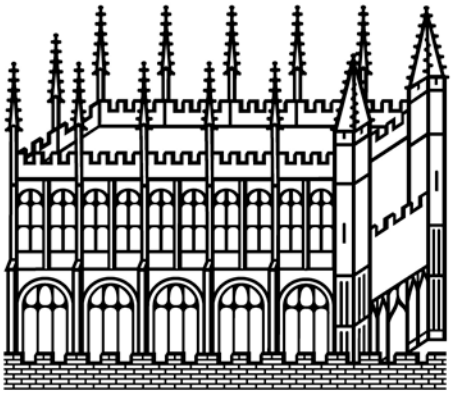

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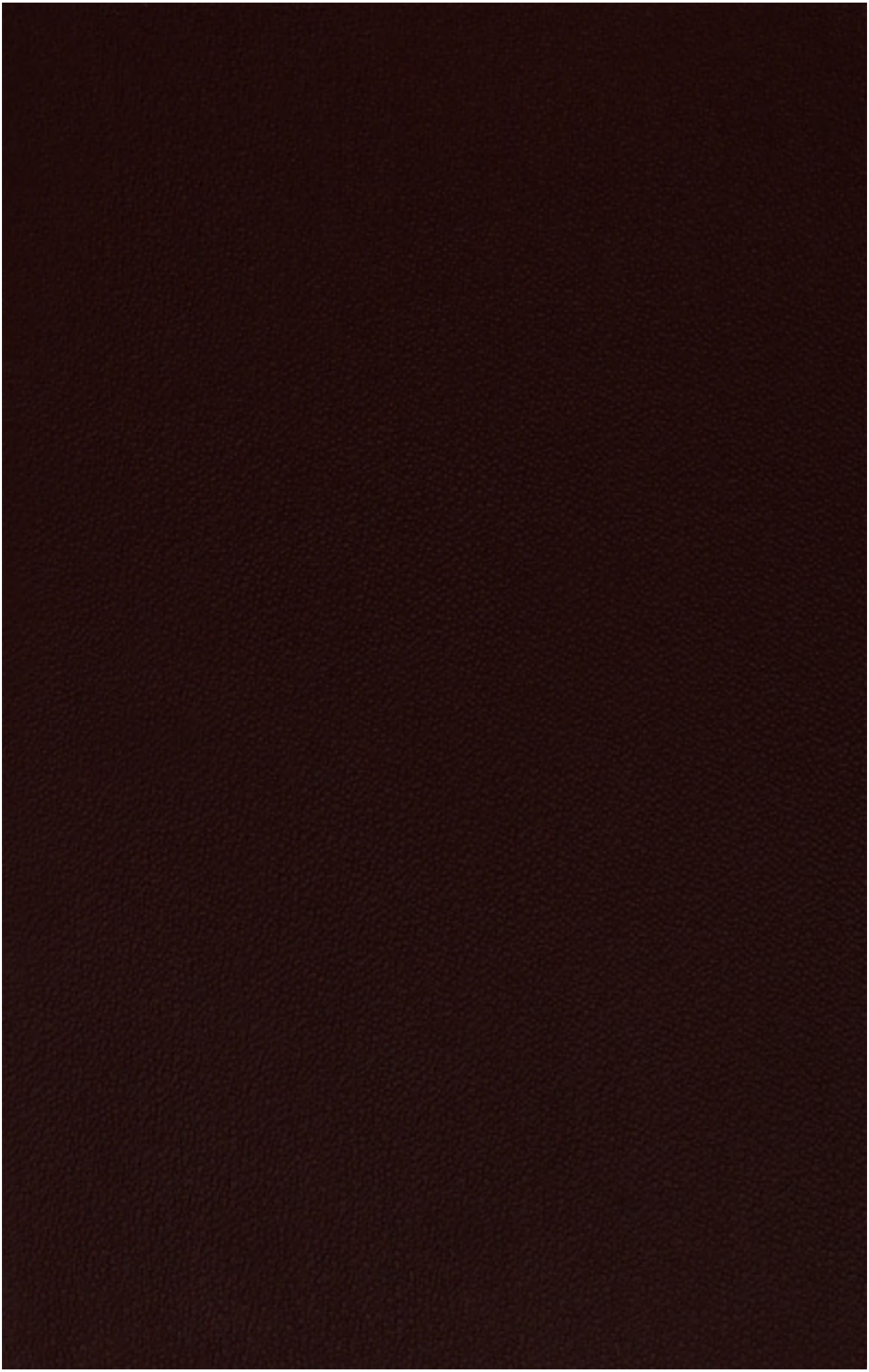

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AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

BY PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS,
AT 5, CHARLES STREET, COVENT GARDEN, LONDON

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-two years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera

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VOL. I.

LONDON. 1852 to 1855.
PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS,
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ABBREVIATIONS.

LO.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

STANHOPEA.

Frost, in Bot. Mag., tt. 2948-9. *LO., p.* 157. —— Ceratochilus. *Lindley, in Lodd. Bot. Cab., t.* 1414, *not of Blume.*

SEPALA membranacea, patentissima, libera; lateralibus paulò majoribus et obliquis.

PETALA minora, conformia.

LABELLUM cum basi columnæ continuum, carnosum, sessile; sæpius *hypochilio* saccato, *mesochilio* bicorni, *epichilio* mobili; partibus quibusdam nunc deficientibus: omnibus nunc (in monstro?) in calceum confusis.

COLUMNA apoda, elongata, versus apicem membranaceo-marginata; nunc (in monstro?) abbreviata, carnosa. *Stigma* area transversa.

POLLINIA 2, elongata, hinc fissa; *caudiculâ* cuneatâ stipitatâ *glandulâ* minutâ. *Anthera* bilocularis.

Herbæ *epiphytæ*, Americæ tropicæ, *pseudobulbosæ*. Folia *membranacea, plicata*. Scapi *radicales, vaginati, sæpiùs penduli*. Flores *maximi, sæpiùs* maculati.

The species of this genus are almost all known from garden specimens, the fleshiness of their flowers rendering their determination in herbaria extremely difficult. Hence, their native countries have been often incorrectly stated, and it is possible that errors still exist upon this subject. They vary greatly in the colours and a little in the forms of their flowers. The Botanist will, however, find safe characters in the HYPOCHIL or lower cavity, MESOCHIL or middle part from which horns usually proceed, and EPICHIL or front moveable lobe. The analogy of these parts with what is found in Coryanthes, whose habit is the same, will be obvious upon comparing the generic characters of the two genera.

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§ 1. **DENSIFLORA.** MESOCHILIUM CORNUTUM. EPICHILIUM INTEGRUM. BRACTEÆ OVARIO SUBÆQUALES.

* 1. **S. insignis.** *Frost, in Bot. Mag. tt.*, 2948 *&* 9. *Lodd. Bot. Cab., t.* 1985. *Lindley, in Bot. Reg., t.* 1837. *LO., p.* 157.

S. bracteis ovario æqualibus, hypochilio globoso anticè intruso basi et apice fisso mutico intùs radiatim verruculoso extùs ecarinato epichilio æquali, epichilio subrotundo-ovato integro, mesochilii cornubus subtriangularibus falcatis incurvis brevioribus, columnâ brevi abruptè alatâ.

(A.) Flowers richly spotted, and stained with purple.

(B.) flava. Flowers yellowish. *Lodd. Cat., no.* 967.

Wild in the woods of BRAZIL—Loddiges, (*v. v. c.*)

OCT. 1, 1852.

B 777

Remarkable for the globose form of the base of its lip, by which all its varieties are readily distinguished. It is also, in almost all cases, sprinkled with small violet spots, which reach even to the tip of the labellum. In colour, however, it varies very considerably. Messrs. Loddiges imported from Brazil the var. **B.**, which was unusually sweet-scented. The winged margin of the column, shaped almost like a battledore, is wider than in any other known species. The Peruvian locality assigned to it in *L. O.* 157, belongs to *S. Bucephalus*.

* 2. **S. inodora.** *Loddiges, Cat., no.* 1147 ; *Bot. Reg.* 1845, *t.* 65.

S. spicâ contractâ, bracteis latis oblongis ovario æqualibus, sepalis lateralibus ovato-oblongis ovario subæqualibus, hypochilio subcompresso brevi saccato intùs glabro, mesochilio bicorni anticè bidentato inter dentes profundè sulcato, epichilio subrotundo-ovato integerrimo cornubus incurvis longiore, columnæ alis latis sensim evanescentibus.

(B.) amœna. Hypochil deep yellow with brownish red eyes ; epichil rose-coloured, dotted ; horns much acuminate, dotted inside.

S. amœna. *Klotzsch. in Allgem. Gartenzeit., Aug.* 28, 1852.

Wild in MEXICO—Loddiges, (*v. v. c.*)

Flowers pale straw-colour, with the hypochil alone yellow—scentless. In this respect it differs from *S. insignis*, as well as in the form of its parts, and from *S. graveolens*, to which in form its flowers nearly approach. From the latter plant it is readily distinguished by the form of the column, which in this species has its side wings gradually narrowing downwards till they disappear, while *S. graveolens* has them as broad at the one end as the other, whence its column has almost the form of a parallelogram. The form of the spike is quite different in the two species, owing to the unusual shortness of the ovaries. In *S. graveolens* it is very wide, after the manner of *S. oculata*, the ovary being considerably longer than the lateral sepals ; but in *S. inodora* it is as much contracted as in *S. insignis*, there being little difference in the length of those parts. *S. amœna* of Dr. Klotzsch appears to be a bright-coloured variety, with deep brown eyes on the hypochil.

* 3. **S. Bucephalus.** *LO., no.* 2 ; *Bot. Reg.* 1845, *t.* 24.

S. bracteis ovario subæqualibus, hypochilio unguiculato cymbiformi basi longè angustato ecorni intùs glanduloso extùs bicarinato anticè intruso, mesochilio bicorni carnoso apertè sulcato, epichilio subrotundo-ovato cuspidato integro breviore, cornubus gracilibus teretibus brevioribus, columnâ basi angustissimâ sursùm alatâ.

Epidendrum grandiflorum. *H. and B., Pl. œquinoct., p.* 94, *t.* 27.
Anguloa grandiflora. *H. B. K., Nov. Gen. et Sp.*, i. 345.

(A.) Sepals, petals, and hypochil, pale rich yellow, with purple dots and small blotches everywhere except on the hypochil.

(B.) guttata. Sepals, petals, and hypochil, deep apricot-colour ; four brown blotches on the hypochil, and four on each petal.—*Paxton's Flower Garden : gleanings, vol.* 3, *from the garden at Corehouse.*

Wild in PERU ; on the trunks of old trees in shady woods near Cuenca—Humboldt and Bonpland ; the woods of Paccha on the ascent from Guayaquil to Loxa, at an elevation of 6000 feet—Hartweg, (*v. v. c. et s. sp.*)

Flowers sweet-scented, pale yellow, variously spotted and dotted with crimson. The lip is deep yellow, and spotless on the hypochil, while the epichil and column are thickly sown with crimson dots. It resembles *S. oculata*, from which it differs in the lengthened, narrow, boat-shaped hypochil, and in the short ovaries, the effect of which is to render the inflorescence very narrow.

§ 2. LAXIFLORA. MESOCHILIUM CORNUTUM. EPICHILIUM INTEGRUM. BRACTEÆ OVARIO MULTO BREVIORES.

* 4. **S. oculata.** *LO., no.* 5 ; *Bot. Reg., t.* 1800.

S. bracteis ovariis longè acuminatis duplò brevioribus, hypochilio unguiculato elongato cymbiformi anticè intruso basi ecorni intùs lævi extùs bicarinato, mesochilio bicorni carnoso apertè sulcato mutico, epichilio ovato integro, cornubus semiteretibus ascendentibus acutis, columnâ latè alatâ.

Ceratochilus oculatus. *Loddiges, Bot. Cab., t.* 1764.

(A.) Flowers clear yellow, variously speckled, with a pair of circular brown blotches on the hypochil.

(B.) Lindleyi, *Zuccarini.* Fowers dull wine-red, but little spotted.

Wild in MEXICO—Karwinski, Loddiges, Lord Derby's Collector, (*v. v. c.*)

Flowers usually lemon-coloured, with a large number of lilac spots on the sepals, a smaller number on the petals, a deep yellow eye, and two, or occasionally four, large dark brown spots on the side of the hypochil, which is very much lengthened out, as if unguiculate ; by the latter circumstance it is chiefly known from *S. Wardii* and *Bucephalus*, which latter has a long narrow opening to the hypochil, and short ovaries. Numerous varieties occur in gardens, varying in colour, and in the spotting of the lip. One, called *Barkeriana*, looks like *S. insignis* with the lip of *S. oculata*, and is very handsome ; the sepals, petals, and column, are covered with numerous purple freckles rather than spots, which, as the flower fades, run together, as if their colouring matter were dissolved ; so that at last the flower becomes of a dull wine-red tint. Most of the varieties are very sweet-scented ; their short bracts and long ovaries give the spikes a very loose appearance, and make them easy to distinguish.

* 5. **S. guttulata.** *Lindley, in Bot. Reg.* 1843, *misc.* 116.

S. bracteis ovario multò brevioribus, sepalo supremo oblongo concavo apice abruptè recurvo, hypochilio angusto extùs bicarinato, mesochilio bicorni apertè sulcato à latere compresso dente valido reflexo, epichilio ovato longiore, cornubus teretibus apiculatis, columnâ apice tantùm abruptè alatâ.

S. graveolens. *Morren, Ann. Gand.*, ii. *t.* 54.

Wild . . . . . (*v. v. c.*)

Flowers rather small for the genus, of a clear very pale nankin colour, closely covered over with small crimson and brown spots and dots, even up to the tip of the labellum. It is nearly related to *S. oculata*, from which it is distinguished by its smaller more fleshy flowers, narrower hypochil, mesochil with a strong reflexed tooth at the base, and the column as abruptly winged as in *S. insignis*.

* 6. **S. Wardii.** *Loddiges, in Lindl. Sert. Orch., t.* 20.

S. bracteis ovariis longè acuminatis duplò brevioribus, hypochilio exactè oblongo depresso sessili anticè intruso basi utrinque

angulato, mesochilio bicorni carnoso fisso (nec apertè sulcato) vix dentato, epichilio subrotundo-ovato integro, cornubus semiteretibus falcatis incurvis subcirrhosis, columnâ latè alatâ.

(B.) aurea. Flowers deep orange. Hypochil with two dark spots.

S. aurea. *Loddiges, in Bot. Reg., misc.* 1841, *no.* 31.

Wild in CENTRAL AMERICA—Loddiges, (*v. v. c.*)

Quite distinct from all the supposed varieties of *S. oculata;* differing in the furrow of the mesochil being closed up and not open, and in the exactly oblong form of the hypochil; also from *S. Ruckeri* in the absence of a strong tooth turned inwards from the apex of the cavity of the hypochil in that species; besides which the angular condition of the base of the hypochil indicates an approach to *S. quadricornis.* The lip is pale yellow, with a few fine specks, a deep yellow hypochil, the whole lower part of which is a deep chocolate brown. The flowers are deliciously sweet. *S. venusta* is a whole-coloured variety.

* 7. **S. Ruckeri.** *Lindley, in Bot. Reg.* 1843, *sub t.* 44.

S. bracteis ovariis longè acuminatis duplò brevioribus, hypochilio obovato sessili anticè intruso basi mutico, mesochilio bicorni carnoso apertè sulcato et dente valido reflexo aucto, epichilio subrotundo-ovato integro, cornubus semiteretibus incurvis, columnâ latè alatâ.

Wild in MEXICO—Loddiges, (*v. v. c.*)

A noble species with the habit of *S. Wardii*, and its general colour, except that it is paler; but the epichil is beautifully stained with pink, and the eyes of the hypochil are very faint. It is distinctly separated by the peculiar form of the hypochil, which instead of being oblong is so much narrowed to the base as to be obovate; by the entire want of lateral teeth on its margin; and by the presence of a very strong inflexed tooth, in which the wide, not closed up, fissure of the mesochil terminates.

* 8. **S. graveolens.** *Lindley, in Bot. Reg.* 1840, *misc.* 125; 1845, *sub t.* 65. *Lemaire, in Flore des Serres, Aug.* 1846, *t.* 18.

S. spicâ expansâ, bracteis angustis ovario vix æqualibus, sepalis lateralibus ovato-lanceolatis ovario duplò brevioribus, hypochilio subcompresso brevi saccato intùs glabro intra scrotum glanduloso et lamellato, mesochilio bicorni, anticè bidentato inter dentes profundè et apertè sulcato, epichilio subrotundo-ovato integerrimo, cornubus acuminatissimis latis planis incurvis, columnâ alis latissimis subquadratis.

(B.) aurata. Flowers deep apricot-colour throughout.

Wild in GUATEMALA? (*v. v. c.*)

A species with the habit of *S. oculata.* The sepals and petals are of a delicate straw-colour; the lip at the base and the central parts of the flower generally are of a deep rich apricot-yellow, while the horns and upper end of the lip are like ivory turning yellow. The odour of the species is so powerful that it communicates itself to the fingers after touching the flowers, and is extremely disagreeable. Its very broad column, winged to near the base, so as to have almost the form of a parallelogram, is an important character. The lip appears at first sight to be quite smooth inside, but it is in reality covered with glands within the anterior pouch.

* 9. **S. quadricornis.** *Lindley, in Bot. Reg.* 1838, *t.* 5.

S. bracteis angustis herbaceis ovariis duplò brevioribus, hypochilio oblongo juxta columnam bicorni anticè saccato, mesochilio bicorno carnoso excavato mutico, epichilio ovato integro, cornubus incurvis teretibus brevioribus.

Wild in the SPANISH MAIN—Rucker, (*v. v. c.*)

This has something the appearance of *S. oculata;* but its lip has a rich crimson stain at the base, instead of a pair of deep brown spots, and it has two prominent horns standing erect on the lower edge of the cavity of the hypochil in the same way as in *S. eburnea.* The flowers are pale yellow sparingly spotted with crimson. It is one of the finest of the genus.

* 10. **S. Warczewitziana.** *Klotzsch, in Allgem. Gartenzeit., Aug.* 28, 1852.

S. bracteis ovario acuminato multò brevioribus, petalis acuminatissimis, hypochilio sessili globoso intus glaberrimo, mesochilio bicorni profundè sulcato dente reflexo, epichilio latè ovato acuto "dente brevi inter cornua anticè instructo," cornubus acutissimis incurvis, columnâ latè alatâ unguiculatâ.

Wild in CENTRAL AMERICA; on the Chiriqui mountains—Warczewitz, according to Klotzsch.

Sepals and petals dirty white; hypochil yellowish white; epichil finely dotted with red. I only know this from Dr. Klotzsch's account; the tooth between the horns of the mesochil, together with the form of the hypochil, seem to indicate a peculiar species.

§ 3. **TRIDENTATA.** MESOCHILIUM CORNUTUM. EPICHILIUM TRIDENTATUM.

* 11. **S. tigrina.** *Bateman, Orch. Mex. and Guat., t.* 7; *Bot. Reg.* 1839, *t.* 1.; *Bot. Mag., t.* 4197.

S. hypochilio subrotundo intùs lamellis glandulosis radiato basi mutico, mesochilii bicornis sulco brevi aperto in dentem validum reflexum producto, epichilio ovali æqualiter trifido cornubus planis falcatis æquali, columnâ lanceolatâ latissimè alatâ.

Maxillaria lyncea. *LO., p.* 151.
Anguloa Hernandezii. *Kunth, Synops.*, i. 332.
Coatzonte Coxoahitl seu Lyncea. *Hernandez, Thesaurus rer. Med. Nov. Hisp., p.* 266.

(B.) nigroviolacea. The whole flower deep brown-purple except the edges of the sepals and petals and the upper half of the lip. *Morren, Ann. Gand.*, i. *t.* 21.

Wild in MEXICO, near Xalapa—Henchman, (*v. v. c.*)

Much the finest of the genus. Flowers deep orange yellow, as much as eight inches in diameter, richly blotched with purplish brown. The excessively broad column, and the radiating toothed lamellæ within the cavity of the lip, are peculiar characters. The form **B** is a variety of striking beauty.

12. **S. Martiana.** *Bateman, in Bot. Reg.* 1840, *misc.* 109; 1843, *t.* 44; *Orch. Mex. and Guat., t.* 27.

S. hypochilio brevi sessili scrotiformi anticè incurvo, mesochilii brevis cornubus apice cirrhosis rectiusculis, epichilio oblongo-lineari obscurè 3-dentato, columnæ pubescentis subclavatæ marginibus parùm dilatatis.

S. implicata. *Westcott, in Hortis.*

Wild in Mexico—Karwinski, Galeotti, (*v. v. c.*)

In the form of the base of its lip this approaches *S. saccata*, in its markings *S. tigrina*, but it is readily known by its downy wingless column, the narrow epichil and bristle-pointed horns. Flowers white, with rich crimson spots.

* 13. **S. Devoniensis.** *Lindley, Sert. Orch., t.* 1.

S. hypochilio subgloboso anticè valdè gibboso epichilio æquali, mesochilio brevi dentiformi emarginato bicorni, epichilio ovato obsoletè tridentato, cornubus falcatis incurvis æqualibus, columnâ glabrâ marginatâ.

S. maculosa ? *Floral Cabinet, t.* 121.

Wild in Peru—Bateman, (*v. v. c.*)

Resembles *S. tigrina*, from which it is distinguished by the slightly divided epichil and almost wingless column. To *S. insignis* it approaches in form, although so different in colour; but the hypochil is very deep, broader than long, and prominent in front instead of being pressed backwards. The flowers are extremely sweet, yellow, with deep crimson-brown blotches; the lip is white with a few spots here and there, and a deep purple stain over half the hypochil. *S. maculosa* seems to have been published from a bad specimen of this, for although its epichil is described as three-lobed, it is represented as perfectly entire. I am indebted to General Dorrien for a variety with a deep blood-red hypochil, said to come from Guatemala. Mr. Bateman is, however, of opinion that Peru is really its native country.

* 14. **S. velata.** *Morren, in Ann. de Gand., t.* 153.

S. bracteis brevibus ovatis acutis, hypochilio velaminiformi transverso utroque latere carinato, epichilio longiore subquadrangulari apice subtrilobo laciniis lateralibus obsoletis intermediâ tuberculiformi, mesochilii cornubus incurvis, columnâ parùm marginatâ.

Wild . . . . . (Exhibited to the Horticultural Society of Ghent, by M. Haeyman, an amateur gardener of Courtrai.)

Only known to me by the figure and description given by Professor Morren, whose language is chiefly employed in the preceding phrase. *Le caractère*, he observes, *le plus saillant que nous avons remarqué sur cette espèce est celui de l'hypochilium* qui offre la forme d'un voile, *pendant devant les deux cornes du labellum.* It seems very near *S. Devoniensis* and *Martiana*, with which the flowers correspond in colour.

* 15. **S. saccata.** *Bateman, Orch. Mex. and Guat., t.* 15.

S. bracteis abbreviatis, labello medio paulò constricto, hypochilio scrotiformi anticè omninò aperto subtùs gibboso ecarinato basi

mutico intùs radiatim glanduloso-lamellato, mesochilio obsoleto esulcato bicorni, epichilii ovalis trilobi laciniâ intermediâ nanâ, cornubus semi-lanceolatis latis planis incurvis æqualibus, columnâ angustissimè marginatâ.

Wild in GUATEMALA—Skinner, (*v. v. c.*)

Flowers small, with the sepals and petals turned completely back on the ovary. They are greenish yellow, regularly speckled, but not blotched, with brown, and are deep yellow at their base. The same colour extends to the lip, whose hypochil is much deeper and more incurved than in any species except *S. Martiana*. The mesochil is reduced to space sufficient for the development of the two broad flat horns, and is without the furrow so common in other species.

* 16. **S. tricornis.** *Lindley, in Journ. of Hort. Soc., IV., p.* 263. *Paxton's Flower Garden ; gleanings, no.* 55, *ic.* 21.

S. ovariis bracteis longioribus, petalis carnosis ovalibus convexis obliquè ovatis acutis (in icone roseis rectis nec revolutis, an semper?), hypochilio subrotundo subdepresso intùs glanduloso basi bidentato cum mesochilio bicorni esulcato continuo, cornubus rectis labello brevioribus, epichilio lineari-oblongo concavo truncato sub-3-dentato margine membranaceo dorso valdè gibboso basi supernè cornu brevi recto aucto.

Wild on the Western side of PERU—Warczewitz, (*v. s. sp.*)

A very remarkable species. The figure of the lip is unusual, there being a third horn at the base of the epichil in addition to the two present at the side. In a figure sent home by Mr. Warczewitz the petals are represented to be pink and the rest of the flower white ; the petals moreover are very fleshy, firm, and apparently incapable of rolling back as in the rest of the genus.

§ 4. ECORNUTA. MESOCHILIUM MUTICUM.

* 17. **S. cirrhata.** *Lindley, in Journ. of Hort. Soc., V.* 37. *Paxton's Flower Garden ; gleanings, no.* 53, *ic.* 19.

S. pedunculis unifloris bracteis spathaceis imbricatis tectis ovario longioribus, petalis ovatis acutis reflexis sepalis obtusis multò brevioribus, hypochilio intùs tricostato extùs rotundato medio depresso ore aperto cornubus brevibus carnosis, mesochilio nullo, epichilio ovato indiviso multò longiore supra basim foveato, columnâ apterâ cirrhatâ.

Wild in NICARAGUA—Warczewitz, (*v. s. sp.*)

Among Stanhopeas unique, the flowers being absolutely solitary, not in spathaceous spikes, and the column being wingless, and extended into a pair of feelers like some Odontoglots. The lateral horns of the lip, too, are extremely short and fleshy, and proceed from the hypochil instead of belonging to a mesochil. Its colours are unknown.

* 18. **S. grandiflora.** *LO., p.* 158.

S. scapo brevissimo erecto, labello oblongo petalis æquali, hypochilio rotundo anticè bicorni, mesochilio solido mutico trun-

cato obsolete tridentato, epichilio ovato duplò breviore, columnâ longissimâ.

Ceratochilus grandiflorus. *Loddiges, Botanical Cabinet, t.* 1414.

Wild in TRINIDAD—Loddiges, (*v. v. c.*)

Flowers full six inches in diameter when expanded, very fragrant ; their colour pure white, except the hypochil, and some dots on the mesochil, which are crimson.

* 19. **S. eburnea.** *Lindley, in Bot. Reg., t.* 1529; *LO., p.* 158; *Bot. Mag., t.* 3359.

S. scapo laxo pendulo, bracteis ovario brevioribus, labello oblongo petalis duplò longiore, hypochilio ovali utrinque in medio margine cornu recurvo instructo, mesochilio solido mutico truncato, epichilio ovato æquilongo, columnâ longissimâ.

Wild in BRAZIL, near Rio Janeiro—Loddiges, (*v. v. c.*)

Flowers smaller than in *S. grandiflora*, of which it may well be regarded as a variety, but from which it certainly differs in the opening of the hypochil being oval not circular, and furnished with two lateral slender recurved horns instead of two short strong anterior teeth. The mesochil is moreover about as long as the epichil. A comparison of the two as they now appear in cultivation seems to show that these marks are constant. Hypochil and mesochil dull purple, or spotted with purple on the upper side. Flowers fragrant.

* 20. **S. ecornuta.** *Lemaire, in Flore des Serres,* 181, *Dec.* 1846. *Paxton's Flower Garden ; gleanings, no.* 54, *ic.* 20.

S. scapo brevi pendulo, bracteis ovario brevioribus, sepalis petalisque minoribus ovatis obtusis carnosis concavis, labello calceiformi obtusissimo ecornuto margine antico tuberculato, columnâ brevissimo carnoso sinuato-alato.

Wild in central AMERICA—Warczewitz.

This curious plant differs from all other known Stanhopeas, in having a lip wholly free from horns, and without any break in its middle. It may be regarded as a species with the hypochil (or lower half of the lip) alone present. This body is described as being "ovate, obsoletely triangular at the end, very short. It has much the form of a slipper, extremely fleshy, of a very bright yellow-orange colour, passing towards the point into pure white, and mottled on its sides with handsome purple blotches. Four little tumours, two near the articulation with the column, and two near the point, indicate four abortive horns." The flowers are otherwise pure white, with a few purple spots near the base of the petals, which are short, firm, concave, and not reflexed, as in most other Stanhopeas. "The column is very short, very fleshy, compressed, rounded above, winged at the sides, channelled in front." "The flowers, which grow in pairs, are about four and a half inches across, and have very short bracts." Is it not a monster of some kind ; for instance, of *Stanhopea tricornis ?*

CORYANTHES.

Hooker, Bot. Mag., t. 3102. *LO.* 159.

Sepala patentissima, membranacea, libera, flexuosa, conduplicata, columnæ basi obliquè inserta, lateralibus maximis.

Petala multò minora, angusta, erecta, torta, pariter obliquè inserta.

Labellum cum basi columnæ continuum, ab apice brachii (unguis) validi horizontalis pendulum; *epichilium* maximum, galeatum, deorsùm (*mesochilium*) involutum; basi supra brachium *hypochilio* poculiformi subtrilobo instructum.

Columna elongata, teres, clavata, abruptè recurva, apice utrinque alata, basi cornubus 2 melliferis (*staminodiis?*) aucta. *Stigma* rima transversa.

Pollinia 2, compressa, posticè sulcata; *caudiculâ* lineari, sigmoideâ; *glandulâ* lunatâ. *Anthera* carnosa, bilocularis; valvulis triangularibus reflexis.

Herbæ *epiphytæ*, Americæ tropicæ, *pseudobulbosæ*. Folia *nervosa*. Racemi *radicales, pauciflori, penduli.*

This genus has the largest flowers known among Orchids; and it is, perhaps, the most extraordinary in its form. All the species are epiphytes, with long strongly-furrowed pseudobulbs, bearing thin ribbed leaves, which vary in breadth with the age and health of the plants. The flowers hang down, singly or in greater numbers, in the same manner as in Stanhopea, to which the genus bears some relation. Their most striking features are the column and lip, which are guarded by thin broad membranous sepals that are unable to bear their own weight, and, after a time, resemble bat's wings, soon collapsing and losing their form. The lip has the form of a bucket, into which a pair of stumps or fingers constantly distil a *sweetish* colourless fluid, which, drop by drop, gradually fills the bucket. The fingers are processes (perhaps abortive stamens) springing from the base of the column; the bucket is sustained by a stiff arm (unguis) which keeps it perfectly steady, so that the honey may not be spilt. The column itself turns back as if to keep its head out of the way of the drops. The use of this singular apparatus is unknown.

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* 1. **C. speciosa.** *Hooker, l. c. Paxton's Flower Garden, III., no.* 581, *fig.* 284. *Morren, Ann. Gand., II.* 15, *t.* 50.

C. hypochilio hemisphærico anticè pubescente ungui æquali, mesochilio eplicato intùs pubescente, epichilio hemisphærico obtuso margine erectiusculo lobis lateralibus acutis.

Gongora speciosa. *Hooker, in Bot. Mag., t.* 2755.

Wild in Brazil: on trees on Victoria Hill, near Bahia, (*v. v.*)

Oct. 1, 1852.

This, the first of the Coryanths that was discovered, was originally supposed to have erect flowers, and is so represented in the "Botanical Magazine"; but in fact they are pendulous, and necessarily so, as in all the others. The flowers are pale dull yellow, without any trace of spots; there is also a whitish variety in cultivation. Their smell is rather unpleasant. It is by no means easy to distinguish this from *C. maculata*, except by the spots on the flowers of the latter species. The hood affords the surest mark of recognition, being almost exactly hemispherical in this, and distinctly curved forwards in *maculata*. A variety with deeper yellow flowers is figured by Prof. Morren, in the work above quoted, under the name of *C. speciosa vitellina*.

* 2. **C. maculata.** *Hooker, in Bot. Mag., t.* 3102.

C. hypochilio hemisphærico galeato anticè puberulo ungui æquali, mesochilio eplicato intùs lævi (?), epichilio hemisphærico obtuso margine erectiusculo lobis lateralibus acutis.

(A.) Sepals and petals whole-coloured pale yellow; hood yellow; bucket blotched inside with violet.—*Bot. Mag., t.* 3102.

(B.) Parkeri. Sepals and petals whole-coloured pale yellow; hood dull purple; bucket spotted inside with purple, and with a purple neck.
C. maculata, Parkeri. *Bot. Mag., t.* 3747.

(C.) punctata. Sepals and petals bright yellow, speckled with red; hood yellow, tinted with reddish orange; bucket pale, speckled and spotted with red.—*Bot. Reg., t.* 1793.

(D.) Albertinæ. Sepals and petals clear yellow, with round crimson spots; hood white, spotted with rich rose; bucket very deep crimson, spotted inside. Flowers larger than usual.
C. Albertinæ. *Karsten, Auswahl, t.* 1.

Wild on trunks of trees in the forests of DEMERARA, (*v. v.*); **Albertinæ** near St. Esteban in Venezuela, on trees at the foot of the Cumbre of Valenzia—Karsten.

The essential difference between this and the last has been already explained. *C. Albertinæ* is a variety of great beauty, but nothing more, as far as can be ascertained from Mr. Karsten's figure and description. It is cultivated in Germany, but has not yet found its way to this country.

* 3. **C. macrantha.** *Hooker, l. c. Lindl., in Bot. Reg., t.* 1841.

C. hypochilio hemisphærico subtrilobo anticè pubescente ungue paulò breviore, mesochilio angustato plicato intùs pubescente, epichilio latè conico margine patulo lobis lateralibus uncinatis.

Gongora macrantha. *Hooker, in Bot. Miscell., t.* 80, *figure inverted.*

Wild in the CARACCAS—Lockhart, (*v. v.*)

Flowers rich yellow, speckled with red, with the hood of the lip and a portion of the bucket rich orange-brown. They are not half the size of *C. Feildingii*; have a hemispherical downy hood and not a broad saucer-shaped woolly one; the bucket too is always distinctly conical, while that of *Feildingii* is even flattened.

* 4. **C. Feildingii.** *Lindley, in Journ. Hort. Soc., III.* 15, *c. ic.*

C. hypochilio subcompresso pateriformi anticè tomentoso ungui æquali, mesochilio dilatato plicato et verrucoso intùs

tomentoso, epichilio subquadrato margine patulo lobis lateralibus uncinatis.

Wild——? Purchased of a Nurseryman at Northampton, in 1842, by Colonel Feilding, (*v. v.*)

The general colour of the flower is a pale brownish yellow, a little mottled and stained with cinnamon in an irregular manner. When closed, it is about five inches long and three wide. As it unfolds, the sepals and petals, which are membranous, turn back, seem to fold up, and finally hang drooping at the back of the lip and column. The lip is borne by a thick horizontal arm an inch and a half long, which proceeds from the top of the flower-stalk, and consequently from the lower end of the column. Right and left of its base are placed two softish fleshy pale ear-like fingers. At the other end this horizontal arm expands into a convex hood, hairy in front but bald on the crown ; a little compressed from the back, and two inches across in its principal diameter. From the hood hangs down a large fleshy bucket smooth at the edges, flattened at the end, two inches deep and as many wide, and connected with the hood by a hollowed fleshy stalk, which is strongly marked by various transverse fleshy folds, warts, and ridges. On the side next the column the bucket is opened, and near the bottom of the opening is furnished with three fleshy lobes, of which the sharp-pointed laterals curve downwards and the middle one stands erect, rising just high enough to come in contact with the head of the column, which grows downwards so far as almost to touch it. The column is two inches and a half long, and throws back its head till its bosom becomes so round and large as to be comparable to the breast of a "puffer" pigeon, The head of the column divides into two short flat fleshy curved arms, between which the anther is seated.

IONOPSIS.

Humb. Bonpl. Kunth, Nov. Gen. et Sp., I. 348. *LO., p.* 193.——Iantha, *Hooker, Exot. Fl., t.* 113.

SEPALA erecta, æqualia, membranacea; lateralibus in saccum connatis.

PETALA sepalis conformia.

LABELLUM membranaceum, sepalis longius, columnâ parallelum, limbo reflexo; basi angustatum, auriculis 2 membranaceis intra marginem callisque 2 carnosis intra auriculas.

COLUMNA erecta, nana, aptera, semiteres, rostello rostrato.

POLLINIA 2, cereacea, sphærica, posticè excavata; *caudiculâ* lineari; *glandulâ* obovatâ. *Anthera* unilocularis, rostrata.

Herbæ *epiphytæ*, Americæ tropicæ, *acaules*. Folia *coriacea*. Flores *in racemis aut paniculis terminalibus dispositi, albi aut violacei*.

Short erect sepals of which the lateral form a small bag, a long lip reflexed at the upper half, and furnished at the base with four processes of which two are thin membranous auricles within the edge of the lip, and two much more fleshy calli within the auricles themselves, distinctly limit this little genus, the species of which are however very difficult to distinguish in herbaria. The two auricles above mentioned have been hitherto mistaken both by myself and others for the edge itself of the lip, owing to their extreme thinness and the consequent difficulty of observing them in dried flowers. The generic character in LO., p. 193, moreover, wrongly states that the lateral sepals are united to a lip which is saccate at the base. Such appears at first sight to be the case; but in reality the base of the lip adheres only to the base of the column, and the sac is formed entirely by the union of the base of the sepals.

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1. **I. testiculata.** *LO., p.* 193.

I. foliis tereti-subulatis, sepalis acutis basi connatis, petalis longioribus obtusis apice patentibus, labello ovato-acuminato, sacco didymo-ventricoso.

Epidendrum Satyrioides. *Swartz, Prodr.*, 123.
Dendrobium testiculatum. *Swartz, Fl. Ind. Occ., p.* 1533.

Wild in the WEST INDIES, occasionally; on the mountains of St. Domingo and Jamaica, on the Crescentia—Swartz.

Leaves two or three inches long. Scape filiform, three or four times as long as the leaves, simple or occasionally divided, few-flowered, with some minute sheathing scales. Flowers from three to six, small, appearing in the spring, white, with the fragrance of violets. Lip and petals veined with crimson.

OCT. 1, 1852.

* 2. **I. teres.** *Lindley, in Bot. Reg.* 1838, *misc.* 181.

I. foliis teretibus, scapo simplici filiformi paucifloro, sepalis acutis lateralibus semiconnatis, labello obovato-lanceolato apice undulato quasi trilobo, callis magnis conspicuis.

Wild in DEMERARA—Schomburgk, (*v. s. sp. et v. c.*)

Flowers small, white. Petals obtuse, and lip with crimson veins. The three-lobed lip appears to separate this from the last; whether the sac is didymous or not I have not been able to ascertain.

* 3. **I. pallidiflora.** *Lindley, in Bot. Reg., sub t.* 1904.

I. foliis angustis oblongis basi carinatis, scapo simplici, sepalis petalisque obtusis, labello bilobo plus duplò longiore, sacco didymo ventricoso.

Iantha pallidiflora. *Hooker, Exot. Fl., t.* 113.

Wild in TRINIDAD—De Schack, Lockhart.

Flowers white, with purple stripes. Leaves, according to Hooker, binate, flat, emarginate; according to a drawing in my possession, oblong, acute, distichous. The plain leaves and didymous sac are peculiar to this species.

4. **I. brevifolia.** *A. Richard, in Ann. Sc., ser.* 3, *III.* 26.

I. "foliis binis recurvis oblongis apice acutissimis, scapo 3-4-floro, floribus violaceis, sepalis basi saccatis, labello triplò longiore obcordato profundè bilobo."

Wild in MEXICO—Galeotti.

Known only from the above short character. The expression "sepalis basi saccatis" seems to point to a testiculate form like that of *I. pallidiflora*.

* 5. **I. utricularioides.** *Lindley, Collect. Bot., t.* 39, *A. LO., p.* 194.

I. foliis oblongis acutis carinatis, racemo brevi subpaniculato, sepalis acutis, petalis obtusis, labelli subbarbati limbo cuneato bilobo sepalis breviore, sacco simplici.

Epidendrum utricularioides. *Swartz, Prodr.*, 122.
Dendrobium utricularioides. *Swartz, Fl. Ind. Occ.*, 1531.

Wild in JAMAICA, in the driest plains, on the branches of Logwood and Citron trees—Swartz; TRINIDAD—Woodford, (*v. v. c.*)

If the plant figured in the "Collectanea Botanica" be taken to be that which Swartz meant by *D. utricularioides*, then the very short limb of the lip will be its principal mark of distinction from the succeeding species, as far as I am at present able to determine, no specimen of it having been preserved in my herbarium. The flowers are very small, white, with red veins to the petals and a few red spots to the lip. The localities given in LO. probably refer to other species. I have seen no Jamaica specimens.

* 6. **I. tenera.** *Lindley, in Bot. Reg., t.* 1904. *Paxton's Flower Garden; gleanings, no.* 276, *ic.* 141.

I. foliis rigidis acutis sulcatis basi carinatis, scapo racemoso v. paniculato coarctato, sepalis petalisque acutis subæqualibus,

labelli pubescentis limbo bilobo sepalis multò longiore: auriculis rotundatis, sacco simplici.

(**A.**) Flowers racemose, white, with a pink stain at the base of the lip.
(**B.**) **zonalis.** Flowers racemose, with a pink lip, and a broad purple band at the base.
I. zonalis. *Lindley, in Paxton, l. c.*
(**C.**) **tomentosa.** Flowers panicled, smaller than usual; white with a pink lip.
(**D.**) **effusa.** Flowers panicled, smaller than usual, with a nearly smooth lip.
(**E.**) **violacea.** Flowers deep purple, in a large contracted panicle.

Wild in TROPICAL AMERICA; **A**. in Cuba—Captain Sutton; **C**. in the Caraccas near Guarenes—Funck and Schlim; **D**. at Sochiapam, on the frontier of the departments of Oaxaca and Vera Cruz—Hartweg; **E**. on old coffee trees of Yatera and Mount Liban in Cuba, 2000 to 3000 feet—Linden, no. 1760, (*v. v. c. et s. sp.*)

The above forms, although in some respects different, do not appear to possess any clear marks of distinction. In *zonalis* the auricles are more fleshy than usual, and the calli are white; in *tomentosa* the flowers are smaller, as well as panicled, with an unusually downy lip.

7. **I. pulchella.** *H. B. K., Nov. Gen. et Sp., pl. I.*, 348, *t.* 83. *LO., p.* 194.

I. foliis lanceolato-linearibus acutis planis coriaceis basi carinatis, scapo subsimplici, sepalis lanceolatis acuminatis patulis, petalis. duplò majoribus obtusis, labelli limbo obcordato sepalis multò longiore, auriculis rotundatis, sacco simplici.

Wild in NEW GRENADA; in warm temperate places between Carthagena and Buga, on the trunks of Guava and Calabash trees, at the height of 2928 feet, flowering in October—Humboldt and Bonpland.

Of this I have seen no certain specimen. It appears to differ from *I. tenera* in having much narrower smaller leaves, and a larger lip, with long obtuse petals. The leaves, according to Kunth, are from two to three inches long, and not more than three lines broad. I now refer the Cuban plant of Linden ("Orch. Lind.," no. 125) to *tenera*. An examination of original specimens can alone determine whether the two are really distinct.

8. **I. Gardneri.** *Lindley, in Paxton's Flower Garden, sub no.* 276.

I. foliis longis planis acutis, scapo paniculato diffuso, sepalis petalisque acuminatis subæqualibus, labelli pubescentis limbo obcordato sepalis multò longiore: auriculis semicuneatis obtusangulis, sacco simplici.

Wild in BRAZIL; on trees and banks at Parahiba; March, 1841—Gardner, no. 5875, (*v. s. sp.*)

A much smaller-flowered plant than *I. paniculata*, which it resembles, with very sharp instead of obtuse petals. The auricles of the lip are not rounded, but broader in front so as to resemble a blunt-angled wedge cut in half.

9. **I. paniculata.** *Lindley, in Bot. Reg., sub t.* 1904.

I. foliis lineari-lanceolatis carinatis, scapo paniculato diffuso, sepalis acutis, petalis obtusis apiculatis longioribus, labelli pubescentis limbo rotundato bilobo sepalis multò longiore : auriculis rotundatis, sacco simplici.

Epidendre paniculé. *Descourtilz, Epid. Bras. ined. in Bibl. De Lessert, t.* 54.

Wild in BRAZIL—Martius; in the primæval forests of St. Paul's—Descourtilz; near Santarem, in Parà—Spruce, (*v.s.sp.*)

The scape of this fine species is above eighteen inches high, loaded towards the summit with gracefully bending branches covered with snow-white or delicate rose-coloured scentless flowers, which, according to Descourtilz, remain fresh from September or October to the following May.

QUEKETTIA.

Lindley, in Bot. Reg. 1839, *misc., p.* 3, *no.* 6.

Sepala erecta, æqualia, membranacea, lateralibus basi leviter connatis gibbosis.

Petala sepalis conformia.

Labellum membranaceum, oblongum, indivisum, sepalorum longitudine, circa columnam convolutum; basi excavatum, bicallosum, lineâ transversâ tomentosâ supra excavationem.

Columna semiteres, erecta, elongata, apice utrinque auriculata, rostello rostrato. *Stigma* rima transversa.

Pollinia 2, cereacea, sphærica, posticè excavata; *caudiculâ* lineari; *glandulâ* minutâ. *Anthera* unilocularis.

Herba *epiphyta*, Brasiliensis, *acaulis*. Folium *teres*. Flores *minuti*. Panicula *terminalis, capillaris*.

A singular little plant, with the habit of a Pleurothallis; is nearly related to Ionopsis, but is different in habit, and is essentially distinguished by its lip being not only parallel with the column throughout its whole length, but excavated at the base, and furnished there with two callosities like those of Spiranthes. Its column is, moreover, long and narrow, and has two long membranous recurved ears hanging down from the apex. The lip has no trace of the auricles and calli of Ionopsis, nor are the lateral sepals united into a pouch; they are, however, slightly joined at the base, and gibbous there.

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1. Q. microscopica. *Lindley, l. c.*

Wild in Brazil—Loddiges, (*v. v. c.*)

Leaves terete, subulate, about three inches long, mottled with light green, deep green, and purple. Panicle, about three inches long, with a few capillary arms, and minute ovate acute membranous bracts. Flowers nearly sessile, cylindrical, two-tenths of an inch long, white. Sepals linear acute; the laterals very slightly united and gibbous at the base. Petals of the same length and form. Lip parallel with the column, oblong, rather narrowed to the base, membranous, at the base itself hollowed out, downy on the anterior edge, and furnished at the foot of the column with a pair of callosities. Column linear, erect, with a pair of falcate obtuse ears curved downwards from either side of the stigma, which is a mere transverse cleft.

This little plant is interesting if examined microscopically. Nothing can be more beautiful than the fabric of the leaves below the epidermis. The flowers abound in raphides, clustered in cells larger than those which surround them, and of a different colour; so that the flower, when examined with low powers of the microscope, looks as if it were dotted. This has long ago been observed in *Liparis pendula* (*Bot. Reg.* 1838, *misc., no.* 128), in *Bolbophyllum fuscum*, *Epidendrum fragrans*, &c., and it is, no doubt, a common structure in the sepals and petals of Orchidaceæ, as we already know it is in their leaves and stems. Exactly the same structure exists in Ionopsis, to which this genus is nearly allied.

Oct. 14, 1852.

ZYGOSTATES.

Lindley, in Botanical Register, xxiii., sub t. 1927. (Jan. 1837.)

Sepala membranacea, subæqualia, libera, reflexa.

Petala membranacea, unguiculata, patentia, majora.

Labellum paritèr membranaceum, cymbiforme, basi appendice liberâ incurvâ auctum.

Columna libera, elongata, arcuata, teres; *rostello* longissimo, recurvo. *Stigma* area triangularis ad basin rostelli. Adest præterea ad basin columnæ utrinque *brachium* subcarnosum, liberum, horizontale, apice dilatatum, columnæ ipsius longitudine.

Pollinia 2, pyriformia; *caudiculâ* e basi cuneatâ in setam geniculatam productâ; *glandulâ* angustâ, ovali. *Anthera* membranacea, acuminata, rostellum ipsum recurvum haud tegens.

Herbæ *epiphytæ, acaules,* Brazilienses, *ebulbes.* Folia *pauca, angusta, carnosa.* Racemi *penduli,* floribus *parvis herbaceis.*

The relation of this, in a very near degree, with *Ornithocephalus*, of which it has much the appearance, is unquestionable. The distinction mainly resides in the presence here of a linear horizontal arm on each side of the column at its base, and of a fleshy incurved process at the base of the lip standing between the arms. What is the signification of these arms, and of the intermediate process? When the genus was published in the "Botanical Register" I compared the arms to the column ears of Burlingtonia; upon which supposition the customary sterile stamens of Orchidaceæ must be assumed to be occasionally free. It is, however, not improbable that the apparatus in question may consist of three abortive stamens belonging to two different whorls. Dr. R. Brown long since (*Wallich, Pl. As. rar. I.* 7) pointed out the possibility that the processes of the lip found in *Pterostylis*, and certain other genera, might represent staminal apparatus, completing the customary number of male parts found in Endogens. He even remarked that "perhaps it may be considered as indicated in all cases where the labellum is furnished with a process, however minute, arising from its axis." I have not seen reason to express publicly an acquiescence in that hypothesis, not having succeeded in finding satisfactory evidence of its truth; on the contrary, it has appeared to me that the processes in question might as justly be referred to the stigma: I am, however, bound to admit that upon the whole there is an accumulation of facts so much in favour of the theory of the sagacious observer above mentioned, that it becomes more and more probable. It is especially to be noted that the number of processes found on the lip is usually one, two, or three; the latter being the more common. In some instances, one may represent the front abortive stamen only, two may represent the two laterals only, and three may represent them all. It is also remarkable that where three processes or three rows of processes are present, the two lateral are generally the largest, as if they represented a more vigorous series of development than that in the

centre. To which it may be added, that where more than three rows of processes are present, nevertheless, the number three seems fundamental. The scientific reader will readily understand this by reference to the accompanying diagram, in which the supposed inner series of stamina is represented by three black dots (●), and the outer series by as many open dots (○).

Upon this hypothesis the two outer abortive stamens of Zygostates are represented by the free horizontal arms, and of the three inner the two lateral are altogether undeveloped, while the anterior appears in the form of the fleshy process at the base of the lip.

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1. **Z. cornuta.** *Lindley, l. c.*

Z. petalis rhomboideis medio tantum serratis, labelli appendice integrâ, brachiis apice bilobis.

Wild in Brazil—Prince Maximilian of Wied Neuwied, (*v. s. sp. in hb. Martius.*)

Spike about four inches long, with short acute bracts. Leaves narrowly lanceolate, not so long. Sepals ovate, obtuse, the dorsal revolute at the margin. Petals wedge-shaped and entire at the base, as well as the apex. Lip serrated like the petals, crimson, acute. Horizontal arms dilated and 2-lobed at the end.

2. **Z. lunata.** *Lindley, l. c.*

Z. petalis lunatis inciso-serratis basi cuneatis integris, labelli appendice apice 3-lobâ: lobis lateralibus divergentibus, brachiis apice globosis.

Wild in Brazil; on trees near the town of Mariana, in the province of Minas Geräes—Martius; on trees on the highest wooded mountains of the district of Bananal, in the midst of dense cold fogs, which are almost perpetual, flowering in March—Descourtilz's drawings, No. 4, (*v. s. sp. in hb. Martius et ic. pict. in bibl. De Lessert.*)

Very like the last, but the flowers are larger and further apart. The petals are not entire at the point, but regularly fringed all round, except at the cuneate base; the appendix of the lip terminates in two diverging lobes, and the horizontal arms are globular at the end: the column is also more slender. Sepals whitish. Petals greenish-yellow, according to Descourtilz.

ODONTOGLOSSUM.

H. B. K. Nov. Gen. et Sp., I. 351. *LO., p.* 211.

SEPALA explanata, libera ; lateralibus nunc basi connatis, nunc unguiculatis elongatis.

PETALA subæqualia, nunc paulò teneriora.

LABELLUM basi cum columnâ parallelum eique medio adnatum, limbo deflexo, basi variè cristatum rarissimè nudum.

COLUMNA clavata, sæpiùs elongata, basi angusta nunc in membranam utrinque expansa, apice auriculata aut aptera. *Stigma* fovea circularis.

POLLINIA 2, pyriformia, solida aut posticè excavata ; *caudiculâ* lineari ; *glandulâ* ovali.

Herbæ *epiphytæ et terrestres,* Mexicanæ Peruvianæ et Novogranatenses, *pseudobulbosæ.* Folia *coriacea v. papyracea.* Racemi *radicales* 1-00-flori, aut paniculæ, *sæpè speciosissimæ.*

A genus nearly allied to Oncidium, from which it is chiefly distinguishable by its column being long, and usually narrow at the base, or at all events not tumid there, and by the base of the lip being always parallel with the face of the column. No other difference has yet been observed ; but it may be added that the lateral sepals are very rarely united. The two genera unite by *Od. nævium*, which is very like *Oncidium phymatochilum*, and by *Od. costatum* and its allies, which run into the *Oncidia microchila.* The crest is extremely variable in its composition, but it usually consists of a pair of parallel lamellæ, between which arise various tumours and plates, the central one of which always really occupies the axis of the lip. In some instances, however, especially among the Trymenia, little or no trace is discoverable of that mode of arrangement.

ANALYSIS OF THE SECTIONS.

Clinandrium nudum.
- Columna cirrhata . . . . . § 1. EUODONTOGLOSSUM.
- Columna auriculata aut aptera.
  - Labellum manifestè unguiculatum,
    - luteum . . . . . § 2. XANTHOGLOSSUM.
    - album aut roseum . . . . . § 3. LEUCOGLOSSUM.
  - Labellum sessile.
    - Sepala lateralia parallela elongata unguiculata § 4 MYANTHIUM.
      - *a.* Labellum cordatum in apicem longum productum.
      - *b.* ——— oblongum v. basi angustatum.
    - Sepala radiantia subæqualia; lateralibus sessilibus aut parùm unguiculatis . . § 5. ISANTHIUM.
      - *a.* Sepala et petala sub anthesi longè distantia.
      - *b.* ——————— imbricata.

Clinandrium cucullatum, margine membranaceo . § 6. TRYMENIUM.

OCT. 14, 1852.

§ 1. **EUODONTOGLOSSUM.** COLUMNA APICE ALIS LONGIS ACUMINATIS ERECTIS AUT CIRRHOSIS INSTRUCTA.

This, the original form of the genus, is readily known by the attenuation of the column-ears, which are never rounded and broad, but invariably tapered into a narrow point, which is often extended into a bristle-like appendage.

1. **O. epidendroides.** *Humb. et Kunth. N. G. et Sp. Pl. I.* 351, *t.* 85. *LO., no.* 1.

O. pseudobulbis ovato-oblongis compressis, foliis lanceolatis subcoriaceis, scapo racemoso multifloro, sepalis petalisque linearilanceolatis acuminatis, labello angusto unguiculato hastato acuminato basi bicorni, columnâ tomentosâ, auriculis erectis angustis acuminatis.

Wild in CENTRAL AMERICA; in the province of Bracamoros, between the river Amazon and the town of Jaen, at the height of 1440 feet—Humboldt and Bonpland: damp forests of Pamplona, at the height of 8500 feet; November—Linden, 1261, (*v. s. sp.*)

Flowers large, yellow, scentless, with broad brown blotches, according to Humboldt and Bonpland. The plant from Mr. Linden, which I suppose to be the same as this, is described by that traveller as having pseudobulbs small, oval; leaves strait, lanceolate; stem twelve to sixteen inches long; flowers fragrant; sepals linear, golden yellow, spotted with purple; lip white, spotted with purple. The column is very downy; and the claw of the labellum is united half way to the face of the column.

* 2. **O. constrictum.** *Lindley, in Bot. Reg.* 1843, *misc.* 25.

O. foliis lineari-lanceolatis pergameneis basi valdè angustatis, paniculâ laxâ racemosâ, sepalis petalisque lineari-lanceolatis acuminatis, labello medio constricto: hypochilio oblongo, epichilio subpandurato cuspidato serrato basi lamellis 2 serratis aucto, columnâ bicirrhosâ.

(B.) majus. **Flowers larger. Epichil hastate.**

Wild in LA GUAYRA, gardens: **B.** in the Caraccas; April, 1842—Linden, 623, (*v. v. c. et s. sp.*)

A much more slender plant than the last, without the long horns at the base of the lamina of the lip. Flowers yellow, spotted with brown, except the lip which is white stained with violet.

* 3. **O. nævium.** *Lindley, in Paxton's Flower Garden, I. t.* 18.

O. pseudobulbis costatis, foliis tenuibus lanceolatis basi angustatis, paniculâ diffusâ, sepalis petalisque angustis ovato-lanceolatis acuminatis undulatis, labello subconformi pubescente vix hastato: cristæ dentibus 2 grossis subtrilobis pubescentibus, columnæ cirrhis subulatis patulis.

(B.) majus. **Flowers much larger. Lip not hastate, but rounded at the base, very slightly serrate. Spots much more rose-coloured.**

Wild in DEMERARA—Schomburgk; VENEZUELA—Funck and Schlim, 721; in the province of Truxillo, near S. Lazaro and

La Peña, at the height of 6000 feet, flowering in August; **B.** NEW GRANADA, in the province of Pamplona, at the height of 8000 feet—Linden, 146, (*v. v. c. et s. sp. comm. cel. Linden.*)

Flowers white, spotted with purple or rose-colour; according to Funck and Schlim the lip of this plant is yellow, a circumstance due perhaps to the fading of the flowers. Very much like *Oncidium phymatochilum*, which is however a true Oncid.

* 4. **O. odoratum.** *Lindley, in Orch. Linden., no.* 86.

O. foliis angustè ensiformibus pergameneis, paniculâ amplissimâ, labello hastato lobis lateralibus rotundatis intermedio acuminato apice subundulato pubescente disco bidentato, columnæ pubescentis cirrhis duabus runcinatis setaceis duabus minimis recurvis.

Wild in VENEZUELA; in the damp and gloomy forests of the Sierra Nevada, of Merida, at a height of 5000 to 7000 feet; June, August—Linden, 623, (*v. s. sp.*)

Pseudobulbs oval, acute, ribbed; leaves lanceolate; flowers numerous, sweet-scented. Sepals golden-yellow, spotted with red. Lip white, purple at the base, according to Linden. The difference in the form of the lip, as well as in the colour of the sepals, makes it easy to distinguish this from *O. nævium*. The appearance of the plant when dried is very much like that of *O. pardinum*.

5. **O. cirrhosum.** *LO., p.* 211, *no.* 2.

O. sepalis lanceolatis petalisque latioribus undulatis acuminatissimis maculatis labello longioribus, labelli unguiculati laminâ cordatâ acuminatissimâ basi cornubus duobus longis porrectis instructâ, columnâ apice bicirrhosâ.

Wild in GUAYAQUIL; in the valley of Mindo, at the height of 6000 feet—Colonel Hall, (*v. s. sp. in hb. Hooker.*)

Nothing more is known of this plant than could be gathered from the examination of a few dried flowers. They appear to be yellow, with some broad purplish blotches.

6. **O. Hallii.** *Lindley, in Bot. Reg. sub t.* 1992.

O. pseudobulbis ovatis acuminatis ancipitibus, foliis ensiformibus in basin angustatis, scapo paniculato, sepalis petalisque ovato-lanceolatis acuminatis unguiculatis, labello oblongo acuminato lacero, cristâ baseos lamellatâ multifidâ, columnæ alis bidentatis dente superiore aristato.

Wild in PERU; in the woods of Guayaz on the western declivity of Pichincha—Hartweg; on trees in the valley of Lloa, at the height of 8000 feet—Colonel Hall; in NEW GRENADA, in the forests of Pamplona, at the height of 8500 feet; November—Linden, 1263, (*v. s. sp. comm. cel. Hooker, Linden, &c.*)

A most beautiful species. Petals yellow, spotted with purple; lip white.—*Linden.* Flowers three inches and a half in diameter.

7. **O. luteopurpureum.** *Lindley, Orch. Linden., no.* 85.

O. foliis ensiformibus basi longè angustatis, floribus racemosis, bracteis ovatis squamæformibus, labello obovato quadrilobo fimbriato lamellis quinque laceris pubescentibus, columnâ pubescente alis in cirrhos numerosos longos solutis.

Wild in NEW GRENADA; in the thick forests of Quindiu, at the height of 8000 feet; February—Linden, 1284, (*v. s. sp.*)

Leaves two feet long. Flowers three inches in diameter and more. Pseudobulbs oval, thick, two or three inches long. Stem a yard high. Flowers large (like those of *O. Hallii*); petals bright yellow, spotted with purple; lip yellowish white, spotted with rose. A magnificent species.

* 8. **O. Insleayi.**

O. pseudobulbis ovatis compressis diphyllis, foliis coriaceis oblongo-ensiformibus subundulatis apice recurvis racemo pauciflоro erecto rigido brevioribus, sepalis petalisque oblongis subæqualibus undulatis infimis basi connatis, labello angusto obovato retuso basi auriculato, disci cristâ apice bilobâ dilatatâ utrinque in medio dente refracto auctâ, columnæ alis incurvis cirrhatis.

Oncidium Insleayi. *Barker, in Bot. Reg.* 1840, *misc.* 21. *Bateman, Orch. Mex., t.* 21. *Van Houtte, Flore des Serres,* 1848, *t.* 62.

(B.) macranthum. Flowers twice as large, thinner, and much paler, without the rich red spots on the lip.

Wild in MEXICO—Barker; Oaxaca—Loddiges, (*v. v. c.*)

Flowers two and a half to three inches in diameter, yellowish, spotted with rich brown; the lip brighter yellow, spotted with red, chiefly round the edge. This plant has much the habit of *O. grande*, from which it differs in the form of the lip, and in the column being furnished with red subulate horns curved forwards, instead of having a pair of broad rounded membranous ears. The slight union of the lateral sepals occurs also in a few other species.

§ 2. **XANTHOGLOSSUM.** COLUMNA AURICULATA V. APTERA. LABELLUM UNGUE LONGO LINEARI (SÆPIÙS BILAMELLATO) INSTRUCTUM, SEMPER LUTEUM.

With this section the attenuated or cirrhose condition of the auricles of the column disappears, not to recur through the remainder of the genus. *O. grande* is notoriously very near *O. Insleayi*, and the two connect the sections Euodontoglossum and Xanthoglossum. The present and following sections are well marked by the long narrow unguis of the lip, beyond which the limb suddenly expands into a thin plate.

* 9. **O. grande.** *Lindley, in Bot. Reg.* 1840, *misc. no.* 94. *Bateman, Orch. Mex. Guat., t.* 24. *Morren, Ann. Gand., I. t.* 37. *Bot. Mag., t.* 35.

O. sepalis lanceolatis lateralibus convexis falcatis petalisque oblongis obtusiusculis latioribus subundulatis, labello subrotundo basi auriculato sepalis plus duplò breviore: disci cristâ apice

truncatâ bituberculatâ utrinque in medio dente calloque auctâ, columnæ tomentosæ auriculis rotundatis convexis incurvis.

Wild in the cooler parts of GUATEMALA—Skinner, Hartweg. (*v. v. c. et s. sp.*)

The dried flowers measure six inches and a half from the tip of the petals, and the fresh ones are even larger. They are yellow, almost covered with cinnamon-brown bands and blotches. The auricles at the base of the lip turn their posterior edges down and inwards till they meet beneath the unguis and there grow together. Two to five flowers grow together on a scape, which is seldom more than five or six inches long. This noble species, now so common in gardens, has been found by Mr. Trevor Clarke to live in health and to flower in the open air in England under the shade of the laurel, during the summer. Mr. Skinner states that in its native country it lives in a climate the extreme temperatures of which are sixty and seventy degrees, and prefers damp shade.

10. **O. tigrinum.**

O. pseudobulbis ovatis ancipitibus 2-3-phyllis, foliis lanceolatis subcoriaceis basi conduplicatis, scapo simplici v. ramoso 3-00-floro, bracteis membranaceis, sepalis petalisque lanceolato-ovatis marginibus revolutis subtùs carinatis, labello basi auriculato ungue convexo margine revoluto obscurè denticulato limbo amplissimo carnoso reniformi bilobove undulato, columnæ alis subrotundis acuminatis demùm stigma claudentibus.

Oncidium tigrinum. *Llave, Orch. Mex., p.* 36. *LO., p.* 203.

Wild in MEXICO; on the Irapæan mountains near Valladolid, and Paracho—Llave.

Known only from the description in the work above quoted. Two varieties are mentioned; one with a branched many-flowered spike ("near *Oncidium altissimum*"), the other with a slender, attenuated scape, and very slender flowers ("fl. gracillimis"). Pseudobulbs three inches and more in length. Scape two feet high, purplish brown. Flowers 3-5, large, showy, like a tiger's skin, having the smell of the sweetest violets. Sepals and petals yellowish, variegated all over with chesnut-purple tigrine spots. Lip very large, yellow, not spotted.

It is singular that a plant like this, used for decoration under the name of "FLOR DE MUERTOS," should have escaped all the numerous botanical collectors who have visited Mexico. It seems from the description to be more like an Odontoglossum than an Oncidium, and to be related to *O. grande*, from which it certainly differs in its very fragrant flowers, and large yellow spotless lip (*labellum maximum luteum immaculatum*).

* 11. **O. maculatum.** *Llave, Orch. Mex.*, 2. 35. *Bot. Reg.* 1840, *t.* 30.

O. pseudobulbis oblongis compressis monophyllis, foliis oblongis nervosis acutiusculis racemis pendulis multifloris brevioribus, bracteis navicularibus herbaceis ovario brevioribus, sepalis lineari-lanceolatis acuminatis discoloribus, petalis oblongis undulatis acuminatis, labello cordato acuminato subcrenato; appendice unguis bivalvi concavâ cochleari apice liberâ bidentatâ per medium argutè serrulatâ, columnâ pubescente subapterâ.

Wild in MEXICO—Barker, Karwinski, (*v. v. c. et s. sp.*)

Sepals chesnut-brown. Petals and lip clear yellow, spotted with brown. Differs from *O. cordatum* chiefly in the petals being broader than the sepals and much more acuminate, the racemes drooping, not stiff and erect, the lower bracts about half as long, and the upper quite as long as the ovary, and in the want of a double tooth which, in *O. cordatum* standing at the very base of the stalk of the lip, presses itself against the foot of the column.

* 12. **O. cordatum.** *Lindley, in Bot. Reg.* 1838, *misc.* 90. *Knowles and Westcott, Floral Cabinet, t.* 100.

O. pseudobulbis oblongis compressis diphyllis, foliis lato-oblongis planis acutis scapo squamis carinatis vaginato brevioribus, racemo stricto disticho, bracteis navicularibus acuminatis membranaceis ovario multò brevioribus, sepalis petalisque linearilanceolatis acuminatissimis, labello cordato acuminatissimo integerrimo appendice unguis carnosâ apice bilobâ basi utrinque dente unico auctâ, columnâ pubescente clavatâ subapterâ.

Wild in MEXICO—Barker; in GUATEMALA—Hartweg, on the Cumbre of Choacus, (*v. v. c. et s. sp.*)

Sepals and petals richly blotched with brown upon a yellowish green ground. Lip white, with the crest at the base purplish, and the apex spotted and blotched with rich brown.

13. **O. umbrosum.** *Reichenbach fil., in Linnæa, vol.* 22, *p.* 848.

O. paniculâ laxâ diffusâ, ramis flexuosis, bracteis ovatis acutis brevibus, sepalis oblongis acutis, petalis æqualibus sed basi valdé cuneatis, labello unguiculato obtusissimè hastato anticè acutiusculo (nunc obtuso), lamellis 2 crassis papillosis a basi medium versis, columnâ brevi crassâ alis membranaceis rotundatis.—*Rchb.*

Wild in NEW GRENADA; in the province of Merida, in shady forests—Moritz, 1096, (*Rchb.*)

Flowers yellow. Only known to me from M. Reichenbach's definition.

* 14. **O. mystacinum.**

O. pseudobulbis ovalibus compressis corrugatis monophyllis basi polyphyllis, foliis ligulatis acutis planiusculis carinatis scapo gracili subramoso multò brevioribus, bracteis herbaceis lanceolatis pedunculis duplò brevioribus, sepalis petalisque ovatis acuminatis, labello unguiculato cordato obovato subrepando plano apice reflexo medio pubescente ungue obsoletè lamellato, columnæ alis multifidis.

Cyrtochilum mystacinum. *Lindley, in Bot. Reg.* 1838, *misc.* 38. 1839, *t.* 62.

Wild in PERU—R. Harrison, (*v. v. c.*)

A slender plant, with distant yellow whole-coloured flowers the size of *O. Bictoniense.*

* 15. **O. cariniferum.** *Rchb. fil., in Bot. Zeitung.* 1852, *p.* 638.

O. paniculatum, sepalis petalisque oblongis acutiusculis basi subcuneatis dorso carinâ crassâ auctis pergameneis, labello sessili

ligulato dimidio anteriore subito in laminam reniformem denticulatam medio anticè apiculatam extenso membranaceo: lamellis rhombeis extrorsùm tri-quadridentatis supinis utrinque in ligulâ labelli basilari, raphi utriusque lamellæ carinatâ antrorsùm in tres digitos excurrente, columnâ elongatâ alis elongatis crenulatis hyalinis inferioribus 2 utrinque obtusatis, crassioribus, clinandrio vix marginato.—*Rchb.*

Wild in CENTRAL AMERICA—Reichenbach.

Panicle with zigzag branches. Bracts triangular, short. Flowers yellowish green, stained with olive-brown. Lip whitish yellow, with purple crests. No other species hitherto known has carinate sepals and petals.—*Rchb.* Described by M. Reichenbach from fresh specimens cultivated in Germany.

16. **O. bicolor.** *Lindley, in Benth. Pl. Hartw., Jan.* 1845; *Bot. Reg.* 1845, *misc., p.* 59.

O. foliis lanceolatis scapo simplici paucifloro flexuoso subæqualibus, sepalis petalisque ovatis acutis subundulatis æqualibus, labello unguiculato obovato apiculato basi cuneato, denticulis quibusdam (sex) in unguem, columnæ brevis alis linearibus decurvis serratis.

Wild in PERU—Ruiz and Pavon, (*v. ic. pict.*)

Only known from a drawing in Sir Wm. Hooker's Herbarium, copied by Mathews from the figures of Peruvian plants left at Lima by Ruiz and Pavon, No. 112. The flowers are large, bright violet, with a great whole-coloured yellow lip. It would appear from the figure that each edge of the unguis is occupied by three strong equal curved teeth, which meet at the point of the unguis.

17. **O. rigidum.** *Lindley, in Benth. Pl. Hartw., p.* 152; *Bot. Reg.* 1845, *misc., p.* 58.

O. foliis oblongis basi angustatis scapo paniculato contracto pyramidali brevioribus, sepalis lateralibus lineari-lanceolatis dorsali petalisque lanceolatis, labello unguiculato obovato cordato apiculato lineis duabus elevatis ex ungue in limbum divergentibus, columnæ alis angustis decurvis.

Wild in PERU; heights of Chachapoyas—Mathews, 168; growing on the ground in the Cordillera, near Loxa—Hartweg, (*v. s. sp. et ic. pict.*)

Panicle stiff, erect, pyramidal, with short ascending zigzag branches clothed at the base with mucronate scales. Bracts ovate, concave, mucronate. Flowers yellow, whole-coloured, with a very long narrow stalk to the lip.

§ 3. **LEUCOGLOSSUM.** COLUMNA AURICULATA V. APTERA. LABELLUM UNGUE LONGO LINEARI (SEMPER BILAMELLATO) INSTRUCTUM, ALBUM AUT PURPUREUM.

These species have in general membranous delicate flowers, and never show the least tendency to produce a yellow colour in their lip. Yellow indeed is unknown among them except in the two plates that surmount the unguis of the lip.

* 18. **O. stellatum.** *Lindley, in Bot. Reg.* 1841, *misc.* 25.

O. pseudobulbo ovali compresso, folio solitario lanceolato recurvo, scapo subbifloro, bracteis ovarii triquetri medium haud attingentibus, sepalis petalisque æqualibus linearibus acuminatis herbaceis, labello rhomboideo subrotundo grossè dentato appendice unguis truncatâ quadridentatâ apice liberâ.

Wild in MEXICO—Hartweg; GUATEMALA, on the Volcan del Fuego and Cuesta of Argueta—Skinner, (*v. v. c. et s. sp.*)

Of nearly the same size and habit as *O. Rossii*, from which it differs in the sepals and petals being equally herbaceous and narrow, of a dull olive green, faintly spotted or rather clouded with purple. It has a pure white lip.

* 19. **O. Ehrenbergii.** *Link, Klotzsch, and Otto, ic. p.* 38, *t.* 16. *Paxton's Flower Garden, III.; gleanings, no.* 496, *ic.* 247.

O. pseudobulbis cæspitosis globoso-subelongatis compressis, foliis solitariis ellipticis acutis membranaceis rigidis margine subreflexis, scapo unifloro medio articulato bibracteato, sepalis lanceolatis acuminatis dorso longitudinaliter carinatis patentibus, petalis latioribus oblongis acutis utrinque attenuatis recurvis, labello subcordato acuto undulato crenulato: lamellis unguis callosis integerrimis anticè in rostrum obtusum breve confluentibus, columnâ apterâ puberulâ.

Wild in MEXICO; on oaks near San Onofro, on the banks of the Zimapore river—C. Ehrenberg.

This is one of the prettiest of the white-lipped Odontoglots. In habit it is hardly distinguishable from *O. Rossii*, to which I formerly referred it; but it seems to have a dwarfer habit, smaller flowers, and especially thin delicate white sepals banded with brown, instead of green ones; the lip too is acuminate, not rounded, each stem bears but one flower, and the processes at the base of the lip are white, not yellow, and join into an undivided apex instead of a two-lobed one. It is just intermediate between *O. Rossii* and *O. stellatum*.

* 20. **O. Rossii.** *Lindley, Sert. Orch. sub t.* 25; *Bot. Reg.* 1839, *t.* 48.

O. pseudobulbis ovatis cæspitosis ancipitibus monophyllis, foliis oblongo-lanceolatis scapo radicali subbifloro longioribus, bracteis membranaceis carinatis acuminatis, sepalis lineari-lanceolatis carinatis acuminatis patentibus, petalis oblongis obtusis revolutis, labello subrotundo-ovato emarginato undulato lamellis

unguis confluentibus rotundatis denticulis 2 anterioribus obtusis, columnâ apterâ pubescente.

O. acuminatum. *Hort.*

Wild in MEXICO—Barker, (*v. v. c.*)

A small species, with one or two flowers only on the scape. The sepals are yellowish-green, blotched with brown; the petals are white, spotted with purple at the base. The lip is pure white, and slightly downy.

21. **O. nebulosum.** *Lindley, Sert. Orch. sub t.* 25.

O. pseudobulbis 2-3-phyllis, foliis oblongis acutis basi conduplicatis pedunculo terminali erecto paucifloro brevioribus, bracteis scariosis amplexicaulibus ovario duplò brevioribus, sepalis petalisque latioribus membranaceis oblongis undulatis basi pubescentibus apiculo recurvo, labelli ungue cucullato carnoso lamellis duabus erectis dentibusque totidem anticis, limbo ovato acuto dentato pubescente, columnâ apterâ elongatâ tomentosâ.

Wild in MEXICO—Karwinski, Galeotti, (*v. s. sp.*)

This is the largest of the race with which it is associated; the scape which appears with the young leaves is about a foot high; and the flowers are three inches and a half in diameter. The lip varies in the degree of toothing, being either coarsely toothed, or merely denticulate.

21* O. Warczewitzii. See p. 24.

22. **O. Galeottianum.** *A. Richard, in Ann Sc.* 1845, *Jan.*

O. pseudobulbis aggregatis 1-phyllis, folio elliptico lanceolato acuto, scapo foliis duplò longiore 3-floro, labelli "alis erectis obtusis truncatis" limbo subcordato-acuminato, columnæ margine alato alis angustis longis.

Wild in MEXICO—Galeotti.

"Flowers large, white."

* 23. **O. maxillare.** *Lindley, in Bot. Reg.* 1847, *sub t.* 62.

O. sepalis lanceolatis acutis petalisque latioribus sanguineo-maculatis, labello ovato acuto integro basi maculato appendice unguis maximâ altè concavâ carnosâ glabrâ luteâ anticè bidentatâ bilamellatâ columnæ apteræ ferè longitudine.

Wild in MEXICO? —(*v. v. c.*)

I have only seen one flower of this beautiful plant, which might at first sight be mistaken for *O. Cervantesii.* It is, however, readily known by its wingless column, and especially by the very large size of the yellow appendage, seated at the base of the lip, which is scarcely shorter than the column. The flowers are pure white, with rich crimson spots at the base of all the six parts.

24. **O. apterum.** *Llave, Orch. Mex.*, 2. 35. *LO., no.* 5.

O. "bulbis ovatis depressis; foliis lato-lanceolatis nervosis conduplicatis; scapo tereti paucifloro; gynostemio aptero crasso."

Wild in MEXICO; on trees near Irape, flowering in March—La Llave.

Flowers white, with roundish purple spots collected near the base. Lips with a fleshy two-lobed unguis, having in front a pair of diverging teeth, and a crenated limb. Said by La Llave to be very like *O. Cervantesii.* Seems allied to *O. maxillare*, which has an entire lip.

25. **O. Cervantesii.** *Llave, Orch. Mex.*, 2. 34. *LO., no.* 4. *Bot. Reg.* 1845, *t.* 36. *Paxton's Flower Garden, I. t.* 15.

O. pseudobulbis ovatis angulatis, foliis solitariis oblongis in petiolum canaliculatum angustatis, scapo paucifloro, bracteis vaginisque membranaceis acutissimis equitantibus elongatis, sepalis membranaceis oblongo-lanceolatis acutis, petalis latioribus subunguiculatis acutis, labello cordato-ovato ungue carnoso cyathiformi pubescente anticè bidentato medio tuberculato processubus 2 elongatis pilosis ante cyathum, columnæ pubescentis auriculis rotundatis.

(A.) Lip slightly cordate, acute. Flowers very pale pink.

(B.) membranaceum. Lip deeply cordate, retuse. Fowers white.

O. membranaceum. *Lindley, Sert. Orch. sub t.* 25 ; *Bot. Reg.* 1846, *t.* 34. *Morren, Ann. Gand.*, i. *t.* 10.

Wild in MEXICO—Karwinski, Barker; **B.** near Oaxaca—Loddiges, (*v. v. c. et s. sp.*)

Flowers large, with broken red concentrical bands at the base of the sepals and petals ; very sweet-scented.

26. **O. cœrulescens.** *Ach. Richard, in Ann. Sc.* 1845, *Jan.*

O. "pseudobulbis ovoideo-oblongis compressis 1-phyllis, fol. oblongo lanceolato acutissimo; scapo 1-2-floro; floribus albido-cœrulescentibus; labello cordato, membranaceo, acuto, margine sinuoso, eroso; gynostemio clavato, pubente."

Wild in MEXICO—Galeotti.

I have from M. Galeotti, without name, what may possibly be this species. If so, it resembles the preceding in its manner of growth, but the lip is ovate, repand, and obtuse, and the sepals are three times as narrow as the petals. In that case this and *O. rubescens* may have to be united ; but the flowers of the latter are much smaller.

* 27. **O. rubescens.** *Lindley, in Journ. of Hort. Soc., V.* 35.

O. pseudobulbis uncialibus oblongis compressis monophyllis, racemo 2-6-floro folii longitudine, sepalis lineari-lanceolatis acutissimis rectis, petalis tenuibus oblongis undulatis, labello cordato obtuso crispo, unguis lamellis carnosis anticè liberis medio cochleatis, columnâ angustâ apterâ tomentosâ.

Wild in NICARAGUA—Skinner, (*v. v. c.*)

Remarkable among the white-lipped species for its flowers being suffused with a tender blush colour. The sepals are very narrow, straight and sharp-pointed, richly spotted all over with crimson. The petals are twice as broad, and have similar spots, but only near their base ; the lip is spotless, crisp, and cordate.

* 28. **O. Bictoniense.** *Lindley, in Bot. Reg.* 1840, *t.* 66; *Sert. Orch. sub t.* 25.

O. pseudobulbis oblongis compressis 2-3-phyllis, foliis ensiformibus undulatis patentibus scapo racemoso duplò brevioribus, bracteis herbaceis lanceolatis acuminatis ovario duplò brevioribus,

sepalis petalisque subæqualibus lineari-lanceolatis maculatis, labelli ungue bilamellato limbo cordato acuminato undulato, columnæ alis transversè oblongis integris.

Cyrtochilum Bictoniense. *Bateman, Orch. Mex. et Guat., t.* 6.
Zygopetalum africanum. *Hooker, in Bot. Mag., t.* 3812.

Wild in GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

A stately species with very upright racemes of flowers, whose sepals and petals are green spotted with brown, and the lip either lilac or nearly white. It was stated in the "Botanical Magazine," by mistake, to be African.

§ 4. **MYANTHIUM.** COLUMNA AURICULATA V. APTERA. LABELLUM SESSILE, VEL SALTEM HAUD UNGUE LINEARI INSTRUCTUM. SEPALA LATERALIA PARALLELA, ELONGATA, MANIFESTÈ UNGUICULATA. Flores sæpè inconspicui.

In this section are collected all the small-flowered species, in which the prevailing colours are yellow and brown, with little brilliancy of tone. They all possess a peculiar irregularity of appearance in consequence of the length and parallelism of the lateral sepals, which project considerably below and beyond the lip. This is especially observable when the flowers are expanding and when the real proportions between the parts are most readily observable.

a. Labellum cordatum aut basi valdè obtusum, in apicem longum carnosum productum.

29. **O. divaricatum.** *Lindley, Orch. Lind., no.* 89.

O. foliis oblongis coriaceis obtusis basi angustatis nitidis, paniculâ maximâ laxâ divaricatâ volubili, floribus (parvis) distantibus vix internodiis æqualibus, sepalis petalisque unguiculatis lineari-lanceolatis acuminatis undulatis, labello rotundato dilatato in cuspidem longum angustato basi lamellis 3 undulatis brevissimis aucto alterâque utrinque arcuatâ elongatâ, columnæ alis brevibus acuminatis recurvis.

