antice albam.

There have been quoted by Dr. Lindley two plants under this name, which I believe decidedly different, viz. the *E. densiflorum* of Sir William Hooker (*Bot. Mag.* 3791) and *E. rubrocinctum*, Lindl. (*Bot. Reg.* 1843, Misc. 20). I shall write on both in another place. In *Walp. Ann.* vi. 380, I brought to the same neighbourhood the *Epidendrum Lansbergii*, Regel *Cat. Hort. Petrop.* I have, however, not seen a type, and the question stands in doubt.

The plant was discovered in Mexico by Ruiz and Pavon! (*Brit. Mus.*!, herb. Boiss.!, *Rchb. fil.*!). Then it was gathered in Mexico, near Jalapa, at Hacienda de la Laguna, on shaded rocks by Schiede! Barrancas Teosolo Zacuapan; Galeotti! 5125! Same place; Leibold! Talea; Hartweg! Guatemala; Bernouilli! (lips very like the Batemanian representation). Venezuela;

gardeners have sent it sometimes as if from there; I have, however, no typical specimen certainly gathered there. Brazil; Dr. Lindley said (Folia!) that the locality given by Professor Morren, St. Catharine's, is certainly erroneous. Now, the plant occurs in the collection of drawings and descriptions made near Lagoa Santa, in Brazil, by Dr. Warming, from Copenhagen. The flowers, put in spirits, appear to be lost, but the drawing is, I cannot doubt, as faithful as possible. It must, however, have been a very poor, wretched specimen, since Dr. Warming saw it but with a 5-flowered inflorescence. I must state that I never saw any tolerable plant, comparable to the giant wild specimens, in any garden: it would appear that the plant can never be kept alive for any considerable time.

*Stem* bulbous, tumid at the very base, nearly terete, with *sheaths* and distichous cuneate oblong-acute or cuneate ligulate-acute *leaves*. *Flower-stalk* long, exserted, ancipitous, sheathed. *Terminal raceme* and numerous *lateral racemes* from the sheaths, sometimes two or three close together, often nodding, sheathed at their base. *Bracts* minute. *Ovaries* scabrous, in very different development. *Dorsal sepal* cuneato-oblong ligulate, bluntly acute. *Lateral sepals* broader, blunter. *Tepals* filiform, a little dilated at their apex. *Lip* adnate with the claw of the *column*; *lateral lacinia* semi-ovate, with some teeth on the outside, or a very projecting tooth at the anterior edge, or rounded semi-ovate, sometimes much lobed, or very much heart-shaped at the base; *middle lacinia* linear-ligulate, blunt, bilobed, with diverging lobes. Two obtuse-angled *calli* before the column, running out into long keels, and bearing a third middle keel. *Androclinium* minutely lobed.

Materials:—Various sketches from fresh flowers made at different times; twenty herbarium specimens.

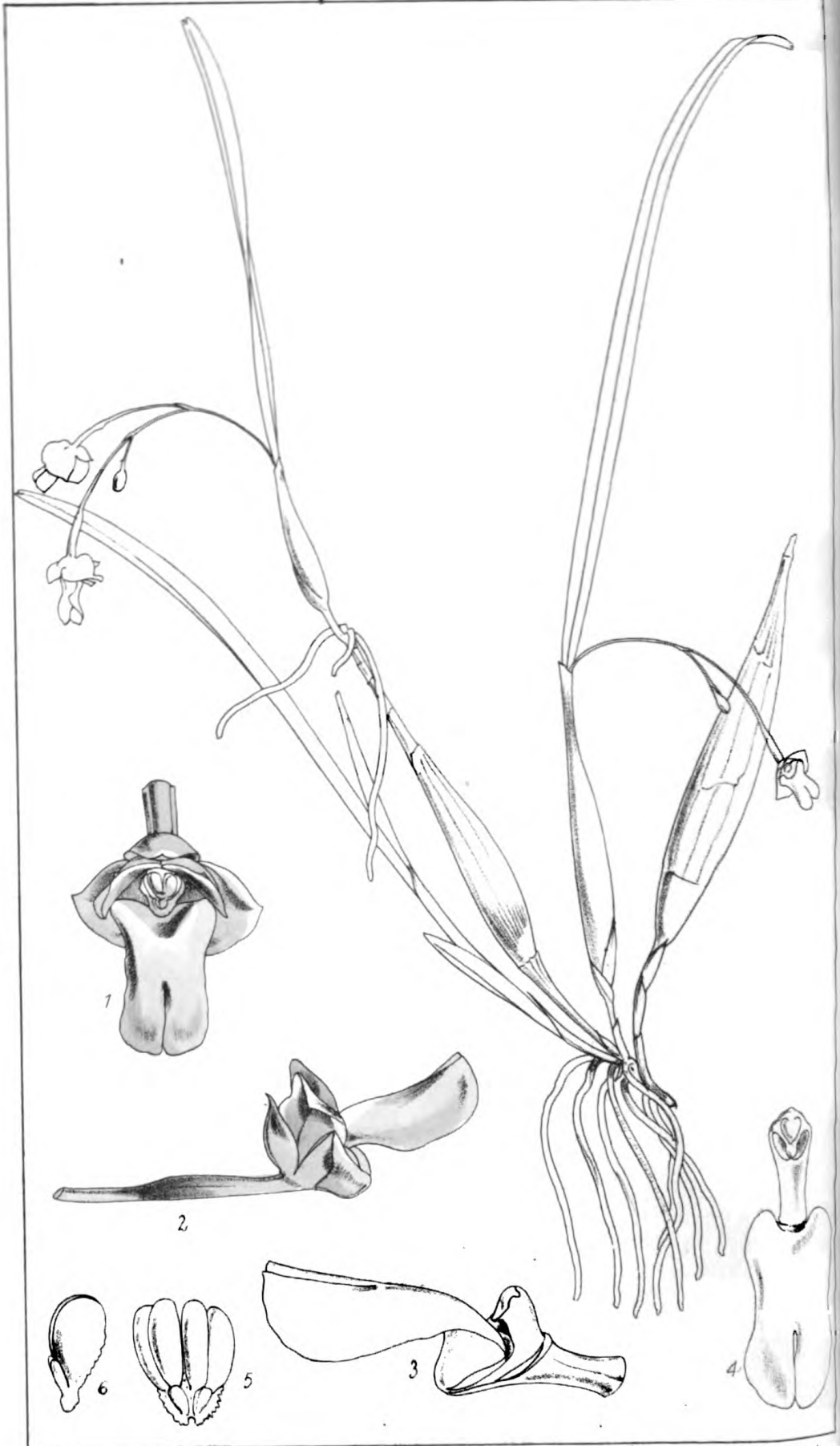
Tab. 112.—A plant, in the narrow state in which it is seen in gardens. 1, front view of flower +; 2, side view of flower, with scabrous ovary +; 3, lip and column of another variety +, given by Professor Reichenbach.

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This is an unpretending species of *Epidendrum*, with dull brownish flowers, but tall graceful foliage. I have to thank the Messrs. Veitch for this addition to my collection. The plant grows freely in a damp, cool, shady house, grown in a pot with peat and sphagnum.—*W. W. S.*







W. E. Fitch del. et lit.

J. N. Fitch sculp.

*Hexadesmia Reedii*, Fitch fil.

## TAB. 113.

Tribe EPIDENDREÆ.

Genus HEXADESMIA, *Brongn.*

- H. REEDII, *Rehb. f. MSS. in hort. Saund.* 1868. Dense cæspitosa, radicibus adventitiis filiformibus rugulosis, pseudobulbis stipitatis fusiformibus, vaginis albidis tectis, demum aphyllis, defloratis pluri-sulcatis, vulgo monophyllis, foliis linearibus elongatis apice symmetrice seu asymmetricè tridentatis, pedunculo capillari nutante folio bene breviori, basi vagina arcta, sursum tri-, bi-, imo quadri-floro, floribus tamen non eodem tempore evolutis, bracteis triangulis parvis, ovariis longipedicellatis, mento valido, cum ovario angulato, sepalo dorsali semiovato triangulo, sepalis lateralibus sublatioribus, tepalis bene majoribus cuneato-obovatis apiculatis, labello supra unguem utrinque angulato dilatato ima basi foveato nectarifluo (an ita semper?), dein ligulato obtuso bifido, lacinia altera in alteram incumbente, lateribus replicatis, in mediis angulis genuflexo, columna clavata, androclinio obliquo rhombeo, apiculo minuto supra antheram dorsalem flexo, apice antice rostellari producto, anthera pyriformi sex-locellari, locellis utrinque geminis obliquis, anteposito locello minuto, pollinariis geneticis. Flores sordide virides, tepalis apice ac labelli parte anteriori fuscatis; flores demum sordide ochroleuci.

All my knowledge of this plant is due to W. Wilson Saunders, Esq., who imported it from Esperance, Brazil, having been discovered by his friend, E. Reed, Esq. Among the thousands and thousands of Brazilian Orchids I have had under my hands, I never saw a vestige of it.

Cæspitose. *Roots* very slender, rugulose. *Pseudobulbs* stipitate fusiform, covered with whitish *sheaths*, finally, when without flowers and leafy organs, sulcate, usually one-leaved. *Leaves* linear, long, with three symmetrical or asymmetrical terminal teeth. *Flower-stalk* filiform, nodding, shorter than the leaf, with two, three, or four *flowers*, which develop at intervals. *Bracts* triangular, small. *Ovaries* with long slender stalks. *Chin* strong, angular, like the ovary. *Dorsal sepal* semi-ovate triangular; *lateral sepals* a little broader. *Tepals* larger, cuneato-obovate, with a small apiculus. *Lip* ascending from its cuneate base, obtuse-angled and dilated, then ligulate, bilobed, one lobe generally covering the inner

border of the other. There is a nectariferous groove at the base of the lip—at least, in the flowers I have observed. *Column* clavate. *Androclinium* oblique, rhomboid; a small *tooth* at the base covering the base of the anther. *Rostellar process* hanging over the *stigmatic hollow*. *Anther* pyriform, with six locelli, the single ones small, anterior, the pairs oblique, posterior. *Pollinarium* quite genetic. The flowers are dirty green, with the apex of the tepals and disc of lip brown. Finally the flowers are whitish ochre-coloured.

There is another unpublished Saundersian *Hexadesmia*, which may be described at once:—

HEXADESMIA BIFIDA, *Rehb. f. MSS. in Hort. Saund.* No. 1661. Pseudobulbo oblongo longissime stipitato, folio oblongo ligulato acuto, racemis quadrifloris, mento acute angulato, sepalis tepalisque ligulatis acutis, labello ligulato medio dilatato, lobo retrorso utrinque quadrato, lobo antico ligulato obtuse bifido, disco lævi, columna utrinque anguste angulata. Flores viridi-flavi.

And another species, which has remained fifteen years in my herbarium, wanting to be described:—

HEXADESMIA SESSILIS. Pseudobulbo pyriformi sessili monophyllo, folio quinques longiori lineari apice tridentato, pedunculo capillari solitario seu geminato basi vaginato bifloro, bracteis triangulis uninerviis abbreviatis, ovariis pedicellatis longe exsertis, sepalis triangulis, tepalis ovatis, labello ligulato obtuse bilobo per lineam mediam incrassato.

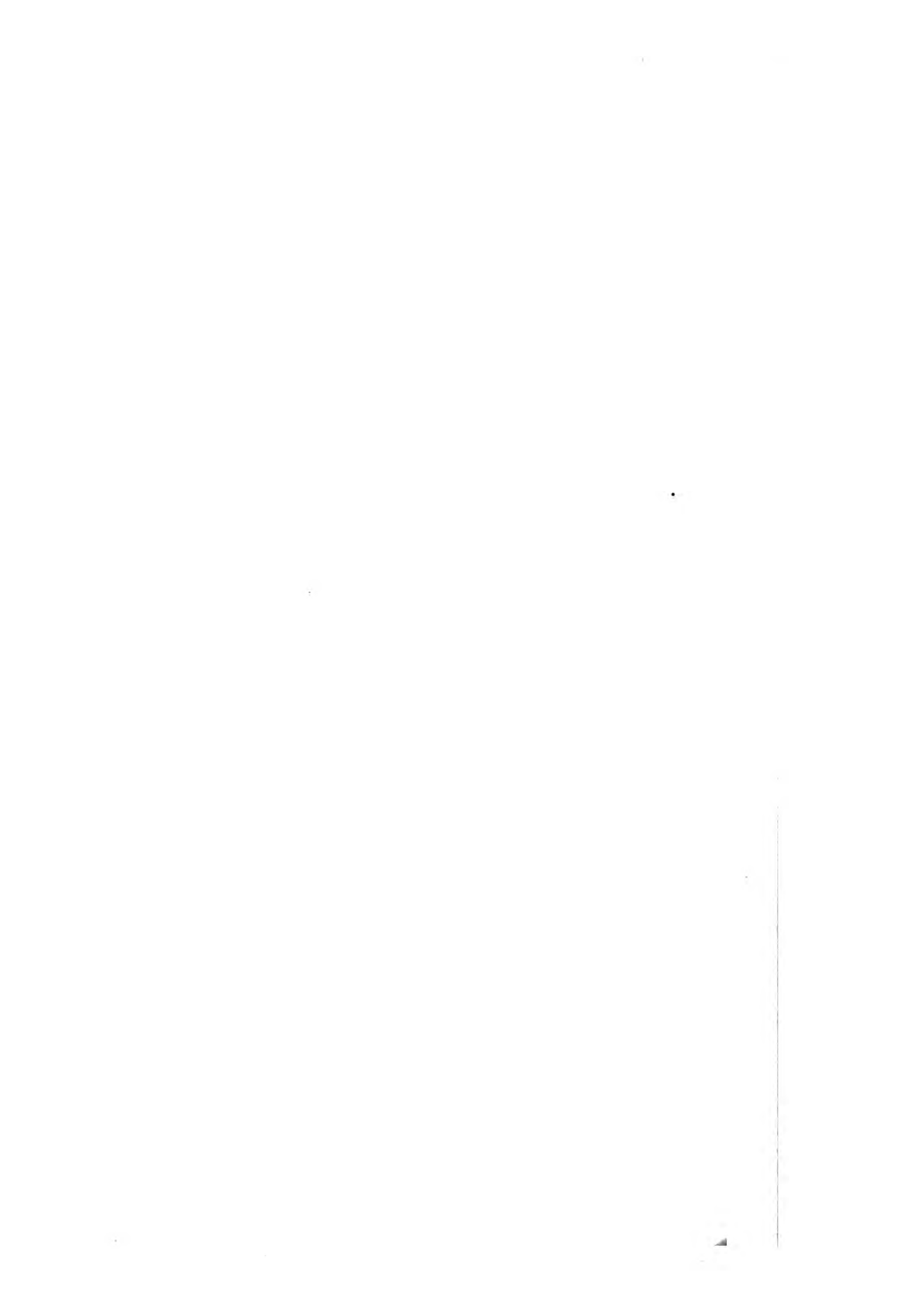
Mexico: Trapiche Sta Ana, Galeotti, 5331! The four specimens I have are all I ever saw, and from the high number and the hand-writing, there is no doubt they came from Jürgensen. It would be a true *H. crurigera* if the pseudobulbs were not sessile, and the lip not different.

Materials:—A careful study of the living types, October, 1868; my sketches and description made then; only two herbarium specimens.

Tab. 118.—The plant. 1, front view of flower +; 2, side view of the same +; 3, the same, sepals and tepals cut +; 4, front view of column and lip +; 5, 6, pollinaria +.

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A species of *Hexadesmia* producing a few inconspicuous yellow-green flowers. I received my specimens of this plant from Mr. E. Reed, and they were obtained at Esperanza and Bahia, Brazil. If put on a block with a little green moss, and placed in a damp, shady, temperate stove, it grows pretty freely.—*W. W. S.*





W.H. Fitch del. et lith.

J.N. Fitch imp.

*Eria barbata*, Richb. fil.

## TAB. 114.

Tribe EPIDENDRÆE.

Genus ERIA, Lindl.

E. BARBATA, *Rehb. fil. in Walp. Ann.* vi. 270. Pseudobulbis approximatis ovoideo-pyriformibus sulcatis di-, triphyllis, foliis petiolatis oblongis acuminatis plicatis nervosis, nervis quinque infra eximii, inflorescentia ex vagina sub bulbo, elongata superne racemosa seu paniculata, basi vaginis ligulatis apiculatis sessilibus pilosis distantibus, tota rhachi molliter pilosula, bracteis oblongis acutis herbaceis pilosis, pedicellos elongatos non æquantibus, pedicellis linea superiori lamellis ligulatis obtusis stipitatis inter pubem, ovariis pedicellos anthesi non æquantibus, mento obtuso, sepalo summo triangulo extus puberulo, sepalis lateralibus subæqualibus latioribus deorsum curvatis, tepalis linearibus acutis, labello a basi rotundato subcordato triangulo apice vulgo minute trulliformi ampliata ob angulam utrinque exsurgentem, omnino lævi, columna semitereti, superne ampliata.—*Erioidea, Griff.! Posth. Pap.* iii. cccii. *Eria longissima, Lindl.! MSS. in herb. Rehb. f. Tainia barbata, Lindl.! in Gardener's Chronicle, 1857, p. 68. New plant, No. 192.* Sepala flavo-viridia, intus viridi-flava striis atropurpureis; sepala flavida striis atropurpureis. Labellum aureum, striis purpureis. Columna viridis.

The original discoverer of this plant was Dr. Griffith!, who observed it in the Khasia Hills, growing on trees of *Gordonia*, on the descent of the Suniassee Valley. It was also found there later by T. Lobb! The plant appeared in October, 1856, in the garden of Messrs. Loddiges, when Dr. Lindley brought home, during one of my London stays, such a miserable specimen, which he was good enough to accept for naming: a single flower from the Loddigesian collection; it came in the Schillerian collection, where it grew well and flowered in profusion. At length, in October, 1866, it appeared in the collection of Messrs. Rollissons, of Tooting. They have, however, stated that their collector had named it a *Cælogyne* from Java. It may have been obtained at Boitenzorg Gardens, where they could have got it from the Calcutta Gardens. Finally, I obtained it, in 1869, from Director Linden of Brussels.

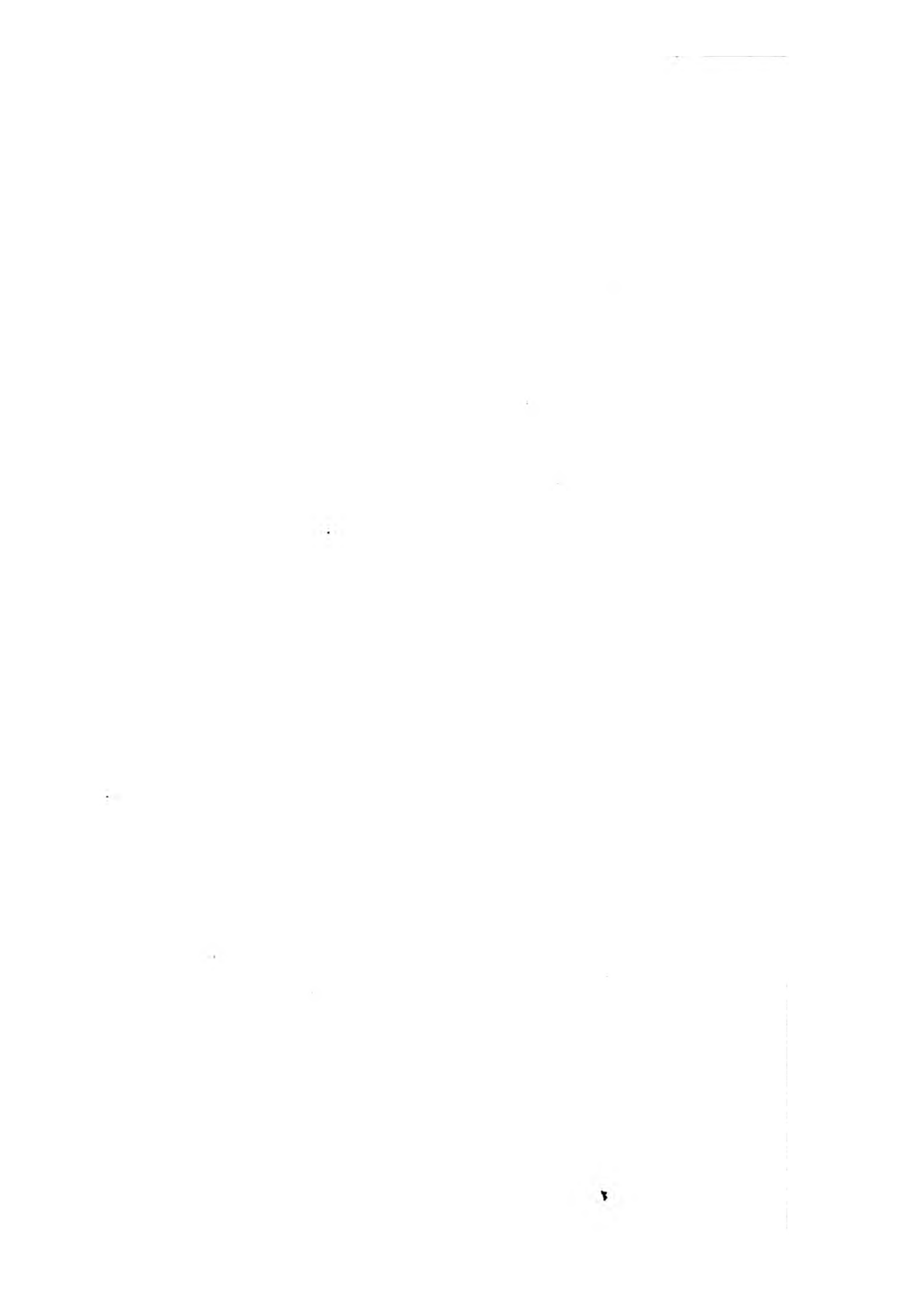
*Pseudobulbs* approximate, ovoideo-pyriform, sulcate, with two or three long leaves. *Leaves* petiolate, oblong, acuminate, plaited, nerved, with three very and two less prominent chief ribs on the under side. *Inflorescence* axillary from a sheath beneath the pseudobulb, very long, racemose or paniculate, with a few sessile ligulate apiculate distant hairy *sheaths*, the dark purplish *rhachis* covered with short soft hairs. *Bracts* oblong acute, herbaceous, hairy, not equalling the stalks of the ovaries, purplish. *Flower-stalks* and *ovaries* hairy, the ovaries shorter, nearly pear-shaped. A row of stalked oblong flat *lamellæ* on the flower-stalks, which show beautiful areolæ under a high magnifying power. *Chin* blunt. *Sepals* short, hairy on the outside; *upper sepal* triangular; *lateral sepals* broader and somewhat falcate, yellowish green outside, greenish yellow to yellow inside, with black purplish nerves, and now and then a few transverse reticulations. *Tepals* linear acute, with ascending apex, yellowish, with two or three purplish streaks and a white apex. *Lip* rounded, nearly heart-shaped at base, triangular, with a little angle above the point, yellow, commonly with purplish streaks, or simply yellow; no crests. *Column* semiterete, greenish, with purplish dots and streaks.

**Materials:**—Four specimens from Griffith and eight garden specimens, and sketches prepared at two different times; often seen in the Schillerian stoves; now in the collection of Hamburgh Botanic Garden.

Tab. 114.—Plant: the pedicels never seen so thick by me. 1, oblique view of flower: I neither understand the artist's perspective nor the surprising insertion of ovary +; 2, portion of pedicel to show the lamellæ +; 3, lip, side view +; 4, column, front view +; 5, pollinaria, seen obliquely +.

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The figure of this plant was made from a specimen flowered by the Messrs. Rollissons, of Tooting. The flower-stalks are remarkable for being hispid-hairy above, and the flowers yellow, lined with crimson. — *W. W. S.*







W.H. Petch del. et lith.

J.N. Petch imp.

*Bulbophyllum dayanum* Echl. fil.

## TAB. 115.

## Tribe MALAXIDÆ.

Genus BULBOPHYLLUM, *P. Th.*

- B. DAYANUM, *Rchb. fil., Gardn. Chron.* 1865, *May* 13, 434 c!
- Rhizomate repente, vaginis emaciatis onusto, hinc inde pseudobulbifero, pseudobulbis turbinatis demum rugosis distantibus, foliis valde carnosis breve petiolatis cuneatis, apice obtusiuscule acutis, racemis (ex vaginis rhizomatis?) abbreviatis paucifloris subumbellatis, bracteis abbreviatis, sepalo summo cuneato-oblongo acuto, toto margine dense piloso, sepalis lateralibus subbrevioribus, nunc introrsum curvatis, toto margine dense pilosis, tepalis angustis brevibus ligulatis obtuse acutis, toto limbo brevi ciliatis, labello bene mobili a basi rotundata trifido, laciniis lateralibus semiovatis antice rectilineis divaricatis, limbo externo sulcatis, lacinia media semiovata serrulata, carinis geminis semiovatis serrulatis in basi, cristis serrulato-papulosis novenis per discum, media quidem crista inter carinas semiovatas basin versus excurrente, columna crassiuscula semitereti apice utrinque unidentata, circa androclinium serrulata, anthera vertice umbonata.—*Bulbophyllum Dayanum*, *Rchb. fil., Xenia Orchidacea*, ii. tab. 144, p. 128.

A very great curiosity which appeared, in 1865, in the Dayan collection, dedicated to this eminent collector, who has not only formed one of the best collection of Orchids ever seen, but who has also contributed much to the progress of Orchidology. It is reported to have been sent, "probably," from Moulmein, having been introduced by Mr. Low. I feel some doubts about the statement, for none of the collectors of plants who have had their servants collecting, and partly nearly or totally destroying Orchids in that El Dorado of Orchids, appears to have ever sent this plant. Hence the question may be admitted, whether it was not a Bornean importation. But that is not the only difficulty. My representation was made from a sketch kindly sent by J. Day, Esq., and from a fresh inflorescence. Whether the colours changed in travelling I cannot say: I could only have

represented what I saw. The representation of our artist in our actual work would appear to have been taken from the same plant. And yet, what differences! The plant is much slenderer. The representation of the inflorescences is not to be understood from fig. 1; they appear umbellate-racemose, the flower standing at the side of a peduncle, and yet they are represented in a deflexed manner, as if they came out single. It has been in the Saundersian collection, whose No. 567 it was, also reported to be a product of Moulmein, likewise coming from Mr. Low. Yet in October, 1867, it had died, if I remember right. I did not see the plant. I do not rely on the difference of colour, yet the bristles of the tepals may be urged as being decidedly longer than those I have at hand in the typical specimen of my herbarium.

*Rhizome* creeping, branches thick, with emaciate sheaths. *Pseudobulbs* distant, turbinate, at length wrinkled. *Leaves* cuneate at the base, oblong, bluntly acute. *Racemes* (arising from the sheaths of rhizome?) nearly umbelliform. *Bracts* short. *Upper sepal* cuneate-oblong acute, greenish, with rows of dark brown-violet dots above the nerves (or brown streaks, according to the artist), and with long bristles round the limb; *lateral sepals* a little shorter, of the same colour and the same border, curved inwards. *Tepals* narrow, ligulate, bluntly acute (observed, or at least represented, aristate by the artist), shortly ciliate, observed dark violet by me (greenish by the artist?). *Lip* very moveable, trifid; *basilar lacinia* triangular, straight on the anterior side, serrate on the rounded posterior side; *middle principal lacinia* broad oblong acute, with two semi-ovate serrulate keels at the base, and nine serrulate crests above the disk, the middle crest running between the keels (seen yellowish with violet streaks by me, yellow with purplish streaks by the artist). *Column* yellow, thickish, semi-terete, with one tooth at each angle and a serrulate back border. *Anther* with an erect blunt protuberance. All the hairs at the border are yellowish.

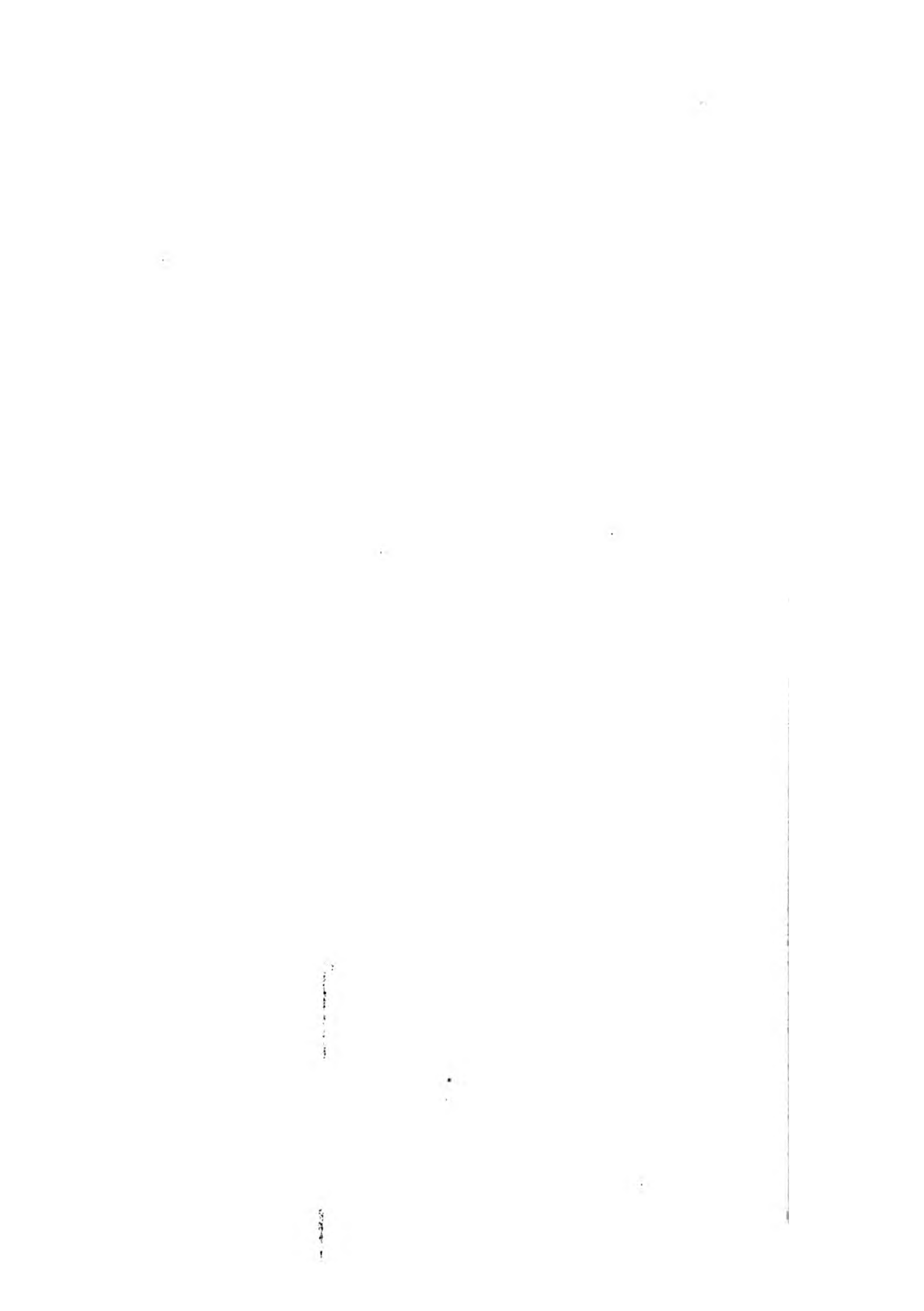
**Materials:**—Very poor. A sketch kindly sent by J. Day, Esq., and that single dried inflorescence which I obtained in 1865; my original sketches.

Tab. 115.—The plant, as represented by our artist. 1, a flower, with a part of the primary peduncle; 2, flower, with removed sepals +; 3, expanded lip +; 4, side view of lip +; 5, column and nail of lip +.

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This is a neat, dwarf, and very remarkable plant, with green and yellow hispid sepals, and petals covered with long hairs. My specimens came from Moulmein. It should be cultivated in a warm stove, where it flowers freely when placed upon a block with a little green moss. When growing it should be kept shaded and well supplied with water; when at rest, moderately dry.—*W. W. S.*







W.H. Fitch del et lith.

J.N. Fitch imp.

*Psychotria* *lobbii*, *var. siamense* Fitch f.

## TAB. 116.

Tribe MALAXIDÆ.

Genus BULBOPHYLLUM, *P. Th.*

- B. LOBBII, *Lindl.* B. SIAMENSE, *Rchb. f.* Rhizomate valido, pseudobulbis pyriformibus, junioribus bene vaginatis, subdistantibus monophyllis, folio cuneato oblongo acuto, racemis infrabulbis unifloris, pedunculis brevissimis subnullis, ovariis pedicellatis elongatis, sepalo summo ligulato acuto seu acuminato, sepalis lateralibus subæqualibus falcatis, tepalis basi superiori semicordatis lanceolatis acuminatis (in icone acutis) rectis, labello bene unguiculato, basi cordato-hastato, oblongo acuto utrinque medio plica insiliente, columna apice subtriloba, anthera velutina. Sepala, tepala, labellum extus straminea.
- B. SIAMENSE, *Rchb. fil., Gardener's Chronicle*, 1867, p. 592! Sepala et tepala brunneo-purpureo-lineata. Labellum intus album, ima basi flavum, lineis longitudinalibus ac punctorum seriebus purpureis. Unguis labelli inferne (extus) striolis purpureis. Columna interne flava, basi purpureo aspersa. Artifex labellum utrinque sulphureum estriatum observavit, in icone analytica tamen punctostriatum ostendit.

My first knowledge of this species is due to J. Day, Esq., who imported it from Siam. It appeared also at the Royal Kew Gardens, February, 1868, from Colonel Benson, probably from Moulmein. We flowered several specimens at the Hamburg Botanic Garden, which induced me to regard the plant as a variety of the polymorphous *B. Lobbii*, Lindl.

*Rhizome* stout. *Pseudobulbs* pear-shaped, decidedly sheathed when young, at small distances one from another, single leaved. *Leaf* cuneate, oblong-acute. *Racemes* beneath the bulbs, with nearly obsolete *flower-stalks*, one-flowered. Stalked *ovaries* very long. *Upper sepal* ligulate acute or acuminate; *lateral sepals* nearly equal, but broader and more or less falcate. *Tepals* on the superior base half-cordate, lanceolate acuminate or acute, straight. *Lip* with a claw, cordato-hastate or cordate at the base, oblong acute, with a fold on each side. *Column* somewhat three-lobed at its apex. *Sepals, tepals* and *labellum* on the under side



nankeen to sulphur-coloured. *Sepals* and *tepals* with many purplish brown lines parallel to their length. *Lip* white inside, with several entire lines and lines of small dots, both purplish brown. *Claw* of the lip with some purplish lines underneath. *Column* deep yellow, with a somewhat purplish hue. The plant represented by our artist has the lip entirely yellow. The purplish dots are indicated by him in fig. 1.

Materials:—Sketch from fresh flowers, and description from it; only two flowers in the herbarium; inspection of the plant at Mr. Day's; plants at the Hamburgh Botanic Garden.

Tab. 116.—The plant. 1, column and lip before it +; 2, lip, expanded; 3, 4, pollinia +. Fig. 2 given by Prof. Reichenbach, f.

—

I obtained my figure of this plant from a specimen which flowered in the Royal Gardens at Kew. It grows freely with me as recommended for *Bulbophyllum Dayanum*, No. 115, and also does well in a basket with sphagnum and spongy peat.—*W. W. S.*





W.H. Fitch. del. et. lith.

J.N. Fitch. sculp.

*Heliconia* ... *Persea* ...

## TAB. 117.

## Tribe MALAXIDEE.

Genus BULBOPHYLLUM, *P. Th.*

**B. TRISTE**, *Rchb. fil. in Walp. Ann.* vi. 253! *Hamb. Gart.* 1865, p. 301! Pseudobulbis primum cepiformibus, dein seu depressis seu angulatis, hinc collo evoluto turbinatis, in rhizomate approximatis prasinis, radicibus adventitiis filiformibus tenuissimis multiflexis; foliis cuneato-oblongo-lanceolatis apiculatis molliter carnosulis solitariis seu geminis, pedunculo gracili distanter vaginato, vaginis vulgo quaternis, duabus tantum superne, acuminatis arctis, apice racemoso, racemo cernuo multifloro densifloro, bracteis lineari-acuminatis, ovaria pedicellata subæquantibus, mento modico obliquo, sepalo summo triangulo, sepalis lateralibus oblongis apiculatis seu triangulis, extus obtuse carinatis supra nervum medium, tepalis valde abbreviatis triangulo-acuminatis uninerviis, labello ab ungue inflexo cordato-oblongo seu rotundato-oblongo obtuse acuto, columna trigona, auriculis triangulis angustis erectis. Pedunculus pallidus. Sepalum dorsale atrovioleaceo-purpureum; sepala lateralia mellicolora, nunc limbo atrovioleaceo-purpureo. Tepala sepalo dorsali æquicoloria. Labellum flavidum, hinc brunneo irroratum. Columna alboviridis.

The discoverer of this species was Mr. Lobb, who gathered it in the Khasya Hills. I have named it from the Lindleyan herbarium, now belonging to the Herbarium of the British nation, kept at Kew. In 1864 it appeared in Consul Schiller's collection at Hamburgh, flowering in May. Then I obtained it from Messrs. Veitch, and saw it both in the Saundersian collection, and in that of the Hamburgh Botanic Garden. There is a small starved variety in the Lindleyan collection and in the Schillerian collection. The specimens in the three other named collections were much stronger.

I must apologise for writing *Bulbophyllum*, not *Bolbophyllum*. The name was originally given by Aubert-Aubert Du Petit Thouars, in his time (1822) a most eminent Orchidologist. He wrote (see Tables 90—110) *Bulbophyllum*. We must adhere to it. It was Sprengel who wrote *Bolbophyllum* (*Syst.* iii. 132), 1826.

If we write *Bolbophyllum*, rejecting *Bulbophyllum*, then we ought to prefer the genus *Diphyes*, published by Blume in 1825. The reason for rejecting *Bulbophyllum* is, no doubt, since it is regarded as a hybrid word, derived from the Latin *bulbus*, the onion, and *φύλλον*, the leaf. This criticism must, however, for many reasons, be rejected. *Bulbus* is Greek, coming from *βολβός*. *Phyllum* being made Latin in its ending, there is no reason why we should not make *βολβός* Latin. A second objection is that everyone is allowed to make names just as he likes. If these grammatical changes were admitted, there would be no end of changes and corrections; and since there are so many who like to put their authority to names, there is a very wide area for personal vanity in constant change. Then come such authors as grumble at the names as not being appropriate. The greatest paradox is simply to change the names, without even declaring the alteration, leaving the changed name along with that of the old author. Thus Dr. Ascherson, of Berlin, writes "*Cypripedileæ*, Lindl., *Cypripeditum*, L.," as if Linnæus and Lindley had known anything about the Berlin Doctor's changes. If it were proposed to call such behaviour as making Linnæus speak of *Cypripeditum* forgery, what answer could be given? (See Ascherson, *Flora der Provinz Brandenburg*, 1864, p. 700). Thus nothing remains but to retain all described *Bolbophyllums* as *Bulbophyllums*, which I do now.

*Pseudobulbs* nearly approximate, leek-green, spheroid to pear-shaped, but very short, at length often angular. *Adventitious roots* very slender, filiform, much bent. *Leaves* cuneate oblong-lanceolate, apiculate, of a rather fleshy texture, solitary or in pairs. *Flower-stalk* very slender, with distant acuminate *sheaths*. *Raceme* small-flowered, nodding, very compact. *Bracts* linear acuminate, one-nerved, as long or longer than the stalked *ovaries*. *Chin* oblique, small. *Upper sepal* triangular; *lateral sepals* oblong apiculate or triangular, with a blunt keel outside above the middle nerve. *Tepals* very short, triangulo-acuminate, one-nerved. *Lip* from inflexed claw cordate-oblong or rounded-oblong, bluntly acute. *Column* trigonous, with two narrow erect ears. *Flower-stalk* greenish. *Dorsal sepal* purplish blackish violet; *lateral sepals* honey-coloured, sometimes with blackish violet borders. *Tepals* same colour as dorsal sepal. *Lip* yellowish, sometimes with a brownish hue. *Column* whitish green, or with small purplish dots beneath the stigma.

**Materials:**—Dr. Lindley's specimen; my four herbarium specimens; my sketches and descriptions made from living plants both at Hamburgh and in Mr. Saunders's garden.

Tab. 117.—A plant. 1, flower, side view +; 2, flower, front view +; 3, flower, side view, sepals cut +; 4, lip +; 5, oblique view of column +; 6, bract +.

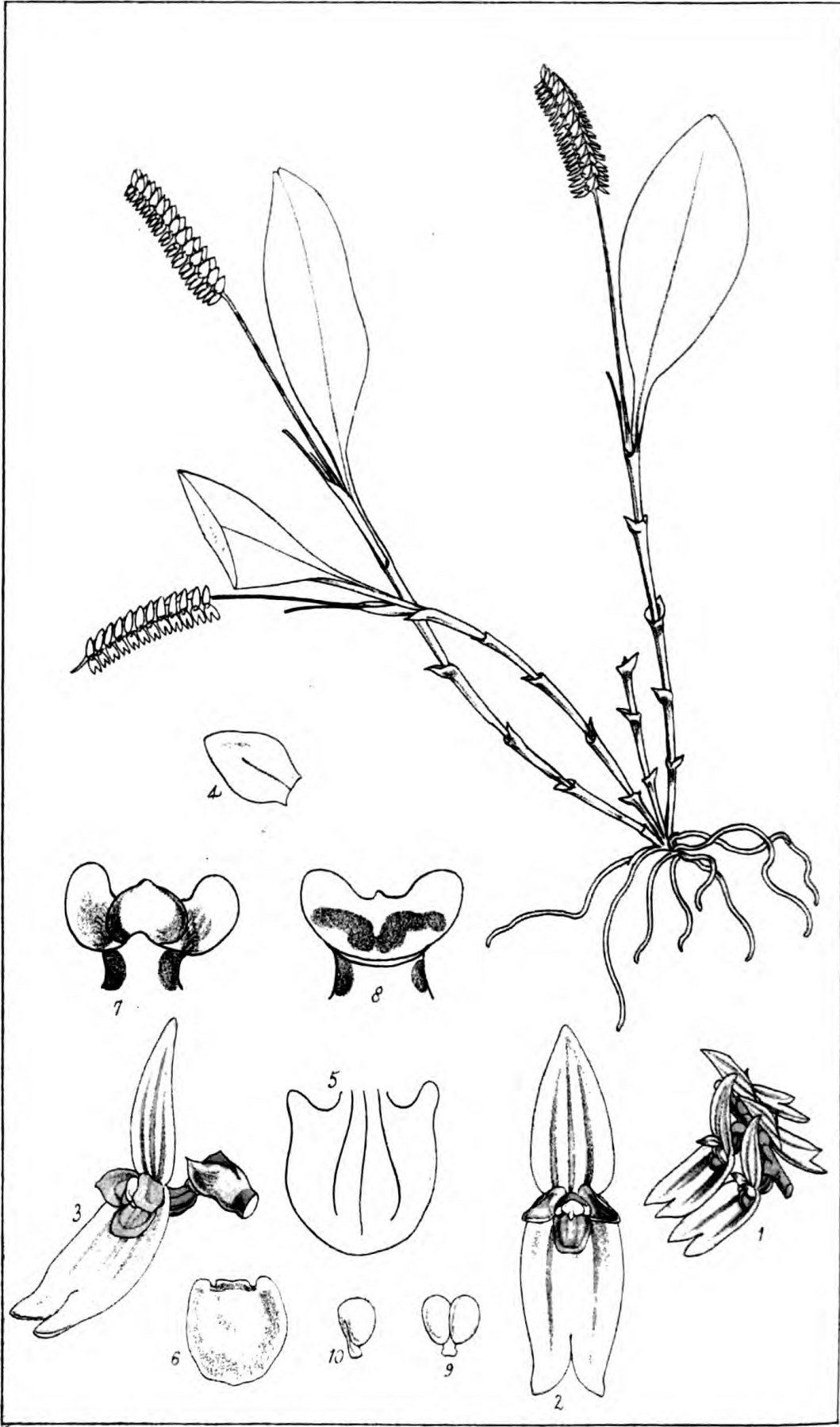


We grow this interesting Orchid in the shady part of the East-India house, where it flowers freely when placed upon a block with a little green moss. I am indebted to the Messrs. Veitch for my specimen of the plant.—*W. W. S.*









W.F. Fitch del et lith.

J.N. Fitch imp.

*Pleurothallis floripecten*, Rehb. fil.

## TAB. 118.

## Tribe MALAXIDÆ.

## Genus PLEUROTHALLIS, R. Br.

- P. FLORIPECTEN, *Rchb. fil. in Bonplandia*, 1854, p. 25, 15 Jan.!  
 Densissime cæspitosa, radicibus intricatissimis nudis, caule secundario gracili bipollicari, nunc longiore, vaginis 4-5 arcte appressis nervosis, ostio dilatato ovato mucronato dense fimbriato, vagina summa laxa ampla folii basin tegente, folio oblongo basi cuneato apice attenuato minute bidentato subcarnoso, pedunculis subcapillaribus fasciculatis quatuor ad quinque hysterochronicis, dimidio longiori inferiori vaginulis arctis brevibus retusiusculis membranaceis tribus seu quatuor hinc inde vaginatis, parte superiori densissime florigera, bracteis arctis vaginæformibus, ostio ovato acuto, minutissimis, floribus distichis transversis alternantibus, flavidulis hyalino purpureo aspersis, sepalo summo ovali abbreviato, inferiori elongato ligulato apice suo subdivaricate bilobo, nervo utroque dorso carinato, tepalis ovatis acutiusculis minutis semiuninerviis, labello brevissime unguiculato ovali basi cordato trinervi, columnæ rostello lato trilobo, lobis lateralibus obtusangulis, lobo medio dentiformi, anthera dorsali.—*Pleurothallis floripecten*, *Rchb. fil.!* Lindley, *Folia Orchidacea*, Part ix. *Pleurothallis*, No. 27.

The original discoverer of this neat, elegant plant, well called by Dr. Lindley "a very remarkable plant," is my friend Herrmann Wagener, Esq., then of Caracas, now of Hamburgh, who collected it in Venezuela, near Jaji. I never saw anywhere any vestige of this delicate thing, except in September, 1867, when W. Wilson Saunders, Esq., sent me a good sketch and an inflorescence from his garden. Then I obtained, at Reigate, the living plant.

This is all my acquaintance with the plant. It has, however, had to lend its name for other purposes.

Professor Grisebach has done his best to name the Orchids of the West Indies. In his 'Catalogus Plantarum Cubensium,' there appears, at p. 260, a *Pleurothallis floripicta*, Lindl. Orch. Wn. syn. *P. melanantha*, G. Rchb. l. c. (Wn. 1509, 3342). I am sorry to be compelled to make the following remarks. A *Pleurothallis floripicta*, Lindl., has never been published, least of all in the 'List of the Orchidaceous Plants collected on the Coast of Cuba,

by Mr. C. Wright' (Annals and Mag. of Natural History for May, 1858). If M. Grisebach had possessed, when writing on *Pleurothallis*, or had seen (as he did when writing his Flora) the monographs of Lindley, he would have found the *Pleurothallis floripecten*, Rchb. f. From a memorandum at hand, indeed, the late Doctor, in his last illness, confounded the Cuban plant with my species. But the Cuban plant, of which I have numerous specimens at hand, is immediately distinguished by its very short blackish purplish sepals and simply erect flowers never being transverse, and the two cannot be confounded. Now, since M. Grisebach had no quotation for any publication of Lindley for the "*Pleurothallis floripicta*, Lindl.," I would like to know what principles entitled him to call my published species (see Flora, 1865, p. 273) a synonym. I must add that to the memorandum just quoted I have added "*Lepanthes floripecten*, Rchb. fil." (Lindl. in Herb. Hook. nec *Pleurothallis floripecten*, Rchb. fil.) It was Lindley who, perhaps by a failure of memory, had believed in a *Lepanthes floripecten*, Rchb. fil., but never published by me.

Closely caespitose. *Aërial roots* naked, very intricate. *Secondary stems* slender, two inches high or more, with four or five very narrow nervous *sheaths*, bearing an ovate mucronate fimbriate expanded opening. *Uppermost sheath* wide, lax, covering the base of the leaf. *Leaf* oblong, cuneate at base, attenuate at the minutely two-toothed end, rather fleshy. *Flower-stalks* somewhat hairy, four or five, not flowering above; lower half longer, with three to four narrow short retuse membranous *sheaths*; superior half densely floriferous. *Bracts* narrow, sheath-like, with ovate-acute opening, very small. *Flowers* distichous, transverse, biseriate, yellowish, with a purplish hue. All the *sepals* yellowish, with lilac veins; *upper sepal* ovoid short; *inferior* one longer, ligulate, bilobed at its apex, two-nerved, both nerves keeled on the outside. *Tepals* ovate, somewhat acute, small, with single nerves, ending before the apex yellowish with a lilac border. *Lip* shortly unguiculate ovate cordate, tri-nerved, yellowish, with a lilac border, not longer than the tepals. *Column* very short, with a three-lobed *rostellum*; side lobes obtuse-angled; middle lobe tooth-like. *Anther* dorsal. *Pollinia* two, cohering with a little mass of glue.

Materials:—Two specimens were originally in my herbarium; one was presented to Dr. Lindley, making now part of the Kew

Herbarium. A fresh spike sent by W. Wilson Saunders, Esq. Inspection and description of the living plant in October, 1867.

NOTES.—I may add a few remarks. The artist has represented the inflorescence as scarcely longer than the leaves. My original specimens both showed the inflorescence exceeding the leaf by the whole of the floriferous part. The sketch kindly sent by W. Wilson Saunders, Esq., shows just the same length and proportion to the leaf. It is highly curious that there is a second plant much like this species and having entirely its appearance; the whole difference is that the sheaths are closely covered with spiny bristles, that the inferior sepal has two straight teeth, the tepals are nerveless, and the lateral laciniae of the rostellum are rhomboid. Let me add that the flowers are deeply purplish, the leaf shorter, smaller and blunt. It may be introduced thus:—

PLEUROTHALLIS ANTHOCTENIUM, n. sp., simillima *P. floripectini*, vaginis laxioribus echinatis, ostiis amplis valde echinatis, folio cuneato oblongo obtuso brevi, inflorescentiis plus duplo longioribus, floribus omnibus in parte superiori transversis, sepalo superiori oblongo triangulo trinervi, sepalo inferiori ligulato apice recte bidentato binervi, tepalis minutis ovatis enerviis, labello cordiformi obtuso trinervi, columnæ brachiis lateralibus oblique rhombeis.

It probably comes from San Domingo. I found it in the herbarium of the Richards (now of M. Prillieux) with the note "S—D." Is it from L. C. Richard, or from Poiteau?

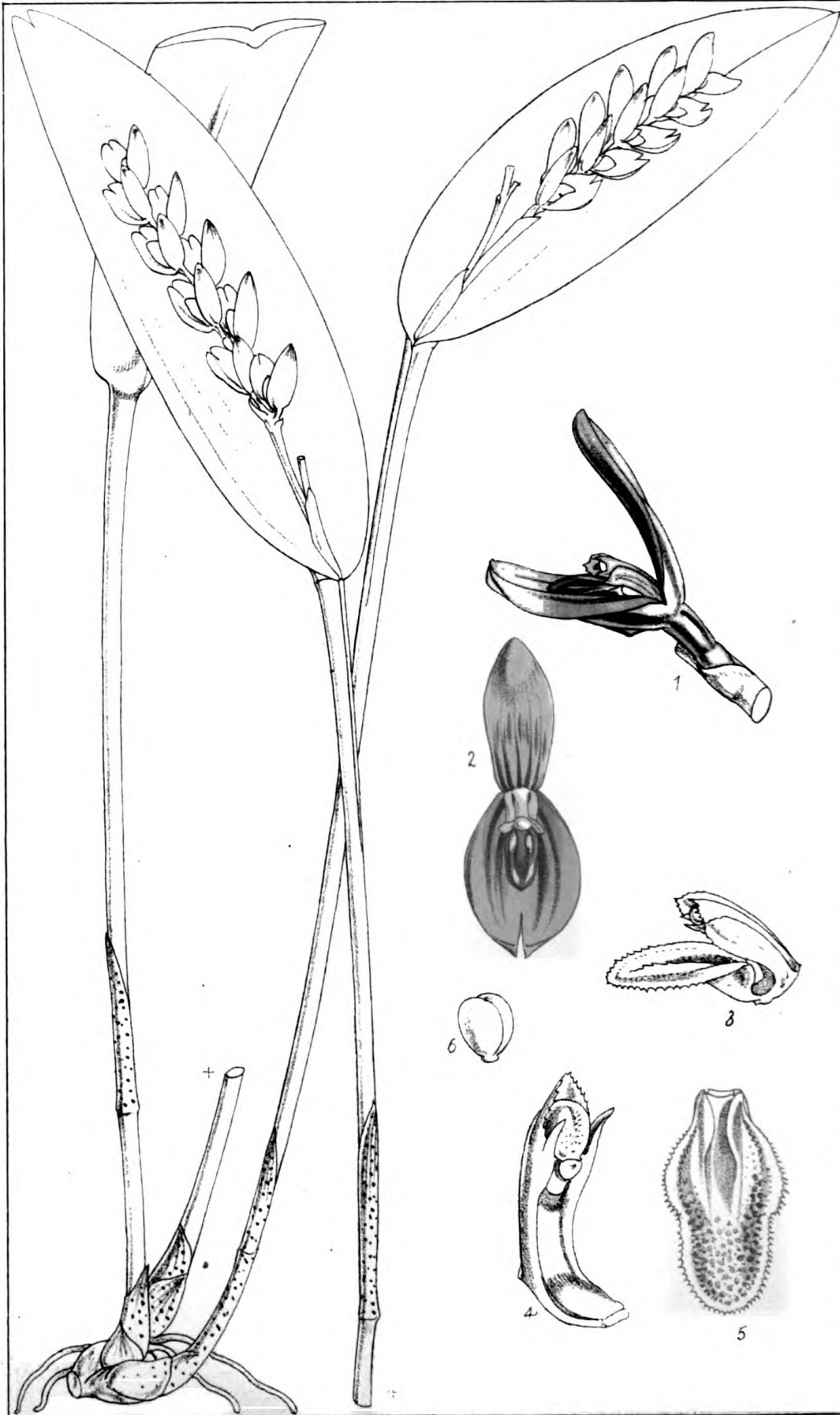
Tab. 118.—The plant. 1, a part of inflorescence +; 2, front view of flower +; 3, side view of the same +; 4, tepal +; 5, lip +; 6, lip +; 7, column, dorsal view +; 8, column, anterior view +; 9, pollinarium, front view +; 10, the same, side view. The figures 4, 5, 7, 8 from Professor Reichenbach f.