Wild in VENEZUELA; in the province of Merida, at the height of 9000 feet; August—Linden, 683, (*v. s. sp.*)

Its broad shining leaves and long straggling panicles of small flowers distinctly point out this species, which is far from a handsome one. Pseudobulbs ovate, acute, compressed at the sides. Petals yellow, spotted with brown.

30. **O. costatum.**

O. foliis lanceolatis tenuibus basi angustatis, paniculâ longâ laxâ subvolubili, floribus parvis distantibus internodiis duplò brevioribus, sepalis petalisque lanceolatis undulato-crispis recurvis imis semiconnatis, labello basi subrotundo 5-costato limbo longo angusto linguiformi, columnæ alis angustis apice dentatis.

Wild in VENEZUELA; in the province of Truxillo, near Agua de Obispo, at the height of 8000 feet; August—Funck and Schlim, 1028, (*v. s. sp. comm. cel. Linden.*)

A long straggling species, with the aspect of a small-lipped Oncid, but the column is clavate, and distinctly united with the base of the lip. When very

young the lip has three central ridges which touch each other, and a pair of tubercles on each side ; when the flower is full grown each pair of tubercles has become a rib, and the middle ribs have separated from each other by a considerable interval.

31. **O. dipterum.** *Lindley, Orch. Linden., no.* 87.

O. foliis ensiformibus versus apicem latioribus, paniculâ strictâ racemiformi, sepalis lanceolatis sessilibus petalisque oblongis unguiculatis undulatis obtusis, labelli hastati glabri lobis lateralibus rotundatis porrectis subcrenatis intermedio elongato, tuberculis disci duobus acinaciformibus ascendentibus quinque à fronte cuneatis minoribus, columnâ apterâ, antherâ pubescente.

Wild in NEW GRENADA ; in the province of Mariquita, at the height of 9000 feet ; January—Linden, 1277, (*v. s. sp.*)

Terrestrial. Pseudobulbs oval, acute. Flower white, spotted with purple, the size of *Oncidium altissimum.*

b. Labellum oblongum, v. basi angustatum in linguam haud productum.

32. **O. densiflorum.** *Lindley, Orch. Linden., no.* 88.

O. foliis lanceolatis elongatis coriaceis basi angustatis paniculâ contractâ paulò brevioribus, paniculæ ramulis brevibus flexuosis, sepalis obovatis apiculatis, petalis oblongis unguiculatis, labello oblongo obtuso plano lamellis 3 carnosis subpubescentibus intermediâ abbreviatâ lateralibus anticè dentatis, columnæ angulis superioribus in dentem productis.

Wild in NEW GRENADA ; the Paramo, near Boyaca, in the province of Tunja, at the height of 11,000 feet ; March—Linden, 1377, (*v. s. sp.*)

Terrestrial, with oval roundish pseudobulbs. Flowers yellow, spotted with red, small, and apparently unwilling to spread flat.

33. **O. macrum.**

O. foliis lanceolatis elongatis basi in petiolum canaliculatum angustatis paniculæ contractæ æqualibus, paniculæ ramulis brevissimis, bracteis scariosis ovario æqualibus, sepalo dorsali lanceolato erecto lateralibus unguiculatis crassè carinatis, petalis lanceolatis, labello ovato basi concavo medio constricto limbo linguiformi lamellis 2 ad basin 2 à fronte plicâque flexuosâ utrinque, columnâ apterâ.

Wild in CENTRAL AMERICA ; Puerto Muelo, at the height of 7000 feet, (*v. s. sp.*)

A very small-flowered species, with the habit of *O. densiflorum.* Pseudobulbs terete, semitransparent. Flowers whitish yellow, with purple spots on the labellum. I am unacquainted with the handwriting of the ticket in my herbarium, and do not know from whom I received the specimen, which is numbered 1490.

34. **O. ixioides.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 55.

O. cæspitosum, ferè ebulbe, foliis lineari-lanceolatis acutis

striatis scapo simplici apice racemoso triplò brevioribus, bracteis ovario subæqualibus ovatis cucullatis, sepalis petalisque unguiculatis obtusiusculis, labello oblongo obtuso basi bilamellato medio tuberculato ($\frac{3}{2}$), columnâ apterâ.

Cyrtochilum ixioides. *LO., p.* 211.

Wild in NEW GRENADA; on the Paramo St. Fortunato—Gudot, (*v. s. sp.*)

Scape a foot and a half high; flowers small, apparently yellow, in a short simple raceme, with two or three cucullate bracts a short distance below it.

* 35. **O. ramulosum.**

O. foliis loratis coriaceis paniculâ angustâ racemosâ brevioribus, bracteis minutis squamæformibus, pedunculis divaricatis, sepalis petalisque unguiculatis dorsali duplò latiore, labello oblongo obtuso basi bilamellato medio tuberculato ($\frac{3}{2}$), columnâ apterâ.

Wild in NEW GRENADA—Funck and Schlim, 1450, (*v. v. c. et s. sp. comm. cel. Linden.*)

Flowers small, yellow, with a deep brown stain at the base of each sepal and petal. Lip with a brown stain on each side of the principal lamellæ. Column purple-brown. In the structure of the flowers this is extremely like *O. ixioides;* but the panicle is long and narrow, with divaricating flowers, whose stalks are much longer than the scale-like bracts.

36. **O. retusum.** *Lindley, in Benth. Pl. Hartw., p.* 152.

O. foliis lineari-lanceolatis papyraceis scapo paniculato brevioribus, bracteis ovatis, sepalis petalisque subsessilibus lanceolatis acutis supremo canaliculato, labello oblongo retuso basi bilamellato, columnæ nanæ alis maximis oblongis.

Wild in PERU; on rocks on the mountains of Saraguro; August —Hartweg, (*v. s. sp.*)

Flowers small, apparently deep yellow.

37. **O. distans.** *Reichenbach fil., in Linnæa, XXII., p.* 848.

O. foliis oblongo-lanceolatis acutis basi angustatis pergameneis, paniculâ diffusâ ramis distantibus, bracteis ovatis acutis pedicellis elongatis multò brevioribus, sepalo supremo oblongo acuto basi unguiculato lateralibus subæqualibus medium usque connatis dein divaricatis, petalis duplò latioribus basi subcuneatis sessilibus, labello oblongo acuto basi angustato lamellis 2 erectis carnosis emarginatis in limite unguis lamellæque, ovario brevi crasso aptero.

Wild in VENEZUELA; in the province of Merida, at Lagunete and Valle, at the height of 7-8000 feet—Funck and Schlim, 1031, (*v. s. sp. comm. cel. Linden.*)

"Petals yellow, sometimes white. Lip rose-coloured at the base. Pseudobulbs creeping."—*Funck and Schlim.*

38. **O. myanthum.** *Lindley, in Benth. Pl. Hartw., p.* 152.

O. foliis lanceolatis basi canaliculatis erectis scapo paniculato

elongato flexuoso brevioribus, bracteis minutis, sepalis petalisque lineari-lanceolatis unguiculatis acutis, labello lanceolato acuto basi bilineato limbo deflexo, columnæ crassæ alis obsoletis subulatis.

Wild in PERU; mountains near Loxa—Hartweg, (*v. s. sp.*)

Leaves a foot and a half long; the scape twice as long; the panicle zigzag, narrow, and very much branched; the flowers minute.

39. **O. longifolium.** *Lindley, in Benth. Pl. Hartw., p.* 152.

O. foliis lanceolatis papyraceis basi longè canaliculatis scapo subpaniculato gracili brevioribus, bracteis minutis, sepalis petalisque lanceolatis acutis longè unguiculatis, labello bilamellato oblongo acuto medio deflexo apicibus lamellarum auriformibus divergentibus, columnæ alis falcatis minimis.

Wild in PERU; on the Cordillera, near Loxa, in July—Hartweg, (*v. s. sp.*)

A small-flowered species, with a little tendency to branch at the base of a slender few-flowered raceme.

40. **O. zebrinum.** *Reichenbach fil., in Linnæa*, 22. 849.

O. paniculâ laxâ diffusâ flexuosâ volubili, bracteis oblongis acutis pedicellis multò brevioribus, sepalis oblongis acutis unguiculatis undulatis petalis subæqualibus brevissimè cuneatis, labello brevissimè unguiculato ligulato acuminato basi obtusato ante basin utrinque angulato: lamellâ basali supernè crenatâ anticè trilobâ callulis circumsparsis nonnullis, columnâ nunc crassâ clavatâ nunc gracillimâ semitereti incurvâ alis minimis lanceis nunc deficientibus.

Wild in the CARACCAS; September—Moritz, 1615, (*Rchb. f.*)

"Flowers white; sepals with purplish violet bands, the crest of the lip deep yellow. Remarkable for the variable state of the column, which differs in form among the flowers of the same panicle."—*Reichenbach.*

41. **O. megalophium.** *Lindley, Orch. Linden., no.* 83.

O. foliis lanceolatis in petiolum gracilem canaliculatum angustatis, paniculâ strictâ racemosâ ramulis subcompositis flexuosis, bracteis membranaceis acutis, sepalis spathulatis apiculatis lateralibus unguiculatis, petalis duplò latioribus sessilibus, labello subcordato-ovato obtuso sub apice carinato, cristæ lamellis 2 maximis, columnâ apterâ.

Wild in VENEZUELA; in the thick forests of the Sierra Nevada, in Merida, at the height of 7000 feet; August—Linden, 682, (*v. s. sp.*)

A small-flowered plant nearly allied to *O. longifolium* and *myanthum*. Pseudobulbs oval, acute, ribbed. Flowers yellow.

42. **O. gracile.** *Lindley, in Benth. Pl. Hartw., p.* 151.

O. foliis oblongis papyraceis basi canaliculatis angustatis scapo stricto gracili subpaniculato brevioribus, bracteis minutis, sepalis

petalisque oblongis obtusis longè unguiculatis illis dorso carinatis, labello bilamellato oblongo obtuso limbo deflexo, columnæ alis falcatis incurvis acutis.

Wild in PERU ; on the Cordillera near Loxa—Hartweg, (*v. s. sp.*)

Flowers small, reddish brown, with unusually flat rounded sepals and petals. The scape is less than a foot high, with a slender raceme of seven or eight flowers at the end, and a very short branch with two or three flowers near its base.

43. **O. cimiciferum.** *Reichenbach fil., in Linnæa,* 22. 849.

O. foliis angustis lanceolatis acutis, paniculâ diffusâ volubili, bracteis ovatis acutis cucullatis, sepalis unguiculatis lateralibus lineari-lanceolatis acuminatis dorsali multò breviore erecto, petalis ellipticis acutis, labello subrotundo convexo apiculato lineâ elevatâ in unguem gibbere anteposito pleiodactylo, columnâ brevi valdè clavatâ auriculis obsoletis.

Wild in VENEZUELA ; in the province of Truxillo, near Agua de Obispo, at the height of 8000 feet, flowering in September —Funck and Schlim, 1027 ; Moritz, 1096 *b*, Rchb., (*v. s. sp. comm. cel. Linden.*)

A singular small-flowered climbing species much like some Oncidium, and remarkable for the large apparently coloured bracts, seated singly at each flexure of the straggling panicle. Flowers brownish, with a yellow spot on the lip (*F. and S.*), which much resembles in form some species of Cimex. I am unable to make out any auricles on the column. Mr. Reichenbach mentions them as very short, usually obsolete, ear-shaped and acute.

§ 5. **ISANTHIUM.** COLUMNA AURICULATA V. APTERA. LABELLUM SESSILE, V. SALTEM HAUD UNGUE LINEARI INSTRUCTUM. SEPALA SUBÆQUALIA, RADIANTIA, LATERALIBUS OMNINÒ SESSILIBUS, AUT PARÙM UNGUICULATA. Flores speciosi.

The species thus separated from MYANTHIUM approach that section by *O. auropurpureum* and its allies, but they never have in the same degree that manifest prolongation and parallelism of the lateral sepals which characterises MYANTHIUM, as is readily seen upon inspecting the expanding flower-buds. All the species are handsome, with large yellow or white flowers ; some pre-eminently so. In the first division the sepals and petals are narrow, and stand wide apart when expanded ; in the second division, in consequence of their increased breadth, those organs almost or quite overlap each other.

a. Sepala et petala sub anthesi longè distantia.

44. **O. auropurpureum.** *Reichenbach fil., in Linnæa,* 22. 848.

O. foliis planis lanceolatis acutis angustatis, paniculâ diffusâ maximâ, bracteis oblongis apiculatis cucullatis, sepalis oblongis acuminatis unguiculatis undulatis lateralibus paulò longioribus basi subconnatis, petalis conformibus brevioribus basi cuneatis, labello sessili acuminato convexo basi dilatato rotundato lævissimè trilobo, cristæ carnosæ glabræ laminis lateralibus magnis integerrimis callis teretibus ($\frac{3}{2}$), columnâ apterâ.

Wild in PERU—W. Lobb; in VENEZUELA—Funck and Schlim, 1430, (*v. s. sp. comm. dom. Linden et Veitch.*)

Stem six feet high.—*F. and S.* Flowers golden-yellow, marked with purple.—*Rchb.* A noble species with a stiff much-branched panicle of flowers, the stalks of which are twice as long as the internodes. Each flower measures about two inches in diameter. The bracts are almost equal to the internodes in some cases. Mr. Lobb's Peruvian specimens have a more compact inflorescence and larger flowers than those from Venezuela.

45. **O. revolutum.** *Lindley, in Ann. Nat. Hist.*, 15. 256.

O. foliis ensiformibus rigidis margine revolutis scapo rigido apice pyramidali paniculato brevioribus, bracteis laxis acutis cucullatis internodiis paulò brevioribus, sepalis petalisque lanceolatis unguiculatis undulatis acuminatis lateralibus paulò longioribus, labello cordato subrotundo in limbum linearem cuspidatum producto, cristæ carnosæ glabræ laminis lateralibus maximis intermediâ filiformi apice in dentem validam productâ digitis 2 utrinque, columnâ apterâ.

Wild in POPAYAN; on the Paramo of Guanacas, at the height of 11,000 feet—Hartweg, (*v. s. sp.*)

This differs from the last in having a dense pyramidal panicle about eight inches long by five wide, and stiff leaves rolled back on either side up to the midrib. The crest is similar, except that the middle of the three anterior lobes is much larger than the others near it. The flowers appear to be yellow.

46. **O. Lindenii.**

O. foliis erectis ensiformibus scapo paniculato duplò brevioribus, paniculæ ramis patentibus distantibus secundifloris, bracteis membranaceis cucullatis oblongis apiculatis internodiis æqualibus, sepalis petalisque unguiculatis lanceolatis undulatis acutis, labello ovato-lanceolato, cristæ carnosæ glabræ laminis lateralibus maximis intermediâ filiformi apice dilatatâ liberâ digitis 2 utrinque teretibus in 4 planas emarginatas suppositas incumbentibus, columnâ apterâ.

Wild in NEW GRENADA, at the height of 9000 feet—Linden, 82, (*v. s. sp. comm. cel. Linden.*)

Smaller than *auropurpureum*, larger than *revolutum*. Leaves not quite a foot long; scape from two to three feet high, with uniform lateral arms for more than half its length, each arm bearing from seven to five flowers, which form a regular unilateral rank directed upwards. The crest has, in addition to the parts found in the two previous species, four irregular flaps placed below the finger-like processes of its extremity.

47. **O. ramosissimum.**

O. foliis longissimis ensiformibus acutis gramineis basi angustatis, paniculâ maximâ ramosâ divaricatâ, bracteis obtusis membranaceis ovario paulò brevioribus, sepalis unguiculatis petalisque angustis lanceolatis undulatis, labello sessili cordato basi dilatato undulato tomentoso in limbum convexum lanceolatum extenso,

cristâ tomentosâ lamellis 2 lateralibus latis anticè cirrhatis quinque brevibus à fronte, columnâ apterâ.

O. angustatum. *Lindley, Orch. Linden., no.* 90.

Wild in VENEZUELA; in the thick forests in the neighbourhood of Merida, at the height of 6500 feet—Linden, 661, (*v. s. sp.*)

"A magnificent epiphyte. Pseudobulbs oval, compressed; stem three or four feet high, covered with innumerable flowers of a brilliant white. Petals rosy-purple at the base. Lip purple."—*Linden.* The panicle of this plant is very stiff, and excessively branched in an angular straggling manner. In the general form of the parts it much resembles *O. angustatum*, to which I formerly referred it; but a more accurate examination shows that it is essentially different, the lip being cordate, not narrowed to the base, and the crest downy all over with a different arrangement and form of the lobes.

I am unacquainted with the variety *heterosepalum*, mentioned by Mr. Reichenbach in the "Linnæa;" no. 1242 of Funck and Schlim's collection not having reached me.

48. **O. angustatum.** *Lindley, in Bot. Reg. sub t.* 1992.

O. pseudobulbis compressis, foliis longis lato-lanceolatis erectis scapo gracili brevioribus, paniculâ flexili, bracteis carinatis cucullatis acutis internodiis duplò brevioribus, sepalis linearibus acuminatissimis lateralibus unguiculatis, petalis latioribus et brevioribus, labello ovato-lanceolato acuminato basi angustato, cristæ lamellis lateralibus membranaceis tridentatis glabris intermediâ triplici filiformi tomentosâ apice in callum et cornua 2 lateralia expansâ in appendicem bicornem pariter tomentosum suppositum incumbentia, columnâ elongatâ apterâ.

Wild in PERU; in the valley of Lloa, at the height of 8000 feet—Hall; in the woods of Guayan, on the western declivity of Pichincha—Hartweg, (*v. s. sp.*)

A much more slender plant than the preceding. Sepals one inch and a half long, and scarcely more than a line broad. The flowers appear to be spotted. The membranous smooth-toothed side lobes of the crest of the lip and the long downy horns which terminate it are remarkable.

49. **O. pardinum.** *Lindley, in Sert. Orch. sub t.* 25.

O. foliis lineari-oblongis basi angustatis striatis scapo stricto laxè paniculato subæqualibus, bracteis membranaceis cucullatis acutissimis, petalis undulatis sepalisque angustioribus lanceolatis, labello unguiculato ovato-lanceolato acuminato, cristæ pubescentis lamellis lateralibus basi dentatis apice 3-partitis intermediâ elevatâ in fronte adjectis callis quibusdam teretibus, columnâ apterâ.

Wild in PERU; on the ground near Surucucho—Jamieson; the Andes of Popayan—Hartweg, (*v. s. sp. comm. cel. Jamieson, &c.*)

Flowers handsome, yellow, spotted with brown in the original form sent to Sir William Hooker by Professor Jamieson. The Popayan plant is somewhat different; the flowers are smaller and apparently not spotted; and the crest of the lip is more downy with a few more teeth in front. The two

plants can hardly however be distinct. I have from Professor Jamieson what appears to be identical with the Popayan form.

50. **O. spathaceum.**

O. foliis oblongis basi conduplicatis, scapo erecto densè paniculato, bracteis oblongis spathaceis apiculatis internodiis longioribus, sepalis angustis acuminatis, petalis duplò latioribus, labello ovato-lanceolato, cristæ pubescentis lamellis lateralibus apice unidentatis et bicirrhosis in appendicem bilobum bifalcem longiorem suppositam incumbentibus, columnâ elongatâ apterâ.

Wild in NEW GRENADA—Purdie, (*v. s. sp. ex hb. Hooker, comm. am. Bentham.*)

A noble plant, with large panicles of spotted flowers, apparently yellow, with sepals an inch and a half long. The bracts are much larger and more spathaceous than in the allied species.

* 51. **O. hastilabium.** *Lindley, Orch. Linden., no.* 84; *Hooker, Bot. Mag., t.* 4272.

O. foliis oblongis coriaceis, paniculæ ramis spicatis, bracteis cymbiformibus acuminatis ovario æqualibus, sepalis petalisque lineari-lanceolatis acuminatis undulatis, labello apice subrotundo-ovato acuto basi auriculis acutis lanceolatis porrectis aucto lamellis 5 elevatis, columnæ pubescentis alis obsoletis undulatis margine versus basin membranaceo dilatato.

Wild in NEW GRENADA; Tesqua, in the province of Pamplona, at the elevation of 2,500 feet; April—Linden, 1376; on the road from Santa Martha to the Sierra Nevada—Purdie, (*v. v. c. et s. sp.*)

This handsome species has flowers three inches in diameter, with the appearance, when dried, of *O. lævе*, but the flowers are white and sweet-scented. Petals and sepals greenish, or greenish white, barred with red. Lip white, purple at the base. The base of the column, which is expanded on either side into an inflexed membrane, resembles that of *cristatum* and some others, but is very different from the tumid base of the genus Oncidium.

* 52. **O. lævе.** *Lindley, in Bot. Reg.* 1844, *t.* 39.

O. pseudobulbis compressis sulcatis, foliis oblongo-ensiformibus obtusis apice obliquis, floribus laxè racemoso-paniculatis, bracteis brevibus membranaceis, sepalis petalisque oblongo-linearibus acutis planis, labelli limbo panduriformi apiculato ungue lævi obsoletissimè bidentato, columnæ alis apice rotundatis crispis basi planis.

Wild in GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

The fragrant flowers have cinnamon-brown blotches on the yellow ground of the petals and sepals; and the lip, which is white, is banded with violet across the middle. The absence of all but rudiments of a crest upon the lip is a very peculiar feature.

53. **O. cristatum.** *Lindley, in Benth. Pl. Hartw., p.* 152.

O. foliis lineari-lanceolatis acutissimis scapo multifloro simplici paullò brevioribus, sepalis petalisque lanceolatis acuminatis, labello

lanceolato acuminato limbo deflexo, cristâ glabrâ multipartitâ laciniis anticis latioribus, columnâ elongatâ basi membranaceo-marginatâ apice alis duabus uncinatis, antherâ cristatâ.

Wild in PERU; mountains of Paccha—Hartweg, (*v. s. sp.*)

Flowers spotted with brown, about as large as those of *O. cordatum*. Leaves very narrow.

54. **O. lacerum.** *Lindley, in Sert. Orch. sub t.* 25.

O. pseudobulbis ovalibus ancipitibus, foliis lineari-oblongis in petiolum canaliculatum angustatis, racemo subpaniculato terminali gracili, bracteis longè distantibus ovatis acutis squamæformibus, sepalis petalisque lanceolatis acuminatis, labelli limbo deflexo ovato-lanceolato lacero concavo apice cuspidato, cristæ lamellis fimbriatis denticulis 2 anterioribus subulatis, columnâ glabrâ auriculis subtruncatis.

Wild in PERU; Casapi—Mathews, 1867, (*v. s. sp. et ic. in hb. Hooker.*)

Flowers large, bright lemon-colour, with a brown blotch or two in the middle of the sepals and petals, and another at the upper half of the lip. Inflorescence very slender, with the flower-stalks not half the length of the internodes.

55. **O. spectatissimum.**

O. pseudobulbis ovatis monophyllis, foliis lanceolatis in petiolum canaliculatum angustatis scapo simplici stricto 3-4-floro æqualibus, bracteis ovatis brevibus membranaceis, sepalis petalisque lanceolatis acutissimis æqualibus, labelli basi angustati limbo ovato apiculato denticulato cristâ simplici antrorsùm bicruri denticulo utrinque adjecto, columnæ alis membranaceis denticulatis acutis.

Wild in NEW GRENADA—Linden, 147, (*v. s. sp.*)

Whole plant about a foot high. Flowers nearly three inches in diameter, strongly blotched with some very dark colour upon a pale ground. One of the finest species, with the sepals and petals so broad that it approaches nearly to the next division.

b. Sepala et petala sub anthesi imbricata.

*56. **O. Pescatorei.** *Linden, in Paxton's Flower Garden, III., t.* 90.

O. pseudobulbis ovatis leviter costatis diphyllis, foliis loratis planis basi angustatis, paniculâ erectâ diffusâ multiflorâ, bracteis minutis, floribus membranaceis, sepalis ovato-oblongis apiculatis leviter undulatis, petalis conformibus duplò latioribus, labello cordato oblongo cuspidato subpandurato basi denticulato, cristæ lamellis lateralibus distantibus cartilagineis laceris lineis duabus elevatis divergentibus apice denticulatis interjectis, columnæ brevis alis brevibus laceris.

? O. nobile. *Reichenbach fil., in Linnæa*, 22. 850.

Wild in NEW GRENADA, in the province of Pamplona—Funck and Schlim, (*v. s. sp. comm. cel. Linden.*)

Of this fine plant the panicle is from two to three feet high, and not much narrower. The flowers are of ample size, of a delicate semitransparent texture, with a faint blush line along the middle of the sepals, and a stain of yellow near the base of the lip, where also are found a pair of broad deep crimson lateral lamellæ belonging to the crest, in the form of two lacerated appendages. The column itself is white. The ragged wings are stained with crimson. Since the publication of this in Paxton it has occurred to me that it is probably the *O. nobile* of Reichenbach fil., for which he quotes Funck and Schlim's collection, no. 1429, a number which I do not possess ; but unless there is some typographical error in the learned author's specific character which destroys its meaning, his plant must be different, especially since he describes the lip as purple, and the other parts rose-coloured. My specimen of *Pescatorei* is without a number, but with a reference to an unpublished drawing, no. 69, which I have not seen. I am the more uncertain whether this can be *O. nobile*, because there is in reality nothing to separate it from Odontoglossum, as Professor Reichenbach partly suggests, the species being in truth extremely near *O. crispum*, the ragged crimson appendages at the base of the lip being evidently identical with the lateral plates so generally found in this genus.

57. **O. crispum.** *Lindley, in Ann. Nat. Hist.*, 15. 256.

O. foliis lanceolatis scapo multifloro paniculato (nunc brevi racemoso) brevioribus, bracteis ovatis acutis cucullatis internodiis multò brevioribus, sepalis ovato-lanceolatis petalisque ovatis acutissimis crispis laceris membranaceis, labello subconformi basi cuneato, cristæ lamellis lateralibus brevibus tridentatis duabus alteris linearibus apice liberis interjectis, columnæ alis rotundatis laceris.

Wild in NEW GRENADA ; in the woods between the villages of Ziquapira and Pacho, in the province of Bogota—Hartweg, (*v. s. sp. et ic. pict.*)

A most beautiful species, occasionally as much as three feet high and more. Flowers large, yellow, with a purple spotted centre. Column deep purple. Differs from the last in the colour of the flowers, and in the form of the lip and its crest, but otherwise very similar.

* 58. **O. pygmæum.** *Lindley, in Benth. Pl. Hartw., p.* 82.

O. pseudobulbis ovalibus vaginis membranaceis acuminatis vestitis, foliis angustè ovalibus in petiolum angustatis racemo paucifloro flexuoso duplò longioribus, sepalis petalisque subæqualibus, labelli pubescentis rhombei dentati sessilis cristâ maximâ bivalvi in medio tumidâ : valvis erectis rotundatis, columnâ brevi clavatâ apterâ, ovario triptero.

Wild in GUATEMALA ; at the foot of the active volcano Xetuch, about 8000 feet above the sea, near Quezaltenango—Hartweg, (*v. s. sp.*)

This curious little alpine plant forms tufts of pseudobulbs and membranous sheaths, from among which just peep out the tiny colourless flowers, which are not above three lines in diameter, even if spread out. I have not seen the pollen-masses, and it may not belong to this genus.

§ 6. TRYMENIUM. *Lindley, in Bot. Reg.* 1843, *t.* 3. CLINANDRIUM CUCULLATUM, MARGINE MEMBRANACEO SÆPE TRIPARTITO.

At first sight this would seem to be a distinct genus, and it may be hereafter considered so. But if any botanist should think the structure of the crest available for a generic character, I would remind him that, although there is no apparent analogy between the crest of some of the Trymenia and that of the Isanthia, so neither do agree among each other in that respect, the crests of every species except *brevifolium* and *coronarium* being formed upon a different plan, and *O. citrosmum* having no crest at all.

* 59. **O. citrosmum.** *Lindley, Bot Reg.* 1842, *misc.* 68 ; 1843, *t.* 3.

O. pseudobulbis subrotundis compressis lævibus, foliis oblongo-ligulatis obtusis racemo paulò brevioribus, sepalis oblongis obtusis petalisque conformibus subæqualibus, labello unguiculato reniformi basi excavato marginibus callosis, clinandrii alis lateralibus subtruncatis dorsalique rotundato denticulatis.

Wild in MEXICO—Karwinski, (*v. v. c. et s. sp.*)

Flowers very large, white, fragrant, stained with pink; the violet-coloured lip orange-yellow at the base.

60. **O. coronarium.**

O. pseudobulbis ovalibus compressis, folio oblongo coriaceo basi canaliculato, racemo longo multifloro, bracteis linearibus canaliculatis ovario triplò brevioribus, sepalis petalisque subrotundis unguiculatis planis, labello longè cuneato retuso basi auriculis unidentatis subfalcatis obtusis subtùs in unam connatis aucto, inter auriculas tuberculis 2 hoc didymo illo inferiore simplici acuto, clinandrio subserrato lobis rotundatis.

Wild in NEW GRENADA ; province of Pamplona, near La Baja, at the height of 7000 feet—Schlim, 1197, (*v. s. sp. comm. cel. Linden.*)

One of the finest species in the genus. Leaves ten inches long by two and a quarter broad. Raceme a foot long, loaded with as many as eighteen flowers, all expanded at the same time, and one and three quarters of an inch in diameter ; brown, the petals bordered with yellow, the lip brown and yellow, the column white. Terrestrial.

61. **O. brevifolium.** *Lindley, in Benth. Pl. Hartw., p.* 152.

O. foliis ovato-oblongis oblongisque patentibus scapo simplici apice multifloro racemoso duplò brevioribus, bracteis oblongis membranaceis pedicellorum longitudine, sepalis subrotundis unguiculatis undulatis, petalis paullò minoribus, labello unguiculato auriculato cuneato emarginato sepalis breviore basi tuberculis verrucosis 5 et appendice parvâ anticâ 3-dentatâ aucto, clinandrio cucullato serrato in marginem membranaceum alæformem decurrente.

Wild in PERU; on the Cordillera near Loxa; July—Hartweg, (*v. s. sp.*)

Pseudobulbs ovate oblong compressed, one-leaved. Leaves two inches broad, and sometimes not much longer. Flowers an inch and a half or more in diameter, eleven or twelve in a drooping raceme, apparently purple.

62. **O. chiriquense.** *H. G. Reichenbach, in Bot. Zeitung, Oct.* 1, 1852.

O. sepalis oblongo-cuneatis obtusis crenulato-crispulis, petalis subæqualibus vix brevioribus supra basin brevissimè cuneatam hastatis, labello imâ basi cum columnâ parallelo trilobo lobis basilaribus triangulis margine postico curvilineis divaricatis lobo medio longè producto à cuneatâ basi dilatato anticè rotundato crenulato undulato, cristâ oblongâ paucicrenatâ inter lobos laterales cristulis inde in marginem anteriorem laciniarum lateralium transeuntibus, columnâ gracili: alis triangulis margine superiori denticulatis, clinandrii cucullo acutiusculo denticulato, lacinulâ triangulâ sub stigmate labium inferum sistente.

Wild in VERAGUA; on the Cordillera of Chiriqui, at the height of 9000 feet, on decayed trunks; in October—Warczewitz.

Flowers as large as in *Oncidium crispum.—Rchb.* Pseudobulbs oval. Leaves in twos, large and green. Sepals brown. Petals and lip golden-yellow.—*Warczewitz.*

* 63. **O. pulchellum.** *Bateman, in Bot. Reg.* 1841, *t.* 48; *Bot. Mag., t.* 4104.

O. pseudobulbis oblongis compressis ancipitibus diphyllis, foliis linearibus (vix semuncialibus pedalibus) apice obliquè emarginatis, scapo foliis æquali ancipiti debili apice racemifero 6-7-floro, bracteis herbaceis linearibus acuminatis, sepalis ovatis acutis, petalis obovatis acutis subundulatis, labelli trilobi laciniis lateralibus triangularibus intermediâ oblongâ subquadratâ apice recurvâ: callo baseos carnoso antrorsùm hippocrepico retrorsùm trilobo, columnæ alis et clinandrio laceris.

Wild in GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

The more striking features in this species are long thin pseudobulbs, very narrow grassy leaves, and a single protuberance at the base of the white lip. This protuberance is deep yellow spotted with crimson, very fleshy, firm and shining, and is almost horseshoe-shaped in front, while it is distinctly three-lobed behind, in consequence of two deep depressions.

* 64. **O. Egertoni.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 50.

O. scapo ancipiti racemo secundo, bracteis herbaceis linearibus acuminatis ovario duplò brevioribus, sepalis petalisque ovatis acutis, labello acuto basi excavato dentibus duobus supra excavationem inflexis posticè rotundato cordato, clinandrii lobis subintegris.

Wild in GUATEMALA? (*v. v. c.*)

This is known in gardens as a variety of *O. pulchellum*, than which it is smaller in all its parts, and from which it differs in the lip being quite acute, by no means hastate, nor almost truncate, and with an excavation at its base in lieu of the triple fleshy tubercle of *O. pulchellum*. Flowers pure white. Its native country is not certainly known.

65. **O. roseum.** *Lindley, in Benth. Pl. Hartw., p.* 151.

O. foliis oblongo-lanceolatis racemo gracili duplò brevioribus, bracteis ovatis concavis subangulatis pedicellis duplò brevioribus, sepalis petalisque lanceolatis, labello trilobo basi bilamellato: lobis lateralibus nanis rotundatis intermedio obcuneato acuto, columnâ elongatâ apice alis 3 membranaceis integris auctâ.

Wild in PERU; Quebrada de las Juntas; August—Hartweg, (*v. s. sp.*)

Leaves from three to five inches long. Raceme about a span long. Flowers bright rose-colour, something less than an inch in diameter.

SPECIES INSUFFICIENTLY KNOWN.

66. **O. erosum** *Ach. Richard, in Ann. Sc., Jan.* 1845; "pseudobulbo ovoideo oblongo 1-phyllo; fol. lanceolatis acutis; scapo 1-floro; sepalis luteis: labello lilacino latè ovali margine erosodenticulato.—*Mexico.*"

67. **O. Ghiesbreghtianum** *Ach. Richard, in Ann. Sc., Jan.* 1845; "pseudobulbis ovoideis compressis 3-phyllis; scapo pedali 3-6-floro; flor. luteis brunneo-maculatis: labello luteo, longè unguiculato, transversè orbiculari, emarginato, sepalis duplò longiori, ungue lineari basi hinc et illinc obtusè auriculato, supernè bi-cristato.—*Mexico.*"

Supposed Species now referred to other genera.

O. hastatum *Bateman* . . . . = Oncidium hastatum.
O. Warneri *Lindley* . . . . = Oncidium Warneri.
O. phyllochilum *Morren* . . . = Oncidium hastatum.
O. anceps *Klotzsch* . . . . = Miltonia.

ADDITIONAL SPECIES.

21*. **O. Warczewitzii.** *H. G. Reichenbach, in Bot. Zeitung, Oct.* 1, 1852.

O. sepalo dorsali cuneato obtusato lateralibus oblongis acutis angustioribus, petalis oblongis acutis cuneatis, labello à basi latissimè cuneatâ dilatato pandurato-quadrilobo lobis lateralibus obtusatis minoribus vix productis anteriori latè cuneato altè bilobo lobo utroque obtusè rhombeo marginibus externis hinc sinuato: denticulo minutissimo interposito inter utrumque, cristâ erectâ hippocrepicâ antrorsùm clausâ velutinâ cum denticulo corneo inflexo in medio basilari in imo labello suberectâ, columnâ humillimâ, alis integris angustissimis stigma marginantibus.

Wild in VERAGUA; on the Cordillera of Chiriqui, at the height of 8000 feet, on leguminous plants flowering from October to January—Warczewitz.

Known to me only from M. Reichenbach's character here transcribed with slight alteration of terms. It is stated by him to be one of the noblest of Warczewitz's discoveries. Flowers snow-white, with a golden crest, nearly as large as in *O. grande*. The leaves are long and sharp-pointed. The bracts sharp, triangular, membranous, one-ribbed, seven times shorter than the stalk of the long ovary. The scape few-flowered. M. Reichenbach considers it near *O. nebulosum*.

DIDACTYLE.

Sepala coriacea, subæqualia : lateralibus basi obliquis nunc connatis.

Petala nana, libera.

Labellum cum basi productâ columnæ articulatum, 3-lobum, per axin in jugum carnosum sulcatum vulviforme elevatum.

Columna libera, semiteres, apice in cirrhos 2 (*staminodia*) extensa, basi in pedem producta, infra apicem digitis duobus marginalibus aucta.

Pollinia 4, cereacea, libera : duobus interioribus minutis. *Anthera* sæpiùs rostrata.

Herbæ *epiphytæ*, Americæ tropicæ, *pseudobulbosæ*. Folia *coriacea*. Scapi *radicales, apice tantùm spicati ;* bracteis *herbaceis*.

Among the numerous forms which have been referred to Bolbophyllum, this seems especially to demand separation as a peculiar genus, on account of its somewhat peculiar habit, and very singular column and lip. The column, in addition to the two cirrhi essential to Bolbophyllum, has two others a little lower down, and projecting towards the lip like a pair of fingers. The lip has a large fleshy ridge running along its middle, and in the species I have examined, slit from end to end : that is to say, the two customary lateral lamellæ are united in front, and are so deep as to produce this appearance.

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1. D. gladiata.

D. pseudobulbo ovato tetragono, folio oblongo carinato spicâ longè pedunculatâ multò breviori, spicâ secundâ multiflorâ, rachi subclavatâ, sepalis linearibus lateralibus connatis, petalis obovatis ciliatis limbatis, labello unguiculato cordato in processum angustum gladiatum villosum elongato, columnæ digitis è medio brevibus.

Bolbophyllum gladiatum. *Lindley, in Ann. Nat. Hist., vol.* x. *p.* 185.
Bolbophyllum chloropterum. *Rchb. fil., in Linnæa,* xxii., *p.* 835.

Wild in Brazil—Descourtilz ; near Rio Janeiro—Reichenbach, (*v. ic. pict. in bibl. De Lessert.*)

A most singular plant, the appearance of whose flowers is thus described by M. Descourtilz :—"The upper sepal is very long, very narrow, channeled at its base, acute at the point, lemon-coloured, as well as the two lateral, which are joined by their edges into one, two-toothed at the point. From the position constantly assumed by the flower, these three sepals are placed right and left of the axis. The petals are short, spathulate, touching at both base and point, leaving between them a heart-shaped space ; they are white edged with purple, and fringed with purple hairs on their outer edge ; in the middle is a large heart-shaped violet spot. The lip is hinged with the column, moveable, and consists of a channel with broad wings, white edged with purple, and of a very long process, shaped like a sword-blade hanging down, brownish and velvety with hairs."

Oct. 16, 1852.

2. **D. Weddelii.**

D. pseudobulbo pyramidali brevi obtuso, folio oblongo plano coriaceo spicâ longè pedunculatâ 8-10-florâ multò breviori, rachi subclavatâ, sepalis linearibus obtusis liberis, petalis . . . ., labello unguiculato subcordato in processum angustum ensiformi-spathulatum (lævem ?) elongato, columnæ cirrhis erectis digitis è medio nanis.

Wild in BRAZIL; Minas Geräes—Weddell, ic. no. 11, (*v. ic. pict. in bibl. herb. mus. Paris.*)

At first sight much like *D. gladiata;* but the leaves are broader, the spike not secund, the sepals all disjoined, and the lip broader; the rachis also seems much more clavate. It appears from Mr. Weddell's sketch that the leaf is about three inches long, the scape about eighteen inches, and the spike rather less than four inches. The sepals are olive-green spotted with brown; the lip white with a purple base, and numerous oblong spots of the same colour.

3. **D. tripetala.**

D. pseudobulbo tetragono, folio oblongo acuto racemo breviore, scapo 6—7-floro flexuoso erecto, bracteis ovatis scariosis ovario longioribus, sepalis linearibus acutis patulis, petalis minimis squamæformibus, labello ciliato unguiculato apice oblongo obtuso basi imâ utrinque auriculato, columnæ digitis dentiformibus.

Bolbophyllum tripetalum. *Lindley, in Ann. Nat. Hist., vol.* x. *p.* 185.

Wild in BRAZIL; in the province of St. Paul's—Descourtilz, (*v. ic. pict. in bibl. De Lessert.*)

A good figure of this exists among M. Descourtilz's drawings, in the library of Monsieur De Lessert. Like *Bolbophyllum saltatorium*, its lip appears to be delicately and elastically articulated with column. The sepals are pale yellow, three-quarters of an inch long. The lip is bright yellow with crimson spots. It is stated by its discoverer to be scentless and to cover whole trunks of trees.

4. **D. exaltata.**

D. pseudobulbo tetragono folio oblongo obtuso paulò breviore, scapo vaginato stricto longissimo (pedali et ultrà), vaginis obtusis supremis laxioribus, spicâ multiflorâ, bracteis ovatis concavis acutis herbaceis, sepalis ovatis acuminatis, petalis oblongis ciliatis, labello obovato obtuso pubescente, columnæ dentibus supremis cirrhosis digitis brevibus incurvis, antherâ mucronatâ.

Bolbophyllum exaltatum. *Lindley, in Ann. Nat. Hist., vol.* x. *p.* 186.

Wild in GUAYANA—Schomburgk, (*v. s. sp.*)

The leaf of this remarkable plant is not much more than an inch long, while the scape is more than a foot high. The flowers are purple, and half concealed by the large permanent bracts.

5. **D. antennifera.**

D. pseudobulbo tetraptero, folio oblongo plano coriaceo apice recurvo scapo triplò breviore, spicâ densâ nutante, bracteis oblongis

obtusis ovario longioribus, sepalis acuminatis, petalis ovato-oblongis ciliatis, labello oblongo basi ciliato auriculis 2 membranaceis apice rotundato dentato, columnæ dentibus supremis longissimis porrectis digitis subulatis.

Wild in BRAZIL; Minas Geräes—Widgren, 764, (*v. s. sp. comm. cel. Rchb. fil.*)

Resembles *D. exaltata*, but the lip is smooth except at the base, and its end is strongly toothed. The fleshy ridge in the middle of the lip is singularly large. The teeth of the column are as long as the column itself, its foot included.

6. **D. meridensis.**

D. pseudobulbo ovato, folio parvo oblongo apiculato scapo pluriès breviore, spicâ elongatâ, bracteis coriaceis acutis recurvis ovario longioribus, sepalis apice subulatis, petalis ovatis ciliatis, labello panduriformi piloso basi auriculato apice rotundato integerrimo barbato, columnæ dentibus filiformibus digitis subulatis.

Bolbophyllum meridense. *Rchb. fil., in Linnæa*, xxii., *p.* 836.

Wild in VENEZUELA; in the province of Truxillo, near Timotes and Chachopo, at the height of 6000 to 8000 feet—Funck and Schlim, no. 735; in Merida, at the height of 4000 feet—Rchb. fil., (*v. s. sp. comm. cel. Linden.*)

I have to thank Mr. Linden for a specimen of this singular species, remarkable for its great bearded lip. The flowers are said to be reddish, bordered with violet.

7. **D. ? Clausseni.**

D. spicâ suberectâ plurimiflorâ pedunculum nudum 3-4 superante, bracteis lanceolatis acutis, floribus brevioribus, sepalis lanceolatis acutis, petalis minoribus oblongis obtusis integerrimis trinerviis margine tenuissimè membranaceis, labello cum pede columnæ elongato continuo brevissimè unguiculato laminâ oblongâ marginibus inflexis apice acutiusculo reflexo gibbere in infimâ basi superficiei externæ, columnâ anticè ad angulos androclinii bidentatâ, antherâ apiculatâ.

Bolbophyllum Clausseni. *Rchb. fil., in Linnæa*, xix. 371.

Wild in BRAZIL; Minas Geräes—Claussen, in hb. De Lessert, (*Rchb.*)

Pseudobulbs ovate, two-edged. Scape seven inches high. Bracts from one to two lines long. Flowers and ovary taken together three lines long, rose-coloured, the points of the sepals darker than the rest. I have not seen this plant, but it can hardly fail to be a Didactyle.

in the order of publication, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, wholly unknown, or very imperfectly known, to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Osyricera *Blume.*
Chrysoglossum *Blume.*
Titania *Endlicher.*
Platystylis *Blume.*
Gastroglottis *Blume.*
Macrostomium *Blume.*
Diploconchium *Schauer.*
Diglyphis *Blume.*
Epicrianthes *Blume.*
Thelychiton *Endlicher.*
Cochlia *Blume.*
Aphyllorchis *Blume.*
Acanthoglossum *Blume.*
Aspegrenia *Pöppig.*
Collabium *Blume.*
Pachystoma *Blume.*
Calostylis *Blume.*
Ceratium *Blume.*
Pachychilus *Blume.*
Microsaccus *Blume.*
Lichenora *Wight.*
Pattonia *Wight.*
Ceratostylis *Blume.*
Ephippium *Blume.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Pteroceras *Hasskarl.*
Adenoncos *Blume.*
Cryptoglottis *Blume.*
Glomera *Blume.*
Conchochilus *Hasskarl.*
Todaroa *Ach. Richard.*
Cuitlauzina *La Llave.*
Psittacoglossum *La Llave.*
Siagonanthus *Pöppig.*
Orchidofunkia *Ach. Richard.*
Diadenium *Pöppig.*
Tipularia *Nuttall.*
Didymoplexis *Griffith.*
Haplostellis *Ach. Richard.*
Cyathoglottis *Pöppig.*
Pogochilus *Falconer.*
Zosterostylis *Blume.*
Chlorosa *Blume.*

Cephostemon *Blume.*
Calyptroglossum *Ach. Richard.*
Ocampoa *Ach. Richard.*
Plexaure *Endlicher.*
Eucosia *Blume.*
Macodes *Blume.*
Galera *Blume.*
Hysteria *Reinwardt.*
Corymbis *Thouars.*
Scaredederis *Thouars.*
Acronia *Presl.*
Scleropteris *Scheidweiler.*
Apetalon *Wight.*
Podanthera *Wight.*
Macrostylis *Kuhl and Hasselt.*
Amblostoma *Scheidweiler.*
Leucorchis *Blume.*
Leopardanthus *Blume.*
Euproboscis *Griffith.*
Pseuderiopsis *Reichenb.*
Brachtia *Reichenb.*
Aclinia *Griffith.*
Androgyne *Griffith.*
Thisbe *Falconer.*
Cybele *Falconer.*
Cryptosanus *Scheidweiler.*
Bolborchis *Moritzi.*

ABBREVIATIONS.

Lindl., G. and S.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

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Part II.] JANUARY, 1853. [Price 2s. 6d.

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-two years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera

SARCOPODIUM.

Lindley, in Paxton's Flower Garden: gleanings, no. 199.

Sepala ringentia, coriacea v. carnosa, lateralibus basi productis columnæ pedi adnatis dorsali æqualibus v. minoribus.

Petala minora.

Labellum nanum, cum basi productâ columnæ articulatum, carnosum, mobile, canaliculatum, basi subcordatum, nunc lamellis 3 brevibus auctum, nunc inappendiculatum.

Columna nana, semiteres, mutica, basi in pedem producta. *Stigma* fovea sub rostello excavata.

Pollinia 4, collateralia, 00 00, subæqualia, cereacea, omninò libera. *Anthera* 2-locularis.

Herbæ *epiphytæ*, Asiæ tropicæ, *pseudobulbosæ*. Folia *solitaria, coriacea*. Flores *solitarii v. pauci, conspicui*, pedunculis *radicalibus*.

A genus intermediate between Dendrobium and Bolbophyllum, having the large flowers of the former, and the peculiar creeping habit of the latter. The species agree with Dendrobium in having four nearly equal pollen-masses, and a hornless column; but they have coriaceous, not thin half-transparent flowers, and a tough leathery lip, enlarged not contracted at the base. If they had a caudicle and gland to their pollen-masses, they would almost be Asiatic Maxillarias. Their flowers form neither horn nor spur, but are simply inflated and expanded at the base of the sepals. One of them has been published by Dr. Blume as an Ephippium, a group which he now regards as a mere form of Bolbophyllum. That generic name cannot be conveniently applied here; because all the other species formerly collected under it belong either to Bolbophyllum, or Cirrhopetalum, or to some Vandeous race, for which alone, if it proves hereafter to be distinct, should the name Ephippium be retained.

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§ 1. Labellum concavum 3-lamellatum.

1. **S. amplum.** *Lindley, in Paxton, l. c.*

S. pseudobulbis ovatis squamatis diphyllis, foliis oblongis emarginatis petiolatis, pedunculo bracteis petaloideis multò longiore, sepalis ovatis acuminatis obtusis, petalis angustioribus, labello cordato sessili trilobo basi lamellato: lobis lateralibus abbreviatis rotundatis intermedio ovato acuto.

Dendrobium amplum. *Wallich Cat., no.* 2001; *Pl. As. rar., vol. i., p.* 25, *t.* 29; *LO., p.* 74; *Griffith Ic., t.* 304; *Notulæ, p.* 307.

Wild in Pundua and Nepal; on Mount Sheopore, on stones and rocks in moist shady situations—Wallich; on rocks, in the valleys of the Sikkim Himalaya, at 4-5000 feet—

J. D. Hooker; Khasia hills, at Churra—Griffith; at an elevation of 4-5000 feet—Hooker and Thomson, (*v. s. sp.*)

Flowers straw-coloured, spotted internally, three inches wide when fully open. Lip with three lamellæ in the middle, of which the central one is shorter than the others; its middle lobe deep purple. Griffith observed two protuberances inside the lower edge of the stigma.

2. **S. fuscescens.**

S. pseudobulbis ovatis acuminatis squamatis diphyllis, foliis oblongo-lanceolatis emarginatis petiolatis apice semitortis, pedunculo bracteis membranaceis multò longiore sepalis oblongo-lanceolatis acuminatissimis reflexis, petalis angustissimis, labello trilobo sessili basi lamellato: lobis lateralibus oblongis columnâ longioribus intermedio ovato acuminato medio carnoso.

Dendrobium fuscescens. *Griffith Ic., t.* 309, *not p.* 308.

Wild on the KHASIA hills—T. Lobb; 4-5000 feet—J. D. Hooker and R. Thomson; near Churra—Griffith, 1123, (*v. s. sp.*)

Middle of lip fragile at the base, breaking off readily at that situation. Sepals one and a half inch long; petals about a line shorter; both brownish flesh-colour. Lateral lobes of lip chesnut-colour; middle lobe pale chesnut, purplish towards the base; crests white. Column with two pale orange spots in front.—*Griffith.* Very near the last, from which Griffith first distinguished it. Both have a strong tooth at the back of the anther-bed.

3. **S. rotundatum.**

S. pseudobulbis ovatis squamatis diphyllis, foliis ovalibus obtusis emarginatis petiolatis, pedunculo bracteis membranaceis breviore, sepalis petalisque carnosis ovatis acutis erectis æqualibus, labello trilobo sessili basi lamellato: lobis rotundatis lateralibus minoribus.

Wild in the SIKKIM-HIMALAYA, at the elevation of 6000 feet—J. D. Hooker, (*v. s. sp. comm. cel. inv.*)

Very like *S. fuscescens*, but the foliage is broader; the peduncles are much shorter than the bracts which envelope them; the lateral sepals are not acuminate, and the dorsal tooth of the column is wider.

4. **S. triadenium.**

S. pseudobulbis parvis ovatis diphyllis, foliis lineari-oblongis retusis basi canaliculatis, pedunculis apice racemosis trifloris folio brevioribus squamâ unicâ in medio, sepalis lineari-lanceolatis acuminatis patentibus, petalis linearibus acutissimis æquilongis, labello trilobo lobis lateralibus oblongis intermedio ovato acuto basi tricalloso.

Wild in JAVA—Junghuhn, 301, (*v. s. sp. comm. cel. de Vriese.*)

I have not seen the anther and pollen-masses of this. The dried flowers are cartilaginous.

§ 2. LABELLUM CANALICULATUM INAPPENDICULATUM.

5. **S. grandiflorum.**

S. pseudobulbis prismaticis, folio lanceolato v. retuso, scapo vaginis 2 maximis aucto, sepalis maximis inæqualibus dorsali latissimo obtuso lateralibus acuminatissimis supra medium refractis, petalis nanis acutis, labello linguiformi obtuso compresso.

Bolbophyllum grandiflorum. *Blume Rumphia, IV. p.* 42.
Ephippium grandiflorum. *Id., tt.* 195 *and* 199.

Wild in woods on the coast of NEW GUINEA—Blume.

Flowers the largest of the genus, above eight inches in diameter, pale yellowish green. Scape six inches high. The dorsal sepal brownish above the base, with a strong pallid netting; the others not netted. Lip glaucous spotted with sanguine.—*Blume.*

* 6. **S. Lobbii.** *Lindley, in Paxton, l. c. ic.* 98.

S. folio petiolato obovato-oblongo coriaceo, pedunculo folio breviore nudo basi subglanduloso è bracteis squamæformibus cucullatis falcatis subglandulosis erumpente, sepalis oblongis acutis lateralibus falcatis, petalis conformibus minoribus reflexis, labello longè unguiculato cordato ovato acuto canaliculato apice recurvo.

Sestochilus. *Hb. Hooker.*
Bolbophyllum Lobbii. *Lindley, in Bot. Reg.* 1847, *sub t.* 29; *Bot. Mag., t.* 4532.

Wild in JAVA—T. Lobb, (*v. v. et s. sp.*)

Flowers full four inches across, yellow, shaded with cinnamon, spotted with light brown, and speckled outside with brown-purple. Pseudobulbs ovate, nearly as large as a pigeon's egg. Scape yellowish, spotted with brown, shorter than the leaf, its base sheathed with imbricated, convex, spotted scales. Sepals deep yellow, the upper one externally marked with purple spots running in lines; the lateral ones falcate, streaked and clouded with purple. Petals resembling the upper sepal, but smaller and streaked with purple lines. Lip cordate-ovate, acuminate, reflexed, yellow, with minute orange dots.

* 7. **S. macranthum.** *Lindley, in Paxton, l. c.*

S. foliis petiolatis oblongis planis coriaceis, pedunculo petiolo longiore, sepalo dorsali plano ovato acuminato lateralibus petalisque subconformibus hinc tortis, labello minimo unguiculato subtrilobo acuminato.

Bolbophyllum macranthum. *Lindley, in Bot. Reg.* 1844, *t.* 13.

Wild at SINGAPORE—Loddiges, (*v. v. c.*)

Allied to both *B. leopardinum* and *affine*; from each it differs in its much more fleshy and larger flowers, whose stalk is considerably longer than the petiole. The flowers expand so flat, that they seem as if they had been pressed. In the centre, they are a pale lemon-colour, but towards the tips they are much mottled with dark chocolate-coloured spots.

* 8. **S. Cheiri.** *Lindley, in Paxton, l. c.*

S. foliis oblongis coriaceis basi canaliculatis apice emarginatis, sepalis elongatis lanceolatis lateralibus basi ventricosis petalisque è latâ basi linearibus acuminatis in manûs speciem velut digiti conniventibus, labello basi ovato concavo apice longè rostrato.

Bolbophyllum Cheiri. *Lindley, in Bot. Reg.* 1844, *misc.* 66.

Wild in MANILLA—Loddiges, (*v. v. c.*)

Sepals an inch and a half long, a clear olive green, marked with brownish stripes. The lip jointed so loosely with its support that it falls forward every time the flower is waved by the wind. Both sepals and petals are so arranged that they converge much like the human fingers when they are brought together without being bent.

9. **S. megalanthum.**

S. pseudobulbis ferè obsoletis monophyllis, foliis oblongis crassis emarginatis basi canaliculatis marginibus recurvis, pedunculo stricto aphyllo unifloro basi squamato, sepalis oblongo-linearibus acuminatis lateralibus invicem falcatis basi auriculatis, petalis linearibus acuminatis incurvis, labelli lobis lateralibus erectis dentiformibus intermedio lineari longè rostrato.

Bolbophyllum megalanthum. *Griffith Ic., t.* 292 ; *Notulæ, p.* 286.

Wild in MALACCA ; on trees and rocks at Pulo Bissar, common —Griffith.

Flowers very large, light brown with purple spots and dots. The lateral sepals are uppermost and cross each other like a pair of scythe blades. I have seen no specimen.

10. **S. Reinwardtii.**

S. pseudobulbis sulcatis cylindraceis, folio oblongo petiolato acuto multinervi, pedunculo pseudobulbis æquali trivaginato, sepalis ovatis acuminatissimis, petalis conformibus setaceo-acuminatis, labello ovato acuminato.

Dendrobium grandiflorum. *Reinwardt ic. ined.*

Wild in JAVA—Reinwardt ; T. Lobb, 174, (*v. s. sp. et ic. pict.*)

There are two varieties known to me, one with leaves eight and a half inches by three and a half inches—*Reinwardt* ; the other with leaves six and a half inches by one and three-eighths of an inch, and thinner—*T. Lobb.* Flowers greenish, one and three-fourths of an inch from tip to tip of sepals. Column, column-foot, and lip, crimson.

* 11. **S. pileatum.**

S. foliis . . . . , floribus solitariis glabris, sepalis oblongis obtusis lateralibus convexis longioribus, petalis conformibus duplò angustioribus, labello linguiformi obtuso lævi ponè basin bijugato inter

juga subaspera nectare lucido obducto, columnâ tereti muticâ, antherâ conicâ.

Bolbophyllum pileatum. *Lindley, in Bot. Reg.* 1844, *misc.* 73.

Wild at SINGAPORE—Loddiges, (*v. v. c.*)

Flower large yellow-ochre-coloured, with a nearly flat moveable labellum stained with two purple ridges near the base, between which is a little bright yellow valley, secreting a mucilaginous matter along its whole length. The anther is conical, like an old-fashioned high-crowned hat.

12. **S. striatum.**

S. pseudobulbis subglobosis monophyllis, foliis oblongis planis emarginatis petiolo lineari subæqualibus, racemis pauciforis debilibus prostratis laxè bracteatis, sepalis ovatis subæqualibus, petalis linearibus patentissimis obtusis duplò brevioribus, labello lanceolato integerrimo basi utrinque obsoletè dentato.

Dendrobium striatum. *Griffith Notulæ, p.* 318.

Wild in KHASIA; at an elevation of 4-5000 feet—Hooker and Thomson; at Myrung on trees, Mumbree $\frac{146}{236}$,—Griffith, (*v. s. sp.*)

The flat long-stalked leaves, and two-to-three-flowered weak prostrate racemes are remarkable. Flowers the smallest of the genus, greenish, lined and dotted with sanguine. Lip greenish white, with three straight central sanguine lines and crimson lateral veins.—*Griffith.* Pseudobulbs dark brown, smooth. Lines on flower dingy purple.—*Hooker and Thomson.*

13. **S. affine.** *Lindley, in Paxton, l. c.*

S. pseudobulbis oblongis teretibus, foliis coriaceis rigidis oblongis solitariis petiolatis emarginatis, floribus solitariis, sepalis petalisque æqualibus ovato-lanceolatis, labello carnoso ovato-lanceolato obtuso integerrimo.

Bolbophyllum affine. *Wallich Cat., no.* 1982; *LO., p.* 48.

Wild in NEPAL—Wallich; KHASIA MOUNTAINS, at the elevation of 3000 feet on Gordonia—Hooker and Thomson, (*v. s. sp.*)

Nearly related to the following, with which it agrees in the position and size of its flowers, but it differs from it in their being solitary, in the more lanceolate figure of the floral envelopes, and especially in the petals being as long as the sepals. (Perianth white, streaked with red. Labellum red-brown. Column yellow.—*Hooker and Thomson.*)

14. **S. leopardinum.** *Lindley, in Paxton, l. c.*

S. pseudobulbis cæspitosis ovato-oblongis, foliis coriaceis rigidis oblongis solitariis petiolatis, floribus fasciculatis globoso-campanulatis, sepalis ovatis guttatis subæqualibus, petalis mino-

ribus conformibus, labello carnoso ovato obtuso integerrimo basi utrinque denticulato.

Dendrobium leopardinum. *Wallich Tentamen, vol.* 1, *p.* 39, *t.* 28.
Bolbophyllum leopardinum. *Lindley, in Wall. Cat., no.* 1981.

Wild in the HIMALAYA; upon Mount Chandaghiry, on the trunks of trees—Wallich; KHASIA MOUNTAINS, 4-6000 feet—Hooker and Thomson, (*v. s. sp.*)

Flowers globose, pale yellowish brown, closely dotted with purple. Lip deep purple.

15. S. Griffithii.

S. pseudobulbis oblongis, foliis ovalibus emarginatis, bracteâ parvâ membranaceâ obtusâ cucullatâ, floribus subglobosis, sepalis petalisque minoribus ovatis concavis, labello ovato.

Bolbophylli sp. *Griffith Ic., t.* 296, *f.* 2.

Wild on the KHASIA hills of India—T. Lobb; at 5000 feet—Hooker and Thomson; Myrung wood—Griffith, (*v. s. sp.*)

Flowers fleshy, whitish, with numerous rosy-purple blotches. Lip white, tremulous, blotched in the same way. Column white—*Griffith.* The figure above quoted has nothing to do with the reference given by Griffith's editor at p. 294 of his "Notulæ." It is no doubt the *Dendrobium Bolbophylli* of that author's "Itinerary Notes," p. 65, no. 1019. The specimen from T. Lobb, communicated by Messrs. Veitch, has but one flower, which I am unable to examine.

16. S. uniflorum.

S. pseudobulbis angustis oblongis teretibus monophyllis, foliis lineari-oblongis coriaceis emarginatis, pedunculo unifloro filiformi pendulo, sepalo dorsali oblongo lateralibus recurvis duplò majore, petalis lineari-spathulatis revolutis, labello trilobo basi calloso auriculato lobo intermedio majore ovato.

Bolbophyllum uniflorum. *Griffith Ic., t.* 295; *Itin., p.* 110.

Wild in BOOTAN; on the Mishmee hills towards Lung; on the mango-tree on Dewangiri—Griffith, (*v. s. sp.*)

"Sepals orange-colour, with red spots inside; petals of the same colour at the base, whitish at the tip. Lip tongue-shaped, sanguine at the point."—*Griffith.* The small cartilaginous ears at the base of the lip, and the great dorsal sepal, are very remarkable. Griffith's figure of them is not good.

SUNIPIA.

Buchanan Hamilt. in Rees Cycl. sub Steli. Lindl. Orch. Scel. LO., p. 179.

Sepala cartilaginea, æqualia, ringentia: lateralibus labello suppositis à dorsali basi sejunctis.

Petala nana.

Labellum posticum, integrum, sessile, sepalis minus, carnosum, concavum, inappendiculatum.

Columna nana, libera, mutica, basi vix producta.

Pollinia 4, per paria caudiculis 2 distinctis apice contiguis adnata; *glandulâ* nullâ. *Anthera* dorso affixa, verticaliter 4-valvis.

Herba *epiphyta*, Himalensis, *pseudobulbosa*. Folia *solitaria, coriacea*. Scapus *radicalis, apice spicatus*. Bracteæ *membranaceæ, spathaceæ, floribus longiores*.

The very peculiar anther, opening vertically, with two pairs of equal pollen-masses adhering to as many tough terete elastic legs or caudicles meeting at the rostellum, which however furnishes no gland, distinguishes this very clearly from all other genera having the habit of a Bolbophyll, except Acrochæne. Ione differs in its having a pair of well-defined glands. The name Sunipia, (from *Sunipiang* an Indian word,) was applied by Buchanan Hamilton to various Bolbophylls, among which this would have been included at the time when he flourished.

1. **S. scariosa.** *Lindley, in Wall. Cat., no.* 7373. *LO., no.* 1. *Sert. Orch., frontisp., f.* 8; *with a good description.*

Ornithidium bracteatum. *Wallich MS.*

Wild in the Khasia Hills—Griffith, T. Lobb; Nepal—Wallich; Sikkim-Himalaya, 5-6000 feet—J. D. Hooker, (*v. s. sp.*)

Pseudobulbs small, ovate, slightly elongated. Leaves from two to four inches long, by three to seven lines broad. Flowers white, stained with pink, shorter than the carinate glumaceous bracts, which, when closed, seem as if their outline was triangular. Lip perfectly destitute of fringes. My specimens vary from five inches to a foot in height.

Supposed species now referred to another genus.

Sunipia bicolor = Ione bicolor.

ACROCHÆNE.

Sepala explanata, membranacea, lateralibus majoribus triangularibus columnæ pedi producto adnatis.

Petala minora.

Labellum c. pede columnæ articulatum, membranaceum, complicatum, inappendiculatum, in columnam incumbens.

Columna nana, mutica, basi longè producta.

Pollinia 2, globosa, apice rimâ verticali fissa, *caudiculis* totidem teretibus apice contiguis adnata. *Glandula* 0. *Anthera* membranacea, incumbens, 1-locularis.

Herbæ *epiphytæ*, Indiæ septentrionalis, *pseudobulbosæ*. Folia *coriacea*. Racemi *radicales, erecti, laxè vaginati*.

What the true position of this and Sunipia may be is open to some question. The presence of a tough terete caudicle to each pollen-mass points to Vandeæ ; but there is certainly no free gland. The habit of the only species is peculiar.

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1. Acrochæne punctata.

Pseudobulbus ovatus. Folium solitarium, coriaceum, oblongum, $\frac{7}{2}$ unciale, petiolo $3\frac{1}{2}$ unciali. Scapus radicalis, folio brevior, basi laxè vaginatus, squamis patulis lineari-lanceolatis membranaceis vestitus, apice racemosus. Bracteæ squamis conformes, ovario vix æquales. Flores straminei, sanguineo-punctati. Sepalum dorsale erectum, ovatum, obtusum ; lateralia triangularia. Petala uninervia, fimbriata. Labellum complicatum, trilobum ; lobis lateralibus erectis obsoletis serrulatis, intermedio recurvo plano obtuso.

Wild in the Sikkim-Himalaya, at the height of 4000 feet —J. D. Hooker, (*v. s. sp. et ic. pict.*)

IONE.

Sepala membranacea, basi æqualia, bilabiata: lateralibus parallelis sæpiùs connatis, labello suppositis.

Petala nana.

Labellum posticum, integrum, sepalis majus v. æquale, margine membranaceum, medio striatum carnosum, sæpiùs in apicem pugioniformem productum.

Columna nana, semiteres, libera, mutica, basi producta.

Pollinia 4, per paria *glandulis* 2 distinctis cartilagineis ovalibus adnata.

Herbæ *epiphytæ*, Himalenses, *pseudobulbosæ*. Folia *solitaria, coriacea*. Scapus *radicalis, spicatus*. Bracteæ *membranaceæ, nunc spathaceæ, floribus longiores*.

With the habit of a Bolbophyllum or Didactyle, this genus unites the glands and pollen-masses of an Angræcum. Its long membranous two-lipped calyx, dwarf petals, and large lip, with a fleshy axis usually extended into a dagger-shaped point, are very unlike anything belonging to neighbouring genera. I see no reason for regarding the glands as of a different nature from those of Vandeæ, out of which this forms one of the transitions to Malaxids.

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§ 1. Latifoliæ; *bracteis spathaceis*.

1. **I. cirrhata.**

I. foliis oblongis scapo æqualibus, bracteis cucullatis acutis ovariis longioribus, sepalis lateralibus connatis, petalis rotundatis integerrimis, labello ovato oblongo integro lineis 2 elevatis basi clavatis aucto.

Wild in Sikkim-Himalaya, at the height of 4000 feet—J. D. Hooker, (*v. s. sp. et ic. pict. Cathcart.*)

Very much like the next; but the leaves are longer, and the lip is not serrated, but is marked by two elevated white lines, resembling the columnar cirrhi of a Catasetum. Flowers dirty white, with purple streaks and a deep violet lip. My account is almost wholly taken from Mr. Cathcart's figure in Dr. Hooker's possession.

2. **I. virens.**

I. foliis oblongis planis utrinque obtusis scapo duplò brevioribus, bracteis ovatis acutis membranaceis distantibus ovario longioribus, sepalis lateralibus connatis, petalis acutis integerrimis,

labello oblongo serrulato in apicem longum crassum teretem striatum producto.

Dipodous genus. *Griffith Not., p.* 405 ; *Ic., t.* 328, *fig.* 1.

Wild in the HIMALAYA : in the Mishmee hills—Griffith, (*v. s. sp. comm. b. Griffith.*)

Readily known by its broad oblong leaves, about four inches long by one and a quarter wide, and by its distant bracts. The scape would seem always to be nodding. Griffith thus speaks of it : Leaves lively green. Scape fuscous below, becoming purple among the flowers, and green at the apex of the newer parts. Bracts whitish with purple veins. Lateral sepals white in the middle, with greenish edges, the white parts veined with purple. Petals purple and sanguine. Pollen-masses light yellow. Pseudobulb shrivelled.

3. **I. fusco-purpurea.**

I. foliis angustis obtusiusculis scapo multò brevioribus, bracteis ovatis acuminatis imbricatis ovario æqualibus, sepalis lateralibus liberis, petalis acutis, labello ovato cordato concavo membranaceo in apicem crassum teretem producto.

Dipodous genus. *Griffith Not., p.* 405 ; *Ic., t.* 327, *fig.* 1.

Wild in the HIMALAYA : trees on Thumathya in the Mishmee mountains—Griffith, (*v. s. sp. comm. b. Griffith.*)

Related to the last in the form of its lip, which is however more cordate, thinner at the edge, and with a more distinct tapering fleshy apex, but the bracts are not carinate, imbricate each other when young, and hardly reach beyond the ovary. (Peduncles light yellowish green. Ovary green. Pseudobulbs blackish. Sepals and petals light fuscous veined with bright purple. Lip the same, but less veined ; apex tongue-shaped, light fuscous green on the sides, purplish at the edge. Bracts membranous.—*Griffith.*)

4. **I. paleacea.**

I. foliis angustis obtusiusculis scapo subæqualibus, bracteis angustis ovalibus obtusis imbricatis adpressis ovario subæqualibus, sepalis lateralibus connatis, petalis acutis serrulatis, labello ovato serrulato membranaceo in apicem longum crassum teretem producto.

Wild in the HIMALAYAS : Darjeeling—Griffith, (*v. s. sp. comm. b. Griffith.*)

Very like *I. fusco-purpurea*, but the scape is little longer than the leaf, the bracts are long, narrow, close-pressed, and membranous, and the petals as well as labellum are distinctly serrated. Lip evidently purple. The flowers are twice as long, and much more membranous.

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§ 2. ANGUSTIFOLIÆ ; *bracteis membranaceis.*

5. **I. Khasiana.**

I. foliis lineari-oblongis emarginatis scapo filiformi æqualibus, spicâ flexuosâ, bracteis laxis angustis distantibus floribus æqualibus, sepalis lateralibus connatis, petalis rotundatis serrulatis, labello

panduriformi-rhombeo obtuso medio serrato anticè integerrimo lineis 2 elevatis secus medium.

Dipodium Khasiyanum. *Griffith Not., p.* 354 ; *Ic., t.* 327, *f.* 2.

Wild in the KHASIA hills, 5-7000 feet—Hooker and Thomson ; on trees at Nungbree, Churra, Myrung, Amwee—Griffith, 1219, (*v. s. sp.*)

A plant from three to four inches high, forming close tufts. Flowers small, with the two lateral sepals completely or nearly united. Sepals white streaked with violet ; lip deep violet with two white streaks, according to a drawing of Mr. Cathcart's.

6. I. bicolor.

I. foliis lineari-oblongis emarginatis scapis filiformibus duplò longioribus, spicâ flexuosâ, bracteis laxis floribus brevioribus, sepalis lateralibus semi-connatis, petalis rotundatis serrulatis, labello panduriformi serrulato in apicem crassum teretem producto.

Sunipia bicolor. *LO., no.* 2. *Sert. Orch. frontisp. fig.* 5.

Wild in NEPAL—Wallich ; Sikkim-Himalaya at 4-6000 feet—J. D. Hooker ; Darjeeling—Griffith, (*v. s. sp.*)

A smaller plant than the last. Scapes very short-stalked, not half the length of the leaves. Sepals white, acuminate, with three purple veins at the base. Petals white. Lip dark purple, with the point protruding in the form of a dagger-blade ; in the Sikkim plant shorter than in that from Darjeeling.

7. I. candida.

I. foliis lineari-oblongis emarginatis scapis filiformibus æqualibus, spicâ subflexuosâ, bracteis floribus brevioribus, sepalis omnibus liberis, petalis ovatis acutis ciliato-fimbriatis, labello ovato basi fimbriato versus apicem serrulato in apicem longum crassum producto.

Wild on the KHASIA MOUNTAINS, at 5-6000 feet—J. D. Hooker and R. Thomson, (*v. s. sp.*)

Flowers pure white.

ERYCINA.

SEPALA subherbacea, æqualia, patentia, lateralibus basi connatis.

PETALA omninò conformia.

LABELLUM maximum, petaloideum, tripartitum, circa columnæ basin adnatum; laciniis æqualibus, auriculâ carnosâ inter columnam sinumque utrumque; basi appendice bilingui auctum.

COLUMNA nana, semiteres, brachio carnoso (staminodiis) utrinque; *rostello* elongato sigmoideo.

POLLINIA 2, subrotunda, posticè excavata: *caudiculâ* lineari subulatâ; *glandulâ* ovali. *Anthera* membranacea, unilocularis, longè rostrata.

Herba *epiphyta*, Americæ tropicæ, *ebulbis*. Folia *pauca, radicalia, disticha, coriacea, acuta*. Panicula *terminalis, racemosa; bracteis squarrosis, amplexicaulibus*. Ovaria *ramentaceo-echinata*.

Excellent specimens of this extremely rare plant, with which I have been favoured by M. Galeotti, show, what has long been suspected, that it is not an Oncidium; from which genus it is separated by its dwarf column, long sigmoid rostellum, and the very large fleshy column-arms, which evidently represent the lateral inner abortive stamina of *Zygostates*, and the two arms of *Leochilus*. It differs from the former genus in the column-arms not being free, in its large peculiar lip, and its minute petals; from *Leochilus* in its long sigmoid rostellum, and peculiar lip; and from *Ornithocephalus*, to which it approaches, in the remarkable arms of the column, and two pollen-masses instead of four. The lip has the following unusual structure; it grows nearly round the column, and adheres to all that it surrounds; at the base next the column stands on either side a little fleshy ear, which arises from within the edge of the lip, and a similar, but smaller, ear is produced within and above each anterior sinus of the lip. The analogy of these intermediate ears is not obvious.

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1. Erycina echinata.

Oncidium echinatum. *H. B. K., Nov. Gen. et Sp., I.* 345, *t.* 79. *LO.*, *p.* 204.

Wild in MEXICO; on the west coast near Acapulco, in the hottest region, flowering in May—Humboldt and Bonpland; at the Laguna de Tututepeque, in the province of Oaxaca, at the elevation of 4000 feet, in April—Galeotti, 5359 F (*v. s. sp. comm. cel. Galeotti.*)

The figure in *H.B.K.* is tolerably characteristic, as a general representation. My specimens are about nine inches high, with leaves like those of *Ionopsis utricularioides*. The scape is polished like a bamboo; the bracts are completely amplexicaul, with diverging acute points The lobes of the lip, which resembles that of a *Tetramicra*, are rounded and entire. The whole plant has the aspect of an *Ionopsis*.

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EPIDENDRUM.

Linnæus. Swartz, Nov. Act. Ups., VI. p. 66, t. 5. f. 2. Brown, in Hort. Kew. ed. 2, V. 217. *LO., p.* 96. *Lindley, in Hooker's Journal, III.* 81.

SEPALA patentia, subæqualia, lateralibus basi haud productis.

PETALA nunc conformia et æqualia, nunc diversissima.

LABELLUM unguiculatum, cum columnâ parallelum et omninò v. parte connatum: limbo integro v. diviso, basi sæpiùs callo duplici, costâ v. tuberculo nunc interjectis, instructo; nunc verosimiliter in calcar productum pedicello immersum ideoque columnæ cuniculum formans.

COLUMNA elongata: clinandrio marginato sæpè fimbriato, semiteres, ecornis, basi sæpiùs cuniculata.

POLLINIA 4, cereacea, æqualia, compressa; *caudiculis* totidem replicatis; glandulâ liberâ nullâ. *Anthera* carnosa, 2—4-locularis.

Herbæ *epiphytæ* Americæ calidioris, *nunc terrestres.* Caulis *nunc pseudobulbosus nunc elongatus foliosus.* Folia *carnosa, rarissimè venis elevatis striata.* Flores *solitarii, spicati, racemosi, corymbosi* v. *paniculati, terminales* v. *laterales, sæpiùs siccati coriacei, raphidibus farcti.*

In this extensive genus, there exist such very remarkable differences in the manner of growth, as would almost justify the creation of several distinct genera for their reception. The three first divisions in the following classification have, for instance, a pseudobulb instead of a true stem, and a lip free from the column instead of being adherent to it; but on the other hand, four other divisions have a pseudobulbous growth combined with an adherent lip, and among the Osmophytes and Encyclian species, the lip adheres to the column in different degrees; so that such distinctions fail when applied to practice. Beyond these differences, I see little that promises to be available for generic purposes; and since it must be admitted that there is something in the peculiar aspect of the genus which usually points it out to even an inexperienced eye, any proposal of new genera seems to me unadvisable.

The essential character of the genus resides in the lip being more or less united by a fleshy base to the edges of a column, which is hornless and considerably elongated, but not petaloid and winged; in the pollen-masses being four, equal, compressed, with as many pulverulent caudicles folded back upon them; and finally in the presence of a cuniculus more or less deep at the base of the lip. Among the genera most nearly allied to Epidendrum, ISOCHILUS, of which Hexisea is a section with adnate labellum, has two caudicles to which the pollen-masses adhere by their whole face; PONERA is an Isochilus with the mentum of a Maxillaria; DINEMA is remarkable for its two-horned column, &c., and pair of caudicles; BARKERIA, so like Amphiglottium in habit, has a petaloid column; PHYSINGA has a scrotiform free spur, &c.; BROUGHTONIA differs in having an external adnate spur, and a membranous cucullate lip. As to ALAMANIA, the transverse appendage of its lip, and some peculiarity of habit, are all that it can be said to have for its character.

For the reasons above given, I do not think it expedient to regard the following divisions as anything more than sub-genera; when they possess distinctions

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beyond what are mentioned in the analytical table, those points will be adverted to at the head of each sub-genus.

ANALYSIS OF THE SUB-GENERA.

Labellum ferè liberum.
- Flores è spathâ . . . . . § 1. EPICLADIUM.
- Flores nudi.
  - Caulis pseudobulbosus . . . . § 2. ENCYCLIUM.
  - —— fusiformis . . . . . § 3. DIACRIUM.

Labellum adnatum.
- Caulis pseudobulbosus.
  - Flores sessiles . . . . . § 4. HORMIDIUM.
  - —— racemosi v. paniculati.
    - Inflorescentia radicalis . . . § 5. PSILANTHEMUM.
    - ———— terminalis.
      - Labellum fissum . . . . § 6. AULIZEUM.
      - ———— indivisum . . . § 7. OSMOPHYTUM.
- Caulis repens, squamatus . . . . § 8. LANIUM.
- —— foliosus strictus.
  - Inflorescentia terminalis.
    - Spatha 1, magna . . . . . § 9. SPATHIUM.
    - Spathæ plures, imbricatæ . . § 10. AMPHIGLOTTIUM.
    - ——— o . . . . . § 11. EUEPIDENDRUM.
  - Inflorescentia lateralis . . . . § 12. PLEURANTHIUM.

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§ 1. EPICLADIUM. *Lindley, in Hooker's Journal, III.* 81.

In this section the structure of the flower is nearly that of Encyclium, but the flowers grow out of a great spathe, as in Spathium, and the pseudobulbs are evidently assuming the condition of an ordinary stem. In *E. aurantiacum*, the calli or linear plates so common in the genus are replaced by three raised lines, the ovary has a very long cuniculus, and the flowers have the regularity of the Hexisean Isochiles.

* 1. **E. aurantiacum.** *Bateman, in Bot. Reg.* 1838, *misc.* 11; *Orch. Mex. and Guat., t.* 12.

E. foliis oblongis planiusculis coriaceis caule clavato diphyllo duplò brevioribus, spathâ maximâ cucullatâ pedunculo longiore, racemo brevi subcernuo densifloro, sepalis petalisque lanceolatis acutis subæqualibus, labello libero oblongo cucullato basi columnam involvente lineis tribus elevatis.

Wild in MEXICO, Sierra St. Pedro Nolasco—Jurgensen, 879; GUATEMALA, on exposed rocks on the precipitous brows of ravines, where it is subject to great extremes of heat and cold —Skinner; on the branches of *Taxodium distichum*—Grisebach, B. 25; Oaxaca, at St. Juan de Nepomuceno—Karwinski in herb. Martius, (*v. s. sp. et v. cult.*)

Flowers numerous, rich orange-colour.

2. **E. campylostalix.** *H. G. Reichenbach, in Bot. Zeit.* 1852, *p.* 730.

E. pseudobulbo oblongo ancipiti, folio solitario oblongo acuto, spathâ lanceolatâ pedunculo breviore, paniculâ folio subæquali vaginis bracteisque lanceolatis ovariis æqualibus scariosis squamatâ, sepalis lanceolatis acuminatis, petalis angustioribus, labello tricarinato medio dilatato trilobo: laciniis lateralibus rotundatis intermediâ obovatâ, columnâ recurvâ, clinandrii appendice "semiterete tabulam proferente!!"

Wild in VERAGUA and COSTA RICA—Warczewitz.

Leaf large. Flower-stem dark purple. Sepals pale, petals dark-purple, lip white.—*Rchb.* This is surely an Epicladium, on account of its spathes, and not an Encyclium, to which sub-genus it is referred by M. Reichenbach.

* 3. **E. Boothianum.** *Lindley, in Bot. Reg.* 1838, *misc. no.* 7.