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We grow this charming little plant in the warmer part of the temperate house, where it produces its delicate flower spikes freely, placed on a mossy block of wood. I obtained my specimens of this plant from M. Linden, of Brussels. The way in which the flowers are arranged in a dense spike, so regularly placed as to look like a miniature comb, is very pleasing.—*W. W. S.*







WH Fitch del et lith.

J N Fitch imp

*Pleurothallis pardipes* Rehb. f.

## TAB. 119.

Tribe MALAXIDÆ.

Genus PLEUROTHALLIS, *R. Br.*

*P. PARDIPES*, *Rchb. f., MSS.* Caulibus secundariis dense aggregatis, basi vagina arcta elongata dense maculata vaginatis, ab apice ad medium canaliculatis, folio oblongo basi rotundato, apice attenuato bidentato cum denticulo interposito, bene marginato, spatha inflorescentiarum hysterochronicarum minuta carinata acuta, racemis folium non æquantibus solitariis seu geminis bifariis, bracteis ochreato-vaginatis apiculatis retusis ovaria pedicellata non æquantibus, ovario perigonioque extus parce velutinis, perigonio carnosulo, sepalo dorsali ligulato acuto, sepalo inferiori oblongo apice bidentato, limbo ciliatulo, infra nervos medios extus vix conspicue carinato, tepalis columnam æquantibus ligulatis obtusissime acutis superne serrulatis uninerviis, labello ima basi utrinque sagittato-undulato utrinque obtusangulo oblongo-obtuso ciliolato, superne minute papuloso trinervi, carinis obtusangulis geminis in basi, columna gracili arcuata superne ampliata, androclinio serrulato hinc tridentato. Pedunculus viridis, maculis multis parvulis purpureo-vio-laceis. Folium ejusdem coloris. Sepala olivacea seu tandem brunnea atropurpurea. Tepala albida seu flavida. Labellum atropurpureum, linea baseos flava media. Columna flava.

The late Mr. Bowmann discovered this plant near Rio Janeiro, in Brazil. I observed it living in the Saundersian garden in 1868, and have now a fresh specimen at hand from the same place in 1871. I cannot find anything like it in the collection of Dr. Lindley or in my own. As a species it approximates, no doubt, very near the well-known *Pleurothallis bicarinata*, Lindl., which had also similar spotted sheaths. It is, however, very easily distinguished by its inflorescence coming out above the base (not at the base) of the much broader and heart-shaped leaf, by its petals being entire three-nerved, and by its very different lip.

*Root-stock* tufted, the joints thickened and articulated at their apex. *Secondary stems* often arcuate at their base, straight, erect, upwards of a span high, terete, a little compressed beneath the leaf and channelled in the middle. *Superior sheath* long, ochre-coloured, with many small brownish dots (whence the name of



“spotted foot” is given). *Leaf* oblong, bidentate at its apex and a little cucullate, rounded at its base, with many dark violet dots on both sides. At the very base of the leaf, in its sinus, stands a small ancipitous acute *sheath*, bearing one after the other a few *inflorescences*, not quite equalling the length of the leaf, having distichous flowers near to the base. *Bracts* retuse, apiculate, shorter than the stalked ovaries. *Perigone* and *ovary* velvety outside. *Dorsal sepal* ligulate, bluntly acute, olive to yellowish brown, with some longitudinal purplish streaks; *inferior sepal* much broader, bidentate at its point, of the same colour, slightly ciliated. *Tepals* much shorter, equalling the column, ligulate, generally one-nerved, with toothlets at their blunt apex, and a very strong single nerve from the base to near the apex, yellowish. *Lip* rhomboid retuse to oblong, ciliated, with many small warts and two small semi-oblong *lamellæ* before its base, obscurely sagittate at its very base, purplish, with a yellowish middle line at its very base. *Column* trigono-clavate, dilated in the upper part, with a toothed border around the *androclinium*, yellowish.

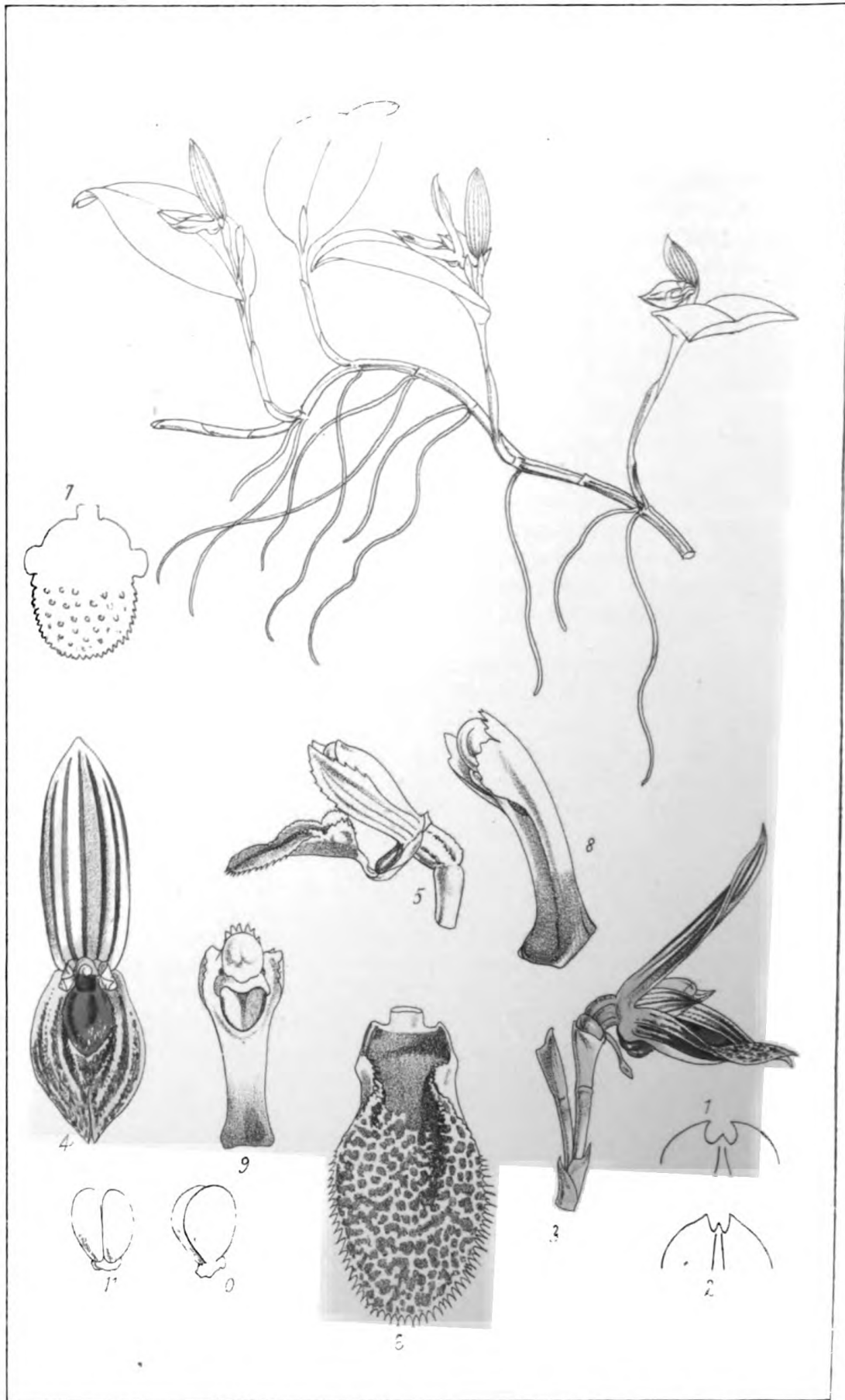
**Materials:**—A description and sketches prepared at Reigate, October, 1869, and at Hamburgh, October, 1871; two herbarium specimens.

Tab. 119.—A plant. 1, flower, side view +; 2, flower, front view +; 3, column, tepals, lip, side view +; 4, column, seen in oblique view +; 5, lip, expanded +; 6, pollinia, side view +.

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This plant should be treated as recommended for *Pleurothallis floripecten*, Tab. 118. My specimens were sent to me by the late Mr. D. Bowman, and obtained near Rio Janeiro. A strong-growing species, not showy, but botanically interesting.—*W. W. S.*





1. E. del. et lit.

J.N. Fitch imp.

*Pleurothallis Saundersiana* Rob. in.

## TAB. 120.

## Tribe MALAXIDÆ.

Genus PLEUROTHALLIS, *R. Br.*

P. SAUNDERSIANA, *Rehb. f. in Gardn. Chron.* 1866, 74! Rhizomate longissime serpente seu scandente, vaginis striato-nervosis, polyrhizo, radicibus filiformibus multiflexis nunc porrectis, caulibus secundariis abbreviatis semiteretibus canaliculatis parce vaginatis, vaginis nervosis scariosis, folio carnosio oblongo-lanceolato acuto, apice energetice tridentato, dentibus lateralibus energetice uncinatis introrsis seu rectis, dente medio setaceo acuminato, superne viridulis, infra linea media et limbis sordide violaceo-purpureis, marginatis et striatis, ceterum maculis atropurpureis multipunctatis, floribus solitariis seu geminis non simul evolutis, sepalo summo oblongo acuto albido, striis septenis brunneis, inferiori cochleato acuto apice minute bidentato æqualiter striato, tepalis rhombeis ligulatis apicem versus serratis, trinerviis, labello ab ungue utrinque humerato oblongo, utrinque ante basin obtusangulo, ceterum denticulato, tota superficie anteriori acute papulosa, columna gracili, androclinio utrinque angulato, postice serrulato. Typo simillima *Pleurothallidi papillosæ*, Lindl.! cujus icon fugacissima tantum adest in herbario Lindleyano, dum a me scrupulosissime depicta juxta specimina Monacensia typica. Hujus folia angustiora, caules lamina longiores, sepala lateralia semibifida, tepala ligulata eroso-crenulata, labellum carinis geminis altissimis, androclinii limbus totus serrulatus.

This lovely little thing was dedicated to the promoter of our present work in these terms:—"Thus we have regarded it our duty to act as an interpreter both of the thankful and confidential feelings of *Pleurothalloids*, and of our own, by making W. W. Saunders, Esq., the godfather of a lovely young anonymous *Pleurothallis*, coming, we believe (papers not seen) out of Mr. Low's Nursery, into which it was introduced from Brazil." Alas! the "papers not seen" would appear to have been written in a prophetic spirit. When (in October, 1857) at Reigate, I was informed that the indication Brazilian was not correct, but that the grand book of Saundersian Orchids (kept with perfect accuracy) indicated a Lindenian origin, and W. Wilson Saunders, Esq., suggested that the plant might come from Popayan.

*Rhizome* filiform, creeping widely, with nervous plaited *sheaths*. *Aërial roots* numerous, filiform, flexuose or straight. *Secondary stems* short, semi-terete, channelled, with few nervous *sheaths*. *Leaf* fleshy, oblong-lanceolate acute, with three teeth, the central one like a short acute bristle, the lateral ones straight triangular or uncinatè; colour green on the outside, with dark purplish middle nerve and limb, and many purplish blotches on the under side. *Flowers* one or two, not developed at once, whitish with purplish nerves. *Tepals* equal. *Lip* whitish, with numerous purplish dots, so close to one another that it appears nearly purplish brown; I have also seen it entirely purplish brown. *Upper sepal* oblong-acute, with seven purplish streaks; *inferior sepal* oblong-ligulate, cochleate-acute, bidentate, the purplish ribbons confluent. *Tepals* rhomboid-ligulate, serrate at their apex, three-nerved. *Lip* with a short claw, then rounded and oblong obtuse, with one short blunt auricle on each side, finely toothed round the limb, with many acute warts. *Column* slender, widened at its apex, with a sharp tooth on each side and a finely toothed limb round the *anther*.

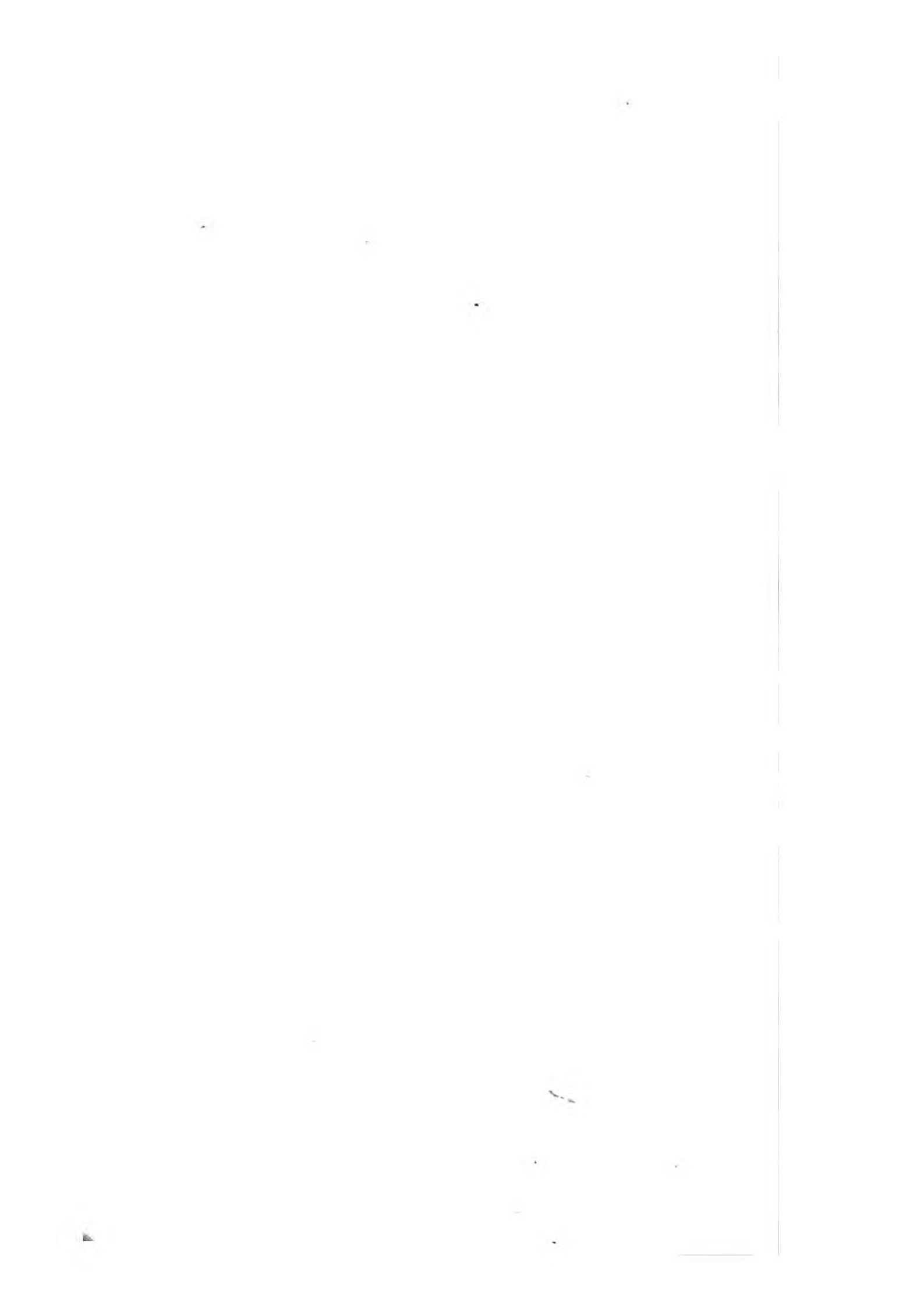
**Materials:**—Specimen sent by W. Wilson Saunders, Esq.; a most correct sketch of his own, showing a single flowering stem at once; and my own sketches and descriptions from the living plant.

Tab. 120.—A plant: I never saw, neither can I understand its having three flowering stems at once, and one of them also two-flowered at once. 1, 2, apex of leaves +; 3, side view of flower +; 4, expanded flower, front view +; 5, side view of flower, sepals cut +; 6, lip +; 7, lip, artificially expanded +; 8, column, oblique side view +; 9, column, front view +; 10, pollinia, side view +; 11, same, front view +.

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This is a little trailing Orchid, which I received from M. Linden, of Brussels. Treated as the two species of *Pleurothallis*, Nos. 118 and 119, it grows freely, and produces its pretty flowers, which have the lip beautifully mottled with crimson.—*W. W. S.*











W.H. Fitch del. et lith.

Hanhart imp.

*Spiranthes esmeralda*, Lindl. & Rchb. fil.

## TAB. 121.

Tribe NEOTTIÆ.

Genus SPIRANTHES, L. C. Richard.

S. ESMERALDA, Linden & Rehb. fil., Hamb. Gartz. 1862, p. 36! Radicibus fasciculatis, foliis rosulatis cuneato-oblongis acutis, maculis argyreis multis pictis, pedunculo elato, squamis densiusculis apice acuminato setaceis elongatis imbricantibus, spica elongata pulchre spirali, rhachi minute glandipili, bracteis lanceolato-setaceis flores excedentibus seu subæquantibus glandipilibus, ovario glandipili, perigonio oblique inserto extus glandipili, gutture angulato humili, sepalo summo ligulato acuto, sepalis lateralibus æqualibus, tepalis subæqualibus minoribus, labello oblongo pandurato acuto seu ovali-acuto, callis conicis retrorsis, rostello retuso utrinque extus acuto, medio in processum lineari-lanceum extenso.—*Spiranthes margaritifera*, Linden & Rehb. fil. in *Gardener's Chronicle*, 1866, 219! *Habenaria margaritacea*, Linden, *Catalog.* Flores albo-viriduli, demum flavidi.

This plant appeared in 1862 in Director Linden's garden, coming from S. Paul, in Brazil. The specimens I obtained in 1866 were widely different. The lip had been simply ovate-acute, now it was pandurato-oblong; it had had a horse-shoe like green picture on its apex, now it was simply one-coloured; the whole appearance was widely different; and yet, having seen more specimens, both in Mr. W. Wilson Saunders' stoves and in the Ham-burgh Botanic Gardens, I have satisfied myself that they are identical, and that we were deceived by a badly developed first specimen. Later, Director Linden named it proprio Marte a "Habenaria"—not a very lucky combination; finally, Dr. E. Warming, now at Copenhagen, brought seven good herbarium specimens, a Danish description and a sketch, and an inflorescence in alcohol from Lagoa Santa, in Brazil.

*Roots* fasciculate. *Leaves* rosulate-cuneate oblong acute, dark green, with many oblong rounded often lobed white shining blotches. *Flower-stalk* often more than two spans high, with many close acuminate bristly *sheaths*. *Spike* elongate, many-flowered, elegantly spiral, with the rhachis covered with glandular hairs; *bracts* equally hairy, one-nerved, lanceolate-setaceous,

longer than the flowers, or nearly equal to them towards the apex of the inflorescence. *Ovary* cylindrico-trigonous, with similar hairs. *Outer perigone* oblique, with glandular hairs outside the sepals; *throat* angular, small. *Upper sepal* ligulate-acute; *lateral sepals* nearly equal. *Tepals* lanceolate-acute, with unequal sides. *Lip* oblong, pandurate-acute, or ovate-acute, with two conical retrorse *calli* at the very base. *Rostellum* retuse, acute at both angles, with a linear middle process. *Flowers* greenish white, finally yellowish.

**Materials:**—Sketches made at various times; descriptions from living plants or fresh specimens; four herbarium specimens; and the use of Dr. Warming's rich materials, described before.

Tab. 121.—The plant. 1, flower and bract +; 2, front view of flower +; 3, side view of flower, sepals cut +; 4, lip, front view +; 5, the same, side view +; 6, column, with anther, front view +; 7, column, side view +.

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This pretty species of *Spiranthes* has its white flowers most regularly arranged, spirally, on a tall upright stem. It may be treated as recommended for *Pelexia triloba*, Tab. 97. I received my stock of this plant from M. J. Linden, of Brussels.—*W. W. S.*





W.H. Fitch del. et lith.

Hanshart imp.

*Cretidium microchilum*, *Bat.*

## TAB. 122.

Tribe VANDEÆ.  
Genus ONCIDIUM, Sw.

O. MICROCHILUM, *Bat. in Lindl. Bot. Reg.* xxvi. 1840, *Misc.* 193! xxix. 1843, *Tab.* 23! *Lindl. Fol. Orch., Oncidium*, No. 21. *Walp. Ann.* vi. 711! Radicibus validissimis deorsum versis albidis nudis, pseudobulbis approximatis ligulato-pyriformibus obtusangulo-tetragonis brevibus nitidis, primum vaginis paucis triangulis non laminigeris fultis, demum basi subnudis valde incrassatis monophyllis vulgo rufo-brunneis, folio crassissimo cuneato-oblongo acuto, limbo subcartilagineo minute crispulodenticulato, vulgo rufo-brunneo sub-pruinato, inflorescentia multo longiori, rhachi subcæsia, basi distanter minute vaginata superne paniculata, ramis distantibus brevibus paucifloris, apice racemosa, bracteis squamiformibus ovaria pedicellata longe non æquantibus, sepalo dorsali cuneato-oblongo obtuse acuto, sepalis lateralibus abrupte unguiculatis oblongis obtuse subacutis, tepalis cuneato-oblongis apiculatis hinc undulatis, labelli ungue lato ima basi minutissime utrinque semicordato, lamina transversa obtusangula quadriloba undulata apiculo minuto terminali interposito in sinu antico, dimidio replicata, callo tumido abrupto a regione ante unguem in basin apiculi minuti, utrinque bilobo, carina obtusa in medio, columna trigona, rostellari processu triangulo-lineari, alis triangulis margine hinc crenulatis paulo deorsum versis. Sepala et tepala cinnamomea, limbo hinc imo insiliente viridulo, demum flava. Labellum album maculis quibusdam flavis atropurpureo cinctis. Columna alba; apices alarum virides. Limbus tabulæ infrastigmaticæ atropurpureus.

This species must have been introduced at various times; it would appear never to have been common, and yet it may be said never to have been quite wanting. All the plants are said to come from Guatemala. The first flowered at Biddulph Grange, with J. Bateman, Esq., sent by the late Mr. Ure Skinner. I do not remember to have seen wild specimens, neither do I possess any.

*Roots* very stout, descending, whitish, never hairy. *Pseudobulbs* close together, ligulato-pyriform, obtuse-angled tetragonous,

short, shining, the first with triangular not laminigerous *sheaths*, then nearly sheathless at their base, very much thickened, one-leaved, generally brownish red. *Leaf* very thick cuneate oblong acute, with a cartilaginous very minutely crisp denticulate border of the same colour as the pseudobulb. *Inflorescence* usually much longer. The basilar *rachis* has a few very distant small short triangular sheaths. *Flowers* in a racemose panicle; the upper part simply racemose, the inferior in strong specimens with distant, short, few-flowered branchlets. *Bracts* triangular, very small, and shorter than the very long-stalked ovaries. *Upper sepal* cuneate-oblong, bluntly acute, often arched; *lateral sepals* abruptly unguiculate, oblong, blunt or slightly acute. *Tepals* cuneate-oblong, apiculate, sometimes a little undulate. *Lip* with short broad claw, minutely half-cordate at each side; *blade* transverse obtuse-angled, four-lobed, undulated, with a minute apiculus in the sinus between the anterior lobes, revolute. *Callus* fleshy, abrupt on both sides, with a roundish lateral lobe and with a blunt keel in the middle between the two anterior blunt lobes. *Column* trigonous; *rostellar process* linear, pendulous. *Wings* triangular, bent down. *Infrastigmatic table* with sharp edges on both sides. *Sepals* and *tepals* cinnamon-coloured, with greenish or yellowish borders. *Lip* white, with several yellow blotches, mostly bordered with purplish brown.

Materials:—Sketches of the parts of the flower and four herbarium specimens, all from gardens; description of the living plant made in the Saundersian, and compared in the Hamburgh Botanic Garden.

Tab. 122.—The plant. 1, flower, front view +; 2, the same, oblique side view +; 3, lip, underneath +.

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I have had this species of *Oncidium* long under cultivation, and I have lost all trace of the source from whence I originally procured it. In the temperate house it grows and flowers freely either in a basket or under pot cultivation, and, like most of the thick-leaved *Oncidiums*, it requires but a moderate supply of water.—*W. W. S.*







W. H. Peck del. et lith.

Harrart sculp.

*Oncidium planifolium* Lindl.

## TAB. 123.

Tribe VANDEÆ.  
Genus ONCIDIUM, Sw.

O. PLANILABRE, Lindl., Journ. Hort. Soc. vi. 59, ic. xyl.! Folia *Oncidium*, p. 43, No. 141! Walp. Ann. vi. 787! Folio stipante inferiori vagina triangula, altero articulato laminigero, lamina cuneato-ligulata acuta, pseudobulbo oblongo apice angustato, demum bene rotundato ancipiti, primum omnino lævi, demum subcostato prasino, statu hebetato monophyllo, statu vegeto diphylo, foliis cuneato-ligulatis acutis, usque pedalibus et usque tres pollices lati, inflorescentia elongata, apice simpliciter racemosa, infra brachyclado ramulosa, ramulis floribusve bracteis vaginis bracteisve spathaceis multinerviis scariosis stipatis, ramulis vix ultra bifloris, bracteis spathas subæquantibus, sepalis unguiculatis oblongis acutis, tepalis bene brevioribus, supra basin angulatis, labello pandurato, angulis posticis retusiusculis, isthmo constricto, parte antica reniformi emarginata, callo subrhombico bicruri in basi explanato, antice medio in acumen exeunte, papula utrinque apposita juxta acumen, columna brevi crassa alis adnatis, rostello tridentato, dente forti ante foveam, anthera ornithorrhyncha. Flores pallide sulphurei, disco sepalorum et tepalorum brunneo. Labellum flavum, parte superiori utrinque brunneo prætexta et per isthmum brunnea. Callus albus rubido-pictus.