E. pseudobulbis compressis imbricatis ovatis subdiphyllis, foliis ligulato-oblongis undulatis apice subobliquis, racemo laxo sub-7-floro basi spathaceo foliis longiore, sepalis petalisque subæqualibus patulis ovali-linearibus acutis, labello semilibero rhomboideo acuto utrinque deflexo.

Wild in CUBA; in the forests of the coast of Saltadero, Guantanamo—Linden, (*v. v. c. et s. sp.*)

Pseudobulbs like those of Broughtonia. Flowers nodding, sweet-scented, yellowish orange, spotted with purple. Lip white, spathe green, compressed, about two inches long, rising nearly as high as the lowest flowers.

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§ 2. **ENCYCLIUM.** *Lindley, in Hooker's Journal of Botany, III.* 81; *Bot. Reg.* 1842, *misc. p.* 28. Encyclia, *Hooker, in Bot. Mag., t.* 2831.

The lip in this sub-genus never has free calli, but, if marked with processes of any kind, usually presents them in the form of a pair of raised lines or ribs, which either converge towards the base of the lamina, or become completely confluent into a kind of cushion. It is this peculiarity which has led to the admission of E. nævosum here instead of among Amphiglotts.

ANALYSIS OF THE SECTIONS.

Labellum integerrimum. . . . . A. *HOLOCHILA.*
——— apice ipso tridentatum, carnosum . . . . B. *SARCOCHILA.*
——— trilobum: lobo medio membranaceo; lobis lateralibus rotundatis, intermedio subconformi nec majore . . . . . C. *SPHÆROCHILA.*
——— angustis, intermedio difformi sæpiùs multò majore . . . D. *HYMENOCHILA.*
a. lobus intermedius acutissimus v. acuminatus.
b. ——— obtusus
* rachi lævi.
* * rachi asperâ-
c. ——— manifestè bilobus.

A. *HOLOCHILA.*

* 4. **E. vitellinum.** *LO., p.* 97 ; *Bot. Reg.* 1840, *t.* 35 ; *Sert. Orch., t.* 45 ; *Bot. Mag., t.* 4107.

E. pseudobulbis ovatis acuminatis diphyllis, foliis oblongo-ligulatis acutis basi vaginantibus racemo erecto multifloro breviori, sepalis petalisque ovato-lanceolatis acutis subæqualibus patulis, labello lineari apice angustato abruptè acuto infra medium callosum bifoveato semilibero.

Wild in MEXICO ; Oaxaca, on oaks at the height of 5-6000 feet —Galeotti, 5104 ; Xalapa—Coulter ; GUATEMALA, on cloud-capped mountains, amidst continual mists, in the regions of Lichens and Jungermannias—Skinner ; the Cumbre of Tetontepeque, 9000 feet above the sea—Hartweg, (*v. v. c. et s. sp.*)

Bears flowers of a brilliant orange in many-flowered erect spikes. A magnificent species very difficult of cultivation.

* 5. **E. aureum.**

E. sepalis linearibus acutis, petalis conformibus, labello ovato convoluto acuminato ecalloso venis 3 parallelis centralibus, ovario altè cuniculato.

Broughtonia aurea. *Lindley, in Bot. Reg.* 1840, *misc.* 22.

Wild in MEXICO ; in the neighbourhood of Valladolid—Barker, (*v. v. c.*)

" Flowers bright yellowish red, like *E. vitellinum*." I still possess the only flower I ever saw of this. Although I can add little to what was stated in the Botanical Register, I can say that it is a species apparently perfectly distinct.

* 6. **E. nævosum.**

E. pseudobulbis fusiformibus membranis laxis vestitis, foliis ovalibus pergameneis supremo tantum persistente, scapo filiformi flexuoso squamis adpressis vaginato apice 3—5-floro, floribus membranaceis nutantibus, sepalis petalisque linearibus acuminatis secundis, labello ovali lineâ mediâ asperâ venisque divergentibus varicosis, callo baseos excavato, cuniculo ventricoso.

Wild in MEXICO ; in the province of Oaxaca, at the elevation of 4000 feet, on the Pacific side—Galeotti, 5330, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

A small species, scarcely six inches high. The leaves are about three to a pseudobulb, but two fall off early, giving the plant the appearance of an Encyclium ; nevertheless, it may be almost regarded as an Amphiglott, related to *E. antenniferum*. A plant that flowered some years since with Mrs. Lawrence had white sepals and petals, a crimson anther, and a yellow lip richly dotted with crimson.

* 7. **E. Brasavolæ.** *H. G. Reichenbach, in Bot. Zeit.* 1852, *p.* 729, *Oct.* 13.

E. pseudobulbis obpyriformibus, foliis oblongis acutis, floribus paniculatis (?), sepalis petalisque brevibus acuminatis coriaceis, labello obtusè rhombeo acuminato : lineâ mediâ elevatâ sinuatâ, clinandrii lobo medio spathulato fimbriato elongato.

Wild in VERAGUA, on the volcano of Chiriqui, at the height of 8000 feet—Warczewitz.

Flowers the size of *Brasavola Perrinii*, yellow and brown violet ; lip yellow, purple at the point. Would not be taken for an Epidendrum without an examination of the anther.—*Rchb.*

* 8. **E. subaquilum.** *Lindley, in Bot. Reg.* 1846, *sub t.* 64.

E. pseudobulbis ovatis monophyllis cæspitosis, foliis linearibus obliquè emarginatis obtusis scapo glabro filiformi subpaniculato æqualibus, sepalis petalisque linearibus dorsali ascendente lateralibus parallelis, labello semilibero ovato-lanceolato indiviso lamellis 3 spongiosis ante medium convexum.

Wild in MEXICO or GUATEMALA—Warner, (*v. v. c.*)

A small slender plant, with leaves seven or eight inches long, and barely three lines wide. Flowers dull brown, with a whitish lip.

9. **E. distantiflorum.** *Richard and Galeotti, Orch. Mex., t.* 7.

E. "pseudobulbis globosis parvulis 2—3-phyllis, foliis lanceolato-linearibus, floribus pallidè luteis, paniculâ laxâ ramosâ, sepalis linearibus, labello ovali-lanceolato acutissimo."

Wild in MEXICO—Galeotti.

10. **E. ligulatum.** *La Llave. LO., p.* 98.

E. pseudobulbis ovatis compressis, foliis lanceolatis subcoriaceis striatis, scapo filiformi, floribus alternis resupinatis, sepalis petalisque ligulatis reflexis, labello obcordato limbo subcrenato, capsulâ glabrâ trigonâ.

Wild in MEXICO, on the Irapæan mountains—La Llave.

Flowers purplish brown with a yellowish dotted lip. Possibly this obscure plant may be more nearly related to *E. glaucum*.

* 11. **E. lividum.** *Lindley, in Bot. Reg., July,* 1838, *misc.* 91.

E. pseudobulbis angustè ovalibus compressis diphyllis, foliis lineari-lanceolatis subundulatis obtusiusculis, scapo paucifloro foliis breviore, ovario triquetro, sepalis erectis herbaceis linearibus mucronatis, petalis spathulatis obtusis æquilongis, labello libero lineari-oblongo obtuso crispo medio tomentoso serie triplici dentium elevatorum intermediâ majore, columnâ triquetrâ apice tricallosâ.

E. articulatum. *Klotzsch, in Allg. Gartenz., Sept.* 22, 1838.

Wild in COLOMBIA—Loddiges; LA GUAYRA—Klotzsch, (*v. v. c.*)

Flowers small, dull dingy purple, a little tessellated; their lip pale dirty yellow, with a few dull purple veins.

* 12. **E. tripunctatum.** *Lindley, in Bot. Reg.* 1841, *misc.* 143.

E. pseudobulbis ovalibus diphyllis, foliis ligulatis tenuibus apice recurvis scapo bifloro pluriès longioribus, sepalis patentissimis lineari-oblongis, petalis duplò angustioribus, labello semiadnato obovato rugoso utrinque ultra columnam emarginato, columnâ atropurpureâ apice trilobâ et luteo tripunctatâ.

!! E. Ghiesbreghtianum. *Richard and Galeotti, Orch. Mex., no.* 31.

Wild in MEXICO—Galeotti, (*v. v. c.*)

This has long grassy leaves, and a very short scape. The sepals are twice as broad, and much larger than the petals, and a dull yellow green. The column is deep purple, with three minute lobes, each tipped with a pale orange spot. The lip is pale citron, rather more than half an inch long, not warted, and distinctly emarginate near the apex of the column.

* 13. **E. auritum.** *Lindley, in Bot. Reg.* 1843, *misc.* 4.

E. pseudobulbis elongatis compressis squamis vaginatis, folio angusto ligulato obtuso, racemo 3—4-floro folio breviore, bracteis cartilagineis spathaceis internodiis longioribus, sepalis linearilanceolatis acutis recurvis, petalis conformibus duplò brevioribus erectis, labello lineari convexo arcuato medio carnoso foveato rugoso, columnâ apice tridentatâ, antherâ utrinque auriculâ simplici bifidâ subulatâ auctâ.

Dinema paleaceum. *Lindley, in Bot. Reg.* 1840, *misc.* 112.

Wild in MEXICO; Vera Cruz, on oaks at the height of 3000 feet—Galeotti, 5114; Linden, 210; GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

Flowers very sweet-scented, like Heliotrope, pale green or almost white, with no spot or stain, except a violet blotch at the base of the lip. A peculiar feature is the presence of one or two fine pointed horns on each side the anther, which thus, when seen in front, presents the appearance of some insect's head.

14. **E. luteoroseum.** *Rich. and Galeotti, Orch. Mex., no.* 32.

E. "pseudobulbis ovoideo-oblongis parvulis, caule 3—4-phyllo, floribus parvulis luteo-roseis paniculatis, labello albido-violaceo obovali-obtuso emarginato 5-nervio glanduloso."

Wild in MEXICO—Galeotti.

* 15. **E. flabellatum.**

E. pseudobulbis ovatis basi subangulatis diphyllis, foliis coriaceis ligulatis carinatis acutis, scapo ramoso glabro, sepalis patentibus oblongis obtusis, petalis magis cuneatis, labello semi-

libero cucullato flabellatim cuneato crispo: callo elevato pubescente obovato medio depresso apice tridentato.

Wild in MEXICO—Harris, (*v. v. c.*)

A plant with the habit of *E. asperum*, with which I once incautiously confounded it (*Bot. Reg.* 1838, *misc.* 36). It differs in its undivided lip, and smooth, not scabrous, rachis. Flowers the size of *E. odoratissimum*, dull yellowish brown; lip yellow, with well-defined crimson veins and a white callus.

B. *SARCOCHILA.*

* 16. **E. glaucum.** *Lindley, in Bot. Reg.* 1840, *misc.* 56.

E. undique glaucedine obductum, pseudobulbis ovalibus compressis monophyllis, foliis ensiformibus acutis pergameneis basi canaliculatis scapo pendulo paniculato brevioribus, sepalis petalisque ovalibus obtusis, labelli linearis apice carnosi trilobi lobis lateralibus rotundatis intermedio recurvo ovato medio calloso, columnæ cardine appendice ovatâ obtusâ recurvâ aucto, ovario brevi trigono.

E. brachiatum. *Richard and Galeotti, Orch. Mex., no.* 40.
Epithecia glauca. *Knowles, Flor. Cub., II.* 167, *t.* 87.
Prosthechea glauca. *Ib., II.* 111.

Wild in MEXICO—Barker; near Oaxaca at the height of 3000 feet—Galeotti, 27 and 28; St. Pedro de Nolasco, &c.—Jurgensen, 600, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

Flowers small, scentless, green stained with dull purple. M. Galeotti's two numbers 27 & 28 merely indicate differently sized specimens of the same plant.

* 17. **E. limbatum.** *Lindley, in Bot. Reg.* 1843, *misc.* 104.

E. facie *E. glauci;* sepalis petalisque minoribus subrotundo-ovatis, labelli lobo medio recto lateralibus subfalcatis, columnæ appendice truncatâ dentatâ.

Wild in GUATEMALA—Skinner, (*v. v. c.*)

The habit of *E. glaucum*, but larger, and the flowers have roundish sepals and petals, like those of *E. squalidum*. The appendage at the back of the anther is thin, truncate and toothed, not rounded, fleshy and entire. The name alludes to a narrow yellowish border which surrounds the dull purplish brown sepals and petals. It has a slight smell, like that of cobbler's wax.

* 18. **E. ochraceum.** *Lindley, in Bot. Reg.* 1838, *misc.* 15, *t.* 26.

E. pseudobulbis obversè pyriformibus cæspitosis sursum attenuatis 1—3-phyllis, foliis linearibus acutis recurvis scapo æqualibus, spicâ terminali laxiflorâ, bracteis ovario æqualibus herbaceis rigidis acutis, sepalis petalisque subæqualibus lineari-oblongis

obtusis, labello postico sublibero trilobo: laciniis lateralibus inflexis truncato-rotundatis denticulatis intermediâ brevi emarginatâ: disci callo plano apice tridentato in series tres breves verrucarum procurrente, columnâ apice tricorni denticulatâ, clinandrio intra cornua coronulâ multidentatâ cincto, ovario triptero.

Wild in MEXICO; Hacienda de la Laguna—Schiede, No. 6; Oaxaca—Loddiges; St. Pedro de Nolasco—Jurgensen, 601 and 645; GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

The whole plant not more than nine inches high, with the long narrow pseudobulbs in tufts. Flowers small, orange on the inside, green without. The fringe between the anther and the horns of the column is very remarkable. Is not *E. triste* the same as this ?

19. **E. triste.** *Richard and Galeotti, Orch. Mex., no.* 38.

E. "pseudobulbis oblongis attenuatis 2-phyllis, fol. lanceolato-linearibus acutis, flor. viridibus parvulis pendulis: labello trilobo lobis lateralibus obtusis intermedio multò minori."

Wild in MEXICO—Galeotti.

C. *SPHÆROCHILA.*

20. **E. squalidum.** *Llave. LO., p.* 99.

E. pseudobulbis subancipitibus, floribus racemosis, sepalis petalisque oblongis acutis patulis, labello rotundato trilobo medio crassissimo 3-costato: laciniis lateralibus obtusis intermediâ subreniformi undulatâ.

Wild in MEXICO—Karwinski; on the mountains of Valladolid —La Llave, (*v. s. sp. comm. cel. Bateman.*)

Flowers dull yellowish brown, purplish outside. Lip whitish, apparently not cuniculate.

21. **E. hastatum.** *Lindley, in Hooker's Journal, III.* 82.

E. pseudobulbis . . . , foliis . . . , racemo striato 6—7-floro, sepalis petalisque discoloribus lanceolatis acutissimis patentibus, labello subrotundo subangulato basi utrinque supra unguem lobulo aucto: venis baseos elevatis.

Wild in MEXICO, in the temperate region, (*v. s. sp. comm. b. Zuccarini.*)

A species with deep purple striated sepals and petals, and a broad ivory white lip. The latter has generally a short lateral lobe on each side of its base so as to acquire a hastate form, but occasionally the lobes are almost obliterated.

* 22. **E. pterocarpum.** *Lindley, in Hooker's Journal, III.* 82. *Bot. Reg.* 1841, *misc.* 128; 1844, *t.* 34.

E. pseudobulbis ovalibus compressis subdiphyllis, foliis ensiformibus acutis, racemo angusto, sepalis petalisque subæqualibus linearibus acuminatis patentibus, labelli subrotundi trilobi cordati laciniis lateralibus rotundatis intermediâ multò longiore acutâ basi bilineatâ callo pubescente obscurè tridentato auctâ, capsulâ ovatâ tri-alatâ.

? E. cinnamomeum. *Richard and Galeotti, Orch. Mex., no.* 36.

Wild in MEXICO; Oaxaca, on oaks and rocks in the cold region at the elevation of 6-7000 feet—Galeotti, 5100, (*v. v. c. et s. sp. comm. b. Zuccarini.*)

This has a long thin raceme of brown flowers, and a yellow heart-shaped lip streaked with crimson. It is remarkable for the seed-vessel, when ripe, being extended into three broad sharp wings.

23. **E. prismatocarpum.** *H. G. Reichenbach, in Bot. Zeitung,* 1852, *p.* 729.

E. pedunculo elongato multifloro, ovario abbreviato triptero, sepalis petalisque ligulato-lanceolatis acutis, labello unguiculato cordato acuminato utrinque obtusè auriculato, cristâ bicruri lineâ interjectâ lanceolatâ, clinandrii appendice quadratâ tridentatâ.

Wild in VERAGUA, on Chiriqui—Warczewitz.

Flowers small, lip brown dotted.—*Rchb.*

D. *HYMENOCHILA.*

a. lobo intermedio *acutissimo* v. acuminato.

* 24. **E. diotum.** *Lindley, in Bot. Reg.* 1843, *misc.* 97.

E. pseudobulbis ovatis elongatis monophyllis, foliis coriaceis ensatis patulis racemo duplò brevioribus, floribus distantibus, sepalis petalisque obovatis unguiculatis undulatis acutis, labelli obtusè rhombei tripartiti axi elevatâ carnosâ in medio foveatâ laciniis lateralibus planis erectis rotundatis intermediâ rotundatâ undulatâ cuspidatâ parùm majore convexâ, columnâ apterâ.

Wild in GUATEMALA—Hartweg, (*v. v. c.*)

Leaves about a foot long, spreading, and very stiff. Raceme about two feet high. Flowers an inch and a half in diameter, of a dull cinnamon colour, with a little yellow and some chocolate veins in the lip. The flowers have a slight odour of Elder leaves. Its name alludes to the appearance of two ears produced by the rounded lateral lobes of the lip ascending and turned towards the front.

25. **E. pachyanthum.** *Lindley, in Bot. Reg.* 1838, *misc.* 42.

E. pseudobulbis ovatis diphyllis, foliis lato-ligulatis subundulatis apice obliquè obtusis dorso rotundatis, sepalis carnosis herbaceis lanceolatis, petalis obovato-lanceolatis apice complicatis, labelli lævis laciniis lateralibus ascendentibus truncatis intermediâ spathulatâ acutâ basi callosâ trilineatâ convexâ multò brevioribus, columnæ auriculis obtusis.

Wild in DEMERARA—Schomburgk, (*v. v. c. et s. sp.*)

A large green-flowered species. Leaves thinner and broader than usual among these Epidendra, and a little wavy at the margin. Flowers full two inches in diameter, thick and fleshy, dull green, stained with a dirty reddish brown towards the ends of the sepals and petals. Lip pale straw-colour, streaked along the middle with violet. Differs from *E. selligerum* in the petals not being at all unguiculate. Leaves one inch and a quarter broad.

* 26. **E. selligerum.** *Bateman, in Bot. Reg.* 1838, *misc.* 66.

E. pseudobulbis 2—3-pollicaribus, scapo subramoso, sepalis patentissimis obovatis concavis obtusis, petalis unguiculatis spathulatis acutis, labello semilibero laciniis lateralibus obtusis recurvis planis intermediâ ovatâ acutâ crispatulâ, disco elevato carnoso medio excavato, antherâ bilobâ terminali, columnâ apterâ.

E. violodora. *Galeotti, in hb. Hooker.*

Wild in GUATEMALA—Skinner; MEXICO, Oaxaca, on rocks and trees, at an elevation of 3000 feet—Galeotti, 5096-7, (*v. v. c. et s. sp. comm. cel. Hooker.*)

Sepals and petals dull dingy purple, lip pale violet. Flowers perfumed like the Tuberose—*Bateman;* or like violets—*Galeotti.* See *E. ionosmum*, *No.* 73.

* 27. **E. replicatum.** *Lindley, in Paxton's Flower Garden; gleanings,* 443, *ic.* 224.

E. floribus densè racemosis, sepalis obovato-lanceolatis acutis, petalis rotundatis unguiculatis apiculatis, labelli trilobi lobis lateralibus oblongis subtruncatis apice reflexis intermedio longiore crispo rhombeo acuminato lateribus omnino replicatis sinubus apertis, columnâ apterâ.

Wild in NEW GRENADA?—Linden? (*v. v. c.*)

Racemes closely many-flowered, about 18 inches high. Sepals and petals dull yellow, stained with brown in the middle below the point, but with a yellow border all round; the former oblong-lanceolate and acute, the latter linear below, and then spread out into a circular disc, terminated abruptly by a small point. The lip, which is white streaked with pink, is remarkable for the manner in which the two sides are turned downwards, so that their backs actually touch.

* 28. **E. Candollei.** *Lindley, in Bot. Reg.* 1839, *misc.* 77. *De Cand. Pl. rar. Genev.,* 8 *not., p.* 15, *t.* 3.

E. pseudobulbis sphæricis, scapo paniculato, sepalis petalisque obovato-oblongis, labelli liberi trilobi cucullati sinubus clausis

lobo medio majori crispo acuminato disco elevato calloso sulcato pubescente.

Ep. cepiforme. *Hooker, in Bot. Mag., t.* 3765.

Wild in MEXICO, (*v. v. c.*)

Flowers dull brown, with a dull yellow lip, striped with the same colour.

* 29. **E. oncidioides.** *Lindley, in Bot. Reg., t.* 1623.

E. pseudobulbis subteretibus, foliis 2—3 ensiformibus paniculâ longâ racemosâ brevioribus, sepalis petalisque obovatis unguiculatis, labelli trilobi lobis lateralibus angustis obtusis planis intermedio subrotundo cuspidato multò brevioribus, disco tricarinato venis elevatis utrinque, columnâ apice obtusè auriculatâ.

(A) Flowers yellow blotched with brown, coriaceous with broader sepals and petals.

(B) graniticum. Flowers smaller, green dotted with red. Lip white, rose-coloured at the base.

E. graniticum. *Lindley, in Hooker's Journal, III.* 83.

Wild **A,** in SURINAM; savannahs—Focke, 237 and 823. **B,** SURINAM—Focke, 457; DEMERARA, on the granitic ridges of the R. Corentyn, the Cuyumi and Guayna, among boulders where a little soil has collected—Schomburgk, 195, (*v. v. c. et s. sp.*: **A** *in herb. Miquel.*)

Flowers extremely fragrant. Stem six feet high according to Schomburgk, three to four feet high in gardens. Leaves two feet long and one and a half inch wide. The native country, long unknown, is proved to be Surinam by M. Focke's specimens which I have examined in the herbarium of Profr. Miquel. The green, white, and pink flowers of my *E. graniticum* are so much thinner and smaller, that it is difficult to suppose it to be the same with this. Beyond colour, however, and size, I find no satisfactory difference, and it is probably a mere local variety of *E. oncidioides*. Hostmann's 792, of which I have seen only a single specimen, seems also to be referable here.

* 30. **E. ensicaulon.** *Richard and Galeotti, Orch. Mex., no.* 34.

E. "pseudobulbis diphyllis, foliis oblongo-lanceolatis obtusis, scapo terminali compresso ensiformi 2—3-floro, labello luteo trilobo: lobo intermedio multò majori latè cordato apice acutiusculo."

Wild in MEXICO—Galeotti.

* 31. **E. ceratistes.** *Lindley, in Bot. Reg.* 1844, *misc.* 92.

E. pseudobulbis conicis 2—3-phyllis, foliis ensiformibus strictis scapo duplò brevioribus, paniculâ longâ cernuâ racemiformi ramulis lævibus divaricatis, sepalis petalisque obovatis acutissimis subconformibus (herbaceis), labelli trilobi lobis lateralibus erectis obtusis ovatis apice recurvis intermedio subrotundo unguiculato acuminato crispo striato, ungue medio depresso versus basin 4-costato, columnâ apice acutè auriculatâ, antherâ tricostatâ.

Wild in NEW GRENADA; in the province of Rio Hacha; Sierra of Sa. Martha, at the height of 5000 feet—Linden, 1658; Socorra and Ocaña—Schlim, 1007, (*v. v. c. et s. sp. comm. cel. Linden.*)

Panicle about three feet long; the leaves resemble those of *E. virgatum*, but are not so glaucous; the flowers are extremely sweet, clear green (Mr. Linden says dull yellow) with a whitish lip, streaked with red, and the column has two horn-like ears.

* 32. **E. plicatum.** *Lindley, in Bot. Reg.* 1847, *t.* 35.

E. pseudobulbis ovatis diphyllis, foliis ensiformibus acutis racemo brevioribus, sepalis petalisque lanceolatis cuspidato-acuminatis, labelli lobis lateralibus oblongo-lanceolatis undulatis basi elevatovenosis intermedio cordato transverso plicato crenato cuspidato, callis 2 maximis carinatis acutis apice subliberis in unguem.

Wild in CUBA—Loddiges, (*v. v. c.*)

The plaited crenelled lip, with a long cusp, is quite peculiar; it is of a rich crimson, as are the petals *at the back*; but the sepals and inside of the petals are green, the former just warmed and the latter richly spotted with crimson.

* 33. **E. odoratissimum.** *Lindley, in Bot. Reg., t.* 1415. *LO.*, 10.

E. pseudobulbis ovatis corrugatis, foliis binis loratis, racemo subsimplici, bracteis membranaceis ochreatis, sepalis oblongis petalisque cuneatis patentibus, labelli trilobi lobis lateralibus linearibus obtusis intermedio ovali rugoso multò latiore, disci callo elevato acuminato medio excavato laminâ laterali s. plicâ utrinque adjectâ prope basin, columnâ apice obtusè auriculatâ.

Ep. glutinosum. *Scheidw. in Allg. Gartenz.* 1843, *p.* 110 ?.
Macradenia lutescens. *Lodd. Bot. Cab., t.* 1556, *non R. Br.*
Encyclia patens. *Hooker, Bot. Mag., t.* 3013.

Wild in BRAZIL—Capt. Sullivan, R.N.; in woods near Rio Janeiro—Harrison, (*v. v. c. et s. sp. in hb. Miers.*)

Flowers olive-green with yellowish edges, or quite green, very sweet-scented. None of the figures above quoted are good, all having been made from unhealthy garden specimens. The middle lobe of the lip is in reality wrinkled with elevated veins, and there is a distinct plait or fold on each side the main callus near the base.

34. **E. tampense.** *Lindley, in Bot. Reg.* 1847, *sub t.* 35.

E. pseudobulbis monophyllis angustè ovatis acuminatis teretibus, foliis linearibus apiculatis paniculâ rarâ racemosâ duplò brevioribus, bracteis obsoletis, sepalis petalisque oblongo-linearibus acutis, labelli tripartiti laciniis lateralibus linearibus obtusis intermediâ oblongâ acutâ paulò longiore, disco bilamellato lineâ intermediâ antrorsum interjectâ, columnæ auriculis minutis acutis.

Wild in FLORIDA; Tampa Bay—Torrey, (*v. s. sp. comm. cel. Torrey.*)

Pseudobulbs small and terete, with a narrow tapering neck. Leaf from seven to eight inches long, and not more than three lines wide. The species differs from the *E. gracile* of the Bahamas in its acute lip, narrow solitary leaves, and smaller flowers.

35. **E. oxypetalum.** *Lindley, Orch. Linden., no.* 46.

E. pseudobulbis monophyllis parvis ovatis acuminatis, foliis rigidis linearibus scapo paniculato flexuoso æqualibus, sepalis petalisque lineari-lanceolatis acutis, labelli tripartiti laciniis lateralibus elongatis obtusis pubescentibus intermediâ unguiculatâ ovatâ acutâ venis scabriusculis, columnâ apterâ.

Wild in CUBA; in the forests of Guantanamo—Linden.

Pseudobulbs oval, rounded, acute. Leaves linear-lanceolate, coriaceous. Scape a foot high. Flowers dull yellow.

* 36. **E. fucatum.** *Lindley, in Bot. Reg.* 1828, *misc.* 17.

E. pseudobulbis subrotundo-ovatis cæspitosis monophyllis, foliis ligulatis coriaceis obtusis scapo brevioribus, paniculâ nutante multiflorâ, bracteis ovatis acutis squamiformibus, sepalis petalisque lineari-oblongis tessellatis æqualibus obtusis conniventibus, labelli liberi tripartiti lobis lateralibus erectis linearibus apice rotundatis intermedio ovali multò brevioribus, disci lamellis 2 elevatis ad basin lobi intermedii.

E. polyanthum. *Hort. Gall.*

Wild in Cuba—Captain Sutton, R.N., (*v. v. c.*)

Flowers small, dull yellow, tessellated, with a pink spot in the centre of a white lip.

* 37. **E. chloroleucum.** *Hooker, in Bot. Mag., t.* 3557.

E. pseudobulbis oblongis ovatis diphyllis, foliis coriaceis ligulatis apice rotundatis obscurè bilobis, racemo paniculato, sepalis petalisque subæqualibus lineari-lanceolatis obovatis, labelli trilobi liberi lobis lateralibus linearibus obtusis inflexis intermedio ovato acuminato crispulo multò brevioribus, disci lamellis 3 obscuris, columnæ auriculis minimis obtusis.

E. chloranthum. *Lindley, Bot. Reg.* 1838, *misc.* 28.

Wild in GUAYANA—Schomburgk, (*v. v. c.*)

Flowers scentless, pale green without spots, and a white lip.

b. lobo intermedio *obtuso.*

* Rachi lævi.

* 38. **E. virgatum.** *Lindley, in Hooker's Journal, III.* 83.

E. pseudobulbis ovatis oblongisve sub-compressis rugosis, foliis binis ensiformibus ternisque convexis subundulatis acutis

glaucis unciam latis, paniculâ virgatâ ramis longis gracilibus, sepalis lanceolatis petalisque duplò angustioribus patentibus discoloribus, labelli unguiculati lobis lateralibus acutis rectangulis intermedio subrotundo-obovato, callo maximo rotundato acuminato pone basin.

Wild in MEXICO; on the ground among Pteris aquilina, on the mountains of Coban, and the Cumbre of Choacas—Hartweg, (*v. v. c. et s. sp.*)

In general appearance much like *E. vitellinum*, but with more glaucous leaves. Flowers small, dirty green stained with brown, arranged in a long lax graceful panicle, the branches of which are simple, and sometimes as much as a foot long, with nearly twenty flowers on each. The lip is whitish yellow. Scape sometimes seven feet high.

* 39. **E. Linkianum.** *Klotzsch, in Allg. Gartenz., Sept.* 22, 1829.

E. pseudobulbis fusiformibus 2—3-phyllis, foliis lineari-ensiformibus recurvis racemo paucifloro longioribus, sepalis patentissimis lineari-lanceolatis, petalis conformibus angustioribus, labelli lobis lateralibus minutis erectis acutis intermedio ovato-oblongo crispo venis elevatis sub columnâ pubescentibus.

E. Pastoris. *Link and Otto, Abbild., t.* 12.

Wild in MEXICO—Deppe, (*v. v. c.*)

Flowers small, dull yellow, streaked with purple. Lip nearly white.

40. **E. concolor.** *La Llave. LO.,* 12.

E. foliis in pseudobulbos confertos lenticulares solitariis lato-lanceolatis acutis, scapo filiformi 5-floro, sepalis ligulatis, petalis linearibus, labello tripartito laciniis integris intermediâ majore, ungue columnæ longitudine.

Wild in MEXICO; on trees near Valladolid—La Llave.

Flowers pale yellow, whole-coloured, with a striated labellum.

41. **E. Pastoris.** *La Llave. LO.,* 7. *Klotzsch, in Allg. Gartenzeit., Sept.* 22, 1838.

E. pseudobulbis oblongis 2—3-phyllis, foliis linearibus carinatis subtortuosis, floribus racemosis, sepalis lineari-subspathulatis acuminatis, petalis spathulatis acutis, labello trilobo lobis lateralibus majoribus basi semilunatis integerrimis basin columnæ orbiculatim amplectentibus medio cordato deflexo minore acuto margine basique recurvo, columnâ semitereti obtusè tridentatâ, pericarpiis elongatis acuto-triquetris.

Wild in MEXICO—Klotzsch; on trees in the province of Mechoacan—La Llave.

Flowers fragrant, like Vanilla, dull yellow externally, striped with purplish brown inside. Lip whitish, becoming yellow, with purple cross-bars on the lateral lobes, and minute purple dots on the middle one. Column brown, with three yellow spots at the end.

* 42. **E. Ovulum.** *Lindley, in Bot. Reg.* 1843, *misc.* 71.

E. pseudobulbis oviformibus diphyllis, foliis linearibus canaliculatis acutis, scapo filiformi foliis paulò longiore 3-floro, sepalis linearibus 3-veniis, petalis angustioribus spathulatis, labelli trilobi lobis lateralibus nanis acutis intermedio dilatato rotundato venis radiantibus glandulosis variegato, columnæ tridentatæ dentibus lateralibus rotundatis denticulatis.

Wild in MEXICO; near Bolanos—Loddiges, (*v. v. c.*)

In habit resembling *E. bractescens*, or *aciculare*. The sepals and petals are olive-green ; the lip white, with rose-coloured side-lobes and crimson glandular radiating veins.

* 43. **E. bractescens.** *Lindley, in Bot. Reg.* 1840, *misc.* 122.

E. pseudobulbis ovatis cæspitosis 3—4-phyllis, foliis linearibus, scapo debili 3—4-floro, bracteis infimis foliaceis floribus longioribus supremis obsoletis, floribus nutantibus longè pedunculatis, sepalis petalisque lineari-lanceolatis acuminatis discoloribus labello longioribus, labelli liberi lobis lateralibus apice recurvis obtusis subdentatis intermedio unguiculato subrotundo-ovato multò longiore secus unguem elevato sulcato pubescente.

Wild in MEXICO; near Oaxaca—Hartweg, (*v. v. c.*)

One of the prettiest of the small species. Pseudobulbs exactly ovate, closely clustered, and about as large as a pigeon's egg. Flowers scentless, with a beautifully but delicately painted white lip, the gay effect of which is heightened by the contrast with the dingy purple of the long narrow sepals and petals.

* 44. **E. aciculare.** *Bateman, in Bot. Reg.* 1841, *misc.* 98.

E. pseudobulbis oblongis diphyllis, foliis linearibus canaliculatis acutis racemo simplici æqualibus, sepalis petalisque linearilanceolatis æqualibus acutis, labelli laciniis lateralibus nanis ascendentibus linearibus obtusis apice recurvis intermediâ ovato-oblongâ subundulatâ apiculatâ.

E. esculentum. *Hort. Kew., in hb. Hooker.*
E. linearifolium. *Hooker, in Bot. Mag., t.* 4572.

Wild in the BAHAMAS—Skinner; MEXICO, near Oaxaca—Galeotti, 39, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

A little species, with long narrow leaves, a slender erect raceme of six or seven flowers, whose sepals and petals are dull purple, and lip white, enlivened with rosy veins.

* 45. **E. pictum.** *Lindley, in Bot. Reg.* 1838, *misc.* 43.

E. pseudobulbosum, foliis ligulatis coriaceis obtusis dorso rotundatis, racemo erecto paniculato, sepalis petalisque obovato-linearibus subæqualibus, labelli trilobi liberi lobis lateralibus linearibus acutiusculis subfalcatis columnam amplexantibus sinubus plicatis intermedio ovali acuto crispo multò brevioribus, disci venis elevatis.

Wild in DEMERARA—Loddiges, (*v. v. c.*)

Resembles *E. odoratissimum* ; with dull yellow flowers, neatly striped with crimson. Also related to *E. chloroleucum*, from which its leaves distinguish it.

* 46. **E. microbulbon.** *Hooker ic., t.* 347.

E. pseudobulbis ovatis diphyllis, foliis lato-linearibus scapo brevioribus, racemo laxo paucifloro, bracteis membranaceis acutis, sepalis linearibus petalisque angustioribus patentissimis, labelli angusti lobis lateralibus nanis rectis obtusis sinubus clausis intermedio oblongo crispulo venis scabris.

Wild in MEXICO; Oaxaca, on trees at the height of 7000 feet—Galeotti, 5188, (*v. v. c. et s. sp., in hb. Hooker.*)

Flowers the size of *E. bractescens*, rose-coloured ; lip yellow with red dots.

* 47. **E. obtusum.** *Alph. De Candolle, Plant. rar. Genev.* 8 *not., p.* 17.

E. pseudobulbis ovatis acutis diphyllis, foliis coriaceis linearibus acuminatis scapo subpaniculato brevioribus, bracteis membranaceis caducis, labelli lobis crispis obtusis striatis æquilongis intermedio latiore, callo disci acuminato.

Wild in MEXICO—Alph. De Candolle.

Leaves four inches long. Scape a foot long, drooping ; flower-stalks two to three lines long. Sepals half an inch long, two lines broad, greenish brown. Lip whitish, streaked with dirty purple. Possibly this species belongs to the Sphærochiles.

* 48. **E. gracile.** *Lindley, in Bot. Reg., t.* 1765.

E. foliis in pseudobulbos ovatos corrugatos pluribus lorato-ensiformibus, racemo simplici longissimo, sepalis oblongis petalisque cuneatis patentibus, labelli ferè liberi lobis lateralibus semiovatis intermedio oblongo crispo obtusissimo duplò minoribus disco bicostato venis elevatis.

Wild in the BAHAMAS—J. C. Lees, (*v. v. c.*)

Flowers green, lip yellow, lined with purple.

* 49. **E. viridiflorum.** *Lindley, in Bot. Reg.* 1842, *misc. p.* 30.

E. pseudobulbis ovatis diphyllis, foliis lineari-lanceolatis carinatis recurvis acutis paniculâ brevioribus, sepalis petalisque linearibus acutis falcatis erectis, labello postico apice 3-dentato lobis lateralibus planis intermediæ ovatæ crispæ æqualibus, disci callo duplici angusto carnoso, columnâ apterâ.

Encyclia viridiflora. *Hooker, in Bot. Mag., t.* 2831. *LO.*, 111.

Wild in BRAZIL; near Rio Janeiro—Harrison, (*v. s. sp. in hb. Hooker.*)

Leaves shorter than the panicle, which is about a foot high, slender, and rather flexuose. Flowers membranous, green, with a purple stain at the base. The figure in the Botanical Magazine is faithful in all particulars.

* 50. **E. rufum.** *Lindley, in Bot. Reg.* 1845, *misc.* 42.

E. pseudobulbis pyriformibus 2—3-phyllis, foliis brevibus lanceolato-ligulatis patentibus scapo paniculato brevioribus, sepalis petalisque ovalibus acutis subcarnosis, labelli laciniis lateralibus brevibus semiovatis erectis intermediâ obovatâ convexâ margine revolutâ apice rotundatâ secus axin elevatâ carnosâ basi in laminam duplicem (disci costam) divisâ, columnâ membranaceo-marginatâ.

E. primulinum. *Bateman, in Paxton's Flower Garden, I. sub t.* 30, 1850.

Wild in the BAHAMAS—Skinner; BRAZIL (?); near Rio—Lieutenant Turner, R.N., (*v. v. c.*)

Leaves six to eight inches long. Scape a foot and more high. Flowers in a narrow slightly branched panicle, very sweet, like primroses, brownish-yellow. Mr. Bateman informs me that Mr. Skinner certainly collected this in the Bahamas, along with *E. altissimum* and *aciculare*. In Sir C. Lemon's garden, it is said to have been sent from Rio, by Lieutenant Turner. I have seen no wild specimens.

51. **E. flavum.** *Lindley, in Hooker's Journal, III.* 83.

E. pseudobulbis ovatis attenuatis 3-phyllis, foliis ensiformibus paniculæ paucifloræ subæqualibus, sepalis petalisque patentibus subæqualibus lineari-oblongis obtusis, labelli laciniis lateralibus linearibus truncatis intermediâ unguiculatâ obovatâ nudâ, columnâ sub apice obtusè auriculatâ.

Wild in BRAZIL; in the province of St. Paul's—Martius; trees, Mission of Douro—Gardner, 3456, (*v. s. sp.*)

Leaves rather more than a foot long. Flowers pale yellow, about an inch and a half in diameter. The inflorescence is only panicled at the base, and is probably very often simple.

* 52. **E. altissimum.** *Bateman, in Bot. Reg.* 1838, *misc.* 61.

E. pseudobulbis elongatis teretibus 2—3-phyllis, scapo paniculato longissimo, sepalis oblongis acutis, petalis conformibus basi angustatis, labelli lobis lateralibus dimidiatis erectis tortis obtusis intermedio dilatato undulato lævi recurvo apiculato basi bicostato.

Wild in the BAHAMAS; in rocky districts—Skinner, (*v. v. c.*)

Flowers as large as in *E. oncidioides*, smelling strongly of beeswax.

* 53. **E. alatum.** *Bateman, Orch. Mex., t.* 18.

E. pseudobulbis ovatis, foliis binis rectis ensatis obtusis, paniculâ laxâ multò longiore, sepalis petalisque conformibus linearibus spathulatis unguiculatis obtusis, labelli trilobi lævis lobis rotundatis

lateralibus erectis intermedio convexo multò majore emarginato undulato intra marginem scabro venis pluribus elevatis coloratis, callo disci medio excavato, columnâ auriculatâ.

E. longipetalum. *Lindley, in Paxton's Flower Garden, I. t.* 30.
E. calocheilum. *Hooker, in Bot. Mag., t.* 3898.

Wild in GUATEMALA—Hartweg; HONDURAS, near Isabal—Skinner, (*v. v. c.*)

Very sweet-scented. Panicle, long, straggling. Sepals and petals greenish at the base, purple upwards, almost an inch and a half long. Lip straw-coloured, bordered with yellow, and streaked with rose.

Until this critical revision was undertaken, I was always under the impression that the plant figured in the Bot. Reg. in Oct. 1847, was Mr. Bateman's *E. alatum*, of which *E. calocheilum* is an undoubted synonyme; and therefore, I regarded *E. longipetalum* as a new species. A very careful re-examination of evidence shows, however, that this was an error, and it is now corrected.

* 54. **E. virens.** *Lindley, in Paxton's Flower Garden, I. sub t.* 30.

E. paniculâ laxâ erectâ angustâ, sepalis lineari-ovalibus, petalis æquilongis spathulatis acutis, labelli laciniis lateralibus erectis oblongis emarginatis intermediâ convexâ plicatâ venosâ apiculatâ retusâ, callo disci excavato utrinque juxta sinum denticulo aucto, columnâ auriculatâ.

Wild in GUATEMALA—Skinner, (*v. v. c.*)

Flowers green, whole-coloured, except the lip, which is white, with crimson veins in the middle lobe; the lateral lobes green, with crimson veins, but white at the point. Certainly distinct from *E. longipetalum*, which it most resembles, in the form and proportion of its sepals, lip, and callus.

55. **E. aromaticum.** *Bateman, Orch. Mex., t.* 10.

E. pseudobulbis sphæroideis diphyllis, foliis latè loratis recurvis, floribus membranaceis paniculatis, sepalis linearibus patentissimis basi angustatis, petalis conformibus sed paulò latioribus, labelli lobis lateralibus triangulari-falcatis rectis inflexis acuminatis intermedio multò majore oblongo venis scabris cristato, callo disci oblongo brevi convexo in acumen producto, columnâ apterâ.

E. incumbens. *Lindley, in Bot. Reg.* 1840, *misc.* 84.

Wild in GUATEMALA—Skinner, in a temperature of 60° to 75° (*v. v. c. et s. sp. comm. cel. Skinner.*)

Flowers very sweet; in large pale dull yellow panicles, the lower branches of which curve gracefully downwards. The texture of the flowers is much thinner than that of allied species. The plant which I formerly called *E. incumbens*, with a shorter lip and a narrow panicle, is apparently an accidental form, and not even a variety.

* 56. **E. ambiguum.**

E. paniculâ laxâ flexuosâ, bracteis brevibus duris acutis, sepalis membranaceis lineari-lanceolatis incurvis, petalis an-

gustioribus longè unguiculatis, labelli lobis omnibus crispato-laceris lateralibus rotundatis intermedio oblongo venis scabris, callo disci duplici anticè in lineas 3 elevatas procurrente lamellâ brevi ad sinum attingente utrinque aucto, columnæ auriculis acutiusculis.

E. alatum. *Lindley, in Bot. Reg.* 1847, *t.* 53, nec Bateman.

Wild in GUATEMALA—Rucker, (*v. v. c.*)

Flowers pale yellowish green, very sweet-scented. Lip straw-colour, spotted and streaked with rose.

This is the plant alluded to under *E. alatum*, No. 53, as having been confounded with that species. It is in reality much nearer *E. aromaticum*, from which its very narrow unguiculate petals (ill represented in the Bot. Reg.), auriculate column, and totally different callus separate it. Both sepals and petals curve inwards exactly as is shewn in the figure just referred to. This and the next require to be carefully distinguished by the characters now assigned to them.

* 57. **E. trachychilum.**

E. pseudobulbis elongatis diphyllis, foliis rectis coriaceis ensiformibus scapo pluriès brevioribus, paniculâ densâ ramosissimâ, bracteis brevibus membranaceis acutis, sepalis coriaceis oblongis patentissimis, petalis subconformibus, labelli lobis lateralibus oblique ovatis obtusis integris scabro-venosis intermedio subrotundo crispo venis ramentaceis varicosis scaberrimis, callo disci quadruplici anticè in lineas 3 elevatas laceras procurrente lamellâ minutâ juxta basin utrinque aucto, columnæ auriculis truncatis.

E. alatum. *Lindl. in Plant. Hartweg., p.* 92.

Wild in MEXICO; on the Cumbre of Choacas—Hartweg, (*v. v. c. et s. sp.*)

Flowers olive-brown, very leathery; sepals about eight lines long, but in *E. ambiguum* quite an inch. Lip deep yellow, studded with red warts, white and spotted with pink on the callus, brilliant green with red warts on the lower lobes.

58. **E. tripterum.** *Lindley, in Hooker's Journal, III.* 83.

E. pseudobulbis ovalibus compressis diphyllis, foliis linearioblongis obtusis racemo paucifloro (4—6) subæqualibus, floribus erectis sepalis petalisque lineari-lanceolatis patulis, labelli trilobi lobis lateralibus linearibus obtusis planis intermedio subrotundo basi angustato undulato venis rugosis elevatis, clinandrio obtusè 3-lobo, capsulâ angustâ clavatâ tripterâ.

Wild in MEXICO—Karwinski, (*v. s. sp. comm. b. Zuccarini.*)

The whole plant when in bloom little more than six inches high. Flowers apparently dull purple, with a pale lip, on long peduncles, and erect, not drooping. Forms a transition to the last section of Encyclians, being nearly allied to *E. tessellatum*.

59. **E. guttatum.** *Richard and Galeotti, Orch. Mex., no.* 39.

E. "pseudobulbis ovoideis 2-phyllis, fol. elliptico-oblongis acutis, scapo brevi compresso 3—4-floro, floribus aurantiacis punctatis, labelli trilobi lobis lateralibus subfalcatis intermedio orbiculari apiculato."

Wild in MEXICO, Galeotti.

* * Rachi, aut ovariis asperis.

* 60. **E. nemorale.** *Lindley, in Hooker's Journal, III.* 82.

E. pseudobulbis ovatis, foliis ensiformibus obtusis flaccidis, scapo pedicellis ovariisque verrucosis, racemo nutante, sepalis petalisque lineari-lanceolatis acuminatis, labelli trilobi lobis lateralibus subfalcatis acutis nanis intermedio ovali crenulato basi serrato bilamellato, columnæ auriculis truncatis.

E. verrucosum. *Lindley, in Bot. Reg.* 1844, *t.* 51; *Hooker, Bot. Mag., t.* 4606.

Wild in MEXICO—Loddiges; on trees in groves near Sultepec —Martius, (*v. v. c. et s. sp. in hb. Martius.*)

Flowers large, rich rose-colour, in a drooping raceme. Sepals full two inches long. The name *E. verrucosum* was applied by Swartz to another species.

61. **E. asperum.** *Lindley, in Hooker's Journal, I.* 6.

E. paniculâ strictâ racemosâ scabrâ, sepalis coriaceis spathulatis obtusis, petalis linearibus apice dilatatis, labelli lobis lateralibus semiovatis obtusis intermedio subrotundo cuneato venis tumidis striato, disci callo medio excavato apice in tres lineas elevatas flexuosas procurrente, columnæ auriculis minutis obtusis.

Wild in PANAMA and W. COLOMBIA—Cuming, 1250; GUAYAQUIL—Jamieson, (*v. s. sp.*)

Much confusion has been introduced into the characters of this plant in consequence of its having been accidentally mixed with *E. flabellatum*, No. 15, in my herbarium. The sepals and petals seem to have been dark-coloured, and the lip pale.

* 62. **E. adenocarpum.** *La Llave. LO.*, 16.

E. foliis strictis linearibus carinatis acutis in pseudobulbos pyriformes glaucescentes ternatim insidentibus, scapo erecto simplici v. paniculato multifloro, floribus distantibus, sepalis lineari-oblongis acutis, petalis paulò angustioribus unguiculatis, labelli semiliberi laciniis lateralibus obovatis intermediâ 3-plò majore obscurè quadrilobâ versus basin callosâ venis 3 tenuibus elevatis radiantibus, columnâ bidentatâ, pedunculis papillosis.

? E. crispatum. *Knowles, Flor. Cab., II. p.* 79.
E. papillosum. *Bateman, in Bot. Reg.* 1838, *misc.* 8. *Hooker, in Bot. Mag., t.* 3631.

Wild in GUATEMALA—Skinner; MEXICO, on the Irapæan Mountains —La Llave; Agua caliente, on the road to Salama—Hartweg, (*v. v. c. et s. sp.*)

Flowers greenish yellow. Lip white, with three short purple streaks.

63. **E. stellatum.**

E. pseudobulbis cepæformibus diphyllis, foliis ensiformibus acutis paniculâ scabrâ longioribus, sepalis petalisque angustioribus lineari-lanceolatis stellatis, labelli lobis lateralibus angustis falcatis intermedio subrotundo plano venis rugulosis, disci callo medio excavato in lineas tres rugulosas procurrente, columnæ auriculis minutis acutis clinandrio denticulato.

Wild in the CARACCAS—Purdie, (*v. s. sp. comm. cel. Hooker.*)

A slender grassy plant, with leaves fifteen inches long by half an inch broad. The stellate flowers and flat round lip are striking peculiarities in the dried state.

64. **E. adenocaulon.** *La Llave. LO.*, 15.

E. foliis in pseudobulbis binis v. ternis ensiformibus coriaceis, scapo simplici glanduloso, sepalis carinatis petalisque lineari-lanceolatis subæqualibus patentissimis, labello tripartito laciniis lateralibus acutis involutis intermediâ cordatâ emarginatâ obtusâ, columnæ auriculis petaloideis.

Wild in MEXICO; on trees near Valladolid—La Llave.

Scape two to three feet high. Flowers pale violet, with a veiny lip of the same colour. Bracts membranous. According to La Llave, the lip is united to the column.

65. **E. gravidum.** *Lindley, in Journ. Hort. Soc., IV.* 114 (1849).

E. scapo paucifloro apice flexuoso læviusculo, floribus pendulis longipedunculatis clausis, pedicellis lævibus, ovariis fusiformibus maximis verrucosis, labelli trilobi lobis lateralibus linearibus intermedio ovato acuto venis elevatis, columnæ angulis superioribus inflexis.

Wild in MEXICO; near Xapatam—Hartweg, (*v. v. c.*)

Scape six inches high, four-flowered. Flowers green, never expanding, seated on a large fusiform deep olive-green ovary, studded with pale green warts. The ovary is one inch and a half long, the flower scarcely half an inch.

66. **E. trachycarpum.** *Lindley, Bot. of Sulphur*, p. 172.

E. pseudobulbis elongato-conicis 2—3-phyllis, foliis rigidis ensiformibus canaliculatis acutis, scapo subpaniculato ramulis pedunculisque scaberrimis, floribus carnosis, sepalis petalisque oblongis obtusis, labelli laciniis lateralibus nanis semiovatis acutis intermediâ rotundatâ emarginatâ lævi, capsulâ ovali scaberrimâ.

Wild in W. MEXICO; Manzanilla Bay—Hinds, (*v. s. sp.*)

Dried flowers nearly black ; natural colour unknown.

* 67. **E. Wageneri.** *Klotzsch, in Allg. Gartenzeit., Aug.* 9, 1851.

E. pseudobulbis ovatis 2—3-foliatis, foliis linearibus coriaceis tortuosis apice obtusis, racemo paniculato terminali ovariis teretibus scabris, sepalis petalisque æqualibus spathulato-acutis patentibus, labello lineis elevatis striato basi bicalloso lobis lateralibus brevibus conniventibus falcato-oblongis obtusis intermedio cordato orbiculato-ovato apiculato, columnâ uncinato-auriculatâ.

Wild in VENEZUELA—Klotzsch.

Pseudobulbs two inches long, and one and a half in diameter above the base. Leaves fifteen inches long, and eight lines wide. Racemes two feet long. Flowers sweet-scented, yellowish green. Lip white, changing to clay-colour.—*Klotzsch.*

* 68. **E. guatemalense.** *Klotzsch, in Allg. Gartenz., Aug.* 7, 1852. *Paxton's Flower Garden ; gleanings, no.* 595.

E. pseudobulbis apice attenuatis diphyllis, foliis linearilanceolatis acutis coriaceis subtortuosis subtus carinatis racemo subsimplici terminali duplò brevioribus, ovariis punctato-scabris, sepalis oblongis utrinque attenuatis, petalis spathulatis brevissimè acutis, labelli lobis lateralibus obovatis columnam amplectentibus intermedio orbiculari deflexo apiculato basi angustâ subcalloso, columnæ auriculis obtusis inflexis.

Wild in GUATEMALA—Klotzsch.

Pseudobulbs from eleven to eighteen inches long, and from half an inch to one inch broad. Panicle two feet long, as thick as a crowquill, with from twenty to twenty-four flowers one inch and a quarter in diameter. Sepals and petals yellowish green, with fine purple dots, the former three, the latter two lines broad. Lip white, half an inch long, striped with violet in the middle.

c. lobo intermedio manifestè *bilobo.*

* 69. **E. tessellatum.** *Bateman, in Bot. Reg.* 1838, *misc.* 9. *Hooker, Bot. Mag., t.* 3638.

E. pseudobulbis ovalibus compressis 2-raro 3-phyllis, foliis lineari-lanceolatis scapo simplici flexuoso paucifloro longioribus, sepalis lineari-lanceolatis acutis mucronatis petalisque minoribus subspathulatis, labelli laciniis lateralibus brevibus rotundatis intermediâ majore oblongâ undulatâ bilobâ v. retusâ, disci callo lineari tomentoso seriebus tribus verrucarum nunc connatarum à fronte.

E. lividum. *Lindley, in Bot. Reg.* 1838, *misc.* 91.

Wild in GUATEMALA—Skinner; MEXICO, near Oaxaca at the

height of 3-5000 feet—Galeotti, 50 and 5320; CARACCAS, Sa. Martha—Purdie, (*v. v. c. et s. sp.*)

Flowers dingy olive-brown : with a pale lip tessellated with crimson. The specimens vary in the warts of the lip ; in one case now before me they form three complete lines with rugosities between ; in Galeotti's No. 50, the lines are broken and incomplete ; in another garden specimen seen by me in 1845, the warts were confluent into a single line lying between the downy callus and the point of the lip.

70. **E. sisyrinchiifolium.** *Richard and Galeotti, Orch. Mex., no.* 35.

E. "pseudobulbis ovoideis 2-phyllis, foliis lanceolatis acutis, floribus aurantiaco-viridibus subpaniculatis, labello oblongo lobis lateralibus acutis intermedio obcordato."

Wild in MEXICO—Galeotti.

* 71. **E. varicosum.** *Bateman, Bot. Reg.* 1838, *misc.* 37.

E. pseudobulbis lagenæformibus 2—3-phyllis, foliis lanceolatis utrinque acuminatis scapo gracili brevioribus internodiis elongatis, sepalis petalisque subæqualibus cuneato-lanceolatis carnosis vernicosis planis, labello unguiculato : laciniis lateralibus nanis triangularibus aut rotundatis intermediâ reniformi emarginatâ venis tuberculatis et varicosis pictâ, disci callo pulvinato ovato pubescente, columnæ lobo dorsali crasso cylindraceo obtuso.

E. leiobulbon. *Hooker, Journal, III.* 308, *t.* 10.
E. phymatoglossum. *H. G. Reichenb., Bot. Zeit.* 1852, *p.* 731.
E. chiriquense. *Id. p.* 730.
E. Lunæanum. *A. Richard, in Hort. Par.*
E. quadratum. *Klotzsch, in Allg. Gartenz.* 1850, 402.

Wild in GUATEMALA—Skinner ; COSTA RICA and VERAGUA—Warczewitz ; MEXICO, on porphyry rocks near Oaxaca, at the elevation of 7-8000 feet—Galeotti, 5080 ; Hacienda del Carmen—Hartweg, (*v. v. c. et s. sp.*)

A small dull-brown-flowered species. The form of the lip, the flask or bottle-shaped pseudobulbs, and the acuminate leaves with wide internodes, especially distinguish it. It seems to be common from Mexico to Panama, and to present many varieties in the form and callosities of its lip. In the original Guatemala plant the lateral lobes of the lip are triangular, and the tubercles arranged in three rows in front of the downy callus ; in Galeotti's Mexican specimens the side-lobes are round, and the tubercles scattered without order over the lip. Other differences seem to occur among plants examined by M. Reichenbach, but I cannot think them of specific value. I learn from M. Pescatore that this is the *E. Lunæanum* of A. Richard.

72. **E. Michuacanum.** *La Llave. LO.*, 21.

E. foliis in pseudobulbos pyriformes ternis quaternisve ensiformi-lanceolatis conduplicatis, scapo ramosissimo, sepalis petalisque angustioribus cuneato-lanceolatis, labelli tripartiti laciniâ intermediâ reniformi bilobâ.

Wild in MEXICO; on the mountains of Mechoacan, and near Valladolid—La Llave.

Pseudobulbs large. Flowers small, scentless, pale yellow, with a white lip. Seems very like *E. varicosum*, but the leaves are said to be a foot long.

* 73. **E. ionosmum.** *Lindley, in Bot. Reg.* 1838, *misc.* 87.

E. pseudobulbis diphyllis scapo apice simplici racemoso brevioribus, sepalis petalisque coriaceis obovatis concavis obtusis subæqualibus, labelli trilobi liberi lobis lateralibus elongatis erectis oblongis columnam amplexantibus apice rotundatis denticulatis intermedio subrotundo emarginato rugoso crispo, callo disci duplici elevato altero angustiore apici propiore, columnâ acutè auriculatâ.

Wild in DEMERARA—Loddiges, (*v. v. c.*)

The blossoms are rather large, a dull reddish green, with the lip delicately streaked with deep lilac. The odour that of the sweetest violets. It is very near *E. selligerum*, No. 26, from which its emarginate not acute lip seems to distinguish it.

* 74. **E. pyriforme.** *Lindley, in Bot. Reg.* 1847, *t.* 50.

E. pseudobulbis obpyriformibus aggregatis diphyllis, foliis coriaceis lanceolatis acutis scapo subbifloro longioribus, sepalis petalisque lanceolatis acutis, labelli lobis lateralibus subrecurvis acutis integerrimis intermedio subrotundo glabro retuso, callis 2 maximis parallelis apice subliberis in unguem.

Wild in CUBA—Loddiges, (*v. v. c.*)

Leaves unusually thick and fleshy, about four inches long, on little pseudobulbs, which look like inverted pears. Notwithstanding its diminutive stature, the flowers are fully two inches and a half in diameter, with reddish yellow sepals and petals, and a pale straw-coloured lip veined with crimson.

* 75. **E. bifidum.** *Aublet. LO.*, 17. *Bot. Reg., t.* 1879. *Redouté liliac, t.* 84.

E. foliis in pseudobulbos subternis oblongis coriaceis, scapo ramoso foliis multò longiore, sepalis oblongis acutis petalisque lineari-spathulatis patentibus, labelli cuneati unguiculati lobis lateralibus rotundatis brevibus conduplicatis intermedio maximo apice dilatato subreniformi sulcato, disci callo ovato lobato in lineam elevatam producto.

Helleborine fl. papilionaceo. *Plum. ic.* 186. *f.* 1.
E. papilionaceum. *West. S. Cruz.* 230.
E. auropurpureum. *LO.*, 14.
E. atropurpureum. *Willd. sp. pl.* 115.

Wild in the WEST INDIES; Hispaniola—Plumier; St. Christopher's, St. Bartholomew's—Swartz; St. Thomas—Riedley, (*v. v. c.*)

Sepals and petals light green, with a dull purple spot near the end. Lip rose-colour, with the lateral lobes yellow. *E. auropurpureum* does not seem to be distinguishable.

* 76. **E. dichromum.** *Lindley, in Bot. Reg.* 1843, *misc.* 119.

E. pseudobulbis ovato-fusiformibus diphyllis, foliis ligulatis planis apice rotundatis racemo laxo paucifloro brevioribus, sepalis lineari-lanceolatis, petalis obovato-lanceolatis latioribus, labelli lobo medio obcordato pluriès costato cum mucrone lateralibus duplò brevioribus rotundatis apice patulis, columnâ obtusè auriculatâ.

Wild in PERNAMBUCO—Quesnel, (*v. v. c.*)

Flowers pure white, with a rose-coloured lip, yellow and downy at the base.

* 77. **E. Hanburii.** *Lindley, in Bot. Reg.* 1844, *misc.* 60.

E. pseudobulbis ovatis, foliis ensiformibus coriaceis scapo racemoso multò brevioribus, sepalis petalisque spathulatis unguiculatis patentibus, labelli lobis lateralibus falcatis obtusis nanis erectis intermedio oblongo bilobo venis elevatis dichotomis sulcato, disci callo excavato in lineam rectam elevatam exeunte, columnâ apterâ.

Wild in MEXICO—Galeotti; Sierra S. Pedro Nolasco—Jurgensen, 829, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

Leaves very coriaceous, shorter than the raceme, which is about two feet long. Sepals and petals deep dull purple; lip pale rose, with crimson radiating veins; lateral lobes white at the tip and curved over the column.

* 78. **E. phœniceum.** *Lindley, in Bot. Reg.* 1841, *misc.* 120. *Sert. Orch., t.* 46.

E. pseudobulbis subrotundo-ovatis diphyllis, foliis angustè oblongis coriaceis erectis, scapo paniculâque scabris, sepalis petalisque subæqualibus coriaceis obovato-lanceolatis, labelli laciniis lateralibus oblongis erectis obtusis apice recurvis intermediâ maximâ membranaceâ subrotundâ undulatâ emarginatâ, disci callo duplici carnoso apice libero, columnâ acutè auriculatâ.

(B) vanillosmum. Lip white spotted with rose.
E. phœniceum vanillosmum. *V. Houtte, Fl. des Serres*, 1848, 306 *ic.*
E. Grahami. *Hooker, in Bot. Mag., t.* 3885.

Wild in CUBA; in the forests of Guantanamo—Linden, (*v. v. c. et s. sp. comm. cel. Linden;* **B** *s. c. in hb. Hooker.*)

Panicle from two to three feet high, flowers large, scentless. Sepals and petals leathery deep purple, a little mottled with green specks both inside and out. Lip nearly an inch and a half long, of the clear bright violet of *Cattleya labiata*, and with the same deep crimson veins and stains in the middle. The variety **B** is said to be deliciously perfumed with Vanilla.

* 79. **E. macrochilum.** *Hooker, in Bot. Mag., t.* 3534. *Bateman, Orch. Mex., t.* 17. *Morren, in Ann. Gand, II. p.* 365 *ic. Van Houtte, Fl. des Serres,* 1848, 372 *ic.*

E. pseudobulbis ovatis rugosis diphyllis, foliis oblongis coriaceis racemo brevioribus, rachi pedicellisque angulatis, sepalis petalisque obovato-lanceolatis patentibus apicibus incurvis, labelli lobis lateralibus ovatis acutis in columnam incumbentibus intermedio maximo obcordato lævi, disci callo bilineato obsoleto, columnâ alatâ.

Wild in GUATEMALA, on the coast with Cattleya Skinneri—Skinner; PANAMA and W. COLOMBIA—Cuming; CARACCAS, Sa. Martha—Purdie, (*v. v. c. et s. sp.*)

A very fine plant; one variety having green sepals and a white lip, the other having purple sepals with a deep rose-coloured lip. Vulgarly '*Boca del Dragón*,' 'Dragon's mouth,' in Guatemala. Flowers the largest in this genus.

80. **E. Humboldtii.** *H. G. Reichenbach, in Linn., XXII. p.* 836.

E. sepalis oblongis acutis basi aliquid cuneatis, petalis obtusis basi valdè cuneatis sub apice dilatatis, labello maximo trilobo basi imâ cuneato lobis lateralibus integris obtusatis medio maximo subquadrato anticè emarginato denticulato nervis 7 medianis elevatis à basi ad centrum cristatis serratis, columnâ posticè carinatâ, clinandrio tridentato interjecto dente anticè rostellari.

Wild in the CARACCAS; Porto Caballo — Humboldt and Bonpland (*Rchb.*)

Supposed Encyclia now referred to other genera.

Encyclia nana
—— polystachya } *Pöppig,* 2. *t.* 113. . . = **species of Polystachya.**
—— macrostachya. *Id.* 2. *t.* 114. . . . . = **Epidendrum armeniacum.**

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§ 3. **DIACRIUM.** *Lindley, in Hooker's Journal of Botany, III.* 81.

This section at first sight seems to merge in Encyclium; for the chief difference appears to consist in the stem being fusiform and leafy at the end, which is but a small modification of the pseudobulbous condition. In addition, the lip of *E. bicornutum* is not parallel with the column, and has two deep pits on the under side, corresponding with the same number of fleshy elevated triangular plates on the upper side.

81. **E. bidentatum.** *LO., p.* 98.

E. foliis obovato-lanceolatis apice recurvis supra v. sub pseudobulbo nascentibus, racemo terminali erecto paucifloro, sepalis

lanceolatis petalisque angustioribus patentibus, labello semilibero rhomboideo angulis utrinque unidentato.

Wild in MEXICO—herb. Pavon, (*v. olim s. sp.*)

The only memorandum I possess regarding this species is a sketch of its flower, made many years ago from a specimen in the Lambertian herbarium. It seems very near *E. bicornutum*, but it has petals narrower not broader than the sepals, and the side lobes of the lip are little more than projecting teeth.

* 82. **E. bicornutum.** *Hooker, Bot. Mag., t.* 3332.

E. foliis lineari-oblongis obtusis coriaceis, caule corniformi, sepalis ovato-lanceolatis, petalis conformibus latioribus, labelli trilobi lobo medio elongato lanceolato acuto lateralibus obtusiusculis basi lamellis 2 triangularibus aucto.

Wild in TRINIDAD—Hooker; DEMERARA—Schomburgk, 429, (*v. v. c. et s. sp.*)

Flowers large and white, slightly tinged with rose-colour. Lip yellow at the base, with some crimson specks on the tongue-like middle lobe. According to Schomburgk, the petals are also spotted with crimson, which is not the case with the cultivated plants.

83. **E. Lindenianum.** *Richard and Galeotti, Orch. Mex., no.* 42.

E. "pseudobulbis oblongis 1-phyllis, folio oblongo-lineari obtuso, scapo terminali, floribus luteis, racemo 4—5-floro, labello libero subspathulato obtuso."

Wild in MEXICO—Galeotti.

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§ 4. **HORMIDIUM.** *Lindley, in Hooker's Journal of Botany, III.* 81.

We here find a set of creeping species, with true pseudobulbs, sessile (or nearly sessile) flowers, and a lip adnate to the column. They differ from Aulizeum and Osmophytum in the pseudobulbs, and in the flowers not being in conspicuous racemes; from Lanium in their flowers not being panicled and woolly; from Spathium, Amphiglottium, and Euepidendrum in their stems not being leafy.

* 84. **E. pygmæum.** *Hooker, Journal of Botany, I.* 49, *t.* 118. *Bot. Mag., t.* 3233.

E. foliis brevibus lanceolatis subundulatis acutis, floribus solitariis, sepalis ovato-lanceolatis acuminatis lateralibus majoribus labello subtùs adnatis, petalis angustioribus acuminatis incurvis, labelli trilobi columnæ adnati laciniis lateralibus rotundatis erectis intermediâ triangulari acuminatâ.

E. uniflorum. *Lindley, Bot. Reg.* 1839, *misc.* 13.

Wild in BRAZIL—Harrison; JAMAICA—Hooker; MEXICO—Barker, (*v. v. c.*)

Flowers small, yellowish green, one or two together. I have no where found a wild specimen of this.

85. **E. miserum.** *Lindley, in Bot. Reg.*, 1841, *misc.* 62.

E. caulibus ovalibus exuviatis compressis aggregatis, foliis . . . . . scapo brevissimo subbifloro, spathâ bivalvi pedunculis subæquali membranaceâ, sepalis ovatis acutis, petalis linearibus, labelli trilobi lobis lateralibus rotundatis inconspicuis intermedio truncato emarginato callis nullis (?)

Wild in MEXICO; near Oaxaca—Loddiges, (*v. v. c.*)

Pseudobulbs about half an inch high. Scape, peduncles, and ovaries, taken together, about the same length. Flowers a dull, dingy, greenish brown, not unlike those of *E. musciferum*.

86. **E. cæspitosum.** *Pöppig and Endl., N. G. et Sp. Pl., II. t.* 101.

E. pseudobulbis subcylindricis diphyllis, foliis ovali-lanceolatis acutis, floribus in sinu folii paucis brevissime spicatis aut sessilibus, sepalis petalisque subæqualibus lanceolatis, labello integro transverso reniformi lateribus rotundato breviter apiculato nudo, capsulâ subrotundâ tripterâ.

Cœlogyne triptera. *Ad. Brongn. Voy. Duperr. t.* 42, A.

Wild in PERU; on trees in dense forests between Cuchero and Pampayaco—Pöppig.

Flowers hardly a line long, green, with a white lip.

87. **E. serpens.** *Lindley, in Benth. Pl. Hartweg., p.* 149.

E. pseudobulbis oblongis 2—3-phyllis, foliis ovato-lanceolatis acutissimis, sepalis ovatis, petalis lineari-lanceolatis, labello cochleato serrulato lævi, capsulâ ovali triquetrâ.

Wild in PERU; mountains near Chiquiribamba, creeping among Lichens—Hartweg, (*v. s. sp.*)

Flowers rather large, deep violet; the pseudobulbs so crowded together that they must form a carpet when growing wild. It is remarkable that no straps appear to be connected with the pollen-masses in this species, but some powdery matter is formed in its stead. The capsule is larger than the leaves.

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§ 5. **PSILANTHEMUM.** *Klotzsch, in L. K. O. ic. pl.* 2, *p.* 111.

The radical inflorescence, otherwise unknown in the genus, distinctly marks this section. The lip is adnate to the column, and is similar in structure to Amphiglottium.

* 88. **E. Stamfordianum.** *Bateman, Orch. Mex. and Guat., t.* 11.

E. pseudobulbis fusiformibus, foliis oblongis obtusis coriaceis basi angustatis, racemo radicali paniculato, sepalis patentibus

lanceolatis, petalis duplò angustioribus, labelli tripartiti laciniis planis æquilongis lateralibus oblongis rotundatis intermediâ transversâ bilobâ s. emarginatâ fimbriatâ.

E. basilare. *Klotzsch, l. c., t.* 45.

Wild in GUATEMALA, on the coast in shady very moist soil —Skinner; SA. MARTHA—Purdie, (*v. v. c. et s. sp. comm. cel. Hooker.*)

Flowers in a large branched raceme, deliciously fragrant, pale yellow, with a vivid violet spot at the base of the lip.

* 89. **E. purpurascens.** *Focke in Tijdschrift. nederl., IV.* 64.

E. "foliis in pseudobulbo elongato pedunculato solitariis lineari-lanceolatis, scapo radicali vaginato, sepalis petalisque conformibus breve acuminatis margine revolutis patentibus concoloribus, labelli trilobi lobis lateralibus ovato-falcatis acutis divaricatis, intermedio unguiculato cordato-ovato acuto recurvo, disco bicalloso."

Wild in SURINAM: on trunks of trees, in woods on the Surinam and Upper Commewyne rivers; Nov., Dec.—Focke.

Pseudobulbs fusiform, purplish. Scape four-to-eight-flowered. Lower bracts large, sheathing, clothing the whole scape; those near the flowers ovate, amplexicaul, half as long as the peduncle, pale purple. Sepals purplish outside, purplish-green inside, two centimetres long. Lip resupinate, white.—*Focke.*

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§ 6. **AULIZEUM.** *Lindley, in Hooker's Journal of Botany, III.* 81. Auliza, *Salisbury, in Hort. Soc. Trans., I.* 261.

Among the species whose lip is united to the column, are those which, like *E. ciliare*, have that organ broken up into long and beautiful fringes, or at least split into three pieces; they have a long horn-like stem, leafy only at the end, and their flowers invariably grow in racemes; these form the subgenus Aulizeum, along with others of less conspicuous beauty, but similar in those respects. They pass into Osmophytum by *E. fallax* and its allies, which may be almost equally placed in one subgenus or in the other.

a. Labellum tripartitum.

* 90. **E. ciliare.** *Linn. Sp. Pl.*, 1349. *Jacq. Amer.*, 224. *t.* 179. *f.* 89. *Swartz, Nov. Act. Ups., VI.* 69. *Ker, in Bot. Reg., t.* 784. *LO., p.* 100.

E. foliis oblongis obtusis, bracteis spathaceis ovario brevioribus, sepalis petalisque linearibus acuminatis, labelli tripartiti lobis lateralibus pectinatis incisis intermedio lineari acuminato.

(A) Sepals and petals narrow. Middle lobe of lip setaceous, longer than the laterals.

Auliza ciliaris. *Salisbury, in Hort. Trans. l. c.*

(B) cuspidatum. Middle lobe of lip linear-lanceolate, not much longer than the laterals.

E. ciliare. *Bot. Mag., t.* 463.
E. cuspidatum. *Lodd. Bot. Cab., t.* 10. *Ker, in Bot. Reg.,* 10. *t.* 783. *LO., p.* 101.

(C) viscidum. Leaf narrower, more channelled. Bracts glutinous. Middle lobe of lip setaceous, longer than the laterals. Flowers smaller.

E. viscidum. *Lindley, in Bot. Reg.* 1840, *misc.* 190.

Wild in TROPICAL AMERICA. **A,** Colombia, on rocks near Guaduas on the descent to Honda, in the province of Bogota—Hartweg; West Indies—Jacquin, Swartz, Hooker; Mariquita—Triana, 126; **B,** Dominica—Imray, in hb. Hooker; **C,** Mexico, on porphyry rocks near Oaxaca—Galeotti, 5087, (*v. v. c. et s. sp.*)

Flowers large, white, changing to straw-colour ; sometimes greenish except the lip. A careful examination of numerous specimens, both wild and cultivated, satisfies me that no limits whatever exist among the above supposed species. It is evident that the plant varies much according to age, health, and other circumstances, from bearing a single flower to forming a raceme a foot and a half long, bearing 28 flowers. It sometimes appears to have sepals only half the length of the lip (*Rchb.*), but I have not seen it in that state.

* 91. **E. falcatum.** *Lindley, in Taylor's Annals of Natural History, Feb.* 1840.

E. caule ramoso carnoso membranis laxis imbricatis vaginato, foliis solitariis carnosis falcatis ovato-lanceolatis canaliculatis acutis, fasciculis florum sub-sessilibus, sepalis petalisque linearilanceolatis patentissimis, labelli tripartiti basi bituberculati laciniis lateralibus oblongis acutis dimidiatis integris intermediâ linearilanceolatâ paulò longiore.

E. lactiflorum. *Richard and Galeotti, Orch. Mex., no.* 57.
E. Parkinsonianum. *Hooker, in Bot. Mag., t.* 3778.
E. aloifolium. *Bateman, Orch. Mex. and Guat., t.* 25.

Wild in MEXICO ; near Oaxaca, on rocks and loose stones—Hartweg, (*v. s. sp.*)

A species with fleshy branching short stems, long channelled fleshy falcate leaves, and large pale yellowish flowers, springing from within a long pale yellowish green membranous spathe. The number of flowers varies from two to four or more in each spathe.

* 92. **E. viviparum.** *Lindl., in Bot. Reg.* 1841, *misc.* 27.

E. caule fusiformi diphyllo pedunculo elongato squamato pluriès breviore, foliis oblongis horizontalibus obtusis, racemo paucifloro, bracteis spathaceis canaliculatis ovario cuniculato æqualibus, sepalis petalisque linearibus acuminatis patentissimis, labelli trilobi basi bicallosi laciniis lateralibus subrotundorhomboideis intermediâ lineari spathulatâ acuminatâ convexâ triplò longiore.

Wild in DEMERARA—Loddiges, (*v. v. c.*)

This has small white flowers closely arranged at the end of a flower-stem two feet long; and the latter when old produces young plants at almost every joint. The flowers have no smell, and are not half the size of the smallest state of *E. ciliare*.

* 93. **E. clavatum.** *Lindley, in Bot. Reg.*, t. 1870.

E. caule clavato in pseudobulbum ovale desinente diphyllum, foliis lanceolatis patulis racemo simplici subæqualibus, bracteis ovatis canaliculatis acutis ovariis infimis brevioribus, sepalis petalisque lanceolato-linearibus æqualibus, labelli tripartiti basi bicallosi laciniis acutis integris lateralibus ovatis intermediâ unguiculatâ ovatâ acuminatâ, clinandrio indiviso serrulato.

Wild in CUMANA—Henchmann; Sa. Martha—Purdie, (*v. v. c. et s. sp. comm. cel. Hooker.*)

Flowers green, with a white lip. Spathaceous bracts reddish.

94. **E. kermesinum.**

E. caule ramoso ramis crassis divaricatis in pseudobulbos ovato-fusiformes mutatis, foliis 4—5 lanceolatis canaliculatis acuminatis falcatis paniculâ laxâ brevioribus, sepalis petalisque minoribus lineari-oblongis obtusis carnosis, labelli semiadnati lobis lateralibus nanis rotundatis intermedio lineari obtuso sulcato.

Wild in the CARACCAS; S. Miguel, Sierra Nivada de Sa. Martha —Purdie; NEW GRENADA, in the province of Rio Hacha, at the height of 6000 to 9000 feet, March—Schlim, 985 (*v. s. sp. comm. cel. Linden.*)

Pseudobulbs like those of *E. erubescens*. Petals and sepals red, yellow at the point; lip white, spotted with crimson.—*Linden.*

95. **E. erubescens.** *Lindley, in Hooker's Journal, III.* 87. *Bateman, Orch. Mex. et Guat., t.* 32.

E. pseudobulbis fusiformibus diphyllis, foliis oblongis acutis scapo pluriès brevioribus, paniculâ amplâ flexuosâ, petalis unguiculatis sepalisque oblongis obtusis, labelli trilobi laciniâ intermediâ venis 3 elevatis subrotundâ lateralibus obovatis multò majore.

Wild in MEXICO—Grisebach, 14; Zuccarini; on oaks at the heights of 7500 to 8500 feet, near Oaxaca—Galeotti, 5007, (*v. s. sp.*)

A magnificent plant, with very large panicles of delicate rose-coloured flowers as large as a shilling.

96. **E. polystachyum.** *H. B. K., vol. I.* 352. *LO.*, 20.

E. foliis oblongis obtusis striato-nervosis geminatim in pseudobulbum insidentibus, scapo polystachyo, sepalis reflexis suboblongis acutis, petalis lanceolato-spatulatis, labelli trilobi lobis

lateralibus irregulariter obovatis crenulatis: intermedio minore profundè emarginato.

Wild in PERU; in the cool region of the Andes of Pasto, between the village of Yayanquer and the R. Guaitara; also in the milder climate of Loxa, in the Cinchona districts, at the height of 5400 to 6480 feet—Humboldt and Bonpland.

Scape about two feet high. Spathes withering. Spikes solitary, two or three together, alternate, distant, about one inch and a half long, spreading. Flowers yellow.—*H. B. K.*

97. **E. grammatoglossum.** *H. G. Reichenbach, in Linnæa, XXII. p.* 837.

E. pseudobulbis teretibus folio canaliculato recurvo gramineo duplò brevioribus, scapo stricto folio longiore, spathâ brevi glumaceâ, bracteis ovatis membranaceis acuminatis, sepalis linearilanceolatis petalisque angustioribus acuminatis, labello hastato lobis lateralibus recurvis obtusis intermedio triangulari acutissimo basi callo retuso concavo lævi mucronulato, clinandrii lobis lateralibus acuminatis dorsali breviore obtuso.

Wild in VENEZUELA; near Sa. Anna, in Truxillo, at the height of 5000 feet—Funck and Schlim, 730, (*v. s. sp. comm. cel. Linden.*)

A slender species, from six to nine inches from the ground to the tip of the raceme. Flowers yellow, marked on either side of the remarkable lip with from three to four deep red spots.

98. **E. tipuloideum.**

E. pseudobulbo gracili 2-phyllo, foliis linearibus gramineis racemo erecto angulato basi spathaceo longioribus, bracteis obsoletis, sepalo dorsali lineari reflexo lateralibus lanceolatis carinâ alatâ, petalis erectis incurvis filiformibus, labelli tripartiti laciniis lateralibus angustis elongatis acutis cordatis intermediâ lanceolato acuto basi bicalloso, clinandrii lobis lateralibus bilobis dorsali deficiente.

Wild in VENEZUELA; Campanara in the province of Carabobo, at the elevation of 1000 feet—Funck and Schlim, 575, (*v. s. sp. comm. cel. Linden.*)

A small slender grassy plant, scarcely more than six inches high. "Flowers white and brown," appearing in May, small, membranous, nine to ten in a raceme.

99. **E. Moritzii.** *H. G. Reichenbach, in Linnæa, XXII.* 837.