Dr. Lindley informed us the species was "wild in Brazil; locality unknown." For a long time it did not appear again: at length Director Linden obtained it from Guayaquil, in the warm region, collected, no doubt, by Mr. Wallis. I have also obtained it from Messrs. Veitch, who may have got it from Mr. Pearce, from Puna Island. There are two species very near it: one, *Oncidium hirundo*, Rchb. fil., in v. Mohl. s. v. Schlechtendal Botanische Zeitung, 1857, p. 156, has much longer lateral sepals. I obtained it from Prince Camille Rohan from Sichrow, in Bohemia. Probably the same was introduced from Peru by Director Linden; yet I did not see well-preserved flowers, fully fit for examination. Much like it, but with an exceedingly rich inflorescence and very blunt sepals and tepals, with deep chesnut-brown disk, is *O. pardothyrsus*, Rchb. f., l. c. p. 158. It flowered

first at Farnham Castle, in 1856, at the Lord Bishop of Winchester's; immediately afterwards in the Berlin Gardens, all the plants having been sent by v. Warpewicz. Then Mr. Linden obtained it from Mr. Wallis, most probably from Ecuador. It is a very recommendable plant: the one in the Hamburgh Botanic Garden remained in flower for a long while.

Two very remarkable *leafy organs* stand beneath the pseudobulb; the inferior one a triangular keeled sheath; the superior one a sheath with an articulated cuneato-ligulate acute leaf. *Pseudobulb* oblong, narrow before, finally rounded, ancipitous, finally ribbed, leek-green; when very weak one-leaved, when strong two-leaved. *Leaves* cuneato-ligulate acute, attaining one foot in length and to three inches broad. *Inflorescence* long, racemose at its top, shortly paniced at its base with small one- or two-flowered branchlets, all the *flowers* and branchlets coming from conspicuous marginal-nerved triangular lanceolate *sheaths*. *Bracts* similar. *Sepals* unguiculate, oblong-acute. *Tepals* shorter, angular above their base. *Lip* pandurate, basilar angles retuse; narrow part much constricted; anterior part reniform emarginate; *callus* rhomboid, with two retrorse shanks, flat at the base, in the middle of the anterior with an acute process, on each side of which stands a conical small callosity. *Column* short, thick, with adnate wings; *rostellum* tridentate; a strong tooth before the *stigmatic hollow*; *anther* like the beak of a bird.

Materials:—Description of the living plant in the Saundersian garden; inspection of Dr. Lindley's type; sketches and descriptions of fresh specimens; three herbarium specimens.

Tab. 123.—The plant. 1, flower, expanded +; 2, the same, side view; 3, column, front view +.

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Placed in a damp shady temperate stove, this dingy coloured *Oncidium* grows freely and flowers abundantly. When at rest it must be but moderately supplied with water. My plants came from M. J. Linden, of Brussels, and were labelled from Guayaquil.—*W. W. S.*





WH Fusch del et lith.

Hanhart umr

*Oncidium ornithocephalum*, Lindl

## TAB. 124.

Tribe VANDEÆ.

Genus ONCIDIUM, Sw.

O. ORNITHOCEPHALUM, Lindl. *Folia Oncidium*, No. 101, pp. 30, 31.

*Walp. Ann.* vi. 749! Rhizomate repente seu scandente, pseudo-bulbis seriatis approximatis ovoideo-compressis obtusangulis bene viridibus, nunc pruinosis, monophyllis seu diphyllis, nunc a vaginis triangulis stipatis nunc a foliis cuneato-lanceolatis acutis articulatis, foliis bulborum cuneato-lanceolatis acutis, usque fere spithamaeis, et unum et dimidium pollicem latis, inflorescentia tenera pluripedali gracili, basi anantha distanter vaginata, ramulis plurimis abbreviatissimis, rarius ramulosis, plurimis flores abortivos stellatos gerentibus, paucis evolutis, sepalis unguiculatis oblongis acutis, tepalis bene latioribus, labello late cuneato-oblongo seu transverso ovato-acuto, seu subquadrato retuso cum apiculo, basi tamen utrinque obtusangulo dilatato, seu triangulo ima basi ante columnam velutina, callo anteposito ex carinis quinque obtuse lobulatis, insula velutina parva utrinque extrorsa antepositis carinulis triangulis subparallelis extrorsis, columna trigona, alis angustis apice ligulatis, infra obtusangulis, tabula infrastigmatica utrinque medio extrorsum angulata, supra angulo papilloso pilosa, anthera pandurata apiculata, caudicula triangula, basi tridentata. Flores pallide flavi, sepalis fascia cinnamomea transversa pictis, fascia lata transversa, una per labellum, angustiori fascia nunc superposita.—*Oncidium ornithocephalum*, Lindl. *Regel Gartenflora*, tab. 689. *Oncidium abortivum Anglorum* (*pertinacissime!*)

The original discoverer would appear to be the late L. Schlim, Director Linden's unfortunate half-brother, who found it near St. Maria, in New Grenada: his plants flowered with Director Linden, where I saw it, as early as 1856, in full flower; and Dr. Lindley had obtained it, even in 1852, from the same source. More recently Director Linden imported it from Bogota. Then it appeared, I believe from Mr. Blunt, in the English collections. Finally, Mr. Roezl sent many specimens to Europe, and just now (November, 1871) a great plant is producing four inflorescences in the Hamburgh Botanic Gardens. When in England I am

quite accustomed to the kindness of many of my acquaintances, who are so good as to correct my statement of its being *ornithocephalum*, contending that it is *abortivum*. Now, having named *Oncidium abortivum* in 1849, a plant with a nearly trifold lip and a short heteranthous pyramidal inflorescence, a much rarer species, I must know something about that plant. No species is so near to *O. ornithocephalum* as my *O. Magdaleneæ* (Seemann, Bonplandia, iii. 66), discovered also by Schlim, and found also by Wagener. It is exceedingly like *O. ornithocephalum*, but the flowers are larger, with much more brown, with a very acute often bent tooth before the callus and no stellate flowers.

*Rhizome* creeping or scandent. *Pseudobulbs* near one another, ovoideo-compressed, obtuse-angled, green, sometimes with a pruinose hue, one-leaved or two-leaved. Beneath the bulbs two triangular *sheaths*, or two articulate leaves, with cuneate-lanceolate laminae. *Leaves of pseudobulbs* cuneate-lanceolate acute, nearly a span long or shorter, and one inch broad or broader. *Inflorescence* very slender, as much as several feet long, with distant sheaths at the flowerless base, with many very short branchlets, which are very seldom branched, covered with crowded abortive stellate *flowers*, consisting of four or five linear acuminate segments, generally arcuate, and of very few developed flowers. *Sepals* unguiculate oblong acute; *tepals* decidedly broader. *Lip* very polymorphous, with broad basilar shoulders, oblong, or transverse ovate acute, or subquadrate retuse, with an apiculus, and obtuse-angled lobes at the base, or triangular, velvety below the column. The *callus* consists of five nearly parallel blunt undulated ridges; two small spots, one at each outside, are velvety, and then come three or only two angular extrorse keels. *Column* trigonous; *wings* narrow, long, obtuse-angled at both ends, the upper one much more elongated. *Infrastigmatic table* with a spreading angle on each side, and some short hairs over the angle. *Anther-bed* pandurate apiculate. *Caudicle* triangular, with three teeth near the pollinia. *Flowers* pallid yellow; *sepals* with a transverse cinnamon bar and a broad transverse or double band above the lip.

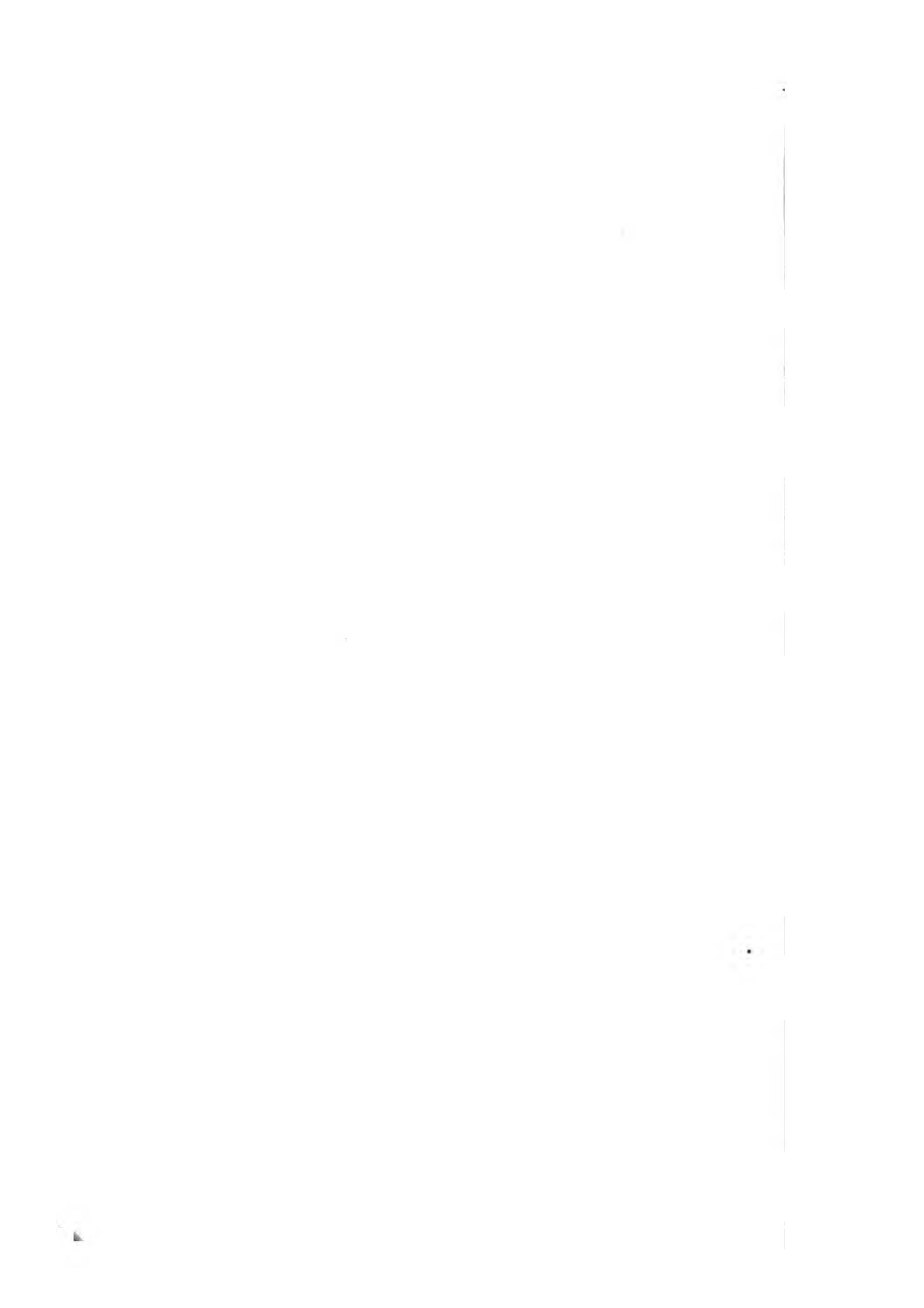
*Materials*:—Inspection of Dr. Lindley's type; a typical flower in my possession; also a specimen, "L. Schlim, No. 296," quoted by Dr. Lindley; several sketches and descriptions made from the living plant in the Lindenian, Saundersian, and Hamburg Botanic Gardens; eight herbarium specimens.

Tab. 124.—The plant. 1, front view of flower +; 2, side view of the same +; 3, oblique view of lip and column +; 4, stellate abortive flower +; 5, pollinarium, oblique view +.

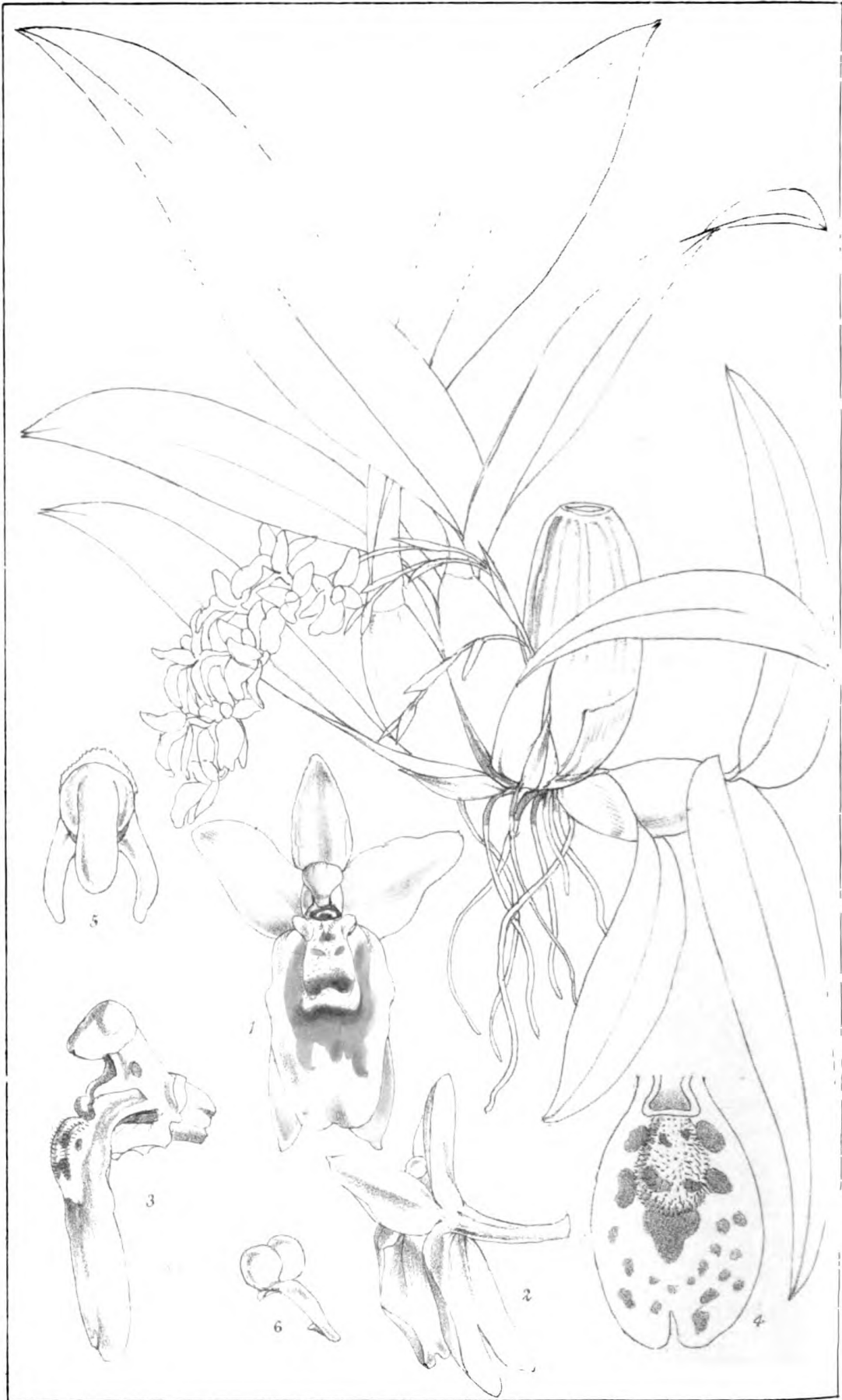
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This curious and pretty species of *Oncidium* should be grown as recommended for the last-named species, Tab. 123. I obtained it from Columbia, where it was found and sent to this country by the late D. Bowman.—*W. W. S.*









W.H. Fitch del. et lith.

Hanbury sculp.

*Oncidium macrantherum*, Hook.

TAB. 125.

Tribe VANDEÆ.  
Genus ONCIDIUM, Sw.

- O. MACRANTHERUM, *Hook. Bot. Mag.* 3845. *Walp. Ann.* vi. 740!  
Pseudobulbis ligulatis usque ovoideis compressis ancipitibus, fultis a foliis articulatis ac vaginis triangulis ancipitibus, radicibus adventitiis valdiusculis multiflexis, foliis bulbi nunc solitariis nunc geminis cuneato-lanceis acuminatis, pedunculis ex folio fultienti nunc utroque, imo geminis ex una axilla, rhachi gracili, ad inflorescentiam usque vaginis lanceis, superne racemosis vel (raro) parce paniculatis, bracteis triangulis pluri-nerviis ovaria pedicellata non æquantibus, sepalis oblongo-ligulatis obtusiusculis, lateralibus ad medium seu basin versus fissis, tepalis oblongis seu oblongo-triangulis obtusatis, labello cuneato oblongo apice obtuse bilobo ante basin angulato deflexo, callo oblongo depresso velutino antice extenso a regione antebasilarum discum usque impressione baseos melliflua carinis quadratum efficientibus cincta, columna brevi, rostello ornithorrhyncho producto bidentato, tabula infrastigmatica utrinque pone foveam brachio porrecto triangulo, anthera pandurato-oblonga magna, caudicula bene ligulata.—  
*Leochilus oncidioides*, *Knw. Westc. Fl. Cab.* ii. 1838, 143!  
*Rodriguezia maculata*, *Lindl. B. Reg.* xxviii. 1842, *Misc.* 22!  
Flores viriduli, hinc purpureo-lavati. Labellum albo-viride, callo maculis quibusdam purpureis, disco purpureo, nunc toto labello purpureo maculato.

This little plant was sent in April, 1840, by Mr. Parkinson, English Consul in Mexico, to the "princely" Woburn collection, as collected by M. Galeotti in Mexico. Sir William Hooker correctly stated it to be "quite unlike any other species of the genus with which I am acquainted." The drawing, published in 1841, was prepared by Mr. W. Fitch, and may candidly be recommended to many now-a-days so-called artists. It is a chaste and honest representation of the plant, as it was, and the few small faults (hairs on the back of column, not enough hairs on the callus of the lip, and the connate pollinia, in fig. 6) may not have been his, but Mr. Swan's, who engraved the plate. My wild specimens are all Mexican: Xalapa, Leibold! Ehrenberg!—5139;

fleurs violâtres: sur les *Erythrina*, de S. Ant. Huatusco, Galeotti! Huatusco, Linden, 203! Orizaba, Weber! My garden specimens were obtained from Paris by my lamented friend E. Desvaux! from the gardens of Messrs. Schiller, Saunders, and Day. I was once deceived by a singular monster, having the sepals and calli different. Dr. Lindley states the plant was sent from Guatemala by the late Mr. Skinner to J. Bateman, Esq.

*Aërial roots* stout for such a small, generally tiny plant, much bent, flexuose, not long. *Pseudobulbs* few, several triangular ancipitous scariose *sheaths*, and two articulate leaves under them. *Leaves* of pseudobulb one or two, cuneate-lanceolate acute. *Common flower-stalks* generally numerous, one or two proceeding from the axils of the leaves beneath the bulb. Under the inflorescence stand a few ample acuminate distant *sheaths*. *Inflorescence* racemose, even paniced by a few side-branches. *Bracts* triangular, scariose, ochreate, many-nerved, not nearly equalling the stalked *ovaries*. *Sepals* oblong-ligulate blunt, the lateral ones divided in very different degrees, now nearly to the base, now only at the top, with all intermediate grades. *Tepals* oblong or oblong-triangular, blunt. *Lip* cuneate-oblong, blunt, bilobed at its apex, with a pulvinate oblong hairy *callus* from the middle of the disk or behind it near to the base, where is a honey-secreting hollow surrounded by a square border of keels, varying in circumference to oblong. *Column* short. *Androclinium* with a velvety border. *Rostellum* projecting, lanceolate-bidentate. One flat triangular arm on each side of the *stigmatic hollow*. *Caudicle* ligulate.

**Materials:**—Sketches from the dry specimens prepared since 1844; sketches from fresh flowers; descriptions from fresh flowers; copy of Dr. Lindley's original sketches; twenty-two herbarium specimens.

Tab. 125.—The plant. I never saw such a strong-bulbed, grand-leaved specimen. 1, flower, front view +; 2, the same, oblique back view +; 3, lip and column, side view +; 4, lip, artificially expanded +; 5, column, showing the top +; 6, pollinarium +.

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This plant seems to do well when grown in a cool house on a block and kept near the light. It is not a very free grower. My specimens were obtained from the Messrs. Low, of Clapton, and came from Mexico.—*W. W. S.*





W.H. Fitch del. et lith.

Hanhart imp.

*Oncidium flavescens*. Rehb. fil

## TAB. 126.

Tribe VANDEÆ.  
Genus ONCIDIUM, Sw.

- O. FLAVESCENS**, *Rchb. fil., Walp. Ann. vi. 757!* Radicibus adventitiis filiformibus tenuibus multiflexis, pseudobulbis junioribus a vaginis imbricantibus triangulis acutis carinatis numerosis stipatis, ipsis ligulatis seu oblongo-ligulatis ancipitibus diphyllis, foliis cuneato-ligulatis acutis, vagina stipante summa nunc laminigera, pedunculo elongato subancipiti infra flores vaginis scariosis triangulo-acuminatis dense imbricantibus vestitis, racemo usque multifloro, rhachi obtusangulo-flexuosa, bracteis scariosis spathaceis acuminatis patulis flores æquantibus seu excedentibus, sepalis ac tepalis sublterioribus ligulatis acutis, labello supra basin columnæ adnato pandurato-acuto seu oblongo-acuto a basi late cuneato, margine undulato ac minute crenulato, lineolis in basi radiantibus velutinis, linea antica bicruri a dente prosiliente in ima basi, columnæ alis abbreviatis nunc lobulatis nunc integris infra foveæ marginem infimum transcendentibus, tabula a labelli ungue omnino seu semivestita.—*Cyrtorchilum flavescens*, *Lindl. Bot. Reg. t. 1627!* *Miltonia flavescens*, *Lindl. Sert. sub. t. 48*; *Folia*, I. v., *Miltonia*, No. 6! *Rchb. f., Xenia*, I. p. 129. Tota planta, uti species affines, flavido tincta, præsertim ubi luci valde exposita. Vaginæ et bracteæ stramineæ. Sepala et tepala sulphurea, demum flava. Labellum albidum, lineis velutinis plerisque purpureo-brunneis. Alæ columnæ albidæ seu flavidæ nunc purpureo-brunneo maculatæ. Flores exsiccati uti illi *Brassia Lanceana* et *Lawrenceana* omnino fiunt cinnabarino miniati.
- b. STELLATUM.** Floribus multo majoribus.—*Cyrtorchilum stellatum*, *Lindl. Sert. t. 7!* *Miltonia stellata*, *Lindl. Sert. t. 48!*

This Brazilian species is by no means uncommon in gardens, coming very often with lots of Cattleyoids. The majority of Brazilian species being the strongest Orchids of the world, they accumulate in gardens, when others die as their successors are imported. It is, however, by no means common in herbaria. My specimens: Minas Geraës, Regnell! Rio Macahe and Canto Gallo, Riedel! Lagao Santa, Warming!

The variety, never seen by the late Dr. Lindley, who took it



from Mr. Descourtilz's drawings, appeared lately in the Royal Exotic Nursery of Messrs. Veitch.

*Adventitious roots* filiform, thin, very flexuose. *Younger pseudobulbs* with numerous imbricate triangular ancipitous *sheaths*, the highest now and then with a leaf-blade. *Pseudobulb* ligulate or oblong-ligulate, ancipitous, two-leaved. *Leaves* cuneato-ligulate acute. *Flower-stalk* elongate, nearly ancipitous, covered under the racemose part with numerous imbricating triangular acute ancipitous *sheaths*. *Raceme* many-flowered. *Bracts* linear-spathaceous, acuminate, scariose, spreading, reminding one of *Heliconias*, as long or longer than the flowers. *Sepals* ligulate-acute. *Tepals* generally a little broader. *Lip* adnate above the base of the column, broadly cuneate pandurate-acute or oblong-acute, undulated and crenulated at the margin, with radiating velvety veins and two keels coming from a tooth-like conical process at the very base of that organ. *Wings of column* narrow, often lobed, now entire, passing under the *stigmatic hollow*. *Infrastigmatic table* wholly or half-covered by the claw of the *lip*. The whole of the organs, roots excepted, have generally a yellowish or copper-coloured hue. The sheaths and bracts are straw-coloured; sepals and tepals sulphur-coloured, finally yellow, even ochroleucous; the lip whitish, the radiating velvety veins purplish; wings of column whitish or yellowish, now with purplish dots. The dried flowers turn out of a cinnabar-colour, as is often seen in the so-called *Brassia Lanceana* and *Lawrenceana* and *Aspasia lunata*.

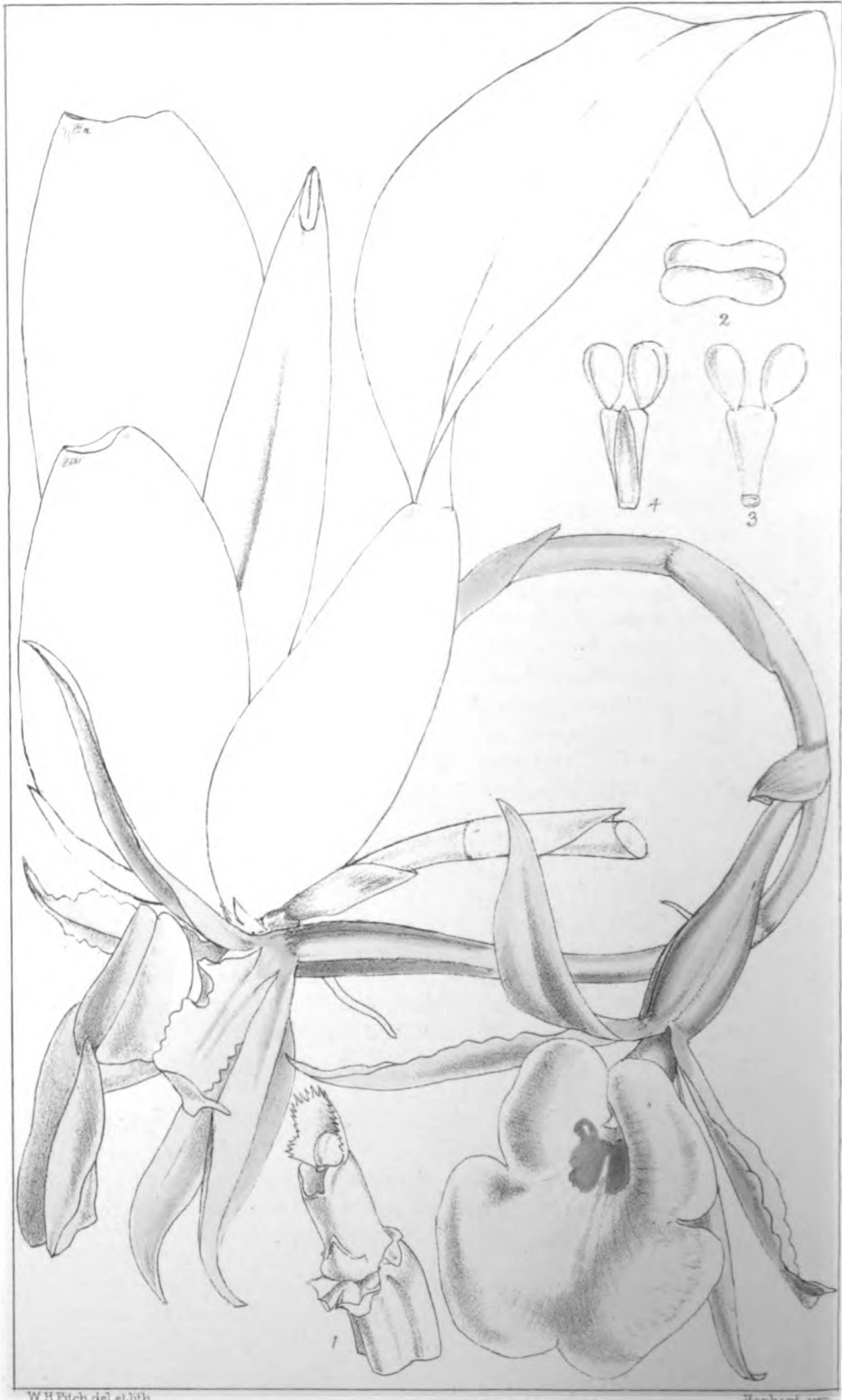
**Materials** :—Sketches from living plants; description of living plant made at Leipsic; nineteen herbarium specimens.