E. pseudobulbo lineari monophyllo, folio oblongo-lineari obtuso, racemo gracili multifloro nutante è spathâ herbaceâ coarctatâ erumpente, sepalis lanceolatis trinerviis petalisque linearibus uninerviis membranaceis acutis, labelli tripartiti basi 3-callosi

in the order of publication, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, wholly unknown, or very imperfectly known, to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Osyricera *Blume.*
Chrysoglossum *Blume.*
Titania *Endlicher.*
Platystylis *Blume.*
Gastroglottis *Blume.*
Macrostomium *Blume.*
Diploconchium *Schauer.*
Diglyphis *Blume.*
Epicrianthes *Blume.*
Thelychiton *Endlicher.*
Cochlia *Blume.*
Aphyllorchis *Blume.*
Acanthoglossum *Blume.*
Aspegrenia *Pöppig.*
Collabium *Blume.*
Pachystoma *Blume.*
Calostylis *Blume.*
Ceratium *Blume.*
Pachychilus *Blume.*
Microsaccus *Blume.*
Lichenora *Wight.*
Ceratostylis *Blume.*
Ephippium *Blume.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Pteroceras *Hasskarl.*
Adenoncos *Blume.*
Cryptoglottis *Blume.*
Glomera *Blume.*
Conchochilus *Hasskarl.*
Todaroa *Ach. Richard.*
Cuitlauzina *La Llave.*
Psittacoglossum *La Llave.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Tipularia *Nuttall.*
Didymoplexis *Griffith.*
Haplostellis *Ach. Richard.*
Cyathoglottis *Pöppig.*
Zosterostylis *Blume.*
Chlorosa *Blume.*
Rophostemon *Blume.*

Galeoglossum *Ach. Richard.*
Ocampoa *Ach. Richard.*
Plexaure *Endlicher.*
Eucosia *Blume.*
Macodes *Blume.*
Galera *Blume.*
Hysteria *Reinwardt.*
Scaredederis *Thouars.*
Acronia *Presl.*
Scleropteris *Scheidweiler.*
Apetalon *Wight.*
Podanthera *Wight.*

Amblostoma *Scheidweiler.*
Leucorchis *Blume.*
Pseuderiopsis *Reichenb. fil.*
Brachtia *Reichenb. fil.*
Aclinia *Griffith.*
Androgyne *Griffith.*
Thisbe *Falconer.*
Cybele *Falconer.*
Cryptosanus *Scheidweiler.*
Bolborchis *Moritzi.*
Pseudepidendrum *Reichenb. fil.*
Trophianthus *Scheidweiler.*

ABBREVIATIONS.

Lo. = The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

LIST OF GENERA IN THIS PART.

SARCOPODIUM	6	pages
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ACROCHÆNE	2	„
IONE	4	„
ERYCINA	2	„
EPIDENDRUM	32	„

Part III.] FEBRUARY, 1853. [Price 2s. 6d.

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS

AT 5, CHARLES STREET, COVENT GARDEN, LONDON.

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-two years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera

laciniis lateralibus semiovatis acutis falcatis serrulatis intermediâ lineari acutâ longiore, clinandrio immarginato.

Wild in VENEZUELA; in the province of Merida—Moritz; at the height of 5000 feet—Funck and Schlim, 1053; Ocaña—Schlim, 742, (*v. s. sp. comm. cel. Linden.*)

A slender species, with very membranous flowers. Leaf three inches long. Spathe more than half as long. Raceme a foot long. Flowers yellow and white.

100. **E. stramineum.**

E. spathâ magnâ amplâ, spicâ multiflorâ nutante, bracteis minimis acutis, sepalis lanceolatis acutis, petalis angustioribus nunc obtusioribus, labelli lamina libera triloba lobis lateralibus rotundatis apice producto nunc acuto nunc obtuso margine nunc serrulato lobo medio ligulato acuto, tuberculis 4—5 in basi labelli.

Wild in TROPICAL AMERICA; Pamplona, at the height of 8500 feet—Schlim, 69; Ocaña—Schlim, 742, (*v. s. sp. comm. cel. Linden.*)

Leaf solitary, rather long. Flowers yellowish green; ground of the lip purple.—*Rchb.*

101. **E. cycnostalix.** *H.G. Reichenbach, in Bot. Zeitung*, 1852, *p.* 731.

E. caule fusiformi, folio oblongo acutiusculo valdè vernixio, spathâ scariosâ acuminatâ abbreviatâ, pedunculo basi uniramoso plurifloro elongato, bracteis summis tenuissimis, pedicellis subitò in ovaria clavata transeuntibus, sepalis lanceolatis acutis apicibus reflexis, petalis angusto-linearibus medio apicem usque dilatatis acutis, columnâ recurvâ, labello quadrilobo basi bicarinato lobis lateralibus ligulatis recurvis retusis medio angustissimo unguiculato bilobo laciniis dolabriformibus denticulatis divaricatis denticulo interposito, clinandrii 5-dentati dentibus infimis reflexis.

Wild in VERAGUA; Chiriqui—Warczewitz.

Flowers white and brown.—*Rchb.*

102. **E. parvilabre.** *Lindley, in Benth. Pl. Hartw., p.* 150.

E. folio oblongo subobliquè emarginato caule longiore, racemo simplici multifloro cernuo folio multò longiore è spathâ erumpente 2—3-phyllâ, sepalis oblongis obtusis lateralibus duplò latioribus 5-nerviis, petalis sepalo dorsali angustioribus, labelli tripartiti laciniis lateralibus falcatis acutissimis intermediâ angustissimâ apice cuneatâ trilobâ, axi elevatâ basi bicallosâ.

Wild in PERU; near El Porotillo and El Sisme—Hartweg, (*v. s. sp.*)

This species has a spathe like a Spathium, but it has pseudobulbs instead of leafy stems. Flowers small, dense, with minute acute bracts, colour unknown.

JAN. 14, 1853.

103. **E. parallelum.**

E. rhizomate crasso repente, pseudobulbis angustis teretibus folio lineari oblongo marginibus parallelis 3-plò brevioribus, racemo stricto basi vaginato folio longiore, sepalis petalisque lineari-lanceolatis, labelli tripartiti laciniis lateralibus semiovatis acutis incurvis intermediâ lineari acuminatâ latiore ungue ecalloso apice concavo pubescente, clinandrio obtusè 3-partito.

Wild in SA. MARTHA; rocks at S. Sebastian, in the Sierra Nevada—Purdie, (*v. s. sp. comm. cel. Hooker.*)

The edges of the obtuse leaves are almost exactly parallel. Flowers the size of *E. inversum*. The total absence of calli from the lip is remarkable.

104. **E. venosum.** *LO., p.* 99.

E. pseudobulbis angustis fusiformibus, foliis ensiformibus scapi longitudine, racemo 4—5-floro, sepalis lineari-lanceolatis petalisque angustioribus patentissimis, labello semilibero tripartito: laciniis lateralibus ovatis acutis intermediâ subrotundâ acutâ multò majore, callo baseos lineisque tribus disci subramosis elevatis.

Wild in MEXICO; on rocks near Morelia—Hartweg, (*v. s. sp.*)

Lip white, with raised violet veins.

b. Labellum trilobum (lobis sæpiùs rotundatis).

105. **E. saxatile.** *Lindley, in Hooker's Journal, III.* 84.

E. caulibus fusiformibus apice diphyllis, foliis lineari-lanceolatis racemo paucifloro brevioribus, floribus membranaceis, sepalis oblongis petalisque filiformibus labello multò minoribus, labelli subrotundi trilobi laciniis rotundatis subrepandis intermediam bilobam reniformem serratam imbricantibus.

Wild in BRAZIL; on rocks in the Serra de Piedade—Martius, (*v. s. sp. in hb. Martius.*)

Whole plant less than six inches high. Flowers membranous, reddish purple, with darker longitudinal streaks, as large as in *E. Schomburgkii.*

106. **E. pruinosum.** *Richard and Galeotti, Orch. Mex., no.* 41.

E. "pseudobulbis globosis 1-phyllis, fol. lanceolato acuto, flor. luteis, racemo simplici, lab. adnato trilobo: lobis lateralibus angustis divaricatis intermedio obcordato."

Wild in MEXICO—Galeotti.

107. **E. rhynchophorum.** *Rich. and Galeotti, Orch. Mex., no.* 37.

E. pseudobulbis monophyllis, folio lorato obtuso racemo 3—5-floro æquali, sepalis linearibus elongatis obtusis, petalis angustio-

ribus brevioribus acuminatis, labelli duplò brevioris laciniâ mediâ subulatâ lateralibus rotundatis nanis, columnæ dente dorsali obtuso.

Wild in MEXICO; Vera Cruz, on the parasitical Andromeda at the height of 4000 feet—Galeotti, 5077, (*adest in hb. Hooker.*)

"Flowers yellow."—*Galeotti;* very like those of *Pleurothallis stenopetala*, but larger.

108. **E. rupestre.** *Lindley, in Hooker's Journal, III.* 84.

E. caulibus filiformibus vaginis membranaceis vestitis diphyllis, foliis lanceolatis acutis pedunculo ancipiti æqualibus, racemo cernuo, bracteis membranaceis acuminatis pedicellis brevioribus, sepalis oblongis petalisque lineari-spathulatis obtusis, labelli trilobi laciniis lateralibus acutis margine postico serratis intermediâ rotundatâ emarginatâ vel integrâ lineis tribus elevatis rugosis.

Wild in PERU; on bare rocks at the base of Tunguragua—Hall, (*v. s. sp. comm. cel. Hooker.*)

The whole plant about six inches high. Flowers yellow.

109. **E. brachychilum.** *Lindley, Orch. Linden., no.* 51.

E. foliis ligulatis obtusissimis racemo basi spathaceo brevioribus, sepalis petalisque ovalibus acutissimis, labello trilobo convexo disco villoso apice glabro petalis breviore.

Wild in VENEZUELA; the thick forests of the slope of the Sierra Nevada, at the height of 7000 feet—Linden, 648; NEW GRENADA, in the province of Ocaña, at 4800 feet—Schlim, 1016; Funck and Schlim, 1182, (*v. s. sp. comm. cel. Linden.*)

Pseudobulbs as in *E. fragrans.* Petals yellow, spotted with brown. Lip bright yellow. Flowers very fragrant. Leaf nearly a foot long. Spathe acuminate, bracts obsolete.

110. **E. fallax.** *Lindley, Orch. Linden., no.* 53.

E. foliis loratis obtusis emarginatisque inæqualibus basi remotis racemo basi spathaceo duplò brevioribus, spathâ papyraceâ, sepalis petalisque lanceolatis, labello semilibero æqualiter trilobo concavo medio tomentoso laciniis lateralibus rotundatis intermediâ subcordatâ acutâ.

(A) Petals reddish. Lip purple, edged with white.
E. Lindenii. *Lindley, in Ann. Nat. Hist., XII.* 397.

(B) flavescens. Petals orange-yellow. Lip white, mixed with yellow.

Wild in VENEZUELA; on trees in the thick forests of the Sierra Nevada, at the height of 6-8000 feet—Linden, 624, 645, (*v. s. sp. comm. cel. Linden.*)

Pseudobulbs like those of *E. fragrans*. Spathe membranous Flowers sweet-scented. The first two varieties seem to differ in nothing but colour. They are near *E. venosum*, the middle lobe of whose lip is much larger than the side ones.

111. **E. sceptrum.** *Lindley, Orch. Linden., no.* 50.

E. foliis loratis basi remotis obtusis emarginatisque racemo basi spathaceo pluriès brevioribus, spathâ foliaceâ, sepalis lanceolatis, petalis obovatis unguiculatis acutis, labello subrotundo-hastato medio basi pulvinato pubescente, clinandrio obtusè trilobo.

Wild in VENEZUELA; on rotten trees near the Indian village of Jaji, at the height of 6500 feet—Linden, 650; Sa. Martha, on trees near Pacho—Purdie; NEW GRENADA, Ocaña—Schlim, 769 and 745, (*v. s. sp.*)

Pseudobulbs a foot long, compressed; raceme one to two feet long. Flowers very numerous, arranged in spikes. Petals golden-yellow, very brilliant, spotted with purple. Lip bright purple, white at the base. Purdie's Sa. Martha specimens, in Sir W. Hooker's herbarium, entirely agree with Linden's. The plant varies much in the brilliancy of its colour.

112. **E. refractum.** *Lindley, in Ann. Nat. Hist., XII. Orch. Linden., no.* 39.

E. folio ovato-oblongo coriaceo obtuso, pedunculo elongato spathis plurimis falcatis obtusis distinctis vaginato, racemo brevi 4—5-floro cernuo, floribus carnosis, sepalis oblongis acutis dorsali refracto, petalis ovalibus subconformibus, labello subrotundo cordato trilobo basi bicalloso lineâ elevatâ interjectâ: laciniâ intermediâ abbreviatâ truncatâ.

Wild in VENEZUELA; the high regions of the Sierra Nevada in Merida, at the height of 10,000 to 11,000 feet—Linden, 618, (*v. s. sp.*)

A remarkable plant, with very broad, short, oblong, coriaceous leaves, six or seven herbaceous, distinct, falcate spathes on a peduncle about nine inches long. Sepals about three-quarters of an inch long. "Pseudobulbs six to eight inches long. Flowers blood-colour."—*Linden.*

113. **E. Hartwegii.** *Lindley, in Plant. Hartw., p.* 150.

E. foliis 2 basi remotis oblongis obtusis coriaceis apice obliquis spicæ rigidæ multifloræ basi spathaceæ caulisque bulbosi teretis longitudine, floribus coriaceis, ovario triquetro clavato, sepalo supremo oblongo obtuso lateralibus acutissimis, petalis obovatis, labello subrotundo æqualiter trilobo basi callo pubescente concavo aucto, ungue et columnâ brevissimis.

Wild in PERU; on the Cordillera near Loxa—Hartweg, (*v. s. sp.*)

Nearly allied to *E. fallax*, but the leaves are shorter and broader, the spike very short and stiff, the flowers much more coriaceous. Their colour is unknown.

* 114. **E. volutum.** *Lindley, in Paxton's Flower Garden; gleanings, no.* 427, *ic.* 215.

E. caule tereti membranaceo-vaginato apice 3-phyllo, foliis lineari-oblongis pergameneis inæqualibus, racemo sessili stricto flexuoso, bracteis magnis glumaceis distantibus pedunculis longioribus, sepalis petalisque linearibus margine revolutis æqualibus acutis, labello subrotundo-ovato subcordato decurvo leviter trilobo cuspidato callis 2 ad basin plicisque tribus obsoletis.

Wild in CENTRAL AMERICA—Skinner, (*v. v. c.*)

Stem merely terete, and not swollen into a pseudobulb. Flowers greenish white, and of no beauty. Easily known by the great alternate paleaceous bracts, planted on a somewhat zigzag rachis, and reaching nearly to the middle of the foot-stalk and ovary of each flower.

115. **E. pulchellum.** *Richard and Galeotti, Orch. Mex., no.* 45.

E. " nanum, pseudobulbis ovoideis diphyllis, foliis ovali-oblongis acutis, floribus purpureis, racemo simplici terminali 3—4-floro, labello adnato trilobo concavo lobis lateralibus latis obtusis intermedio minori emarginato."

Wild in MEXICO—Galeotti.

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§ 7. **OSMOPHYTUM.** *Lindley, in Bot. Reg.* 1839, *misc.* 135. *Hook. Jour. III.* 81.

In the whole of this division the lip is absolutely undivided, without any apparent tendency to even rudimentary subdivision.

116. **E. tigrinum.** *Lindley, Orch. Linden., no.* 52.

E. foliis oblongis coriaceis racemo basi squamato duplò brevioribus, sepalis petalisque lanceolatis, labello obovato piloso callo magno apice transversè corrugato basi biconcavo pubescente, clinandrii trilobi lobis rugosis dorsali appendice membranaceâ 3-dentatâ antepositâ.

Wild in VENEZUELA; on earth or trees at Jaji in Merida, at the height of 5-9000 feet; July—Linden, 1468; BRAZIL? Minas Geräes—Weddell, (*v. s. sp. comm. cel. Linden.*)

" Pseudobulbs a foot or a foot and half long, compressed. Petals orange-yellow, spotted with red. Lip white, washed with purple." A plant in the way of *E. variegatum*, but with flowers four times as large. I suppose that a drawing, No. 1, in the Hb. Mus. Par., made in the Minas Geräes, by Mr. Weddell, belongs to this species.

* 117. **E. variegatum.** *Hooker, Bot. Mag., t.* 3151. *Bot. Reg.,* 1839, *t.* 11.

E. pseudobulbis fusiformibus compressis diphyllis, foliis oblongis obtusis, racemo multifloro, sepalis petalisque subrotundo-obovatis coriaceis obtusis, labello subrotundo brevissimo acuto

intùs sub columnâ pubescente: callis duobus incurvis in appendicem hippocrepicam carnosam confluentibus, lobo columnæ postico obtuso dente membranaceo subbifido anteposito.

(A) virens. Sepals and petals green spotted with purple. Lip white with a crimson horse-shoe mark.

(B) coriaceum. Flowers cream-coloured, with purple spots on the sepals and petals, and dirty purple streaks on the lip.

E. coriaceum. *Hooker, Bot. Mag., t.* 3595.

(C) crassilabium. Calli of the lip thicker and more downy. Leaves more remote at the base.

E. crassilabium. *Pöppig and Endl., Nov. Gen., II. p.* 1, *t.* 102.

(D) leopardinum. Flowers yellow, marbled with dark red; lip white at the point. Leaves long, broad, like those of *E. tigrinum.*

Wild in TROPICAL AMERICA. **A**, Brazil—Harrison, Loddiges; Rio Negro above Barcellos, common—Spruce, 1948; New Grenada—Funck and Schlim, 1435; **B**, Demerara—Parker; Jamaica—Purdie; **C**, Peru—Mathews, 1886; trees and rocks in the primæval forests near the farm of Pampayaco—Pöppig; **D**, New Grenada, in the province of Ocaña, at the height of 4950 feet—Schlim, 1010, (*v. v. c. et s. sp.*)

A variable plant, readily known by its very short lip, on the base of which is placed a large concave downy callus, which presses against the column and gives the lip the appearance of being divided horizontally into two layers. On very strong specimens there are occasionally three or four leaves on a pseudobulb. The flowers are extremely fragrant. I am persuaded that the above synonyms represent different varieties of one and the same species, the leaves of which are sometimes strictly oblong, as in Spruce's specimens, sometimes strap-shaped, and as much as a foot long. Pöppig's figure is accompanied by details which it would be difficult to find, and he overlooks the down on the lip, which is a striking feature of the species.

118. **E. pamplonense.** *H. G. Reichenbach, in Linnæa, XXII. p.* 837.

E. racemo multifloro (14) bracteis lanceolatis acutis, sepalis oblongis cuneatis obtusis, petalis subæqualibus minoribus, labello minuto ovato cuncato anticè nunc acuto obsoletissimè trilobo callo magno longitudinali foliaceo apice acuto lateribus implicato partibus lateralibus hinc centrum ipsius calli tegentibus, clinandrii lobo dorsali obtuso laciniâ subulatâ antepositâ lateralibus emarginatis.

Wild in NEW GRENADA; Pamplona, at the height of 6000 feet; January—Funck and Schlim, 1435, (*Rchb.*)

Leaves in pairs, long, acute, carinate. Nearly allied in lip, leaves, and column, to *E. tigrinum* and *variegatum.* Flowers yellow and white, flecked with purple.—*Rchb.*

119. **E. Spondiadum.** *H. G. Reichenbach, in Bot. Zeit.* 1852, *p.* 731.

E. spathâ ancipiti crassâ, pedunculo valido plurifloro, bracteis triangulis excavatis brevissimis, pedicellis in ovaria triptera sensim

abeuntibus, sepalis oblongis acutis, petalis obovato-oblongis acuminatis, labello ovali anticè subitò acuto, callo depresso oblongo à basi discum versus in carinulam antrorsum excurrente, columnâ abbreviatâ crassâ, clinandrii auriculis lateralibus obtusangulis nunc bilobis mediâ lineari apice tri-quadridentatâ.

Wild in COSTA RICA; on the Spondias—Warczewitz.

120. **E. Widgrenii.**

E. pseudobulbis teretibus diphyllis, foliis oblongis scapo subæqualibus, spathâ papyraceâ pedunculi angulati longitudine, racemo 6—8-floro stricto, sepalis lanceolatis acuminatis, petalis ovalibus, labello subrotundo cochleato acuminato basi bicalloso secus axin costato.

Wild in BRAZIL; Minas Geräes—Widgren, 775, (*v. s. sp.*)

Resembles *E. fragrans*, from which it is immediately known by the presence of a strong rib which runs along the axis of the lip.

* 121. **E. collare.** *Lindley, in Bot. Reg.* 1843, *misc.* 85.

E. caulibus fusiformibus elongatis apice triphyllis, foliis coriaceis canaliculatis patentibus, racemo laxo paucifloro, cuniculo ovarii elongato extùs manifesto, sepalis petalisque conformibus petaloideis undulatis lanceolatis, labello ovato obtuso undulato apice recurvo basi trilamellato lamellis lateralibus basi bilobis, clinandrii margine elevato denticulato.

Wild in GUATEMALA—Hartweg, (*v. v. c.*)

Stems eighteen inches long, strong, and deeply furrowed. Flowers white, changing to yellow and brown as they go off. Anther-bed surrounded by an elevated edge, standing up like a collar. The cuniculus of the ovary as prominent and conspicuous as in a Pelargonium.

* 122. **E. fragrans.** *Swartz, Fl. Ind. Occ., III.*, 1847. *Bot. Mag., t.* 1669. *Bot. Cab., t.* 1039.

E. pseudobulbo monophyllo angusto fusiformi, foliis lanceolatis apice recurvis, scapo folio breviore, sepalis lineari-lanceolatis petalisque ovato-lanceolatis acuminatis patentibus, labello subrotundo cuspidato lineato integerrimo, columnæ lobo dorsali obtuso dente bifido anteposito.

E. æmulum. *Lindley, in Bot. Reg., t.* 1898.
E. lineatum. *R. A. Salisbury, stirp.* 10.

(B) **megalanthum.** Flowers very large, with vivid stripes of rich crimson on the lip.

Wild in the TROPICS of AMERICA; Dominica—Imray; Jamaica—Swartz; French Guiana—Leprieur, 123; Surinam—Hortmann, 205; Focke, 127; Demerara—Schomburgk, 423;

Guayaquil—Jamieson; Para—Loddiges. **B**, Guatemala—Skinner, (*v. v. c. et s. sp.*)

Flowers extremely fragrant, pale green or cream-colour, with crimson streaks on the lip. This plant, the great range of which is indicated by the above localities, is subject to much diversity of appearance, according to its age or the place in which it grows. My *E. æmulum* is not, I believe, even a variety, but merely a diminutive state. The variety **B** is remarkable for its gigantic dimensions, which it retains in cultivation; the flowers are full four inches in diameter, and its pseudobulbs and leaves, taken together, are sometimes eighteen inches long.

* 123. **E. glumaceum.** *Lindley, in Bot. Reg.* 1840, *t.* 6.

E. pseudobulbis ovatis apice angustatis diphyllis, foliis angustè oblongis patentibus, racemo terminali cylindraceo è spathis glumaceis erumpente, sepalis linearibus petalisque lineari-lanceolatis acuminatissimis, labello obovato acuminato convexo integerrimo basi calloso.

Wild in BRAZIL; on the branches of *Vellozia candida*, on the summit of the Pedro Bonito Mountain, common—Gardner, 243; EQUADOR—Sinclair (*v. v. c. et s. sp. in hb. Hooker.*)

This has the habit and sweet odour of *E. fragrans*, from which it differs in the colour of its flowers, which are white, tinged with pink, and striped with rose, in the long tapering figure of the flower-buds, caused by the peculiar form of the sepals and petals, and in the shape of the lip, which is convex not concave, obovate, and acuminate.

* 124. **E. inversum.** *Lindley, in Bot. Reg.* 1839, *misc.* 135.

E. pseudobulbis diphyllis elongatis compressis, foliis oblongo-loratis obtusis, spicâ terminali sub-6-florâ basi spathaceâ bracteis brevibus ovatis acuminatis, ovario triquetro, sepalis petalisque patentibus lineari-lanceolatis convexis subæqualibus, labello ovato acuminato basi lævi medio sulcato callis 3 obsoletis, columnâ obtusè 3-dentatâ, antheræ cardinis appendice oblongâ denticulatâ.

Wild in BRAZIL; on the Crescentia—Martius; in the Minas Geräes—Widgren, 776, (*v. v. c. et s. sp.*)

Flowers straw-coloured, with a few purple streaks on the column and at the base of the lip; a heavy not very pleasant smell, something like that of Glechoma, is peculiar to it. It differs from *E. glumaceum* in the colour and small size of its flowers, and I believe in the calli of the lip, but the specimens of that plant at my disposal do not enable me to describe them accurately. The species are, however, no doubt distinct.

* 125. **E. calamarium.** *Lindley, in Bot. Reg.* 1838, *misc.* 163.

E. pseudobulbis teretibus ovalibus diphyllis, foliis linearibus planis abruptè acutis, racemo simplici erecto, bracteis minutis acuminatis, sepalis patentissimis linearibus acutis apice recurvis, petalis angustioribus subspathulatis, labello postico subrotundo acuto convexo basi pubescente, callo duplici lato apice confluente.

Wild in BRAZIL; Organ Mountains, on the stems and branches of trees in large clusters; April—Gardner, 624, 5869 (*v. v. c. et s. sp.*)

Flowers pale, whole-coloured, yellowish green, with five small violet spots at the base of the lip. Not fragrant. A small two-leaved plant, four or five inches high.

* 126. **E. tripunctatum.**

E. pseudobulbis ovalibus diphyllis, foliis angustè loratis recurvis scapo longioribus, racemo paucifloro, bracteis minutis, sepalis linearibus acuminatis, petalis angustioribus, labello lanceolato plano basi pubescente callis 2 clavatis sulcisque 3 utrinque, columnæ lobis anticis acutis.

Wild in BRAZIL—Loddiges, (*v. v. c.*)

Much like *E. calamarium*. Flowers yellowish, with three deep purple spots in front of the calli, and two or three smaller on each side above the furrows of the lip.

* 127. **E. attenuatum.**

E. caule basi ramoso in pseudobulbos tenues angustos monophyllos diviso, folio lineari-lanceolato racemo tenui spicæformi duplò breviore, bracteis subulatis, sepalis linearibus membranaceis acutis dorsali reflexo, petalis filiformibus, labello ovato cordato basi bisquamato tuberculo interjecto, ovario lagenæformi.

Wild in VENEZUELA; Truxillo, at the Aguas de Obispo, at the height of 9000 feet; August—Funck and Schlim, 734, (*v. s. sp. comm. cel. Linden.*)

The habit is that of *E. transparens*. Flowers small, membranous, with reddish petals and a yellow lip, on which are five strongly marked forked dark veins.

* 128. **E. cochleatum.** *Linn. Jacq. Ic. Rar., III. t.* 605. *Bot. Mag., t.* 572. *LO., p.* 97.

E. pseudobulbis ovalibus compressis diphyllis, foliis oblongis acutis subundulatis, sepalis petalisque paulò angustioribus linearilanceolatis reflexis, labello postico cordato cochleato subrotundo basi bicalloso, columnâ nanâ, clinandrii lobo dorsali obtuso dente lineari bifido anteposito.

(B) pallidum. Stains on the lip very faint.

Anacheilium cochleatum. *Hoffmgg. in Linnæa, XVI.* 229.

Wild in the WEST INDIES, where it is common; in Mexico, near Zacuapan, &c.—Galeotti, 5107, (*v. v. c. et s. sp.*)

Leaves broad, deep green, in pairs upon an oval furrowed pseudobulb. Sepals and petals green. Lip green, bordered with purple, and deeply stained with the same colour below the middle.

* 129. **E. lancifolium.** *Pavon. LO., p.* 98. *Bot. Reg.* 1842, *t.* 50.

E. pseudobulbis ovalibus diphyllis teretibus, foliis oblongo-lanceolatis acutiusculis, racemo brevi, sepalis petalisque lanceolatis acuminatis reflexis, labello cordato oblato-ovato cochleato basi tricostato.

Wild in MEXICO—Hartweg, (*v. v. c.*)

Like *E. cochleatum* ; but sepals and petals shorter and broader, and lip regularly cochleate, without a tendency to lobing at the edge. Flowers pale green ; lip marked with deep crimson radiating streaks.

* 130. **E. radiatum.** *Lindley, in Bot. Reg., misc.* 1841, *no.* 123 ; 1844, *t.* 45.

E. pseudobulbis ovatis compressis utrinque costatis triphyllis, foliis angustis elongatis acutis, racemo denso paucifloro, ovariis trialatis, sepalis lanceolatis petalisque ovalibus patentissimis, labello cochleato retuso crenato crispo basi bicalloso pubescente, clinandrii laciniis lateralibus erectis carnosis intermediâ truncatâ apice serratâ.

E. marginatum. *Link, Klotzsch, and Otto., Ic. Pl., t.* 36.
? E. bracteolatum. *Presl. Rel. Hœnk.*, 100. *LO.*, 5.

Wild in MEXICO ; rocks near the Hacienda de la Laguna ; August—Schiede, 11 ; Oaxaca—Galeotti, 5020 ; Vera Cruz—Id. 5161 ; GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

Allied to *E. cochleatum ;* it has the same habit, but the pseudobulbs are strongly ribbed at the side, and the lip has the margin crisp and crenated. The flowers are pale pea-green, with the exception of the lip, which is striated with bright deeper purple rays.

131. **E. chondylobolbon.** *Rich. and Galeotti, Orch. Mex., no.* 43.

E. "pseudobulbis oblongis compressis basi articulatis 3—4-phyllis, foliis lanceolato-linearibus obtusis, flor. luteis violaceo-lineatis, labello breviter unguiculato cordato apice longè acuminato acutissimo."

Wild in MEXICO—Galeotti.

132. **E. marmoratum.** *Rich. and Galeotti, Orch. Mex., no.* 44.

E. "pseudobulbis oblongo-fusiformibus articulatis, foliis ellipticis oblongis, scapo terminali dependente, flor. violaceis, labello adnato convexo orbiculari emarginato costato."

Wild in MEXICO—Galeotti.

§ 8. **LANIUM.** *Lindley, in Hooker's Journal, III.* 85.

Creeping scaly stems throwing up little leafy branches or even pseudobulbs, and loosely arranged small long-stalked flowers, more or less covered with down, are the principal characteristics of this section, which has a lip adnate to the column. The only other Epidendrum with woolly flowers is *E. lanipes.*

* 133. **E. microphyllum.** *Lindley, in Hooker's Journal, III.* 85.

E. ramulis foliosis, foliis distichis angustis carnosis canaliculatis acutis serrulatis racemo terminali tomentoso multò brevioribus, sepalis aristatis, petalis linearibus, labello oblongo acuto basi bilamellato venis tribus per medium obsoletis.

E ? sarcophyllum. *Focke, Tijdschrift nederl. IV.* 67.

Wild in DEMERARA—Schomburgk; Hostmann, 626, in herb. Mus. Par. and Miquel, (*v. v. c. et s. sp.*)

A small creeping species, with woolly dull purple or greenish flowers. The cultivated plant has much longer foot-stalks to the flowers than the wild one. M. Focke observes that the pollen-masses are *incumbent,* not collateral, a circumstance which leads him to ask whether this is really an Epidendrum. See his excellent description in the work above quoted.

134. **E. Avicula.** *Lindley, in Hooker's Journal, III.* 85.

E. ramulis pseudobulbosis diphyllis, foliis ovatis planis margine lævibus paniculâ tomentosâ multò brevioribus, sepalis lanceolatis acutis tomentosis, petalis linearibus, labello acuto subrhombeo basi bicalloso.

Wild in BRAZIL; Organ mountains, forming dense tufts on the stems and branches of trees; April—Gardner, 625, (*v. s. sp.*)

Leaves about an inch long. Panicle between three and four inches. Flowers small, when seen from the back not unlike a little bird in full flight.

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§ 9. **SPATHIUM.** *Lindley, in Hooker's Journal of Botany, III.* 81. *Bot. Reg.* 1844, *misc.* 82.

This division is distinguished by its stem being slender, leafy, and erect, its flowers placed on a long peduncle, which proceeds from a spathe consisting of one or more equitant bracts, and by its labellum being wholly attached to the corolla. It differs from AULIZEUM in its stem being covered with leaves, and not pseudobulbous with two or three leaves at the end only. It is very near AMPHIGLOTTIUM, from which it is distinguished by the branches not being excessively lengthened and covered with close pressed scales below the flowers. In their stead there is usually a long sheathing spathe, like that of Cattleya, out of which the inflorescence proceeds: occasionally there are several of such spathes, as in the second section of the following enumeration, which is only known from Amphiglottium by the spathes being large and herbaceous instead of dry and membranous.

a. Spatha subsimplex. Flores racemosi.

* *Labellum indivisum.*

135. **E. grandiflorum.** *Lindley, in Hooker's Journal, III.* 86.
E. foliis distichis ensiformibus obtusis, racemo denso terminali basi flexuoso è spathâ duplici orto, sepalo dorsali ovali lateralibus duplò latioribus dimidiatis, petalis linearibus, labello subrotundo cordato emarginato margine postico crispo venis baseos 2 elevatis.

Wild in PERU—Mathews, (*v. s. sp. in hb. Hooker.*)

Flowers coriaceous, about twice as large as in *E. variegatum.*

136. **E. mancum.** *Lindley, in Bot. Reg.* 1844, *misc.* 28.
E. foliis 3—4 oblongis obtusis carnosis obliquè emarginatis supremo spathæ longitudine, racemo stricto multifloro foliis multò longiore, floribus carnosis, sepalis subrotundo-oblongis obtusissimis, petalis spathulatis obtusissimis apice concavis, labello parvo postico carnoso concavo indiviso callo magno margine membranaceo in medio.

Wild in PERU; on the Cordillera, near Loxa, flowering in July — Hartweg; in NEW GRENADA, in the province of Pamplona, at the height of 9000 feet—Schlim, 135, (*v. s. sp.*)

Flowers rather small, orange and yellow—*Htwg.*; yellow spotted with red.—*Schlim.*

137. **E. ventricosum.** *Lindley, in Hooker's Journal, III.* 86.
E. foliis lineari-lanceolatis acutis, racemis angustis multifloris è spathâ lineari ortis, floribus membranaceis, sepalis subæqualibus oblongis acutis, petalis filiformibus, columnâ ventricosâ, labello ovato cordato acutissimo basi bicalloso.

Wild in PERU—Mathews, (*v. s. sp. in hb. Hooker.*)

A slender plant, with the stem about six inches up to the commencement of the spathe. Racemes from four to five inches long, including the spathe which covers the whole peduncle. Flowers purple, small, membranous.

138. **E. tenellum.**
E. foliis paucis linearibus, pedunculo flexuoso bracteâ lineari carinatâ tenui ad utrumque articulum, floribus 3—4 membranaceis, sepalis oblongis carinatis apiculatis, petalis filiformibus, labello subrotundo rotundato repando basi bicalloso.

Wild in NEW GRENADA—Funck and Schlim, 1049, (*v. s. sp. comm. cel. Linden.*)

The smallest species I know, not more than four inches high. The thin delicate bracts shorter than the internodes.

139. **E. adenoglossum.** *Lindley, in Hooker's Journal, III.* 86.

E. foliis carnosis lineari-oblongis obtusis, racemo elongato simplici terminali è spathâ ancipiti pedunculo breviore orto, sepalis ovatis reticulatis, petalis linearibus 3-veniis acutis, labello lineari basi callis 2 lamelliformibus minore interjecto instructo.

Wild in PERU; Pangoa—Mathews, (*v. s. sp. in hb. Hooker.*)

Flowers small, in a thin flexuose spike.

* * *Labellum trilobum.*

140. **E. brachyglossum.** *Lindley, in Bot. Reg.* 1844, *misc.* 82, *no.* 6.

E. foliis lineari-oblongis apice rotundatis obliquis, racemo elongato simplici terminali nutante è spathâ ancipiti pedunculo breviore orto, floribus carnosis, sepalis obovatis concavis, petalis linearibus 3-veniis acutis, labello brevi trilobo laciniis lateralibus nanis intermediâ ovatâ callis duobus lamellæformibus tuberculoque interjecto.

(B) **microtum.** Leaves longer and broader. Spathe more distinctly carinate. Lip linear, with a pair of minute auricles.

Wild in PERU; on the western face of the Andes, near Nanegal —Hartweg; **B,** NEW GRENADA, in the province of Ocaña, at an elevation of 5800 feet—Schlim, 1029, (*v. s. sp.; B comm. cel. Linden.*)

A slender creeping rooted plant, with small flowers, and the appearance of *E. adenoglossum*, but the leaves are narrower and the lip has a different form. The supposed variety **B** may be a distinct species; but it is extremely like the original, and I dare not place too much reliance upon the form of the lip, which seems as if it might be that of *adenoglossum*, emaciated.

* * * *Labellum tripartitum.*

141. **E. sarcodes.**

E. caulibus strictis brevibus carnosis, foliis oblongis obtusis carnosis, spathis 1—2 carinatis herbaceis, racemi cylindracei erecti pedunculo spathis longiore, bracteis minutis membranaceis, floribus coriaceis, sepalis oblongis crassis obtusis, petalis membranaceis obtusis apice dilatatis, labelli brevis carnosissimi lobis lateralibus rotundatis intermedio oblongo apiculato, callis 2 maximis lineâque elevatâ interjectâ.

Wild in NEW GRENADA; near Papaquere—Purdie, (*v. s. sp. in hb. Hooker.*)

General appearance that of *E. mancum* and *cylindraceum*. The excessive thickness of the lip is peculiar.

142. **E. acutissimum.**

E. caulibus elongatis, foliis angustis oblongis obtusis, racemi pedunculo spathâ duplò longiore, bracteis setaceo-acuminatis ovario vix æqualibus, floribus carnosis, sepalis ovatis acutissimè carinatis, petalis filiformibus brevioribus, labelli carnosi lobo medio brevi tereti carnoso lateralibus cordatis repandis margine membranaceis, callis 3 subæqualibus in lamellas deorsum desinentibus.

Wild in NEW GRENADA; Mariquita—Triana, 134, (*v. s. sp. comm. cel. Linden.*)

Much like *E. sarcodes*, but with an entirely different flower, and larger thinner leaves.

143. **E. cylindraceum.** *Lindley, in Bot. Reg.* 1844, *misc.* 82.

E. foliis ovato-oblongis, pedunculo spathis 2—3 equitantibus elongatis herbaceis vestito, racemo erecto elongato cylindraceo, sepalis obovatis acutis dorso scabris, petalis linearibus, labelli 3-partiti basi tricallosi laciniis lateralibus angustis antrorsum falcatis posticè serrulatis intermediâ lineari basi latiore apice in lobos 2 subrotundos serrulatos divisâ.

Wild in PERU; in the woods of Pitayo, in the province of Popayan, at the height of 10,500 feet—Hartweg; near Pasto —Jamieson, (*v. s. sp.*)

Flowers small, in a very dense cylindrical raceme, about six inches long; whitish according to Jamieson in herb. Hooker.

144. **E. sinuosum.**

E. caule longo flexuoso compresso, foliis lanceolatis acutis, racemo brevi nutante, pedunculo spathâ falcatâ breviore, bracteis minutis setaceis, sepalis coriaceis dorsali lanceolato lateralibus valdè obliquis, petalis lineari-spathulatis reflexis, labelli lobis lateralibus cordatis acutis basi callosis posticè denticulatis intermedio oblongo acuto, callis 2 in lineas sinuosas excurrentibus lineâque rectâ elevatâ interjectâ.

Wild in COLOMBIA; in subalpine forests at the mouth of the Paramo del Tambor, at the height of 6000 feet; Nov.— . . . ? 1181, (*v. s. sp.*)

I am unacquainted with the name of the collector by whom this was found, and can only give his number. The leaves are seven or eight inches long. "Flowers yellowish."

145. **E. brevivenium.**

E. caule ramoso, foliis oblongis obtusis, spathâ ancipiti obtusâ, pedunculo ancipiti breviore, racemo laxo erecto, bracteis setaceis ovarii longitudine, sepalo dorsali oblongo lateralibusque dimidiatis 3-veniis, petalis linearibus obtusis 1-veniis, venis omnium cis

apicem desinentibus, labelli lobis lateralibus auriculatis anticè digitatis intermedio lineari in lobulos duos divergentes dilatatos expanso, callis 3 minutis, clinandrio cucullato emarginato.

Wild in PERU; Pichincha at 10,000 feet of elevation—Jamieson, 817, (*v. s. sp. in hb. Hooker.*)

Flowers the size of *E. corymbosum*, apparently pale green. The short veins which never reach the point of the parts to which they belong are very peculiar.

* 146. **E. Trinitatis.** *Lindley, in Bot. Reg.* 1844, *misc.* 82.

E. caulibus foliosis ancipitibus, foliis elongatis lineari-lanceolatis glaucescentibus obtusis obliquè emarginatis, racemo terminali nutante pedunculato basi spathâ herbaceâ equitanti, sepalis lineari-lanceolatis, petalis piliformibus, labelli lobis lateralibus acutis concavis denticulatis intermedio lineari-lanceolato acuminato basi 3-calloso.

Wild in TRINIDAD—Garden report; SANTA MARTHA, Molina Rio Hacho—Purdie, (*v. v. c. et s. sp.*)

Flowers small, in a long raceme, pale greenish yellow, with a deep apricot-yellow lip. It appears from Purdie's specimens in Sir W. Hooker's herbarium to form particularly long thick roots.

147. **E. carneum.** *Lindley, Orch. Linden., no.* 49.

E. foliis oblongis obtusis, spathâ solitariâ rectâ carinatâ pedunculo æquali v. breviore, racemo nutante, bracteis membranaceis setaceis, sepalis lateralibus lanceolatis acuminatis, petalis filiformibus, labelli lobis lateralibus subrotundo-cuneatis planis intermedio carnoso lineari acuminato basi trilamellato.

Wild in VENEZUELA; terrestrial in the forests of Jaji, in the province of Merida, at the height of 5000 feet; August—Linden, 675, (*v. s. sp.*)

Flowers smaller than in *E. bivalve*, yellow, with a flesh-coloured lip, arranged in a nodding raceme from three to four inches long.

148. **E. bivalve.**

E. foliis oblongo-lanceolatis, spathâ solitariâ falcatâ carinatâ pedunculo æquali, sepalis lateralibus lanceolatis acuminatissimis, petalis linearibus deflexis, labelli lobis lateralibus semicuneatis planis intermedio carnoso tereti, lamellis baseos latissimis lobis lateralibus subæqualibus tuberculo interjecto.

Wild in VENEZUELA; on trees in the forests of Pamplona, at the height of 9000 feet—Linden, 1266, (*v. s. sp.*)

Flowers yellow, larger than in *E. carneum*. I believe this to be really distinct from that species, with which I confounded it in the Orch. Lind. The great bivalve calli and terete middle lobe of the lip are peculiar.

149. **E. cornutum.** *Lindley, in Hooker's Journal, III.* 86.

E. foliis gramineis lineari-lanceolatis acutissimis, racemo elongato cylindraceo cernuo, sepalis linearibus acuminatis striatis, petalis filiformibus, labelli trilobi laciniis lateralibus nanis rotundatis intermediâ tereti cornutâ basi 3-callosâ.

Wild in PERU—Mathews, 1895; NEW GRENADA, Boca del Monte, between Bogota and the village of Tena—Hartweg, 1420, (*v. s. sp.*)

The Peruvian plant is more slender and smaller in all its dimensions than that from New Grenada, but I think not otherwise different. The two spathaceous bracts are acuminate, as long as the peduncle. Flowers white, very fragrant.

150. **E. Klotzscheanum.** *H. G. Rchb., Linnæa, XXII. p.* 838.

E. spathis geminis acutis maculatis, racemo cernuo elongato, bracteis lanceolatis cuspidatis, sepalis oblongis acutis, petalis lanceolatis acutis, labelli trilobi lobis lateralibus rotundatis medio producto acuto lineis 3 elevatis, callis 2 magnis in basi, clinandrio subintegro.

Wild in VENEZUELA; cool places in the woods of the Sierra Nevada of Merida, in January—Moritz, 1069.

Stems very strong. Leaves longish, acute. Flowers brown.—*Rchb.*

* 151. **E. colorans.** *Klotzsch, in Allg. Gartenz., Aug.* 9, 1851.

E. caule tereti, foliis patentirecurvis oblongis brevi-acutis subcarinatis, racemo brevi punctato-scabro, spathâ dorso crenulatâ diphyllâ, floribus parvis brevi-pedicellatis bracteâ lanceolatâ acuminatâ, sepalis spathulatis, petalis subbrevioribus angustioribusque, labelli lobis lateralibus brevioribus integerrimis subobliquis intermedio elongato apice bilobo lamellis 3 parallelis angustis instructo.

Wild in GUATEMALA—Warczewitz.

Stems a foot high. Flowers pendulous, small, bracts two lines long. Sepals white at first, then pink; petals narrower and a little shorter. Lip white with three narrow plates.—*Klotzsch.*

152. **E. parviflorum.** *Fl. Peruv. Syst.* 245. *LO., no.* 68.

E. caule stricto gracillimo, foliis membranaceis lineari-lanceolatis acuminatis, racemi furcati tenuis pedunculo spathâ angustissimâ breviore, sepalis coriaceis, petalis filiformibus, labelli trilobi laciniis integris lateralibus rotundatis intermediâ divaricatim bilobâ, venis 3 elevatis.

Wild in PERU; Jambrasbamba—Mathews, 1900, (*v. s. sp. in hb. Hooker.*)

The slenderest species of this group. Stems not thicker than a knitting needle, about one foot high. Spathe about two inches long, extremely narrow and fine-pointed.

153. **E. armeniacum.** *Lindley, in Bot. Reg., t.* 1867.

E. caulibus teretibus erectis, foliis lanceolatis coriaceis acutis subplicatis, racemis pedunculatis cylindraceis nutantibus, bracteis setaceo-acuminatis, sepalis patulis ovatis acutis, petalis setaceis, labelli subcucullati laciniis lateralibus rotundatis intermediâ ovatâ acuminatâ, callo magno oblongo integro acuto in discum.

Encyclia macrostachya. *Pöppig and Endl. N. G. et Sp.*, 2 *t.* 114.

Wild in PERU; on trees near Cuchero; flowering in December —Pöppig; in BRAZIL—Miers (*v. v. c. et s. sp. in hb. Miers.*)

Flowers small, apricot-coloured, in a slender drooping spike. Leaves sometimes grassy, sometimes lanceolate.

b. Spatha subsimplex. Flores subumbellati.

154. **E. Scutella.** *Lindley, in Bot. Reg.* 1844, *misc.* 82.

E. foliis coriaceis ovato-lanceolatis distichis, spathâ brevi latâ acinaciformi pedunculo æquali, racemo umbellato paucifloro, sepalis petalisque lanceolatis, labello oblongo cordato plano obsoletè bicalloso.

Wild in PERU; in the woods of Guayan, on the western slope of Pichincha, near Quito—Hartweg, (*v. s. sp.*)

Flowers greenish yellow, very large. Lip full an inch long. Spathe very broad, about an inch and half long. Lip an inch and half long.

155. **E. geminiflorum.** *Humb. et Kunth. Nov. Gen. et Sp., Pl. I.* 354. *LO., p.* 102.

E. caule repente ramoso, foliis oblongis obtusis coriaceis, pedunculo paucifloro è spathâ pollicari orto, floribus coriaceis, sepalis lanceolatis acuminatis patulis margine revolutis, petalis conformibus planis, labello ovato cordato subcucullato trilobo: lobis lateralibus rotundatis ab intermedio sinu brevi sejunctis, callis 3 linearibus elevatis intermedio minore.

Wild in PERU; Popayan, on the trunks of trees—Hartweg: Valley of Lloa—Jamieson: in shady mountain places, at the height of 7400 feet—Humboldt and Bonpland, (*v. s. sp.*)

Stem with dwarf, stiff, erect side branches. Flowers middle-sized, very fleshy, with extremely sharp-pointed divisions, yellowish green, according to Humboldt and Bonpland. Dr. Jamieson's Lloa specimens in the Hookerian Herbarium have broader leaves, and larger flowers, which are also more numerous than in those from Popayan, brought home by Hartweg.

156. **E. megagastrium.**

E. caule repente ramoso, foliis ovato-oblongis obtusis coriaceis, pedunculo paucifloro è spathâ duplici laxâ abbreviatâ orto, floribus valdè carnosis, sepalis petalisque lanceolatis planis, labello cordato

ovato cucullato indiviso basi 2-lamellato areâ asperâ triangulari interpositâ, cuniculo maximo ventricoso.

Wild in PERU; on trees in the province of Chachapoyas—Mathews, (*v. s. sp.*)

Very like *E. geminiflorum*, but the flowers are larger, more fleshy, and have a long distended pouch in front of the ovary. The lip is undivided, has only two calli, and in place of the intermediate lamella there is a dull triangular space, covered with minute asperities.

157. **E. lacustre.**

E. foliis latis obtusis, spathâ duplici supremâ acinaciformi, racemo brevi umbellæformi, pedunculis ovariisque 4-plò longioribus, sepalis petalisque linearibus acuminatis patentissimis, labello subcordato-ovato acuminato obsoletè trilobo, callis baseos acutis lineâ elevatâ interjectâ.

E. leucochilum. *Lindl. Orch. Linden., no.* 47, *nec Klotzsch.*

Wild in VENEZUELA; on half-submersed rotten trees in the marshes of Laguneta, in the province of Merida, at the height of 8000 feet—Linden, 684, (*v. s. sp.*)

This is described as being from three to four feet high, with the purest white flowers. They are two inches and a half across, and consequently among the largest in the genus.

* 158. **E. leucochilum.** *Klotzsch, in Allg. Gartenz.*, 11, *p.* 146. *Ic. Plant. rar. berol., t.* 46. *Paxton's Flower Garden, III.; gleanings, no.* 622, *ic.* 303.

E. foliis coriaceis obtusis, spathâ magnâ solitariâ pedunculo longiore, umbellâ brevi cernuâ, sepalis petalisque lineari-lanceolatis patentissimis, labelli trilobi lobis lateralibus magnis obliquè orbiculatis intermedio ovali basi bicalloso lineisque tribus elevatis, clinandrio cucullato truncato.

E. flavidum. *Lindl. Orch. Lind., no.* 48.

Wild in NEW GRENADA; terrestrial in the cold region near Chitagá, in the province of Pamplona, at the height of 9000 feet; April—Linden, 2213; Funck and Schlim, 1084; province of Ocaña, near S. Pedro, at the elevation of 6000 feet—Schlim, 743; CARACCAS—E. Otto, at the height of 4500 feet, (*v. s. sp. comm. cel. Linden.*)

A very fine caulescent plant. Leaves coriaceous, oval, acute. Flowers green, with a snow-white lip. In Funck and Schlim's 1084, the calli at the base of the lip are wrinkled, and seem almost three-lobed, and the spathe is not more than three-quarters of an inch long. When the *Orchidaceæ Lindenianæ* were published, I only knew this plant by the specific character and description given of it in the *Allgemeine Gartenzeitung;* and I then supposed it to be different from what a figure in the *Icones Berolinenses* now shows it to be. Under this misapprehension, when I found it among Mr. Linden's Orchids (No. 2213), I thought it new, and called it *E. flavidum*, an error which is now corrected.

159. **E. longiflorum.** *Humb. et Kunth. Nov. Gen. et Sp. Pl., I.* 354. *LO., no.* 45.

E. foliis oblongis obtusis, racemi nutantis pedunculo spathâ maximâ breviore, sepalis petalisque lanceolato-linearibus acuminatis margine revolutis, labelli tripartiti laciniis lateralibus ovatis obliquè truncatis revolutis: intermediâ lineari cuneatâ mucronatâ margine revolutâ duplò longiore, callis 2 lineisque 3 elevatis.

Wild in NEW GRENADA; on the slope of Mount Puruguay, a lofty point in the Andes near the village of Aguacillas, at the height of 8880 feet—Humboldt and Bonpland; POPAYAN, near the village of Sotara—Hartweg, (*v. s. sp.*)

A most noble plant, with yellow flowers more than four inches across. Some of the leaves are about a foot long.

c. Spatha subsimplex. Flores paniculati.

160. **E. tovarense.** *H. G. Rchb., Linnæa, XXII. p.* 838.

E. spathâ brevi acutâ carinatâ (?), paniculâ pauciflorâ, bracteis minutissimis squamæformibus acutis, sepalis oblongis obtusis, petalis subæquilongis basi cuneatis, labello trilobo lobis lateralibus semiovatis aliquid cuneatis basi bicallosis medio cuneato rotundato anticè emarginato margine hinc inde minutè denticulato.

Wild in COLOMBIA; Tovar—Moritz, 851, (*Rchb.*)

Leaves few, rather long, sharp-pointed. Flowers white, pink on the outside.—*Rchb.*

161. **E. mesomicron.**

E. foliis brevibus oblongis obtusis, racemo basi subpaniculato è spathâ brevi obtusâ, bracteis linearibus acutis patulis, floribus carnosis, sepalis oblongis petalisque linearibus acutis, labelli trilobi laciniis lateralibus rotundatis serrulatis intermediâ parvâ carnosâ ovatâ per medium obtusè carinatâ, callis baseos 2 acutis 2que minoribus exterioribus, clinandrio margine tenui cincto.

Wild in BOLIVIA—Bridges, (*v. s. sp.*)

Stem a foot long. Leaves five inches long by one inch and a half broad. Flowers when dried black and brittle. The five calli are remarkable; that in the middle being large, deep, and reaching to the point of the middle lobe of the lip, those next it free at the point, and the outer ones small, but very distinct.

162. **E. amplexicaule.**

E. vaginis scabris, foliis oblongis amplexicaulibus acuminatis papyraceis, paniculâ laxâ cernuâ flexuosâ, spathâ angustâ pedunculo longiore, bracteis linearibus acuminatis herbaceis ovario

æqualibus, sepalis acutis lateralibus valdè obliquis, petalis linearibus acutis venosis, labelli lobis subæqualibus oblongis truncatis apice dentatis lateralibus obliquis, callis 2 elongatis, clinandrio integro.

Wild in PERU; Quito—Jamieson, (*v. s. sp. comm. cel. Jamieson, A.D.* 1849.)

The habit of this is almost that of some thin-leaved Evelyna. Leaves three inches and a half long by one inch and three-quarters wide. Flowers the size of *E. nutans*.

163. **E. excisum.** *Lindl. in Bot. Reg.* 1844, *misc.* 82, *no.* 14.

E. foliis latis oblongis apice rotundatis excisis, spathâ brevi latâ coriaceâ pedunculo longiore, floribus laxè paniculatis, petalis filiformibus, labello basi bicalloso laciniis lateralibus cordatis obsoletè crenulatis intermediâ lineari divergenti cuneatâ retusâ.

(B) grandiflorum. Flowers with all the parts larger and broader.

Wild in PERU; on the ascent to Sotara, near the village of Totoro, in Popayan—Hartweg; **B**, rocky banks, Chachapoyas —Mathews, 3182; Santa Martha—Purdie, (*v. s. sp.*; **B**, *in hb. Hooker.*)

This is much like *E. floribundum*, of which it has the habit, but it has a great sheathing spathe. The variety **B** sometimes forms great horizontal cucullate spathes, not unlike those of *E. spathaceum*; this is observable in Purdie's specimens.

d. Spathæ plures imbricatæ.

164. **E. raphidophorum.**

E. foliis oblongis obtusis, racemo crasso pendulo spathis pluribus maximis foliaceis longiore, bracteis rigidis acicularibus inferioribus æqualibus, sepalis coriaceis oblongis lateralibus abruptè acuminatis, petalis linearibus reflexis, labelli lobis lateralibus acinaciformibus obsoletè denticulatis intermedio oblongo truncato apiculato apice concavo, callis 2 lineâque intermediâ.

Wild in the CARACCAS; the Silla, at the height of 6500 feet—Funck and Schlim, 182; same place, at the entrance of the Paramo de los Conisos....? 1180, (*v. s. sp. comm. cel. Linden.*)

A strong coarse plant, with the habit of *E. nutans*, but distinct in its great spathes and long stiff needle-like bracts. Flowers white, according to Funck and Schlim, flesh-coloured according to my no. 1180, procured by the same unknown collector as he who obtained *E. sinuosum*.

165. **E. ochriodes.**

E. spathâ foliaceâ pedunculo longiore, racemo denso multifloro nutante, bracteis minutis setaceis, floribus carnosis, sepalis oblongis cuspidatis, petalis linearibus, labelli trilobi laciniis sub-

integris laciniis lateralibus rotundatis intermediâ retusâ cuneatâ, callis 2 conspicuis lineâque interjectâ obsoletâ.

Wild in NEW GRENADA; at Matanzas, in Pamplona, at the elevation of 7000 feet; Nov.—Schlim, 136, (*v. s. sp. comm. cel. Linden.*)

A plant with the habit of *E. nutans;* the flowers are not panicled, but in a dense cylindrical raceme six inches long, and there is a large herbaceous spathe at its base. Flowers pale violet.

166. **E. spathaceum.** *Lindley, in Hooker's Journal, III.* 85.

E. racemis alternis densissimis pendulis spathis foliaceis falcatis conduplicatis vix longioribus, sepalis rigidis striatis acutis, petalis filiformibus, labelli trilobi laciniis lateralibus obtusis posticè obsoletè crenulatis intermediâ ovali obtusâ basi bilamellatâ lineâ elevatâ interjectâ brevioribus.

Wild in PERU; obtained by Mr. Mathews out of the herbarium of Ruiz and Pavon, preserved at Lima; NEW GRENADA; in the province of Pamplona, near Matanzas, at the height of 6000 feet; February—Schlim, 110; Mariquita—Triana, 125, (*v. s. sp. in hb. Hooker et comm. cel. Linden.*)

The masses of inflorescence of this plant are upwards of one and a half foot long, and consist of dense racemes proceeding from the axil of falcate spathes, so as to have a great resemblance to that of some Palm. "Flowers white and pink. Leaves thick, leathery."—*Schlim.*

* 167. **E. raniferum.** *LO.*, 64. *Bot. Reg.* 1842, *t.* 42.

E. foliis distichis lanceolatis, spathis plurimis equitantibus obtusis pedunculo æqualibus, racemis terminalibus lateralibusque divaricatis multifloris, sepalis oblongis convexis obtusis petalisque linearibus mucronulatis patentissimis, labelli sexlobi basi 2-callosi laciniis integerrimis dentatisque: posticis latioribus—intermediis linearibus—anticis linearibus obtusis retrorsum falcatis.

(**A**) Lobes of the lip all toothed at the point.
(**B**) Back lobes of the lip rounded, others linear blunt, all entire.
(**C**) **luteum.** Flowers bright yellow, with red spots and a whiter lip. Back lobes of the lip confluent, plaited and lacerated.

Wild **A**, in MEXICO—Pavon; **B** and **C**, in DEMERARA—Schomburgk, 424,(*v. v. c. et s. sp.*)

Something like *E. nutans.* Flowers greenish, marked with rich purplish brown spots. The species varies in the amount of toothing observable in its lip. In the specimen originally described the divisions were perfectly entire; in others they are all toothed.

In the variety **C**, which flowered with Messrs. Loddiges, the lip is not six-lobed, but three-lobed only, with the middle lobe emarginate. The lateral divisions are rounded, lacerated, and crisp, like those of some Amphiglott.

168. **E. cnemidophorum.**

E. spathis plurimis foliaceis equitantibus obtusis, racemo brevi multifloro sessili cernuo, bracteis linearibus, sepalis oblongis

obtusis, petalis linearibus, columnâ sigmoideâ, labelli lobis carnosis integerrimis lobis lateralibus rotundatis intermedio cuneato bilobo rotundato, callis 2 maximis lineisque tribus elevatis quarum intermedia major.

Wild in GUATEMALA—Skinner, (*v. s. sp. comm. cel. Skinner.*)

Leaves long, broad, acute. Spathes ten, closely imbricated, forming a sheath nine inches long in the specimen before me, just as in *E. raniferum*. Flowers fleshy in a short raceme scarcely longer than broad.

169. **E. discoidale.**

E. foliis ellipticis acutissimis, racemi brevis pedunculo spathis pluribus equitantibus acutissimis breviore, floribus carnosissimis, bracteis minutis apice setaceis, sepalis oblongis obtusis, petalis linearibus canaliculatis, labelli transversi circularis lobulo terminali truncato callis 2 acutis lineâque intermediâ elevatâ.

Wild in DOMINICA—Dr. Imray, (*v. s. sp. in hb. Hooker.*)

Stem one to one and a half foot high. Leaves six inches long. Flowers erect, larger than in *E. nutans*, their stalks an inch long. In the centre of the lip is a circular dull space which seems to be connected with some peculiarity of colour, the nature of which cannot be determined from dry specimens. Much like *E. Clowesii*, but a stouter plant, with flowers very much larger, and a widely different lip.

* 170. **E. Clowesii.** *Bateman, in Bot. Reg.* 1844, *misc. p.* 16.

E. foliis lanceolatis acutis racemo basi spathaceo erecto longioribus, bracteis minimis mucronatis, floribus carnosis, sepalis oblongo-linearibus, petalis filiformibus reflexis, labelli lobis subundulatis rotundatis intermedio bilobo majore, callis 2 minutis cum lineis duabus elevatis lateralibus confluentibus lineâ intermediâ abruptè cis apicem evanidâ.

Wild in GUATEMALA—Bateman, (*v. v. c.*)

Although in the only specimen of this plant which I have seen, the spathes of the peduncle are not in the leafy state that is required for a Spathian Epidendrum, on which account I formerly placed it among Amphiglotts, yet it has so close an affinity to *E. discoidale* that I am led to believe my specimen to be starved, and that the spathes which do exist are imperfect, in which case they would in a more natural condition acquire a leafy character. The stem is leafy throughout its whole length. The leaves are nearly six inches long. The raceme short with about fifteen flowers; its peduncle being enclosed in several equitant spathes. Flowers yellowish white, sepals four to five lines long, their stalk about the same length. I formerly overlooked the calli, which are small and not easily distinguished from the raised lateral lines which proceed from them.

171. **E. xantholeucum.** *H. G. Rchb., Linnæa, XXII. p.* 839.

E. spathis numerosis fastigiatis acutis, racemo recurvo multifloro, bracteis minutis acutis, sepalis oblongis obtusis cuneatis, sepalis linearibus apice dilatatis, labelli trilobi lobis lateralibus

rotundatis sinu obtuso disjunctis à lobo medio abbreviato cuneato anticè bilobulato, callis 2 maximis lineâ longâ elevatâ interjectâ.

Wild in VENEZUELA; at Chachopo in the province of Merida, at the height of 9000 feet—Funck and Schlim, 852, (*v. s. sp. comm. cel. Linden.*)

Stem a foot and more high, clothed with long obtuse leaves. Spathes numerous, collected in a cluster at the foot of the raceme, which is eight inches long and almost parallel with the stem down which it hangs. Flowers yellowish with a white lip.

* 172. **E. Harrisoniæ.** *Hooker, in Bot. Mag., t.* 3209.

E. caule folioso tereti, foliis elongato-oblongis obtusis cum mucrone, pedunculo flexuoso elongato spathis pluribus acuminatis vestito, racemi 7—8-flori abbreviati nutantis axi pedunculo multò breviore, bracteis squamæformibus acutis, sepalis petalisque oblongis coriaceis obtusis his paulò angustioribus, labelli carnosi tripartiti cordati basi bituberculati laciniis lateralibus oblongis truncatis intermediâ cuneatâ apiculo reflexo.

E. aeridiforme. *Booth, in Bot. Reg.* 1845, *misc. no.* 12.

Wild in BRAZIL; on rocks in the Organ Mountains; April—Gardner, 5868, (*v. v. c. et s. sp. in herb. Hooker.*)

This plant in habit and mode of growth bears some resemblance to *E. nutans.* Flowers green, sometimes touched with reddish brown.

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§ 10. **AMPHIGLOTTIUM.** *Lindley, in Hooker's Journal of Bot., III.* 81; *Bot. Reg.* 1844, *misc.* 24. Amphiglottis, *Salisbury, in Hort. Trans., I.* 261.

The character of Amphiglott Epidendrums consists in a long leafy stem with distichous leaves, an absence of any tendency to form pseudobulbs, a peduncle suddenly covered with close sheaths, and a lip wholly united to the column. They join the last section of Spathian Epidendrums through *E. Harrisoniæ*, which section consists of Amphiglotts in all respects except that the bracts are spathaceous and herbaceous, or foliaceous.

ANALYSIS OF THE SECTIONS.

Flores verè paniculati	A. *POLYCLADIA.*
Flores racemosi (rarò in paniculam racemosam luxuriantes).	
Labellum indivisum	B. *HOLOCHILA.*
——— lobatum.	
laciniis omnibus integris .	C. *SCHISTOCHILA INTEGRA.*
laciniis laceris.	
lobo medio lamellato.	D. *SCHISTOCHILA CARINATA.*
lobo medio nudo basi bicalloso	E. *SCHISTOCHILA TUBERCULATA.*

A. *POLYCLADIA.*

a. Panicula effusa pyramidalis.

* 173. **E. nutans.** *Swartz, Fl. Ind. Occ., I.* 1499; *Hooker, Exot. Bot., I. t.* 50. *LO., no.* 44.

E. foliis oblongis distichis undulatis obtusis, paniculâ divaricatâ nutante multiflorâ ramis basi spathaceis, sepalis oblongo-lanceolatis petalisque lineari-lanceolatis obtusis patentibus, labelli trilobi lobis lateralibus subrotundis intermedio transverso truncato apiculato basi bicalloso venis tribus elevatis.

(B) dipus. Middle lobe of the lip divided into two linear arms. Flowers brownish green with a white lip.

E. dipus. *Lindley, in Bot. Reg.* 1845, *t.* 4.

Wild in the WEST INDIES; mountains on the west of Jamaica —Swartz; **B**, BRAZIL, in rocky places — Von Martius, (*v. v. c. et s. sp.*)

Flowers sweet-scented in the evening, quite green in general, but brown-green and white in **B**, which has a shorter and more compact inflorescence, and a differently shaped lip, but which I do not now regard as a species.

174. **E. paniculatum.** *Fl. Peruv. Syst., p.* 243. *LO.,* 61.

E. foliis oblongis acuminatis, pedunculo vaginis acuminatissimis membranaceis vestito, paniculâ compositâ divaricatâ, bracteis pedicello brevioribus, sepalis oblongis, petalis filiformibus, labelli quadrilobi laciniis posticis brevibus semicordatis obtusis: anticis linearibus divaricatis, callis duobus lineisque 3 brevibus elevatis contiguis.

E. læve. *Lindley, in Bot. Reg.* 1844, *p.* 17.

(B) longicrure. Leaves very acuminate. Front lobes of lip very long and falcate.

(C) cuspidatum. Leaves oblong, suddenly cuspidate.

Wild in PERU; Popayan—Hartweg: NEW GRENADA—Funck and Schlim, 1448; Schlim, 68; VENEZUELA—Funck and Schlim, 732; CARACCAS—Linden, 616; **B**, PERU—Maclean; BOLIVIA—Bridges; **C**, PERU—Mathews, (*v. s. sp.*)

A noble species; its panicle, which is eight or nine inches long and nearly a foot broad, being crowded with flowers. It is common all over tropical South America, varying with a more or less dense inflorescence, and in the colour of the flowers, which are said to be green with a white lip (732), or lilac (68 and 1448), and very sweet-scented. The roughness which is found on the sepals of some specimens seems to be accidental. The two most striking forms that I have seen are the varieties **B** and **C**.

175. **E. fastigiatum.**

E. foliis angustè oblongis acutis, pedunculo vaginis acuminatis membranaceis vestito, paniculâ compositâ rigidâ pyramidali,

bracteis rigidis acuminatis pedicellis contortis subæqualibus, sepalis oblongis basi angustatis, petalis filiformibus, labelli quadrilobi laciniis posticis brevibus rotundatis anticis linearibus divaricatis, callis 2 elongatis costisque 3 crassis axin labelli occupantibus, columnâ apice carnosâ utrinque bilobâ.

(A) Leaves oblong, six inches by one and a quarter.
(B) Leaves linear oblong, six inches by half an inch.

Wild in NEW GRENADA; province of Mariquita—Triana, 127 (A), 136 (B), (*v. s. sp. comm. cel. Linden.*)

Very like *E. paniculatum*, but with a more erect panicle, with stiffer branches, longer and stiffer bracts, and much shorter flowers. Its pollen-masses are four, acuminate, and unequal, the inner of each pair not being one third the size of the others; to each pair is a single replicate strap, proceeding from the blunt end of the masses. This is very like what Mr. H. G. Reichenbach takes as the main feature of his genus PSEUDEPIDENDRUM.

176. **E. laxum.** *Pöppig et Endlich. N. G. et Sp., II. p.* 2.

E. "caulibus repentibus adscendentibus ancipitibus, foliis lanceolato-oblongis acutis, paniculâ terminali elongatâ laxâ multiflorâ, sepalis erectis subæqualibus lanceolatis acutis, labelli columnâ triplò longioris ovalis subcordati apice breviter trifidi nudi laciniis integerrimis intermediâ majore acutiore.

Wild in PERU; on trees in woods on the eastern subandine slope, at the farm of Cuchero, in February—Pöppig.

Stems above a foot high on a long creeping rhizome. Leaves seldom more than three on each, with a spiny point. Panicle a foot long or more. Flowers small, pale green.

177. **E. porphyreum.** *Lindley, in Hooker's Journal, III.* 86.

E. foliis distichis oblongis acutissimis, squamis spathaceis densè imbricatis acuminatis pedunculo longioribus, paniculâ simplici multiflorâ, sepalis oblongis acutis lateralibus falcatis, petalis lineari-spathulatis, labelli trilobi laciniis lateralibus rotundatis intermediâ quadratâ bidentatâ: disci axi elevatâ apicem versus bicallosâ basi bicornutâ.

Wild in PERU; on trees in the Andes of Popayan—Hartweg; woods on the eastern side of Pichincha, at an elevation of 7000 feet—Jamieson, (*v. s. sp.*)

Very like *E. paniculatum;* but abundantly distinct in the customary calli being long and horned, and in the presence of two supplemental calli on each side the main rib of the lip. Flowers larger than in *E. paniculatum*, deep orange red or purple.

178. **E. Funkii.** *H. G. Reichenbach, in Linnæa XXII.* 839.

E. paniculâ multiflorâ, bracteis brevissimis lanceolatis obtusis, sepalis oblongis acutis, petalis cuneatis apice obtusè trilobis, labelli trilobi lobis lateralibus oblongis latere externo retusis

denticulatis medio cuneato anticè retuso, callo bicruri in basi lamellâ erectâ interpositâ.

Wild in PAMPLONA; at an elevation of 7500 feet; January, 1847—Funck and Schlim, 1436.

Leaves rather long, sharp-pointed with wide sheaths. Flowers whitish, tinged with violet.—*Rchb.* It does not seem clear in Mr. Reichenbach's mind whether this is an Amphyglott or not. I cannot find any species to which the definition applies.

179. **E. Hænkeanum.** *Presl. Rel. Hænk.* 100. *LO., no.* 40.

E. foliis distichis ovato-lanceolatis nervosis acutis, spicâ paniculatâ, sepalis oblongo-lanceolatis acutiusculis in basin attenuatis, petalis spatulatis, labelli trilobi lobis lateralibus rotundatis medio minore obcordato.

Wild in PERU—Hænke.

Scape a foot high. Sepals ten lines long. Leaves ten lines broad. Perhaps *E. porphyreum.*

* 180. **E. pallidiflorum.** *Hooker, in Bot. Mag., t.* 2980. *LO., no.* 41.

E. foliis distichis oblongis linearibus obtusis pedunculo distanter vaginato brevioribus, sepalis petalisque lanceolatis obtusis patentibus, labelli trilobi lobis subæqualibus rotundatis: intermedii trisulci 2-callosi marginibus involutis.

Wild in DOMINICA—Imray, (*v. s. sp. comm. cel. Henslow.*)

Flowers pale yellowish white, with a purple stain on the end of the column. The specimen figured in the Botanical Magazine was weak. The inflorescence is really a loose panicle. I do not find any sufficient authority for its being a native of St. Vincent's.

181. **E. hymenodes.**

E. foliis gramineis lanceolatis acutissimis pedunculo longioribus, paniculâ erectâ pauciramosâ, bracteis lanceolatis membranaceis floribus subæqualibus, sepalis petalisque tenuibus carnosis angustis acutis patentissimis, labelli hastati lobis ovatis intermedio acuto integerrimo lateralibus serrulatis (?), lamellulâ elevatâ ante antheram lineolisque 2 elevatis, clinandrio subintegro.

Wild in NEW GRENADA; on trees, in the province of Sa. Martha, at the elevation of 4000 feet; in lofty forests above Minca; July—Schlim, 986, (*v. s. sp. comm. cel. Linden.*)

This remarkable plant has much the appearance of some broad-leaved Grass. The thin narrow panicle is copiously clothed by long membranous bracts which, in the dried state, strikingly contrast with the black flowers. The latter are much decayed in my specimen, and the structure above assigned to them is not to be altogether relied upon; they seem to have been both membranous and succulent, in the dried state are about an inch long, and are described by Schlim as dirty white.

182. **E. Miersii.**

E. foliis ovato-oblongis acutis, paniculâ amplâ divaricato-ramosâ pauci-vaginatâ, bracteis minutis, sepalis lineari-oblongis acutis, petalis filiformibus, labelli lobis lateralibus oblongis integerrimis intermedio bipartito cuneato laciniis fimbriatis, callis 2, clinandrio cucullato membranaceo indiviso.

Wild in BRAZIL; Organ Mountains—Miers, 1838; DEMERARA —Schomburgk, (*v. s. sp. in hb. Miers.*)

A most distinct plant with a great branching panicle of (apparently) yellow flowers, having a similar form to those of *E. Weddelii.*

* 183. **E. seriatum.**

E. paniculâ filiformi laxâ pedunculo elongato distanter vaginato, bracteis minimis, ovariis longipedunculatis, sepalis linearilanceolatis acutis, petalis filiformi-spathulatis, labello lineari oblongo acuto seriebus 5 verrucarum ornato, clinandrio integro.

Wild in MEXICO—Bateman, (*v. v. c.*)

A thin panicle at the end of a long slender peduncle, and dirty yellow flowers, are very peculiar features among the present section of Amphiglotts.

184. **E. myrianthum.**

E. foliis lineari-lanceolatis acutis vaginis nigro-punctatis, paniculæ compositæ effusæ ramis divaricatis, bracteis setaceis, pedicellis ovariisque longissimis, sepalis membranaceis oblongis obtusis, petalis lineari-spathulatis, labello longiore 4-partito bicalloso laciniis truncatis linearibus æquilongis recurvis lateralibus subintegris intermediis apice tantum laceris, clinandrio utrinque carnoso obtuso appendice dorsali membranaceâ cucullatâ bifidâ.

Wild in GUATEMALA—Klee, (*v. s. sp. comm. cel. invent.*)

A most brilliant species, conspicuous with its narrow leaves, whose sheaths are spotted with black, and great panicles of membranous ruby-red flowers.

b. Paniculæ laterales, racemosæ.

* 185. **E. Blepharistes.** *Barker, in Bot. Reg.* 1844, *misc. p.* 80.

E. foliis angustè ovalibus elongatis obtusis, paniculâ simplici strictâ racemosâ, sepalis ovalibus, petalis acuminatis, labelli quadrilobi laciniis æqualibus linearibus apice multifidis lineâ mediâ elevatâ callisque duobus semiliberis arcuatis ad basin.

Wild in LA GUAYRA — Linden; VENEZUELA — Funck and Schlim, 1436, (*v. v. c. et s. sp. comm. cel. Linden.*)

The habit of this species is altogether that of *E. polyanthum.* The sepals and lip are a rich rose-colour; the column has the deepest tint of the garnet, which gives the flowers a very gay appearance.

186. **E. brachycladium.**

E. foliis angustis oblongis carinatis obtusis apiculatis, paniculâ angustâ racemosâ, bracteis parvis ovatis acutis squarrosis, sepalis oblongis lateralibus valdè obliquis carinatis, petalis rhombeis, labelli longioris transversi laciniis lateralibus cuneatis intermediâque parvâ bilobâ denticulatis, callis 2 apice liberis lineâque elevatâ interjectâ.

(A) Petals and lip but little toothed, or even entire.

(B) crassipes. Petals and lip much toothed or fringed. Stem fusiform at the base.

Wild **A**, in PERU; Huanuco—M'Lean, Mathews; BOLIVIA—Bridges; **B**, CARACCAS, Sa. Martha—Purdie, (*v. s. sp.* **B**, *in hb. Hooker.*)

The narrow panicle, fleshy flowers, great wedge-shaped and small two-lobed divisions of the lip, are peculiar to this species. **B** has a stem like that of *E. Stamfordianum*, and has both petals and lip very considerably denticulate; but in the latter respect each variety varies much.

* 187. **E. polyanthum.** *LO., no.* 50. *Bateman, Orch. Mex. et Guat., t.* 34.

E. foliis distichis ovali-lanceolatis acutis, paniculâ strictâ simplici racemis plurimis multifloris cernuis basi spathaceis, sepalis ovato-lanceolatis acutis striatis, petalis linearibus reflexis, labelli trilobi tricostati lobis lateralibus subcuneatis retusis: intermedio retuso, ovario scabro.

(A) Flowers rich orange-colour.

E. funiferum. *Morren. Ann. Gand., IV.* 211, *t.* 198.
E. bisetum. *Lindley, in Bot. Reg.* 1841, *misc.* 148.

(B) densiflorum. Flowers greenish, with a little pink on the edges and in the middle of the lip.

E. densiflorum. *Hooker, in Bot. Mag., t.* 3791.
E. rubrocinctum. *Lindley, in Bot. Reg.* 1843, *misc.* 20.

Wild in MEXICO; **A**, Talea—Hartweg: VERA CRUZ—Galeotti, 5125, in the hot country; **B**, Parkinson, (*v. v. c. et s. sp.*)

Flowers in **A**, orange or salmon-colour, with a strong smell of cowslips; in **B**, pale green. I am unable to discover any distinction beyond colour among the plants now brought together. I do not find an authentic specimen of *E. densiflorum* in Sir W. Hooker's Herbarium. *E. funiferum* is no doubt to be referred here, the locality given by Prof. Morren, St. Catharine's, being certainly erroneous.

188. **E. lignosum.** *La Llave, Orch. Mex., II.* 28. *LO., no.* 42.

E. caulibus ramosissimis lignosis, foliis distichis linearilanceolatis confertis emarginatis, sepalis petalisque patentibus . . . . . ., labelli 3-partiti laciniâ intermediâ convexâ integrâ, florum fasciculis sparsis.

Wild in MEXICO; on trees on the mountains of Valladolid—La Llave.

Flowers green, dotted. Lip with three purple streaks at the base.

189. **E. Martianum.** *Lindley, in Ann. Nat. Hist., IV.* 382.

E. foliis distichis angustis lanceolatis, paniculâ strictâ simplici squamis concavis obtusiusculis vaginatâ, racemis corymbosis, petalis linearibus obovatis obtusis sepalis multò angustioribus, labello cordato subrepando basi bicalloso lineis 3 elevatis.

Wild in BRAZIL; on plains near Villa Rica, in the Minas Geräes—Martius, (*v. s. sp. in hb. Mart.*)

Stem from one and a half to two feet high. Flowering stem stiff, erect, branched, much longer than the leaves, which are narrow and sharp-pointed.

B. *HOLOCHILA.*

* 190. **E. corymbosum.**

E. caule ramosissimo, foliis lanceolatis acuminatis racemo corymboso longioribus, pedunculo basi 1—2-bracteato, bracteolis setaceis pedicellis brevioribus, floribus membranaceis, sepalo supremo angusto lateralibus latioribus semiovalibus acutis petalis linearibus basi tenuissimis uninerviis, labello subrotundo cordato obtuso, callis 2 lineâque brevi elevatâ interjectâ.

E. dichotomum. *Lindley, in Bot. Reg.* 1838, *misc. no.* 146; not of *Presl.*

Wild in BRAZIL—Miers, no. 3484; Organ Mountains, on an old tree—Gardner, 631; DEMERARA—Loddiges; VENEZUELA, on trees in the forests of Merida at 5500 feet—Linden, 647, (*v. s. sp. et v. c.*)

A small branching species with the appearance of *E. anisatum*; but the leaves are thinner, the bracts setaceous, and the lip quite membranous without lobes. Flowers green.

* 191. **E. carinatum.**

E. caule brevi tenui erecto, foliis paucis membranaceis striatis lanceolatis acutis, racemo subrotundo cernuo, bracteis setaceis ovario subæqualibus, sepalis lanceolatis carinatis, petalis linearibus, labello undulato circulari 3-lineato callis 2 angustis, clinandrio cucullato emarginato.

Wild in MEXICO; Sierra San Pedro Nolasco, Talea, &c.—Jurgensen, 647, (*v. s. sp. in hb. Hooker.*)

A small thin-leaved plant with the habit of *E. fuscatum.*

192. **E. setiferum.** *Lindley, in Ann. Nat. Hist., IV.* 383.

E. foliis lanceolatis acutis, caule simplici, pedunculo squamis lineari-lanceolatis acuminatis sub floribus foliaceis vaginato, racemo cernuo pyramidali, bracteis longis setaceis, petalis linearibus obtusis sepalis angustioribus, labello cordato integerrimo acuto reticulato basi 3-tuberculato, clinandrio integro.

Wild in BRAZIL—Gomez, (*v. s. sp.*)

Has the habit of *E. fuscatum*, but shorter leaves, longer bracts and a different lip. The flower-stem is about ten inches long in the specimen before me.

* 193. **E. cucullatum.** *Lindley, in Bot. Reg.* 1838, *misc.* 47.

E. caule compresso folioso, foliis lanceolatis acutis, pedunculo squamato paucifloro foliis multò breviore, rachi brevi flexuosâ, sepalis petalisque erectis ovato-lanceolatis acutis, labello obovato acuto: lineâ mediâ tuberculisque duobus basilaribus callosis, antherâ longè infra apicem clinandrii cucullati dentati truncati insertâ.