Tab. 126.—A very small plant (and yet a specimen collected by Riedel is not equalling it half!). 1, column and lip +; 2, column, lip cut +; 3, column, lip cut, side view +. The two last figures given by Professor Reichenbach.

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I obtained this old inhabitant of our stoves, many years since, from Mr. Masters, of Canterbury. When well grown it produces a good effect. Treated as recommended for *Oncidium planilabre*, Tab. 123, it will thrive and flower freely.—*W. W. S.*





W.H. Fitch del. et lith.

Harhart imp.

*Trichopilia fragrans* Rehb. fil.

## TAB. 127.

Tribe VANDEÆ.

Genus TRICHOPILIA, Lindl.

**T. FRAGRANS**, *Rchb. f.*, in *Hambg. Gtz.* 1858, p. 229. Vaginis sub pseudobulbo distichis scariosis stramineis punctis plurimis fuscis punctulatis, pseudobulbis approximatis ovatis seu ligulatis seu depresso-pyriformibus semper ancipitibus monophyllis, folio cuneato-oblongo obtuse acuto, usque ultra pedem longo, duos imo tres pollices lato, pedunculo usque spithamaeo erecto seu porrecto pauci vaginato, vaginis scariosis acutis tribus quatuorve arctis, apice vulgo bifloro, bracteis carinatis oblongis acutis ovariis pedicellatis bene brevioribus, sepalis lineari-lanceis acutis, tepalis sublatioribus undulatis, labello a basi cuneato pandurato quadrilobo ima linea media columnæ adnato, ubique obtusangulo, plica basin versus utrinque insiliente, carina basi ante columnam, columna subtereti brevi, androclinii limbo erecto denticulato, limbis foveæ pronis fovea subtrigona, anthera per dorsum carina obtusa erecta.—*Pilumna fragrans*, Lindl.! *Bot. Reg.* xxx. 1844, *Misc.* 74! *Trichopilia candida*, Linden, in *Lindl. Orch. Lind.* p. 13. *Trichopilia fragrans*, *Rchb. f.* in *Xenia Orchid.* ii. 100! *Walp. Ann.* vi. 380! *Trichopilia fragrans-nobilis*, Linden & André, *Illustrat. Horticole*, xix. tab. 94. Flos candidus, macula ante labelli basin aurea.

A Columbian plant, originally discovered by the late Mr. Hartweg at Popayan! Merida 5000', Linden, 549! Funck and Schlim, 1189! Epiphyte dans les forêts de Lagunette et Valle 5—6000' Sept. Funck and Schlim, 1026. It has recently been largely introduced by Messrs. Linden, Veitch, and Low. It came also from Huancabamba, sent by Mr. Wallis to Mr. Linden.

The *Pilumna fragrans*, Hook. *Bot. Mag.* 5035, is not this, but the *Trichopilia Wageneri*, *Rchb. fil.*

Very near to *T. nobilis*, *Rchb. f.*, from Jaji. This appears to be distinct by the much thinner flowers and a long claw to the hastate crisp lip. The plant represented by Messrs. Linden and André, under the erroneous statement of its being true *nobilis*, appears by no means distinct from the old plant.

*Sheaths* under the pseudobulb distichous, scariose, straw-coloured, with many brown small dots. *Pseudobulbs* close

together, ovate or ligulate, or depresso-pyriform, always ancipitous, one-leaved. *Leaf* cuneate-oblong, bluntly acute, reaching one foot in length and two or three inches wide. *Flower-stalk* up to one span high, erect or porrect, strong, greenish white, with three to four generally blunt distant *sheaths*, generally two-flowered. *Bracts* keeled, oblong, acute, much shorter than the stalked *ovaries*. *Sepals* linear-lanceolate acute. *Tepals* a little broader and undulate. *Lip* very shortly unguiculate, expanded into a blunt quadrilobed *blade*; the *lateral laciniae* erecto-cucullate, with a keel at the base before the line where it is adherent to the base of the column. *Column* nearly terete, short; border of *androclinium* erect, generally retuse, slightly toothed; borders of trigonous *stigmatic hollow* protruded; *anther-case* with a longitudinal blunt *keel*. *Flowers* white, with a yellow blotch before the base of the lip.

**Materials:**—Inspection of Dr. Lindley's types; description of living plant in Saundersian collection and Hamburg Botanic Garden; sketches of flowers, made since 1853; a great sketch made for me by Dr. Lindley; ten herbarium specimens.

Tab. 127.—The plant. 1, oblique view of column +; 2, anther +; 3, pollinarium +; 4, the same, under side. Figs. 2, 3, 4 given by Prof. Reichenbach.

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This very fragrant Orchid produces its beautiful flowers very regularly when under temperate treatment and grown upon a block near the light. My stock of the plant came from two sources, Mr. D. Bowman sending it from Columbia, and M. J. Linden providing me with a plant from the same country.—*W. W. S.*





W. J. H. S. J. 1871

Hanhart

*Rodriguezia baseniana* (Lam.) Fendl.

## TAB. 128.

Tribe VANDEÆ.

Genus RODRIGUEZIA, *R. Pav.*

R. BATEMANI, *Pöpp. Endl. Nov. Gen. & Sp.* vol. i. t. 70! Radicibus filiformibus apice multirameis albis apice viridibus elongatis plus quam pedibus de caule disticho ochroleuco triangulo scarioso vaginato pendulis, pseudobulbis ovoideis nitidissimis prasinis demum sulcatis compressis, foliis stipantibus articulatis vaginis limbo libero membranaceo scariosis, laminis cuneatis late ligulatis inæqualiter acutis, folio pseudobulbi cuneato-oblongo ligulato acuto, racemo paucifloro porrecto seu pendulo, nunc densifloro, bracteis triangulis carinatis acutis ovaria pedicellata longe non æquantibus, sepalo superiori cuneato-oblongo fornicato acuto, sepalo inferiori subæquali curvulo acuto basi gibbo, tepalis cuneato-obovatis obtuse acutis, labello utrinque ante basin angulato, lato ligulato antice dilatato marginato, carinis geminis per medium, ante basin utrinque in plicam extrorsam excurrentibus, calcari solido parco conico acuto seu emarginato minutissime verruculoso brevissimo, columnæ brachiis erectis ligulatis acutiusculis seu falcatis.—*Burlingtonia rubescens*, *Lindl. Bot. Reg.* xxiii. Sub. 1927! *Rodriguezia Batemani*, *Pöpp. Endl. Walp. Ann.* vi. 694! *Rechb. f. in Gardn. Chronicle*, 1866, 1042! Flores albo-virides. Tepala et labellum purpureo aspersa, imo striata.

It was in 1830 that the late Professor Pöppig discovered this graceful plant near Maynas, in Peru, growing on calabash trees: coming home, in 1833, so exhausted that he seemed to have but a few months to live, he was appointed to Leipsic; there, having enjoyed the visit of young Mr. Bateman, who, no doubt, knew Orchids better than he, he dedicated the plant to the young English traveller. Thus matters stood till 1866; then the plant flowered with Director Linden, sent by Mr. Wallis from Moyabamba, I believe. I obtained flowers from Director Linden and the Lord Bishop of Winchester. There is, however, no great hope of keeping the plant long in gardens. It was a very difficult task to ascertain the identity of the Pöppigian and the Lindenian plants, since Dr. Pöppig's specimens are not prepared in such a manner as to make investigation easy.



*Aërial roots* filiform, with many branches at their top, white, with green apex, more than a foot long, coming from the short trunk with ochroleucous distichous triangular scariose *sheath*. *Pseudobulbs* ovoid, very shining, leek-coloured, finally sulcate compressed. *Leaves* beneath the bulb articulate, with scariose membranous borders to the sheath and cuneate broadly ligulate unequally acute blades. *Leaf of pseudobulb* cuneate-oblong ligulate acute. *Raceme* few-flowered, dense, porrect or pendulous. *Bracts* triangular, keeled, acute, not nearly equalling the stalked *ovaries*. *Upper sepal* cuneate-oblong-acute fornicate. *Inferior sepal* nearly equal, curved, acute, gibbous at the base. *Tepals* cuneate-obovate bluntly acute. *Lip* angular on both sides before the base, broad, ligulate, dilated and emarginate, with two membranous *keels* from the base of the widened anterior part, ending in an extrorse fold on the basilar angle; *spur* solid conical acute or emarginate, very short, with very small warts. *Arms of column* erect, ligulate-acute or sulcate. Flowers whitish or greenish. Tepals and lip with four purplish streaks.

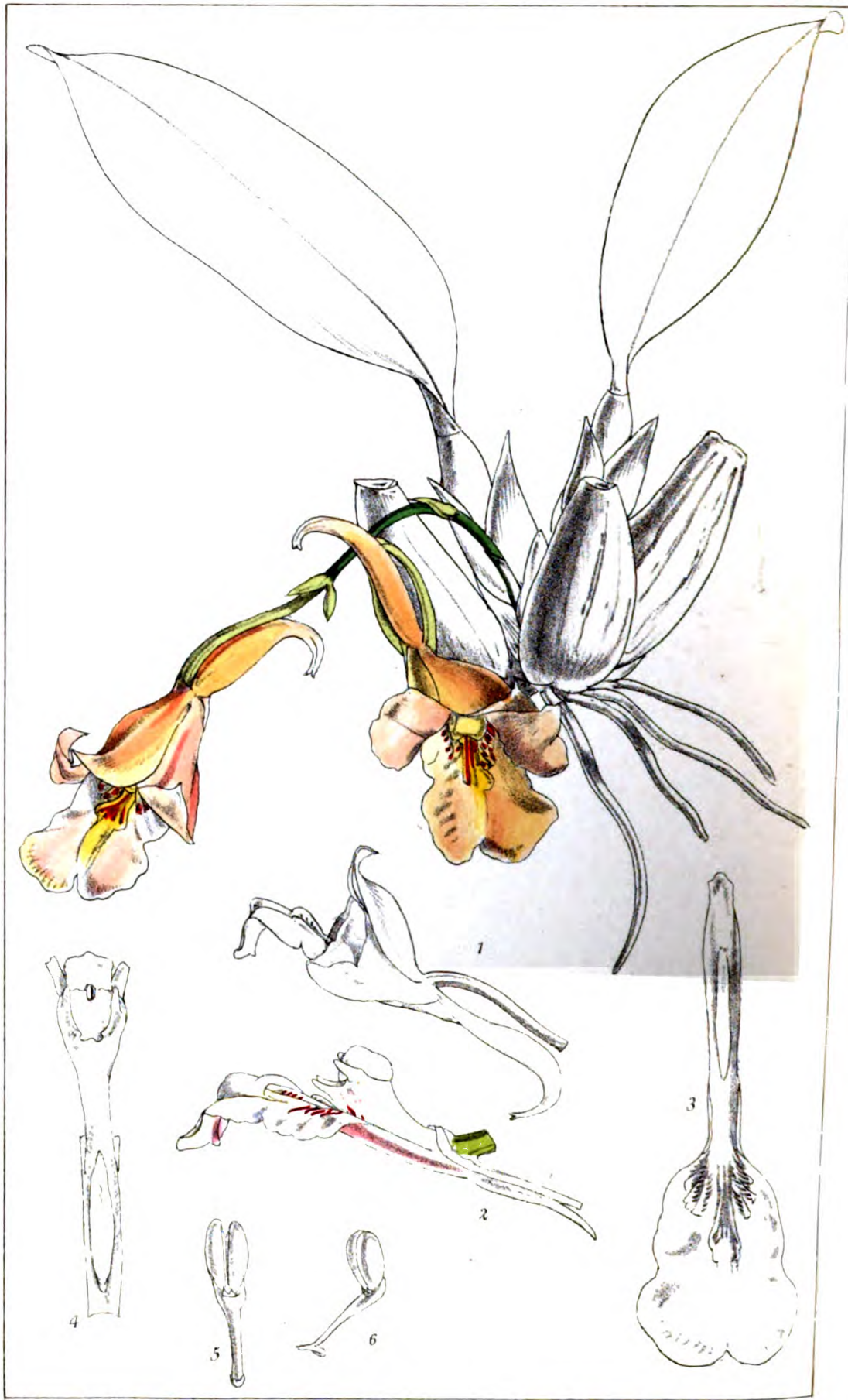
**Materials:**—Sketches of fresh flowers and of Dr. Pöppig's dry specimens; description from fresh plant in the Saundersian collection; four herbarium specimens; inspection of the Pöppigian types in Vienna Herbarium.

Tab. 128.—Plant. 1, flower, side view +; 2, flower, front view +; 3, side view of lip, involving the column +; 4, expanded lip +; 5, column, side view +; 6, top of column, front view +; 7, pollinarium +. Fig. 4 given by Professor Reichenbach. The colours have been observed by our artist brighter than I, alas! ever happened to see them.

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A very pretty and interesting species of *Rodriguezia*, requiring the same treatment as *Trichopilia fragrans*, Tab. 127. I received the plant from Mons. J. Linden, who procured it from Peru.—*W. W. S.*





W H Fitch. del et lith.

Hanbat: 1897

Rodriguezia refracta, Rech. Fil.

## TAB. 129.

## Tribe VANDEÆ.

Genus RODRIGUEZIA, *R. Pav.*

*R. REFRACTA*, *Rehb. f. Walp. Ann. vi. 695!* Pseudobulbis ancipitis pyriformibus monophyllis, basi vaginis triangulis acutis stipatis, folio pseudobulbi cuneato-oblongo acuto, racemo paucifloro porrecto, parte anantha plurivaginata, bracteis triangulis ovario pedicellato pluries brevioribus, sepalo dorsali cuneato-obovato obtuse acuto, sepalis lateralibus in unum corpus naviculare angustum apice incurvum bidentatum connatis, refractiis cum ovario pedicellato parallelum, tepalis cuneato-obovatis hinc apiculatis hinc obtusis, labello unguiculato in laminam quadratam obtusangulam panduratam emarginatam extenso, lamellis seriatis angulatis retrorsum decrescentibus utrinque quaternis seu quinis a disco in basin, mediis productis, calcari solido lato lineari acuto elongato retrorso a vagina sepalorum lateralium involuto, ex parte adnato, columna clavata glabra, brachiis duobus juxta foveam, duobus juxta androclinium nunc ligulatis acutis nunc falcatis. —*Burlingtonia refracta*, *Lindl. Gardn. Chronicle, 22nd October, 1853, 679 b!*

For a long while this plant was to me a very doubtful one. Dr. Lindley had described it after having got a living specimen from Mr. Skinner, and dried specimens from Santa Martha, Purdie, who was collector for Kew Gardens. I possess a copy of Dr. Lindley's original analytical sketches, and a rich specimen from Purdie with the author's own hand-writing; but I was always bothered by finding the Purdiean specimen very different from the original description and analytical sketch, so that I never could come to the point. Finally came the fresh inflorescence from the plant now represented. After longer consideration, I keep the name for this, which entirely corresponds with Dr. Lindley's description and analytical sketch. There is but one single difference, of no great importance. Dr. Lindley says the flowers are dirty white, a little stained with purple, and the elevations of the lip spotted with dull red. Director Linden's plant, sent in the spring of 1867, said to come from northern Peru, had the flowers whitish yellow, with purplish spots round

and on the carinæ of the lip. I was not so fortunate as to see it so brown as our artist happened to see them. I have no doubt that both the description and the sketches of Dr. Lindley were taken from the Skinnerian fresh specimen. We have here a very rare instance when the typical specimen of the author must be neglected, and description and sketch preferred. I openly confess that I did not immediately come to this conclusion. Purdie's specimen belongs to *Rodriguezia granatensis*.

*Pseudobulbs* ancipitous-pyriform, one-leaved, with inferior triangular scariose *sheaths*. *Leaf of pseudobulb* cuneate-oblong-acute. *Raceme* few-flowered, porrect, the lower part with several sheaths. *Bracts* triangular, much shorter than the pedicellate *ovary*. *Dorsal sepal* cuneate-obovate, bluntly acute; *lateral sepals* combined into one navicular narrow body, with an incurved apex, nearly parallel to the stalked *ovary*. *Tepals* cuneate-obovate, now blunt, now with a little apiculus. *Lip* unguiculate, expanded into a quadrato-pandurate obtuse-angled emarginate blade. On both sides there stand four or five angular *keels* from disk to base, the most interior the longest, just reaching the disk; a solid linear acute *spur*, nearly equalling half the body of the sheathing lateral sepals, which involve it. *Column* clavate, glabrous, with two ligulate or falcate arms near the fovea, and two similar arms near the *androclinium*.

**Materials:**—A copy of Dr. Lindley's sketch; my own sketch; my single well-according herbarium specimen. I have scarcely any doubt that the plant is now dead everywhere. Who knows when it may reappear?

Tab. 129.—The plant. 1, flower, side view; 2, the same, sepals and tepals cut; 3, lip expanded +; 4, column, front view +; 5, 6, pollinaria +. The colours are much brighter than I saw them.

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Another interesting *Rodriguezia*, obtained from Peru by Mons. J. Linden, from whom I received my plant. It requires the same treatment as recommended for Tab. 128. The colour of the flowers is very peculiar, but few are produced at a time.—*W. W. S.*





W.H. Fitch del et lith.

Hauhart sculp.

*Lycaste Schilleriana, Rehb. Fil.*

## TAB. 130.

Tribe VANDEÆ.

Genus LYCASTE, Lindl.

- L. SCHILLERIANA, *Richb. f. in Seemann, Bonplandia*, iii. 215! *Walp. Ann.* vi. 604! Pseudobulbis oblongo-ovoideis ancipitibus diphyllis, foliis plicatis cuneato-oblongis acutis, foliorum cicatricibus aculeatis, foliis stipantibus anthesi emaciatis, pedunculo ultra pedali, vaginis paucis (3—4) amplis ostio triangulis distantibus, bractea spathacea ovarium pedicellatum vulgo duplo excedente, mento parvo obtuse conico, sepalis ligulatis acuminatis, tepalis oblongis acutis duplo brevioribus, labello trilobo, lobis lateralibus semioblongis medium usque, lobo medio producto ligulato seu oblongo obtuso parce denticulato, appendice ligulata retusa inter a laciniarum lateralium apicibus basin versus extrorsum margine utrinque arcuata, columna trigona medio villosa, basi velutina, anthera obtusa velutina, fovea transversa humili. Sepala olivacea seu viridia. Tepala, labellum, et columna alba. Labellum lineis quibusdam maculisque albo-purpureis. Columnæ pes et unguis labelli flavi maculis duabus brunneis in pede columnæ.

This giant species flowered at the late Consul Schiller's, in 1854, at the beginning of July. There was a single plant, sent from an English sale by the late Mr. Ure Skinner. This was all that was known for a very long while, till finally, a very short time ago, I obtained the flower from various English correspondents, the first from Mr. Williams, then from Mr. Low, then from others. There is a general belief that it was sent from New Grenada by that excellent collector, Mr. Blunt. I never saw a dried specimen collected at the place.

*Pseudobulbs* oblong-ovoid, ancipitous, two-leaved. *Leaves* plaited, cuneate-oblong, acute. Leaves beneath the bulb numerous, but withered when it is mature, leaving only a few *sheaths*. *Common flower-stalk* more than a foot high, with few (three to four) wide distant sheaths with triangular opening. *Bracts* spathaceous, nearly twice as long as the stalked *ovary*. *Sepals* ligulate-acuminate. *Tepals* oblong-acute, half as long. *Lip* trilobed; *lateral lobes* semioblong from the base to the middle; *middle lobe* ligulate or oblong, much longer, blunt,



with small denticulations; *appendix* depressed, ending between the end of the lateral lobes and slightly arched on both sides towards the base. *Column* trigonous, villous in the middle, velvety to the base. *Anther* blunt, velvety. *Stigmatic hollow* transverse, very low. *Sepals* olive or green. *Tepals*, *lip* and *column* white; lip with some pallid purplish streaks and blotches. *Claw* of lip yellow. Two brown blotches on the yellow foot of column.

Materials:—I often saw the Schillerian type living, and made sketches and descriptions from the living plant: we have it now at the Hamburg Botanic Garden. Twenty-one dried specimens.

Tab. 180.—A flower. 1, lip, seen obliquely +; 2, column, oblique side view +; 3, pollinarium +.

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This plant produces fine effective flowers, of a large size, but wanting much in colour, the sepals being very dingy greenish brown. It flowers regularly when treated in quite a temperate, moderately damp house, and grown in a pot with spongy peat. I am indebted to my friend Mr. Sigismund Racker for my plant of this interesting *Lycaste*.—*W. W. S.*





W.H.Fitch del. et lith.

Hambart del.

*Lyeaste xytriphora* Lind, *Rech. Fil.*

## TAB. 131.

Tribe VANDEE.

Genus LYCASTE, Lindl.

L. XYTRIOPHORA, Linden & Rehb. f. in hortis. Radicibus adventitiis ramosis deflexis diu pilosis, pseudobulbis maturis basi vaginis emaciatis ochroleuco-fuscis seu albido-fuscis, ovoideo-hexangulis seu subdepressis seu utrinque fornicatis jugis duobus obtusangulis prosilientibus superficie tota tenuissime rugulosa, foliorum cicatricibus in apice apiculatis, foliis in pseudobulbo geminis seu ternis a petiolari basi cuneata oblongis seu oblongo-ligulatis acuminatis, nunc circa limbum minute undulato-plicatis, inferne quinquecostatis, nervulis tenerioribus, pedunculis aggregatis vix quatuor pollices altis, vaginis quatuor baseos brevibus obtuse acutis fuscatis, suprema multo ampliori vaginata acuta, bractea subfoliacea viridi cucullato acuminata sæpius totum florem subæquante, mento conico retuso, sepalis oblongis apiculatis, lateralibus sæpius acutis, tepalis oblongis sursum attenuatis subtus angulis obtusis, labello oblongo-ligulato antice trilobo lobis lateralibus apice extrorso rectangularibus, lobo medio producto longiori ovato hinc dentato, callo lineari a regione antebasilaris usque in basin lobi antici, ibi cochleariformi, lateribus suis valde libero, columna clavata antice sub fovea velutina, anthera obtusata velutina. Sepala viridi-brunnea, apicibus mere viridia, interne præsertim violaceo-purpureo irrorata. Tepala et labellum albido-flaveola. Tepala basi purpureo-lavata. Nonnullæ lineolæ radiantes purpureæ nunc in labelli basi. Callus flavus maculis rubropurpureis.

This species came, in 1867, from Director Linden, who obtained it from Ecuador or Peru, I believe from the neighbourhood of rich Loxa. I possess a dried flower from Mr. Wallis, signed "Ecuador." It appears that the lot sent to Mr. Linden was not inconsiderable. It stands at a very moderate price in the Lindenian catalogue of Orchids. We have not only obtained twice, at the Hamburgh Botanic Garden, living plants from Mr. Linden, but both are even now alive, one a very strong mass. As a species it ranks near the *L. macrophylla*, Lindl.,

a plant with an immense geographical range, descending from Costa Rica to New Grenada and Venezuela, Bolivia and Peru. There is no doubt that *L. plana*, Lindl., is the same plant, though there is great doubt that there may ever appear such an elegantly coloured thing as represented in Bot. Reg. 1843, t. 35: Miss Drake may have dipped her brush into a wrong colour, just as our good von Warscewicz did so very often. *L. macrophylla* has a much longer peduncle, and the callus of the lip is very different—flat up to its apex, not expanded in such a spoon-like excavation.

*Adventitious roots* branched, long continuing hairy, subterraneous. Mature *pseudobulbs* with an emaciated yellowish or whitish brown *sheath* at their base, ovoid-hexangular, a little ancipitous, having two blunt ribs on each side, covered with small transverse grooves like "shagreen leather." *Leaves* two or three on the pseudobulbs, with a cuneate petiolar base, oblong or oblong-ligulate acuminate, often undulated and plaited around the limb, with five stronger ribs on the under side. *Common flower-stalks* several close together, four inches high, with four brownish short blunt acute *sheaths* at the base and a wider acuminate one beneath the subfoliaceous green subcucullate acuminate *bract*, often equalling the flower. *Chin* conical, blunt. *Sepals* oblong-acuminate, the lateral ones often only acute. *Tepals* oblong-attenuate, nearly triangular, blunt. *Lip* oblong-ligulate, three-lobed towards the point; *lateral lobes* rectangular, blunt; *middle lobe* much longer, ovate or oblong, with a few small teeth. A linear *callus* from the antebasilar region, dilated between the lateral lobes into a spoon-like process, with erect border. *Column* clavate, with numerous small hairs below the *stigmatic hollow*. *Anther* blunt, velvety. *Sepals* brownish greenish, with a violet-purplish hue, except at the tips, which are generally full green. *Tepals* and *lip* whitish yellow; some purplish colour at base of tepals and purplish lines on the disk of lip. *Callus* yellow, with purplish blotches.

**Materials:**—Description of the living plant in the Saundersian collection, compared with plants of the Hamburgh Garden; my original sketches; one wild and nine garden specimens; inspection of many fresh flowers, the plant having very much flowered in Hamburgh Botanic Garden. I never observed such broad anterior lobes to the lip as are represented by our artist.

Tab. 131.—The plant. 1, flower, side view, sepals and tepals cut +; 2, lip, oblique view +; 3, expanded lip, from the type +; 4, column +; 5, pollinarium +. The figures 3 and 5 given by Professor Reichenbach.

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A very free flowering *Lycaste*, treated as Tab. 130. I received plants of it from Mons. Carmiol collected in Costa Rica, and Mons. J. Linden also supplied me with a plant, but the locality from whence it was procured is unknown to me. Although the sepals are of a dull reddish purple colour, the plant is well worth growing.—*W. W. S.*









W.H.F. & Co. del.

Bar. 1871

*Maxillaria elongata* Lindl.

## TAB. 132.

## Tribe VANDEÆ.

Genus MAXILLARIA, *R. Par.*

*M. ELONGATA*, Lindl. *Paxton, Fl. Gard.* iii. p. 69 c. *Xyl.* 264! Dense cæspitosa, radicibus terrestribus densis descendentibus validis lævibus, pseudobulbis transsectione teretibus, inferne vaginis arctis castaneis nunc fusco prætextis vestitis, superne longissime nudis viridibus lucidis lævibus diphyllis, foliis a cuneata petiolari basi oblongo-acuminatis, crassius membranaceis, nervis quinisinfra prominulis, superne nitidis, inferne, pallidioribus, pedunculo porrecto, vaginis partis inferioris amplis cucullatis acutis, racemo plurifloro, bracteis lineari-lanceis acuminatis, inferioribus ovaria pedicellata æquantibus, ovariis punctulatis, mento valde angulato, sepalo superiori ligulato-acuminato, sepalis lateralibus latioribus, subdimidiatis, tepalis ligulatis acuminatis subbrevioribus, labello valde carnososo cuneato oblongo-ligulato medio utrinque obtusangulo, lobo antico subcochleato, margine valde crasso, carinulis ternis valde brevibus inter lacinias laterales, seriebus papularum minutarum post illas, lobo antice cristulis papulosis supra et infra nervos verrucoso, rugoso utroque latere, columna trigona, anthera obtuse conica, caudicula brevi, sed bene evoluta.—*Maxillaria elongata*, Lindl., *Walp. Ann.* vi. 508! *Rchb. f., Beitr. Orch. Centr. Am.* 30! *Maxillaria roseans*, A. Rich. *Hort.* Flores albo-straminei, demum rosei. Labellum sordide violaceum seu flavum, carinulis obscure brunneis.

It appears that the plant came first to the Jardin de l'École de Médecine, at Paris, of which M. Rivière is Curator. I obtained it from there as early as 1852, through my late friend Emile Desvaux. Achille Richard gave a new name to nearly every species (as in the Galeottian Orchidology). The species was said to come from Guatemala, which is very probable. During the same time J. de Warszewicz, most successful in travelling and most unsuccessful in sending, had found the same plant in the Cordillera de Chiriqui, at an elevation of 7000 feet. It flowered in England, and I have three dried spikes and a sketch from him. Finally, I obtained from Costa Rica two good specimens from Mr. Endres. The plant came from Paris in Consul Schiller's collection, and

is now, too, in that of the Hamburg Botanic Garden and of W. Wilson Saunders, Esq. The plant flowers very freely, giving two spikes from the same bulb, one after the other.

Densely cæspitose. *Roots* terrestrial, dense, strong, without hairs. *Pseudobulbs* terete, furnished at the base with narrow chesnut-coloured *sheaths*, bordered with darker brown, very long, destitute of leaves, green, shining, two-leaved; the young shoot has several distichous leaves, those beneath the two terrestrial ones sheathing, with deciduous sessile triangular blades. *Leaves* with a cuneato-petiolar base oblong-acuminate, with five very prominent nerves on the under side, very shining on the upper side, pallid beneath, thickly membranaceous. *Common flower-stalk* porrect, sheaths of lower part wide, cucullate, acute. *Raceme* generally with a dozen flowers, dense. *Bracts* linear-lanceolate, acuminate (as in *Maxillaria bractescens*, Lindl.), nearly equalling the lower flowers, the upper ones much shorter. *Ovaries* with small blackish acute *warts*. *Chin* very well developed, obtuse-angled. *Upper sepal* ligulate-acuminate; *lateral sepals* broader, a little dimidiate. *Tepals* ligulate-acuminate, rather shorter. *Lip* very fleshy, cuneate oblong-ligulate in the middle, obtuse-angled on both sides; *anterior lobe* nearly spoon-shaped, excavated, with very thick margins; three very small and obscure *keels* in the disk between the lateral angular lobes; all the nerves behind it covered with very small warts; the nerves of anterior lobe covered with much stronger wartish elevations, now and then forming a nearly crisp membranaceous *keel*. *Column* trigonous. *Anther-bed* blunt, conical. *Caudicle* short, but well developed. I observed the perigone whitish yellowish, turning later in purplish. I believe Achille Richard saw the same, when he gave his name "roseans." The lip is yellowish, with brownish warts; I saw it also dark violet. Later J. de Warscewicz brought home a sketch representing the flowers yellow, painted with brown; he used to urge that the same Orchids had very different colours at various elevations. This may be so; but we know very well that the same Orchid plant brings very differently coloured flowers in various years—whether from the very different intensity of light or from the soil used, I do not know. No plants are more variable in this respect than some *Stanhopeas*. I never observed such a well-developed system of keels on the lip (fig. 4), nor such bright colours as observed by our artist.

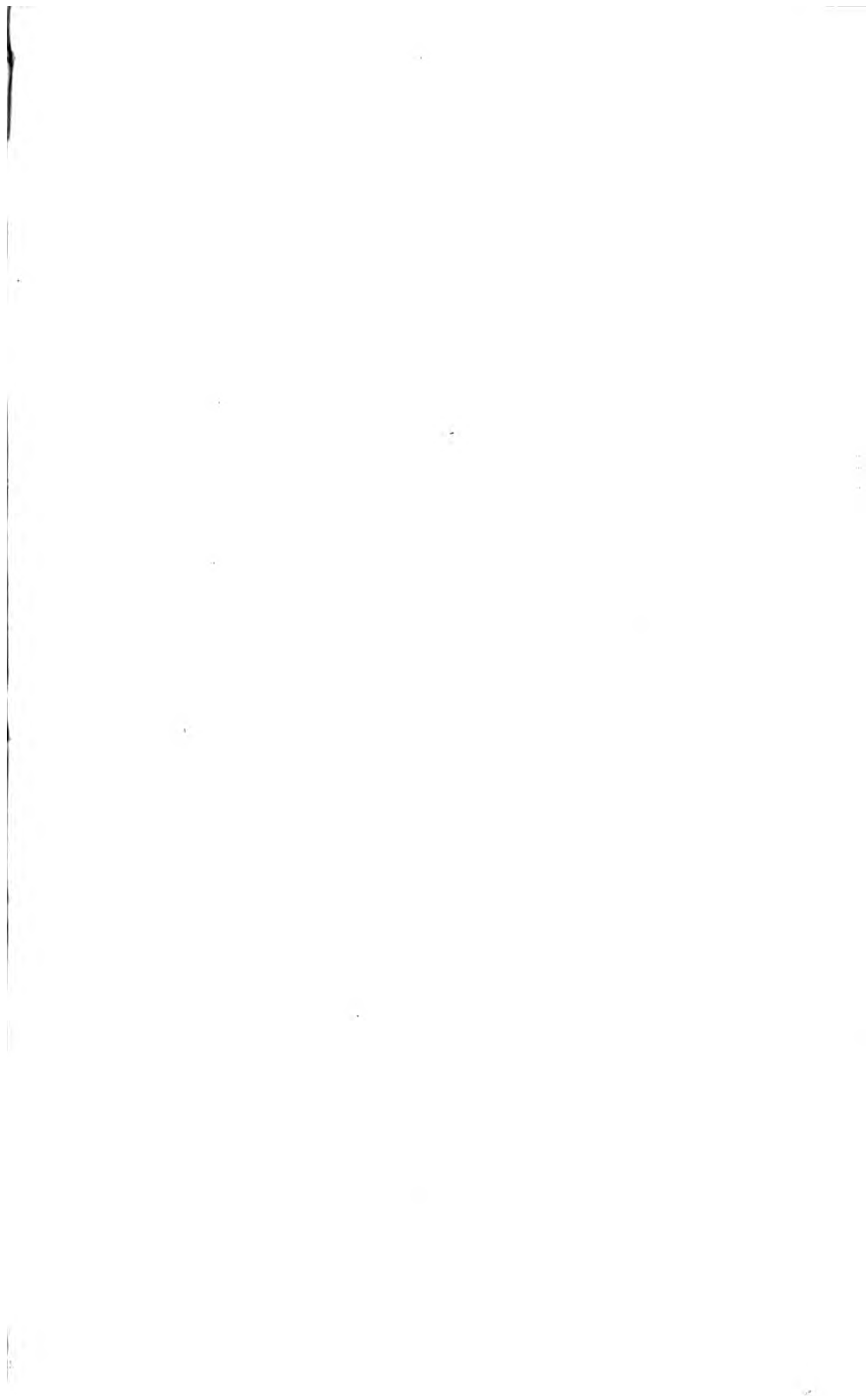
**Materials:**—Copy of the Warscewiczian sketch; my own analytical sketches, prepared at various times; description of plant made in Saundersian garden, 1868, and compared in the Hamburgh Garden; ten herbarium specimens.

Tab. 132.—The plant. 1, flower, front view +; 2, the same, side view +; 3, the same, sepals and tepals cut +; 4, lip, front view +; 5, column, front view +; 6, 7, pollinaria +.

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An Orchid remarkable for its long slender pseudobulbs. My plant was presented to me by the Messrs. Veitch, who have on various occasions enriched my collection of Orchids by several interesting species, and I am much indebted to them for their kind assistance. This plant grows and flowers freely when grown in a temperate house, and treated as recommended for Tab. 130. —*W. W. S.*







W.H. Fitch del. et lith.

Hanhan: 27

*Maxillaria rufescens* Lindl.

## TAB. 133.

Tribe VANDEÆ.

Genus MAXILLARIA, Ruiz. &amp; Pav.

*M. RUFESCENS*, Lindl. *Bot. Reg.* xxi. 1802, in textu! xxii. 1836, t. 1848! Description, see our Plate 79, where the smaller yellow-flowered form is represented.—*Maxillaria fuscata*, Hort.! *M. acutifolia*, Lindl.! *Bot. Reg.* xxv. 1839, Misc. 148! *M. articulata*, Klotzsch, *Semin. Berol. Hort. Bot.* 1853, *Notul.* No. 3.—(? *M. galeata*, Scheidw. *Berl. Gart.* 1842, 309! *M. rugosa*, Scheidw., l. c. 1843, 101!) *M. rufescens*, Lindl. *Walp. Ann.* vi. 523! *Rchb. f. in Bonplandia*, ii. 16!

The original specimen was said to come from Trinidad, where the plant is described as common by Mr. Bradford (see Grisebach, 'Flora of the British West Indian Islands,' p. 626, where the plant is made a *Xylobium*, as if it had plaited leaves and a spike like *Maxillaria elongata*!), whence came also the Saundersian specimen for Plate 79. It appears to be common in Cuba, at M. Verde, flowering in May and September, where Mr. Wright collected it several times: a very precious gift for herbaria, where it occurs exceedingly seldom from the native place. I have a copy of a sketch prepared by my friend Wagener in Venezuela: he found it at 6000 feet elevation, flowering in November, in Caracas. Living specimens flowered at Berlin (*M. articulata*, Klotzsch!) and at Kröllwitz, near Halle a S., in the collection of Mr. Keferstein, one of the nicest and best kept amateur collections I ever knew, now long since given up. It was a small-flowered variety that gave copious fruits without ever having opened its flowers—a most remarkable instance of fertilization, which one may observe often enough if one is not blind from theory-spinning. The *M. acutifolia* was introduced by Messrs. Loddiges from Demerara. J. Day, Esq., introduced the plant from Brazil. The plant was exceedingly common in collections, and is even now imported oftener than nurserymen and amateurs would like, since it is not at all appreciated.

An English description is given for Plate 79. I may add a few remarks. The pseudobulbs are represented by our artist quite



ancipitous, while we call them subtetragonous. Indeed one may see them very often simply ancipitous. They occur, however, often subtetragonous, especially when they have given a young shoot. Thus a representation of Mr. Keferstein's plant which I made in 1851 represents (and an added description says) the older bulbs subcostate in the middle. Mr. Wright says simply, "Tubers flattish, quadrangular." The flowers give a wonderful perfume, reminding one much of Vanilla. The disk of the lip is glutinous, and the long velvety line consists of epidermal cellules going out into clavate processes, standing close together. The superior side of the leaves is covered with numberless transverse wrinkles (transverse rugosula).

Materials:—Sketches prepared at various times; inspection of Dr. Lindley's types; twenty herbarium specimens; several living plants in the Hamburg Botanic Garden.

Tab. 133.—Plant, representing a fully developed variety. 1, lip, oblique view +; 2, lip, side view +; 3, column, front view +; 4, column, side view +; 5, 6, pollinaria +; 7, some of the cellules forming the velvety line of the lip,  $\frac{1}{75}$  +.

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I have specimens of this plant from Trinidad, sent thence by Mr. Horne. Also specimens procured from the Royal Horticultural Society, said to have come from Santa Martha. The plant is very free flowering, and the flowers are richly and powerfully scented. It should be grown on a block in the temperate house, and placed near the light.—*W. W. S.*





W.H. Fitch del. et lith.

H. Hartw. sculp.

*Maxillaria Besvauxiana*, Rehb. Fil.

## TAB. 134.

Tribe VANDEÆ.

Genus MAXILLARIA, Ruiz. &amp; Pav.

M. DESVAUXIANA, *Rchb., f., Seemann, Bonplandia*, iii. 67! *Walp. Ann.* vi. 524! Rhizomate breviusculo, radicibus adventitiis filiformibus validis numerosis, pseudobulbis aggregatis, vetustis ovoideo-pyriformibus ancipitibus sulcatis, junioribus vaginis triangulis complicatis scariosis demum solutis imbricatis, primum pulchre viridibus, demum fuscis, omnibus monophyllis, folio ima basi longe petiolari complicato dein oblongo-ligulato bene acuto superne valde lævigato, nitente, infra pallido, pedunculo brevi, dense vaginis magnis scariosis triangulis tecto, bractea æquali sepalum dorsali basi tegente, mento prope obsoleto, sepalis oblongo-ligulatis apiculatis, tepalis paulo latioribus et brevioribus, labello subbreviori, late ligulato apice paulo emarginato utrinque obtusangulo, hinc trilobo, carinula hippocrepica in basi, nunc linea utrinque retrorsa callum longiusculum efficiente, disco lobi antici ruguloso verrucoso, columna clavata, androclinio elevato cincto, anthera mitrata, calva, glandula hippocrepica.—*Maxillaria petiolaris*, *A. Rich. MSS.* Ovaria sordide purpurea. Sepala flavo-brunnea cinnamomea lavata. Tepala et labellum sordide violaceo-purpurea. Verrucæ in disco antico labelli lobi antici atrato-purpureæ seu atratæ.

This species appeared first at Paris in the Jardin de l'École de Médecine, said to come from Cayenne. I obtained it from my late friend Emile Desvaux, in whose memory I named it. I obtained also flowers from M. Rivière, the able Curator of that establishment. The same plant was found in Surinam by Focke! (from whom I have a sketch with very dirty violet colours) and by Splitgerber! (from whom I obtained a flower in spirits by Professor Miquel!) It was also found in New Grenada by my friend Wagener, whose excellent dried specimen I possess. Finally, W. Wilson Saunders, Esq., introduced it from Brazil. Many of these Orchids would appear to have a very wide area. Those who name plants from the geographical indications will not feel too much pleased by such wide ranges.

*Rhizome* short. *Adventitious roots* thick, filiform, numerous. *Pseudobulbs* near one another, the old ones ovoideo-pyriform,

ancipitous-sulcate, the younger ones covered with scariose triangular complicate *sheaths*, soon dissolving in fibres, very green when young; all the bulbs monophyllous. *Leaf* with a long complicate petiolar narrow base, and an oblong-ligulate very acute very shining glossy blade, pallid and opaque on the under side; the petiolar part varying in length; I have, however, never seen it so short as represented by the artist; in my Wagenerian specimen it is nearly a span long, and the late Achille Richard would never have given his name of "*petiolaris*" if he had seen fresh specimens, as are here represented. *Common flower-stalk* short, covered with scariose triangular acute sheaths. *Bract* like the upper one, larger, covering the base of the upper sepal. *Sepals* oblong-ligulate, apiculate. *Tepals* a little shorter and broader. *Lip* even shorter than or equal to the tepals, broadly ligulate, slightly emarginate at the blunt end, obtuse-angled on both the middle sides, then nearly trilobed. A small horse-shoe-like *keel* behind the out-springing lateral angles, now going out into side-lines, to make a sort of *callus*; I have, however, never seen such a clear long callus as has been represented by the artist. The anterior disk of *lip* covered with rounded dark warts. *Column* clavate; border of *androclinium* elevated. *Anther* mitrate, without papillæ. *Glandule* horse-shoe shaped. The flowers have purplish ovaries, yellowish brown sepals, with a cinnamon hue; tepals and lip dirty purplish, with very dark warts on the anterior disk of the same.

**Materials:**—Observation of the living plant in the Saundersian collection, and that at Luxemburg, near Paris, 1867; observation of fresh flowers; thirteen herbarium specimens.

Tab. 134.—1, flower, front view +; 2, flower, side view +; 3, the same, sepals cut +; 4, the same, sepals and tepals cut +; 5, lip +; 6, column +; 7, 8, pollinaria +.

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Treated as *Maxillaria rufescens*, Tab. 133, this plant does well and flowers freely. My plants came from Brazil; some from the vicinity of Bahia, collected by Mr. E. Reed. It is a curious species, more appreciated by the botanist than the horticulturist.—*W. W. S.*





W.H.Fitch del. et lith.

Hanhart imp.

*Maxillaria crassifolia*, Rehb. Fil.

## TAB. 135.

## Tribe VANDEÆ.

## Genus MAXILLARIA, Ruiz. &amp; Pav.

- M. CRASSIFOLIA, *Rchb. f. in Seemann, Bonplandia*, ii. 16! *Walp. Ann.* vi. 529! Radicibus adventitiis valde firmis brunneis terrestribus, pseudobulbis ligulatis ancipitibus valde lævibus viridiprasinis, 5—6 pollices longis, angulo altero basin versus appanato excavato, foliis stipantibus vaginæformibus summo laminigero, pseudobulbi monophylli folio lato ligulato apice inæqualiter exeunte, altero latere dentiformi prosiliente, altero imo introrsum angulato, superne obscure prasino, inferne pallidiore lineolis parvis transversis impressis plurimis, pedunculis axillaribus paucivaginatibus, ovario pedicellato longissime bracteam cupulatam apiculatam excedente, ovario punctulato, mento subnullo, perigonio carnosio coriaceo, sepalis ligulatis acuminatis, tepalis linearibus acutis, labello ligulato acuto medio utrinque extrorsum acutangulo, tumore velutino longitudinali in axi inter lacinias laterales, altero per discum lacinie anticæ, columna trigona, anthera conica subscabra.—*Heterotaxis crassifolia*, *Lindl. Bot. Reg.* xii. 1826, 1028! *Lodd. Bot. Cab.* 1651! *Dicrypta Baueri*, *Lindl. Gen. & Sp. Orch.* 44! 152! *Bauer, Ill. Orch.* tab. v.! Flores flavi, labello aurantiaco maculis rubris picto.

For a long time this has been a weed in the gardens, and yet we do not know much about its habitat. So much is quite certain, that it grows near Caracas, whence I obtained it dried and sketched by my excellent friend Wagener. It is certain that it was introduced by several collectors, also by W. Wilson Saunders, Esq., from Brazil; and the same gentleman has obtained it from Costa Rica by Mr. Carmiol, whose specimen I saw flowering at Hillfield House, Reigate, in the autumn of 1868. It is spoken of as common in the Antilles. My numerous Antillan specimens are, however, altogether very unsatisfactory.

*Adventitious roots* very strong, terrestrial. *Pseudobulbs* ligulate, quite even, greenish bluish, ancipitous, with the one angle generally excavated near the very base; several *sheaths* stand beneath the young pseudobulb, the uppermost one sometimes with an articulate *lamina*; the bulbs are one-leaved. *Leaf* broadly ligulate,



with a blunt unequal apex, one side extended into a sharp angle, the other inferior, even, dark leek-green on the upper side, more pallid beneath, with many small impressed transverse lines on the upper side. *Common flower-stalk* axillary, with a few wide lax nearly blunt *sheaths* and an angular very short apiculated *bract* beneath the elongated stalked scabrous *ovary*. *Sepals* ligulate-acuminate or acute. *Tepals* linear-acute. *Lip* ligulate-acute, with a tooth-like angle on each side and a velvet oblong *callus*, narrower at the base between the lateral lobes, and one long callosity on the disk of the anterior lobe. *Column* trigonous. *Anther* conical, subscabrous; the whole of the perigone fleshy leathery; scarcely any *chin*. *Flowers* pale yellow in our stoves, orange near Caracas, according to my friend Wagener's sketch, always with a greenish hue outside the sepals. *Lip* orange-coloured, the tumours sulphur-coloured, many or few purplish or cinnabar spots and dots scattered over its surface.

There is a certain *Maxillaria* very near this, which I described ten years since, though, from my remembrance, I never published it. I add a short diagnosis:—

MAXILLARIA SUPERFLUA. Foliis loratis lineari-ligulatis apice inæqualibus, pedunculo vaginato, bractea cupulari brevissima, mento minuto, sepalis ligulatis acutis, tepalis angustioribus brevioribus, labello ligulato acuto versus medium utrinque angulato, tumore velutino uno posteriore, uno anteriore.

The lip is violet, with yellowish tumors. The tepals have usually a violet streak inside.

*M. discolor*, Lindl., has the broadest, *M. superflua* the narrowest leaves. Garden plant from Demerara.

Materials:—Old and new sketches; description from the living plant in Saundersian garden, 1869, and at Hamburg; many specimens.

Tab. 135.—The plant. 1, flower, expanded, front view +; 2, column and bent lip +; 3, flower, side view, sepals and tepals cut +; 4, 5, pollinaria +.

A leafy *Maxillaria*, with rather inconspicuous yellow flowers. It is a plant very free to grow, and placed in a temperate house it will be sure to do well.—*W. W. S.*





W.H. Fitch del. et lith.

*Ansellia gigantea*, Rehb. Fil.

Hanhart sculp.

## TAB. 136.

## Tribe VANDEÆ.

Genus ANSELLIA, *Lindl.*

A. GIGANTEA, *Richb. f., v. Schlechtendal, Linnæa*, xx. 673! Cæspitosa, caulibus fusiformibus usque ultra pedibus, distiche foliatis, foliis cuneato-ligulatis acutis seu obtuse acutis subtus nervis tribus validis, superne nitidis omnino planis, vaginis manifeste nervosis, pedunculo terminali (racemoso, vulgo) paniculato, inferne vaginis scariosis nervosis emaciatis vaginato, imis prope contiguis, superioribus distantibus, panicula nutante, bracteis squamæformibus triangulis ovariis longipedicellatis multo brevioribus, sepalis ligulatis obtuse acutis, tepalis subæqualibus, labelli laciniis lateralibus obtusangulo-rhombeis retrorsis, lacinia media cuneato-obovata retusiuscula, carinis geminis a basi in discum lacinie anticæ, carina tertia interposita antice breviori, verrucis circumstantibus nullis, columna trigona incurva basi utrinque buccata, buccis sæpius crenulatis, antheræ processu terminali tumido ligulato obtuso.—*A. africana*, *β. natalensis*, *Hook. Bot. Mag.* 4965! *A. gigantea*, *Richb. f., Xenia*, ii. 18! *Walp. Ann.* i. 784! Flores citrini maculis pallide brunneis in sepalis tepalisque. Labellum pulchre citrinum.

b. CIFRINA, *Richb. f., Xenia*, l. c. Omnino flaviflora, labio pulchre aurantiaco.

When I named this plant, I suspected it might be the *Cymbidium giganteum*, Sw. I do not think so now, though the question is not settled, since there appears to be now no type of the plant. My friend Dr. Theodor Fries informs me that nothing of the *Limodorum giganteum* is left in Thunberg's herbarium, and, as far as I know, the *Cymbidium giganteum* is not to be found in Swartz's collection, nor did I see the *Satyrium giganteum*, L., in the Linnean collection. I feel almost inclined to believe the plant described by those botanical patriarchs may have been some *Lissochilus*; but, even if it was rediscovered at Zeekoe-rivier, we have already the celebrated Welwitschian *Lissochilus giganteus*, so that the specific name could not be restored. So much for the antiquity.

Our authentic plant was discovered August, 1841, at Port Natal, by Gueinzius, the same who was robbed of the discovery of the

*Stangeria paradoxa*. I possess a sketch, in colour, made by him. He reported, and sketched too, that the roots stood all upright, with their ends looking like the nest of a bird. (It is very remarkable that, in our pots, the *Angellias* send, as far as I know, their roots in the earth, while other plants, as *Eriopsis*, very often turn them upright.) He found the plant on the upper branches of a tree "having leaves like an elm," and says it is nearly scentless. Much later the plant was imported, living, to England.

Sir William Hooker judged it a local variety of the *Ansellia africana*. I gladly admit it is very near it; and yet I believe there is a constant difference in the shape of the lateral laciniae of the lip, the keels, the surface or coating of warts on it, not to speak of the constant difference of colour.

The genus *Ansellia* stands between *Grammatophyllum* and *Cymbidium*. It differs considerably from the first in the pollen apparatus; less, and yet it appears sufficiently, from the last in the base of the lip.

Cæspitose. *Pseudobulbs* fusiform, reaching a foot in length, with distichous leaves; *leaves* cuneate ligulate-acute or bluntly acute, with three strong nerves on the under side, quite even above; *sheaths* very nervous. *Common flower-stalk* terminal, with scariose nervous dry sheaths beneath, the under ones close one to another, the upper ones distant, racemose or paniced, generally nodding when fully developed, when not erect. *Bracts* triangular, exceedingly small, much shorter than the stalked *ovaries*. *Sepals* ligulate bluntly acute. *Tepals* nearly equal. *Lip* with obtuse-angled rhomboid *lateral laciniae*, with an antrorse anterior point; *middle laciniae* cuneate-obovate, nearly retuse; two *keels* from the base to the middle disk of the anterior laciniae, with a very short and small third keel between these two; no warts of any kind around the anterior part of these keels. *Column* trigonous, bent, with prominent, often crenulate cheeks at its base. *Anther* with a tumid blunt process.