E. biforatum. *Lindley, in Bot. Reg.* 1844, *misc. p.* 15, *no.* 2.

Wild in BRAZIL; Para—R. Harrison, (*v. v. c.*)

One of the most unattractive of this large genus. The flowers are small and white, at the top of a leafy stem about nine inches high ; the anther is remarkable for being inserted far below the apex of the column, in which respect the species approaches the genus Physinga. The *E. biforatum* was founded upon a bad specimen of this.

194. **E. lamprocaulon.** *H. G. Reichenbach, in Bot. Zeitung.* 1852, 735.

E. ramosum rigidum, ramulis paucifoliatis vaginis verruculis asperis, foliis anthesi adhuc persistentibus 1—3 oblongo-linearibus acutis, racemis tenuibus paucifloris flexuosis basi unisquamatis, squamis lineari-subulatis parvulis, bracteis angusto-lanceis pedicellos non æquantibus, sepalis oblongo-linearibus acutis, petalis duplò angustioribus, labelli laminâ obtusè trilobulâ minutè denticulatâ callis 2 erectis in basi.

Wild in MEXICO ; near Oaxaca—Galeotti, 5265, (*Rchb.*)

There exist in Sir W. Hooker's herbarium two specimens from Galeotti, numbered 5072, which agree with this in all respects except the leafsheaths, which are not verrucose. They are marked " Arborescent, on oaks near Oaxaca at 7500 feet, flowers greenish, May."

* 195. **E. antenniferum.** *Lindley, in Paxton's Flower Garden, vol. I. ; gleanings,* 234, *ic.* 113.

E. foliis coriaceis oblongis acutis, pedunculo gracillimo apice subpaniculato, petalis longissimis filiformibus, labello ovato leviter dentato basi trituberculato.

Wild in MEXICO; Xalapa—Henchmann, (*v. s. c.*)

In many other Amphiglotts, there is a similar tendency to lengthen the petals, but in no other does it occur in the same degree as here. It is to be observed that the lengthening is an after-growth, the petals being straight and short before the flowers expand.

* 196. **E. Skinneri.** *Bateman, in Bot. Reg., t.* 1881. *Hooker, in Bot. Mag., t.* 3951.

E. foliis distichis lanceolatis acuminatis, caule apice longè aphyllo squamoso, racemo cylindraceo multifloro, bracteis membranaceis setaceis pedicellis æqualibus, floribus cernuis, sepalis lineari-lanceolatis, petalis ovalibus acutis, labello ovato acuminato integerrimo per medium trinervi basi obsoletè 2-calloso.

E. Fuchsii. *Regel in Schweitz. zeitschr. für Gartenb.* 1851, *p.* 202.

Wild in GUATEMALA; on trees in a cool climate—Skinner, (*v. v. c.*)

One of the most beautiful of its race. Flowers large, deep rose-colour, in long racemes. It is difficult to cultivate. Mr. Skinner says that it inhabits a middling temperature, and will thrive best in a climate graduated from 56° to 70°. He directs us not to put it in earth, but to permit it to have free scope for the young roots and shoots, which it, when wild, throws out in August. *E. Fuchsii* is certainly a starved state of this common and well-known plant.

* 197. **E. costatum.** *Richard and Galeotti, Orch. Mex.*, 22.

E. caule compresso crasso vaginis maculatis apice folioso, foliis oblongis subundulatis acutis paniculâ cernuâ bispathaceâ brevioribus, bracteis spathaceis costatis pedicellis brevioribus, sepalis lanceolatis apice involutis, petalis angustioribus incurvis, labello transverso rotundato dentato emarginato basi bicalloso venis radiantibus, clinandrio integro.

Wild in MEXICO—Galeotti, Loddiges, (*v. v. c.*)

Flowers rich crimson, as large as in *E. nutans*.

198. **E. filicaule.** *LO., no.* 23.

E. caule gracili ramosissimo, foliis linearibus acutis, sepalis cuneato-oblongis acutis petalisque filiformibus patentibus, labello subrotundo cordato retuso repando, spicis terminalibus 3-floris, rachi capillari bracteis spathaceis paucis membranaceis.

Wild in BRAZIL—Prescott; branches of trees, Pedra Bonita Tejuca—Gardner, 242, (*v. s. sp.*)

A branched reed-like plant. Flowers small, in little three-to-four-flowered racemes, half hidden among the grassy leaves.

199. **E. Sellowii.** *H. G. Reichenbach, in Linnæa, XXII. p.* 839.

E. pedunculo brevi squamato, squamis vaginantibus subacutis,

bracteis subæqualibus, ovariis pedicellatis longioribus, florum (3) sepalis oblongis acutis, petalis angustioribus, labello cordato acuto basi bicarinato.

Wild in BRAZIL—Sellow, (*Rchb.*)

"Stems erect, leafy. Leaves longish, rounded at the point."

200. **E. Galeottianum.** *Richard and Galeotti, Orch. Mex., p.* 21.

"E. caule simplici, foliis ellipticis obtusis carnosis, racemo simplici terminali, floribus parvulis purpureis, labello adnato cordiformi subobtuso."

Wild in MEXICO—Galeotti.

201. **E. Schlimii.** *H. G. Reichenbach, in Linnæa, XXII. p.* 838.

E. pedunculo erecto subflexuoso basi spathaceo, spathâ lanceolatâ acutâ parvâ internodio ad florem breviore, bracteis lanceolatis acutis, floribus minimis paucis erectis, ovariis valdè cuniculatis, sepalis ovatis acutis supremo cuneato, petalis linearibus apice dilatatis acutis, labello transverso oblongo nunc emarginato basi subcordato.

Wild in VENEZUELA; Merida, at the height of 6500 feet; September, 1846—Funck and Schlim, 1049, (*Rchb.*)

Stem erect. Leaves half amplexicaul. Flowers pale red. Mr. Reichenbach observes that the spathe is quite small, and suggests that it may be not a Spathium, but an Amphiglottium.

C. *SCHISTOCHILA INTEGRA.*

202. **E. fruticosum.** *LO.*, 22.

E. foliis distichis ovato-oblongis acutis, caule ramoso fruticoso, racemo terminali nutante, sepalis cartilagineis petalisque membranaceis ovato-lanceolatis acutis erectis, labello subrotundo cordato retuso apiculato undulato callis 5 magnis confluentibus in disco.

Wild in MEXICO—Pavon, (*v. olim s. sp. in hb. Lamb.*)

Stem branching, without a trace of sheaths, as thick as a crowquill. Bracts linear-lanceolate, about as long as the ovary.

203. **E. gladiatum.** *LO.*, 47.

E. "foliis distichis gladiiformibus, racemis terminalibus fasciculatis corymbosis recurvis, sepalis oblongis obtusis margine reflexis petalisque spatulatis patulis, labelli trilobi lobis lateralibus

subquadratis rotundatis intermedio multò minore obcordato basi bituberculato."

Wild in PERU—Pavon, (*v. s. sp. olim in hb. Lambert.*)

"Stem a foot high, apparently simple, naked at the base, hard, as thick as a goose-quill, leafy towards the upper end, and curved. Racemes short, proceeding from several sheaths. Sepals four lines long, three lines broad." It is more than twenty-two years since I saw this plant, which I have since thought identical with a Mexican plant, now referred to *E. anisatum*. The original specimen requires to be re-examined.

204. **E. anisatum.** *La Llave, p.* 27 ; *LO., no.* 62.

E. caulibus brevibus erectis, foliis ovato-lanceolatis carnosis obtusis racemis longioribus, bracteis membranaceis ovatis, sepalis oblongis petalisque lineari-cuneatis obtusis, labelli lobis lateralibus rotundatis intermedio emarginato basi bicalloso.

E. gladiatum. *Lindley, in Bentham Plant. Hartweg, p.* 72.

Wild in MEXICO ; on trees near Valladolid, June—La Llave ; Rancho del Ojo de Agua, April—Hartweg, (*v. s. sp.*)

This is very near *E. gladiatum*, with which I once confounded it ; but it seems to be satisfactorily distinguished by its narrow fleshy leaves, short membranous blunt bracts, &c. The flowers are described as being of a dingy colour, and emitting a smell of Anise at night. The lip is said to have three purple lines at the base.

205. **E. orchidiflorum.** *Salzmann. LO., no.* 29.

E. foliis distichis coriaceis planis ovato-oblongis obtusis, caule apice nudo obtusè vaginato, racemo brevi terminali, floribus carnosis, sepalo supremo obovato lateralibus oblongis dimidiatis, petalis linearibus sub-cuneatis, labello subrotundo basi bicalloso apice tridentato : dente intermediâ minore.

Wild in BRAZIL ; Bahia, in sandy thickets—Salzmann ; sandy bushy places near Macero, February—Gardner, 1421 ; BERBICE—Schomburgk, (*v. s. sp.*)

Leaves very fleshy and shining. Flower-stem a foot long, stout, clothed with blunt somewhat rough sheaths. Flowers green, as large as in the largest state of *E. fuscatum*.

* 206. **E. fuscatum.** *Swartz. Nov. Act. Ups., VI.* 69. *LO., no.* 38. *Bot. Reg., t.* 67. *Bot. Cab., t.* 887. *Bot. Mag., t.* 2844.

E. foliis oblongis undulatis apice recurvis, scapi squamis acuminatis, sepalis oblongis, petalis linearibus, labello carnoso cordato trilobo laciniis rotundatis intermediâ emarginatâ apice calloso basi 2-tuberculato, spicâ globosâ recurvâ.

E. anceps. *Jacq. Amer.* 224, *t.* 138.
Amphiglottis lurida. *Salisbury, l. c.*

(B) virescens. Flowers smaller and more green than usual.

E. virescens. *Lodd. Bot. Cab., t.* 1867.
E. musciferum. *Lindley, in Hooker's Journal, I.* 6.

JAN. 25, 1853.

(C) viridipurpureum. Flowers much larger than usual, with a violet lip edged with yellow.

E. viridipurpureum. *Hooker, in Bot. Mag., t.* 3666.

Wild in the WEST INDIES, and TROPICAL AMERICA; Jamaica —Swartz; Grenada—Loddiges; Panama—Cuming, 1288; St. Vincents — Guilding; Dominica—Imray; Guayana—Schomburgk; Martinique—Jacquin, (*v. v. c. et s. sp.*)

One of the most common plants in some of the tropical parts of America, varying greatly in the size of its flowers and the length of the flower-stem. Hence have arisen spurious species, proposed by myself and others, which a better acquaintance with them cancels. In colour, the flowers vary from dull greenish purple to green and almost yellow. *E. viridipurpureum* has unusually large flowers, and a flower-stem shorter than common. There is a little difference in the degree of lobing of the lip.

207. **E. ovalifolium.** *LO., no.* 39.

E. foliis distichis ovali-lanceolatis acutis, sepalis oblongo-lanceolatis, petalis linearibus, labelli trilobi cordati lobis lateralibus rotundatis intermedio lineari bilobo disco 3-carinato basi bituberculato, racemo elongato.

Wild in MEXICO—Pavon, (*v. s. sp. olim in hb. Lambert.*)

Very near *E. fuscatum*, from which it chiefly differs in the lateral lobes of the lip being mucronate, the intermediate linear and two-lobed, and the racemes long. It requires re-examination. What bears the name in gardens is usually a starved state of *E. paniculatum*.

* 208. **E. smaragdinum.** *Lindley, in Bot. Reg.* 1838, *misc.* 44.

E. caule gracili ad fastigium ipsum folioso, foliis linearilanceolatis acuminatis subdistichis, spicâ terminali pauciflorâ rigidâ nutante foliis breviore, bracteis acuminatis squarrosis ovario ventricoso cuniculato brevioribus, sepalis lineari-oblongis acutissimis, petalis angustissimis acuminatis, labello cuneato cordato carnoso apice tridentato basi bicalloso : laciniis æquilongis lateralibus rotundato-truncatis intermediâ acutâ decurvâ.

Wild in DEMERARA—Loddiges; BRAZIL, Organ Mountains—Miers, (*v. v. c. et s. sp. in hb. Miers.*)

Allied to *E. cucullatum*, with small bright green flowers, hardly distinguishable from the leaves.

209. **E. campestre.** *Lindley, in Bot. Reg.* 1844, *misc. p.* 17.

E. foliis distichis lineari-lanceolatis canaliculatis coriaceis, caule basi pseudobulboso, pedunculi elongati squamis distantibus appressis, racemo cylindraceo, sepalis lateralibus falcatis labello duplò brevioribus, petalis conformibus angustioribus, labello subrotundo obsoletè 4-lobo margine integerrimo, callis 2 linearibus confluentibus lineâ elevatâ flexuosâ interjectâ, clinandrio 4-lobo laciniis quadratis.

Wild in BRAZIL; in dry upland Campos, Serro do Frio, Diamond District—Gardner, 5207, (*v. s. sp.*)

Somewhat related to *E. orchidiflorum*. Remarkable for its short falcate lateral sepals and round lip, without any sort of fringing, and for the enlarged pseudo-bulbous condition of its stems at the base, in which they approach *E. brachycladium*.

210. **E. Lima.**

E. caule ramoso folioso, foliis ovato-lanceolatis acutis vaginis scabris, racemis subsessilibus corymbosis, bracteis linearibus acuminatis herbaceis pedicellis æqualibus, sepalis lanceolatis margine revolutis lateralibus obliquis carinatis basi columnæ manifestè adnatis, petalis lineari-spathulatis 3-veniis, labelli lobis lateralibus rotundatis intermedio cuneato minoribus, callis 2 conspicuis lineâque elevatâ interjectâ, clinandrio cucullato carnoso.

Wild in PERU; in the ravines of Pichincha—Jamieson, 111, (*v. s. sp. in hb. Hooker.*)

In habit this agrees with *E. corymbosum*, from which its scabrous sheaths, larger flowers, and widely different lip, distinguish it. The lateral sepals are an inch long, and very distinctly united to the base of the column. The capsule is oblong, three-cornered, with broad rather thin-edged ribs at the angles.

* 211. **E. vandifolium.** *Lindley, in Journ. of Hort. Soc., IV. p.* 269.

E. foliis longis angustis distichis recurvis basi canaliculatis, racemo brevi cernuo subsessili, labelli tripartiti lobis lateralibus semicircularibus intermedio lineari retuso lineis tribus parallelis lucidis elevatis callisque 2 elongatis intra basim.

Wild in MEXICO—Loddiges, (*v. v. c.*)

Introduced by Messrs. Loddiges, from whom I received it in April, 1849. It is nearly related to *E. fuscatum*, but its leaves are long, narrow, distichous, and recurved like those of some Vanda. The flowers are sweet-scented, dull purple, somewhat freckled.

212. **E. Weddelii.**

E. caule simplici, foliis paucis ovalibus obtusis sursùm angustioribus, pedunculo elongato gracili apice paucifloro, petalis filiformibus, labelli lobis lateralibus rotundatis intermedio cuneato fisso brevioribus.

Wild in BRAZIL; Serra d'ouro branco, Minas Geräes, Dec. 1843—Weddell, (*v. ic. pict. in hb. Mus. Par.*)

I have only seen a sketch of this, among Mr. Weddell's Brazilian drawings. It represents a slender plant about a foot high, with four leaves towards the root. The flowers are rose-coloured, like those of *E. elongatum*, and twice as large.

213. **E. Warczewitzii.** *H. G. Reichenbach, in Bot. Zeitung,* 1852, p. 736.

E. caule calamum anatinum crasso paucifolio (5—6), foliis in caule florido duobus summis tantum adhuc vigentibus linearibus ligulatis apice bilobis, pedunculo reflexo plurifloro basi bisquamato, squamis apice lanceis glumaceis vix pollicaribus pedicellis brevioribus seu æqualibus, ovario sub apice strumoso cuniculato, sepalis petalisque oblongis acutis, labello lato-cuneato anticè dilatato minutè denticulato trilobulo, callis 2 erectis in basi lineis tribus elevatis antrorsum procurrentibus.

Wild in COSTA RICA and VERAGUA—Warczewitz, (*Rchb.*)

214. **E. paranthicum.** *H. G. Reichenbach, in Bot. Zeitung,* 1852, p. 736.

E. tenue pusillum rhizomate tenuissimo, caulibus assurgentibus teretiusculis, foliorum vaginis arpophyllaceis laminis carnosulis trigono-teretiusculis obtusis, pedunculo ancipiti paucifloro, bracteis triangulis amplexicaulibus ovaria pedicellata non æquantibus, sepalis petalisque lanceolatis acutis, columnâ ultra basin labelli productâ, (labello ?) trilobo lobis lateralibus oblongis anticè et posticè rotundatis medio lineari acuto (omninò Hormidii more).

Wild in GUATEMALA—Warczewitz.

Flowers as small as in *Stelis parvilabris.* Leaves scarcely half an inch long. Stem as much as five inches high.—*Rchb.* I presume that the word labello is accidentally omitted by Mr. Reichenbach in his printed definition above quoted.

215. **E. centropetalum.*** *H. G. Reichenbach, in Bot. Zeitung,* 1852, *p.* 736.

E. caule stricto calamum passerinum crasso densius foliato, foliorum vaginis arctissimis violaceo-verrucosis, foliis linearioblongis sensim acutis, pedunculo abbreviato basi unisquamato paucifloro, bracteis linearibus acutis ovaria pedicellata longè non æquantibus, sepalis cuneato-lanceolatis acutis, petalis duplò angustioribus magis cuneatis, labelli trilobi lobis lateralibus basilaribus angustè triangulis apice cuneatis medio cuneato altè bilobo lobis oblongis obtusis cum denticulo in sinu, callo bilobo cum denticulo medio corneo in basi, clinandrio cucullato longè producto integro crenulato.

Wild in VERAGUA; on the volcano Chiriqui—Warczewitz.

Caudicles three times as long as the pollen-masses.—*Rchb.*

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* As this sheet was going to press, the B. Z. of Dec. 31, 1852, reached me, in which Mr. Reichenbach raises this to the rank of a genus, called OERSTEDELLA, joining with it a second species. The genus is described as having a petaloid, though adnate column, &c.

D. *SCHISTOCHILA CARINATA.*

216. **E. spicatum.** *Hooker fil., in Linn. Trans., XX.* 180.

E. caule simplici flexuoso, foliis lanceolatis acutis laxè vaginatis, spicâ densâ ovali squamis 2 membranaceis suffultâ foliis multò breviore, bracteis lineari-oblongis carinatis ovario æqualibus, sepalis ovalibus acutissimis lateralibus sub apice altè carinatis, petalis linearibus acutissimis, labelli subrotundi lobis lateralibus cordatis rotundatis anticè denticulatis sublaceris intermedio retuso majoribus, callis 2 minutis lineâque interjectâ obsoletâ.

Wild in the GALAPAGOS; Chatham Island—Capt. Wood; James Island—Darwin, (*v. s. sp. in hb. Hooker.*)

This has no very obvious affinity to any other species. Its loose leaf-sheaths and simple oval spike are very peculiar.

217. **E. attenuatum.**

E. foliis carnosis ovato-oblongis obtusis, pedunculo aphyllo, bracteis linearibus acuminatis pedicellis multò longioribus, sepalis petalisque linearibus acuminatis, labelli lobis lateralibus semiovatis laceris intermedio lineari-lanceolato subdentato multò brevioribus, callis 4 lineâ longâ elevatâ interjectâ, clinandrio obsoletè denticulato.

Wild in NEW GRENADA—Lobb, (*v. s. sp. in hb. Hooker.*)

A plant quite unlike all others, with flowers resembling those of *E. ciliatum* in miniature.

*218. **E. cinnabarinum.** *Salzmann. LO.*, 106. *Bot. Reg.* 1842, *t.* 25.

E. foliis oblongis apice sub-recurvis, sepalis petalisque lanceolatis subæqualibus, labello trilobo carinato basi bicalloso laciniis lateralibus inciso-laceris intermediâ basi obcuneatâ sub apice constrictâ apice cuneatâ truncatâ angulis acuminatis simplicibus fissisque.

Wild in BRAZIL; sandy thickets near Bahia — Salzmann; Glocker, 38; Pernambuco, in similar places—Gardner, 1163; VENEZUELA, Merida—Sonder in hb. Hooker, (*v. v. c. et s. sp.*)

Three species, each of great beauty, are very nearly related. They all have bright scarlet or crimson flowers, a pair of tubercles at the base of the labellum, and a ridged line running from between the tubercles to nearly the apex of the lip. They however differ thus: *E. radicans* has the lateral lobes of the labellum rounded and toothletted only, not lacerated, and it produces coarse pale green roots from its stems; *E. cinnabarinum* has the lateral lobes of the labellum deeply lacerated, while the central lobe is contracted in the middle, and then *suddenly* wedge-shaped, with its angles prolonged into one or two fine teeth; *E. Schomburgkii* has the lateral lobes only toothed, with the centre lobe gradually widened to the point, and there toothletted, without being at all truncate.

* 219. **E. Schomburgkii.** *Lindley, in Bot. Reg.* 1838, *misc. no.* 16. *t.* 53.

E. foliis oblongis obtusis carnosis, caule simplici apice aphyllo, sepalis petalisque lineari-lanceolatis acutis æqualibus patentissimis, labelli trilobi altè carinati basi bicallosi lobis lateralibus semiovatis latis rotundatis posticè laceris: intermedio cuneato apice triangulari crispo denticulato et utrinque undulato.

E. fulgens. *Focke, Tijdschrift nederl., IV.* 66.

(B) confluens. Lobes of the lip almost blended in one circular deeply-fringed body.

E. fulgens. *Ad. Brongn. Voy. Duperrey, t.* 43.

Wild in DEMERARA—Schomburgk, 834, 581; Surinam, on the trees bordering the Commewyne river—Focke, 57, 1057; BRAZIL, Pernambuco, on trees—Gardner, 1162; St. Catharine's—Lesson; PERU, Andes of Quito—Jamieson in hb. Hooker, (*v. v. c. et s. sp.*)

Flowers rich scarlet, very handsome. Leaves sometimes bordered with crimson. The variety **B**, with all the lobes of the lip nearly run together into one circular plate, a little toothed at the edge, and more so at the point, seems to be a very common state. There is no doubt that the form of the lip varies greatly.

* 220. **E. radicans.** *Pavon. MSS. LO.*, 35.

E. foliis carnosis subcordatis ovatis obtusis, caule simplici longè aphyllo vaginato, sepalis petalisque lanceolatis acutis patentibus, labelli carinati basi bicallosi lobis lateralibus rotundatis denticulatis intermedio cuneato apice fimbriato emarginato utrinque integro.

E. rhizophorum. *Bateman, in Bot. Reg.* 1838, *misc.* 10.

Wild in GUATEMALA—Skinner; MEXICO—Hartweg, 567; in grass at Tomatze, near Comaltepeque—Id. (*v. v. c. et s. sp.*)

One of the finest of its race, with dark orange-red flowers, as much as an inch and a half across. It always has long white roots proceeding from the sides of the stem. The plant thus named in Pavon's handwriting in the Fieldingian herbarium is *Dinema polybulbon.*

221. **E. decipiens.**

E. foliis oblongis obtusis carnosis, caule simplici apice aphyllo, sepalis petalisque lanceolatis æqualibus patentissimis, labelli trilobi carinati basi bicallosi semicircularis lobis æqualibus inæqualiter dentatis intermedio cuneato lateralibus anticè rectis posticè rotundatis, clinandrio cucullato denticulato.

Wild in NEW GRENADA; in the province of Ocaña—Schlim, 1032; DEMERARA, on the Conocon mountains—Schomburgk, (*v. s. sp.*)

This is nearest *E. Schomburgkii*, from which it is distinguished by its equally divided lip, smaller flowers, and the inconsiderable keel of the lip. The flowers are vermilion according to Schomburgk, orange according to Schlim.

222. **E. imatophyllum.** *LO., no.* 52.

E. foliis distichis ligulatis obtusis subemarginatis, caule simplici apice aphyllo vaginato, sepalis lineari-lanceolatis patentibus lateralibus falcatis, petalis duplò latioribus nanis laciniatis intermedio cuneato-rotundato subundulato basi serrato.

? E. flexuosum. *Meyer, Fl. Essequeb. p.* 260. *LO., no.* 34. *Focke, Tijdschrift. nederl., IV.* 65.

Wild in DEMERARA—Schomburgk, 426; Parker; SURINAM—Kuppler, 1656; Hostmann, 405; BRAZIL, mouth of Rio Negro, on trees,—Spruce, 1660*, (*v. v. c. et s. sp.*)

Flowers pale rose-colour, larger than in *E. ellipticum*. Leaves very long, strap-shaped. The column is sometimes green, and the same colour occurs to a small extent in the sepals. *E. flexuosum* is referred hither in hb. Hooker —and perhaps with justice. No. 122 of the Herb. Mus. Par., collected in French Guiana by Mélinon, consists of leaves of this, and flowers of *E. Schomburgkii*.

E. *SCHISTOCHILA TUBERCULATA.*

223. **E. dichotomum.** *Presl. Rel. Hænk.* 101. *LO., no.* 58.

E. foliis lanceolato-oblongis obtusis, caule apice aphyllo squamoso ramoso, sepalis petalisque lanceolatis acutis reflexis, labelli laciniis fimbriatis lateralibus rotundatis patentissimis intermediâ majore obcordatâ, callo altero concavo crenulato indiviso duobusque minoribus ad basin, clinandrio integerrimo.

Wild in PERU—Mathews, 1024; near Huanuco—Hænke, (*v. s. sp.*)

Very near *E. ibaguense*, but distinguished by its little lobed lip, and entire clinandrium. The unlobed tubercle, with a pair of smaller calli near its base, affords another mark of distinction.

224. **E. fastigiatum.**

E. foliis ovato-oblongis obtusis carnosis, scapo aphyllo, racemo oblongo composito densissimo fastigiato, bracteis setaceis, sepalis petalisque oblongis obtusis æqualibus, labelli multifidi, laciniati lobis lateralibus intermedio truncato minoribus, tuberculi 5-lobi elongati callo terminali 3-crenato lateralibus 2-crenatis, clinandrio integro.

Wild in PERU; on the Andes of Quito—Jamieson, (*v. s. sp. in hb. Hooker.*)

The large middle lobe of the lacerated lip, and its very peculiar long tubercle, render it easy to recognise this, independently of the dense fastigiate inflorescence. It is the size of *E. Schomburgkii*.

225. **E. brachyphyllum.**

E. foliis ovato-oblongis carnosis, pedunculo 4-squamato racemo bis longiore, bracteis acuminatis pedicellis brevioribus, sepalis petalisque oblongis acutis subæqualibus, labelli lobis inæqualibus dentatis lateralibus rotundatis intermedio cuneato emarginato apiculato ungue utrinque 2-dentato, tuberculi tripartiti lobis lateralibus decurrentibus intermedio ovato 5-crenato, clinandrio serrato.

Wild in BOLIVIA; in the province of Yungas, Dec.—Weddell, 4255, (*v. s. sp. comm. hb. Mus. Par.*)

A sturdy plant, about six inches high, with the habit of *E. elongatum*. Flowers rose-coloured.

226. **E. spinescens.**

E. caule elongato apice densè folioso, foliis lineari-lanceolatis petiolatis rigidis apice spinescentibus, pedunculo sessili bracteis inferioribus acuminatis herbaceis, sepalis oblongis subæqualibus, labelli transversi lobis dentatis lateralibus rotundatis anticè incisis intermedio apiculato minore, callo ovato elevato concavo medio utrinque tumido et in labellum decurrente, clinandrio serrulato.

Wild in BRAZIL—Miers, 3484, (*v. s. sp. in hb. Miers.*)

Stem nine inches high, at the upper end bearing five or six stalked taper-pointed leaves, an inch and a half to two inches long. Raceme sessile, two inches long. Flowers the size of *E. ellipticum*.

227. **E. Lindenii.** *Lindley, in Bot. Reg.* 1845, *misc.* 59.

E. caulibus simplicibus strictis, foliis carnosis ovalibus obtusis emarginatisve, racemo oblongo obtuso, sepalis lanceolatis petalisque æqualibus, labelli laciniis laceris lateralibus subrotundis intermediâ cuneatâ emarginatâ, callo 7-crenato crenis convexis integris inferioribus duplò majoribus, clinandrio denticulato.

Wild in VENEZUELA; rocks in the neighbourhood of Merida, at the height of 5000 feet—Linden, 636; NEW GRENADA, Santa Martha—Purdie; CARACCAS—Linden, 64, (*v. s. sp.*)

This seems to be a common plant on the Spanish Main. Mr. Linden says there are three varieties; one with bright carmine flowers, another with rose-coloured, and a third with yellow-orange. The central tubercle is hemispherical, with seven lobes gradually diminishing in size up to the point. Mr Linden's 636 is authority for this; what is said about the species in the Botanical Register, l. c., belongs, in part at least, to some other plant. Mr. Linden's 64 is rather smaller, the tubercles on the lip are slightly different, and the middle lobe of the lip is merely denticulate.

228. **E. cochlidium.** *Lindley, in Ann. Nat. Hist., Vol. IV.* 382.

E. foliis ovato-oblongis obtusis emarginatisque coriaceis, sepalis petalisque lineari-lanceolatis patentibus æqualibus, labelli

laciniis laceris subæqualibus intermediâ cuneatâ truncatâ callo carnoso maximo excavato trilobo parùm majore.

Wild in PERU—Mathews, 1868; VENEZUELA, Merida, in subalpine rocky places—Moritz, 1601, (*v. s. sp.*)

Flowers yellow and red according to Moritz. The large tubercle which covers the whole centre of the lip is very remarkable. It is said by Moritz to be called "Flor de San José" in Merida.

229. **E. xanthinum.** *Lindley, in Bot. Reg.* 1844, *misc. p.* 18.

E. foliis oblongis carnosis, caule longè aphyllo, sepalis petalisque patentibus ovalibus acutis æqualibus, labelli trilobi lobis lateralibus truncatis altè incisis intermedio cuneato dentato, callo plicato mucronato concavo serrato, clinandrio anticè serrato.

E. ellipticum, *var.* flavum. *Lindley, in Ann. Nat. Hist., IV. p.* 382.

Wild in BRAZIL—Martius; Serro do frio, Minas Geräes — Gardner, 5205; CARACCAS — Linden, 636; Loddiges, (*v. v. c. et s. sp.*)

Flowers yellow, or vermilion, touched with orange. Stems three feet high according to Martius, but in all my specimens very much shorter. The leaves like *E. ellipticum*, but its yellow flowers are peculiar, and the central tubercle of the lip is destitute of the shoulders that run off into the side lobes in *E. ellipticum*.

*230. **E. ellipticum.** *Graham, in Exot. Bot., t.* 207. *LO., no.* 56. *Lodd. Bot. Cab., t.* 1216.

E. foliis ellipticis obtusis concavis succulentis, caule longè aphyllo nunc ramoso squamoso, sepalis petalisque patentibus lineari-lanceolatis æqualibus, labelli trilobi lobis dentatis lateralibus rotundatis intermedio emarginato basi cuneato, callo concavo plicato acuminato utrinque in lobos laterales decurrente deorsùm dentato, clinandrio serrato.

E. crassifolium. *LO., no.* 55. *Bot. Mag., t.* 3543.

Wild in BRAZIL; Organ mountains—Miers; common on rocks in exposed places—Gardner, 627; three to four feet high in marshy bushy places, Chapada de N. S. d'Abadio, May—Gardner, 4365, (*v. v. c. et s. sp.*)

Very near *E. elongatum*, from which it differs in its elliptical blunt succulent leaves, paler flowers, and especially in the form of the tubercle of the lip, which is deeply furrowed, or plaited, shouldering off to the lateral lobes, and is not furnished there with a free tubercle as in *E. elongatum*. Flowers light rose-colour.

* 231. **E. elongatum.** *Jacq. ic. rar., III. t.* 604. *Bot. Mag., t.* 611. *LO., no.* 54.

E. foliis ovato-lanceolatis acutiusculis, scapo longè aphyllo nunc ramoso squamoso, sepalis petalisque patentibus lineari-lanceolatis æqualibus, labelli trilobi lobis lateralibus truncatis

denticulatis : intermedio duplò majore dilatato cuneato emarginato biloboque denticulato, callo carnoso concavo acuminato crenato utrinque verrucâ crenatâ aucto, clinandrio serrato.

Amphyglottis secunda. *Salisb. Hort. Trans., l. c.*
E. secundum. *Linn. sp. pl.* 1349. *Jacq. Amer.*, 224, *t.* 137. *LO., no.* 57.

Wild in the WEST INDIES; Trinidad—Schach; Dominica—Imray; Antigua—Nicholson; Martinique, on the mountains—Jacquin; CARACCAS—Jacquin, (*v. v. c. et s. sp.*)

Flowers bright rose-colour. Leaves longer and thinner, more ovate and acute than in *E. ellipticum.*

* 232. **E. lacerum.** *Lindley, in Bot. Reg.* 1838, *misc.* 18.

E. foliis lineari-oblongis acuminatis obtusis, caule simplici apice aphyllo laxè squamato, sepalis petalisque patentibus linearilanceolatis subæqualibus acutis, labelli lobis æqualibus laceris pectinatis intermedio apice mucronato integro, callo hippocrepico mucronato in labellum utrinque per crura 2 decurrente, clinandrio serrulato.

Wild in CUBA—Capt. Sutton, (*v. v. c.*)

A slender species with narrow grassy leaves, pale rosy flowers, and a distinct entire point to the middle lobe of the lip. It has the habit of *E. imatophyllum*, but the leaves taper to the point, and the lip is wholly different.

233. **E. ibaguense.** *Humb. et Kunth, Nov. Gen. et Sp., I.* 352. *LO., no.* 53.

E. foliis oblongis obtusis carnosis, caule simplici apice aphyllo nunc ramoso, sepalis oblongis acutis patentibus, petalis conformibus paulò minoribus, labelli lacero lobo intermedio obcordato lateralibus altiùs fimbriatis cordatis apice rotundatis, callo concavo carnoso trilobo apiculato, clinandrio serrato.

Wild in NEW GRENADA; between Ibague and M. Tolima, at the height of 4440 feet—Humboldt and Bonpland; PERU, on walls and rocks about Loxa—Hartweg; deep ravines near Quito—Jamieson, 94, (*v. s. sp.*)

A very fine species, with orange-coloured flowers. The leaves are an inch and a quarter broad, and the stems as thick as a swan's quill, and apparently often branched. When old they become as smooth as bamboo.

234. **E. Schlimii.**

E. caule erecto ramoso, pedunculi vaginis paucis obtusis distantibus, racemo laxo, sepalis petalisque membranaceis oblongis reflexis, columnæ elongatæ basi tenui, labelli parvi lobis lateralibus hastatis cordatis posticè subdentatis apice trifidis intermedio lineari indiviso, callis 5 conspicuis oviformibus.

Wild in NEW GRENADA; on trees in forests on the Volcan del

Diablo, in the province of Socorro, at the height of 4-5000 feet—Schlim, 75, (*v. s. sp. comm. cel. Linden.*)

Leaves unknown. The stem branches like some shrub. The flowers are bright red, an inch and a half in diameter, with a very slender column and small lip.

* 235. **E. patens.** *Swartz, Fl. Ind. Occ., I.* 1495. *Bot. Cab., t.* 1537. *LO., no.* 60. *Bot. Mag., t.* 3800. *Paxton's Flower Garden; gleanings,* 394, *ic.* 198.

E. foliis oblongo-lanceolatis, racemo longo laxo pendulo, sepalis petalisque subæqualibus oblongis acutis concavis patentibus, labelli quadrilobi lobis lateralibus subrotundis anterioribus linearibus obtusis conniventibus, callis 2 minutis lineâque elevatâ.

Wild in JAMAICA; on the mountains—Swartz; GUATEMALA—Skinner, (*v. v. c.*)

Stem about a foot high, clothed with oblong coriaceous distichous leaves. The raceme is about nine inches long, and pendulous, bearing thirteen or fourteen flowers, of a pale rusty yellow colour, and about an inch and a half across. Sepals thicker in texture than the petals, keeled on the outside, and somewhat darker. Lip thin, roundish, four-lobed, with a slight central elevated line, and a pair of thin tubercles at its base; the lateral lobes rounded, somewhat hatchet-shaped, very much larger than the two in front, which are divergent.

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§ 11. EUEPIDENDRUM. *Lindley, in Hooker's Journal, III.* 81.

The essential distinction of this section is the leafy, not pseudobulbous stem, the adnate labellum, and the entire want of sheaths at the base of its peduncle, as in Amphiglottium, or of leafy spathes, as in Spathium.

The Species may be subdivided thus:—

Folia equitantia	A. *EQUITANTIA.*
Folia plana, bracteis spathaceis sæpius ancipitibus	B. *PLANIFOLIA SPATHACEA.*
Folia plana, bracteis depauperatis.	
floribus umbellatis .	C. *PLANIFOLIA UMBELLATA.*
floribus racemosis .	D. *PLANIFOLIA RACEMOSA.*
floribus paniculatis .	E. *PLANIFOLIA PANICULATA.*

In all cases the species with an entire lip form the beginning of each series, and those with it most divided the termination.

A. *EQUITANTIA.*

* 236. **E. vesicatum.** *Lindley, in Bot. Reg.* 1838, *misc.* 89.

E. caule elongato, foliis inflatis equitantibus carinatis acutis glaucis, floribus terminalibus fasciculatis carnosis foliis vix longioribus, sepalis lineari-oblongis acutis, petalis conformibus angustioribus, labello subrotundo cordato lineâ mediâ tuberculisque duobus basilaribus elevatis, collo ovarii medio vesicato.

Wild in BRAZIL—Loddiges, (*v. v. c.*)

Leaves covered with a glaucous bloom, imbricated, and more like inflated carinate bracts than true leaves. Flowers greenish white, with the neck of the ovary having an elevated semi-transparent blister near its middle. This blister is in fact the lower extremity of the cuniculus.

* 237. **E. equitans.** *Lindley, in Bot. Reg.* 1838, *misc.* 76.

E. caule folioso ancipiti, foliis equitantibus ancipitibus lanceolatis elongatis acuminatis, flore solitario terminali pendulo, pedunculo ancipiti, spathâ diphyllâ foliolo inferiore erecto foliaceo flore longiore, sepalis linearibus acuminatis patulis, petalis conformibus paulò brevioribus, labello ovato-lanceolato trilobo complicato cum columnâ basi connato medio trilamellato; lobo medio carnoso semitereti recurvo lateralibus erectis membranaceis integris.

Wild in MEXICO; Vera Cruz—Hartweg, (*v. v. c.*)

In habit resembles Fernandezia. Flower dull chocolate-brown.

B. *PLANIFOLIA SPATHACEA.*

* 238. **E. ramosum.** *Jacq. Amer.* 221, *t.* 132. *Swartz, Fl. Ind. Occ., I.* 1505. *LO., no.* 24.

E. fruticosum, ramosum, foliis linearibus obtusis emarginatis, racemis terminalibus laxis flexuosis paucifloris, bracteis cucullatis obtusis ovario longioribus, sepalis ovato-lanceolatis petalisque linearibus acutis patentibus, labello subcordato ovato acuto concavo rigido.

E. rigidum. *Lodd. Bot. Cab., t.* 1600.
Isochilos ramosum. *Spreng. Syst. III.*, 734.

Wild on trees in the WEST INDIES, common; DEMERARA—Parker; FRENCH GUAYANA—Mélinon, 116; MEXICO, rocks and trees at 5000 feet near Oaxaca, on the Pacific side—Galeotti, 5034; Brazil, Organ Mountains—Miers, (*v. s. sp.*)

Stem shrubby, somewhat dichotomous. Flowers small, greenish yellow. It varies in the size of its parts. In Sir William Hooker's herbarium is a Dominican specimen (Imray, 179), with leaves two inches long by half an inch wide.

* 239. **E. rigidum.** *Jacq. Amer.* 222, *t.* 134. *Swartz, Fl. Ind. Occ., III.* 1507. *LO., no.* 70. *Hook. ic., t.* 314.

E. caule subsimplici foliis distichis ovato-oblongis obtusis, spicæ flexuosæ rachi ancipiti, bracteis foliaceis dolabriformibus carinatis ovarii longitudine, sepalis coriaceis ovatis obtusis patentibus lateralibus majoribus, petalis linearibus membranaceis, labelli

postici cordato-ovati obtusi disco calloso cuniculo inflato, clinandrio dentato.

Wild in the WEST INDIES, common; CARACCAS—Purdie; MEXICO—Pavon; DEMERARA—Loddiges, Schomburgk, 889; SURINAM—Splitgerber; BRAZIL, on trees, Barro do Rio Negro—Spruce, 1166, Martius, Miers, (*v. s. sp. et v. c.*)

Stem simple, a span high, two-edged. Flowers small, green, turning yellow.

* 240. **E. coriifolium.** *Lindley, in Journ. Hort. Soc., VI.* 218, *c. ic.*

E. foliis angustis coriaceis subdistichis carinatis concavis obtusis, spicâ densâ terminali, bracteis coriaceis carinatis herbaceis distichis ovario longioribus, sepalis lateralibus crassis carinatis ovalibus, petalis linearibus spathulatis, labello subrotundo plano emarginato basi bicalloso medio elevato.

Wild in CENTRAL AMERICA—Skinner, (*v. v. c.*)

In all its parts tough, thick, leathery, and generally glazed, as it were, with a shining exudation. The narrow stiff leaves are blunt, about six inches long, concave, with a sharp midrib. Spike terminal, about four inches long, consisting of hard amplexicaul keeled bracts. Flowers greenish. Keel of lateral sepals serrated.

241. **E. xylostachyum.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 70.

E. caule simplici, foliis oblongis obtusis coriaceis mucronulatis vaginis scabris, spicâ strictâ flexuosâ durâ folio summo parùm breviore, bracteis herbaceis cucullatis ovatis rigidis approximatis, floribus carnosis, sepalis oblongis concavis, petalis conformibus planis angustioribus, labello cordato ovato obtuso concavo margine recurvo, clinandrio integro.

Wild in NEW GRENADA; Peñon du Pan de Azucar, on the side of Tolima, at the height of 6000 feet, February—Linden, 1280,(*v. s. sp.*)

Resembles *E. macrostachyum*, but the bracts are larger, the spike is short, the flowers are larger, and the petals are almost as broad as the sepals, instead of being filiform. Flowers greenish white.

242. **E. macrostachyum.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 70.

E. caule simplici, foliis oblongis mucronulatis vaginis scabriusculis, racemo longissimo cernuo angulato, bracteis magnis duris ovato-cordatis reflexis, floribus coriaceis, sepalis oblongis obtusis, petalis filiformibus, labello cordato obtuso lævi basi valdè concavo, clinandrio integro.

Wild in NEW GRENADA; on the rocks of the Pan de Azucar,

on the side of Tolima, at the height of 6000 feet; February —Linden, 1279, (*v. s. sp.*)

A singular species, with racemes more than a foot long, covered with distant leafy bracts full half an inch long. Flowers green, fleshy. Stem from two to three feet high.

243. **E. imbricatum.** *LO.*, 71.

E. caule ramoso, foliis distichis lineari-oblongis obtusis, spicis ovato-oblongis imbricatis, bracteis carinatis obtusis, sepalis petalisque ovatis acutis subæqualibus erectis, labello ovato acuto obsoletè crenulato.

Wild in BRAZIL; pendent from large trees in the Organ Mountains—Gardner, 630, (*v. s. sp.*)

Spike almost like a strobilus, two inches long, by one and a half inch broad. Flowers white."—*Gardner.*

244. **E. bifarium.** *Swartz Fl. Ind. Occ., III.* 1509. *LO.*, 69.

E. foliis distichis cordato-lanceolatis acuminatis horizontalibus, spicâ terminali flexuosâ, rachi ancipiti, bracteis spathaceis compressis falcatis acutis carinatis, sepalis ovato-lanceolatis convexis, petalis brevioribus setaceis, labelli dilatati trilobi lobis lateralibus subrotundis integris intermedio bilobo.

Wild in JAMAICA—Mac Fadyen, 4; on the trunks of trees on the Blue Mountains, September—Swartz, (*v. s. sp. in hb. Smith et Hooker.*)

Stem two to four inches high. Flowers greenish white. Bracts somewhat falcate, keeled, as long as the ovary. The only specimens I have seen of this are in Mr. Smith's herbarium, from Swartz himself, and in Sir William Hooker's. Its amplexicaul fleshy somewhat falcate leaves, and long naked ancipitous zigzag spike, are very different from anything else in the genus.

245. **E. piperinum.** *Lindley, in Ann. Nat. Hist., XV.* 256.

E. caule ramuloso, foliis distichis succulentis oblongis obliquis obtusis laxè vaginatis, pedunculis brevissimis terminalibus subbifloris, sepalo dorsali petalisque filiformibus erectis lateralibus ovato-lanceolatis carinatis horizontalibus, labello cordato-ovato cochleato ecalloso venis radiantibus in margine confluentibus.

Wild in PERU; on the road between Quito and the village of Machachi—Hartweg, 1419, (*v. s. sp.*)

A small succulent species, when dried beautifully netted. It looks like a *Peperomia.*

246. **E. tolimense.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 66. *Orch. Linden., no.* 29.

E. caulibus ramosis scaberrimis, foliis striatis ovato-lanceolatis, floribus 2—3 terminalibus sessilibus coriaceis, sepalis lineari-

lanceolatis acutis striatis, petalis setaceis, labello subcordato ovato concavo apice carnoso basi ecalloso intùs pubescente avenio.

Wild in NEW GRENADA; in the forests of Tolima at the height of 10,000 feet, January —Linden, 1272, (*v. s. sp.*)

Flowers small, a dull yellow colour. Branches excessively rough with irregular asperities. Leaves about one and a half inch long. It is much like *E. Lima* in habit, although so different in structure.

* 247. **E. stenopetalum.** *Hooker, in Bot. Mag., t.* 3410.

E. caule flexuoso, foliis loratis acuminatis obtusis emarginatis, umbellâ sessili terminali pauciflorâ, sepalis petalisque angustioribus acutissimis, labello obovato rotundato convexo basi lamellato, columnâ brevissimâ, clinandrio carnoso lobato.

E. lamellatum. *Bot. Reg.* 1843, *misc.* 60.

Wild in HONDURAS—Sir C. Lemon; PANAMA—Fendler, 332; JAMAICA—Mac Fadyen; VENEZUELA, in Merida, near St. Cristoval, in forests at the height of 3000 feet, October—Linden, 710, (*v. s. sp. et ic. pict.*)

Sir W. Hooker says that the lip is free from the column, Mr. Booth that it is adherent; we cannot settle the point from want of examinable specimens. The flowers are bright rose-colour. The *E. stenopetalum* of *Knowles and Westcott* (*Floral Cabinet, II. p.* 175), now irrecoverably lost, must be very different from this.

* 248. **E. umbellatum.** *Swartz, Nov. Act. Ups., VI.* 68. *Bot. Mag.* 2030. *LO., no.* 28.

E. foliis oblongis subundulatis obtusis, umbellâ sessili, sepalis lineari-oblongis obtusis petalisque linearibus acutis patentibus, labello indiviso rotundato repando transverso basi bicalloso, clinandrio laciniato.

E. difforme. *Jacq. Amer.* 223, *t.* 136.
? E. subumbellatum. *Hoffmg. in Linnæa, XVI.* 232.
? E. radiatum. *Hoffmg. Bot. Zeitung* 1843, 832.

Wild in the WEST INDIES; Trinidad—Sieber, 379, Dominica—Imray, 130, St. Vincent's—Guilding; BRAZIL, Minas Geräes—Widgren, 777; GUATEMALA; in woods near Samborondan—Hartweg, (*v. v. c. et s. sp.*)

Flowers green, without a trace of spathe or equivalent bracts.

* 249. **E. latilabre.** *Lindley, in Bot. Reg.* 1841, *misc.* 163.

E. foliis ovatis obtusis brevivaginantibus supremis suborbicularibus, umbellâ 2—4-florâ sessili, sepalis lineari-oblongis obtusis patentibus, petalis lineari-spathulatis obtusissimis, labello repando sublobato emarginato basi bicalloso ferè 4-plò latiore quam longo, clinandrio laciniato.

? E. virens. *Hoffmg. in Linnæa, XVI.* 233.

Wild in the WEST INDIES, Dominica—Imray; PERU, Myobamba, on trees—Mathews; BRAZIL, Rio Janeiro—Gardner, 628, Organ Mountains—Miers, (*v. v. c. et s. sp.*)

Very near *E. umbellatum*, of which it has the habit; but its lip, which is four times broader than long, and curved downwards on each side, so as to bear no little resemblance to a stiffly-starched lady's apron, gives it a different appearance. The flowers, too, seldom exceed four to an umbel, the petals are very blunt, and the leaves more round than oblong: in Mathews's Peruvian specimens they are almost orbicular. Nevertheless, it is much to be doubted whether this is anything more than a gigantic variety of *E. umbellatum*.

250. **E. ensatum.** *Richard and Galeotti, Orch. Mex., no.* 54.

E. "caule compresso ancipiti, foliis oblongo-lanceolatis acutis, floribus parvulis albido-brunneis, labello adnato trilobo lobis obtusis subæqualibus margine sinuosis."

Wild in MEXICO—Galeotti.

251. **E. tetraceros.** *H. G. Reichenbach, in Bot. Zeitung,* 1852, *p.* 735.

E. caule elato ramuloso, foliis linearibus acuminatis, pedunculis tenuibus paucifloris (2—4), bracteis angustè triangulis acutis, sepalis cuneato-oblongis acutis, petalis duplò angustioribus, labello ab angustiori basi trapezoideo dilatato obtusangulo anticè emarginato in sinu minutè unidentato lineis tribus medianis elevatis, clinandrio 4-dentato dentibus mediis minutis lateralibus dolabriformibus.

Wild in VERAGUA; on Mount Chiriqui—Warczewitz.

Twice as large in every part as *E. filicaule*, which is nearly related to it.—*Rchb.*

*252. **E. lacertinum.** *Lindley, in Bot. Reg.* 1841, *misc.* 109. *Hort. Soc. Journ., II.* 309.

E. foliis lanceolatis acuminatis pedunculo longioribus, racemo sessili umbellato, ovariis subsecundis longissimis pendulis bracteis setaceis multoties longioribus, sepalis lanceolatis acuminatis, petalis lineari-lanceolatis, labelli trilobi basi bilamellati laciniis lateralibus triangularibus intermediâ lineari acuminatâ elongatâ, antherâ cucullo integerrimo immersâ.

Wild in GUATEMALA—Loddiges, (*v. v. c.*)

The flowers hang down on long stalk like ovaries from one side of a short raceme; bright green, with the exception of the column, which is yellow; the lip is a little stained with purple, and has the appearance of a lizard's tail, the hind legs being outside the flower, and the head and shoulders buried within the cup.

253. **E. Spruceanum.**

E. foliis oblongis obtusis, floribus fasciculatis, sepalis petalisque linearibus acuminatis pedicello longioribus, labelli trilobi laciniis

in the order of publication, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, wholly unknown, or very imperfectly known, to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Osyricera *Blume.*
Chrysoglossum *Blume.*
Titania *Endlicher.*
Platystylis *Blume.*
Gastroglottis *Blume.*
Macrostomium *Blume.*
Diploconchium *Schauer.*
Diglyphis *Blume.*
Epicrianthes *Blume.*
Thelychiton *Endlicher.*
Cochlia *Blume.*
Aphyllorchis *Blume.*
Acanthoglossum *Blume.*
Collabium *Blume.*
Pachystoma *Blume.*
Calostylis *Blume.*
Ceratium *Blume.*
Pachychilus *Blume.*
Microsaccus *Blume.*
Lichenora *Wight.*
Ceratostylis *Blume.*

Ephippium *Blume.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Pteroceras *Hasskarl.*
Adenoncos *Blume.*
Glomera *Blume.*
Conchochilus *Hasskarl.*
Todaroa *Ach. Richard.*
Cuitlauzina *La Llave.*
Psittacoglossum *La Llave.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Didymoplexis *Griffith.*
Haplostellis *Ach. Richard.*
Cyathoglottis *Pöppig.*
Chlorosa *Blume.*
Rophostemon *Blume.*
Ocampoa *Ach. Richard.*
Plexaure *Endlicher.*
Eucosia *Blume.*
Macodes *Blume.*

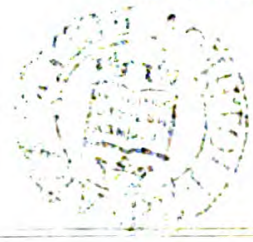
Galera *Blume.*
Hysteria *Reinwardt.*
Scaredederis *Thouars.*
Acronia *Presl.*
Scleropteris *Scheidweiler.*
Apetalon *Wight.*
Podanthera *Wight.*
Amblostoma *Scheidweiler.*
Leucorchis *Blume.*
Pseuderiopsis *Reichenb. fil.*
Brachtia *Reichenb. fil.*
Aclinia *Griffith.*
Androgyne *Griffith.*

Cybele *Falconer.*
Cryptosanus *Scheidweiler.*
Bolborchis *Moritzi.*
Pseudepidendrum *Reichenb. fil.*
Ponerorchis *Rchb. f.*
Mesospinidium *Rchb. f.*
Paradisanthus *Rchb. f.*
Pescatorea *Rchb. f.*
Chaubardia *Rchb. f.*
Hofmeistera *Rchb. f.*
Sarcadenia *Hort. Par.*
Guebina *Hort. Par.*

ABBREVIATIONS.

L.O.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.



LIST OF GENERA IN THIS PART.

EPIDENDRUM . . . . . 48 pages

Part IV.] APRIL, 1853. [Price 2s. 6d.

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS,
AT 5, UPPER WELLINGTON STREET, COVENT GARDEN, LONDON.

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-two years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera

lateralibus semirhombeis obtusis apice dentatis intermediâ setaceâ brevioribus, clinandrio integro.

Wild in BRAZIL; at the Barro do Rio Negro, on trees—Spruce, 1466, (*v. s. sp.*)

Leaves as large as in the largest state of *E. nocturnum*. Flowers nearly six inches from tip to tip of the long attenuated sepals. "Sepals and petals greenish white; lip white."—*Spruce.*

* 254. **E. nocturnum.** *Linn. Sp. Pl.* 1349. *Jacq. Amer.* 225, *t.* 139. *LO., no.* 43. *Bot. Reg. t.* 1961. *Bot. Mag., t.* 3298.

E. foliis oblongis, floribus subgeminis, sepalis petalisque pedicello duplò brevioribus linearibus acuminatis patentibus, labelli trilobi lobis lateralibus ovatis integerrimis intermedio setaceo brevioribus, clinandrio dentato.

E. discolor. *Richard and Galeotti, Orch. Mex., no.* 56.
E. tridens. *Pöppig and Endlicher, N. G. et Sp., II. t.* 103.

(A) Leaves oval, four to five times as long as broad.

(B) latifolium. Leaves very large, not more than twice as long as broad.

Wild in the WEST INDIES; St. Vincent's—Guilding, Dominica—Imray, 200, woods on the mountains of Martinique—Jacquin, Jamaica—Mac Fadyen; SURINAM—Focke, 126, Hostmann, 36; DEMERARA—Parker; PERU, on rocks and stones—Pöppig, (*v. v. c. et s. sp.*)

About a foot high. Flowers three inches long, white, with a tinge of green or crimson, extremely sweet-scented. It varies so much in the breadth of the leaves as to make it doubtful whether *E. longicolle* is really distinct.

* 255. **E. longicolle.** *Lindley, in Bot. Reg.* 1828, *misc.* 49. *Bot. Mag., t.* 4165.

E. foliis strictis linearibus apice angustatis obtusis, floribus subsolitariis foliis brevioribus, sepalis lineari-lanceolatis acuminatis patentibus, pedicellis ovario subæqualibus, petalis linearibus acutis supra columnam convergentibus, labelli trilobi lobis lateralibus obtusis semiovatis integerrimis intermedio setaceo brevioribus: lamellis 2 callosis ad basin, collo ovarii elongato, clinandrio dentato.

Wild in DEMERARA—Schomburgk, (*v. v. c. et s. sp.*)

Near *E. nocturnum*, but much less handsome. The sepals and petals are pale yellow; the lip white, with two yellow plates at the base.

D. *PLANIFOLIA RACEMOSA.*

256. **E. jamaicense.**

E. foliis oblongo-lanceolatis acutissimis racemo longioribus, bracteis herbaceis acuminatis pedicellis æqualibus, floribus membranaceis, sepalis lanceolatis petalisque linearibus acutis, labello transverso indiviso cuspidato basi bicalloso, clinandrio cucullato indiviso.

Wild in JAMAICA; on trees in the woods of Dunrobin Castle—Purdie, (*v. s. sp. in hb. Hooker.*)

Not much like any other species. The two upper leaves (?) in Sir W. Hooker's herbarium being broken off, I am not quite sure of the section. The flowers are as large as in *E. verrucosum*, and apparently white or yellow.

257. **E. ledifolium.** *Richard and Galeotti, Orch. Mex., no.* 50.

E. caule erecto fruticoso ramoso, foliis lanceolato-linearibus obtusiusculis, racemo subsessili laxo flexuoso, bracteis membranaceis setaceis pedicellis brevioribus, sepalis acutis petalisque obtusis angustioribus linearibus, labello cordato subrotundo emarginato subintegro basi bicalloso lineis 3 elevatis interruptis.

Wild in MEXICO—Galeotti, (*v. s. sp. comm. cel. inv.*)

A branching shrub, in the specimen before me almost eighteen inches high. Flowers yellow.

258. **E. subulatifolium.** *Rich. and Galeotti, Orch. Mex., no.* 51.

E. foliis teretibus subulatis acutis, scapo 4—5-floro, floribus intensè luteis parvulis, labello suborbiculari integro sinuoso.

Wild in MEXICO—Galeotti.

259. **E. propinquum.** *Rich. and Galeotti, Orch. Mex., no.* 49.

E. "caule tereti foliis oblongo-lanceolatis obtusiusculis, racemis 4-floris, floribus brunneis, labello cordato margine denticulato."

Wild in MEXICO—Galeotti.

260. **E. Philippii.** *H. G. Reichenbach, in Linnæa, XXII.* 840.

E. racemo paucifloro, bracteis lanceolatis acutis ovaria pedicellata superantibus, sepalis oblongis, petalis lanceolatis basi cuneatis multò angustioribus brevioribusque acutis, labello ovato cordato latere utroque sinuato anticè emarginato margine subtiliter crenulato, callis 2 minimis.

Wild on the CORDILLERAS; eastern side—Philippi, (*Rchb.*)

Stem branched, leafy. Leaves longish, with a sharp point, and broad sheaths.—*Rchb.*

261. **E. orgyale.** *Lindley, in Ann. Nat. Hist., XV.* 256.

E. caule orgyali distiche foliato, foliis ovato-oblongis margine vaginisque scabris, racemo sessili erecto cylindraceo, bracteis membranaceis subulatis, floribus carnosis, sepalis ovalibus, petalis spathulato-linearibus serrulatis, labello cordato acuto serrulato callis duobus juxta basin unoque sulcato minore sub apice, cuniculo ventricoso.

Wild in NEW GRENADA; Andes near Bogota—Hartweg, (*v. s. sp.*)

Stem five feet high. Flowers apparently yellow.

262. **E. quadratum.**

E. caule alto folioso, foliis coriaceis ovato-oblongis obtusis, racemo sessili cernuo multifloro, floribus carnosis, bracteis linearibus herbaceis acuminatis, floribus carnosis, sepalis oblongis obtusis, petalis spathulato-lanceolatis minutè denticulatis, labello subrotundo-quadrato serrulato undulato basi bicalloso axi crassâ venisque lateralibus elevatis carnosis rugosis, clinandrio carnoso 4-dentato.

Wild in TROPICAL AMERICA—Linden, (*v. s. sp. comm. cel. Linden, sine numero aut loc. nat.*)

Near *E. orgyale*, with very much larger flowers.

263. **E. fimbriatum.** *H. B. K., I.* 351. *LO., no.* 27.

E. foliis distichis oblongo-linearibus obliquè retusis margine vaginisque scabris, racemo angusto terminali, floribus subsessilibus, sepalis linearibus retusis, petalis conformibus serratis, labello subrotundo-ovato serrato basi bilineato, columnâ nanâ.

E. alternans. *Lindley, in Hooker's Journal, III.* 88.

Wild in PERU; lofty mountains of Andimarcha—Mathews, 1072 and 1897; ravines of Pichincha—Jamieson, 67 and 95; woods of Guayan—Hartweg, 1418; nearly on a level with Quito—Jamieson, 9; province of Carabaya—Weddell, 4668; VENEZUELA, terrestrial, in the Paramo del Zumbador, at the height of 11,000 feet—Linden, 1473; NEW GRENADA, tufts in the open spaces of the vast forests of Quindiu, between Palmilla and El Moral, in the province of Mariquita, at the height of 8400 feet—Linden, 1288, Purdie; Ocaña, on the borders of rivulets—Schlim, 736, (*v. s. sp.*)

Slender plants about six inches high, with small racemose flowers, pale rose-coloured—*Weddell;* white, dotted with rose or violet—*Linden.* The lip varies in its degree of fimbriation.

264. **E. scriptum.** *Rich. and Galeotti, Orch. Mex., no.* 53.

E. "caule tereti, foliis elliptico-oblongis acutis, floribus viri-

dulis, racemo simplici terminali, labello adnato obsoletè trilobo albo lineis purpureis scripto."

Wild in MEXICO—Galeotti.

265. **E. longipetalum.** *Rich. and Galeotti, Orch. Mex., no.* 55.

E. "caule compresso diphyllo, foliis approximatis lato-ellipticis subacutis, floribus pallidè roseis, racemis paucifloris scapum pedalem terminantibus, sepalis internis linearibus externa duplò superantibus, labello cordato obsoletè trilobo."

Wild in MEXICO—Galeotti.

Compare with *E. antenniferum.*

266. **E. tenue.** *Lindley, in Hooker's Journal, III.* 88.

E. foliis distichis linearibus acuminatis obliquè emarginatis, racemis acutis angustis simplicissimis (nunc casu quodam bifidis multifloris 10—20), bracteis ovatis acutis rigidis cucullatis pedicello longioribus, floribus erectis membranaceis, sepalis linearibus obtusis, petalis filiformibus, labello sessili ovato acuto concavo utrinque 1-dentato, venis baseos elevatis.

Wild in BRAZIL—Martius, (*v. s. sp. in hb. Martius.*)

The habit is that of *E. parviflorum.* Stems little more than six inches high.

267. **E. angustissimum.**

E. caulibus cæspitosis erectis simplicibus, vaginis scabriusculis, foliis linearibus serrulatis mucronulatis, racemo tenui flexuoso foliis breviore, bracteis acuminatis ovario æqualibus, sepalis linearibus reflexis, petalis filiformibus, labello tripartito laciniis lateralibus cuneatis fimbriolatis intermediâ ovatâ.

Wild in NEW GRENADA; province of Mariquita—Triana, 128, (*v. s. sp. comm. cel. Linden.*)

Near *E. fimbriatum* and *tenue.* Stem six to nine inches high. Flowers extremely small. The exact structure of the lip and column cannot be determined in the only specimen I possess.

268. **E. cardioglossum.** *H. G. Reichenbach, Linnæa, XXII.* 841.

E. racemis paucifloris cernuis, bracteis lanceolatis acutis, sepalis oblongis acutis, petalis oblongis basi cuneatis ab apice latissimis acutis, labello trilobo oblongo cordato retusiusculo medio apiculato latere utroque emarginato, callis 2 in basi lineis 3 elevatis antepositis.

Wild in the CARACCAS, March—Moritz, 621, (*Rchb.*)

Stems strong, branched. Leaves longish, acute. Vaginæ in the dried specimen very rough, loose. Flowers yellowish.—*Rchb.* Seems to be near *E. scabrum.*

* 269. **E. conopseum.** *R. Br., in H. Kew., V.* 219. *Elliott. Carol., II.* 506. *Hooker, in Bot. Mag., t.* 3457. *LO., no.* 48.

E. foliis paucis rigidis coriaceis acuminatis, racemo laxo multifloro, sepalis linearibus petalisque angustioribus spatulatis patentibus obtusis, labello obtusè trilobo laciniâ intermediâ ovatâ aut quadratâ, callis 2 apice liberis, clinandrio cucullato integerrimo.

E. Magnoliæ. *Muhl. Cat.* 81.

Wild in the SOUTHERN STATES OF NORTH AMERICA; on evergreen trees sea coasts of Georgia and Carolina—Elliott; East Florida—Baldwin; Apalachicola, in West Florida—Drummond; Louisiana—hb. Hooker, (*v. s. sp. in hb. Hooker.*)

This, the most northern Epiphyte yet known, occurs, we are told by Elliott, as far to the north as "Eding's island, at the entrance of Port Royal inlet. To the south it becomes more common, and is found on several species of oak and other trees. Plant four inches high, or smaller. Flowers five to eight, green or pale yellow." The lip of Sir W. Hooker's Louisiana plant has the middle lobe ovate, not truncate as in that which flowered at Liverpool, and is represented in the "Bot. Mag." Sir W. Hooker states that at the very time when Drummond gathered it in Apalachicola ice formed so thickly in one night's time as to bear the weight of a man. No doubt it is sheltered by the leaves and branches of the evergreen trees on which it is found, from the nocturnal radiation which produces ice in such countries as Florida.

* 270. **E. acuminatum.** *Fl. Peruv. Syst.*, 248. *LO., no.* 31.

E. caulibus erectis subramosis, foliis lanceolato-linearibus acuminatis vaginis verruculosis, racemo pyramidali foliis subæquali, bracteis brevibus membranaceis acutis, sepalis oblongis patulis lateralibus columnæ altè adnatis, petalis linearibus apiculatis basi angustatis univeniis subdenticulatis, labelli lobis lateralibus semiovatis obtusis posticè subdentatis intermedio truncato tridentato 3-lineato basi bicalloso, clinandrio integro cucullato.

Wild in PERU; on trunks of trees, 12,500 to 13,000 feet—Jamieson, (*v. s. sp. comm. cel. Hooker.*)

A grassy plant, with erect open racemes of greenish-yellow flowers.

271. **E. scabrum.** *Fl. Peruv. Syst.*, 248. *LO., no.* 49.

E. caulibus ascendentibus subramosis, foliis coriaceis ovato-lanceolatis obtusis, racemo denso oblongo reflexo sessili, sepalis oblongis lateralibus columnæ adnatis, petalis filiformibus, labello 3-partito basi bicalloso laciniis æqualibus lateralibus denticulatis intermediâ indivisâ, columnâ brevi crassâ, clinandrio integro.

Wild in PERU; mountains of Pillao and Muña—Ruiz and Pavon; Surrucucho, on the trunks of trees, Chimborazo, on rocks at 12,000 feet—Jamieson, 10 and 251; valley of Baños—Hall, Chachapoyas—Mathews, 3200; Andimarcha—Id. 1063; NEW GRENADA, Bogota—Gudot, 1; Pamplona—Purdie, (*v. s. sp. comm. cel. Hooker.*)

Very like *E. varicosum*, among the Amphiglotts, as well as *E. chioneum*. Varies much in the size of both leaves and flowers.

272. **E. torquatum.** *Lindley, in Benth. Pl. Hartweg., p.* 149.

E. caule elongato aspero, foliis oblongis coriaceis obtusis distichis, spicâ sessili recurvâ, floribus coriaceis, sepalis ovatis acutiusculis, petalis tenuioribus basi angustatis parùm angustioribus, labelli trilobi basi bicallosi lobis lateralibus subtruncatis intermedio cuneato tridentato.

Wild in PERU; Popayan, on the ascent to the Paramo de Guanacas, at 10,500 feet—Hartweg, 1424; on the ground on the Cordillera of Loxa—Id.; NEW GRENADA, on the ground, from the Quebrada between Monserrate and Guadalupe, in the province of Bogota, at the height of 8160 feet; March—Linden, 1268, (*v. s. sp.*)

Near *E. scabrum*, but with much larger and more coriaceous flowers. It varies very much in the size of the flowers, which are yellowish—*Linden*, and very fragrant—*Hartweg*. It seems to be always terrestrial.

273. **E. chioneum.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 73.

E. caule lævi ramoso, foliis ovato-lanceolatis mucronulatis, racemo capitato cernuo, bracteis erectis herbaceis acuminatis ovario longioribus, sepalis subrotundo-ovatis apiculatis, petalis obovatis minutè serrulatis, labelli laciniis integris intermediâ lineari medio rugulosâ basi bicallosâ cuneatâ lateralibus minoribus acutis, clinandrio altè marginato.

Wild in NEW GRENADA; on the ground, Paramo, between Venta Quemada and Tunja, at the height of 12,000 feet; March—Linden, 1344, (*v. s. sp.*)

The flowers are pure white, in small close heads, an inch or more long. It is very near *E. cernuum*, but differs in the form of its sepals and the lobes of the lip, if that species is correctly described. Leaves about two inches long by a quarter of an inch wide.

274. **E. cernuum.** *Humb. et Kunth. Nov. Gen. et Sp., I.* 353. *LO., no.* 46.

E. foliis oblongis obtusis coriaceis, spicâ elongatâ cernuâ, sepalis lanceolatis margine revolutis cuspidatis, petalis conformibus angustioribus, labelli trilobi margine reflexo lobis lateralibus subrotundis acuminatis intermedio triplò majore concavo convexo lineari apice rhombeo axi coriaceâ basi bicallosâ.

Wild in PERU; on trees in the Ravines of the Andes of Popayan, between the town of La Erre and the valley of Yanacatu, at the height of 5080 feet—Humboldt and Bonpland; forests on the western side of Pichincha—Jamieson, (*v. s. sp. in hb. Hooker.*)

Stem three feet high, and more. Spike three inches long. Flowers sweet-scented, yellowish green.

275. **E. matutinum.** *H. G. Reichenbach, in Linnæa, XXII. p.* 840.

E. racemo incurvo brevi multifloro, bracteis lanceolatis acutis ovariis pedicellatis multò brevioribus, sepalis lanceolatis acutis petalis subæqualibus sub apice dilatatis, labello libero trilobo lobis lateralibus margine externo rotundatis apice acutis medio producto ligulato acuto lamellis 3 elevatis in medio, callis 2 parvis in basi.

Wild in VENEZUELA; Merida, Jan.—Moritz, 1065, (*Rchb.*)

Stems strong. Leaves longish, acute, keeled beneath. Flowers yellowish. —*Rchb.*

276. **E. insectiferum.**

E. foliis oblongis acutis undulatis striatis, racemo longipedunculato stricto densè multifloro, bracteis setaceis pedicellis brevioribus, sepalis petalisque linearibus acuminatis, labelli trilobi basi bicallosi lineâ elevatâ interjectâ laciniis lateralibus rotundatis anticè acutis intermediâ ovatâ obtusâ apiculatâ, clinandrio cucullato integro.

Wild in BOLIVIA—Bridges, (*v. s. sp.*)

A large species. Stem nearly a foot high up to the base of the peduncle, which is perfectly naked, and, including the raceme, nearly a foot long. Leaves six inches long by more than two broad. Flowers small, membranous, on long slender stalks.

277. **E. Arbuscula.** *Lindley, in Benth. Pl. Hartw., p.* 93.

E. caule tereti fruticoso ramoso, ramulis vestitis apice 2—3-phyllis, foliis oblongis coriaceis patentibus, racemis oblongis densis terminalibus subsessilibus cernuis, bracteis lineari-lanceolatis acuminatis membranaceis patentissimis pedicellis duplò brevioribus, sepalis lanceolatis acutis carnosis, petalis tenuioribus linearibus apice paulò latioribus, labello trilobo cordato basi tricalloso, laciniis lateralibus rotundatis intermediâ emarginatâ undulatâ.

Wild in MEXICO; San Juan Sacatepequez; April—Hartweg, (*v. s. sp.*)

A plant with a large branching stem, leathery leaves, three or four inches long, and many pale stout roots. Flowers dull chocolate, relieved by a patch of yellow in the middle of the labellum, which is so folded back at the sides and front, that, although almost circular, it presents the form of an old-fashioned three-cocked hat.

278. **E. incomptum.** *H. G. Reichenbach, in Linnæa,* 1852, *p.* 735.

E. caule valido squamoso supernè folioso, foliis summis anthesi persistentibus cuneato-oblongis acutis erectis, racemo plurifloro congesto, bracteis lanceolatis acuminatis ovaria infima

pedicellata subæquantibus, sepalis oblongis petalisque linearibus acutis, labello transverso trilobo basi rotundato lobis lateralibus divaricatis medioque producto triangulis, clinandrio quinquelobo.

Wild in VERAGUA; on Mount Chiriqui—Warczewitz.

Next to *E. Arbuscula—Rchb.*

E. *PLANIFOLIA PANICULATA.*

279. **E. gramineum.** *LO., no.* 30.

E. foliis distichis lineari-lanceolatis acutis striatis, racemo terminali paniculato, sepalis oblongis acutis, petalis linearibus, labello cordato acuto medio plicato basi calloso, clinandrio integro.

Wild in PERU—Pavon, (*v. s. sp. olim in hb. Lambert.*)

280. **E. recurvatum.** *Lindley, in Bot. Reg.* 1845, *misc.* 77.

E. foliis ensiformibus mucronatis strictis, paniculâ gracili ramis longis recurvis æqualibus, bracteis apice setaceis, floribus membranaceis distantibus, sepalis ovato-oblongis, petalis linearispathulatis, labello altè cordato subquadrato.

Wild in VENEZUELA; heights of Bailadores, in the province of Merida, 6000 feet above the sea; June—Linden, 1472, (*v. s. sp.*)

A plant with the habit of *E. tridactylum*, &c., but with rose-coloured flowers, which are three or four times as large.

*281. **E. diffusum.** *Swartz, Fl. Ind. occ., III.* 1503. *LO.* 25. *Bot. Mag., t.* 3565.

E. foliis oblongis, caule ancipiti, paniculâ filiformi terminali ramosissimâ, sepalis lineari-lanceolatis petalisque setaceis erecto-patentibus striatis, labello cordato angusto membranaceo acuminato trilineato basi calloso.

Seraphyta multiflora. *Fisch. Ann. Nat. Hist., VIII.* 471.
E. tenuiflorum. *Hort.*

Wild in JAMAICA; on trees in the temperate parts—Swartz, Mac Fadyen, (*v. s. sp. et v. c.*)

Flowers small, crimson.

282. **E. Funckianum.** *Rich. and Galeotti, Orch. Mex., no.* 52.

E. "caule articulato, foliis ovalibus obtusissimis apice bilobis, floribus parvulis brunneis paniculatis, labello adnato cordato acuto."

Wild in MEXICO—Galeotti.

283. **E. micranthum.** *Lindley, in Hooker's Journal, III.* 88.

E. foliis distichis lanceolatis acuminatis, racemo v. paniculâ racemosâ virgatâ, bracteis setaceo-acuminatis florum dissitorum longitudine, sepalis oblongis carnosis obtusis subæqualibus, petalis linearibus, labello oblongo quadrato indiviso.

Wild in PERU—Mathews, 1858, (*v. s. sp.*)

A plant with flowers scarcely a line long, and all the habit of *E. tridactylum.*

284. **E. aquaticum.** *Lindley, in Ann. Nat. Hist.* 12.

E. caule ascendente ancipiti ramoso, foliis ovato-oblongis acutis paniculâ simplici pauciflorâ (aut racemo) paulò brevioribus, sepalis oblongis petalisque linearibus obtusis, labello carnoso altè cordato cucullato, clinandrio carnoso utrinque bidentato.

Wild in BRAZIL; Goyaz, on the margin of a small stream near N. S. d'Abadia; May—Gardner, 4364; Minas Geräes, Serra de Curaça; Oct.—Gardner, 5206, (*v. s. sp.*)

Branches four or five inches long; leaves from half an inch to two inches. Flowers yellowish.

285. **E. vincentinum.** *Lindley, in Hooker's Journal, III.* 88.

E. caule ancipiti, foliis distichis angustè lanceolatis acutissimis paniculâ pauciflorâ laxâ filiformi brevioribus, sepalis linearilanceolatis, petalis filiformibus, labello subrotundo crispo.

Wild in ST. VINCENTS—Guilding, (*v. s. sp. in hb. Hooker.*)

A small delicate species, not more than four inches high, with minute membranous flowers, disposed in a short, loose panicle, with filiform pedicels.

286. **E. frigidum.** *Linden, in Bot. Reg.*, 1845, *misc. p.* 76. *Orch. Linden., no.* 36.

E. caule stricto indiviso, foliis imbricatis coriaceis ovato-oblongis obtusis emarginatisque, paniculâ racemosâ nutante, bracteis coriaceis ovatis abruptè acuminatis, floribus valdè carnosis, sepalis ovatis obtusis altè costatis, petalis linearibus erectis, labello complicato transversè ovato subtùs obtusè carinato basi bicostato, columnâ brevissimâ.

Wild in VENEZUELA; on damp rocks a short distance from eternal snow, at the height of 13,000 feet, on the Sierra Nevada of Merida—Linden, 643; PERU, on the volcano of Pasto, on trees at 13,000 feet—Jamieson, (*v. s. sp.*)

This singular plant has a stem a foot and a half high, densely covered with leaves, which are stiff, and curved back at the edge. The flowers, which are pale rose, grow in long drooping panicled racemes. Linden states that it grows *on wet rocks*, at *but little distance from the eternal snow*, at the height of 13,000 feet above the sea. He adds that it is especially remarkable for all the plant, flowers included, being covered over with varnish. Jamieson's Pasto plant is weak and racemose, not panicled.

287. **E. durum.** *Lindley, in Hooker's Journal, III.* 87.

E. foliis distichis ovato-lanceolatis acutis, vaginis rugosis, paniculâ subsessili simplici pauciflorâ, bracteis duris ovatis cucullatis acuminatis ovariis æqualibus, sepalis oblongis acutis duris striatis, petalis angustioribus, labelli postici trilobi transversè rhombei lobis lateralibus erectis truncatis intermedio triangulari acuto.

(B) parviflorum. Leaves narrower. Flowers much smaller.

Wild in GUAYANA—Schomburgk; **B.** BRAZIL, Minas Geräes—Weddell, 1272, in hb. Mus. Par., (*v. s. sp.*)

Stems simple or branched, from nine to eighteen inches high, equally covered with hard distichous leaves. Flowers small, apparently yellow. The inflorescence is occasionally simple. Differs from *E. carnosum* in having smaller and less fleshy flowers, and a panicle with a shorter stalk.

288. **E. carnosum.** *Lindley, in Hooker's Journal, III.* 87.

E. foliis coriaceis distichis ovato-lanceolatis acutiusculis, vaginis rugulosis, paniculâ racemove rigidâ striatâ multiflorâ, bracteis duris ovatis cucullatis acutis ovarii longitudine, sepalis carnosis oblongis obtusis lateralibus hinc gibbosis carinatis latioribus, petalis sepalo dorsali conformibus, labelli postici trilobi carnosi lobis lateralibus rotundatis erectis intermedio conico solido.

Wild in BRAZIL—Zuccarini, (*v. s. sp.*)

A rigid plant, with the habit of *E. elongatum*. Panicle stiff, many-flowered. Flowers pale yellow; when dry, hard, thick, black; evidently must be very fleshy when recent.

* 289. **E. purum.** *Lindley, in Bot. Reg.* 1844, *misc.* 75.

E. caule fusiformi elongato, foliis ensiformibus obtusis, floribus paniculatis ramis racemosis gracilibus foliis paulò erectioribus, sepalis lineari-lanceolatis, petalis filiformibus, labelli tripartiti basi 3-costati laciniis indivisis acutis lateralibus cordatis repandis.

Wild in the CARACCAS—Linden; NEW GRENADA, on trees near La Paz—Purdie, (*v. v. c. et s. sp. in hb. Hooker.*)

Leaves not half an inch wide, six or eight inches long. Flowers in a thin panicled raceme, and of a light pale green colour. The lobes of the lip vary a little in form, the middle one especially being sometimes ovate, sometimes linear.

* 290. **E. tridactylum.** *Lindley, in Bot. Reg.* 1838, *misc.* 81.

E. caule fusiformi gracili apice distichè folioso, foliis angustè oblongis obtusis cum mucronulo, paniculâ 3—5-partitâ spicatâ multiflorâ foliis longiore, sepalis subrotundo-ovatis incurvis lateralibus majoribus, petalis linearibus spathulatis incurvis, labello

ascendente tripartito basi bicalloso laciniis linearibus carnosulis lateralibus margine involutis intermediâ planâ, columnâ brevi crassâ cuneatâ labello omninò adnatâ.

Wild in BRAZIL; in dense tufts on large trees in the Organ Mountains—Gardner, 626, (*v. s. sp. et v. c.*)

Flowers very small, brownish yellow, except the column, which is green, short, thick, and wedge-shaped. The flowers are often so filled with crystals as to appear tuberculated. The reputed country of this, viz., Mexico, is no doubt a Garden error.

291. **E. lanipes.**

E. foliis ensiformibus obtusis paniculâ strictâ brachiatâ brevioribus, rachi scabriusculâ, ovariis lanulosis, sepalis linearioblongis obtusis, petalis filiformibus, labelli lobis lateralibus semi-ovatis intermedio cuneato retuso basi bicalloso, clinandrii bilobi laciniis 2-dentatis.

Wild in PERU; Chachapoyas—Mathews, 3183, (*v. s. sp.*)

Flowers apparently yellow in a panicle nine inches long, and as much broad. The woolly ovary is quite peculiar.

292. **E agathosmicum.** *H. G. Reichenb. Linnæa, XXII.* 841.

E. paniculæ ramis squamis oblongis acutis suffultis, bracteis minimis cuspidatis, sepalis oblongis acutis basi cuneatis, petalis linearibus apice ovatis acutis, labello trilobo lobis lateralibus semiovatis basi aliquid cuneatis denticulatis callis 2 minimis in basi lobo medio à basi cuneatâ dilatato transverso anticè emarginato denticulato.

Wild in the CARACCAS; on the top of the mountain, near the Venta—Moritz, 233, (*Rchb.*)

Leaves longish, acute, carinate. Flowers snow-white, very fragrant.—*Rchb.*

* 293. **E. floribundum.** *Humb. et Kunth. Nov. Gen. et Sp., I.* 353. *t.* 86. *LO.* 63. *Hooker, in Bot. Mag. t.* 3637.

E. foliis lanceolato-oblongis acuminatis submembranaceis, paniculâ maximâ racemosâ, sepalis reflexis lanceolatis, petalis filiformibus, labelli quadrilobi basi bituberculati lobis lateralibus subrotundis terminalibus linearibus divaricatis.

E. densiflorum. *Hooker, in Bot. Mag., t.* 3791. *H. G. Reichenb., Linnæa, XXII. p.* 840.
E. ornatum. *Lemaire; fid. Rchb.*

(B) lilacinum. Flowers purple, larger than usual, with a white lip.
(C) convexum. Flowers smaller, shorter, with a roundish, denticulate, obscurely four-lobed lip.

Wild in PERU—Humboldt and Bonpland; **B**, VENEZUELA—Moritz, 233, Funck and Schlim, 1448; **C**, NEW GRENADA,

in the woods of the Hacienda de Palmas, near Guaduas—Hartweg, (*v. v. c. et s. sp.*). Not MEXICAN, as stated in *Bot. Mag.*, on the authority of the Collection at Woburn.

A great branching green-flowered species, very much like *E. paniculatum* and *laxum*, differing however in the want of spathaceous bracts.

* 294. **E. verrucosum.** *Swartz, Fl. Ind. Occ., III.* 1497.

E. foliis distichis lanceolatis obliquè patentibus vaginis verrucosis, floribus paniculatis, sepalis oblongis concavis, petalis spathulatis basi angustatis, labello multò longiore 4-lobo laciniis linearibus obtusis divaricatis anterioribus dentatis, callis 2 sulcatis alteroque minore interposito.

Wild in JAMAICA; on the trunks of trees—Swartz, Purdie, Bancroft, &c.; NEW GRENADA—Purdie, (*v. s. sp.*)

Stems simple erect, two or three feet high. Sepals and petals pale green. Lip yellow. Flowers sometimes in a large branching panicle, sometimes in a mere raceme, persistent without change long after the ovary has acquired a fusiform figure of considerable dimensions. The sheaths of the leaves are quite smooth in very strong specimens.

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§ 12. **PLEURANTHIUM.** *H. G. Reichenbach, in Linnæa, XXII. p.* 841.

These are long leafy stemmed species with lateral inflorescence, and an adnate lip.

295. **E. Dendrobii.** *H. G. Reichenb., in Linnæa, XXII. p.* 841.

E. pedunculis nunc simplicibus nunc ramosis, squamis ovatis nunc acutis imbricatis, sepalis oblongis lateralibus obliquis, petalis obtusis cuneatis, labello rotundo basi obtusè hastato ante basin bicalloso.

Wild in VENEZUELA; Merida, on mountains—Moritz, 1074, (*Rchb.*)

Stems erect, with many leaves, which are longish, acute, somewhat carinate. Flowers yellowish.—*Rchb.*

296. **E. aggregatum.** *Lindley, in Hooker's Journal, III.* 84.

E. foliis distichis lanceolatis acuminatissimis, racemis oppositifoliis subsessilibus brevissimis basi squamatis, floribus corymbosis, labello subrotundo cordato basi bilamellato.

Wild in PERU—Mathews, 1901, (*v. s. sp.*)

A very singular plant, allied to *E. cauliflorum*. The flowers are apparently as large as in *E. nutans*. The appearance of the plant is that of some Dendrobium.

* 297. **E. cauliflorum.** *Lindley, in Bot. Reg.* 1838, *misc.* 82.
E. foliis ovato-oblongis planis acuminatissimis, corymbis brevibus, sepalis angustis patentissimis subæqualibus concavis, petalis linearibus apice cuneatis acutis reflexis, labello cuneato-subrotundo trilobo lobo intermedio truncato tridentato lateralibus rotundatis repandis, callis tribus linearibus in medio labelli lateralibus majoribus.

Wild in BRAZIL; Rio Janeiro—Loddiges, (*v. v. c.*)

Flowers about the size of those of *E nutans*, pale straw-colour, appearing from the side of the stout cylindrical stem, bursting forth from among the dry sheaths with which it is closely invested.

ALTOGETHER DOUBTFUL SPECIES.

298. **E. vomeriforme**; *Swartz. Prodr.*, 124; *Fl. Ind. Occ.*, *III.* 1511; *Willd., no.* 25; "caulescens, foliis bulbis innatis carnosis ovato-acuminatis convexis canaliculatis subtus carinatis, scapis è sinu foliorum." JAMAICA—Swartz. Species minima. Flores ignoti, (*v. s. sp. in hb. Smith.*)

299. **E. angustifolium**; *Swartz. Prodr.*, 123; *Fl. Ind. Occ.*, *III.* 1512; *Willd., no.* 26; "folio lineari bulbo innato, scapo paniculato." JAMAICA—Swartz.

300. **E. ? turbinatum**; *La Llave, Nov. Veg. Descr., II.* 41; "bulbis oblongo-turbinatis confertis membranis laceratis præcinctis, scapo ex bulbis prodeunte, foliis lineari-lanceolatis coriaceis bulbo adnatis." MEXICO—La Llave.

301. **E. ? mayzifolium**; *La Llave, Nov. Veg. Descr., II.* 42; "bulbis fusiformibus pedalibus articulatis, foliis distichis ensiformibus trinerviis." MEXICO—La Llave.

302. **E. cristatum**; *Fl. Peruv. Syst.*, 243; *LO., no.* 66.; "foliis lanceolatis, racemo dependente, labello tripartito laciniâ mediâ bifidâ lateralibus tripartitis." PERU; on trees near Pozuzo —Ruiz and Pavon.

303. **E. coronatum**; *Fl. Peruv. Syst.*, 242; *LO., no.* 65; "foliis ovato-lanceolatis, racemis dependentibus, labello trilobo laciniis bifidis intermediâ minori." PERU; on stones and rocks near Pozuzo—Ruiz and Pavon.

304. **E. viride**; *Fl. Peruv. Syst.*, 244; ***LO.***, *no.* 67; "foliis lanceolatis acutis, racemo terminali, labii trilobi laciniis lateralibus obcordatis intermediâ bifidâ." PERU; in groves, on trees in the neighbourhood of Pozuzo—Ruiz and Pavon.

305. **E. volubile**; *Fl. Peruv. Syst.*, 247; *LO.*, 37; "foliis oblongo-obovatis, ramis volubilibus, labelli bifidi laciniis lanceolatis." PERU; on precipices at Acobamba—Ruiz and Pavon.

306. **E. lineare**; *Fl. Peruv. Syst.*, 249; *LO.*, 33; "foliis linearibus, racemo terminali subpaniculato, labello obcordato-cuneiformi basi utrinque dentato." PERU; in groves at Chinchao, Muña, and Huassahuassi—Ruiz and Pavon.

307. **E. ferrugineum**; *Fl. Peruv. Syst.*, 245; *LO.*, 32; "foliis oblongo-lanceolatis emarginatis, racemo simplici erecto, labello acuminato integro." PERU.

308. **E. cordatum**; *Fl. Peruv. Syst.*, 244; *LO.*, 36; "foliis cordatis amplexicaulibus, paniculâ flexuosâ, labelli bifidi laciniis acuminatis recurvis." PERU; in the groves and ravines of Chinchao, on trees and rocks—Ruiz and Pavon.

As the present sheet was about to go to press, I received the latest number of the *Botanische Zeitung* for 1852, and the 2nd part of the 25th vol. of the Linnæa, which render the following additions necessary.

Add to AULIZEUM, between 92 and 93.

309. **E. Oerstedii.** *H. G. Rchb. in B. Z.*, 1852.

E. foliis ovatis acutiusculis binis, spicâ pauciflorâ, bracteis angustis ligulatis obtusiusculis ovaria pedicellata vix dimidio æquantibus, sepalis subæqualibus lanceolatis acuminatis, petalis paulò brevioribus apice subulatis, labello trilobo lobis lateralibus obtusè et obliquè rhombeis integerrimis margine postico et externo magis curvatis quam interno et antico lobo medio sublongiore ligulato dein dilatato apiculato subulato, callis duobus obtusè triangulis in labelli basi, columnæ lobo postico denticulato.

Wild in COSTA RICA; San Miguel—Oersted.

Flowers as large as in *E. ciliare*, yellow.—*Rchb.*

310. **E. costaricense.** *H. G. Rchb., l. c.*

E. pseudobulbis fusiformibus crassis abbreviatis triarticulatis, foliis ovatis acutiusculis solitariis seu geminis, racemo nunc flexuoso pauci—plurifloro, bracteis angustis ligulatis acutiusculis seu

obtusis ovaria pedicellata ne dimidio quidem æquantibus, sepalis petalisque lanceolatis acuminatis subæqualibus, labelli lobis lateralibus triangulis margine postico recto sublanceolato lobo medio angustè ligulato acuto apice vix dilatato subulato lobis lateralibus subduplò longiore, callis 2 in basi obtusè triangulis, columnæ lobo postico denticulato.

Wild in CENTRAL AMERICA—Oersted.

Leaves as large as in *E. ciliare*. Sepals green. Lip yellowish white.—*Rchb.*

122. **E. fragrans.** Add, according to *H. G. Rchb.*, the following synonyms, viz.: *E. Papilio, bulbosum, Vespa,* of Arrab. Fl. Flum., and *E. ionoleucum* Hffmg.

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HEMISCLERIA.

Sepala erecta, coriacea, concava, æqualia.

Petala conformia, membranacea.

Labellum dependens, concavum, lineare, sessile, coriaceum, sepalis longius, basi c. columnâ continuum; lineis 3 rectis elevatis.

Columna nana, semiteres, basi juxta labellum utrinque auriculatum; *clinandrium* membranâ marginatum. *Stigma* fovea circularis.

Pollinia 4, ovalia, æqualia; *caudiculis* 2 pulvereis replicatis in unam connatis; *glandulâ* 0. *Anthera* 4-locularis, carnosa, loculis membranaceo-marginatis.

Herba *epiphyta*, Americæ tropicæ, *caulescens*. Folia *coriacea*, *disticha*. Corymbus *terminalis*, *pedunculatus*. Flores *coriacei*, *semiclausi*.

A singular plant, with quite the habit of an Amphiglottian Epidendrum. From that genus it differs in its lateral sepals being shorter than the lip and in no degree oblique; in the latter gradually passing into the column; and especially in the presence of a pair of small round auricles, standing at the base of the column, at the place where the lip joins on. I think there can be no doubt that these processes belong to the column and not to the lip, because they hold firmly to the column when the lip is pulled off, and have evidently a vascular connection with the former. It may be added that the lip hangs down from the foot of the column, instead of being parallel with it, as in Epidendrum.

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1. H. nutans.

Wild in Peru; Chachapoyas—Mathews, (*v. s. sp. in hb. Miers.*)

The single specimen of this rare plant, preserved in Mr. Miers' herbarium, has no number, and consists of a hard stem about six inches long, closely covered with coriaceous distichous obtuse leaves. The peduncle is scarcely so long as the upper leaves, stands nearly horizontally, and has a pair of acute short scales at its base; below the middle there is a single joint, above which it thickens into a club-shaped rachis, closely covered with small globular coriaceous flowers, and stiff acute bracts, very much shorter than the stiff pedicels. The sepals are roundish ovate, concave, very obtuse, and erect. The petals are thin, of the same figure, but flat and rather cordate. The lip is linear, channelled, two-lobed, very coriaceous, broadest at the base where it joins the column, and there furnished with three stout ribs, of which the central is much the largest. The auricles of the column are nearly round, and petaloid.

PINELIA.

Sepala patula, petaloidea, libera; lateralibus basi inæqualibus.

Petala conformia, minora.

Labellum majus, indivisum, c. columnâ continuum, eique basi adnatum, (basi bicallosum?)

Columna nana, reclinata, ferè horizontalis, margine petaloideo. ("*Stigma* prominens." *Pinel.*)

Pollinia 4, basi materie glutinosâ colligata; *caudiculâ glanduláque* nullis? (caudiculis 2 pulvereis replicatis. *Pinel.*) *Anthera* (columnæ apici adnata, carnosa, 4-locularis. *Pinel.*)

Herba *epiphyta*, Brasiliensis, *pseudobulbosa*, *monophylla*. Folium *carnosum*, *apice tridentatum*, *Lepanthis more*. Pedunculus *terminalis*, *filiformis*, *distanter vaginatus*, *uniflorus*.

This very singular plant has been communicated by the Chevalier Pinel, a French botanist, who has paid attention to the minute species of the order, and after whom it is named. The materials consist of one plant glued to paper, with some sketches and manuscript notes. Although insufficient to enable me to speak with certainty of some of the parts of fructification, they are enough to show that it is a very curious and wholly new form. In habit the plant would be a Pleurothallis, if the stem had not the fusiform condition of an Aulizean Epidendrum. The leaf is quite that of many Pleurothallids. Of the flower, which is very nearly half an inch from tip to tip of the back sepal and lip, M. Pinel says, "Ce serait un Cattleya en miniature sans l'expansion foliacée du gynostéme et l'adhérence du labellum à la colonne." The anther, which I have not seen satisfactorily, is represented by him as resembling that of the same genus; as are the pollen-masses, of which he says, "Quatre masses polliniques, sur deux lames semblables à celles du grand Cattleya Harrisoniæ et de tous les Cattleya." This I have not been able to verify; M. Pinel's drawing is at variance with his description, and shows to each pair of pollen-masses the same kind of glutinous secretion of matter as is found in many species of Pleurothallis. This, and some other parts of the structure, therefore remain for further examination.

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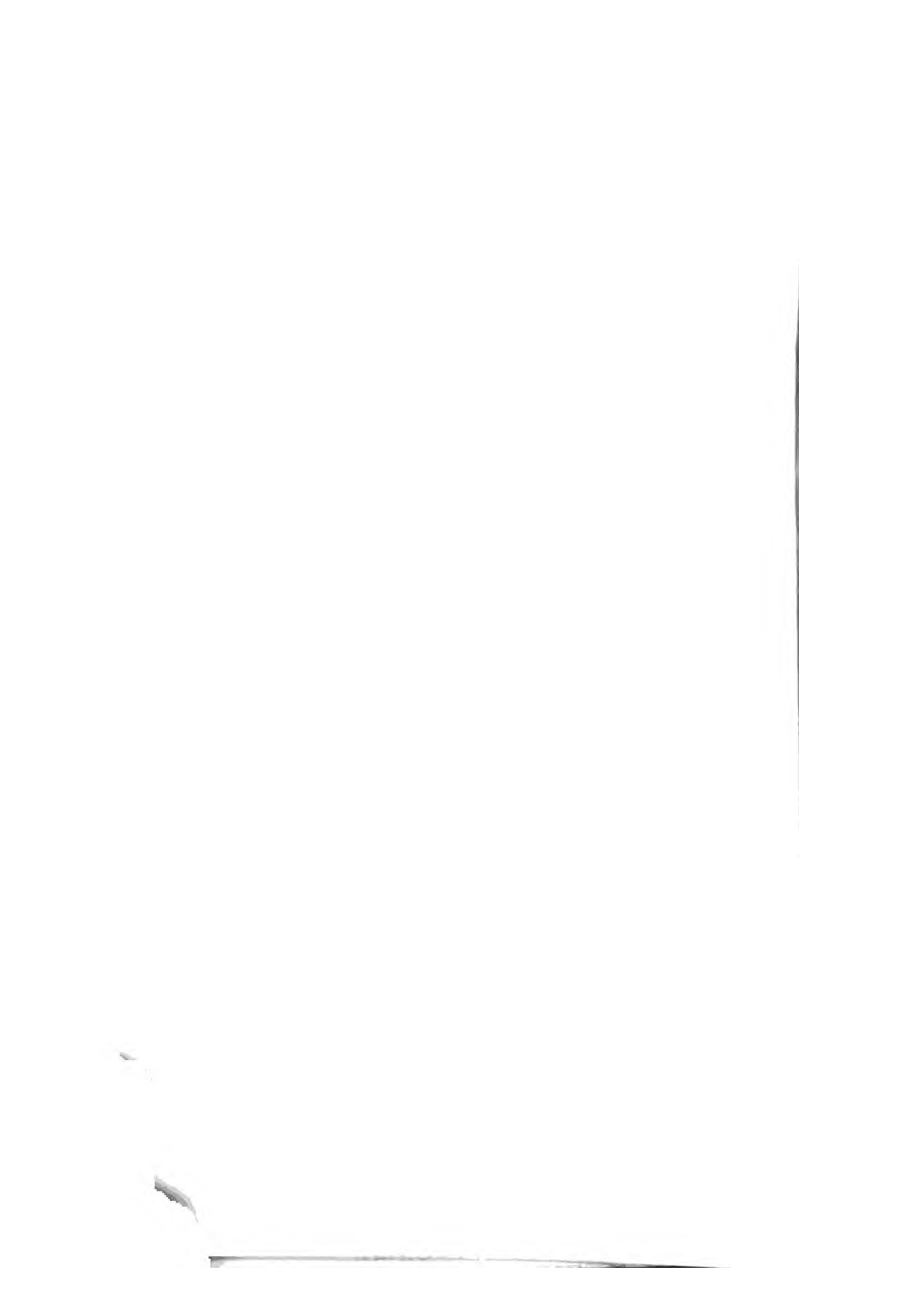
1. P. hypolepta.

Wild in Brazil; near Rio Janeiro—Pinel, (*v. s. sp.*)

Herba cæspitosa, 2-pollicaris. Caules pseudobulbosi, 1½ l. longi. Folium solitarium, sessile, carnosum, ovatum, acutum, obsoletè tridentatum, 3½ l. longum. Pedunculus filiformis, 9 l. longus, vaginis 3 distantibus arctè convolutis. Flos solitarius, virens, vi expansus semipollicem latus. Sepala ovata obtusa. Petala obovata, obtusa, minora, uninervia. Labellum basi verosimiliter 2-callosum, linguiforme, acutum, planum, sepalis duplò majus.

Feb. 19, 1853.



ACACALLIS.

SEPALA patentia, petaloidea; lateralibus basi imâ levissimè productâ connatis.

PETALA subæqualia, basi subobliqua.

LABELLUM unguiculatum, sepalis longius, petaloideum; *hypochilio* (ungue) lineari, apice saccato, margine lobato; *mesochilio* brevi, è facie sacci, 3-corni; *epichilio* transverso, basi concavo, juxta mesochilium verticaliter plicato.

COLUMNA brevis, subteres, anticè marginata, cum labello continua, apice alata; *stigma* subrotundum, in marginem inferiorem bicallosum, superiore 3-partito, laciniis lateralibus brevibus forcipatis intermediâ (rostello) subulatâ.

POLLINIA duo, cereacea, (pedicellata, biloba, emaciata, fortè casu quodam); *caudiculâ* rhombeâ; *glandulâ* parvâ, subrotundâ.

Herba *epiphyta*, Americæ tropicæ, *pseudobulbosa*. Folia *nervosa*. Racemi *erecti*, *pauciflori*. Flores *speciosi*.

Allied to Huntleya, Warrea, &c., but clearly distinguished by its long narrow hypochil, with a deep bag at the point, surrounded by a five-lobed reflexed border, and furnished in front with three projecting processes arising from the very base of the mesochil at its junction with the hypochil and just above the concave ribbed base of the epichil. Mr. H. G. Reichenbach's PARADISANTHUS, with which I am unacquainted, would seem to be also a genus related to this.

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1. **A. cyanea.**

Wild in BRAZIL; Barra of Rio Negro, on trees by forest streams; July, 1851; Spruce, 1790, (*v. s. sp.*)

This is a very fine plant, with the habit of a Maxillaria of the racemose section, and with flowers as large as those of *Odontoglossum Pescatorei*. Mr. Spruce reports the sepals and petals to be light blue, paler within; the lip light bluish purple with pale veins; back and wings of column streaked with red. He adds that the blue of the flower is almost perfectly pure. The leaves are three inches broad by fifteen inches long, with much the texture of a Stanhopea; at the base they gradually taper into a furrowed petiole three inches long. The pseudobulb is ovate, and one-leaved. The peduncle, including the close five-flowered raceme, is about a foot long.

Sepala et petala subrotunda, apiculata, basi cuneata. Hypochilii saccus margine acutè 5-dentato auctus; mesochilii processus recti, subulati; epichilium transversum, subtrilobum, denticulatum, basi latè cuneatum, concavum, lobo medio minuto acuminato integerrimo. Columnæ alæ membranaceæ, quadratæ. Clinandrium dorso cornutum. Anthera membranacea, ecristata.

ABOLA.

Sepala subcoriacea, patentia; lateralibus connatis, labello suppositis.

Petala membranacea, conformia.

Labellum liberum, sessile, columnam amplectens, basi dilatatum, indivisum, membranaceum; callo 3-plici carnoso.

Columna nana, membranaceo-marginata; *clinandrio* marginato.

Pollinia 2, oblonga; *caudiculâ* brevi, tenui; *glandulâ* minutâ. *Anthera* subrotunda, ecristata.

Herba *epiphyta*, Americæ tropicæ, *ebulbis*, *acaulis*. Folia *pauca*, *coriacea*. Flores *parvi*, *racemosi*; pedunculo *radicali*.

This curious little plant must be regarded as an ally of Oncidium and Odontoglossum, from both which, as well as their allies Brassia and Miltonia, it is distinguished by an extremely slender, delicate caudicle, minute circular gland, and solid pollen-masses. The column too forces down the sessile lip by its thin projecting edges, which thus rest upon the lip and partially surround the calli.

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1. A. radiata.

Wild in New Grenada; in the province of Pamplona, at the height of 9500 feet; Schlim, 111, (*v. s. sp. comm. cel. Linden.*)

The whole plant about five inches high. Leaves coriaceous, channelled, sessile, the uppermost not half the length of the raceme and perfect, the next imperfect, the remainder merely cartilaginous scales, from among which rises the scape, consisting of seven or eight small distant flowers seated on a flexuose rachis, with short cucullate striated acute bracts. The sepals seem to be rather coriaceous; the lateral separate only at the point. Petals linear-ovate, acute. Lip circular at the base, then contracted into a linear retuse upper half. Of the triple callus the middle is erect, the sides smaller and projecting. ("Flowers brown with yellow rays. Column and lip white." —*Schlim.*)

ONCODIA.

Sepala erecta, costata, herbacea: lateralibus paulò obliquis, ovarii mento adnatis.

Petala membranacea, latiora.

Labellum membranaceum, indivisum, erectum, cum cavitate carnosâ in ovarii apice mentiformi continuum, basi foveatum et bilamellatum.

Columna brevis, erecta, aptera; margine membranaceo versus basin latiore. *Ovarium* ad columnæ labellique junctionem in cavitatem carnosam mentiformem (cuniculum) dilatatum.

Pollinia 2, ovalia, solida; *caudiculâ* latâ lineari; *glandulâ* oblongâ. *Anthera* apiculo recurvo.

Herba *epiphyta*, Americæ tropicæ, *pseudobulbosa*. Folia *coriacea*. Racemi *radicales*. Bracteæ *glumaceæ*.

In habit this resembles somewhat such plants as *Brassia glumacea*; but in structure it is extremely different. The small flowers, hidden within the bracts, have an anterior hollow tumour, like a goitre, arising from the top of the ovary, and answering to the cuniculus so common in Epidendrum. On the edge of the cavity of this tumour stand the lip and the pair of lateral sepals, which are widened on one side at the base so as to accommodate themselves to the form of the tumour. The column is exactly that of Brassia, to which the genus is nearly related.

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1. O. glumacea.

Wild in New Grenada—Funck and Schlim, 1499, (*v. s. sp. comm. cel. Linden.*)

Pseudobulb narrow, two-edged, one-leaved. Leaf coriaceous, somewhat shining, linear-oblong, obtuse, channelled at the base and greatly narrowed. Peduncle erect, about as long as the leaf, terete, with an adpressed sheath near the middle, and another half way between it and the spike. The latter short, distichous, imbricated, with cucullate blunt glumaceous bracts, which are longer than the flowers. The sepals are narrowly triangular, with a sharp central rib. Petals twice as broad, roundish oblong, apiculate. Lip of the same form as the petals, with a pair of deep stout diverging plates near the base, between which, next the cavity or chin, is a small pit clothed with hairs.

COCHLIODA.

SEPALA petaloidea, patentissima, libera : lateralibus angustioribus labello suppositis.

PETALA tenera, patentissima, sepalo dorsali æqualia.

LABELLUM tenerum, 3-partitum, ad medium usque columnæ connatum, decurrens : callis 2 linearibus apice verticaliter bivalvibus (cochleæ ad instar) sub antherâ.

COLUMNA arcuata, elongata, apice auriculata ; *clinandrio* cucullato.

POLLINIA 2, oblonga, solida ; *caudiculâ* rhombeo-ovali ; *glandulâ* oblongâ parum majore.

HERBA *epiphyta*, Peruviana, *pseudobulbosa*. Folia *coriacea*. Racemus *radicalis*, *densiflorus* ; pedunculo *squamato*, bracteis *glumaceis*. Flores conspicui.

The habit of this plant is that of Odontoglossum ; the lip and column would refer it to Epidendrum ; the pollen-masses and caudicle are such as we find in no neighbouring genus. The calli on the lip, placed just in front of the anther, are narrow, raised, and fleshy, and each is furnished at the point with a bivalve gland which opens vertically. The two narrow lateral sepals, standing apart from the others and beneath the lip, indicate an unmistakeable affinity with Oncidium.

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1. C. densiflora.

Wild in PERU—Mathews, (*v. s. sp.*)

Pseudobulb oval, two-edged, something like that of *Oncidium tenue*, with one narrow coriaceous spreading leaf at the point, and a pair of smaller and more channelled ones at the base. Peduncle about as thick as a crowquill, five inches long before reaching the flowers, clothed through its entire length with close-pressed glumaceous sheaths. Raceme oblong, rather more than three inches long. Bracts glumaceous, cucullate, spreading, about as long as the ovary. Back sepals and petals roundish, acute, of the same size ; lateral sepals spathulate-oblong, acute, nearly parallel. Lip three-lobed ; lateral lobes roundish, middle one linear-oblong, dilated and two-lobed at the point. In their dried state the flowers are about one inch and a quarter across ; their colour is unknown ; it seems to have been yellowish, or white, and unspotted.

CHEIRADENIA.

Sepala herbacea, patentia: lateralibus pedi producto columnæ adnatis.

Petala conformia.

Labellum indivisum, planum, c. pede columnæ articulatum; lineâ medianâ elevatâ, lamellâ intramarginali digitatâ.

Columna brevis, semiteres, mutica, pede longo lineari. *Stigma* circulare.

Pollinia 2, solida, in *caudiculam* ovalem sessilia; *glandulâ?*

Herba *epiphyta*, Guayanensis, *muscicola, acaulis.* Folia *membranacea, nervosa.* Pedunculi *filiformes, pauciflori, parcè vaginati.* Flores *parvi, herbacei.*

The adhesion of the lateral sepals to the extended foot of the column, the spurless lip, and other characters seem to refer this to the Maxillarideous herd, as well as the stemless bulbless habit. Its true station would seem to be near my *Zygopetalum gramineum*, which is by no means the plant so called by Mr. H. G. Reichenbach, and those Warreas which form the same author's genus Warcziewiczella. But the solid undivided pollen-masses, peculiar lip and habit, are essentially different.

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1. C. cuspidata.

Wild in French Guayana—Leprieur, 108, and probably 114, (*v. s. sp. in herb. mus. Paris.*)

A stemless bulbless plant, from three to four inches high. Leaves a few, radical, obovate, membranous, slightly ribbed, spreading, drawn to a fine slender recurved point. Peduncle filiform, with two or three spreading distant acuminate vaginæ, bearing one to three drooping flowers at the point. Sepals and petals ovate, acute. Lip membranous, obovate, very obscurely three-lobed, with an elevated line along the middle, and a thin intramarginal lamina, divided into five equidistant teeth.

There are no flowers upon my specimens of Leprieur's 114, but I think it is the same as 108, which I have examined. My thanks are due for both to the Administration of the Museum of Natural History at Paris.

ACAMPE.

Sepala carnosa, fragilia, explanata, omnia basi æqualia, lateralibus calcari labelli leviter adnatis, dorsali paulò majore v. remotiore.

Petala sepalis conformia, semper recta.

Labellum carnosum, fragile, saccatum, v. calcaratum, columnæ apodæ adnatum, indivisum, auriculatum; sæpiùs intra saccum lineâ elevatâ s. lamellâ pilisque auctum.

Columna crassa, nana, apoda, angulis anticis sæpiùs in mucronem productis; *clinandrio* verticali. *Stigma* transversum, subrotundum, *rostello* brevi obscuro, emarginato.

Pollinia cereacea, geminata; *caudiculâ* subulatâ polliniis longiore; *glandulâ* parvâ subrotundâ. *Anthera* ovata, bilocularis, valvulis semiliberis.

Herbæ *epiphytæ* Asiæ tropicæ. Folia *coriacea, disticha, apice obliqua.* Flores *densè racemosi, carnosi, fragiles, luteæ maculatæ.* Pedunculi *breves, rigidi, laterales,* bracteis *latis brevibus diù persistentibus.*

Although these plants have been hitherto placed in the genus Vanda, yet their small brittle flowers, in which there is no flexibility, their lip adnate to the edges of the column, the slender caudicle, and very small gland afford convenient means of separating them from the true Vandas, to which they bear little resemblance. As now limited, Acampe forms a very natural groupe.

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* 1. **A. multiflora.**

A. foliis loratis apice obliquis emarginatis, pedunculis ramosis erectis subcorymbosis foliis brevioribus, labello ovato acutiusculo, calcare vacuo.

Vanda multiflora. *Lindl. Collect. Bot., t.* 38.

Wild in China—Reeves; common in the ravines of Hong Kong, flowering in September, or earlier—Champion, (*v. v. c. et s. sp. comm. cel. Champion.*)

A species of no beauty, with coarse fleshy leaves and small yellow flowers dotted with sanguine. I seem to have formerly confounded with it specimens of *A. longifolia*, which differs among other things in having a hairy raised line inside the sac of the lip.

* 2. **A. longifolia.**

V. foliis longis loratis apice obliquis obtusissimis, racemis horizontalibus foliis triplò brevioribus, labello carnoso plano

subrotundo-ovato transversè rugoso basi concavo pubescente cristâ carnosâ per axin.

Vanda longifolia. *LO.*, 215. *Journ. Hort. Soc., VII.*

Wild in TAVOY—Wallich, (*v. s. sp. et v. c.*)

A fine-looking plant, with dark green distichous leathery wavy leaves, as much as a foot and a half long and two inches wide, obliquely rounded at the end. Flowers insignificant, sweet-scented, much like those of *Acampe multiflora* in form and colour, except that they are paler, in a corymb at the end of a short stiff ascending peduncle not one quarter the length of the leaves; very fleshy, and banded with red upon a dull yellow ground; the lip is white. Inside the pouch of the lip are numerous yellowish hairs, concealing an erect fleshy plate, which slightly divides the hollow of the lip into two halves.

3. **A. Wightiana.**

A. foliis obliquè bilobis, racemis densis sessilibus nanis, sepalis petalisque obtusissimis, labello ovato obtuso fimbriato basi bicorni, calcare intus piloso.

Vanda Wightiana ? *Wight, ic. t.* 1670.
V. fasciata. *Gardner MSS.*

Wild on trees in INDIA; Ivamally Hills and Malabar—Wight; Ceylon—Gardner, (*v. s. sp. comm. cel. Hooker.*)

"Flowers yellowish, dashed with dark crimson or purplish spots; lip nearly white, with a red line at the base of the lamina."—*Wight.* Two subulate horns are represented in Wight's plate as springing from the base of the lip; they probably represent the tubercles found in *A. congesta.* My specimens are decayed and unexaminable as to this point.

* 4. **A. congesta.**

A. foliis elongatis canaliculatis obliquè bilobis mucrone interjecto, racemis subsessilibus nanis, labello rhombeo acutangulo papilloso lineâ mediâ elevatâ, calcare intus piloso, lineâ elevatâ sursum mucronatâ.

Vanda congesta. *Lindl. in Bot. Reg.* 1839, *misc.* 94.

Wild in MADRAS Presidency—Wight $\frac{1836}{1019}$; Ceylon—Loddiges, (*v. v. c. et s. sp. comm. cel. Wight.*)

Flowers small, yellow and brown. From *A. papillosa*, to which I have formerly referred it, owing to some mixture of specimens, it differs in having very long leaves, and an acute-angled lip, with a distinctly elevated middle line. At the junction of the spur and lamina there is a stout tubercle on each side.

* 5. **A. papillosa.**

A. caule elongato ramoso, foliis obtusis obliquè emarginatis mucrone interjecto, racemis sessilibus nanis, labello ovato oblongo papilloso medio elevato calcare intus piloso auriculis anticè confluentibus.

Saccolabium papillosum. *LO.*, 222. *Bot. Reg. t.* 1552, with its synonyms.

Wild on the continent of INDIA; Prome—Wallich; Malabar;

East Bengal and Chittagong—J. D. Hooker and T. Thomson; hot valleys of Sikkim—J. D. Hooker, (*v. v. c. et s. sp.*)

Flowers small. Petals and sepals yellow banded with red. Lip white. It differs from *A. congesta* in the form of the lip, and the nature of the papillosity, which is always crowded into an elevated line in the middle. The Sikkim plant collected by Dr. Hooker, and referred here, is not in flower. The lip varies in its length and in the degree of crispness; but is very badly represented in the Botanical Register.

6. **A. cephalotes.**

A. racemis capitatis pedunculo rigido squamato brevioribus, labello ovato subcordato papilloso crispato calcare brevi conico intus villoso, auriculis carnosis confluentibus.

Wild in SYLHET; on the plains—J. D. Hooker and T. Thomson, (*v. s. sp.*)

"Flowers yellowish green with transverse bars of brown purple. Lip posterior, very pale rose, with deeper spots, much fimbriated on the disk." —*J. D. H. & T. T.* This exists in Hooker and Thomson's Indian collection numbered 197; but the leaves associated with it appear to belong to *Vanda alpina*. The short conical blunt spur, very dense flowers, and fleshy shallow auricles distinguish it sufficiently from *A. papillosa*.

7. **A. excavata.**

A. foliis rectis planis lobo altero truncato dentato altero longiore rotundato, racemis sessilibus nanis, sepalis petalisque angustis dorsali majore, labello ovato acuto excavato basi unidentato calcare intus piloso.

Wild in WESTERN INDIA; the Concan—Law, (*v. s. sp. comm. cel. J. D. Hooker.*)

Habit, that of *A. papillosa*. Colour of flowers unknown.

8. **A. dentata.**

A. caule flexuoso, foliis latis planis obliquè rotundatis paniculæ gracili angustæ æqualibus, sepalis petalisque distantibus falcatis, labello brevi ovato in centro papilloso basi utrinque dentibus 2 carnosis aucto, auriculis obsoletis, calcare recto cylindraceo elongato pendulo intus villoso.

Wild in SIKKIM HIMALAYA, on the lower ranges—J. D Hooker, (*v. s. sp. comm. cel. invent.*)

The long slender panicle, and the four great fleshy teeth at the base of the lip, are features peculiar to this species, whose flowers are about the size of *A. papillosa;* their colour is unknown to me.

BRACHIONIDIUM.

Sepala membranacea, acuminata, lateralibus connatis. Petala conformia, paulò minora. Labellum nanum, sessile, indivisum. Columna nana, teres, basi haud producta, clinandrii 3-lobi brachiis maximis falcatis carnosis, rostello plano interjecto. Anthera . . . . . ; Pollinia . . . . . basi cartilaginea setacea.——Rhizoma *repens, vaginatum*, folia *coriacea subsessilia gerens*. Flores *solitarii, conspicui, brevè pedicellati.*

I formerly referred one species of this genus to Restrepia, the true characters of which were unknown. Better acquaintance with the structure of Brachionidium, although still very insufficient, the pollen-masses and anther not having been seen, shows that the affinity is more with Stelis than Restrepia. With the former genus, indeed, it corresponds in the dwarf lip, pressed close against a footless column, and in the great development of the lateral arms of the column, which, however, are not stigmatic. But it differs not only in its whole habit, but in the petals having the same full development as the great membranous sepals. In Pleurothallis, I find nothing at all approaching this structure.

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1. **Br. parvifolium** (Restrepia parvifolia Lindl. in Orch. Linden, No. 18); foliis acuminatis subtus albidis——*New Grenada*, Linden (*on the slope of the Peak of Tolima, creeping among mosses and over old stunted trees at* 12000′ *of elevation*) h. s. sp.——The flowers are fully 1½″ long, far larger than in the other species; "yellow, slightly streaked with red," *Linden*. With their lip and column I am unacquainted.

2. **Br. concolor**; foliis acuminatis subtus herbaceis, labello lunato inappendiculato——*Bolivia*, Bridges, h. s. sp.——Flowers much smaller than in the last. Lip crescent-shaped, strongly 3-veined, thin edged, with the horns of the crescent recurved.

3. **Br. tuberculatum**; foliis oblongis apiculatis tantum, labello lunato medio tuberculo 3-lobo aucto——*New Grenada*, Funck & Schlim, 1558, h. s. sp. Comm. cel. Linden——Flowers intermediate in size between the two preceding species. The lip has a thickened margin; its 3-lobed tubercle is just in the centre, upon the middle vein, with a furrow along the middle lobe.

Jan. 17, 1859.

PLEUROTHALLIS.

R. Brown in Hort. Kew, V. 231, *LO.* 4.——Specklinia, *Lindl.* Humboldtia, *Pavon.* Rhynchopera, *Klotzsch.* Myoxanthus, *Pöppig.* Acronia, *Presl.* Duboisia, *Karsten.* Reymondia, *Karsten.* Acianthera, *Scheidweiler.* Centranthera, *Scheidweiler.* Crocodilanthe, *Rchb. f.*

Sepalum dorsale liberum, lateralia sæpe cohærentia, basi in mentum s. gibbulum producta. Petala libera nana, v. sepalis subæqualia. Labellum c. basi magis minùsve productâ columnæ articulatum, varié tuberculatum v. divisum, sæpiùs petalis minus. Columna elongata aut nana, teres aut membranaceo-alata, truncata aut clinandrio membranaceo-marginata; rostello porrecto plano, erecto, aut elongato convexo. Anthera terminalis aut subdorsalis, opercularis. Pollinia libera, cereacea, sæpiùs duo obovata aut pyriformia, rarò 4 (maximâ pro parte ignota aut indescripta)——Caules *a rhizomate orti, sæpissimè monophylli, subnudi v. arctè vaginati, nunc inter muscos in rhizoma serpens quasi abscondita* (PROREPENTES); *rhizoma nunc elongatum polyphyllum* (CAULESCENTES). Folia *coriacea.* Flores *axillares, spathacei, sessiles, solitarii, aut racemosi, nunquam minimi ut in Stelide.*

It will be seen from the above character that, for the present, I think it necessary to preserve this great and difficult genus without dismemberment. Not that I regard it as a really single aggregation of species, but because, in the present state of our information, and working exclusively upon dried specimens, I am of opinion that the materials on which to construct other genera do not exist in Europe; or, if they do exist, are not to be found either in books or any single herbarium. My own collection is doubtless the largest in the world, by far, and I have dissected every species in it, at least once, often many times. Yet I shrink from that creation of genera which some observers find so easy. All that a very long and careful study enables me to do is to cast the species in a rather artificial mould, so grouping them that they can be easily studied and identified. Beyond that I dare not venture to proceed.

The sections now proposed will, it is hoped, be found a considerable improvement upon those employed in the Botanical Register in the year 1842, as, indeed, was to be expected from seventeen years' longer study of at least twice as many species. Upon what ground the sections stand will be seen from the following description:

1. There is a group of species with great coriaceous leaves, long herbaceous spathes, and numerous racemes of fleshy flowers, rising above the leaves. These are the aristocracy of the genus, although some approach very nearly the mean genus Stelis; they form my SPATHACEÆ.

2. Many others there are, conspicuous for their large leathery leaves, usually heart-shaped, pouring forth great membranous flowers in racemes, or usually smaller ones in clusters, all without conspicuous spathes; such form the MACROPHYLLÆ RACEMOSÆ (Acronias of Presl), and MACROPHYLLÆ FASCICULATÆ.

3. Then come large leaved plants with winged stalks, sometimes resembling a thin stiletto, and fasciculate small flowers. These are SICARIÆ.

4. Immediately follows a crowd, many of which resemble Octomerias, all with fasciculate flowers and leaves tapering to the base; to these is applied the name of AGGREGATÆ.

Jan. 25, 1859.

5. Much like the last is a little group with the points of the petals distended into a gland, offering a passage to the genus Restrepia, of which they are kinsmen; whence they are called RESTREPIOIDEÆ.

6. Close to Aggregatæ, but with the inflorescence developed into a raceme, stands a herd, none of which are able to extend it beyond the summit of the leaves; hence the name of BRACHYSTACHYÆ.

7. Then the development of the floral axis is manifested by long racemes of flowers rising high above the leaves, as in ELONGATÆ.

8. And parallel with these are other species in which the lengthened axis is accompanied by a well marked attenuation of the sepals: the ACUMINATÆ.

9. Having considerable relation to the last division, but with little or no development of the stem, appear the APODÆ or species in which the stem, if present, is much shorter than the leaves; and of them some form dense tufts: the APODÆ CÆSPITOSÆ, while others crawl upon the ground: the APODÆ PROREPENTES.

10. Finally, a very small number of species casts off the character of a creeping or shortened rhizome producing erect one-leaved stems, and form an ordinary stem with leaves alternating with each other in the usual way. These, the CAULESCENTES, close the genus. The parallel of these is to be found among the Labiated Stelises.

The foregoing statement may be reduced to a tabular form as under:—

Folia coriacea. Spathæ maximæ herbaceæ. Flores carnosi, in racemos copiosos dispositi	I. SPATHACEÆ.
Folia carnosa; floribus magnis membranaceis racemosis pendulis espathaceis .	II. MACROPHYLLÆ RACEMOSÆ.
Folia carnosa, cordata; floribus fasciculatis	III. MACROPHYLLÆ FASCICULATÆ.
Folia carnosa; caule ancipiti v. alato .	IV. SICARIÆ.
Folia basi angustata; caule tereti aut angulato; floribus fasciculatis . .	V. AGGREGATÆ.
Folia basi angustata; floribus fasciculatis; petalis glanduloso-clavatis . . .	VI. RESTREPIOIDEÆ.
Folia basi angustata; racemis folio vix longioribus	VII. BRACHYSTACHYÆ.
Folia basi angustata; racemis elongatis; sepalis acutis	VIII. ELONGATÆ.
Folia basi angustata; racemis elongatis; sepalis acuminatis	IX. ACUMINATÆ.
Acaules aut subacaules; cæspitosæ. .	X. APODÆ CÆSPITOSÆ.
Acaules aut subacaules, rhizomate prorepente	XI. APODÆ PROREPENTES.
Rhizoma in caulem erectum extensum foliis sessilibus alternis . . .	XII. CAULESCENTES.

§ I. SPATHACEÆ: Spathâ herbaceâ, aut coriaceâ.

*** These plants are not to be confounded with species having membranous, or dry dead spathes; for all the genus has spathes of some kind. The distinctive feature consists in the spathes approaching the condition of the leaf itself. The group was indicated by Rchb. f. in the Bonplandia of Jan. 15, 1854, under P. elegans, but without any character being assigned to it.

A. SEPALA ACUTA CARNOSA.

* *Racemi folio multò breviores.*

1. **P. lævigata** (Lindl. in Ann. Nat. Hist. xv. 106); spathâ maximâ, folio oblongo coriaceo sessili, labello ovato acutissimo——*Popayan* (on the trunks of trees, on the declivity of Purace, at 10,000′, *Hartweg*, 1406) h. s. sp.——Stem very stout, 1′ and more, with a great loose sheath in the middle. Spathe 2″. Leaf 10″ × 2″. Dorsal sepal much larger than either of the laterals which adhere slightly. Petals obovate, acute, 3-veined, longer than the 3-veined lip which is fleshy at the point. Flowers in numerous stiff racemes more than half as long as the leaf.

2. **P. macrophylla** (H. B. K. i. 365. LO. p. 7. P. floribunda Pöppig & Endlicher n. gen. & sp. 1. t. 84); spathâ brevi, folio oblongo-lanceolato in petiolum canaliculatum angustato, labello subrotundo basi apiceque acuminato ——*Peru* (on trees in the drier woods in the neighbourhood of Pampayaco and Cuchero, *Pöppig*)——"Stem 2′ and more. Leaf 1′ × 3″. Flowers sulphur coloured" in numerous short stiff racemes.

3. **P. galeata** (Lindl. in Taylor's Ann. Nat. Hist. xv. 107); spathâ magnâ tenuiore, folio lato subcordato petiolato, labello rhombeo obtusangulo petalis multò breviore apice carnoso utrinque tuberculato——*Colombia* (at the foot of Tunguragua, at about 11000′, *Hartweg*, 1408) h. s. sp.——Stem 1½′, with a long loose sheath in the middle. Leaf 7″ × 3½″. Dorsal sepal very much larger than the laterals, which are united almost to the end. Petals linear, 1-veined, somewhat oblique at the end. Flowers in loose lax racemes.

4. **P. fraterna**; spathâ . . . . , folio lato oblongo petiolato, labello rhombeo obtusangulo petalis multò breviore apice carnoso etuberculato——*Bolivia*, Bridges. h. s. sp.——Very like the last in size, and general characters; but the flowers are not half so large, the thin loose racemes are very unequal in length, the petals do not appear to be oblique at the point, the lateral sepals separate down to the base, and the dorsal sepal is not remarkably larger. In the only specimen I possess the great cauline sheath of P. galeata is wanting—perhaps by accident. (Column long, taper with a thin edged entire cucullate anther-bed. Pollen-masses 2, oblong.)

** *Racemi folio æquales v. longiores.*

1. Labellum subrotundum.

5. **P. Cassidis** (Lindl. in Ann. Nat. Hist. xv. 384); folio sessili ovato obtuso, spathâ maximâ, spicis plurimis strictis rigidis, bracteis obovatis cucullatis, sepalo dorsali galeato: lateralibus semiconnatis, labello oblongo emarginato utrinque intra marginem juxta basin calloso——*Popayan* (on the ascent to Sotara, on the ground, at 10,500′, *Hartweg*) h. s. sp.——A large stout species. Stem angular, more than 9″, with a long loose membranous sheath in the middle. Leaf 6½″ × 2″. Spathe 2″ long. (Column very small. Lip much longer, but shorter than the obovate petals.)

6. **P. palmiformis**; folio oblongo sessili, spathâ maximâ, spicis plurimis erectis laxiusculis, sepalis submembranaceis obtusis dorsali recto lateralibus parum connatis, labello subrotundo emarginato utrinque intra marginem versus apicem calloso petalis obovatis trinerviis æquali——*Peru* (at 12,000′, on the eastern declivity of the Andes, adjoining the province of Pasto, *Jameson*, 13) h. s. sp.——Stem unknown to me. Leaf 9″ × 3″. Spathe nearly 2½″. Spikes less rigid than in the last. Flowers not so fleshy. (Column terete, not quite so long as petals.)

7. **P. diffusa** (Pöppig & Endl. gen. & sp. 1. t. 86); folio oblongo petiolato

spicis paucis (3—7) nutantibus multò breviore, bracteis membranaceis circularibus, sepalo dorsali lateralibus connatis multò minore, labello subrotundo emarginato 3-nervi utrinque constricto intra isthmum calloso, petalis obovatis emarginatis——*Peru* (Quito, *Jameson;* on trees near Cuchero and Pampayaco, *Pöppig*) h. s. sp.——As far as can be judged from Pöppig's vile figure, his plant is the same as that of Jameson, in an unexpanded state. The length of the petiole is evidently variable. I have only the tops of stems with leaf and flowers attached. Leaf 6″ × 2″ and 8″ × 3″. Spikes 10″. (Column excessively short and inconspicuous.)

8. **P. expansa;** folio oblongo petiolato spicis nutantibus (3) multò breviore, bracteis membranaceis circularibus, sepalis patulis lateralibus semiconnatis dorsali paulò minoribus, labello subrotundo emarginato parum constricto utrinque ad isthmum intra marginem calloso in ipso medio carnoso 3-nervi, petalis oblongis——*Peru* (on trees in the valley of Lloa, *Jameson*) h. s. sp. ——Very like the last, but the flowers are larger, and appear to spread their sepals in a manner unusual among this group. I have no stems. (Column extremely small, taper.)

9. **P. Crocodilanthe** (Crocodilanthe Xiphizusæ, Rchb. f. in Bonpland. May 1, 1854. Xenia 1. p. 11. t. 6); folio oblongo subsessili spicâ solitariâ secundâ breviore, bracteis membranaceis cucullatis imbricatis, floribus horizontalibus, sepalis rectis lanceolatis lateralibus connatis, labello subrotundo trinervi ecalloso, petalis obovatis 3-nerviis——*Peru* (at the source of the Marañon, *Warczewitz*) h. s. sp.——Notwithstanding the long horizontal flowers of this plant, it is evidently a mere Pleurothallis of the present group, as I limit the genus. The peculiarities of column are those of many others, as will be shown at the end of this enumeration of the species. (Column terete. Anther-bed expanded into a somewhat circular head, toothed at the back, within the anterior margin of which is the stigmatic cavity. Pollen-masses 2, pyriform, plane at their commissure, connected by some loose mucilage. Anther roundish, 1-celled, downy at the back.)

10. **P. cauliflora** (Hooker ic. pl. 1. t. 50); folio subrotundo longe petiolato spicis geminis secundis multò breviore, spathâ elongatâ, sepalis lateralibus connatis obtusis dorsali multò brevioribus, labello subrotundo retuso ecalloso petalis linearibus duplò minore——*Peru* (on trunks of trees near Lloa, on the western slope of Pichincha, *Jameson*) v. s. sp. in hb. Hooker—— A more slender plant than any of the preceding, but very nearly related to P. Crocodilanthe. (Column clavate, semiterete, with an oblique edgeless anther-bed. Pollen-masses 2, pyriform, adhering by loose mucilage.)

11. **P. roseopunctata** (Lindl. in Orch. Linden. No. 7); folio angusto oblongo sessili spicis 2-3 erectis multò breviore, spathâ maximâ, bracteis membranaceis cucullatis, floribus nutantibus, sepalis rectis carinatis dorsali lateralibus connatis breviore, labello subrotundo-cordato 3-venio membranaceo ecalloso petalis oblongis majore——*Caraccas* (Linden, 629) h. s. sp.—— Varies much in size, from 6″ to nearly 18″ in height. Leaves from 2½″ × ¾″ up to 6″ × 1½″. "Flowers white, dotted with rose;" Linden. (Column thin-edged, curved, not so long as the oblong 3-veined petals, with a fleshy horn at the back and a fleshy lateral lobe on either side. Rostel protruding horizontally.)

2. Labellum lineare, oblongum, retusum.

12. **P. gelida** (Lindl. in Bot. Reg. 1841, misc. 186); folio oblongo petiolato racemis geminis subæquali, sepalis intùs pilosis lateralibus semiconnatis, labello cuneato medio bicarinato — *Jamaica*, Loddiges, v. v. c.——A foot high. Stem slightly angular, with a long loose sheath in the middle. Bracts membranous, shorter than the pedicels, amplexicaul, obtuse. Petals oblong, rather tridentate. (Column shorter than petals with an oblique anther-bed.)

13. **P. univaginata** (Lindl. in Taylor's Ann. Nat. Hist., May, 1858);

folio oblongo petiolato racemis 2-3 paulò longioribus, sepalis intùs glabris lateralibus disjunctis, labello oblongo medio constricto ecarinato——*Cuba*, Wright, 668; *Jamaica*, Purdie in Hb. Hooker. h. s. sp.——Very like the last, but distinguished by the state of the sepals and form of the lip. The long loose sheath of the stem is set on near the base, and not in the middle.

3. Labellum ovatum integrum.

14. **P. loranthophylla** (Rchb. f. in Bonplandia, Jan. 15, 1854. Rhynchopera punctata Karsten Venez. Gew. t. 7. Regel. in Ann. Sc. ser. iv. 6. 373. Pleurothallis subpellucida Klotzsch Ann. Sc. Nat. iii. 19. 375); folio ovali subpetiolato bidentato mucrone interjecto caule duplò longiore, spathâ elongatâ, racemis laxis nutantibus solitariis foliis multò longioribus, petalis acuminatis sepalis 2 subæqualibus, labello ovato acuminato——*Venezuela*, Wagener, Karsten. h. s. c. comm. cel. Rchb.——This would perhaps be placed in a really natural arrangement among the Elongatæ; but its highly developed green spathe brings it here. Flowers greenish with purple spots. (Column terete truncate. Pollen masses two. Rostel 0, according to Karsten's figure.)

15. **P. fons florum**; folio lato oblongo obtuso subsessili spicis innumeris flexuosis multò breviore, spathâ ovatâ, sepalis acutis liberis membranaceis æqualibus, labello subrotundo-ovato acuto trinervi petalis oblongis univeniis apiculatis breviore——*Peru* (near Cuchero, *Pöppig*; forests on the eastern and western slopes of the Andes, on fallen trunks of trees and on the ground, *Jameson*) h. s. sp.——I have only the upper end of a stem, but this must be one of the largest species. Leaf 6½″ × 3″. Spathe 1½″. Spikes unequal, some 10″ and more. I have a fragment of the inflorescence of this from Prof. Rchb. marked "P. multicaulis! Cuchero, Pöppig," which is a totally different plant, belonging to AGGREGATÆ.

16. **P. Hartwegii** (Lindl. in Ann. Nat. Hist. xv. 106); folio sessili lanceolato amplexicauli spicis densis strictis spiralibus æquali, spathâ maximâ, sepalis disjunctis æqualibus lanceolatis subcarinatis acutis intùs pubescentibus, labello cordato ovato obtuso medio constricto et intra marginem utrinque lamellato, petalis ovatis obtusis obsoletè univeniis——*Popayan*, Hartweg, 1405. h. s. sp.——Another gigantic species. Leaf 6″ × 1½″, quite hard. Spathe 2″. Stem 9″ from spathe to insertion of the great loose sheath, which is 5″ long.

17. **P. elegans** (Lindl. in Bot. Reg. 1842, misc. Rchb. f. in Bonplandia, Jan. 15, 1854. Dendrobium elegans H. B. K. 1. 357); "folio coriaceo oblongo apice attenuato rotundato basi subito et brevissime cuneato, spathâ arpophyllaceâ, spicis 5 validis folium æquantibus vel superantibus, floribus bilabiatis, sepalo dorsali oblongo acuto lateralibus imâ basi coalitis, labello petalis ovatis acutiusculis minore ovato ante unguem transversè plicato"——*New Grenada*, Humboldt and Bonpland, Wagener——The above is abridged from Rchb., who found the species among Wagener's Caraccas plants. Stem 1′ high. Middle sheath membranous, finely dotted with black. Leaf 6″ × 2½″. Flowers the size of those of Hartwegii; (semitransparent, white, with violet veins and dots. *H. B. K.*)

Very near this, if not identical, is a solitary specimen in Hb. Hooker, collected by Mathews on rocks in Chachapoyas. Its petals are however obtuse, and there is no plait across the bottom of the lip, instead of which are the two small lateral intramarginal calli so common among these species.

18. **P. Moritzii** (Rchb. f. in Linnæa xxii. 824); folio ovali acuto obtusè 3-dentato crassissimo, spathâ acutâ, spicis 3 curvatis, sepalo dorsali ligulato utrinque emarginato (!) lateralibus semiconnatis margine asperis, petalis ellipticis acutis, labello ovato acuto trinervi medio utrinque emarginato——*Venezuela*, Moritz——Flowers said to be reddish yellow. (Column half-terete. Anther-bed membranous at back quadrate. Rostel small square.)

19. **P. Jamesoni** (Lindl. in Bot. Reg. sub. t. 1797); folio oblongo sessili spicis pendulis (1—5) flagelliformibus breviore, sepalis lanceolatis carinatis

æqualibus lateralibus infra medium connatis, petalis obtusis uninerviis, labello ovato obtuso utrinque medio obtusangulo——*Peru* (Ravines of Pichincha; valley of Lloa on trees, in April, *Jameson*) h. s. sp.——The specimens from which this was first described were very small and imperfect. Others sent by Dr. Jameson show it to have slender somewhat angular stems 7″ long; leaves 3½″—4″ × ¾″, and weak weeping spikes 1′ in length. The flowers are white. It is very like P. velatipes in the next section.

4. Labellum ovatum trilobum v. utrinque acutangulum.

20. **P. velatipes** (Rchb. f. in Linnæa 22. 828); folio oblongo-lanceolato petiolato spicis debilibus nutantibus æquali, sepalis lanceolatis acuminatis subcarinatis lateralibus basi connatis, petalis ligulatis subtriveniis, labello ovato acutiusculo utrinque infra medium acutangulo——*Venezuela*, Funck & Schlim, 1194; Moritz. h. s. sp.——The principal differences between this and P. Jamesoni are such as the specific characters describe. In my specimen from Linden there are only 3 weak spikes, Rchb. speaks of 14.

21. **P. pulchella** (L. O. 12. Stelis pulchella H. B. K. 1.364, t. 90); folio oblongo-lanceolato obtuso basi in petiolum angustato, spicis 2—3 strictis secundis folio longioribus, sepalis lanceolatis carinatis æqualibus liberis, labello utrinque in medio grossè unidentato——*Peru*, Humb. & Bonpl. (valley of Lloa at 8000′, *Hall*), *Equador*, Jameson 63 & 179; *New Grenada* (on rocks near Bogota at 8900′, Hartweg) h. s. sp.——This seems to vary a little in the form of the petals which in some specimens are linear, in others obovate, but always one-veined.

22. **P. laurifolia** (Rchb. f. in Bonplandia, Jan. 15, 1854); folio lato oblongo utrinque angustato, racemo valido rarifloro, sepalo dorsali galeato acuto antico bidentato, petalis orbiculari-cuneatis et "labello naviculari ligulato anticè trilobo:" lobo medio carnoso acuto supernè verrucoso basi tricarinato sepalis paulò brevioribus——*Caraccas*, Wagener——I am quite at a loss to understand upon what ground this remarkable plant has been referred to the P. laurifolia of H. B. K. which is expressly declared to be related to P. ruscifolia, a well-known species among AGGREGATÆ. I have never seen anything to which Rchb.'s description at all applies. He says the stem of his plant is stout and about 1′ high; and the leaf 6″ × 2—3″; that it has an acute keeled spathe; and that the flowers are as large as in Schlimia jasminodora, that is to say a full inch long by ½ inch across the tube. Had this P. laurifolia been described by a less experinced orchidologist than Professor Rchb. it might have been reasonably doubted whether the plant is a Pleurothallis at all.

B. SEPALA ACUMINATA MEMBRANACEA.

23. **P. pedunculata** (Rchb. f. in Linnæa xxii. 822. Rhynchopera pedunculata Klotzsch in Link & Otto's ic. 2. 103 t. 41); folio elliptico subsessili, spathâ maximâ compressâ, racemis laxis folio vix æqualibus, sepalis liberis, petalis filiformibus æquilongis, labello ovato-lanceolato——*New Grenada* (Ocaña at 10,200′, *Schlim*, 757) h. s. sp.——Stem about 9″ high, with a close fitting sheath in the middle. Flowers violet, nearly an inch long. Leaf, of full size, 6″ × 2½″. (Column semiterete, scarcely extended at base. Anther-bed oblique. Rostel subulate.)

24. **P. lanceolata** (LO. 5); folio oblongo-lanceolato petiolato, spathâ maximâ compressâ, racemis laxis folio vix æqualibus, sepalis lateralibus apice tantum liberis, petalis lanceolatis acuminatissimis æquilongis, labello lanceolato naviculari——*Peru*, Pavon in Hb. Lambert; *Venezuela*, Fendler, 1476. h. s. sp. ——Very like the last but larger. "Flowers sulphur colour, brownish on the outside;" Fendler. (Column as in the last. Pollen-masses certainly four.)

25. **P. navicularis**; caule ancipiti, folio oblongo obtusè acuminato sessili, spathâ tenui oblongâ acutè carinatâ, racemis capillaribus paucifloris folio

OBSERVATIONS SUR LA DÉHISCENCE DU FRUIT DES ORCHIDÉES.

PAR ED. PRILLIEUX.

[For the following document, from the pen of one of the most rising of the young botanists of Paris, I am indebted to my learned friend M. Decaisne. It forms a useful beginning to a study of the fruit of Orchids, hitherto almost entirely neglected.]

On a depuis long temps observé et décrit comment s'ouvrent les fruits des Orchidées de nos pays et ceux d'un grand nombre de genres exotiques de la même famille qui ont la même structure. J'ai eu occasion de reconnaître dans ces derniers temps, qu'outre le mode de déhiscence bien connu et que l'on peut considérer comme normal, la famille des Orchidées en présente dans divers genres exotiques plusieurs autres qui n'ont guère, je pense, malgré leur singularité, attiré l'attention des observateurs.

Le fruit des Orchidées s'ouvre ordinairement par six fentes longitudinales qui s'étendent depuis le haut jusqu'au bas de la capsule et la partagent en six pièces d'inégale largeur. Trois d'entre elles sont très étroites et formées seulement par une nervure isolée, les trois autres sont beaucoup plus larges et portent le long de leur ligne médiane une rangée, souvent double, de graines très petites. Cette disposition est trop connue pour qu'il soit nécessaire d'y insister. Elle est fort commune. Je puis citer parmi les genres exotiques qui m'en ont fourni des exemples le Cypripedium barbatum, le Phajus Wallichii, le Dendrobium moniliforme, l'Ansellia africana, etc.

Le fruit du Leptotes bicolor ne s'ouvre pas ainsi par des fentes longitudinales en valves cohérentes au sommet : on aura une juste idée de son mode de déhiscence, si en se reportant au type normal, on suppose que les six pièces du fruit se séparent complètement au lieu de rester jointes par leur extrémité supérieure. On ne peut plus dire par conséquent que le fruit s'ouvre par six fentes, puisque les pièces, au lieu de demeurer

soudées au haut du fruit se séparent à partir du sommet de la capsule. Le Maxillaria punctulata (Klotzsch) m'a fourni un fruit pareil à celui du Leptotes bicolor. Celui de l'Eulophia guineensis se rapporte aussi au même type ; il diffère seulement des précédents en ce que les grandes valves et les nervures restent soudées ensemble dans la partie inférieure du fruit.

Le fruit du Cattleya Mossiæ présente une autre disposition ; son mode de déhiscence se rapproche plus de celui des Orchidées de nos pays ; il se sépare de même en plusieurs valves qui demeurent soudées au sommet ; mais il s'en distingue en cela, que les fentes qui divisent la capsule, au lieu d'être au nombre de six sont moitié moins nombreuses. La capsule du Cattleya par conséquent se partage en trois pièces seulement. Chacune de ces trois pièces porte en son milieu les placentas couverts de graines. On rendra exactement compte de la déhiscence de ce fruit en disant qu'elle diffère de la déhiscence normale en ce que chaque panneau demeure soudé dans toute sa longueur avec l'une des nervures voisines, de manière à ne former avec elle qu'une seule valve, d'où il résulte que la capsule se divise en trois valves cohérentes au sommet

Le fruit du Phajus albus (Thunia alba, Rchb. fil) présente la même disposition ; il diffère de celui du Phajus Wallichii, dont la déhiscence est pareille à celle de nos Ophrydées.

Le Fernandezia acuta nous montre un fruit qui diffère de celui du Cattleya à peu près comme celui du Leptotes diffère de celui d'une Ophrydée. C'est une capsule qui se divise à partir du sommet en trois valves portant chacune les graines sur sa ligne médiane. Dans le Fernandezia acuta, comme dans l'Eulophia guineensis, le fruit ne se divise pas jusqu'à sa base, les valves restent soudées par leur partie inférieure. Le F. pulchella m'a présenté un fruit pareil à celui du F. acuta.

Les fruits de plusieurs espèces de Pleurothallis m'ont offert un mode de déhiscence différent de tous les précédents et fort singulier. La capsule se partage au moment de la maturité en deux pièces d'inégale largeur, qui demeurent fixées l'une à l'autre par le sommet. Si on examine la plus étroite de ces pièces, on reconnait qu'elle porte vers son milieu les graines disposées sur une seule ligne ; qu'elle offre ainsi la structure ordinaire des valves du fruit des Orchidées. Quant à l'autre, qui est deux fois plus large, elle porte deux rangées de graines placées chacune à une égale distance du milieu de la valve et de son bord, il est bien évident qu'elle est formée de deux valves pareilles à la plus étroite, mais qui demeurent soudées ensemble dans toute leur longueur.

La déhiscence du fruit d'un Pleurothallis diffère donc de celle du Cattleya Mossiæ en ce qu'une seule des valves se sépare des deux autres, tandis que dans le Cattleya les trois valves s'isolent depuis la base jusqu'au sommet. Du reste, dans le Pleurothallis, comme dans le Cattleya, les valves séparées par des fentes restent jointes par leur extrémité supérieure.

J'ai observé ce mode de déhiscence sur les Pleurothallis obtusifolia, clausa, et racemiflora qui ont fructifié dans les serres de l'École de Médecine de Paris ; sur un Pleurothallis de la Guyane et sur une plante portant le nom de Stelis dans l'herbier de M. Delessert. Je l'ai retrouvé encore dans des espèces appartenant à d'autres genres : le Bolbophyllum occultum (P. Th.), l'Epidendrum macrochilum, l'Angræcum eburneum.

Je suis fort porté à croire, que les fruits des autres espèces du genre Angræcum s'ouvrent comme ceux de l'A. eburneum et ceux des Pleurothallis.

Avant d'avoir observé les fruits de l'Angræcum eburneum qui ont

mûri dans les serres du Muséum, j'avais cru que les capsules des Angræcum s'ouvraient d'une autre façon. Mes observations n'avaient porté que sur des plantes conservées en herbier. Sur des échantillons d'Angræcum pusillum (Lindl.) rapportés du Cap par Drege et conservés dans l'herbier Delessert, j'avais cru reconnaître que la capsule s'ouvre par une seule fente qui la partage dans toute sa longueur. La fente s'élargissant de plus en plus par le milieu, ses deux bords s'eloignent l'un de l'autre et la paroi se déroule tout d'une pièce de façon à former une seule valve concave, sur laquelle on voit trois rangées de graines. Il est certain que la plus grande partie des fruits d'Angræcum pusillum présentaient ce mode de déhiscence ; quelques uns seulement étaient partagés par deux fentes longitudinales : it était naturel d'attribuer la deuxième fente à la compression qu'avaient dû subir les capsules, et de penser que les fruits des Angræcum ont un mode de déhiscence particulier.

J'étais d'autant plus disposé à admettre cette interprétation des faits que j'avais trouvé dans l'ouvrage de Du Petit Thouars sur les Orchidées des îles de l'Afrique australe, une figure de fruit d'Angræcum (A. recurvum, P. Th.) ouvert ainsi en une seule pièce. Depuis que j'ai vu un fruit mûr d'Angræcum eburneum, je n'ose affirmer d'après mes observations que la déhiscence des autres espèces est différente. Dans les fruits de Pleurothallis que j'ai vus s'ouvrir, il arrive souvent que l'une des deux fentes se montre avant l'autre, que la capsule s'ouvre ainsi d'abord en une seule pièce qui ensuite se partage en deux à la complète maturité. N'est-il pas possible que les fruits d'A. pusillum de l'herbier Delessert soient précisément, pour la plupart, dans cet état de déhiscence incomplète ?

Les fruits d'A. fragrans, triquetrum et pectinatum que j'ai observés aussi conservés en herbier ne m'ont pas permis de décider s'ils s'ouvrent en deux valves comme ceux de l'A. eburneum, ou en une seule comme l'indique le dessin de Du Petit Thouars ; les fentes que l'on observe peuvent être attribuées à la compression, l'absence de fentes à une maturité incomplète.

Il me parait donc prudent, avant de rien décider touchant la déhiscence des Angræcum fragrans, triquetrum, pectinatum, et pusillum, d'attendre que la culture nous en ait fourni des fruits mûrs ; ou que les voyageurs les aient observés dans leur patrie.

Le fruit de la Vanille, qui a été à tort considéré par plus d'un auteur comme indéhiscent, offre dans sa façon de s'ouvrir, une assez grande analogie avec celui des Fernandezia, dont il diffère sous ce rapport comme le fruit des Pleurothallis de celui du Cattleya Mossiæ. Lorsqu'il est mûr, il se fend à partir de son sommet et se partage en deux valves de largeur inégale. De même que dans les Pleurothallis la valve la plus étroite porte une seule rangée de graines ; la plus large en porte deux ; mais dans la Vanille ces valves ne restent pas jointes l'une à l'autre par le sommet.

Dans les fruits de Vanilla planifolia ? que j'ai vu murir dans les serres, les valves ne se séparent pas jusqu'à la base ; elles demeurent soudées par leur partie inférieure, comme nous l'avons vu dans le fruit des Fernandezia ; mais dans une autre espèce de Vanille, dont les fruits sont conservés dans les collections du Muséum, les deux valves se séparent jusqu'à la base.

En résumé, la déhiscence de la Vanille diffère de celle du Fernandezia en ce que le fruit se divise non en trois mais en deux valves, de celle des Pleurothallis en ce que ces valves se séparent à partir du sommet, au lieu de rester soudées l'une à l'autre par leur partie supérieure.

Il résulte de ce qui précede que les fruits d'Orchidées que nous connaissons peuvent, au point de vue de leur déhiscence, être rapportés

à 6 types différents (peut-être 7), que l'on peut caractériser et classer ainsi :—

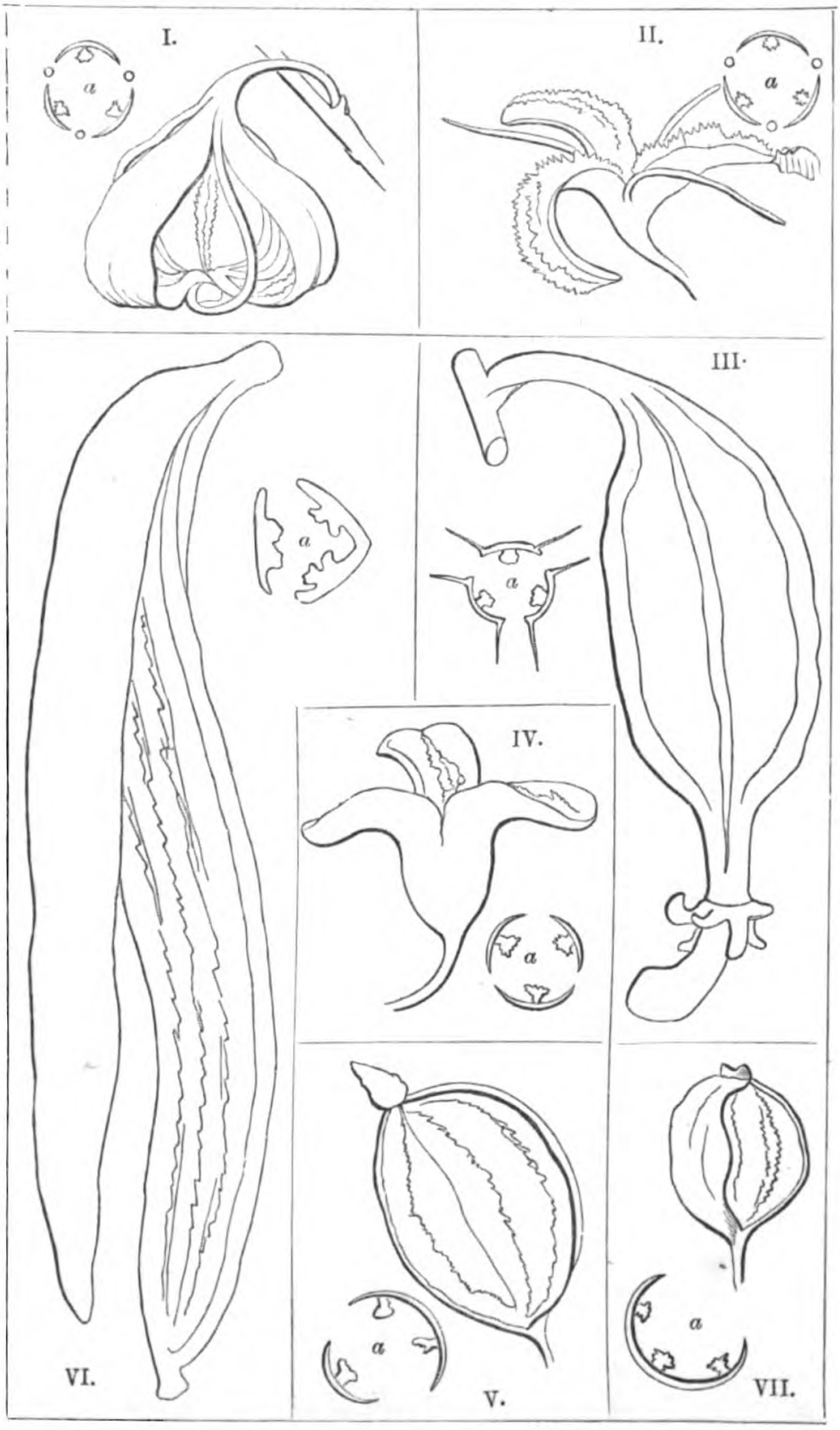
FRUIT S'OUVRANT PAR DES FENTES EN VALVES COHÉRENTES AU SOMMET.	FRUIT S'OUVRANT A PARTIR DU SOMMET EN VALVES LIBRES.
I. F. s'ouvrant en 6 pièces (dont 3 nervures). *Orchidées indigènes. Cypripedium barbatum, Phajus Wallichii, Odontoglossum, Dendrobium moniliforme, Œceoclades maculata, Ansellia, etc.*	II. Fruit s'ouvrant en 6 pièces (dont 3 nervures). *Leptotes bicolor, Maxillaria punctata, Eulophia.*
III. F. s'ouvrant en 3 valves. *Cattleya Mossiæ, Thunia alba.*	IV. F. s'ouvrant en 3 valves. *Fernandezia acuta, F. pulchella.*
V. F. s'ouvrant en 2 valves. *Pleurothallis clausa, Pl. racemiflora, Pl. obtusifolia, Bolbophyllum occultum, Angræcum eburneum, Epidendrum macrochilum.*	VI. F. s'ouvrant en 2 valves. *Vanilla.*

Enfin, si l'observation vient prouver que certains Angræcum *ont*, comme la figure publiée par Du Petit Thouars et certains échantillons d'herbier peuvent le faire supposer, un mode particulier de déhiscence, on aura le 7me type que j'indique ici avec doute.

VII.

F. s'ouvrant en une seule valve. *Angræcum fragrans ? A pusillum, etc.*

[The figures on the opposite page illustrate this table. The diagrams marked *a* represent imaginary cross sections of the fruit.]


I.
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cation, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, imperfectly known to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Epicrianthes *Blume.*
Cochlia *Blume.*
Aspegrenia *Pöppig.*
Collabium *Blume.*
Pattonia *Wight.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Conchochilus *Hasskarl.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Cyathoglottis *Pöppig.*
Pogochilus *Falconer.*
Chlorosa *Blume.*
Rophostemon *Blume.*
Scaredederis *Thouars.*
Androgyne *Griffith.*
Cybele *Falconer.*
Bolborchis *Moritzi.*

ABBREVIATION.

LO.—The author's Genera and Species of Orchidaceous Plants.

LIST OF GENERA IN THIS PART.

STELIS	20	pages
OBERONIA	8	„
ALVISIA	2	„
RESTREPIA	4	„
BRACHIONIDIUM	2	„
PLEUROTHALLIS, IN PART	6	„
PRILLIEUX, OBSERVATIONS SUR LA DÉHISCENCE DU FRUIT DES ORCHIDÉES	6	„

Curtis's Bot Mag

rt IX.] MAY, 1859. [Price 2s. 6d.

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS,

AT 5, CHARLES STREET, COVENT GARDEN, LONDON.

Bradbury & Evans, Printers, Whitefriars.

1912

THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-nine years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera in the order of publi-

æqualibus, floribus longè pedunculatis bracteis arctis cylindraceis, sepalis 2 acuminatis, petalis subæqualibus ovatis apice filiformibus pubescentibus, labello sessili naviculari acuminato petalis paulò breviore.——*New Grenada*, Purdie (St. Antonio, Nevada de S^{a} Martha) v. s. sp. in Hb. Hooker——A much smaller plant than the two preceding. Stem 5″—8″, with one long tight sheath below the middle. Leaf 3½″ × 1″, rather thin, usually quite sessile, a little acuminated into a blunt extremity. Spathe 1½″ long. Pedicels 5‴. Flowers slender, 7‴—8‴. Differs from P. pedunculata not only in size and the form of the leaves, but in the petals being broad at the base, not filiform from end to end, in the two lateral sepals being completely united, and in the lip having a rather sharp angle a little above the base.

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§ II. MACROPHYLLÆ RACEMOSÆ: foliis carnosis, floribus magnis membranaceis racemosis pendulis espathaceis.

A. PETALA ELONGATA ATTENUATA, SEPALIS SUBÆQUALIA.

1. Labellum indivisum.

26. **P. xanthochlora** (Rchb. f. in Linnæa xxii. 823); folio ovali sessili spicis pluribus breviore, caule tereti nudo multò longiore, sepalis 2 acutis subæqualibus, petalis linearibus acuminatis æquilongis, labello ovato utrinque unidentato, columnâ tereti basi incrassatâ——*Colombia*, Moritz, h. s. sp.—— Leaf 6″ × 3″. Stem 16″. Flowers rather fleshy. I describe this from an authentic specimen communicated by Rchb. (Column acuminate, with no border to the antherbed.)

27. **P. semipellucida** (Rchb. f. l. c.); folio ovali sessili spicâ gracili breviore, caule . . . , sepalo dorsali ligulato obtuso antico breviore subrotundo ventricoso emarginato, petalis filiformibus clavatis subæquilongis, labello orbiculari columnæ nanæ crassæ adpresso dein abruptè deflexo—— "*Caracas*, Otto," h. s. c. comm. cel. Rchb.——This is so much like the last in general appearance that the two might be thought identical. But their specific characters, drawn up from a repeated dissection of authentic specimens, shows them to be wholly distinct. In this, instead of a trowel-shaped straight lip and taper pointed petals, we have a fleshy orbicular lip abruptly bent down in the middle, and clavate petals such as are found in the Restrepioid section. (Column very short with a broad stigma, a long rostel, and a fleshy antherbed with a tooth in front on either side.)

28. **P. Lindeni** (Lindl. in Ann. Nat. Hist. xii. 397. Orch. Linden. No. 2. Rchb. f. in Bonpland. Dec. 1, 1854, and Sept. 1, 1855); folio oblongo acuminato basi ovato racemis pendulis paucifloris æquali v. longiore, bracteis brevibus laxis truncatis, sepalis petalisque acutis æquilongis antico maximo indiviso, labello concavo acuto intus medio bilamellato—— *Peru*, Jameson; *Venezuela*, Linden, 630. Fendler, 1475, h. s. sp.——Flowers large membranous variegated, varying in size and colour. Rchb. distinguishes 2 varieties; one large, with a leaf more than a foot long and 4 inches broad, the other dwarf, with leaves only 3 inches long and 1 inch wide, with a two-flowered raceme, the latter being P. secunda of Pöppig, which, however, appears to me to be a totally different plant. In the collection of Fendler the specimens have much smaller flowers than Linden's; some being sulphur coloured, others green with broad blackish brown spikes. They all, however, appear to belong to one variable species.

2. Labellum trilobum, lobis lateralibus nanis.

29. **P. bicornis**; folio oblongo cordato acuminato deflexo spicis pluribus

nutantibus laxifloris longiore, bracteis longè vaginatis, sepalo dorsali lineari-lanceolato canaliculato recurvo antico maximo horizontali utrinque 3-nervi, petalis carnosis acuminatis involutis erectis, labelli 3-lobi columnæ adpressi lobis lateralibus auriculæformibus medio rhombeo serrato deflexo——*Peru*, Jameson (*Forests on the eastern slope of the Andes, on trees at* 9000′), h. s. sp. ——Stem terete, with a sheath 5″ long, reaching up to the leaf, which is 7″ × 2″. Racemes 5-6, about 5″ long, 4-5-flowered. Flowers large, blotched with purple. (Column truncate, with a long erect rostel. Pollen-masses spherical.)

30. **P. Mathewsii** (Lindl. in Comp. Bot. Mag. II. 355. P. bogotensis. Id. Orch. Linden. No. 3. Rchb. f. in Bonplandia, Sept. 1, 1855. Acronia phalangifera, Presl. Symbolæ, t. 57); folio lato ovali acuto sessili subcordato racemis erectis multifloris breviore, sepalis divaricatis anticis connatis petalisque acuminatis æquilongis, labello hastato costato ad isthmum bituberculato lobis lateralibus nanis rotundatis intermedio carnoso acuminato canaliculato—— *Peru* (*Loxa*, Hartweg, 58, Mathews, 1902; *near Bacza on the E. Andes at* 6000′, Jameson); *New Grenada* (*in the province of Bogota*, Linden, 1271), h. s. sp.—— Leaf 7″ × 4½″ or less. Stem very much longer, terete, naked towards the summit. Flowers membranous, 1½″ long. A mutilated, or monstrous lip led to the creation of P. bogotensis, which better materials show to be identical with P. Mathewsii. (Column short, fleshy, semi-terete, broad and downy at the base, with a pair of fleshy cheeks. Antherbed not edged, but extended into a strong tooth at back.)

31. **P. decurva**; folio latè ovali acuminato racemo paucifloro decurvo subæquali, sepalis 2 lanceolatis acuminatis, petalis e latâ basi filiformibus æquilongis pubescentibus, labelli ecostati lobis lateralibus oblongis reflexis intermedio carnoso acuminato——*Peru*, Jameson, 19 (*forest on the Eastern flank of the Cordillera, on trunks of trees at* 10000′), h. s. sp.——Much like the last, but the flowers are far larger, and fewer, with no ribs on the lip, whose lateral lobes are oblong so as to destroy the hastate form. (Column as in the last, and equally downy at the base.) I find some flowers with only the rudiment of a lip.