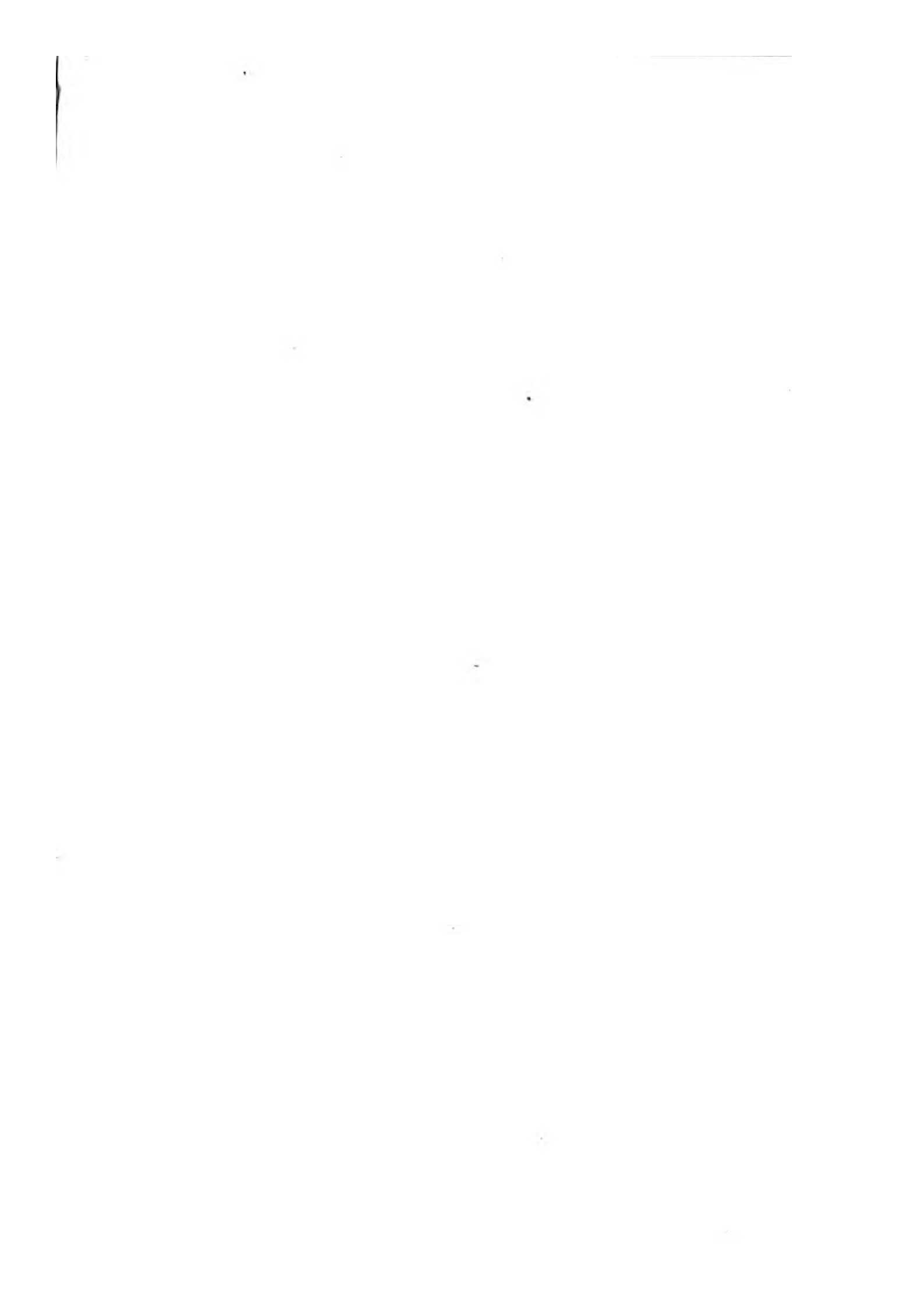
Materials:—M. Gueinzius's original sketch, and seven specimens of his, and two garden specimens; inspection of fresh flowers of the normal plant and the variety from Consul Schiller's garden.

Tab. 136.—A plant. 1, side view of lip and column +; 2, expanded lip +; 3, column, front view +; 4, 5, pollinia.

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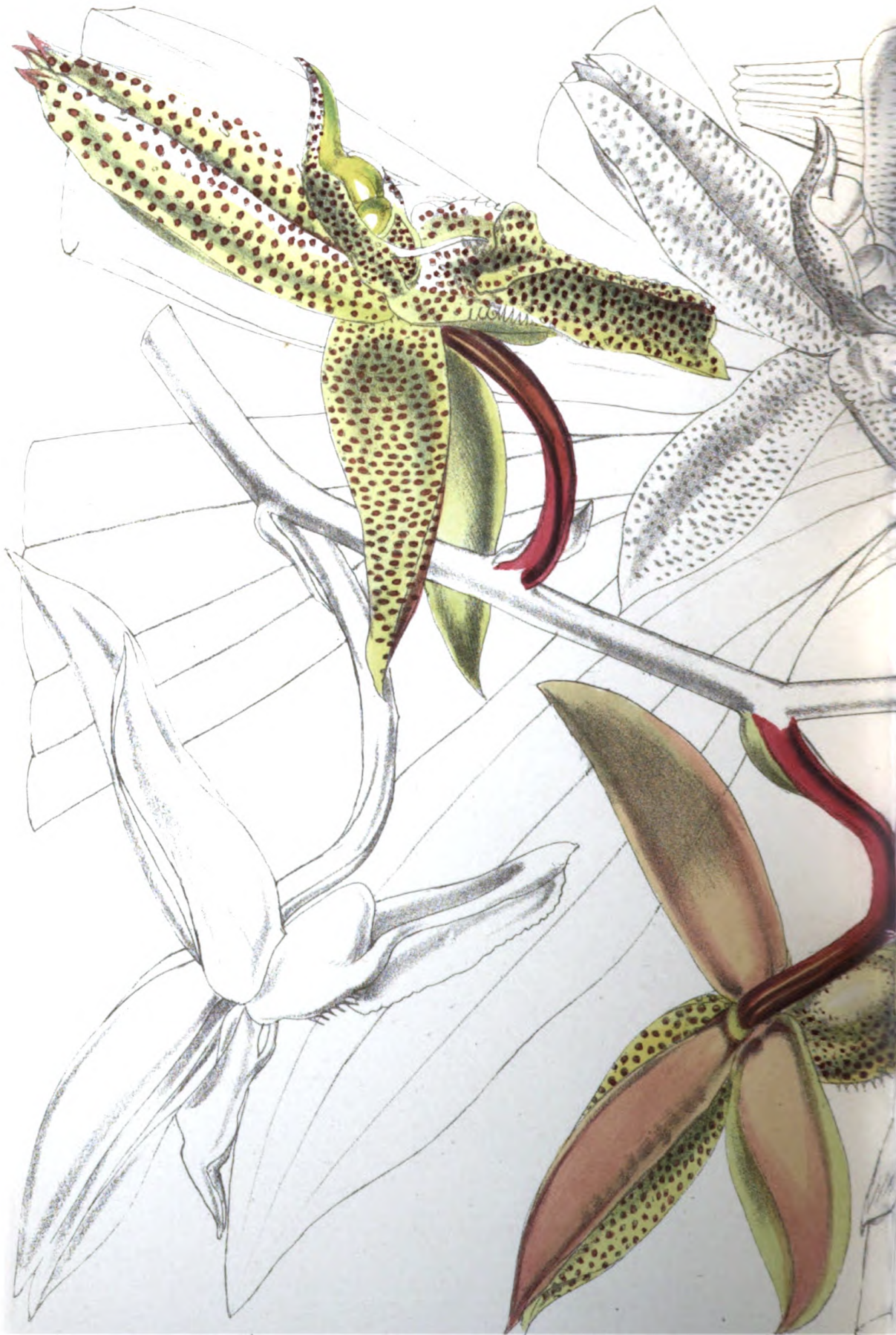
This species of *Ansellia* seems to thrive best in the warm stove when growing, and placed in the temperate stove while at rest. It should be potted in spongy peat and sphagnum with a deep substratum of drainage by crocks. The plant likes to be well raised above the rim of the pot. I received this plant both from Mr. Thomas Cooper, while collecting in South Africa, and from Mr. Plant, who obtained it in Natal.—*W. W. S.*







PLATE





Hainart imp.

*Catasetum laminatum Lindl.*

Wm. A. K. S. S. S.



## TAB. 137.

## Tribe VANDEÆ.

## Genus CATASETUM, Rich.

- C. LAMINATUM, Lindl., *Ann. Nat. Hist.* iv. 384! *Bot. Reg.* xxx. Misc. 40! *Lindl. in Benth. Plant. Hartw.* 72! *Walp. Ann.* vi. 573! Pseudobulbis dense approximatis crasso-fusiformibus dense foliatis, foliis inferioribus vaginis, foliis superioribus ad se ex laminigeris, laminis cuneato-oblongo-ligulatis acutis, nervis quinis valde infra prominulis, pseudobulbis vetustis multo incrassatis, spithamæis, multi-annulatis, vestigiis foliorum argenteis vestitis, pedunculo ex infima parte pseudobulbi adhuc foliigeri, ultra pedali, porrecto, vaginis infra paucis scariosis distantibus, superne racemoso brunneo-purpureo, bracteis triangulo-spathaceis quinque-nerviis, ovaria pedicellata longe non æquantibus, ovariis pedicellatis elongatis (ultra duos pollices longis), sepalis ligulatis acutis fornicatis, tepalis latioribus sepalo impari approximatis, labello ligulato pandurato seu oblongo-ligulato cordato acuto, marginibus involutis omnino seu basi tenuiter ciliato, lamella carinata humiliter semioblonga per discum a regione anteapicilari, basi ante ostium calcaris conici bicurvi, columna trigona sursum dilatata apice rostrata, setis duabus deflexis bene evolutis juxta foveam impressam, anthera longe rostrata.
- a. MACULATUM, Lindl., *Sert.* t. 38! Sepalis tepalisque intus viridulis maculis atroviolaceo-purpureis innumeris, sepalis extus brunneo-purpureo lavati, labello flavo-viridi maculis brunneis seu obscure viridulis, columna viridi purpureo-maculata.
- b. EBURNEUM, Lindl. *l. c. et Bot. Reg.* xxvii. 5, fig. 4! Sepalis tepalisque viridulis, labello eburneo.

The *Cataseta* are by no means the pets of collectors of dried specimens. I possess this one from Mexico: Oaxaca, Karwinski! Mountains Tuquila, Hartweg! There were two varieties distinguished by Dr. Lindley. The second appeared at the Garden of the Horticultural Society, no doubt sent by the late Mr. Hartweg.

*Pseudobulbs* near one another, thickly fusiform, closely covered with *leaves*, the lower ones simple sheaths, the upper ones (generally six) with cuneate oblong-ligulate acute laminæ, having five nerves well developed underneath. The older pseudobulbs

are much thickened, a good span long, many-ringed and with silvery remains of sheaths and leaves. The *flower-stalk* comes out from the base of the bulb, not generally more than a foot in length, porrect (tending obliquely outside), brownish purplish to green. *Bracts* triangular-spathaceous, five-nerved, not nearly equalling the stalked *ovaries*, which are usually more than two inches long. *Sepals* ligulate-acute, fornicate, the lateral ones usually spread downwards. *Tepals* broader, near the odd sepal. *Lip* ligulate-pandurate or oblong-ligulate, heart-shaped at its base, acute, with inflexed narrow borders, ciliate either altogether or only towards the base. A carinate low nearly half-oblong *keel* in the longitudinal line of the lip, beginning above its apex and opening into two short shanks near the mouth of the conical spur. *Column* trigonous, dilated near the *stigmatic hollow*, with a beak at its end and two deflexed bristles from the sides of the stigmatic hollow. *Anther-case* with a long beak.

There are two varieties:—

*a. MACULATUM*, Lindl.—*Sepals* and *tepals* green inside, with numberless small dark violet-purplish dots. *Sepals* with a brownish purplish mark outside. *Tepals*, on both sides, like the inside of sepals. *Lip* yellowish green, with brown or dark greenish spots. *Column* green, with purplish spots. This is the plant figured.

*b. EBURNEUM*, Lindl.—*Sepals* and *tepals* greenish. *Lip* ivory-like. This appears to have been seen but once, as stated above.

The fourth flower of our plate represents a not uncommon monstrosity, seen sometimes in the genus *Ophrys* (even last spring in *O. ferrum-equinum*, Desf., in the Hamburg Botanic Garden, flower dried and kept), in *Goodyeras*, &c. In lieu of the lip stands a sepal, and at each lower angle of the column stands a lip. It is, of course, a monstrosity of degradation (declination). The lip is changed into a member of an inferior cycle, *viz.* sepals. The staminodes of the outside whorl of anthers are developed and degraded to lips.

**Materials:**—Several sketches of fresh flowers; description of the living plant in the Saundersian garden, 1868; inspection of Dr. Lindley's typical specimens; Lindleyan types in my herbarium; seven herbarium specimens. My garden specimens came from Consul Schiller and W. Wilson Saunders, Esq.

Tab. 187.—The plant, the very grand flower-stalk, showing a curious flower with four sepals, two tepals, two lips.

Obs.—It is necessary to correct on Tab. 83 the name to *Catasetum discolor*, Lindl., var. *fimbriatum*, Rchb. f. MS., in lieu of the quite inexplicable *C. discolor*, Lindl., *C. fimbriatum*, Rchb. f.—*H. G. R. f.*

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I take a particular interest in the species of the genus *Catasetum*, and I have a very considerable number of species, almost all of which require the following treatment:—When growing they are placed in a warm and damp stove, rather near the light, and with moderate ventilation. When at rest they are kept nearly dry and cool at the same time. They like to be grown in baskets full of spongy peat and sphagnum, which their peculiar roots will in some species soon cover and present a rounded, interlacing whitish mass, firm and compact. *Catasetum laminatum* so treated is a very free flowering species, and well worth cultivating from the peculiar form of the flowers, which are produced in long pendant spikes. My specimens came from Mexico, and were supplied to me by Mons. Boucard.—*W. W. S.*









March 1910

Hannary

*Cordyline Arcuata Lirid*

## TAB. 138.

Tribe EPIDENDREÆ.  
Genus EPIDENDRUM, Sw.

E. AVICULA, Lindl. in Hook. Journ. Bot. iii. 85! 1841. Lindl. Folia, Epidendrum, No. 134! Walp. Ann. vi. 360! Rhizomate valido viridi multi-articulato polyrrhizo scandente seu repente, radicibus adventitiis filiformibus flexuosis nunc ramosis, torulosis, multiflexis, pseudobulbis subdistantibus ovoideis, vix ancipitibus, nunc subtetragonis, defoliatis incrassatis, vaginis baseos triangulis acutis, foliis evolutis ternis seu quaternis laminis ligulatis apiculatis, seu cuneato-ligulatis acutis, seu cordato-triangulis acutis inferne carinatis, pseudobulbis junioribus teretibus, vaginis atrobrunneis, pseudobulbis adultis cicatricibus foliorum demum obscuris, pedunculo racemoso seu paniculato, cum bracteis (extus), ovariis pedicellatis et sepalis (extus) albido-velutinis, papillis simplicibus tubulosis (fig. 11), squamis in basi pedunculi nunc paucis bracteæformibus evolutis, nunc nullis, bracteis triangulis trinerviis scariosis, ovariis pedicellatis multo brevioribus, usque dimidia ovaria pedicellata æquantibus, sepalis triangulis acuminatis, lateralibus ima basi connatis, tepalis lineari-lanceis uninerviis, labello cuneato rhombeo acuminato utrinque obtusangulo, venis ternis mediis a basi in medium incrassatis, denticulo utrinque in basi confluyente superaddito, columna trigona subcompressa, androclinio ascendente rostello semiannulato, fovea semilunari, anthera depressa, loculis oblique superpositis. Sepala intus et extus hyalino-cuprea. Tepala, labellum et columna viridiflava seu virida. Alabastra mire cum ovaria angulata avis caput simulantia, ill. Lindley forsitan nomen dederunt (fig. 1).

The discovery of this pretty plant appears to have been made by the late Gardner! so early as 1838. It is indicated by Dr. Lindley, on Gardner's account: Organ Mountains, forming dense tufts on the stems and branches of trees, April, 625. From a memorandum in my herbarium it would also appear to have been gathered by Gardner near Pernambuco. I am, however, not sure of the authority. All the Gardnerian specimens I have seen or possess are mere miserable dwarfs, when compared to the beautiful specimens: Minas Geraës, Regnell! The plant appeared some years ago both in the gardens of W. Wilson Saunders, Esq., and

J. Day, Esq. We have also imported a large mass last year at the Hamburgh Botanic Garden.

*Rhizome* stout, green, with many articulations, and many *roots* scandent or creeping. *Adventitious roots* filiform, flexuose, sometimes branched, torulose, much bent. *Pseudobulbs* at small intervals, ovoid, scarcely ancipitous, sometimes subtetragonous, very much thickened when destitute of leaves; *sheaths* of lower part triangular-acute. Developed *leaves* three or four, with ligulate-apiculate or cuneate-ligulate acute, or cordate-triangular blades, the line of the middle nerve keeled on the under side. *Younger pseudobulbs* terete, with brownish sheaths; *older pseudobulbs* finally with very obscure marks of the fallen leaves. *Flower-stalk* racemose or paniculate, equally whitish velvety from simple tubular papillæ (fig. 11), like the bracts outside, the stalked *ovaries*, and the sepals (outside). Either some bract-like *sheaths* at the base or none. *Bracts* triangular, three-nerved, scariose, much shorter than the pedicellate *ovaries*, or reaching over half their length. *Sepals* triangular-acuminate, the lateral ones connate at their base. *Tepals* linear-lanceolate, one-nerved. *Lip* cuneate-rhomboid acuminate, obtuse-angled on both sides, the three middle veins thick from the very base to the disk of the dilated part, confluent at the very base, and having there at each side a small tooth. *Column* trigonous, a little compressed. *Androclinium* ascending. *Rostellum* semilunate. *Stigmatic hollow* semilunate. *Anther* depressed, with the locelli oblique. *Sepals* outside copper-coloured, inside the same, or more greenish, or totally green. *Tepals*, *lip* and *column* greenish yellow. The buds are bent in a queer manner with the ovary, and have, no doubt, suggested to the late Dr. Lindley the name of "*Avicula*," they having a remarkable likeness to a bird's head with a long neck.

**Materials:**—Living plants observed in the Saundersian, Dayan and Hamburgh Botanic Gardens; inspection of Dr. Lindley's type; description from living plant at Reigate, 1868, and from fresh specimens at various times; seven herbarium specimens.

Tab. 138.—A plant. I possess a specimen with a much better developed panicle. The branches of the panicle would appear always to ascend in the flowering state, and to bedivarcate in the bud state. 1, a bud, with part of rhachis +; 2, flower, front view +; 3, flower, with part of rhachis, side view +; 4, back view of flower +; 5, lip, free from column +; 6, column, side view +; 7, column, front view +; 8, anther, seen internally, to show the

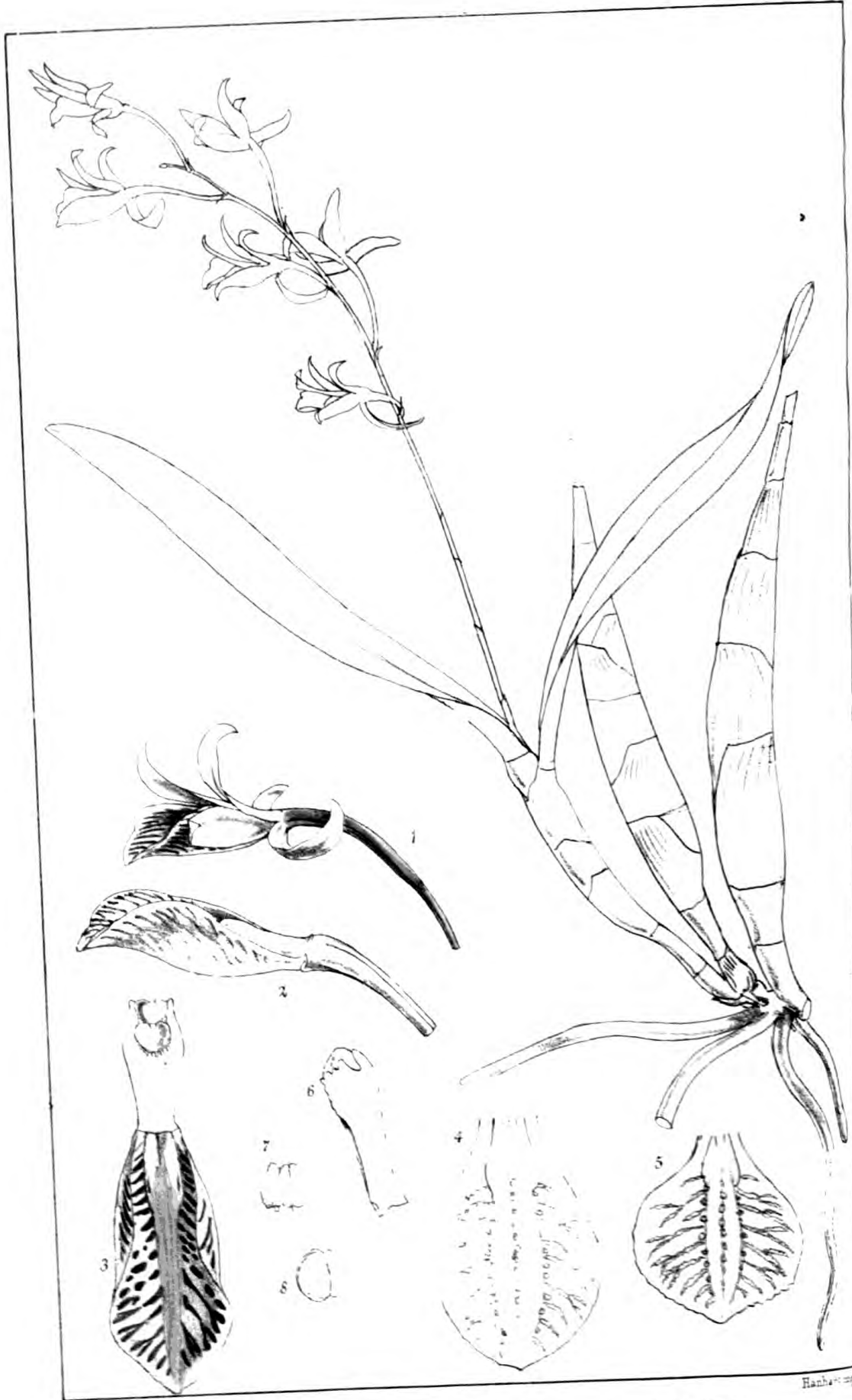
oblique position of the locelli + ; 9, 10, pollinaria + ; 11, two papillæ, which form the grey cover to the peduncle, bracts, stalked ovaries, sepals (outside) + (highly magnified).

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This *Epidendrum* was sent to me from Brazil by the late Mr. D. Bowman. It is a pretty little species, producing its flowers freely when placed in the temperate stove and grown upon a block near the light.—*W. W. S.*







W.H. Fischer del. et lith.

Ranby sculp.

*Epilendrum nov chinense* Rolfe et al.

## TAB. 139.

Tribe EPIDENDREÆ.  
Genus EPIDENDRUM, Sw.

**E. NON-CHINENSE**, *Rehb. f. in Walp. Ann. vi. 324!* *Beitr. Orch. Centr. Am. p. 103!* Radicibus adventitiis flexuoso-filiformibus, pseudo-bulbis aggregatis fusiformibus plurifoliis, vaginis ampliusculis nervosis, laminis cuneato-ligulatis acutis hysterochronicis, pedunculo terminali longius exserto usque ultra pedali, vaginis scariosis nervosis acutis demum emaciatis onusto, apice racemoso seu paniculato, bracteis scariosis plurinerviis triangulis acutis ovaria pedicellata subæquantibus seu eisdem (præcipue in plantu culta) multo brevioribus, ovarii caniculo longe adnato, sepalis ligulatis acutis, tepalis paulo latioribus, labello cuneato-oblongo seu ovato seu acuto, integerrimo seu antice crenulato, nunc trilobulo cucullato, carinis in basi geminis humilibus semiligulatis, venis ternis medianis nunc valde approximatis nunc distantibus squamuligeris, venulis lateralibus hinc ramosis ramentaceis, columna semitereti juxta foveam dilatata apice trifida, lacinia postica lineari. Flores candidi. Labellum sulphureum, venulis lateralibus brunneo tinctis. Columna alba, antice sulphurea. Anthera rubido-purpurea. — *Broughtonia chinensis*, Lindl.! *Hook. Lond. Journ. 1842, p. 492!* *Laeliopsis chinensis*, Lindl.! *Pact. Fl. Garden, iii. 105!*

This plant has an uncommon mysterious history. It was introduced to Science with the following remarks by our excellent Dr. Lindley, nearly thirty years ago:—"It is perhaps not very surprising that an American genus should occur upon one of the most westerly\* points of Asia; yet it is a circumstance so striking as to demand strict investigation before it can be accepted as correct. It does not, however, appear possible to doubt it in the case of the *Broughtonia*, which, although in an indifferent state of preservation, indicates all the main features of the genus to which I have referred it. It is unquestionably Epidendreous, as is distinctly shown by its well-preserved pollen-masses. The only doubt that I entertain respecting it is whether to place it in *Barkeria* or *Broughtonia*. The habit is more that of the former than of the latter; but it has the adnate spur belonging to the

\* "Westerly," a mistake for "easterly"?



labellum of *Broughtonia*, and it has not, as far as I can discover, the peculiarly deflexed dorsal sepal of *Barkeria*. Its lip, too, is distinctly cucullate, after the manner of a *Laelia*." It had been given to Dr. Lindley by Mr. Hinds, among plants collected near Hong Kong.

Thus matters stood till the autumn of 1856. It was remarkable that no one had seen the plant again. Neither Major J. G. Champion, nor Mr. Hance had seen it. "The *Laeliopsis chinensis*, Lindl., described from Mr. Hinds' specimens, is not among Major Champion's plants." At that period I studied carefully Dr. Lindley's Orchid collection, and when I found the *Laeliopsis* I could not help laughing very heartily, not altogether to Dr. Lindley's full satisfaction. I had obtained the American plant at several periods—I was very sure of the fact; and Mr. Hinds, too, having collected plants in Central America, it was much to be wondered at that such an acute observer as Dr. Lindley had not immediately suspected some confusion. When Dr. Lindley described his *Epidendrum nævosum* (*Epidendrum*, Folia, No. 6) he spoke of the fresh plant; "a plant that flowered some years since with Mrs. Lawrence had white sepals and tepals, a crimson anther, and a yellow lip, richly dotted with crimson." Now there is in the Lindleyan herbarium, no doubt from Miss Drake, a frontispiece painted, only differing a little in the very sharp angles of the column, added to the true specimens of *E. nævosum* from Galeotti; and that is, no doubt, once more the *E. non-chinense*, with a very cordate-triangular acute lip. I have but once seen the true *E. nævosum* alive, from Mr. Borsig's garden at Moabit, near Berlin; that has whitish flowers, with a somewhat rosy hue.

There is but little doubt that the plant was originally found near Veraguas by Mr. Hinds. My specimens come from Mexico, Schiede! Costa Rica: Ojo de Agua, Dec. 1855, Dr. Carl Hoffmann! Guatemala, Dr. Bernoulli! It has also been gathered near Chontales by Friedrichsthal! (Museum of Vienna!), who observed it on sterile stony places. He says it is called "Cebollin," and the stems give a certain gum.

*Adventitious roots* filiform, flexuose, very unequal in extent in various specimens. *Pseudobulbs* close together, as in *Dendrobium crassinode*, stalked, fusiform, with several leaves. *Sheaths* generally wide, nervous. *Leaf-blade* cuneate, ligulate, acute, the lower ones falling off early, all distant. *Flower-stalk* terminal,

more than a foot long, with many nervous scariose acute *sheaths*, which wither early. *Inflorescence* racemose, or even paniced with a few side-branches. *Bracts* scariose triangular acute, many-nerved, as long as the stalked ovaries, or much shorter, especially in the garden-plant. *Ovary* with a long thin adnate *spur*. *Sepals* ligulate-acute. *Tepals* a little broader. *Lip* cuneate-oblong or ovate-acute, perfectly entire or a little crenulate, also obscurely three-lobed, cucullate, with two small *keels* at its base running into two nerves, and with the third central nerve covered with small wartish lobules; lateral veinlets with ramentaceous erect membranes. *Column* half-terete, wider near the *stigmatic hollow*, trifid at its apex, the posterior lacinia linear. *Flowers* white. *Lip* sulphur-colour, with brownish purple radiating streaks on the veinlets. *Column* white, sulphur-colour under the *stigmatic hollow*. *Anther-case* brownish purple. The dried flowers have brownish pallid sepals and petals, and the lip has a purplish hue.