3. Labellum trifidum.

32. **P. bicruris**; folio oblongo membranaceo acuminato racemis solitariis pendulis filiformibus breviore, sepalis acutissimis lateralibus semiconnatis, petalis linearibus acutissimis æquilongis, labelli columnæ adpressi 3-fidi lobo intermedio nano deflexo lateralibus setaceis erectis——*Peru*, Jameson (*forests on the Andes at* 10000′), h. s. sp.——Leaf 5″ × 1½″. Racemes 6″, about 6-flowered. Flowers 1″ long. This is one of the species in which the middle division of a 3-parted lip is bent downwards, while the side ones stand erect. (Column fleshy, terete, truncate, with a long erect rostel. Anther dorsal (!) as in Neottieæ.)

B. Petala nana.

1. Labellum integrum.

33. **P. cyclochila**; folio lucido sessili ovali acuminato basi ovato racemis erectis subæquali caule tereti nudo multò breviore, sepalis 2 dorsali angustiore acuto antico obtusè acuminato, petalis linearibus acutis inæquilateris, labello circulari utrinque acutangulo lamellâ transversâ reflexâ supra basin.—— *New Grenada*, Triana, 124. h. s. sp. comm. cel. Linden.——A remarkable species, distinguished from the rest of its section by its shining taper-pointed leaves as well as very peculiar lip. Leaf 6″ × 2″. Flowers firm, and in their dried state bright brown. (Column obliquely truncate, terete, with no apparent rostel.)

34. **P. lamellaris**; folio sessili coriaceo lato ovali basi rotundato racemis nutantibus duplò longiore, caule crasso tereti versus basin tantum vaginato,

bracteis longè vaginatis carinatis, sepalo dorsali lanceolato lateralibus semiconnatis duplò latioribus, petalis spathulatis carnosis dorso scabris apice cohærentibus, labello minimo oblato supra medium serrulato lamellâ maximâ retusâ supra basin.—*Bolivia*, Bridges, h. s. sp.—One of the largest species. Leaves 7″ × 2½″—4″. Stem as thick as a crow's quill, very much longer. Flowers middle-sized. (Column smaller than the very small lip, semiterete, clavate, with the back of the antherbed extended into a tooth.)

35. **P. Imræi**; folio lato ovali petiolato utrinque acuto racemis duplò longiore cauli medio laxè vaginato subæquali, bracteis longè vaginatis, sepalis intus pilosis oblongis dorsali lateralibus disjunctis duplò latiore, petalis obovatis uninerviis, labello oblongo unguiculato longitudinaliter bilamellato versus apicem serrulato et scabro—*Dominica*, Dr. Imray, h. s. sp. comm. cel. Hooker.—Leaf thin, 5″ × 2½″. Peduncles filiform, from a short carinate sheath. Lip much smaller than the petals. (Column cucullate, short, with an obscurely 3-lobed membranous margin.)

2. Labellum utrinque unidentatum.

36. **P pilifera**; folio lato ovali petiolato utrinque acuto racemis erectis densis secundis multifloris multò breviore, caule angulato basi tantùm vaginato, bracteis obtusis amplexicaulibus, sepalis oblongis disjunctis carinatis intus pilosis, petalis obtusis 3-nerviis, labello oblongo medio carnoso carinulato dente valido utrinque supra basin—*Peru*, Jameson (*Valley of Lloa, on the branches of trees; forests at* 8000′), h. s. sp.—Leaves thin, much like those of P. Imræi. Flowers small, very close, in long slender erect racemes; they vary a little in size, but not otherwise. (Column curved, semiterete, with an entire cucullate antherbed. Rostel horizontal, projecting.)

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§ III. MACROPHYLLÆ FASCICULATÆ: foliis cordatis, floribus fasciculatis, caule tereti v. angulato.

*** Care must be taken not to mistake for small species of this section some of the Sicarians, which are much like them in habit, but are known by their flat ancipital stem.

A. Grandifloræ; *floribus rictu semunciali et ultra, pedicellis filiformibus multò longioribus.*

37. **P. bivalvis** (Lindl. in Orch. Linden. No. 10); folio coriaceo subrotundo-ovali acuto altè cordato caule tereti multò breviore, sepalis 2 subæqualibus oblongis concavis, petalis linearibus acuminatis serratis paulò brevioribus, labello . . . .—*Venezuela*, Linden, 1480, h. s. sp.—In my only two specimens the stem, which is a foot long and naked, is broken off. Leaf 5″ × 2¾″. The lip has dropped off. It is, however, very distinct from the others of its section.

38. **P. macrocardia** (Rchb. f. in Bonplandia, Dec. 1, 1854)—*New Grenada*, Schlim, near S. Pedro at 5000′—It is probable that this is the same as the last. The lip, which is unknown in that species, is described by Rchb. as "oblongo subcordato acuto apicem versus serrato," and as having the "unguis lineis transversis notatus; lamina 3-nervis, plicula in basi."

39. **P. grandiflora** (Lindl. in. B. Reg. sub. f. 1797. P. ionantha? Rchb. f. in Linnæa, xxv. 238); folio oblongo acuminato basi rotundato, sepalis rictu ultra unciali 2 lanceolatis acutissimis pubescentibus antico majore, petalis linearibus acutis villosis, labello unguiculato oblongo cordato scabro 3-nervi.—*Peru*, Jameson (*trunks of trees near Lloa, at* 8000′, Hall), h. s. sp.—Varies somewhat in the breadth of the leaves, which are on an average 4½″ × 2½″, and four times shorter than the shining terete stem. I cannot

[illegible] P. ovatifolia Rchb. f. in Venezuela, by Funck & Schlim [illegible] have seen no authentic specimen.

[illegible] **P. micra** [illegible] Lindl. in Hartweg. exsicc.; folio [illegible] petalis angustissimis subfalcatis [illegible] labello [illegible] ovato [illegible] ——*Ecuador*, Jameson, h. s. sp.——Stem like a slender P. grandiflora. Leaf [illegible] flowers much smaller and narrower. The lip has a central tubercle beneath its base. (Column terete, truncate, with a fleshy border to the antherbed.)

4[illegible] **P. linguifera**. [illegible] ovato-oblongo acuminato cordato, sepalis [illegible] petalis linearibus minutissimè pilosis [illegible] labello unguiculato oblongo convexo glabro.——*Ecuador*, Jameson, h. s. sp.——A much slender and more fleshy plant than P. grandiflora. The leaf is 3" × 1½". There is an oblong tubercle beneath the base of the tongue-shaped lip, which is 3 times as long as broad, and not as wide as the [illegible].

42. **P. monocardia** Rchb. f. in Bonplandia Dec. I. 54: folio oblongo-[illegible] sepalis 2 dorsali lanceolato-ovato acuto, petalis linearibus, labello angusto ligulato cordato acuto——*New Granada*, Linden——It is in some respects like seems like P. ruberrima, but the [illegible] of the leaf and [illegible] do not at all apply. "Stem slender, as much as 4" Leaf [illegible] parchment, 1' × 2" above the base. Flowers very narrow, [illegible] long, brown." *Rchb.*

43. **P. ruberrima** Lindl. Orch. Linden. No. 5: folio oblongo v. oblongo-lanceolato acuminato cordato, sepalis 2 retro sesquiunciali dorsali ligulato antico oblongo-ovato acuminato multo breviore, petalis linearibus falcatis, labello subcordato-ovato apiculato basi transverse excavato, ovario tomentoso——*New Granada*, Linden, 47: *Venezuela*, Fendler, 2585. h. s. sp.——Leaf of full size 6" × 1½". Flowers deep red, streaked with purple (*Linden*), purple (*Fendler*). Lip very small, not longer than the column. (Column terete, truncate, toothed at the edge of the antherbed.)

B. Parvifloræ; *floribus multò minoribus, pedicellis parum elongatis.*

1. Petala elongata acuminata.

44. **P. cordata** (LO. No. 4. Rchb. f. in Bonplandia, Jan. 15, 1854); *folio crasso chartaceo* orbiculari altissimè cordato apice acutato, floribus innumeris fasciculatis, sepalo dorsali oblongo obtusè acuto antico orbiculari subacuto, petalis lineari-lanceolatis acutis ciliatis subæquilongis, labello orbiculari *carnosissimo* obtusè cordato——*Peru*, Ruiz——Rchb. having examined authentic specimens of this plant, of which I had only seen a leaf and stem, I adopt his description; from which it appears to be perfectly distinct from the following; although the leaf and stem are hardly distinguishable.

45. **P. coriacardia** (Rchb. f. in Bonplandia, Jan. 15. 1854. P. cordata. Lindl. in Pl. Hartweg. exsicc.); folio lucido coriaceo subrotundo-ovato *altè* cordato, floribus innumeris, sepalis 2 obtusis acuminatis dorsali breviore, petalis lineari-lanceolatis acuminatis carnosis æquilongis pilosis, labello lanceolato auriculato medio carnoso ter sulcato ultra sulcos acuminato——*Popayan*, Hartweg (*on trees on the ascent to Sotara*); *Peru*, Jameson (*forest on the Eastern slope of the Andes, at* 9000′), h. s. sp.——Leaf varies from 4" × 1½", to 7" × 3¼", and is more or less horizontal. (Column truncate, very small, with a pair of broad cheeks; rostellum as long or longer, linear, acute, convex. Anther rather longer still, with a fleshy connective, and a pair of very slender pollen-masses.)

46. **P. undulata** (Poppig & Endl. n. g. et sp. I. 48. Lindl. Orch. Linden,

No. 8. Rchb. f. in Bonplandia, Jan. 15, 1854); folio subrotundo-ovato acuminato cordato pergameneo undulato, floribus paucis, sepalis 2 lanceolatis, petalis linearibus falcatis auriculatis scabriusculis, labello unguiculato ovato obtuso lævi——*Venezuela*, Linden, 674; *Peru*, Pöppig. h. s. sp.——cordato maller than the two preceding species. Flowers yellowish (Linden).

47. **P. Cardium** (Rchb. f. in Bonplandia, Jan. 15, 1854); folio lato oblongo acuminato cordato papyraceo, floribus solitariis, sepalis 2 ovato-lanceolatis subæqualibus, petalis linearibus falcatis duplò brevioribus, labello oblongo cordato scabriusculo——*Caracas*, Wagener; *Venezuela*, Fendler (1477), h. s. sp. ——A thin leaved plant with solitary brown flowers. Leaf 4″ × 1¾″. Stem slender, angular below the leaf, 10″. Ovary very long, clavate, angular. This, P. cardiostola and P. cardiothallis are much alike, and require care to be distinguished.

*** P. Lansbergii (Regel in Ann. Sc. Nat. ser. 4. 6. 373); Caulis 6″, tenuis, teretiusculus, internodio superiore longissimo. Folium pergameneum 3½″ × 1½″, ovato-oblongum, cordatum, acuminatum. Sepala 2, ½″, dorsale ovato-lanceolatum acutum, anticum subæquale paulò latius. Petala linearia. Labellum subhastatum, ovato-linguiforme, crassum, densissimè muriculatum, atropurpureum. Columna abbreviata, truncata——*Colombia*, Lansberg——This is compared by Regel to P. Cardium; and I do not see how it differs.

48. **P. cordifolia** (Rchb. in Bonplandia, Jan. 15, 1854); "gracilis, folio orbiculari subito acutato cordato, flore solitario, sepalo dorsali ligulato obtuso antico duplò latiore excavato apice bidentato, petalis lineari-setaceis divaricatis ciliatis, labello oblongo subsagittato unguiculato duplò longiore quam lato" ——*Caracas*, Wagener——"All the parts only half the size of P. Cardium."

49. **P. scabrilinguis** (Lindl. in Comp. Bot. Mag. II. 354.); folio pergameneo ovato-lanceolato subcordato cauli subæquali, flore solitario, sepalis 2 ovalibus subæqualibus, petalis linearibus acuminatis serrulatis, labello oblongo obtuso unguiculato scabro callo oblongo juxta apicem——*Peru*, Mathews, 1904, h. s. sp.——A small species. Leaf 2″ × ½″. Stem 2½″—4″, with a thin sheath far below the middle.

50. **P. tridentata** (Klotzsch in Allg. Gartenzeit. No. 37, 1840. P. microphylla, id. in hort. Berol.); folio oblongo acuto cauli æquali, floribus paucis, sepalis 2 subrotundo-ovatis obtusis subæqualibus, petalis filiformibus, labello oblato emarginato venis 3 clavatis——*Venezuela*, Fendler, 1480. h. s. sp.—— Leaf 2″ × ¼″ or much narrower. Flowers small "greenish brown or yellow" (*Fendler*). The name *tridentata* is unfortunate, every species of the genus having tridentate leaves. It varies a little in the proportion between stems and leaves.

51. **P. microcardia** (Rchb. in Bonplandia, Dec. 1, 1854); "folio a basi minute cordatâ lineari-ligulato acuminato undulato, labello triangulo cordato obtuso papuloso minuto, sepalis longè attenuatis"——*New Grenada*, Schlim ——"Stem very long, as much as 8″, slender. Leaf 3″ × ¼″. Flowers very narrow, nearly 1″. Petals, as in P. undulata, linear-lanceolate, acuminate, scabrous at the edge." So far Rchb. and if there is no misprint in his description, this must be near P. grandiflora. But I have a specimen from himself, without flowers, and with stems only 3, not 8, inches high, and evidently close to P. tridentata.

52. **P. cardiothallis** (Rchb. f. in Bot. Zeit. xv. 158); folio tenui ovato-lanceolato acuminato cordato caule duplò beviore, flore subsolitario, sepalis 2 dorsali ovato obtuso antico subrotundo concavo acuto, petalis linearibus acuminatis falcatis, labello unguiculato ovato cordato glabro——*Nicaragua*, Wright, 12. h. s. sp.——Originally described from a garden specimen imported by Consul Schiller from England. Leaf 4½″ × 1¾″. Stem 6″. Flower-bud ¼″ long.

2. Petala linearia nana.

53. **P. cardiostola** (Rchb. f. in Bonplandia, Jan. 15, 1854. Xenia, i. 72, t. 28); folio tenui lato oblongo acuminato cordato demum inverso caule subangulato breviore, spathâ bivalvi obovatâ, sepalis 2 obtusis concavis parùm inæqualibus, petalis ovalibus linearibusve serratis, labello æquilongo 3-nervi unguiculato cordato scabriusculo——*Caracas*, Wagener; *Venezuela*, Fendler, 1478 & 1479. h. s. sp.——Among its many allies this appears to be most readily known by its large brown membranous spathe which in uninjured specimens divides into 2 obovate flaps or valves. The short serrated petals also distinguish it from any of the preceding division. Fendler's 1478 has "brown flowers and a very thin leaf"; his 1479 "brown flowers, with the upper surface of leaf minutely warty;" the first seems to be an old state of the second. In some specimens the dorsal sepal has 3 veins, in others 5.

54. **P. semiscabra** (Lindl. in Orch. Linden, No. 11); folio coriaceo oblongo acuminato maturo caule breviore, sepalo dorsali ovato antico oblato, petalis æquilongis obtusissimis cucullatis, labello nano cordato rotundato inferiùs lævi dimidiâ superiore scabrâ——*Venezuela*, Linden, 669. h. s. sp.——Several species of the fasciculate Macrophylls are so much alike that if it were not for the different structure of their flowers they would be considered identical. This for example is extremely like microcardia, tridentata, and scabrilinguis, although quite peculiar in its petals, sepals, and lip.

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§ IV. SICARIÆ; caule alato v. ancipiti, foliis coriaceis v. carnosis.

*** These must be carefully distinguished from the Aggregatæ, to which many approach altogether in habit. The winged and most commonly flat stem is the essential mark of the section; all species of similar habit with merely angular stems will be found among either Aggregatæ or Brachystachyæ. See also P. crocodiliceps. The following characters are scarcely more than differential, but are quite sufficient for identification.

1. Labellum auriculatum.

55. **P. harpophylla** (Rchb. f. in Bonplandia, Dec. 1, 1854); prorepens, caulibus angustis foliis conduplicatis cordatis æqualibus, sepalo dorsali oblongo obtuso lateralibus liberis apiculatis semipubescentibus basi obliquis, labello ovato auriculato serrulato bilamellato——*Ocaña*, Wagener; *Venezuela*, Fendler, 2445. h. s. sp.——A stout creeping species, readily known by its cucullate leaves and short channelled winged stems.

2. Labellum basi fimbriatum.

56. **P. pectinata** (Lindl. in B. Reg. 1839, misc. 1); sepalis pubescentibus, petalis lanceolatis integris, labello hastato retuso basi fimbriato apice serrulato ——*Brazil*, hortul. v. v. c.——Flowers sea-green, with a few purple spots at the base of the lip.

57. **P. prolifera** (Herbert. LO. 7. Bot. Reg. t. 1298. B. Mag. t. 3261); sepalis scabriusculis, petalis lineari-lanceolatis sursum serratis, labello ovali aspero basi fimbriato lamellis 2 serratis submarginalibus in medio——*Brazil*, Herbert. v. v. c.——Flowers deep purple, with pale petals. The formation of leaves in place of flowers, which gave rise to the specific name, occurs occasionally in many other species.

3. Labellum integrum.

* *Flores glabri v. glabriusculi.*

58. **P. bilamellata** (Rchb. f. in Linnæa, xxii. 830); "folio ligulato

utrinque angustato, sepalo dorsali lanceolato lateralibus ovatis denticulato-serratis, labello unguiculato subtriangulari angulis baseos obtusatis serrulatis, lamellis 2 medianis serrulatis"——*Mexico*, Rchb. f.——Possibly this should be referred to the last division. Except in the form of leaf, the character is much that of P. prolifera.

59. **P. chamensis** (Lindl. in Orch. Linden, No. 7. P. triquetra, Klotzsch, in litt. P. triangularis, id. in Bot. Zeit. 1847, 942); sepalo antico bidentato, petalis lanceolatis serratis, labello oblongo lævi——*Caracas*, Otto; *N. Grenada*, Triana, 123; *Venezuela*, Fendler, 1483, Linden, 639. h. s. sp.—— Leaf always flat and almost exactly a broad-oblong. Flowers racemose, yellow (Linden), or orange (Fendler), or greenish yellow (id.).

60. **P. casapensis** (Lindl. in Bot. Reg. 1842, misc.); folio cordato-oblongo, sepalo antico bidentato, petalis serratis, labello crasso carnoso obovato acuto margine elevato leviter serrulato, ovario tomentoso——*Peru*, Mathews, 1830 (*at Casapi*); Jameson (*in forests on the W. side of Pichincha, on trees at* 8000′), h. s. sp.——Much like P. chamensis, but the racemes are shorter and the leaves more cordate.

61. **P. fragilis** (Lindl. in Bot. Reg. 1841, misc. 188. P. luteola, id. 1841, misc. 2); sepalis carinatis antico emarginato, petalis cuneatis retusis, labello ligulato obtuso lævi——*Brazil*, Loddiges, v. v. c.——I think there can be no doubt that the two species here united are mere states of the same. In luteola the sepals are deeply carinate, the lip undotted; in fragilis the sepals are less obviously carinate, and there is a double row of purple dots along the middle of the lip; moreover, in the first the flowers are yellow, in the second bright orange, and the lip is a little spread out at the base. The flowers are said to smell like sliced cucumber.

62. **P. malachantha** (Rchb. f. in Bonpl. Aug. 1, 1855); folio oblongo caule dorso alato multò breviore, racemis multifloris folio ferè duplo longioribus, sepalis 2 glabris oblongis antico latiore emarginato, petalis uninerviis labelloque 3-nervi conformibus subæqualibus——*Brazil*, Gardner, 660 (*Rio Janeiro*), h. s. sp.——Something like P. secunda in inflorescence; and quite alone among Sicarians in having a long inflorescence.

63. **P. bicarinata** (Lindl. in B. Reg. 1839, misc. 11); folio oblongo caule acutè carinato medio laxè vaginato breviore, racemo paucifloro, sepalis aristatis antico bifido bicarinato, petalis oblongis minutè serrulatis, labello obovato carnoso cordato——*Brazil*, Loddiges, v. v. c.——Flowers dull greenish yellow. Leaf 5″ × 1¾″. Sheath on stem 1¾″.

64. **P. decurrens** (Pöppig & Endl. n. g. & sp. 1. 48. t. 73); folio ovali acuto pedunculo longè adnato caule triangulari multò breviore, racemis paucifloris fasciculatis, sepalis 2 glabris membranaceis ovalibus acutis dorsali duplò angustiore, petalis multò brevioribus linearibus inæquilateris acuminatis, labello ovato-oblongo acuto——*Peru*, Pöppig.——Much like P. circumplexa, but far larger in every part, and with thin smooth acute petals.

** *Flores tomentosi.*

65. **P. circumplexa** (Lindl. in B. Reg. 1838, misc. 27. P. mesophylla, A. Rich. & Gal. in Ann. Sc. ser. 3. iii. 16); folio ovato v. oblongo obtusissimo pedunculo longè adnato caule carinato breviore, sepalis obovatis antico latiore retuso utrinque 3-nervi, petalis versus apicem carnosis serratis, labello ligulato carnoso prope apicem 3-dentatum membranaceo-marginato——*Mexico*, Galeotti, Jurgensen (*Sierra San Pedro Nolasco, Talea, &c.* 946); *Guatemala*, Skinner. v. v. c. & s. sp. in hb. Hooker——Flowers small, dull dirty brownish yellow. The complete adhesion of the long peduncle to the midrib of the leaf, and the lip terminating in 3 teeth, like the leaves of the genus, are quite peculiar to this. (Column semiterete, with a broad cordate membranous toothed border to the antherbed; in the flowers I have examined truncate at back between a pair of short distinct bristles: qu. accidental?)

66. **P. Cubensis** (Lindl. in Ann. Nat. Hist. ser. III. i. 328); folio coriaceo angusto oblongo obtuso caule multò breviore, sepalis tribus dorsali lateralibus dimidiatis paulò longiore, petalis obtusissimis, labello ovato acuto bilineato ——*Cuba*, Wright, 653, h. s. sp ——Leaf 2″ × ½″. Stem 6″. Peduncles 2-flowered. Bracts lax, truncate, membranous. (Column clavate with a deep thin undivided edge.)

67. **P. rubroviridis** (Lindl. in Ann. Nat. Hist. ser. III. i. 327); folio coriaceo ovali obtuso caule parum breviore, sepalis subæquilateris intus aphthosis, petalis obtusissimis, labello oblongo bicristato——*Cuba*, Wright (*Monte Verde*), h. s. sp.——Something like a dwarf state of the last. Bracts short, ovate, spreading, acuminate. Peduncles 3-flowered. Sepals green, petals dark red, lip green at point. (Column as in the last.)

68. **P. chrysantha** (P. aurea, A. Rich. & Galeotti in Ann. Sc. nat. ser. 3. iii. 16); caule plano in folium ovato-oblongum retusum expanso, sepalis liberis acuminatis, petalis labelloque (pandurato ?) acutis——*Mexico*, Galeotti, v. ic. pict.——I am indebted to Prof. Rchb. for a tracing of A. Richards' unpublished figure of this; from which it appears to have a cluster of downy flowers within an acuminate spathe. The lip is acute, turned upwards near the base as if it were there expanded and thickened. Leaf 3½″ × ½″. Stem about 5″.

69. **P. Pantasmi** (Rchb. f. in Bonplandia, Aug. 1, 1855); caule plano in folium ovatum expanso apice triangulari, "sepalo antico bifido, petalis rhombeis, labello ligulato basi utrinque angulato nervis 2 in basi lamellisque geminis"——*Nicaragua*, Oersted (*on Mount Pantasmo at* 4000′), v. s. sp. sine fl.——The junction of the stem and leaf forms an isosceles triangle. It is to be much suspected that it is the same as the last, of which I have seen no specimen.

4. Labellum dente utrinque auctum.

70. **P. sicaria** (Lindl. in. Bot. Reg. 1841, misc. 187. P. tripteris, Rchb. f. in Linnæa, xxii. 829. P. trigonopoda, Klotzsch in Allg. gartenz. 1853, Nov. 12); caule triptero plano in folium oblongum expanso, sepalis disjunctis linearibus apice recurvis, petalis lanceolatis apice serrulatis, labello lanceolato 2-lamellato utrinque dentato——*Trinidad*, Loddiges; *N. Grenada* (*loose stones on the Rio Cuchero*), Purdie in hb. Hooker; *Venezuela*, Fendler, 1482. h. s. sp. & v. v. c. ——Leaf about four times shorter than the stem, often proliferous where the flowers should be. Flowers yellowish green with brown or purple stripes. Notwithstanding some differences between my description, to which I adhere, and that of Rchb. and Klotzsch, there can be little doubt that their names are synonymous. Indeed I have the authority of Rchb. for trigonopoda being the same as tripteris; and P. sicaria is marked by Rchb. himself in the Hookerian herbarium as possibly his tripteris.

71. **P. floribunda** (Lindl. in B. Reg. 1842, misc. Specklinia floribunda, LO. p. 9.); caule debili canaliculato folio oblongo bis longiore, racemis pluribus flexuosis folio subæqualibus bracteis inconspicuis, sepalis liberis carinatis, petalis obovatis acutis obsoletè serrulatis, labello lanceolato acuto bilamellato dente utrinque juxta medium——*Martinique*, Sieber, 206. h. s. sp. & v. v. c.——A small weak species, with yellow glabrous flowers. It blossomed some years since at Carclew in the garden of Sir Charles Lemon. (Column with a membranous toothed antherbed, having two great teeth in front. Pollen-masses 2, plano-convex.)

[72. P. linearis (Lindl. in B. Reg. 1842, misc. Specklinia linearis, LO. 5); "caule ancipiti folio lineari-oblongo subtriplò longiore, spicis capillaribus bifloris alterâ folio subæquali alterâ duplò breviore"——*Mexico and Peru*, Pavon in Hb. Lambert——This is a doubtful plant, of which I know nothing further. What I have from Rchb. under the name, without flower, is something quite different, near P. angustifolia.]

§ V. AGGREGATÆ; foliis basi angustioribus; caule tereti v. angulari; floribus fasciculatis.

A. Labellum medio abruptè deflexum, in lobos superficiales protrusum. (Columna cylindracea, truncata, basi vix producta, stigmate verticali, rostello erecto elongato emarginato. An genus proprium?)

73. **P. geniculata** (P. Hartwegii, Lindl. in Bot. Reg. 1842, misc.); folio coriaceo lanceolato undulato, labello ovato nano concavo serrulato——*Peru*, Hartweg (*Loxa, on mountains*), h. s. sp.——Leaf 1′ × 2″, channelled at the base. Flowers large. Lip with a pair of incurved unequal humps on each side.

74. **P. Archidonæ**; folio coriaceo lanceolato plano, labello circulari nano integerrimo——*Peru*, Jameson (*forest near Archidona, on rocks by the river side*), h. s. sp.——A much smaller plant than the last. Flowers also much smaller. Lip with a pair of erect equally 2-lobed humps on each side.

B. Labellum rectum planum.

1. *Caulis vaginæ manicatæ v. hispidæ.*

75. **P. ceratothallis** (Rchb. f. in Bonplandia, Jan. 15, 1854); folio angusto lanceolato, caule breviore imbricato vaginis inferioribus hispidis, sepalis 2 divaricatis extus pubescentibus antico duplo majore bidentato, petalis oblongo-lanceolatis apice filiformibus sepalo dorsali subæqualibus, labello ligulato bilamellato truncato utrinque dente valido falcato aucto——*Caracas*, Wagener; *Venezuela*, Fendler, 1488. h. s. sp.——A tall slender plant; sometimes having a stem as much as 2′ long, and proliferous at the base of the leaf whence long succulent fibres hang down. Flowers green with numerous brown stripes. The oblong-lanceolate petals suddenly contracting into filiform extremities, and nearly as long as the dorsal sepal are very peculiar. (Column oblong, undivided, with a continuous thin edge.)

76. **P. exasperata**; folio angusto lanceolato caule duplò breviore vaginis transversè scaberrimis, sepalis 3 petalisque acuminatis æqualibus, labello . . ., ovarii costis 3 asperrimis tribusque scabris—— *Venezuela*, Fendler 1490. h. s. sp.——Much like the last but far more scabrous. Even the pedicels and bracts are beset with dark hard hairs. My flowers are past, and the lip has dropped from them.

77. **P. Beyrichii** (Rchb. f. in Linnæa xxii. 829); "vaginis caulis 4-5 papillis filiformibus in nervis et margine, folio oblongo-lineari, sepalo dorsali oblongo acuto lateralibus latioribus denticulatis, labello lineari basi utrinque angulato erosulo retuso"——*Brazil*, Beyrich (*New Friburg, on trees*)—— Sepals purple. Petals white. Sheaths of stem 4-5. (Antherbed 3-lobed, the middle lobe denticulate.) *Rchb.*

78. **P. elongata** (Klotzsch in Ind. Hort. Hamb. 1853. Ann. des Sc. ser. 4. i. 333); vaginis caulis minutissime transversè fimbriatis, folio oblongo crasso coriaceo subpetiolato, pedicellis bracteisq. hispidis, sepalis crassis latis obtusis, petalis acutis, labello obtuso integro canaliculato basi angustiore—— ? ?——Described from a plant in the Berlin Garden of unknown origin. Leaf 3″ –5″ × 12‴—13‴. Bracts white; hairs purple; sepals dirty yellow, 2‴; petals bright yellow; lip deep purple. *Klotzsch.* Can this be P. exasperata?

79. **P. scabripes** (Lindl. in Bot. Reg. 1839, misc. 155); folio linear-lanceolato caule longiore, vaginis maculatis caule brevioribus basi hispidis, sepalis 3 pubescentibus linearibus acutis, petalis conformibus minoribus, labello cordato ovato acuto concavo——*Brazil*, Miers, h. s. sp. & v. v. c.——A little

plant looking like a diminutive P. Ceratothallis. Leaf 2″—3″ × 2‴. Flowers dirty purple with close fitting spotted bracts.

2. *Caulis vaginæ læves.*

* Flores acuminati elongati.

80. **P. Pöppigii** (Lindl. in Comp. Bot. Mag. 2. 354.) Myoxanthus monophyllus, Pöppig & Endl. n. g. i. t. 88); folio lanceolato recto, bracteis hispidis imbricatis ovario longioribus, sepalis 3 anticis bipartitis petalisq. subæqualibus linearibus acuminatis, labello "lanceolato apice attenuato obtuso" ——*Peru*, Pöppig (*near Casapi*) v. florem comm. cel. Rchb. f.——Remarkable for the flowers, which are white, being half immersed in coarse striated hispid bracts.

81. **P. affinis** (Lindl. in Comp. Bot. Mag. 2. 354); folio lanceolato recto, bracteis pilosis dissitis ovario brevioribus, sepalis 3 linearibus petalisq. angustioribus elongatis, labello ovato-oblongo obtuso unguiculato——*Peru*, Mathews, 1899——Much like P. Pöppigii, but the flowers are smaller, on long pedicels, and the bracts are totally different. (Column half terete, with a pair of long teeth on either side of the stigma which is on the face of the column. Pollen-masses 2, pyriform.)

82. **P. peduncularis** (Lindl. in Bot. Reg. 1843, misc. 62); folio lanceolato recto, bracteis pilosis dissitis ovario brevioribus, sepalis 3 pubescentibus petalisq. subæqualibus ovatis setaceo-acuminatis, labello oblongo bilamellato supra medium angustato cuneato——*Brazil*, Loddiges, v. v. c.——Much smaller than the last. Flowers pale straw-colour with the lamellæ of the lip purple. (Column fleshy, without teeth at the side of the stigma.)

83. **P. ruscifolia** (R. Br. in Hort. Kew, 5. 211. Hooker, Exot. Fl. 197. LO. 1. P. succosa, LO. 3. P. multicaulis, Pöppig & Endl. n. g. 1. t. 82. Epidendrum ruscifolium, L. Jacq. Amer. 226. t. 133. f. 3. Dendrobium ruscifolium, Swartz, n. act. Ups. 6. 84); folio pergameneo ovali-lanceolato utrinque acuminato subobliquo caule tereti nudo breviore, bracteis glabris, sepalis 2 acuminatis, petalis conformibus multò minoribus, labello ovato-oblongo cordato unguiculato——*Tropical America: Martinique*, Jacquin; *Jamaica*, Swartz; *Peru*, Pöppig, Mathews, Jameson; *Trinidad*, Parker. h. s. sp.——Evidently common all over the countries above named. There seems to be nothing to distinguish multicaulis and succosa. The flowers appear in variable numbers from a little 2-valved spathe.

84. **P. laurifolia** (H. B. K. n. g. & sp. 1. 364. LO. 2); "folio oblongo acuminato basi angustato, foliolis calycinis lateralibus apice liberis"—— *Popayan*, Humboldt.——A puzzle. I should have thought it P. ruscifolia had not the lateral sepals been described as disunited; and if there was anything in that species resembling the leaf of a Laurus.

85. **P. ventricosa**; folio papyraceo oblongo-lanceolato longè petiolato, sepalis 2 ventricosis setaceo-acuminatis, petalis linearibus acuminatis 3-nerviis multò minoribus, labello sessili oblongo supra medium constricto medio carnoso——*Peru*, Jameson (*on trees, western flank of the Andes at* 5000′), h. s. sp.——Like P. ruscifolia, but very much larger; leaves broader with a long channelled petiole. (Column terete, truncate, with a nearly vertical stigma.)

86. **P. chloroleuca** (Lindl. in Orch. Linden, No. 9); folio maximo oblongo-lanceolato petiolato, caule vagina maxima supra medium, sepalis 2 ovatis acuminatis, petalis filiformibus duplò brevioribus, labello nano obovato sessili bilamellato in cuspidem producto——*New Grenada*, Linden, 1269, h. s. sp. ——Resembles a gigantic P. ruscifolia. Leaf 9″ × 3.″ Stem, of which I have only a part, 7½″, as thick as a crow's quill. Flowers yellow.

N.B. P. rigidifolia, No. 100, approaches closely to this group, but associates better with P. octomerioides.

** Flores abbreviati, obtusi.

a. Prorepentes. *Rhizoma repens, caule filiformi subnudo folio subæquali.*

87. **P. bidentata** (Lindl. in Bot. Reg. sub t. 1797); folio papyraceo oblongo bidentato mucronulo interjecto cauli subæquali, flore solitario, bracteâ ovatâ pedicello breviore, labello . . . . . apice lineari rotundato ciliato——*Rio*, Forbes, h. s. sp.——There is nothing more known of this, of which I have only seen one flowerbud. The leaf is a little inclined to be unequal sided, $2\frac{1}{4}'' \times \frac{3}{4}''$.

88. **P. apiculata**; folio lineari-oblongo coriaceo caule vaginato longiore, sepalis 2, petalis oblongis apiculatis ferè æquilongis, labello (oblongo?) ——*Venezuela*, Fendler, 2155. h. s. sp.——Not unlike P. scabripes, but with neither spots nor bristles on its vaginæ. The oblong apiculate petals nearly as long and broad as the sepals are peculiar. The form of the lip is uncertain. I have only seen one damaged flower.

89. **P. angustifolia** (Lindl. in B. Reg. sub t. 1797. P. obscura, A. Rich. & Galeotti in Ann. Sc. nat. ser. 3. iii. 17); folio angusto oblongo-lanceolato caule capillari medio vaginato breviore, vaginâ herbaceâ semiliberâ, floribus 1-2, bractea cucullatâ ovario paulò longiore, sepalis serratis acutis, labello lineari acuto infra medium concavo margine incrassato——*Mexico*, Deppe (*near Xalapa*), h. s. sp.——The whole plant between 2 and 3 inches high. Flowers very small. The stem has a sheath in the middle with a linear free herbaceous termination.

90. **P. Wilsoni** (Lindl. in Ann. Nat. Hist. ser. III. i. 326); folio ovali caulis capillaris longitudine, floribus solitariis glabris, sepalis 2, petalis oblongis acutis, labello ovato angulato obtuso——*Jamaica*, Wilson in hb. Hooker; *Cuba*, Wright, 668. h. s. sp.——Leaf an inch long. Capsule oval, smooth. Flower not sufficiently examined.

91. **P. papillosa** (Lindl. in Bot. Reg. sub 1797); folio angustè oblongo cauli capillari subæquali, sepalis campanulatis lateralibus semiconnatis dorsali oblongo brevioribus, petalis . . . . ., labello subhastato obtusissimo apice lamellisq. 2 carnosis papillosis——*Brazil*, Martius (*on trees in the province of Mines near S. Joâo Baptista*), v. s. sp. in hb. Mart.——Flowers large for this section, 2 or 3 together. Plant the size of P. Wilsoni.

92. **P. fimbriata**; folio lineari-lanceolato caule angulato basi vaginato breviore, sepalo dorsali lineari lateralibus subcohærentibus semiovatis longiore, petalis serratis, labelli trilobi cordati lobis lateralibus nanis rotundatis intermedio oblongo denticulato in discum aphthoso, androclinio fimbriato—— *Brazil*, Spruce (*Panure, Caatingas, creeping on trees*, 2459), h. s. sp.——"Fresh leaf $1\frac{1}{4}'' \times \frac{1}{2}''$, keeled, with a reflexed margin. Flowers brownish purple." The long linear dorsal sepal, and deeply fringed antherbed are very remarkable.

93. **P.? Miqueliana** (Stelis? Miqueliana. Focke in Tijdschrift nederl. ii. 199. Bot. Zeit. 1849, 638); "caulibus folio lanceolato supinato æqualibus, sepalis lateralibus connatis apice liberis facile partibilibus supremo libero ligulato, petalis multò brevioribus lanceolatis, labello linguæformi, pedunculo 1-2-floro"——*Demerara*, Focke.

b. Cæspitosæ. *Rhizoma contractum, haud prorepens.*

‡ Flores tomentosi.

94. **P. ophiocephala** (Lindl. in Bot. Reg. 1838, misc. 48. P. puberula,

Klotzsch in Allg. Gartenz. Dec. 16, 1854. P. stigmatoglossa, Rchb. Mss.); folio oblongo petiolato caule angulato medio laxè univaginato breviore, spathâ bivalvi, sepalis tribus disjunctis obtusis intus papulosis, petalis margine villosis, labello lineari-ovato carnoso obtuso——*Mexico*, Loddiges; *Guatemala*, Skinner. v. v. c.——A great loose sheath, inserted a little above or below the middle of the stem is a striking feature of this species. No other of the group has a petiolate leaf. Flower dull yellowish brown, spotted with dull purple and about ¾" long.

95. **P. fœtens** (Lindl. in Bot. Reg. 1843, misc. 7); folio ovali sessili cauli angulato subæquali, sepalis 2 oblongis intus papillosis, petalis oblongis acutis serrulatis glabris, labello oblongo bilamellato concavo carnoso lævi——*Brazil*, Loddiges. v. v. c.——Odor stercoreus. No loose sheath on the angular stem. Flowers green outside, purple inside. Petals white with lines of crimson spots. Lip deep dull purple.

96. **P. aphthosa** (Lindl. in Bot. Reg. 1838, misc. 71. P. pedunculariş, Hooker, Journ. Bot. iii. p. 308, t. 9); folio ovali obtuso cauli angulato æquali, sepalis intus papillosis lateralibus subconnatis, petalis lanceolatis acutis glabris, labello oblongo carnoso medio altè canaliculato margine papilloso declivi——*Mexico*, hortul.; *Guatemala*, hortul. v. v. c.——The native country uncertain: Mexico, according to the Birmingham Botanic garden; Guatemala according to the Garden of Woburn, a very bad authority. It is much like P. fœtens, but the leaves are more oval, it wants the atrocious smell, the petals are entire, and the fleshy lip is sliced off as it were right and left. The flowers are also much smaller. (Pollen-masses 2, globose; 4, Hooker.)

97. **P. vittata** (Lindl. in Bot. Reg. 1838, misc. 133. P. Wageneriana, Klotzsch in Allg. Gartenzeit, Aug. 28, 1852); folio oblongo crassissimo, caule angulato, sepalis pubescentibus dorsali lineari angusto lateralibus ferè liberis semioblongis, petalis serrulatis, labello carnoso ovato lævi margine scabro obtuso sagittulato utrinque infra medium dente acuto aucto——*Mexico*, Loddiges; *Venezuela*, Fendler, 1481. h. s. sp. & v. c.——A singular thick leathery sessile leaf, and a three-lobed lip are characteristic of this species. Flowers brown purple, streaked and dotted with bright purple inside. (Column cucullate, auricled near the stigma. Pollen-masses 2, plano-convex, adpressed.)

98. **P. aspasicensis** (Rchb. f. in Bonplandia, Dec. 1, 1854); "folio lanceolato utrinque attenuato, sepalis liberis, petalis falcatis, labello ligulato attenuato retuso basi transversè carinato et utrinque lobulo falcato aucto." ——*Caracas*, Wagener, v. fl. unic.——Stem 3"—4", with great torn sheaths. Leaf a span long, and 1" wide in the middle.

99. **P. breviflora** (Lindl. in Bot. Reg. 1841, misc. 125); folio obovato-oblongo, caule angulato, sepalis hispidis ovatis intus brevibus antico cochleato dorsali multò latiore, petalis oblongis apiculatis, labello carnoso rugoso excavato obovato obtuso versus apicem obtusangulo——*Mexico*, Loddiges, v. v. c.——The short dumpy hispid dull purple flowers, are quite unlike the others in this group.

‡‡ Flores glabri.

100. **P. rigidifolia** (Rchb. f. in Bonplandia, Aug. 1, 1855); folio lanceolato coriaceo rigidissimo striato cauli arctè vaginato æquali, floribus plurimis longè pedicellatis glabris, ovario tomentoso, bracteolis sparsim hispidis, sepalis 3 acuminatis obtusis, petalis conformibus paulò minoribus, labello minimo columnæ adpresso oblongo utrinque obtusangulo——*South Peru*, Mathews (*Chachapoyas*, 3187), h. s. sp.——Although I cannot wholly reconcile my specimens with Rchb.'s description, yet I cannot doubt their belonging to his P. rigidifolia; the difference between his account of the lip and mine being caused by the crushed state of his flowers. The leaf is 8" × 1½" or smaller in proportion, much acuminate, but blunt and emarginate. (Column short,

broad, semiterete with a blunt tooth behind, and a very acute angle in front on each side of the stigma. Pollen-masses 2.)

101. **P. octomerioides** (Lindl. in Comp. Bot. Mag. 2. 354. P. congesta, A. Rich. & Gal. in Ann. Sc. ser. 3, vol. 3. 17); folio oblongo-lanceolato obtuso caule multò breviore, bracteolis scabris, sepalis petalisque oblongis æqualibus, lamello carnoso ovato canaliculato——*Mexico*, Henchman, v. v. c.——Much like Octomeria Baueri. Flowers pale yellow, very fleshy, with a purple lip. (Lower leaf-sheaths with purple transverse scabrous flecks as in P. Ceratothallis. Pollen-masses 2.)

102. **P. chloidophylla** (Rchb. f. in Linnæa 22. 830); "caule vaginis 4-6 nervosis tecto, folio oblongo cuneato apice angustato, floribus 1-3, sepalis petalisq. subæqualibus oblongis acutis, labello pandurato unguiculato angulis supra basin obtusis apice retusis lamellis 2 obtusis in medio, columnâ clavatâ ——*Brazil*, Beyrich (*on trunks of trees at N. Friburg*)." Rchb. f.

103. **P. viridula;** folio ovato-oblongo papyraceo caule breviore, vaginis imbricatis carinatis costatis, floribus 2 bracteatis, sepalis 3 oblongis acutis, petalis filiformibus brevioribus, labello oblongo apiculato basi incurvo——*Venezuela*, Fendler, 1486, h. s. sp.——A small species with greenish flowers. Leaf 17‴ × 5‴. Sheaths of the stem 4, the uppermost forming a spathe. Requires further examination.

104. **P. ujarensis** (Restrepia ujarensis, Rchb. f. in Bonpl. Aug. 1, 1855); folio angusto ovali complicato cauli æquali, vaginis membranaceis apice inflatis costatis, sepalo dorsali membranaceo naviculari lateralibus linearibus carnosis, petalis oblongis decurvis, labello membranaceo obtusè et æqualiter trilobo diaphano medio incrassato, ovario triptero——*Costarica*, Oersted (*at* 3000′), h. s. sp. comm. cel. Oersted & Rchb. f.——Leaf 12‴ × 2‴. Stems a little longer. (Column nearly terete, erect, with a fleshy 2-lobed antherbed. Anther 2-lobed.) See note at end of Restrepia. The lateral sepals appear to be always uppermost.

105. **P. tubulosa;** folio papyraceo oblongo petiolato caule debili distanter vaginato duplo breviore, spatha longè tubulosâ costatâ, sepalo dorsali (antico) membranaceo naviculari lateralibus herbaceis linearibus, petalis oblongis obtusis, labello obovato diaphano margine crispo basi carnoso excavato hastato lobis brevibus antrorsum falcatis——*Peru*, Jameson (*Valley of Lloa, on trees; forests at* 12,000′), h. s. sp.——Nearly related to the last, but much longer and with quite a different lip. The sheaths of the stem are each marked with about 3 purple ribs. Flowers white. (Column cucullate, with a projecting rostel. Pollen-masses 4, in pairs.)

106. **P. discoidea** (Lindl. in Bot. Reg. sub t. 1797); folio ovato-lanceolato cauli gracili nudo æquali v. longiore, pedunculis unifloris, sepalis 2 ovatis antico duplò majore, petalis linearibus apice angustatis deflexis, labello cordato-ovato obtusiusculo sepalis subæquali——*Trinidad*, hb. Hooker, v. ic. pict.—— Longest stems 1½ inch high. Lip yellow with an oblong sanguine spot in the middle.

107. **P. atropurpurea** (Lindl. in Bot. Reg. 1842, misc. Specklinia atropurpurea, id. in Bot. Reg. sub t. 1797); folio oblongo basi angustato cauli subæquali, vaginis ventricosis, flore solitario, sepalis lineari-oblongis, petalis nanis obliquis 3-cuspidatis, labello obtusè sagittato medio cristato——*Jamaica*, hort. Liverpool, v. s. c. in hb. Hooker——Leaf 2½″; stem 2″. Flowerbud half an inch long. Flower dark purple.

§ VI. RESTREPIOIDEÆ; floribus solitariis aut fasciculatis, petalis filiformibus sæpius clavatis.

N.B. P. semipellucida, No. 27, has glandular petals. In P. filifera, No. 112, they are merely filiform, not visibly clavate; and the same may almost be said of P. gratiosa, No. 110. The two last cannot, however, be separated from P. hemirhoda, No. 109.

1. *Flores longipedunculati.*

108. **P. tentaculata** (Lindl. in Comp.Bot.Mag. 2. 354. Restrepia tentaculata, Pöppig & Endl. n. g. & sp. 1. 34. t. 59); folio oblongo basi angustato cauli æquali, floribus paucis, sepalis 2 lineari-lanceolatis æqualibus, petalis e lata basi filiformibus clavatis, labello basi auriculato in setam petalis æqualem extenso ——*Peru*, Pöppig (*on trees near Pampayaco and Cuchero*)——Flowers 4 inches in diameter. Sepals white. Petals at point and lip purple. (Pollen-masses 2. Antherbed expanded into a palmate membrane.)

109. **P. hemirhoda** (Lindl. in Paxt. Fl. Garden, No. 612. Restrepia vittata, id. in Journ. Hort. Soc. 3. 315 ic. Rest. nuda, Klotzsch Allg. Gartenz. Aug. 28, 1852); folio angusto oblongo, flore solitario, sepalis 2 antico oblongo latiore concavo, petalis ovatis tomentosis recurvis in filum clavatum sepalo dorsali æquale productis, labello acutè auriculato oblongo convexo margine tomentoso sepalo antico parum breviore——*Colombia*, Linden, v. v. c.——Sepals white; petals crimson and white; lip yellowish with deep purple stripes. (Pollen-masses 2, connected by a double granular flap.)

110. **P. gratiosa** (Rchb. f. in Bonplandia, Jan. 15, 1854. Xenia 1. 17. t. 28); folio oblongo basi subcuneato apice angustato acuto, pedunculo medio bracteolato, sepalis 2 triangulis acuminatis, petalis æquilongis ovalibus apice filiformibus "subdilatatis, labello orbiculato acuto ciliato tricarinato utrinque unifalculato brevissimo"——*Caracas*, Wagener (*at* 5000′)——Flower white, with purple spots at the base. (Column short, with a strong tooth at the back of the antherbed.)

111. **P. crocodiliceps** (Rchb. f. in Bonplandia, Dec. 1, 1854); folio oblongo-ligulato acuto, pedunculo supra medium bracteato, sepalis ligulato-linearibus subæqualibus, petalis linearibus acuminatis subæquilongis, labello "a basi humerata cordata divergente rectangulo retuso abbreviato"——*Caracas*, Schlim——Stem winged ancipital! 4″; leaf papery, of the same length. Peduncle 2″.

112. **P. filifera**; folio ovato-oblongo pergameneo apice subitò acuminato basi complicato, caule multò longiore tereti longè infra medium vaginato apice carinato, pedunculo basi bracteato, sepalis 2 postico duplici angusto ovato antico duplo majore incurvo, petalis filiformibus sepalis æqualibus, labello unguiculato ovato obtuso aspero——*Peru*, Jameson (*in the valley of Lloa, on trunks of trees, at* 9000′), h. s. sp.——Much like P. gratiosa, but with a narrow abruptly acuminate leaf and an entirely different lip. Compare this with P. Lansbergii, No. 47.

2. *Flores subsessiles.*

113. **P. nittiorhyncha**; folio late oblongo carnoso pedicellis æquali, caulis folio æqualis vaginis carinatis imbricatis maculatis, sepalis parallelis dorsali lineari acuminato petalisque æquilongis apice clavatis antico emarginato naviculari, labello concavo acuminato apice scabro in cuneum expanso basi utrinque laciniâ lineari falcatâ aucto——*Ocaña*, Schlim. h. s. sp. sine numero. ——Leaf $1\frac{1}{2}'' \times \frac{3}{4}''$. Flowers green. The end of the lip is shaped like a duck's bill. (Column long, semiterete, clavate, cucullate, with a horizontal projecting rostel.)

114. **P. hystrix** (Rchb. f. in Bonplandia, Jan. 15, 1854); folio angustè lanceolato cauli æquali, vaginis asperrimis, ovario puberulo, sepalo dorsali triangulo acuto antico bifido lobis triangulis, petalis basi obtusè quadratis margine superiore lineari carnoso, labello oblongo obtuso anticè utrinque minutè sinuato——*Caracas*, Wagener, h. s. sp. sine flore comm. Rchb.—— Remarkable for its singularly spiny stem sheaths. Rchb. compares it to P. Raymondi. ("Column winged, the wings curved inwards, the back wing of the antherbed toothletted and erect.")

115. **P. Reymondi** (Rchb. in Walper's Ann. 3. 520). Duboisia Reymondi, Karsten in Allg. Gartenz. 1847, p. 394. Dubois-Reymondia palpigera, id. in Bot. Zeit. 6. 397); folio coriaceo lineari-lanceolato obtusè acuminato caule breviore, vaginis asperis manicatis, sepalis pubescentibus oblongis dorsali majore antico bifido breviore, petalis bilobis lobo altero rotundato altero elongato clavato, "labello oblongo minuto basi concavo ante excavationem bicornutulo" ——*Venezuela*, Karsten, Fendler, 1489. h. s. sp.——Much like P. ceratothallis in all except the flowers, which are wholly different. Sepals orange, brown, and green. *Fendler.*

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§ VII. BRACHYSTACHYÆ; foliis basi haud cordatis, racemis folio brevioribus aut vix longioribus.

*** P. meridana, No. 160, in the next §, might perhaps be better stationed in this. See also P. crassipes, No. 172.

A. *Vaginæ caulis rectæ adpressæ.*

1. Folia teretia v. semiteretia canaliculata.

116. **P. Klotzscheana** (Rchb. f. in Linnæa 22. 828); folio convoluto spicis multò longiore, bracteis ciliatis, sepalis 2 extùs papillosis dorsali oblongo acuto antico bidentato basi gibbo, petalis obovatis integris, labello panduræformi obtuso nervis 3 incrassatis lamella una in utroque margine medio—— *Brazil*, Regnell (*Minas Geraes*), h. s. sp. sine fl. comm. cell. Sonder et Rchb. f. ——Leaf 2″, a little falcate, as long as the angular stem.

117. **P. convoluta** (Lindl. in Ann. Nat Hist. 15. 107); folio convoluto recurvo spicis flexuosis paulò longiore, sepalis glabris marginatis lateralibus ultra medium connatis, petalis oblongis obtusis, labello longiore concavo apice spathulato acuto infra medium dilatato rotundato——*Popayan*, Hartweg 1414. h. s. sp.——Leaf 3½″, as long as the angular stem. Spikes 1-3, clothed with flowers to the base. Sheath of the stem membranous, arising near the base.

118. **P. teres** (Lindl. in Bot. Reg. sub t. 1797); folio tereti racemo gracili paulò breviore, floribus pendulis, sepalis acutissimis subcarinatis lateralibus apice liberis, petalis oblongis acutis, labello canaliculato acutissimo basi latiore marginibus incrassatis, columnâ basi pubescente——*Brazil*, Loddiges, v. v. c. ——Flowers pendulous, cinnamon-coloured; leaves like those of Leptotes bicolor. Strictly this should stand among Elongatæ, but it cannot be well separated from the two preceding.

2. Folia plana.

* *Folium caule multo brevius.*

119. **P. rostriflora** (Rchb. f. in Linnæa 22. 827); folio angusto oblongo basi angustiore, pedicellis capillaribus apice 6-7-floris basi nudis, sepalis oblongis disjunctis (?) dorsali intùs villoso, petalis nanis ligulatis, labello cordato unguiculato sub apice subitò attenuato——*Brazil*, Beyrich (*Serra dos Orgaos, near the Rio Papaquera*), h. s. sp. comm. cel. Rchb. f.——Leaf 3″ × ½″

Stem 4″. I have been unable to dissect the only flower in my possession of this curious and very distinct species; but that it has a shaggy glandular purple lining to the dorsal sepal is apparent without dissection.

120. **P. truncata** (Hooker ic. pl. t. 55. Rchb. f. in Bonplandia, Sept. 1, 1855); folio ovato-lanceolato acuminato racemis longiore, sepalis marginatis dorsali oblongo obtuso antico retuso ventricoso obsoletè bicarinato, petalis oblongis nanis basi angustioribus, labello sessili transversè oblongo lateribus involutis——*Peru*, Jameson, h. s. sp.——A very distinct plant immediately recognised by its erect slender spikes of orange-coloured flowers, and transverse lip, which may be compared to a broad strap attached by the middle of one side and rolled up. (Column terete, truncate with a great two-lobed convex rostel.)

121. **P. sphenochila;** folio oblongo coriaceo longè petiolato caule duplo breviore, racemis gracilibus strictis, sepalis liberis lineari-lanceolatis, petalis nanis lanceolatis, labello duplo breviore sessili cuneato lamellis 2 apice rectangulis intra-marginalibus——*New Granada*, Schlim (*Ocaña*, 1031), h. s. sp.——Leaf 4″. Stem 6″. Bracts ovate, cucullate. Flowers the size of P. truncata.

122. **P. cochlearis** (Rchb. f. in Bot. Zeit. 1852. p. 764); folio oblongo-lanceolato basi cuneato, spicâ pauciflorâ, sepalo dorsali lanceolato membranaceo antico carnoso cochleato, petalis lanceolatis acutis, labello sagittato complicato medio carinato——*Mexico*, Hort. Dresd.——Stem 3″—4″. Sepals whitish with 5 red streaks. Petals white, with one purple line. Lip purple with a green gold edge.

123. **P. secunda** (Pöppig & Endl. n. g. & sp. 1. 49. 85); folio lato ovali acuminato caule paulò breviore racemis strictis secundis longiore, sepalis 2 latè ovatis subæqualibus diaphanis, petalis linearibus acuminatis integris paulò brevioribus, labello subrotundo cordato acuminato concavo longè unguiculato——*Peru*, Pöppig (*in the dry woods of Cuchero, on trees*)——Stem 6′. Racemes from 3 to 8. Flowers pale rose, with purple veins in the sepals.

124. **P. navilinguis** (Rchb. f. in Bonpl. Dec. 1, 1854); folio oblongo-cuneato acuto racemis 3 duplò longiore, sepalis 2 æqualibus, petalis ligulatis obtusis minutis integris, labello ligulato anticè acuto naviculari——*N. Grenada*, Schlim——Stem 3″—4″ with three sheaths. (Column clavate, with a triangular elevated head behind.)

125. **P. obovata** (Lindl. in Bot. Reg. 1842, misc. P. albida, id. in Taylor's Ann. Nat. Hist. ser. III. i. 327. P. octomeriæformis, Rchb. f. in Bonpland. Jan. 15, 1854. Specklinia obovata, Lindl. in Bot. Reg. 1839, misc. 137); folio obovato obtuso in petiolum canaliculatum angustato cauli angulato æquali, pedicellis plurimis paucifloris capillaribus, sepalis linearibus glabris acuminatis disjunctis, petalis minoribus conformibus integris, labello sessili lineari acuto infra medium constricto——*Cuba*, Wright, 655 (*on shaded rocks*). *Venezuela*, Fendler, 1487; *Caracas*, Wagener; not Brazil as far as at present known, h. s. sp.——Flowers small, yellowish white. (Column with a large crisp membranous hood.)

126. **P. dendrophila** (Rchb. f. in Linnæa 22. 827); "folio oblongo angustissimè cuneato, caulis sulcati vaginis 3 erectis, pedicellis aggregatis nunc ramosis paucifloris, sepalis glabris dorsali oblongo acuto sub apice dilatato lateralibus lanceolatis acutis basi connatis, petalis linearibus apice triangulis serrulatis, labello oblongo serrulato sub apice utrinque emarginato—— *Venezuela*, Funck & Schlim, 1057——The above character is Reichenbach's, *mutatis mutandis;* but I imagine Fendler's 1474, which is in fruit only, to be the same; in which case it will be very near P. obovata.

127. **P. capillaris** (Lindl. in Bot. Reg. sub t. 1797); folio lineari-lanceolato racemis capillaribus æquali, sepalis acutissimis glabris lateralibus basi connatis, petalis lanceolatis æquilongis serratis, labello sessili lanceolato acuto basi angustato petalis æquali——*Brazil*, Martius (*on trunks of trees in the province of Rio Janeiro*), v. s. sp. in hb. Martius——Stem 4″. Leaf $2\frac{1}{2}$″.

emarg., pp. membr. lunatis, lab. minuto 3-dent. disco convexo.——*Peru*, Jameson, h. s. sp.——A thin-leaved densely tufted plant, not unlike S. nutans. Its pubescent very blunt sepals are remarkable.

125. **S. pugiunculi**; caule prolifero, f. coriac. lin. lanc. subsess. spicâ reflexâ paulò breviore, s. antico ventr. emarg. dorsali obl. 3-nervi, pp. membr. ov. acut. 3-nerviis, lab. hastato laciniâ intermediâ elongatâ acum. disco carnoso——*Peru*, Jameson, h. s. sp.——A branching plant, with terete nearly naked branches. Leaf $1\frac{3}{4}'' \times 2\frac{1}{2}'''$. Spike $2\frac{1}{4}''$. Bracts small membr. not acuminate. Lip broad and cuneate at the base, produced in the middle into a long straight narrow blade.

126. **S. triseta**; caule prolifero laxè vaginato, f. obl. angustè petiol. spicâ exili strictâ duplò breviore, ss. obl. 3-nerv. anticis semiliberis, pp. cuneatis lunatis labelloq. obl. concavo aristatis——*Bolivia*, Bridges, h. s. sp.——Extremely like S. tenuicaulis, No 119, but very different in the structure of the flowers, which are also much smaller. The long aristæ of the lunate cuneate petals are found in no other species.

§ III. LABIATÆ.

127. **S. brevilabris** (Lindl. in Ann. Nat. Hist. 1845, p. 107); caulescens-ramosa, f. lin. lanc. racemo stricto multò breviore, fl. secund. nutant., bract. membr. obt., ss. obl. 3-nerv. subcarin. dorsali multò longiore intus calvo, pp. membr. cun. rotund. subtrilobis 3-nerv., lab. minimo carnoso incurvo 3-lobo lob. lat. rotundatis erectis intermedio conc. acut. tuberculo magno in discum, columnâ tripartitâ——*Popayan*, Hartweg (*Paramo de Guanacas*, 1411), h. s. sp.——An erect branching little bush. Leaf $2'' \times 2\frac{1}{2}'''$. Spikes 6″ or less. The very minute lip is so difficult to dissect, that I have only ascertained its true structure after repeated examination. My original description of it was inexact.

128. **S. lobata** (Rchb. f. in. Bonpl. 1 Sept. 1855); caulescens ramosa, f. lanc. spicâ breviore, bract. membr. acut., ss. 3-nerv. anticis ovatis acutis dorsali obl. duplò longiore intus velutino, pp. membr. subtrilob., lab. hastato acuminato basi bicalloso, columnâ 3-partitâ——*Peru*, Jameson (*Andes of Quito, Valley of Lloa, on trees*), h. s. sp.——Much like the last, but the leaves are broader, the spikes shorter, the flowers green. There is a variety with purple flowers and broader leaves, collected by Jameson *in the forest of Auca, on the road to Nanegal, on trees at* 6000′, and elsewhere.

129. **S. piperina**; rhizomate repente, foliis imbricatis succulentis subrotundo-obl. obt. quam caules multò longioribus quam spicæ erectæ breviores, ss. lat. ovatis acum. dorsali crassiore spathulato, pp. 3-dent. 5-nerviis dente medio carnoso, lab. lanceolato basi fornicato——*Peru*, Jameson (*Forest on the Western slope of the Andes, on the trunks of trees*) h. s. sp.——A very remarkable plant, looking like a creeping Peperomia, with leaves so close to each other as to be imbricated. Leaf $9''' \times 4\frac{1}{2}'''$. Stem 3‴. Spike 18‴. Bracts membranous acuminate. Flowers apparently brownish green, the back sepal being much darker than the others.

130. **S. velutina**; f. obl. coriac. subsess. basi angustato cauli laxè vaginato æq. spicâ duplò breviore, bract. ovatis acut. membr. ferè imbricatis, ss. intus velutinis lateralibus semiconn. basi angustioribus, pp. trunc., lab. 3-dent. lob. lateralibus minoribus acutis disco abrupto carnoso——Var. β spicis multò longioribus nutantibus secundis——*Peru*, Jameson (α. *Andes on trees*; β *Valley of Lloa*) h. s. sp.——In the typical form the leaf is $3\frac{1}{2}''$—$4'' \times 6'''$—$8'''$, and the spike is 7″. In β the leaf is unknown, the spikes are as much as 10″ long, and the sheaths of the leaf are extremely loose.

131. **S. elongata** (H. B. K. n. g. et sp. I. 363. L. O. p. 13); f. lanc. obt. subcoriac. spicâ quadruplò breviore, fl. nutant., ss. obt. obl. 3-nerv. superiore cæteris longiore——*Popayan*, Humboldt and Bonpl. (*at* 2880′, *flowering in*

November)——Stems 2″ and more. Leaf 3″ × 4‴—5‴. Spike 12″. Flowers 1½‴ long. I find nothing in herbaria corresponding with this imperfect description by Kunth.

132. **S. mucronata**: caule prolifero stricto arctè vaginato, f. lanc. acut. petiol. spicâ exili breviore, bracteis subrotundis membr., s. dorsali 3-nerv. lateralibus acutis incurvis semiconnatis duplò longiore, pp. membr. trilob. lob. med. aristato, lab. minimo 3-dent. lineâ transversâ elevata——*Peru*, Jameson, h. s. sp.——Stem when jointed 3″—4″ long. Leaf 3″ × ½″ as distinctly 3-toothed at the points as any Lepanthes. Flowers very small, apparently purple.

133. **S. bicornis**; f. obl. v. ovato-lanceolato petiolato spicis 1-2 breviore, br. ovat. acut. amplex. pedicello brevioribus, s. dors. carnoso spathul. erect. obt. lateralibus subrotund. membr. conniventibus brevioribus, pp. lunatis obliquè bicornibus, lab. plano rotundato basi truncato, columnæ brachiis linguiform.——*Peru*, Jameson (*valley of Lloa, on trees, flowering in Dec.*) h. s. sp.—— Flowers among the largest. The two petals overlap each other considerably behind the column, and curve forwards their fleshy oblique acuminate points in the form of a pair of horns.

NOTE.—Since the foregoing matter was in type, I have received, through the kindness of Dr. Asa Gray, a complete set of Fendler's Venezuelan Orchids, with that industrious collector's notes, which enable me to make the following additions :—

2—3, p. 2. **S. alata**; f. obl. petiol. cauli subæq. spicis fasc. multò longiore, bract. trunc. acum. hyal. flore parum brevioribus, ss. lin. acut. dorso alatis, pp. cun. mucronulatis aveniis, lab. membr. obl. conc. trunc. infra apicem utrinque emarginato——*Venezuela*, Fendler, 2154, h. s. sp.—— "Flowers golden yellow, crowded, not opening much. Bracts white." Leaf 4″ × 6‴. Stem terete, rather angular, with a long brown close-pressed sheath, ending nearly an inch below the summit.

3—4. **S. coriifolia**; f. sessili carnoso obl. 3-dent. caule membranis vaginato multò longiore spicæ pedunculo æquali, bract. acum. floribus longioribus, s. dorsali minore, pp. membr. cun. transv. 3-nerv. marg. carnoso, lab. obov. carnos. membranaceo-marginato——*Venezuela*, Fendler, 2444, h. s. sp. ——A dwarf cæspitose plant, not more than 2 inches high, exclusive of the spikes. The latter naked as high as the leaves, with a single acum. membr. scale in the middle of the peduncle. "Flowers brownish purple, flower-stalks not curved. Leaves stiff and leathery, thick. Bracts long, acuminate."

6. **S. muscifera.** "Flowers brown. Bracts very transparent."

10. **S. Fendleri.** "Fl. deep yellow; also sulphur yellow. Bracts very thin, perfectly transparent. Lower surface of leaves with minute black dots."

20. **S. tenuilabris.** "Flowers yellow. Bracts golden yellow." No. 1469 of Fendler is the same plant in young fruit.

48. **S. muscosa.** "Flowers minute, deep green."

50. **S. lutea.** "Flowers greenish yellow."

72. **S. humilis.** "Petals golden yellow, striped like *S. sphærochila*. Fl.-stalk and pedicels transparent red."——No. 1466. "Pedicels ascending, short." Has the lip more acuminate and the 3 veins of the petals clavate; but I find no other difference.

78. **S. cymbiformis.** "Fl. bright reddish yellow. Petals striped with brownish black lines. Bracts mucronate."

97. **S. sphærochila.** "Fl. light yellow. Sepals greenish yellow; margin very little hairy. Petals with brownish dots and margin. Pedicels stout,

bent down abruptly in the middle. Leaves with minute black glands.' ——Fendler's 1464 β has "Fl. greenish yellow with purplish veins. Margin of sepals hairy. Bracts nearly truncate with minute black dots." There is no structural difference.

The following do not belong to the genus.

S. *foliosa*, Hooker Ann. Nat. Hist. II. 330 = *Polystachya cerea* Lindl. in Bot. Reg. 1840, misc. 208.
S. *ovalifolia* Focke in Tijdschrift nederl II. 202 } = *Pleurothallis.*
S *flavida* do. do. }
S. *triura* Lindl. Orch. Linden. No. 13 = *Lepanthes.*
S. *cordata* Pers. Syn. No. 3 . }
S. *lanceolata* do. No. 12 . } = *Pleurothallis.*
S. *spiralis* do. No. 13 . }
S. *pulchella* H. B. K. 1 364. *t.* 90 }

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OBERONIA.

L. O. 15. Malaxis ; § Ensifera, *Blume, Bijdr.* i. 394.

Sepala libera, dorsali minore, sæpius reflexa. Petala minora. Labellum sessile, columnam amplectans, immobile, variè divisum, rarò integrum, nunc basi pulvinatum aut carinatum, sæpius concavum. Columna nana, teres basi angustior, clinandrii angulis anticis acutis. Anthera 2-locularis. Pollinia 4, cerea, libera, incumbentia, nunc obliqua et inæqualia——Herbæ *epiphytæ*. Folia *equitantia*. Spicæ (v. Racemi) *terminales*. Flores *minuti*. Omnes Asiaticæ, Australasicæ, Polynesicæ v. Mascarenenses.

The species now collected into this curious genus are for the most part inhabitants of the tropics of Asia, both continental and insular. One is found in the Mauritius and Bourbon, one in Eastern Australia, and five in the South Sea Islands. None have as yet been brought from Africa.

They divide readily into stemless and caulescent species; and although some are as it were intermediate, as in § 2 × × ×, yet there is no practical difficulty in recognising to which section a species belongs.

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§ I. ACAULES; caule nano v. parùm evoluto, foliis omnibus ferè radicalibus.

* *Labello indiviso v. obsoletè lobato.*

1. **O. iridifolia** (L. O. 15, Cymbidium iridifolium, Roxb. Fl. Ind. 3, 458) ; bracteis petalisq. ovatis serratis, labello multifido variè lobato, foliis longissimis ensiformibus——

A; labello basi pectinato apice bilobo multifido. *Sylhet*, Roxb. h. s. sp.

B; labello basi pectinato apice bilobo obtuso denticulato. *Hb. Wallich sine numero*, h. s. sp.

C; labello ovato emarginato altè serrato. *Burma*, Griffith. h. s. sp.

Peduncle two edged. Spike very long and slender. Flowers yellow. Evidently a variable plant, and probably appearing under other forms than those above mentioned. O. iridifolia of Griffith is probably O. Brunoniana, No. 6; of the Bot. Mag. is O. tahitensis, No. 4.

2. **O. cylindrica** (Lindl. in Bot. Register, 1840, misc. 23) ; bracteis serrulatis, floribus intus pilosis, petalis serratis, labello oblongo basi latiore emarginato margine fimbriato——*Philippines*, Cuming (*Island of Bohol*) h. s. sp. and v. v. c.——Leaves 6″—7″. Spikes stout, much longer. Peduncle compressed, winged only near the base. Flowers very small, and compact, green.

3. **O. Griffithiana** (Lindl. Sert. Orch. t. 8 B.) ; bracteis lineari-lanceolatis denticulatis, petalis obtusis fimbriatis papillosis sepalis acutis longioribus labello multifido papilloso in laminam bipartitam producto——*Moulmein*,

Griffith (*common on trees in damp places*), h. s. sp.——A small species with narrow sabre-shaped blunt thin leaves shorter than the spikes which are covered to the base with scattered flowers. Sepals pale green. Petals and lip dull purplish brown. This has a slight tendency to becoming caulescent.

4. **O. tahitensis** (O. iridifolia, Bot. Mag. 4517); bracteis duplicato-serratis, sepalis dorso verrucosis ,petalis linearibus integerrimis, labello oblongo apice bilobo integro laciniis latis subfalcatis basin versus rotundato denticulato——*Otaheite*, Bidwill——Leaves 5″—6″, broad, thick. Spikes not much longer, stiff, with two-edged peduncles, closely covered with brownish yellow flowers. Differs from O. iridifolia in its petals as well as the other marks above ndicated.

5. **O. denticulata** (Wight, ic. 1625); bracteis dentatis, petalis ovatis acutis integerrimis, labello triangulari dentato nunc apice producto bi-bidentato——*Southern Hindostan*, Wight (*Iyamally Hills, near Coimbatore*, fl. Jul. Aug.)——I have not seen this——Leaves short, broad, thick. Spikes much longer, drooping, very dense. Flowers "dull orange." Peduncles completely 2-edged. Varies much in size according to Wight.

6. **O. Brunoniana** (Wight, ic. 1622); bracteis denticulatis, petalis linearibus integerrimis, labello circulari integerrimo infra apicem 2-lobum constricto denticulo interjecto——*Southern Hindostan*, Wight (*Iyamally Hills, near Coimbatore*); *Khasya*, Lobb, h. s. sp.——Leaves as much as 8 or 9 inches long, very broad. Spikes dense, stiff, erect, not much longer. Peduncles completely 2-edged. "A large and handsome species; flowers large for the genus; lip and sepals dark brownish; petals pale yellowish," R. W. This is probably the O. iridifolia of Griffith's Notulæ III. 274, found at Churra growing on a species of Eugenia. If so it will also be an *Assam* plant.

7. **O. forcipata**; bracteis dentatis, petalis linearibus nanis recurvis, labello circulari denticulato apice abrupte forcipato——*Ceylon*, Thwaites (*Hewahette district, on trees*, 2511) h. s. sp.——Much like O. Brunoniana in structure, except that the lip is toothletted all round and that its extended apex is much smaller. The petals are moreover much shorter, and the whole plant, not more than 4″ or 5″ high, has none of the robustness of that species. Peduncle slightly 2-edged. Bracts very deciduous. "Flowers dingy yellow," *Thwaites*, from whom I have an excellent sketch along with the specimens.

8. **O. longibracteata** (L. O. 15); bracteis subulatis alabastris multò longioribus, petalis ovatis acutis integerrimis, labello subrotundo obsoletè 4-lobo, caule in pedunculum monophyllum ancipitem producto——*Ceylon*, Macrae, h. s. sp.——Of this little plant the leaves are thin, narrow, and nearly straight. The stem is extended enough to bear one or two rather distant leaves at its base, and another at its summit immediately below the flower spike; in my specimens it is from 2 to 3 inches long. Perhaps therefore it would be better to place the species in the caulescent division.

9. **O. platycaulon** (Wight, ic. 1623); bracteis serrulatis, petalis filiformibus sepalis æqualibus, labello carnoso oblato trilobo: lobo medio tridentato, pedunculo latissimè alato——*S. Hindostan*, Wight (*Courtallum; Pulney Mountains in September*) h. s. sp.——Flowers "whitish or pale yellow." Peduncle four lines wide up to the very flowers, quite thin.

10. **O. Lindleyana** (Wight, ic. 1624); bracteis ciliatis, petalis filiformibus integerrimis, labello subrotundo truncato obsoletè quadrilobo integerrimo——*Khasya Hills*, Lobb; *S. Hindostan*, Wight (*Iyamally Hills, near Coimbatore*) h. s. sp.——Leaves very succulent, broad and often dolabriform. Spikes longer, drooping. Peduncles narrow, the winged edges vanishing near the flowers which are "straw colour with a dull orange lip" (R. W.). My Khasya specimens have the front of the lip less lobed than in Wight's figure, and the petals are narrower. Specimens of the southern form I have not seen.

11. **O. setifera**; bracteis cymbiformibus integerrimis, petalis setaceis sepalis longioribus, labello obsolete quadrilobo truncato denticulato versus basin rotundato—— *Western India, (S. Concan,* Dalzell,) h. s. sp. ex hb. Stocks, 38——A very small species not exceeding $2\frac{1}{2}''$, flower spike included. Leaves quite sharp-pointed. Peduncles terete. Flowers perhaps the smallest in the genus——This might perhaps be better placed among the quadrifid species, further on.

12. **O. truncata**; bracteis acuminatis serrulatis, petalis integerrimis oblongis, labello carnosissimo obtriangulari obsoletè æqualiter 3-lobo——*Ceylon,* Champion (*Hantanè*) h. s. sp.——Leaves about $4'''$ broad, and apparently thin. Peduncle broadly winged. Flowers small, green? From root to tip of erect spike $5''$.

** *Labello bifido.*

13. **O. lunata** (L. O. p. 17, Rchb. f. in Bonpl. Mar. 1, 1857, Malaxis lunata, Blume, Bijdr. p. 394); "foliis paucis ensiformibus basi vaginatis subincurvis, labelli limbo semilunato denticulato, capsulis oblongis"——*Java,* Blume (*Mt. Salak, flowering from October to February*)——Lip often slightly 3-lobed according to Rchb. f. Can this be O. truncata, No. 12?

14. **O. verticillata** (Wight, ic. 1626); bracteis angustis serrulatis, labello truncato in laciniis 2 æqualibus semibipartito, floribus verticillatis, capsulâ oblongâ.

A, *grandiflora;* floribus majoribus glabris, habitu vegetiore——*Nilgherries,* Schmidt, 37; *Pulney Mountains,* Wight; *Khasya,* Lobb, h. s. sp.——Flowers green and orange (R. W.). Some of Schmidt's specimens in the Hookerian herbarium are 1′ from root to tip of spikes. Peduncle terete except near the base.

B, *pubescens;* floribus minoribus pubescentibus, petalis latioribus——*Ceylon,* Thwaites, 2516, h. s. sp.——Rather less in stature than **A,** with much smaller flowers.

C, *densiflora;* floribus minoribus densis, habitu multò humiliore——*Nilgherries,* Schmidt, 36, h. s. sp.——The flowers appear to be much yellower than in **A.** Not more than $4''$ high.

D, *Khasyana;* floribus laxis multò minoribus glabris viridibus——*Khasya,* Lobb; *at* 2′—6000′, Hooker and Thomson 118; h. s. sp.——A small form with short drooping spikes, never above $3''$—$4''$ high. Flowers pale green.

E, *gigantea;* petalis spathulatis, labello basi dilatato laciniis apicis carnosis——*Java,* Junghuhns 294, h. s. sp.——Spikes in fruit more than a foot long. Capsules subsessile, obconical.

15. **O. pyrulifera**; rachi acutangulo, bracteis integris acuminatis rigidis, petalis serrulatis, labelli bifidi lobis acutis parallelis, capsulâ pyriformi——*Khasya Hills,* Griffith (*Myrung, on trees*) h. s. sp.——Much like var. **D** of the last species, but the long-stalked pear-shaped fruit, and serrulate petals induce me, with much hesitation, to distinguish it. The flowers appear to be pale yellow with an orange lip.

*** *Labello trifido.*

16. **O. tenuis**; bracteis setaceis floribus longioribus, petalis linearibus obtusis integris sepalis æqualibus, labelli lobis lateralibus elongatis filiformibus incurvis intermedio cuneato leviter trilobo angulis productis——*Ceylon,* Thwaites (*Hittàwaka, on trees, March,* 2654) h. s. sp.——A slight erect thing with small thin lanceolate leaves. Spike erect, 2 inches long. Flowers minute "ochrey red. Lip and appendages dark red," *Thwaites,* from whom I have an analytical sketch.

17. **O. bicornis** (L. O. 16); bracteis setaceis floribus verticillatis longioribus, petalis ovatis, sepalo dorsali maximo, labelli lobis lateralibus lineari-lanceolatis erectis medio carnosis intermedio brevi cuneato truncato——*Sylhet*, Wallich, h. s. sp.——A small species with thin short leaves and long drooping dense verticillate spikes. An elevated fleshy line runs across the base of the lip and along the middle of each erect arm, forming a kind of crescent.

18. **O. demissa**; floribus verticillatis, bracteis ovatis subdentatis, petalis oblongis dentatis, labelli 3-fidi lobis subæqualibus lateralibus rotundatis intermedio ovato acuto——*Terai, below Sikkim*, J. D. Hooker 121, h. s. sp.——A low plant with thin spikes not longer than the thin broad blunt incurved leaves, about 2″ long. Flowers green?

19. **O. brachystachys** (Lindl. Sert. Orch. sub. t. 8); floribus verticillatis, bracteis ovalibus integerrimis, petalis obtusis labellique æqualiter 3-partiti lobis cuneatis denticulatis——*Burma*, Griffith, h. s. sp.——Another dwarf thin-leaved species, in habit much like the last.

20. **O. Jenkinsiana** (Griffith, MSS); floribus densissimis, bracteis setaceo-acuminatis denticulatis, petalis obtusis dentatis, labelli 3-partiti lobis lateralibus majoribus fimbriatis intermedio integro nunc 3-dentato.

A, labelli lobo medio tridentato lateralibus benè fimbriatis——*Assam*, Major Jenkins (*Deboroo Mookh*) h. s. sp.——Somewhat inclined to be caulescent.

B, labelli lobo medio integerrimo lateralibus dentatis——*Khasya Hills*, Lobb, h. s. sp.——About 5″ high. Leaves narrow, erect, acuminate, as long as the spikes.

**** *Labello quadrifido, vel benè quadrilobo.* (See No. 11.)

21. **O. ensiformis** (Malaxis ensiformis, Smith in Rees Cycl. Oberonia acaulis, Griff. Notul. III. 275, ic. 286. Itin. not. 76, no. 1139); bracteis oblongis integerrimis, floribus verticillatis glandulosis, petalis sepalisq. æqualibus, labello oblongo quadrilobo laciniis rotundatis anterioribus productioribus——*Narainhetty in Nepal*, Buchanan Hamilton; *Khasya Mountains*, Griffith (*under Churra, on trees*) h. s. sp.——The largest of the genus. A broken leaf before me must have been 18″. Spikes dense, shorter than the leaves. Peduncles terete. "Leaves brownish, pallid. Sepals and petals reflexed. Lip projecting, 4-lobed. Flowers brownish, with clavate dot-like glands; sepals paler," *Griffith*. Capsules small, dark brown, very dense.

22. **O. Sikkimensis**; bracteis lanceolatis serratis, petalis linearibus integris sepalis æqualibus, labello quadrifido laciniis lateralibus semiovatis falcatis brevioribus——*Sikkim*, J. D. Hooker (*low valleys*, 114) h. s. sp.——Leaves narrow acuminate, as long or longer than the slender spikes. Flowers more or less perfectly verticillate. Looks like a diminutive form of the last, but the lip has quite a different form and wants the clavate glands. The flowers seem to be green.

23. **O. myriantha**; bracteis setaceis denticulatis, petalis obtusis integris sepalis æqualibus, labelli oblongi quadripartiti medio scabri laciniis obtusis lateralibus duplò brevioribus falcatis——*Khasya*, Griffith; *at* 2—4000′, J. D. Hooker and T. Thomson, 113, h. s. sp.——Leaves narrow, rather thick, sometimes setaceo-acuminate, longer or shorter than the very densely flowered verticillate erect (?) spikes. Peduncles terete, with distant empty scales far below the flowers, which are dirty greenish yellow.