There are several species, near to one another, which would stand very well with old *Epidendrum Skinneri*, Bat., if they had no free column. *E. nevosum*, Lindl. ! is immediately recognized by its rounded *goitre* at the base of the lip. I have it in nine specimens: Oaxaca, Karwinski! Galeotti! two garden specimens. Dr. Lindley having written in his diagnosis "cuniculo ventricosum," we must keep his name. *E. non-chinense* has a long adnate spur.

A third unpublished species is this:—

EPIDENDRUM STROPHINX. Pseudobulbis fusiformibus plurivaginatibus, pedunculo elongato dense vaginato, racemo plurifloro, bracteis triangulis acutis plurinerviis, ovariis pedicellatis duplo brevioribus, cuniculo adnato apice valde ampliato, non ventricosum, sepalis tepalisque ligulatis acuminatis, labello cuneato-oblongo acuto, callo in basi depresso in venas tres medianas ramentaceas exeunte, venulis lateralibus omnibus muticis.

It had small rosy flowers, like those of *E. non-chinense*, the lip pallid, lateral veinlets purplish, ramentaceous part of lip yellow. It was said to come from Guatemala with a "*Barkeria*" *spectabilis*, and flowered about 1860 in Consul Schiller's garden. It died long since, and my sketches and one inflorescence are all that is left in Europe, to my knowledge.

Materials:—A careful copy of Dr. Lindley's herbarium specimen and of his analytical sketch; various analytical sketches made by me from the dried Mexican, Guatemalan and Chontales

plant, as well as from that which flowered in the Saundersian garden; thirteen herbarium specimens.

Tab. 139.—The plant. 1, side view of flower +; 2, the same, sepals and tepals cut; 3, front view of column and lip +; 4, expanded lip +; 5, the same +; 6, side view of column +; 7, pollinaria +; 8, side view of same +.

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Another small and interesting *Epidendrum*, with a prettily spotted lip. I obtained my specimens from my late friend G. A. Skinner, who received them from Guatemala. It requires cool treatment, and should be grown upon a block, and kept moderately dry during the winter season.—*W. W. S.*





W.H. Fitch del. et lith.

Hanhart imp.

*Epidendrum globosum* Jacq.

## TAB. 140.

Tribe EPIDENDREÆ.

Genus EPIDENDRUM, Sw.

- E. GLOBOSUM, *Jacq. Am.* 222, t. 133, f. 1! Radicibus adventitiis filiformibus multiflexis, caulibus dense congestis distiche foliatis, vaginis arctis oblique decisis jam ab initio minute plicatulis, dein brunneis pruinatis costatis, costis valde rugosis, foliis lineari-subulatis semiteretibus apiculatis, transsectione subcordiformibus viridibus, junioribus flavo-viridibus, adultioribus prasinis, multis foveolis impressis, pedunculis terminalibus solitariis seu paucis congestis parvi-vaginatibus, floribus deflexis, bracteis ovaria longe non æquantibus cuniculo obtusangulo, sepalis ligulatis obtuse acutis, lateralibus obscure supra nervum medium carinatis, tepalis ligulato-rhombeis obtusangulis, labello pandurato in apiculo obtuso, omnino lævi, columna trigona libera sursum ampliata.—*Cymbidium globosum*, Sw., *Fl. Ind. Occ.* 1467! *Isochilus globosum*, Lindl. *Gen. & Sp. Orch.* 112! Flores flavidi, hinc rubro aspersi.

It was indicated first at Martinique, by Jacquin, whence I have specimens from Madame Richard, *née* Rivoire! Trinidad, Sieber! Guadeloupe, Mont du Souffre, Duchassaing! St. Kitts, crater of Mount Miseri, Bruetel! Jamaica, Mount Carmel, Wullschlaegel! Cuba, Wright! "Ind. Occ.," Ryan! I never heard of the plant being in any European garden, except in the Saundersian.

I have also a certain plant much like it: Pearl Key Lagoon on Palma Mosquito. I am, however, at a loss to understand whether it is this, or another one, since I have no flowers.

A species much like this may be described thus:—

EPIDENDRUM LEUCOMELANUM. Caulibus tenuibus cæspitosis, vaginis striatis, foliis subcylindræis obtusis abbreviatis, inflorescentia terminali capitata parva, vaginis nervosis triangulis, 2—3 stipatis, bracteis hyalinis, ovariis pedicellatis, cuniculo subnullo, sepalis oblongis obtusis, tepalis linearibus obtuse acutis, labello libero calceolari antice utrinque angulato, in processum brevem carnosum acutum anticum extenso.—*Mexico*, Schiede! *Liebmann!*

As to systematic position, it is a little difficult. That the plant has nothing to do with *Isochilus* is quite evident. Now it is one

of those members of the distichous *Epidendra* which have free labella,—a section I once called *Amblostoma*,—which must also receive the so-called *Barkerias*. My private opinion is, that *Epidendra* must be resolved into many natural smaller groups. I began to do so with very good success in my herbarium, and will try to explain those groups in my General Monograph, which would have been, perhaps, already published if I had found sincere assistance at certain places.

*Adventitious roots* filiform, much bent. *Stems* crowded, with distichous leaves. *Sheaths* narrow, obliquely cut, with many small transverse folds, then brown, geminate, ribbed; ribs very rugose. *Leaves* linear-subulate, semiterete, apiculate, nearly cordiform in the transsection, green, in first youth yellow-green, later leek-green, with many impressed grooves. *Flower-stalks* terminal, solitary or several together, with a few *sheaths*, very short and small, bent over. *Bracts* triangular, not nearly equalling the stalked *ovaries*. A little *goitre* at the top of the ovary. *Sepals* ligulate bluntly acute, lateral ones with an obscure *keel* over the middle nerve. *Tepals* ligulate-rhomboid, obtuse-angled. *Lip* pandurate, with a blunt apiculus, quite even. *Column* trigonous, free, broader above.

Materials :—Description of the living Saundersian plant, 1868; inspection of a type of Swartz's in Osbeck's herbarium, and of Dr. Lindley's types; my own rich materials quoted above; my sketches, but from dried flowers only.

Tab. 140.—A plant. 1, 2, 3, three summits of stems in flower, or fruit (3); 4, flower, sepals cut +; 5, lip and column +; 6, column and lip +; 7, expanded lip +; 8, column, front view +; 9, 10, pollinaria +.

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A very unpretending member of the large genus *Epidendrum*, which with me grows slowly and seems wanting in vigour, although it flowers pretty freely. It seems to do best in the temperate house, grown upon a block. My specimens came from Trinidad, and were sent to me by Mr. Hance.—*W. W. S.*







W.H. Fitch del. et lith.

Humbert

*Pleurothallis longissima*, Lindl.

## TAB. 141.

## Tribe MALAXIDÆÆ.

## Genus PLEUROTHALLIS, R. Br.

*P. LONGISSIMA*, Lindl., *Folia Orchidacea*, II. Part ix. *Pleurothallis*, No. 182, p. 31.—Cæspitosa, radicibus adventitiis filiformibus multiflexis densis, rhizomate prorepente validissimo, caulibus teretiusculis sulcatis abbreviatis, ima basi plurivaginata, vagina una arctiore elongata sub folio, folio cuneato obovato apice obtusato minute tridentato constricto, valde valido, pedunculo folium longe excedente, basi spatha una ligulata acuta ancipiti ochracea, vaginis fatuis brevibus paucis, racemo secundifloro disticho elongato nunc subnutante, bracteis ochreatis apice oblique retusis uninerviis, ovariis pedicellatis exsertis, sepalo dorsali triangulo fornicato trinervi, tepalo inferiori oblongo apice simpliciter acuto seu bidentato, nervis duobus validis lateralibus, tepalis oblongo-triangulis trinerviis nunc acutis apicem versus serrulatis, labello pandurato obtuse acuto, lateribus baseos erectis, nervis ternis apice clavatis, omnibus ante apicem evanidis, columna clavato-trigona, androclinii limbo vulgo tridentato, rostello triangulo deflexo, fovea subrotunda.—*Pleurothallis racemiflora*, Lindl. in Hook. *Exot. Fl.* ii. t. 123! Lodd. *Bot. Cab.* 949! Lindl. *Gen. & Sp. Orch.* p. 6, *excl. citat. Swartzianis!* Flores virides demum flavo-virides.

This *Pleurothallis* was formerly common in German gardens, and is even now kept at some places. It was thought to be the *Dendrobium racemiflorum* of Swartz, which is immediately distinguished by the petiolar base of the leaf. It was, however, only in 1859 that the old error was corrected by Dr. Lindley himself. The reason may have been that what I believe to be the solitary Swartzian type in German herbaria, Willdenow's No. 16,896, was signed "Humboldt." Now the paper to which it is fastened corresponds to that to which the other Swartzian types are gummed, and, from my sketch, I believe the plant agrees altogether with Swartz's types, kept at Stockholm, just now at my side. I have suspected the mistake since 1846; I could, however, not make use of my opinions until I had more positive proofs. The habitat of *P. longissima* was unknown to Dr. Lindley when he described the plant: "I have nowhere found wild specimens of this, and much

question its inhabiting Jamaica." My numerous wild specimens come from Jamaica, Mexico and Costa Rica: Jamaica, Gilbert MacNab! Oaxaca, Mexico, Karwinski! Carthago, Catharina, Costa Rica, Oersted! San Jose de Costa Rica, Carmiol!

Cæspitose. *Adventitious roots* filiform, much bent, dense. *Rhizome* creeping, very strong. *Secondary stems* nearly terete, sulcate, short, with some short *sheaths* at their very base, a longer one beneath the leaf. *Leaf* cuneate-obovate, blunt at the apex, minutely and obscurely tridentate. *Flower-stalk* much longer than the leaf, with a ligulate-acute ancipitous ochraceous *sheath* at the very base. A few short sheaths beneath the very long inflorescence occupying the greater part of the flower-stalk. *Raceme* one-sided, distichous. *Bracts* ochreate, obliquely retuse, one-nerved. Pedicelled *ovaries* exserted. *Dorsal sepal* triangular, fornicate, three-nerved. *Inferior sepal* oblong, single, acute, or bidentate, with two strong lateral nerves and some finer ones. *Tepals* oblong-triangular, three-nerved, generally blunt, sometimes very acute, also with serrate borders towards the apex. *Lip* pandurate, bluntly acute, with erect basilar borders (auriculæ), three-nerved, the nerves never reaching the apex, ending in clavate points. *Column* clavate-trigonous. Borders of *androclinium* with a membrane, generally tridentate. *Rostellum* triangular, bent over the roundish *fovea*. *Flowers* green, finally yellowish green.

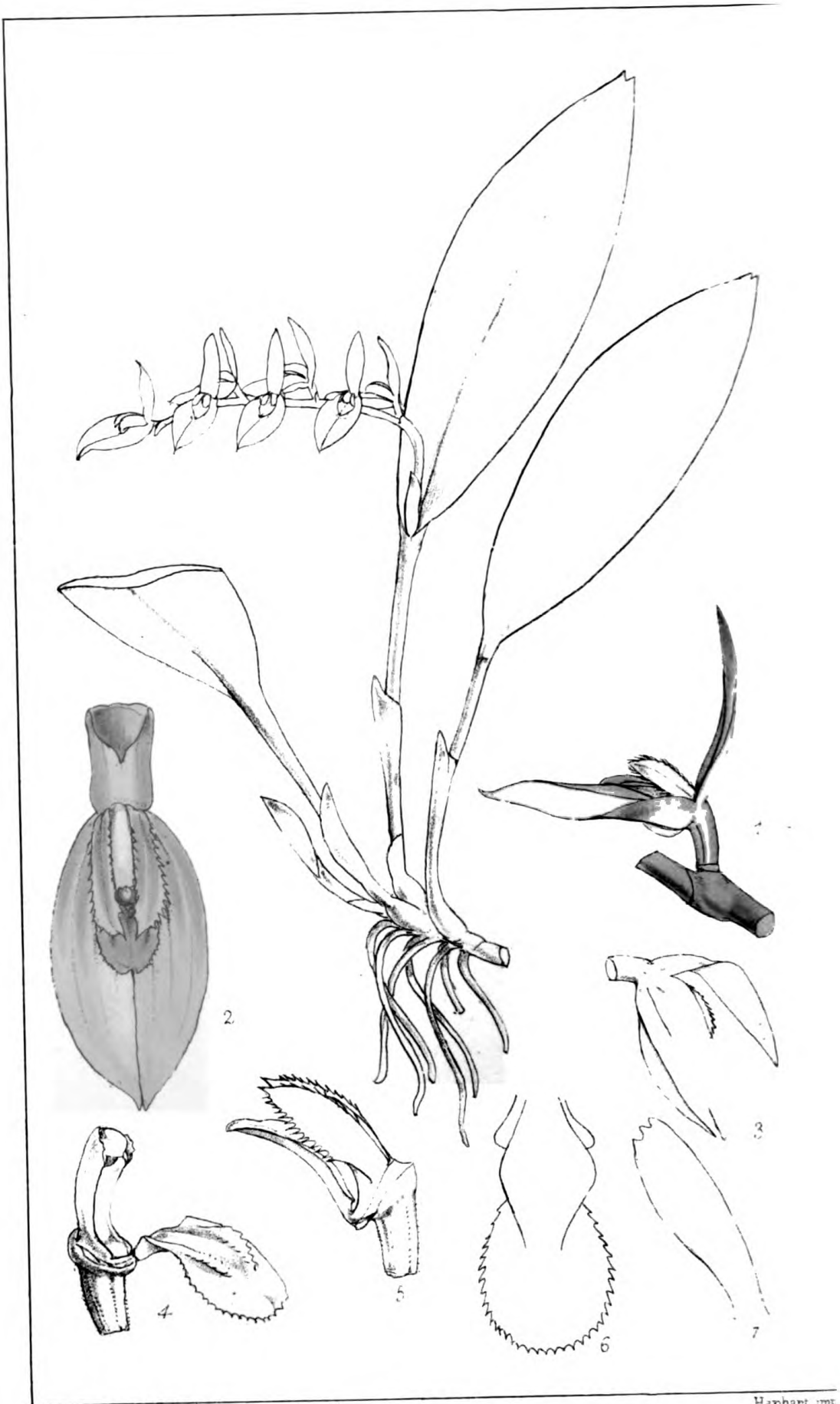
Materials:—Inspection of Dr. Lindley's types; sketches of fresh flowers made on various occasions; fifteen herbarium specimens.

Tab. 141.—The plant. 1, flower, with part of rhachis and bract + ; 2, flower, front view + ; 3, column and lip, side view +.

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Except to the botanist, the species of *Pleurothallis* have but little interest, and have often been called weeds not worthy of cultivation. I must confess to a lively interest in these outcasts, some of which are really beautiful when well-grown; and the one now under consideration is deserving of favour, producing long and elegant stripes of yellow-green flowers, and having thick dark green glossy leaves. The figure is from a plant which flowered in the Royal collection at Kew.—*W. W. S.*





W.H.Fitch del et lith.

Hanhart imp

*Pleurothallis ciliata* Knowl. Wester.

## TAB. 142.

## Tribe MALAXIDÆ.

## Genus PLEUROTHALLIS, R. Br.

*P. CILIATA*, Knowle & Westcott, *Floral Cab.* t. 19! *Lindl. B. Reg.* xxvi.

*Misc.* 41! *Lindl. Folia*, II., ix. *Pleur.* No. 140, p. 24! Caulibus secundariis dense cæspitosis, radicibus tenuissimis inflexis, caulibus basi vaginis duabus seu ternis ancipitibus apice triangulis brunneis nervosis, intermedio foliifero elongato, linea anteriori canaliculato subtrigono, folii lamina cuneato-oblonga acuta apice minute tridentata, vagina ancipiti acuminata, pedunculo porrecto subcompresso folium subæquante, racemo subdisticho, bracteis ochreatis acutis ovariis pedicellatis multo minoribus, perigonio externo carnoso coriaceo bilabiato, sepalo superiori lineari-ligulato acuto, sepalo inferiori apice acuto seu bidentato oblongo-ligulato, bene latiori, ima basi angulato gibboso, tepalis multo minoribus lanceolatis acuminatis ciliatis, labello tepalis subæquilongo, oblongo, utrinque ante basin angulato, ceterum ligulato, antice ciliato, carina carnosa triangula utrinque a basi in discum, columna gracili trigona, androclinio quinqueidentato, rostello transverso supra foveam, anthera gibba. Flores aurantiaci, labello magis ochraceo-rubro.

The plant was collected by Mr. Henchman on the Masseromi river in Demerara, and sent to the Willmorian garden. Finally, it re-appeared in the Saundersian garden, coming from Rio Salween. I never saw a wild specimen, to my knowledge.

*Secondary stems* close together. *Roots* very slender and much bent. Stems with two or three *sheaths*, the upper one the longest, all brown, nervous, triangular at their open end. The internode from the highest sheath to the leaf longer, canaliculate, nearly trigonous. *Leaf* cuneate-oblong acute, minutely tridentate. *Sheath of inflorescence* ancipitous, acuminate. *Flower-stalk* bent forwards, somewhat compressed, as long as the leaf. *Raceme* nearly distichous. *Bracts* ochreate acute, much shorter than the pedicellate ovaries. *Sepals* leathery to fleshy; the upper one linear-ligulate acute; the lower acute or bidentate, oblong-ligulate, much broader, angular-gibbous at its base. *Tepals* much smaller, lanceolate-acuminate, ciliated. *Lip* as long as

tepals, oblong, with an angular tooth on both sides, ciliated towards and at the apex, a fleshy triangular *keel* on both sides from the base to the disk. *Column* slender, trigonous; *androclinium* with a five-toothed membranous border; *rostellum* transverse above the *stigmatic hollow*; *anther* gibbous. *Flowers* orange, the lip more ochraceous-red.

Materials:—Sketch and description from the living plant in the Saundersian garden; inspection of Dr. Lindley's herbarium; one specimen in my herbarium.

Tab. 142.—Plant. 1, flower and part of spindle +; 2, flower, front view +; 3, flower, oblique back view +; 4, flower, sepals and tepals cut +; 5, the same, sepals cut +; 6, lip +; 7, column, side view +. The figures 6 and 7 given by Professor Reichenbach, who did not see the keels of the lip crenulate, as represented by the artist.

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This *Pleurothallis*, with lovely yellow flowers, came from the Salween, and was supplied to me by Mr. Bartlett. It should be grown on a block, in the warm part of the temperate house, with a little moss.—*W. H. S.*







W.H. Fitch del. et lith.

Hannaf. 1877

*Dendrobium bicameratum* Fendl.

## TAB. 143.

Tribe MALAXIDÆÆ.

GENUS DENDROBIUM, Sw.

- D. **BICAMERATUM**, *Lindl. Bot. Reg.* xxv. 1839, *Misc.* 85. *Walp. Ann.* vi. 299! Pseudobulbis congestis fusiformibus, junioribus foliigeris, laminis cuneato-oblongis acutis apice bidentatis tenuibus, siccis pergamaneo-membranaceis, racemis in pseudobulbis adultis aphyllis lateralibus, paucifloris parvifloris, bracteis triangulis obtusis ovaria pedicellata æquantibus, mento obtusangulo, sepalo dorsali ovali fornicato subacuto, sepalis lateralibus triangulis, tepalis late ligulatis usque ovatis acutis, labello cuneato-dilatato trifido, laciniis lateralibus triangulis porrectis, lacinia media transversa ovata acuta seu retusiuscula, columna apice tridendata, basi antica usque infra foveam foveis duabus parallelis, carina angusta separatis, anthera gibba calva.—*Dendrobium breviflorum*, *Lindl. Contrib. Orchid. of India*, No. II. p. 14, No. 14. Flores flavidi, lineis punctisque purpureis.

Mr. Gibson brought this *Dendrobium*, probably from the Khasya Hills, to the Duke of Devonshire's garden, where it flowered as early as 1839. I have obtained it from Consul Schiller's garden and from Mr. Low. My wild specimen was gathered in Eastern Himalaya, 2000 feet, July, Mann! I have scarcely any doubt left that I am fully entitled to reduce the *Dendrobium breviflorum* (Singapore? Loddiges) to the *D. bicameratum*. I explain the mistake from Dr. Lindley's having described the *D. bicameratum* as what it is, a *Stachyobium*, and having taken the *D. breviflorum*, by an oversight, for an *Eudendrobium*. I must add that I have a strong suspicion that the apex of the lip was shrivelled or broken when the representation in Dr. Lindley's herbarium was prepared.

*Pseudobulbs* near one another, fusiform, the younger bearing leaves with cuneate-oblong acute bidentate thin laminæ, which are paper-like when dried. The flowers stand on the older leafless pseudobulbs in lateral, small, short, few-flowered *racemes*. *Bracts* triangular-obtuse, as long as the stalked *ovaries*. *Chin* obtuse-angled. *Dorsal sepal* ovate subacute fornicate; *lateral sepals* triangular. *Tepals* broadly ligulate or ovate-acute. *Lip* cuneate, the widened part trifid; *lateral lacinia* triangular or uncinata

spreading; *middle lacinia* transverse ovate-acute or nearly retuse  
*Column* short, stout, tridentate at its apex, with two parallel long  
cells on its anterior side beneath the *stigmatic hollow*. *Flowers*  
yellow, with purplish spots and streaks. *Lip* wholly yellow.

Materials:—Two sketches from fresh flowers; description from  
fresh flowers; three herbarium specimens; inspection of the  
types.

Tab. 143.—Plant. 1, side view of flower +; 2, flower, front  
view +; 3, side view of flower, sepals and tepals cut +; 4, lip,  
oblique view +; 5, column, front view +; 6, 7, pollinia +.

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This remarkable species of *Dendrobium* is figured from a  
plant which flowered in the collection of the Royal Horticultural  
Society at South Kensington.—*W. W. S.*





W.H. Fitch del. et lith.

Hartnert sculp.

*Dendrobium Peguanum* Lindl.

## TAB. 144.

Tribe MALAXIDÆ.  
Genus DENDROBIUM, Sw.

- D. PEGUANUM, *Lindl. Contrib. Orch. Ind., II. Dendrobium*, p. 19, No. 140! (*Proc. Linn. Soc., Aug. 1858!*) Pseudobulbis pyriformibus tumidis articulatis vaginatis, vaginis emaciatis nitidis, superioribus geminis seu ternis laminigeris, laminis cuneato-ligulatis acutis carnosulis, costa inferiori omnino obtusangula, radicibus adventitiis in ima basi tenuissime filiformibus, inflorescentia congesto-capitata racemosa (terminali et) laterali abbreviata congesta, bracteis triangulis scariosis uninerviis ovariis pedicellatis subæqualibus, mento acutangulo longiore seu brevioris nunc apice incrassato extensoriiformi, sepalo impari ligulato acuminato dorso obtuse carinato, sepalis lateralibus triangulo-falcatis æquilongis basi mentali productis, tepalis cuneato-spatulatis apice inæqualiter acutis acuminatisve, bene longioribus, labello cuneato-triangulo apice trilobo, lobis lateralibus obtusangulis rectangulis, lobo antico triangulo acuto seu acuminato plicato crispato producto, callo depresso lineari a basi usque versus basin lobi antichi, ibi abrupto, retuso cum apiculo, seu retuso medio unicarinato, seu omnino retuso sine carinula mediana, columna clavata, androclinio vario (tridentato dentibus lateralibus obtusis crenulatis, tridentato omnibus dentibus argutis, dente medio pulchre tridentato, æqualiter minute quinquedentato), fovea stigmatica oblonga, fovea altera sub illa impressa, angulo utrinque in basi supra unguem mentalem, anthera obtusa emarginata nunc cum parvo apiculo in sinu. Dorsum menti viride. Sepala et tepala candida. Labellum luride et pallide olivaceum, venis purpureo-violaceis. Callus antice violaceo-purpureo prætextus. Anthera amethystina, punctis plurimis albidis. Columna albida, punctulis plurimis purpureo-violaceis antice. Pollinia arcte cohærentia.

This species appears to have been discovered in Pegu by Mr. M'Lelland! who sent it to Sir William Hooker, who gave, in his liberal manner, specimens to the monographers. It was found in the same neighbourhood by the Rev. C. S. R. Parish near Moulmein! and the living plant, which flowered several times in the Saundersian collection, may have been sent by him. Quite the

same plant was sent by T. Lobb! and announced by Messrs. Veitch as coming from Borneo. Since T. Lobb collected likewise to Burmah, a mistake may have happened.

*Pseudobulbs* pyriform, tumid, articulate, with sheaths; the lower *sheaths* emaciate, shining in the flowering plant; the two or three standing uppermost have fleshy cuneate-ligulate blades, with an obtuse-angled middle rib on the outside. *Adventitious roots* only basilar, very slender, filiform. *Racemose inflorescence* usually lateral, but occurs also terminal, even in the actual presence of the leaves, though these appear oftener falling off before the expansion of the flowers. *Raceme* very dense-flowered and very short, nearly capitate. *Bracts* triangular, scariose, one-nerved, equal to the pedicelled *ovaries*. *Chin* acute-angled, very variable in its length, sometimes clavate at its apex, sometimes extinguisher-shaped. *Upper sepal* ligulate-acuminate, with a blunt *keel* above its midrib outside; *lateral sepals* triangular-falcate, just as long, extended for the formation of the chin at their base. *Tepals* cuneate-spathulate, unequally acute or acuminate, longer than the sepals in the manner of some *Ceratobia*. *Lip* cuneate-triangular, three-lobed at its apex; *lateral lobes* obtuse-angled, rectangular; *anterior lobe* triangular, acute or acuminate, longer than the lateral lobes, undulated; a linear *callus* with elevated borders runs from the base of the lip towards the base of the anterior lobe, where it occurs either abrupt with a transverse ridge, or tridentate, a small short *keel* running from the middle tooth to the inner surface, or retuse with a small apiculus. *Column* clavate, being singularly variable in the borders of the *androclinium*, it being tridentate, with blunt crenulate lateral teeth, or tridentate with the central tooth having two small lateral teeth below its apex, or equally quinquedentate. *Stigmatic hollow* oblong, having a second excavation below. There is an angle at each side at the very base just where the claw of the column descends for the formation of the chin. *Anther* obtuse-emarginate, sometimes with a small apiculus in the sinus. The back of the chin is green. *Sepals* and *tepals* white. *Lip* olive, with purplish violet veins. The anterior border of the *callus* is violet-purple. The *anther* is amethyst-coloured, with very numerous very small white dots. The anterior border of the *callus* is violet-purple. The *column* is whitish, with many small purplish violet dots on the inner side. The *pollinia* are strongly coherent. The plant has the habit of some *Erias*.

**Materials:**—Inspection of Dr. Lindley's materials ; description of the living Saundersian plant ; analytical sketches from fresh flowers, made at various times ; dissection of flowers sent by Messrs. M'Lelland, Parish, and Lobb ; six herbarium specimens.

Tab. 144.—Plant. 1, a flower, side view, with an unusually blunt chin + ; 2, flower, front view + ; 3, flower, side view, sepals and tepals cut + ; 4, lip, with an acute callus such as I never saw + ; 5, column, front view + ; 6, 7, pollinia +.

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This plant I obtained at one of the Messrs. Stevens' Orchid sales : it was said to be from Moolmein. It should be grown in the warm stove placed on a block with a little green moss, and kept in the shade and damp while growing. When at rest it should be kept moderately dry.—*W. W. S.*