B, foliis angustioribus, floribus minoribus, labelli lobis acutioribus lobis lateralibus rectis——*Khasya*, at 4000′, J. D. Hooker and T. Thomson, 117; *Assam*, Griffith, h. s. sp.——There seems to be no appreciable character by which this can be specifically divided from the last; unless mere size of flowers with small differences in the direction of the lobes of the lip can be so considered.

24. **O. recurva** (Lindl. in Bot. Reg. 1839, misc. 8); bracteis ovatis integris' petalis obovatis sepalis acutis æqualibus, labello subrotundo quadrilobo laci˙niis subrotundis anterioribus paulò minoribus mucronulo interjecto——*Bombay*, Loddiges, v. v. c.——A very small species. Leaves short acute. Spike recurved, quite green.

25. **O. Wightiana** (Lindl. in Bot. Reg. 1839, misc. 9. Wight, ic. 1627. O. Arnottiana, Wight, ic. 1628. O. stachyoides, A. Richard in Ann. des Sc. ser. 2. xv. 15, t. 1A.); bracteis lanceolatis denticulatis, petalis linearibus integris, labelli quadrifidi lobis lateralibus erectis rotundatis intermediis longioribus linearibus divergentibus——*Nilgherries, and Pulney Mountains*, Wight, Perrottet; *Khasya Hills*, Lobb; *Ceylon*, Thwaites 2506 (*Newera Ellia*, Gardner) h. s. sp.——Leaves lanceolate, erect, always shorter than the slender erect or drooping spikes. Peduncles terete. Flowers pale green. This seems to vary more than usual in the present genus, in the form of its lip, the front lobes of which are either ligulate and denticulate at the point, or entire, or short and acute; and these differences seem to occur on the same or otherwise undistinguishable individuals. I can find nothing sufficient to separate my learned friend Wight's O. Arnottiana, whose bracts appear exactly the same as in O. Wightiana, and by no means furnished with long cilia, as is represented by his Indian draughtsman.

26. **O. Thisbe** (Rchb. f. in Bonplandia, Mar. 1, 1857); bracteis setaceis floribus subverticillatis brevioribus, petalis erectis sepalisq. concavis obtusis, labelli linearis basi pulvinati laciniis lateralibus setaceo-falcatis intermediis latioribus divaricatis denticulo interjecto——*Philippines*, Cuming, h. s. sp.——Leaves thin, obtuse, shorter than the spikes. Flowers minute, brick-red when dry. Very near the next, but the blunt sepals and petals, shorter bracts and much smaller flowers seem to distinguish it pretty well.

27. **O. rufilabris** (Lindl. Sertum Orch. t. 8 A.); bracteis setaceis floribus sparsis multò longioribus, petalis patulis sepalisq. acutis, labelli linearis bifidi basi pulvinati laciniis lateralibus setaceis intermediis lanceolatis divaricatis ——*Moulmein*, Griffith (*on trees in damp places*) h. s. sp.——Flowers deep dull red, larger than in the last. The petals which are acute fall back upon the sepals instead of standing erect as in that species.

28. **O. Scyllæ**; bracteis herbaceis setaceo-acuminatis floribus longioribus, sepalis lateralibus orbiculatis concavis dorsali lanceolato longiore, petalis linearilanceolatis falcatis ciliatis multò longioribus inflexis, labelli lobis lateralibus linearibus acutis asperis erectis intermediis divergentibus brevioribus apice in crinibus solutis—— *Ceylon*, Thwaites, 3124, h. s. sp.——A most remarkable thing with minute crimson flowers whether opening or expanded, looking like a bunch of red tongues thrust from within a mask, worthy of a Gorgon. The leaves are erect, short, fleshy, bristle-pointed, according to an excellent drawing sent me by my indefatigable and most accurate correspondent, Mr. Thwaites. There does not seem to be any cushion at the base of the lip as in the two last, which is rather singular considering the very close relationship of all three.

§ II. CAULESCENTES; caule elongato distichè folioso. (O. longibracteata, No. 8 should perhaps be referred to this division.)

* *Labello indiviso v. obsoletè lobato.*

29. **O. angustifolia**; bracteis ovatis complicatis integerrimis, petalis integris, labello subrotundo obsoletè quadrilobo lobulis anterioribus obliquè truncatis v. emarginatis——*Sikkim*, Griffith (*Dorjeeling*); *Khasya*, Griffith; *at* 4000′—5000′, J. D. Hooker and T. Thomson, III. h. s. sp.——A very remarkable species with numerous distichous leaves, scarcely more than $\frac{1}{2}'''$ broad, although 8‴ long. The flowers are perhaps the smallest of the genus, perfectly smooth, in ascending spikes from $1\frac{1}{2}''$ to $2\frac{1}{2}''$ long.

30. **O. pachystachya**; bracteis lanceolatis acuminatis sepalisq. hispidis, petalis nanis labelloque ovato acuto glabris——"*S. Sea Islands*," Catlett, 37, h. s. sp.——Leaves lancet-shaped, short, straight from 3 to 5 on each side. Spikes shorter than the stems, in fruit nodding and very dense.

31. **O. imbricata** (L. O. 17, Malaxis imbricata, Blume, Bijdr. p. 395); "caule simplici folioso, foliis compressis vaginatis confertè imbricatis, labelli limbo ligulato denticulato"——*Java*, Blume (*Damp woods on Mounts Gede and Salak*) flowering from September to December——Of this I know nothing certain. If a sketch from Kuhl and Hasselt's collection, for which I am indebted to Prof. Rchb. f., really belongs to it, then it has oblong acute entire bracts, as long as the flowers, entire narrow petals, and an oblong emarginate lip, without any denticulation. The leaves are also so completely imbricated that even their points do not spread away, but form one unbroken line from the root to the origin of the spike.

32. **O. aporophylla** (Rchb. f. in Bonplandia, Mar. 1, 1857); sepalis petalisq. æquilongis acutis, labello pandurato obtusè sagittato apice latiore obcordato denticulato——*Philippines*, Cuming, h. s. sp.——Leaves short spreading 6‴ by 3‴ at the base, acute, about 9 on a side. Spike sessile drooping, covered with flowers to the very base.

33. **O. anceps** (Lindl. Sertum Orch. sub. t. 8; O. imbricata, Wight, ic. 1629 non Blumei; O. Griffithii, Wight, l.c.); bracteis subrotundo-ovatis denticulatis, petalis serrulatis acutis sepalis æqualibus, labello subrotundo brevè sagittato emarginato——*Philippines*, Cuming; *Burma*, Griffith, 1097; *Malacca*, Griffith, according to Wight, h. s. sp.——Leaves broad, blunt, slightly curved inwards, projecting very little beyond each other. Spikes short, extremely dense. Capsules very small, globose, absolutely sessile.

34. **O. miniata** (Lindl. in Bot. Reg. 1843, misc. 8); bracteis ovato-lanceolatis acuminatis, petalis integris obtusis sepalis erectis brevioribus, labello carnoso basi dilatato concavo in laminam linearem emarginatam producto——*Singapore*, Loddiges; *Philippines*, Cuming, h. s. sp. and v. v. c.——Leaves broad falcate acute, four or five on a side. Spikes long, slender, thin-flowered, drooping. Pedicels hairy. Flowers orange-coloured.

35. **O. microphylla** (L. O. 17, Rchb. f. in Bonplandia, March 1, 1857. Malaxis microphylla Blume Bijdr. 395); "subcaulescens, foliis paucis angusto-ensiformibus basi vaginatis subincurvis, petalis erosis, labelli limbo producto rotundato emarginato"——*Java*, Blume (*on the higher parts of M. Salak*) ——M. Rchb. who saw this species, adds nothing to the brief character given by Blume.

36. **O. brevifolia** (L. O. 16, Cymbidium equitans, Thouars, t. 92. Pleurothallis disticha, Ach. Rich. Orch. Maurit. t. 8, f. 1, Ad. Brong. Voy. Coquille, t. 40); bracteis linearibus acuminatis margine asperis, petalis sepalisq. glabris, labello subhastato apice dilatato dentato——*Mauritius*, Bouton, Thouars, Richard, h. s. sp.——Leaves lanceolate, acute, nearly straight. Spikes long, drooping, very slender.

37. **O. glandulosa**; bracteis setaceis margine scabris, petalis sepalis hispidis minoribus, labello apice latiore subdentato——*Otaheite*, Kartalsky (Prescott); Mathews (*on branches of trees*, 158) h. s. sp.——This is probably the Epidendrum equitans of Forster, rather than O. brevifolia, from which it is distinguished, *inter alia*, by its longer straighter leaves and hispid flowers. The latter appear to be pale yellow.

38. **O. spathulata** (L. O. 16, Malaxis equitans, Blume, Bijdr. 395); bracteis concavis floribusq. hispidis, petalis sepalis brevioribus, labello basi rotundato medio constricto apice in laminam denticulatam subrotundam expanso——*Java*, Lobb, h. s. sp.——Leaves like those of O. brevifolia. Flowers very small, green, somewhat verticillate. The hispidity of the flowers is very striking. It agrees well enough with Blume's short definition.

** *Labello bifido.*

39. **O. caulescens** (L. O. 15); petalis linearibus, labello elongato cuneato bilobo basi carnoso utrinque dentato——*Nepal*, Wallich; *Khasya at* 4000′—5000′, J. D. Hooker and T. Thomson, 116, h. s. sp.——Leaves grassy, distant. Spikes very slender, thin flowered, naked at the base. Flowers slightly whorled.

40. **O. spiralis**; petalis ovatis integris sepalis subæqualibus, labello brevi cuneato bifido integerrimo——*Java*, Kuhl and Hasselt.——Of this apparently very distinct species I have only seen a sketch for which I am indebted to Prof. Reichenbach. The leaves are straight, blunt, 4—5 on each side, about 2″ × 5‴. The spike is erect, 4 inches long, with distant perfect spires of minute flowers, which are represented as being smooth. The lip is broader at the end than it is deep, and divided less than halfway down.

*** *Labello tri-quadrifido.*

N.B. All these species have narrow grassy leaves, and might be almost placed among ACAULES.

41. **O. anthropophora** (L. O. 16); bracteis ovatis subdenticulatis, petalis linearibus integerrimis, labello elongato quadrifido laciniis lateralibus brevibus carnosis falcatis intermediis setaceis divergentibus——*Tavoy*, Wallich, h. s. sp. ——In foliage this resembles O. angustifolia, No. 29; but has even less tendency to lengthen its stem. The leaves are about 2 on a side, 1½″ × 1½‴. The spikes are 4″ long, dense at the base, open and nearly flowerless at the point, with a naked terete peduncle rather more than ½″ long.

42. **O. Pumilio** (Rchb. f. in Bonplandia, March 1, 1857); bracteis linearisubulatis floribus æqualibus, petalis ovatis acutis hinc lobulatis crenatis erosis, labello pandurato lobis posticis ligulatis antico obreniformi c. apiculo——*Java*, Rchb. f.——"Allied to O. microphylla. Leaves equitant, linear ligulate, acute, 4 on each side. Raceme long, interrupted, somewhat whorled. Sepals and petals green. Lip vermilion." Seems to differ from the next in the *ligulate* side lobes of the lip, its broader central piece, eroded petals, and shorter bracts.

43. **O. obcordata**; bracteis setaceis floribus longioribus, petalis linearibus acuminatis integerrimis, labelli tripartiti basi bicarinati lobo medio obcordato lateralibus angustis lanceolatis brevioribus——*Sikkim*, J. D. Hooker and T. Thomson (at 2000′, 112): Griffith (*Dorjeeling*); *Khasya*, Griffith (*Myrung*) h. s. sp.——A small, slightly caulescent species, with the foliage of O. anthropophora, No. 41. Spikes verticillate. Flowers deep rose colour (Hooker), or orange coloured (Griffith). The Sikkim specimens are leafy at the base of the spikes in consequence of the elongation of the stem; those from Khasya are much less evidently so.

44. **O. cimicina** (Griffith, Not. III. 275); bracteis lineari-lanceolatis subintegris, petalis oblongis denticulatis sepalis obtusis æqualibus, labelli 4-lobi scabri lobis lateralibus inæqualiter multifidis intermedio elongato acutè bipartito.——*Martaban*, Griffith (*Moulmein, in damp places on Lagerströmia*); *Tenasserim*, Id. (*Mergui*, 772), h. s. sp.——Another grassy leaved species resembling O. anthropophora, No. 41. Spikes long, slender, erect, somewhat verticillate. "Sepals and petals pale, streaked with brown. Lip darker," *Griffith*.

45. **O. Lobbiana**; bracteis minutis subdentatis ovario brevioribus, petalis filiformibus sepalis ovalibus æqualibus, labelli lobis lateralibus rotundatis dentatis intermedio quadrato bidentato——*Borneo*, Lobb, h. s. sp.——A very small species. Scarcely caulescent. Leaves 1 or 2 on each side, thin, blunt. Flowers very minute, apparently yellow, in erect spikes rising much above the leaves.

46. **O. similis** (L. O. 17. Malaxis similis, Blume, Bijdr. 394); "foliis paucis ensiformibus basi vaginatis subrectis, labelli limbo semitrifido eroso lobo medio elongato bifido, capsulis obovatis globosis"——*Java*, Blume (*on the trees of M. Salak*)——One of Kuhl and Hasselt's sketches, No. 37, possibly belongs to this plant, with which it agrees in every thing mentioned except having an eroded lip. The figure shows a linear lip without any trace of erosion, bidentate at point, with a short acute falcate lobe near the base on each side.

46 *bis*. **O. Titania** (Titania miniata Endl. Fl. Norf. p. 31);——*Norfolk Island*, Ferd. Bauer——Evidently some species of this section.

The following are insufficiently known.

47. **O. spiralis**, Griffith, Not. III. 275.

48. **O. trilobata**, Ib. 273. A plant found on trees near Nowgong in the Khasya hills, with leaves a foot and more long. It seems to belong to the Acaules, and has a *clavate* spike longer than the leaves themselves, dense brownish yellow flowers, *sunk in oblong excavations of the axis!* and a flat 3-lobed lip with the lateral lobes rounded and resembling the petals; while the terminal one is broadly obcordate with a deepish denticulate sinus. Is it an Oberonia at all? notwithstanding Griffith's comparison of it to O. iridifolia.

49. **Oberonia**, 120; from the hills and plains of Behar, *J. D. Hooker*.

50. **Oberonia**, from the Brisbane River in New Holland; F. Müller.

51. **Oberonia Myosurus**, L. O. 16, said to be found both in Nepal and the Society Islands. Flowers unknown. Requires re-examination, but evidently a very distinct species among the ACAULES.

52. **Malaxis Querci**, De Vriese, ic. 238; a small stemless species with purplish brown verticillate flowers. Structure unknown.

The following are to be excluded from the genus.

53. **O. Lindleyana**, *Ad. Brongn. Voyage de la Coquille, t.* 40, is probably Adenoncos virens, as Rchb. f. has suggested.

54. **O. gladiata**, *A. Richard in Sert. Astrol. t.* 2,
55. **O. micrantha**, *Ib., t.* 3, } appear to be Phreatias, another suggestion of the learned Leipsig botanist.

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ALVISIA.

Calyx bilabiatus, basi clausus; sepalis lateralibus in mentum semiconnatis. Petala multò minora, libera. Labellum emarginatum, concavum, c. basi productâ columnæ articulatum. Columna nana, libera, basi longè producta, apice brachiis 2 cellulosis acuminatis elongatis instructa. Anthera didyma, loculis omninò disjunctis lateraliter bivalvibus. Pollinia 8, disjuncta, libera——Herba pseudobulbosa, monophylla, spicis terminalibus tenuibus elongatis sparsifloris. Bracteæ herbaceæ. Flores parvi.

Nothing among the species referred to Eria much resembles this curious plant, in which the wholly disunited anther-cells, each with 2 valves opening laterally, not vertically, constitute an important feature. The pollen-masses are all terete, not collected into pairs with a flat commissure.

Alvisia tenuis. *Ceylon*, Thwaites. *On trees in the Ambagamowa district, February*, 1853, (h. s. sp.)

Pseudobulbs single or double, oval, 3‴ long. Leaf 1″ long, membranous, lanceolate, narrowed into the petiole, acute. Spikes filiform, 2″—5″ long, terminal, naked at the base; the flowers being at last 2‴ apart. Bracts herbaceous, membranous, roundish, acute, rather longer than the ovary. Flowers perfectly sessile, orange-coloured, smooth, 1‴ long. Sepals blunt, concave, irregularly involute.

This description is wholly drawn up from a sketch by Mr. Thwaites, I being unwilling to dissect the only two or three flowers I possess.

It gives me much pleasure to give the genus to Mr. Harmanis de Alwis Seneviratna, the meritorious native artist who has been attached to the Botanic Garden, Ceylon, for more than thirty years.

Jan. 6, 1859.

RESTREPIA.

H.B.K. 1. 367. *L.O.* 14.

Sepalum dorsale et petala setaceo-acuminata, apice glandulosa, libera, c. sepalis lateralibus lineari-oblongis productis cohærentibus multò latioribus parallela. Labellum planum, basi excavatum, cum columnæ basi parum productâ articulatum. Columna elongata, tenuis, labello parallela et amplexa; clavata, versus apicem in stigma lineare alato-marginatum excavata; clinandrio cucullato indiviso. Anthera subrotunda, verticalis, 2-locularis. Pollinia . . . . . (in R. elegante 4, subglobosa pedicellata; in R. cucullatâ 4 semipyriformia).——Caulis *nunc monophyllus, nunc ramulosus, ramulis monophyllis; semper squamis magnis membranaceis carinatis imbricatis vaginatus.* Pedunculi *elongati, uniflori, apice squamâ vaginante aucti.* Flores *sæpius maculati, inter majores.*

There is little to separate this genus from Pleurothallis, to which it bears much the same relation as Cirrhopetalum to Bolbophyllum. It would seem, indeed, that R. elegans has four globose pollen-masses, a good character were it so in others; but in R. cucullata, the only species whose pollen-masses I have been able to find, although their number is 4 they are plano-convex and applied face to face. In all the others they are unknown to me, although I have dissected great numbers of flowers. The taper pointed, glandular dorsal sepal and petals cannot be taken alone as distinctive, although they are found in every species; because Pleurothallis hemirhoda, tentaculata, Reymondi and others have the same structure. It is only when this attenuated glandular condition is connected with a long slender column, a cucullate anther bed and linear stigma having a membranous border that the conditions required for a Restrepia are fulfilled. Hence R. parviflora and ujarensis must be removed, as well as such mere Pleurothalls as have been erroneously associated with the genus.

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§ 1. *Monophyllæ. Labellum juxta basin utrinque cirrhosum.*

1. **R. antennifera** (H. B. K. 1.367. t 94. L. O. 14. Rchb. f. in Bonplandia (March 1855——R. maculata Lindl. Orch. Linden No. 19); folio ovato acuto caule breviore, vaginis falcatis, labello lineari retuso scabro trinervi juxta basin utrinque cirrhoso—— *Venezuela* (in the province of Merida, terrestrial at 12000′, Linden 1481; flowers yellow, dotted with red). *New Grenada* (in the prov. of Bogota, on oaks at 7740′, *Linden* 1270; also 47; in Ocaña, at 10500′, *Schlim* 730 & 738). h. s. sp. comm. amic. Linden——In the figure prepared by Turpin for the N. G. et Sp. Pl. of Humboldt and Bonpland the leaves are represented as plaited, and the stem as furnished with two leaves, which is never the case. This led me to distinguish R. maculata, an undoubted error, as modern collections prove. The colours of the flower—yellow dotted with red or purple—seem to be constant; but those of the foliage are not so. Some of my specimens have the sheaths beautifully speckled with purple and the leaves rich purple on the under side; while others are perfectly whole-coloured.

Jan. 15, 1859.

2. **R. elegans** (Karsten Gewächse Venezuelas c. ic. R. punctulata m. in litt. 1846); folio ovali caule duplò longiore, vaginis rectis, labello lineari retuso basi cavo dilatato utrinque unidentato . . . . .——*Caraccas* (on the mossy bark of trees at the height of 5—6000′, *Karsten*); *Columbia*, Linden. h. s. c. comm. amic. Klotzsch——Flowers much smaller than in the last, chiefly yellow spotted with purple. Leaves oval, not at all ovate. I have not seen the lip, and Karsten's figure does not show whether it is scabrous (as I suppose) or merely spotted.

§ 2. *Monophyllæ. Labellum ecirrhosum.*

3. **R. guttulata** (Lindl. in Compan. Bot. Mag. 2. 356); folio ovato acuto caule multò breviore, vaginis rectis, labello scabro retuso basi mutico—— *Pichincha* (in woods, *Jameson*) h. s. sp. comm. cel. Jameson——Very like R. antennifera, but larger in every part, and quite destitute of cirrhi at the base of the lip. If this latter character should prove variable then the plant will perhaps have to be reduced to R. antennifera. I have only seen two specimens and examined one.

4. **R. erythroxantha** (Rchb. f. in Linnæa 22. 817; Bonpland. Jan. 15, 1854. Xenia I. 171. t. 60); folio elliptico basi rotundato caule breviore, vaginis rectis laxiusculis, labello trullæformi denticulato supra basin obtusangulo—— *Columbia*, Moritz——The peculiar form of the lip evidently distinguishes this from any of the preceding. According to Rchb.'s figure it is smooth; his description is silent on that point. "Peduncles purple. Bract yellowish dotted with purple. Upper sepal and petals crimson with the interstices of the veins at the base pale. Front sepals and lip yellow. Column crimson." *Rchb.*

5. **R. Lansbergii** (Rchb. f. in Bonpl. Jan. 15, 1854. Xenia I. 171. t. 60.); folio ovali cauli æquali, vaginis rectis arctè imbricatis, labello lineari truncato scabro mutico basi excavato latiore——*Caraccas*, Wagener. *Venezuela*, Fendler, 1485. h. s. sp.——Resembles small specimens of R. antennifera. "Flowers greenish brown, speckled," *Fendler*; "upper sepal and petals crimson, front sepals white with crimson dots, lip yellow with purple blotches," *Rchb.*

B. *Wageneri* (Rchb. l. c. Xenia, t. 60.). Humilior, labello minus scabro ——*Venezuela*, Wagener; Fendler, 1485, *β*. h. s. sp.——"Upper sepal and petals dark purple, lip and front sepals yellow dotted with purple," *Rchb.*; "flowers yellowish purple with brown stripes; lower surface of leaves minutely and densely dotted with black." *Fendler.*

I cannot persuade myself that the plants here collected are more than slight varieties of one common species. Fendler so considered them, judging from their appearance when wild. Prof. Rchb., indeed, represents the lip of his R. Wageneri as being smooth, doubtless an important circumstance, if real, but his description says nothing, and in my own specimens the lip is decidedly scabrous, although in a less degree than in R. Lansbergii, which is itself little more than a dwarf form of R. guttulata.

6. **R. aspacicensium** (Rchb. f. in Bonplandia, March, 1855); folio ovali caule longiore, vaginis rectis carinatis, labello ligulato retuso ante apicem serrato basi rectangulo——*Venezuela*, Wagener. h. s. sp. sine fl. comm. cel. Rchb.——I have not seen the flowers. The fragment in my herbarium is very like some Pleurothallis, but it has the ancipital sheaths of Restrepia.

7. **R. muscifera** (Rchb. f. in hb. Nostr. Pleurothallis muscifera Lindl. in B. Reg. 1842, misc. no. 77); folio oblongo-lanceolato obtuso, vaginis rectis, floribus fasciculatis, labello lineari glabro medio angustiore apice carnoso obtuso——*Guatemala*, Skinner, v. v. c.——Very like Pleurothallis Ceratothallis and the allied species, but with exactly the column and lateral sepals of a Restrepia. The pollen-masses were not observed.

§ 3. *Ramulosæ.*

8. **R. cucullata** (Lindl. in Taylor's Ann. of Nat. Hist. xv. 108. R. rhynchantha, Rchb. f. in Bonplandia, May 1, 1854); caule ascendente ramuloso, foliis oblongo-linearibus coriaceis acutis pedunculis filiformibus multò brevioribus, vaginis laxis apiculatis, sepalis lateralibus lineari-lanceolatis dorsali angustissimo, petalis cuspidatis, labello oblongo carnoso lævi lamellis 2 per axin denique connatis——*Popayan*, Hartweg (*on trees in the woods of Pitayo, at the height of* 10500′, no. 1430) h. s. sp.——An authentic flower from my learned correspondent, Prof. Reichenbach, is identical with this very distinct and remarkable species.

9. **R. varicosa**; caule ascendente ramuloso, foliis lineari-oblongis basi angustatis pedunculis æqualibus sub apice mucronulatis, vaginis laxis apiculatis, sepalis lateralibus linearibus canaliculatis obtusis dorsali angustissimo, petalis clavatis ciliatis, labello diaphano ovato-oblongo lævi callis 2 juxta basin——*Peru*, Jameson (*Valley of Lloa, on the trunks of trees, at* 9000′ *of elevation*) h. s. p.——Flowers apparently orange yellow. The lip of this species is unlike any other; the column is the same as in R. cucullata, but less elongated.

Species to be excluded from the genus.

R. ophiocephala *Rchb. f.*
R. nuda *Klotzsch.*
R. tentaculata *Pöppig.*
R. vittata *Lindl.*
} =Pleurothallis.

R. ujarensis *Rchb.* Of this I have been favoured with some fragments from Prof. Rchb., which show that it has nothing to do with Restrepia. It is a very peculiar plant, with a great membranous dorsal sepal, a pair of fleshy lateral ones, oblong membranous petals, a 3-lobed membranous lip, and a column which, although imperfectly seen, is not perhaps at variance with that of some Pleurothalls.

R. parvifolia *Lindl.*=Brachionidium.

VANDA.

R. Brown in Bot. Reg., t. 506. *LO., p.* 215. *Blume Rumphia, IV.* 48.

Sepala explanata, omnia basi æqualia et angustata; sæpiùs petaloidea.

Petala sepalis conformia, sæpiùs basi torta.

Labellum basi saccatum v. calcaratum, c. basi columnæ apodæ continuum, carnosum, sæpiùs sepalis multò brevius; subtrilobum aut integrum, ante calcar sæpiùs callosum, auriculis nanis v. obsoletis.

Columna crassa, nana, libera, apoda; *clinandrio* verticali. *Stigma* transversum; *rostello* obtuso v. retuso.

Pollinia cereacea, plano-convexa, geminata, v. 2 altè bipartita; *caudiculâ* loratâ aut cuneatâ, polliniis longiore; *glandulâ* magnâ subrotundâ v. triangulari. *Anthera* ovata, bilocularis, valvulis semiliberis.

Herbæ *epiphytæ* Asiæ tropicæ. Folia *coriacea, disticha, apice obliqua.* Flores *sæpiùs racemosi, conspicui.* Pedunculi *laterales.*

The limits of this genus are very difficult to ascertain; they are here defined by a saccate or calcarate lip continuous with the column, a truncate rostellum, and two or four pollen-masses attached to a broad caudicle having a large circular gland. It is very near Luisia, which is better known by its habit than by any very satisfactory peculiarity of structure, except having a very short broad caudicle, and thin gland. Probably *V. Lowei* at least will be hereafter separated, if other species agreeing with it in its long drooping racemes and simple unguiculate lip should be discovered. The genus, as it now stands, may be divided into the following sections:—

§ 1. **Fieldia**. . . . Lip obscurely auriculate, incurved, entire, concave at the base, with a strong tooth at or above its middle. Pollen-masses four.

§ 2. **Euvanda**. . . Lip auriculate, straight, variously lobed, spurred, even or furrowed (usually with a tooth or callus in front of the spur).

§ 3. **Lamellaria**. Lip auriculate, straight, variously lobed or entire, spurred, bearing from one to three perpendicular plates.

§ 4. **Anota**. . . . Lip without auricles, contracted and lobed at the point, spurred, with a pair of hairy elevated veins.

§ 5. **Cristatæ**. . Lip auriculate, straight or recurved, quite naked, saccate or excavated at the base.

April 20, 1853.

§ 1. FIELDIA.

* 1. **V. Batemanni.** *Lindl. in Bot. Reg.* 1846, *t.* 59.

V. foliis planis coriaceis obliquè emarginatis obtusis racemo laterali multifloro brevioribus, bracteis coriaceis cucullatis squamæformibus, floribus maximis planis coriaceis, alabastris globosis, sepalis petalisque falcatis obovato-cuneiformibus obtusis, labello triangulari basi saccato lobis ascendentibus acutis apice carnoso sulcato uncinato dente elevato in medio et cristâ brevi transversâ juxta basin.

Angræcum quintum. *Rumph., Herb. Amb., VI.* 102.
V. lissochiloides. *LO.,* 216. *Blume Rumphia, IV.* 49.
Fieldia lissochiloides. *Gaudich. Voyage,* 421, *t.* 36.

Wild in the MOLUCCAS, PHILIPPINES, &c., growing on trees near the coast, (*v. v. c.*)

A very large erect plant, with remarkably thick aerial roots, sword-shaped curved hard leaves averaging two feet in length, and a still longer spike of some score of flowers, each full two inches and a half across, flat, leathery, and long enduring; rich golden yellow, spotted all over with crimson in front; behind a vivid purple, fading away at the edges into violet. A rare species of extraordinary beauty, according to Blume the *Angrek Kringsing Kitsjil* of the Malays.

2. **V. gigantea.** *Lindl. in Wall. Cat., no.* 7326. *LO.,* 215.

V. foliis latè loratis apice obtusissimis emarginatis subæqualibus, racemis foliis duplò brevioribus, sepalis petalisque oblongo-obovatis obtusis æqualibus, labello incurvo canaliculato dolabriformi obtuso: callo conico in medio, auriculis nanis rotundatis.

V. Lindleyana. *Griff. notul.,* 353.

Wild in MOULMEIN, and other parts of BURMA; on Lagerstromia Reginæ, on the banks of the Tenasserim river, near Barlavo —Griffith, (*v. s. sp. et ic. pict.*)

Leaves tough and fleshy, fifteen inches long by two and a half broad. Flowers of the size of *V. Roxburghii*, resupinate, deep yellow with cinnamon brown blotches. Pollen-masses four, with a narrow caudicle and broad square membranous gland. Griffith says it is the only Orchid he had seen capable of rivalling American Vandeæ: which is surely a great exaggeration.

3. **V. Lowei.** *Lindl. in Gard. Chron.* 1847, *p.* 239.

V. (foliis coriaceis rigidis distichis), racemo longissimo pendulo flexuoso scabro-piloso, floribus maximis distantibus coriaceis, sepalis petalisque lanceolatis acuminatis valdè undulatis extus scabris, labello parvo unguiculato triangulari glabro sub apice saccato acutissimo supra medium cornu refracto setâque sub apice aucto.

Wild in the forests of BORNEO on high trees in very damp places—Lowe, (*v. s. sp.*)

Flowers lemon-yellow, barred and blotched with bands and spots of the richest cinnamon, three inches in diameter, disposed in pendulous racemes ten to twelve feet long. In some respects, especially in the minute simple unguiculate lip saccate near the point, and two-horned there, this resembles the genus Arachnanthe. The column is tomentose ; the sepals and petals downy. All the plants which were imported are supposed to have perished : so that this noble species has still to be obtained for cultivators.

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§ 2. EUVANDA.

* 4. **V. Roxburghii.** *R. Brown in Bot. Reg., t.* 506. *LO,* 215. *Bot. Mag., t.* 2245. *Van Houtte, Fl. des Serres, Febr.* 1846. *Paxton's Flower Garden, t.* 42, *fig.* 2.

V. caule brevi crasso, foliis apice obliquè tridentatis, racemis erectis foliis longioribus, sepalis petalisque oblongo-obovatis undulatis tessellatis obtusis, labelli lobo medio convexo ovato emarginato obtusissimo canaliculato ante calcar obtusè calloso auriculis acuminatis columnæ subæqualibus.

Vanda. *Jones in As. Researches, IV.* 302.
Cymbidium tesselloides. *Roxb. fl. ind., III.* 463.

Wild on trees in many parts of BENGAL, especially on the Mango—Roxb. (*v. v. c. et s. sp.*)

This fine species, the type of the genus, is readily known by its tessellated flowers and blue lip, the lateral lobes of which are sharp-pointed, and as long as the column.

* 5. **V. concolor.** *Blume Rumphia, IV. p.* 49.

V. caule alto, foliis laxis membranaceis apice obliquè tridentatis, racemis elongatis plurifloris, floribus distantibus, sepalis petalisque oblongo-obovatis unguiculatis undulatis unicoloribus obtusis, labelli lobo intermedio cuneato bilobo basi puberulo lineis elevatis auriculis obtusis, calcare conico attenuato intus pubescente.

V. furva. *Bot. Reg.* 1844, *misc.* 42.
V. Roxburghii, unicolor. *Hooker in Bot. Mag., t.* 3416.

Wild in CHINA—Loddiges, (*v. v. c.*)

According to Blume this is not the *Angræcum furvum* of Rumphius, but a distinct species. It has the habit of *V. Roxburghii*, but differs not only in the whole colour of its sepals and petals, and the other characters above indicated, but also in being a large lax-growing plant, five or six feet high, with much thinner and longer leaves. From the real *Vanda furva* it differs in the colour and form of the lip, in the attenuated spur, in the absence of a callus at the entrance of the latter, and in the total absence of the tessellation found in *V. furva*, as well as in *V. Roxburghii.*

6. **V. furva.** *LO., p.* 215. *Blume Rumphia, IV.* 48, *t.* 192, *fig.* 1, *and t.* 197, *c.*

V. foliis canaliculatis rigidis apice obliquè retusis, racemis

erectis folio brevioribus laxis 3—5-floris, sepalis oblongo-obovatis, petalis unguiculatis obovatis falcatis æquilatis, labello patulo panduriformi glabro (?) apice rotundato emarginato plano lineis 5 elevatis, dente valido ante calcar obconicum obtusum auriculis obtusis ascendentibus.

Angræcum furvum. *Rumph. Herb. Amb., VI. t.* 46, *f.* 1.

Wild in the MOLUCCAS, and in BIMA—Blume.

The figure in Blume's Rumphia, copied from an original in Professor Reinwardt's collection named *Aerides bicolor*, together with the details added by the former author, seem to indicate that this is really a species distinct both from *V. fuscoviridis* and *concolor*, both which I have formerly supposed might be identified with it. The flowers are the size of *V. Roxburghii*, and grow in a few-flowered raceme much shorter than the leaves. The sepals and petals are of the same size, of a rich cinnamon colour distinctly tessellated; the petals are the same size as the sepals, but unguiculate and strongly falcate. The lip is rose coloured, apparently smooth, nearly oblong, with a shallow contraction below the round two-lobed point; at its base stands a stout tooth; its lateral lobes seem very short and blunt; the spur seems to be conical without any attenuation. According to Blume it is called *Angrek Kitsjil glap* by the Malays.

* 7. **V. insignis.** *Blume Rumphia, IV. p.* 49, *t.* 192, *fig.* 2, *and t.* 197, *b. Paxton's Flower Garden, t.* 42, with a woodcut.

V. "foliis rigidis canaliculatis apice inæquali abscissis v. dentatis, racemis erectis folia adæquantibus laxis 5—7-floris, ph. perigon. obovato-oblongis rectiusculis, labelli lobis lateralibus ascendentibus obtusis intermedio arrecto apice dilatato rotundato undulato ad basin subhastatam è tuberculo obtuso cum lineis 2 elevatis, calcare obconico obtuso."—*Blume.*

Wild on the mountains of TIMOR—Blume, (*v. v. c.*)

According to Blume's figure this would seem to be a very handsome species. The flowers are two and a half inches in diameter; green outside, brownish inside. The lip is pink, white at the base, with a singular gauffered surface if we are to trust his figure 192, but flat as in other Vandas judging from his figure 197. The name is frequent in collections, but I have never seen the plant alive, unless it was a specimen flowered by Mr. Knowles of Manchester, in which the lip was furnished with larger side lobes than in Blume's figure 197, but otherwise identical, especially in the concave not convex state of the lip, and the two elevated lines which run along its middle. The sepals and petals were dull yellow blotched with brown. The lip was white, with a faint shade of violet in the middle, and rich deep crimson streaks at the base. The flowers had a slight and agreeable fragrance, even when cut and kept in a sitting-room. See *Paxton's Flower Garden, No.* 341.

8. **V. Hindsii.** *Lindl. in Hook. Journ. Bot.*

V. foliis arcuatis canaliculatis (pedalibus) apice obliquè emarginatis et excisis, racemo horizontali laxo 10-floro foliorum longitudine, pedicellis floribus 3-plò longioribus, sepalis petalisque obovatis unguiculatis lobato-crispis, labelli cornu brevi obtuso lobo intermedio convexo cuneato apice rotundato bilineato ecal-

loso: lateralibus abbreviatis rotundatis hinc acutis explanatis, auriculis nanis.

Wild in the forests of NEW GUINEA—Hinds, (*v. s. sp.*)

This has the habit of *Vanda suavis*, and its flowers seem to be of the same texture and size. Their colour cannot be judged of from the single dried specimen. The short blunt spur is downy inside; there is no callus at the base of the lip; the pollen and anther are those of *V. Roxburghii*, but the gland is much larger and rounder.

* 9. **V. suavis.** *Lindl. in Gard. Chron.* 1848, *p.* 351.

V. foliis loratis flaccidè recurvis apice obliquè dentatis, racemis laxis elongatis, sepalis petalisque spathulatis retrorsis convexis valdè undulatis sublobatis apice rotundatis, labello convexo trilobo laciniâ mediâ angustâ altè bifidâ 3-costatâ lateralibus longis ovatis acutis patulis, auriculis erectis rotundatis.

(A) Flowers white, with blood-red scattered spots. *Paxton's Flower Garden, t.* 42, *fig.* 3.

(B) flava. Flowers yellow, with broad oblong rich brown spots.
V. tricolor. *Hooker, Bot. Mag., t.* 4432.

Wild in JAVA, (*v. v. c.*)

This has the foliage of *V. Roxburghii*. Flowers large, deliciously fragrant, white or yellow, with rich marbling and spotting. Lip deep violet. The lobed sepals and petals are remarkable; they are both bent back at an angle of about 120°, and the petals are twisted round so as to present the principal part of their back to the eye. It is very rare in gardens, the plants thus called being almost always varieties of *V. tricolor*. The figure in the Botanical Magazine is characteristic, but I have never seen the flowers so yellow or the brown spots so large as they are there represented.

* 10. **V. tricolor.** *Lindl. in Bot. Reg.* 1847, *sub t.* 59. *Paxton's Flower Garden, t.* 42.

V. foliis canaliculatis racemo paucifloro longioribus, sepalis petalisque æqualibus coriaceis unguiculatis obovatis obtusis, labello æquilongo trilobo per axin 3-lineato basi vix calloso, laciniis lateralibus rotundatis intermedio convexo cuneato emarginato latioribus auriculis erectis rotundatis, calcare brevi obtuso.

V. suaveolens. *Blume Rumphia, IV. p.* 49 (1848).

(A) Sepals and petals cinnamon, blotched with brown; lip rose-colour.

(B) flava. Flowers wholly yellow, except a faint violet stain in the middle of the lip.

Wild in JAVA; on trees, especially Saguerus saccharifer, in woods on the mountains on the west side of the island—Blume, (*v. v. c.*)

This fine plant always has the sepals white at the back, whatever may be the colour of the inside. Some other varieties occur in collections, of which the three following are the most notable:—1. *V. t. pallens.* Flowers cream-coloured, with scattered brown spots. 2. *V. t. cinnamomea.* Flowers yellower, with lines of close cinnamon-coloured spots. 3. *V. t. planilabris.* With a clear citron ground-colour, scattered broad brown spots, and a *flat* purple lip. This looks very distinct from the others.

11. **V. bicolor.** *Griffith notul., p.* 354, *ic. t.* 330. (*Itin. notes, p.* 132, *no.* 546.)

V. foliis loratis coriaceis medio semitortis apice valdè obliquis subtridentatis, racemis erectis rigidis paucifloris brevioribus, pedunculis angulatis, sepalis petalisque obovatis repandis falcatis tessellatis anticis duplò majoribus, labello linguæformi emarginato basi minutè bicalloso auriculis latioribus columnæ margini connatis, calcare brevi conico obtuso.

Wild in BOOTAN, on trees on the banks of the Monass River, at the elevation of 2300 feet—Griffith, (*v. s. sp. comm. b. Griff.*)

Flowers less than two inches across, white externally, yellowish brown inside, with obscure livid tessellations. Ovary very long, white. Lip lilac, with large white auricles, giving the base a broad cordate appearance, dotted with lilac and tinged with yellow. Capsule very large, club-shaped, six-winged, almost a span long. The length of the anterior sepals brings the species into the neighbourhood of *V. lamellata.*

* 12. **V. fuscoviridis.** *Lindl. in Gard. Chron.* 1848, *p.* 351, with a cut repeated in *Paxton's Flower Garden, under t.* 42, *p.* 20, *no.* 4.

V. . . . . ; racemo paucifloro brevi, sepalis oblongis planis obtusis, petalis unguiculatis obtusis falcatis subundulatis latioribus, labello basi tomentoso ecalloso 5-sulcato bilobo medio utrinque exciso auriculis erectis obtusis nanis, calcare cylindraceo labelli dimidii longitudine.

Wild in (JAVA ?), (*v. v. c.*)

The flowers are about as large as *V. furva*, dull brown, with a little greenish yellow at the edge, and a pure greenish yellow lip ; they have a slightly fishy smell. The species seems to be distinct from all the others ; *V. furva*, to which it approaches nearest, has no undulation of the sepals, nor it would seem any tomentum on the lip, which bears, at its base, a great tooth which is missing, I believe, in this species.

13. **V. limbata.** *Blume Rumphia, IV. p.* 49.

V. "labelli lobo medio arrecto panduriformi margine infernè revoluto apice rotundato-spathulato integerrimo."

Wild in JAVA—Blume.

According to Blume the roots of this are very long. The leaves somewhat curved, seven to eleven inches long, nearly an inch broad, obliquely retuse, channelled, and coriaceous. Racemes erect, lax. The flowers much spreading, about one and a half inch in diameter, ochre-yellow outside, clouded with brown inside ; the two inner more narrowed at the base than the others. The lip much spreading, lilac, expanded at the base of the somewhat panduriform middle lobe, with five slightly elevated lines ; spur compressed, obconical, with a flat transverse rounded callus.

14. **V. helvola.** *Blume Rumphia, IV. p.* 49.

V. "foliis rigidis subundulatis basi carinatis apice obliquè retusis, racemis erectiusculis folio brevioribus laxis subtrifloris,

ph. perig. oblongo-spathulatis lateralibus 2 exterioribus sub labello conniventibus, labelli saccati lobis lateralibus conniventibus obtusis intermedio patulo triangulari."—*Blume.*

Wild in mountain woods on the West of JAVA, flowering in March and April—Blume.

Blume states this to be a most magnificent species, forming a sort of transition between Vanda, Renanthera, and Cleisostoma. Flowers the size of *V. suaveolens* (my *tricolor*), wine-red, shading into pale purple, with the lateral lobes of the lip short and a brighter purple. Column much dilated at the base; the little sac of the lip has a pair of small callosities on the side opposite the column; the middle lobe is triangular-hastate, tumid inside, and a little furrowed, concave beneath.

15. **V. Sulingi.** *Blume, Museum,* 1. 62.

V. foliis rigidis canaliculatis rectiusculis apice obliquè retusis, racemis erectiusculis folium æquantibus laxis 3—5-floris, sepalis petalisque lineari-spathulatis, labelli lobo intermedio ovato patulo incrassato tuberculis lineato auriculis ascendentibus truncatis erosulis, calcare brevi incurvo.

Aerides Sulingi. *Blume, Bijdr.* 367.
"Armodorum distichum. *Kuhl and v. Hasselt. Orch. t.* 6."—(Bl.)
Renanthera Sulingi. *LO.*, 217.

Wild in JAVA; on rocks and trees on Mount Suling, in the province of Buitenzorg—Blume.

Flowers dull purple.—*Blume.* I am uncertain whether a plant, very rare in Gardens, bearing this name, and much resembling a Renanthera, is what Blume intends; but I presume not.

* 16. **V. teres.** *Lindl. in Wall. Cat., no.* 7324. *Bot. Reg., t.* 1809. *Bot. Mag., t.* 4114. *Griffith notul.,* 352.

V. scandens, foliis teretibus, racemis ascendentibus subbifloris foliis æqualibus, sepalis oblongis obtusis: supremo erecto lateralibus semitortis labello suppositis, petalis majoribus suborbiculatis undulatis, labello maximo cucullato pubescente apice dilatatâ rotundatâ emarginatâ auriculis subrotundis maximis incurvis, calcare magno infundibulari.

Wild in hot damp jungles in SYLHET, BURMAH, MARTABAN, scrambling up the bark of trees—Griffith, (*v. s. sp. et v. c.*)

Flowers very large; sepals white; petals sanguine, with a white border. Lip sanguine, strongly veined, yellow on the upper surface below the point, and speckled with crimson. A most beautiful species. Griffith says that the sepals and petals adhere at the base, and he questions its being a Vanda at all. No doubt in the triangular gland and cuneate caudicle it differs from other species.

§ 3. LAMELLARIA.

17. V. Cathcarti.

V. longè caulescens, foliis oblongis planis subundulatis apice rotundatis obliquè bilobis racemo laxo erecto paucifloro breviori-bus, sepalis petalisque oblongis rotundatis sessilibus æqualibus, labello coriaceo basi mutico cuniculato auriculis nanis rotundatis lobo intermedio cordato obtuso margine elevato tomentoso rugoso, per axin bicostato ante cuniculum carnosissimo.

Wild in SIKKIM HIMALAYA, at 3000 feet—J. D. Hooker; hot places 2-4000 feet—Cathcart, (*v. s. sp. et ic. pict.*)

This seems to be a very showy scrambling plant, with the habit of *Renanthera coccinea*. The leaves are six to seven inches long, by one and a half broad, or somewhat less. The flowers are fleshy and from three to four inches in diameter, in a two to four-flowered straggling raceme ; the sepals and petals are white outside, yellowish with horizontal narrow cinnamon-brown bands. The lip, which resembles a tray, is white, with a downy yellow turned-up edge ; its auricles are speckled with red, as is the callus formed by the junction of two strong ribs that run along the middle dividing it into two halves ; at the base, instead of a spur, there is a deep horizontal hole, worked in the thickness of the lip, and reaching to about one-third of its length. The column is green, tinged with red ; the anther is bright yellow. The pollen-masses, which I have not seen, appear to be four.

No more remarkable Orchid has been found in Northern India, and therefore it is selected to bear the name of J. F. Cathcart, Esq., who caused a noble collection of drawings to be made in Sikkim, some account of which it is to be hoped that the public will have in time from Dr. Hooker.

* 18. **V. cœrulea.** *Griffith MSS. Lindl. in Bot. Reg.*, 1847, *sub t.* 30. *No.* 1284 *Griffith, Itin. notes, p.* 88. *Paxton's Flower Garden, t.* 36.

V. foliis coriaceis apice æqualibus truncatis sinu concavo lobis lateralibus acutis, spicis densis erectis multifloris, bracteis oblongis concavis obtusissimis membranaceis, sepalis petalisque basi tortis azureis membranaceis oblongis obtusissimis planis subunguiculatis, labello coriaceo lineari-oblongo apice divergenti-bilobo obtuso per axin trilamellato auriculis triangularibus acu-minatis, calcare curvo obtuso intus lævi.

Wild in KHASIA, at the height of 3-4000 feet—J. D. Hooker and T. Thomson ; near the R. Borpanee at an elevation of 2500 feet, on trees of Gordonia, in Pine and Oak forests—Griffith, (*v. s. sp. et v. c.*)

Leaves five inches long by nearly one wide ; equally two-lobed, and sharp-pointed, so that the end looks as if a piece had been struck off by a circular punch. The bright blue flowers grow in upright spikes. Each flower is nearly four inches in diameter. The lip is barely three-quarters of an inch long, narrow, with a short spur and a two-lobed point. Its surface is broken by three deep parallel perpendicular plates, and the auricles of the base are triangular and acuminated.

19. **V. cœrulescens.** *Griffith Notulæ, p.* 352 ; *Ic. t.* 331.

V. caule elongato, foliis angustis loratis bilobis, pedunculis nudis distanter vaginatis erectis multifloris foliis et caule multò longioribus, pedunculis trigonis, sepalis petalisque basi tortis unguiculatis ovatis obtusis, labello ovato auriculato columnæ adnato, calcare recto conico.

Wild in BURMA, on trees at Tsenbo near Bamo—Griffith.

Only known from some notes of Griffith, and a rude figure. The species appears to be near *V. spathulata*. Sepals and petals pale blue ; lip white at the base, blue at the point, with the auricles purplish lilac inside. Column blue, minutely dotted.

* 20. **V. lamellata.** *Lindl. in Bot. Reg. misc.* 1838, *no.* 125.

V. foliis coriaceis obliquè et acutè bidentatis, spicâ multiflorâ thyrsoideâ, sepalis petalisque obovatis obtusis undulatis inferioribus subincurvis majoribus, labello lineis 2 divergentibus elevatis acuto obcuneato retuso pone apicem bituberculato, auriculis nanis rotundatis, calcare brevi cylindraceo conico intus hirsuto.

Wild in the PHILIPPINES—Cuming, (*v. v. c. et s. sp.*)

Flowers in long loose erect racemes, pale yellow, streaked with dull pale red.

21. **V. spathulata.** *Spreng. Syst.* 3. 719. *LO.*, 216.

V. caule elongato, foliis ovato-oblongis obtusis obliquè emarginatis, pedunculis nudis distanter vaginatis erectis multifloris foliis et caule multò longioribus, sepalis petalisque oblongis obtusis planis, labello rhomboideo apice incurvo medio cristato basi intra calcar acutè conicum bicalloso auriculis retusis, ovario hexaptero.

Wild in MYSORE and MALABAR, (*v. s. sp. comm. cel. Wight.*)

A species with long corymbose racemes of golden-yellow flowers standing high above the short distichous leaves. Both leaves and flower-stalks are marked with crimson spots ; the former vary in breadth and length. Inside the spur of the lip is a pair of linear diverging calli free at the upper end.

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§ 4. ANOTA.

22. **V. densiflora.** *Lindl. in Paxton's Flower Garden, under t.* 42.

V. foliis latis loratis coriaceis apice uncinato-bilobis obliquis, racemis strictis cylindraceis multifloris, sepalis oblongis obtusis, petalis angustioribus obovatis, labello edentulo inappendiculato lineis 2 elevatis juxta calcar pubescentibus oblongo carnoso infra

apicem constricto exinde 3-partito sub apice mucronato lobis rotundatis intermedio inflexo minore, calcare vacuo conico breviore.

Saccolabium giganteum. *LO.*, 221.

Wild in Jungles in BURMA; near Prome—Wallich, (*v. s. sp.*)

Although the pollen apparatus of this is unknown to me, yet its habit, so much like that of *V. gigantea*, and its thick leathery lip, lead to the placing it in Vanda. The leaves in the specimen before me are nearly a foot long and one and three-quarters of an inch broad. The racemes are erect, very dense, with broad short membranous reflexed bracts when the flowers have fallen. The latter are much less fleshy than in *V. gigantea*, &c. Two elevated hairy lines pass from within the spur diverging in the middle and reuniting at the contracted portion of the lip.

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§ 5. CRISTATÆ.

* 23. **V. cristata.** *LO.*, 216. *Sertum Orchidaceum, f.* 3. in front. *Bot. Reg., t.* 48. 1842.

V. foliis canaliculatis recurvis apice truncatis obliquè excisis tridentatis, racemo erecto trifloro foliis breviore, sepalis oblongis obtusis fornicatis, petalis angustioribus incurvis, labello oblongo convexo sulcato apice saccato inæqualiter tricorni, auriculis ovatis, calcare conico vacuo.

(B) Flowers much paler. Lip without the apical horns.

Wild in NEPAL—Wallich; Bootan—Griffith; **B**, Sikkim—Cathcart, (*v. v. c. et s. sp.*)

Flowers green; lip regularly striped with rich purple on a buff ground, and divided at the end into two or three narrow acute diverging unequal lobes. This is the plant mentioned in Griffith's *Itinerary Notes, p.* 203. *no.* 1188, as an Aerides growing on trees at Chuka, remarkable for smelling of Cockroaches. The var. **B** is only known to me by one of Mr. Cathcart's drawings. It brings *V. cristata* still nearer to *V. alpina*.

24. **V. Griffithii.** *Lindl. in Paxton's Fl. Gard. under t.* 42.

V. foliis canaliculatis recurvis acutè inæqualiter tridentatis, racemis erectis 5-floris foliis brevioribus, sepalis lineari-oblongis recurvantibus, petalis acuminatis, labello ovato elongato sulcato mutico basi concavo vacuo.

Wild in BOOTAN—Griffith, (*v. s. sp.*)

Very like *V. cristata;* but perfectly distinct in the termination of the leaves, which are sharply and unequally three-lobed, not truncate and præmorse; and in the form of the lip. The flowers are much smaller. A wrong reference in my herbarium led me to refer this to 546 of Griffith's Bootan plants, which the publication of his *Icones* shows to belong to *V. bicolor*.

* 25. **V. alpina.**

V. foliis canaliculatis recurvis obliquè (nunc acutè) bilobis mucronulo sæpiùs interjecto, racemis subsessilibus erectis 2—3-

floris, sepalis oblongis sub apice incrassatis, petalis paulò minoribus, labello oblongo concavo nudo sub apice gibboso emarginato, auriculis cum laminâ confluentibus.

Luisia alpina. *Lindl. in Bot. Reg.* 1838, *misc.* 101.

Wild in KHASIA, at the height of 5-6000 feet—J. D. Hooker and T. Thomson; near Nungklow—Gibson, (*v. v. c. et s. sp.*)

The habit is that of *V. cristata;* the flowers approach so nearly to those of a Luisia that it is a question to which genus it belongs; the pollen apparatus is more that of Vanda. Flowers small, pale green. Lip yellowish, streaked with dull purple. Basal hollow, deep purple.

Species excluded.

Vanda pulchella, *Wight* . = Saccolabium.
——— longifolia, *Lindl.*
——— multiflora, *Id.*
——— congesta, *Id.* } = Acampe.
——— Wightiana, *Wight*
——— parviflora, *Lindl.* . = Aerides Wightianum.
——— peduncularis, *Lindl.* = Cottonia.

LUISIA.

Gaudichaud, in Freycinet's Voyage, p. 426. (1826.) *Blume Rumphia, IV.* 50. *Museum* 1. 63.

Sepala herbacea, linearia, lateralibus labello suppositis, dorsali minore.

Petala dissimilia, tenuiora, sæpius longiora, patentissima v. fornicata.

Labellum indivisum, sæpiùs auriculatum, c. columnâ continuum, dependens, inappendiculatum, nunc convexum nunc concavum et medio constrictum.

Columna nana, carnosa, apoda. *Stigma* anticum, circulare; *rostello* obtuso obsoleto.

Pollinia 2, cereacea, posticè excavata; *caudiculâ* latâ, brevi, triangulari; *glandulâ* membranaceâ replicatâ. *Anthera* subrotunda, 2-locularis; valvulis macilentis.

Herbæ *epiphytæ, caulescentes, erectæ, junceæ,* Asiæ *et* Americæ tropicæ. Folia *teretia, rigida.* Flores *parvi, obscure virides v. purpurascentes.*

A genus of inconspicuous, taper-leaved, rushy plants, with dingy green or purplish or yellowish flowers. The species differ greatly in the form of the lip and the proportions of the sepals and petals. They are not of the least interest to cultivators ; the most remarkable is *L. volucris*, found in Khasia by Mr. T. Lobb, which does not appear to have been gathered by any other traveller.

A species occurs on rocks on Mount Victoria in Hong Kong, where it was found by Major Champion (*herb. Champ.* 526) : but it was not seen in flower and cannot be identified. It may possibly be *L. teres.*

---

1. **L. volucris.**

L. spicis brevissimis paucifloris, sepalo dorsali recto lineari cucullato, petalis ferè triplo longioribus patentissimis linearibus subspathulatis, labello biauriculato laminâ cordatâ oblongâ convexâ.

Wild in Khasia—T. Lobb, (*v. s. sp. comm. am. Veitch.*)

Much the most striking of the genus. The flowers look like little birds with narrow outspread wings, or petals. They are nearly two and a half inches from tip to tip.

2. **L. antennifera.** *Blume Rumphia,* 64.

L. spicis multifloris, sepalis oblongis lateralibus margine reflexis dorsali cucullato, petalis angustissimis elongatis apice

subincrassatis, labello biauriculato ovato obtuso ad callosum apicem margine revoluto.

Wild in BORNEO; on trees near Martapura—Blume.

3. **L. tenuifolia.** *Blume Museum,* 64.

L. petalis sepalo dorsali duplò longioribus, sepalis lateralibus sub apice mucronulatis, labello oblongo biauri convexo trisulcato apice tenui bilobo.

Tsierou-mau-maravara. *Rheede, XII. t.* 5.
Cymbidium tenuifolium. *LO.,* 167.
Birchea teretifolia. *A. Rich. Ann. Sc.* 1841, *t.* 10.
Luisia Birchea. *Blume, l. c.*

Wild in CEYLON—Macrae; NILGHERRY mountains—Hooker; MALABAR—Rheede; KHASIA—Lobb, (*v. s. sp.*)

Sepals and petals yellowish green. Lip pale green, painted with purple, and bearing some resemblance to an Ophrys.

* 4. **L. trichorhiza.** *Blume Museum,* 63.

L. racemo paucifloro, petalis sepalo dorsali parum longioribus, sepalis lateralibus altè carinatis, labello convexo oblongo rotundato basi biauri supra basin interrupto, radicibus junioribus pubescentibus.

Vanda ? trichorhiza. *Hook. Exot. Bot., t.* 72.
Cymbidium triste. *Hooker, in Bot. Mag., t.* 3648.

Wild in KHASIA, at the base—J. D. Hooker and T. Thomson; hot valleys of SIKKIM—J. D. Hooker; NILGHERRY mountains—Hooker, (*v. s. sp.*)

This is the stoutest and stiffest of the genus, sometimes with an enormous development of downy roots. Flowers dull dirty purple, or (as in B. M. 3648) with white sepals and petals.

5. **L. teretifolia.** *Gaudich. in Freyc. Voy., p.* 426, *t.* 37. *Blume Rumphia, IV.* 50, *t.* 194, *f.* 3; *t.* 197 *D. Museum* 63.

L. spicis multifloris, sepalis oblongo-ovatis acutis, petalis paulò longioribus linearibus obtusis, labello auriculato constricto laminâ oblongâ concavâ 3-callosâ.

Epidendrum triste. *Forster, prodr. n.* 314.

Wild in the MALAY ARCHIPELAGO—Blume; NEW CALEDONIA—Forster.

I have not seen this plant. According to Blume the flowers are greenish yellow, with a dark purple lip bordered with yellow.

6. **L. teres.** *Blume Museum,* 64.

L. spicis paucifloris, sepalis lateralibus angustioribus carinatis dorsali et petalis subæqualibus, labello biauriculato oblongo sulcato apice bifido c. mucrone intermedio.

Epidendrum teres. *Thunb. Fl. Jap. p.* 30 ; *Ic. Pl. Jap. decas* 1.

Wild in JAPAN—Thunberg.

* 7. **L. zeylanica.**

L. spicis sessilibus nanis, sepalo dorsali petalis acuminatis obtusis multò breviore, labello concavo oblongo lævi medio constricto.

Cymbidium triste. *Hort. Angl.*

Wild in CEYLON—Macrae, (*v. s. sp. et v. c.*)

Flowers dull green with a dull violet lip.

8. **L. Burmanica.**

L. spicis brevissimis, sepalis petalisque inflexis acuminatis, labelli inauriculati ungue lato sulcato laminâ ovatâ cordatâ acutâ papillosâ.

Cymbidium triste. *Griffith Notul.* 340 *in part.*

Wild in BURMA ; near Mergui—Griffith, (*v. ic. pict. beat. inventoris.*)

I only know this from a sketch by Griffith. It has the habit of *L. tenuifolia*, but the flowers are totally different. They are greenish daggled with red, and the lip is black purple with green stains inside the edge.

9. **L. uniflora.** *Blume Rumphia,* 64.

L. floribus solitariis longè pedunculatis, petalis sepalis æqualibus sed triplò angustioribus, labello concavo medio constricto dimidiæ inferioris venis rectis elevatis superioris ovatæ medio calloso.

Mesoclastes uniflora. *LO.*, 45

Wild in NEPAL ; Gossain Than—Wallich, (*v. s. sp.*)

Entirely different from *L. tenuifolia*, to which Blume suggests that it may be referred.

10. **L. brachystachys.** *Blume Rumphia,* 64.

L. racemis sessilibus, sepalis petalisque subæqualibus, labello concavo medio constricto apice ovato sulcato.

Mesoclastes brachystachys. *LO.*, 45
Cymbidium triste. *Roxb. Fl. Ind., III.* 461. *Wight, Ic. t.* 1689.

Wild in CONTINENTAL INDIA ; Delta of the Ganges, common —Roxburgh ; Silhet—Wallich ; Khasia—Lobb ; JAVA and BORNEO—Blume, (*v. s. sp.*)

Flowers pale pink—*Wight ;* yellowish—*Blume ;* greenish yellow, lip dark purple with a few yellowish spots—*Roxburgh.*

11. **L. occidentalis.**

L. spicis nanis sessilibus, sepalis petalisque incurvis æquilongis, labello cordato ovato-oblongo convexo emarginato.

Wild in NEW GRENADA; Sa. Martha—Purdie, (*v. s. sp. comm. cel. Hooker.*)

Flowers very small. Habit quite that of *Luisia brachystachys*. Pollen-apparatus unknown to me.

Species excluded.

Luisia alpina, *Lindl.* = Vanda alpina.

in the order of publication, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, wholly unknown, or very imperfectly known, to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Osyricera *Blume.*
Chrysoglossum *Blume.*
Titania *Endlicher.*
Platystylis *Blume.*
Gastroglottis *Blume.*
Macrostomium *Blume.*
Diploconchium *Schauer.*
Diglyphis *Blume.*
Epicrianthes *Blume.*
Thelychiton *Endlicher.*
Cochlia *Blume.*
Aphyllorchis *Blume.*
Acanthoglossum *Blume.*
Collabium *Blume.*
Pachystoma *Blume.*
Calostylis *Blume.*
Ceratium *Blume.*
Pachychilus *Blume.*
Microsaccus *Blume.*
Lichenora *Wight.*
Ceratostylis *Blume.*

Ephippium *Blume.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Pteroceras *Hasskarl.*
Adenoncos *Blume.*
Glomera *Blume.*
Conchochilus *Hasskarl.*
Todaroa *Ach. Richard.*
Cuitlauzina *La Llave.*
Psittacoglossum *La Llave.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Didymoplexis *Griffith.*
Haplostellis *Ach. Richard.*
Cyathoglottis *Pöppig.*
Chlorosa *Blume.*
Rophostemon *Blume.*
Ocampoa *Ach. Richard.*
Plexaure *Endlicher.*
Eucosia *Blume.*
Macodes *Blume.*

Galera *Blume.*
Hysteria *Reinwardt.*
Scaredederis *Thouars.*
Acronia *Presl.*
Sclerοpteris *Scheidweiler.*
Apetalon *Wight.*
Podanthera *Wight.*
Amblostoma *Scheidweiler.*
Leucorchis *Blume.*
Pseuderiopsis *Reichenb. fil.*
Brachtia *Reichenb. fil.*
Aclinia *Griffith.*
Androgyne *Griffith.*

Cybele *Falconer.*
Cryptosanus *Scheidweiler.*
Bolborchis *Moritzi.*
Pseudepidendrum *Reichenb. fil.*
Ponerorchis *Rchb. f.*
Mesospinidium *Rchb. f.*
Paradisanthus *Rchb. f.*
Pescatorea *Rchb. f.*
Chaubardia *Rchb. f.*
Hofmeistera *Rchb. f.*
Sarcadenia *Hort. Par.*
Guebina *Hort. Par.*

ABBREVIATIONS.

LO.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

LIST OF GENERA IN THIS PART.

EPIDENDRUM (CONCLUDED)	18	pages
HEMISCLERIA	2	„
PINELIA	2	„
ACACALLIS	2	„
ABOLA	2	„
ONCODIA	2	„
COCHLIODA	2	„
CHEIRADENIA	2	„
ACAMPE	4	„
VANDA	12	„
LUISIA	4	„

Part V.] FEBRUARY, 1854. [Price 2s. 6d.

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

PUBLISHED FOR THE AUTHOR, BY J. MATTHEWS,
AT 5, UPPER WELLINGTON STREET, COVENT GARDEN, LONDON.

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-two years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with most serious difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between forty and fifty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera

postici cordato-ovati obtusi disco calloso cuniculo inflato, clinandrio dentato.

Wild in the WEST INDIES, common; CARACCAS—Purdie; MEXICO—Pavon; DEMERARA—Loddiges, Schomburgk, 889; SURINAM—Splitgerber; BRAZIL, on trees, Barro do Rio Negro—Spruce, 1166, Martius, Miers, (*v. s. sp. et v. c.*)

Stem simple, a span high, two-edged. Flowers small, green, turning yellow.

* 240. **E. coriifolium.** *Lindley, in Journ. Hort. Soc., VI.* 218, *c. ic.*

E. foliis angustis coriaceis subdistichis carinatis concavis obtusis, spicâ densâ terminali, bracteis coriaceis carinatis herbaceis distichis ovario longioribus, sepalis lateralibus crassis carinatis ovalibus, petalis linearibus spathulatis, labello subrotundo plano emarginato basi bicalloso medio elevato.

Wild in CENTRAL AMERICA—Skinner, (*v. v. c.*)

In all its parts tough, thick, leathery, and generally glazed, as it were, with a shining exudation. The narrow stiff leaves are blunt, about six inches long, concave, with a sharp midrib. Spike terminal, about four inches long, consisting of hard amplexicaul keeled bracts. Flowers greenish. Keel of lateral sepals serrated.

241. **E. xylostachyum.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 70.

E. caule simplici, foliis oblongis obtusis coriaceis mucronulatis vaginis scabris, spicâ strictâ flexuosâ durâ folio summo parùm breviore, bracteis herbaceis cucullatis ovatis rigidis approximatis, floribus carnosis, sepalis oblongis concavis, petalis conformibus planis angustioribus, labello cordato ovato obtuso concavo margine recurvo, clinandrio integro.

Wild in NEW GRENADA; Peñon du Pan de Azucar, on the side of Tolima, at the height of 6000 feet; February—Linden, 1280,(*v. s. sp.*)

Resembles *E. macrostachyum*, but the bracts are larger, the spike is short, the flowers are larger, and the petals are almost as broad as the sepals, instead of being filiform. Flowers greenish white.

242. **E. macrostachyum.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 70.

E. caule simplici, foliis oblongis mucronulatis vaginis scabriusculis, racemo longissimo cernuo angulato, bracteis magnis duris ovato-cordatis reflexis, floribus coriaceis, sepalis oblongis obtusis, petalis filiformibus, labello cordato obtuso lævi basi valdè concavo, clinandrio integro.

Wild in NEW GRENADA; on the rocks of the Pan de Azucar, on the side of Tolima, at the height of 6000 feet; February —Linden, 1279, (*v. s. sp.*)

A singular species, with racemes more than a foot long, covered with distant leafy bracts full half an inch long. Flowers green, fleshy. Stem from two to three feet high.

243. **E. imbricatum.** *LO.*, 71.

E. caule ramoso, foliis distichis lineari-oblongis obtusis, spicis ovato-oblongis imbricatis, bracteis carinatis obtusis, sepalis petalisque ovatis acutis subæqualibus erectis, labello ovato acuto obsoletè crenulato.

Wild in BRAZIL; pendent from large trees in the Organ Mountains—Gardner, 630, (*v. s. sp.*)

Spike almost like a strobilus, two inches long, by one and a half inch broad. "Flowers white."—*Gardner.*

244. **E. bifarium.** *Swartz Fl. Ind. Occ., III.* 1509. *LO.*, 69.

E. foliis distichis cordato-lanceolatis acuminatis horizontalibus, spicâ terminali flexuosâ, rachi ancipiti, bracteis spathaceis compressis falcatis acutis carinatis, sepalis ovato-lanceolatis convexis, petalis brevioribus setaceis, labelli dilatati trilobi lobis lateralibus subrotundis integris intermedio bilobo.

Wild in JAMAICA—Mac Fadyen, 4; on the trunks of trees on the Blue Mountains; September—Swartz, (*v. s. sp. in hb. Smith et Hooker.*)

Stem two to four inches high. Flowers greenish white. Bracts somewhat falcate, keeled, as long as the ovary. The only specimens I have seen of this are in Mr. Smith's herbarium, from Swartz himself, and in Sir William Hooker's. Its amplexicaul fleshy somewhat falcate leaves, and long naked ancipitous zigzag spike, are very different from anything else in the genus.

C. *PLANIFOLIA UMBELLATA.*

245. **E. piperinum.** *Lindley, in Ann. Nat. Hist., XV.* 256.

E. caule ramuloso, foliis distichis succulentis oblongis obliquis obtusis laxè vaginatis, pedunculis brevissimis terminalibus subbifloris, sepalo dorsali petalisque filiformibus erectis lateralibus ovato-lanceolatis carinatis horizontalibus, labello cordato-ovato cochleato ecalloso venis radiantibus in margine confluentibus.

Wild in PERU; on the road between Quito and the village of Machachi—Hartweg, 1419, (*v. s. sp.*)

A small succulent species, when dried beautifully netted. It looks like a *Peperomia.*

246. **E. tolimense.** *Lindley, in Bot. Reg.* 1845, *misc. p.* 66. *Orch. Linden., no.* 29.

E. caulibus ramosis scaberrimis, foliis striatis ovato-lanceolatis, floribus 2—3 terminalibus sessilibus coriaceis, sepalis lineari-

MILTONIA.

Lindley, in Bot. Reg. 1976, *et t.* 1992.

SEPALA explanata, æqualia : lateralibus basi paulò connatis.

PETALA conformia, æquilonga.

LABELLUM indivisum, sessile, c. columnâ continuum, lineis quibusdam elevatis interruptis juxta basin.

COLUMNA nana, auriculis 2, nunc cum clinandrio cucullato confluentibus. *Stigma* excavatum.

POLLINIA 2, cereacea, posticè sulcata; *caudiculâ* obovatâ; *glandulâ* oblongâ. *Anthera* operculata, membranacea, nuda.

Herbæ *epiphytæ* Americæ tropicæ, *pseudobulbosæ, colore sæpiùs lutescente.* Folia *angusta, plana.* Racemi *simplices, radicales,* pedunculo *sæpiùs squamis arctè imbricato.* Flores *speciosi, lutei,* v. *purpurei.*

The short column separates this genus from Oncidium and Odontoglossum ; its auricles from Brassia. Its habit is peculiar. The section B bears the same relation to Miltonia as the § Trymenium to Odontoglossum.

SUBDIVISIONS OF THE GENUS.

§ A. Column with two auricles; anther-bed naked.

§ B. Column wings blended with the cucullate membranous raised edge of the anther-bed.

---

§ A.

* 1. **M. spectabilis.** *Lindley, in Bot. Reg. sub t.* 1976, *Aug.* 1, 1837, *t.* 1992. *Bot. Mag., t.* 4204.

M. pseudobulbis ovalibus ancipitibus lævibus, foliis ligulatis patentissimis, pedunculis unifloris squamis magnis fuscis striatis carinatis densè imbricatis, sepalis ovalibus planis, petalis conformibus latioribus revolutis, labello maximo cuneato rotundato basi trilamellato, columnæ alis angustis acutissimis.

(A) Sepals and petals white. Macrochilus Fryanus. *Floral Cab., t.* 45, *Sept.* 1, 1837.

(B) Sepals and petals purple. *Bot. Mag., t.* 4425. Miltonia Moreliana. *Hort.*

Wild in BRAZIL; Serra de Estrella—Weddell, ic. ined. no. 17, (*v. v. c.*)

Flowers very large, solitary ; in the original species, with pale straw-coloured sepals and petals, and a broad violet purple lip ribbed with crimson. The variety **B** has nothing whatever except colour to distinguish it. The foliage has the unhealthy tern colour so common in this genus.

DEC. 1, 1853.

* 2. **M. Karwinskii.** *Lindley, in Journ. Hort. Soc., IV.* 77, *c. ic.*

M. scapo paniculato, sepalis petalisque oblongo-lanceolatis apiculatis, labello obovato rigido ecristato venis centralibus recurvantibus lamellatis, auriculis columnæ serratis, caudiculâ obovatâ.

Oncidium Karwinskii. *Lindley, Sertum, sub t.* 25.
Cyrtochilum Karwinskii. *Lindley, Bot. Reg. sub t.* 1992.

Wild in MEXICO—Karwinski in hb. reg. Monac. (*v. v. c. et s. sp. comm. cel. Grisebach.*)

A fine species, with flowers 2⅛ inches in diameter. Sepals and petals banded with brown on a yellow ground. Lip deep violet on the lower half, pale on the upper ; the lateral sepals placed exactly beneath it.

* 3. **M. Clowesii.** *Lindley, in Sert. Orch. t.* 34. *Bot. Mag.* 4109.

M. pseudobulbis ovalibus diphyllis, foliis ensiformibus angustis erectis scapo longioribus, racemo paucifloro laxo, bracteis minutis, sepalis petalisque lanceolatis æqualibus, labelli cordati in medio constricti apice subrotundo acuto basi lamellis 5 inæqualibus abruptis quincuncialibus auctâ, columnæ auriculis abortientibus.

Odontoglossum Clowesii. *Lindley, in Bot. Reg.* 1839, *misc.* 153.
Brassia Clowesii. *Id.*

Wild in BRAZIL; Organ Mountains—Gardner, 669, (*v. v. c. et s. sp.*)

Sepals blotched with chocolate brown upon a yellow ground. Lip white at the tip, violet-coloured at the base. There can be no doubt that this belongs to the same genus as M. Karwinskii. My former notion that it must be a Brassia was founded upon a supposed entire absence of column-ears ; I now, however, know that they are present, as represented in the *Bot. Mag.*, although quite rudimentary. The numerous lamellæ, too, are alien from Brassia.

* 4. **M. Russelliana.** *Lindley, in Sert. Orch., sub t.* 48.

M. pseudobulbis ovatis costatis diphyllis, foliis ligulato-lanceolatis patentibus, racemo paucifloro, bracteis acuminatis ovario 3-plo brevioribus, sepalis petalisque conformibus ovato-oblongis subundulatis, labello postico oblongo-cuneato retuso apiculato subsinuato, lamellis disci pluribus parallelis interruptis truncatis, columnæ bidentatæ alis magnis falcatis.

Oncidium Russellianum. *Lindley, in Bot. Reg., t.* 1830.

Wild in BRAZIL; near Tejuco in the province of Rio Janeiro, (*v. v. c.*)

Flowers dingy greenish purple. Lip posterior, dull violet. Wings of the column yellow. Border of the stigma crimson.

5. **M. Regnelli.** *Reichenb. f. in Linnæa., XXII.* 851.

M. pedunculo paucifloro, bracteis lanceolatis nervosis pedicellis longioribus, sepalis lanceolatis, petalis oblongis nunc obovatis acutis, labello subpandurato apice quadrato emarginato basi

cuneato : callis 3 elevatis parvis intermedio minore, alis columnæ integris falcatis.

Wild in BRAZIL; Minas Geraës—Regnell, (*v. fl. exs. comm. cel. Rchb.*)

This, of which I have received a single dried flower from Mr. Reichenbach, appears to be nearer *M. Russelliana* than any other species. I possess no further information concerning it.

* 6. **M. flavescens.** *Lindley, Sertum, sub t.* 48.

M. pseudobulbis diphyllis ovalibus ancipitibus, foliis ligulatis obtusis scapo ancipiti arctè vaginato multò brevioribus, racemo disticho flexuoso multifloro, bracteis carinatis convolutis acuminatis glumaceis ovario longioribus, sepalis petalisque linearibus acutis stellatis, labello ovato-oblongo undulato acuto basi pubescente canaliculato striato, alis columnæ acinaciformibus integerrimis.

M. stellata. *Lindley, Sert., sub t.* 48.
Cyrtochilum stellatum. *Lindley, Sert., t.* 7.
Cyrtochilum flavescens. *Lindley, in Bot. Reg., t.* 1627.

Wild in BRAZIL; Minas Geraës—Regnell: Macahé and Bananal—Descourtilz, (*v. v. c.*)

Flowers pale yellow with no spots. Lip white with yellow streaks. Wings of the column yellow streaked with crimson. Bracts rose-coloured. I believe that my *M. flavescens* and *stellata* are the same species in different states, *M. stellata* being a very large vigorous specimen and *M. flavescens* a small starved one. The so-called Mexican habitat of the latter is certainly a misrepresentation of some nurseryman. It is singular that the large form represented by Descourtilz in his drawings in the possession of M. Delessert, and on which *M. stellata* was founded, has nowhere occurred in the many collections of wild Brazilian plants that have been submitted to me. Even Mr. Miers has in his herbarium nothing beyond a specimen from the Garden at Rio Janeiro.

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§ B.

* 7. **M. anceps.**

M. pseudobulbis compressis versus apicem attenuatis, foliis binis oblongis apice obliquè rotundatis, racemo ancipiti unifloro foliis longiore biarticulato, sepalis petalisque lanceolato-oblongis patenti-recurvis, labello rhomboideo-lyrato apice recurvo basi pubescente bilamellato dente intermedio breviore adjecto, clinandrio circulari carnoso dentato.

Odontoglossum anceps. *Klotzsch in Allgem. Gartenzeit., Aug.* 9, 1851.

Wild in BRAZIL—Klotzsch; Loddiges, (*v. v. c.*)

"Pseudobulbs two inches long. Leaves four inches long, by six lines broad. Scape two-edged, four and a half inches long. Sepals an inch long, greenish yellow, the two side ones with a purple line, the upper and the petals without marks. Lip white, with purple lines and spots at the base." Such is an abridgment of Dr. Klotzsch's account of his *O. anceps* which I entertain no doubt is the same as a Brazilian plant, which many years since flowered with the late Messrs. Loddiges, although the colour is somewhat different. In that plant the leaves &c., had the same scorched yellow appearance which

characterizes *M. flavescens.* The sepals were dull yellow, linear, acuminate; the petals exactly the same except being much broader. The lip was yellow, a little tinged with brown near the base, and with three purple downy veins proceeding from the point of the downy lamellæ. Of these there were three, completely confluent except at the point, and the middle one much shorter than the others. The anther-bed was expanded into a circular purple hood, white and toothed at the edge, and much longer than the anther.

* 8. **M. cuneata.** *Lindley, in Bot. Reg.* 1844, *misc.* 28, 1845, *t.* 8.

M. pseudobulbis ovato-oblongis, foliis oblongis striatis subundulatis, racemo plurifloro, bracteis elongatis glumaceis, sepalis petalisque lanceolatis undulatis, labello cuneato rotundato basi bilamellato utrinque subrepando, columnâ medio bidentatâ, clinandrio membranaceo cucullato denticulato repando retuso.

Wild in BRAZIL? (*v. v. c.*)

Flowers nearly four inches in diameter; sepals and petals rich brown tipped with green. The lip is pure white, with a tinge of pink near the base, in form different from M. *candida*, for it is scarcely curled at the edge, is much narrowed to the base, and has only one pair of plates instead of two and a half. The wings of the column too are scarcely divided, or at all events not at all notched.

* 9. **M. candida.** *Lindley, in Bot. Reg.* 1838, *misc.* 29. *Sertum, t.* 21.

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

(A) Column purple, lip white.
(B) Column and lip yellowish. *Bot. Mag., t.* 3793.

Wild in BRAZIL, (*v. v. c.*)

Flowers in long erect racemes, very large; sepals and petals spotted with brown; lip white. One of the finest plants of the order.

BRASSIA.

R. Brown in Hort. Kew., ed. 2, V. 215. LO., gen. cxxxii.

SEPALA explanata, basi æqualia; lateralibus elongatis acuminatis sæpiùs caudatis.

PETALA conformia, sepalo dorsali æqualia v. minora.

LABELLUM planum, indivisum, c. columnâ continuum, basi bilamellatum, verrucis sæpè antepositis.

COLUMNA nana, aptera. *Stigma* excavatum.

POLLINIA 2, cereacea, posticè sulcata; *caudiculâ* lineari arcuatâ: *glandulâ* ovali. *Anthera* Oncidii.

Herbæ *epiphytæ, pseudobulbosæ,* Americæ tropicæ. Folia *pergamenea.* Racemi *radicales, simplices.* Flores *xanthini, speciosi.*

A genus extremely near Oncidium, from which nothing in reality separates it except its very short, earless column, and entire bilamellate lip *combined with* elongated lateral sepals. The inflorescence of Oncidium is however usually branched. ADA is readily known by its closed perianth, lip, caudicle, and gland; MILTONIA by its auriculate column firmly blended with the base of the lip.

SUBDIVISIONS OF THE GENUS.

§ A. EUBRASSIA. Bracts short and inconspicuous.
1. Lip quite even.
2. Lip verrucose.

§ B. GLUMACEÆ. Bracts long, herbaceous.

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§ A. 1.

* 1. **B. maculata.** *R. Brown, in Hort. Kew., V.* 215. *Bot. Mag., t.* 1691.

B. sepalis lateralibus labello duplò longioribus, petalis acuminatis labello subæqualibus, labello paulò breviore supra basin oblongum in limbum subrotundum expanso, lamellis disjunctis simplicibus apice dentiformibus basi villosis.

(A) Flowers large, pale yellow, with a nearly white lip, spotted below the middle with purple.

(B) guttata. Flowers much smaller, and greenish, with spots distributed pretty equally over the surface.

B. guttata. *Lindley, in Plant. Hartw., p.* 94.
B. Wrayæ. *Hooker, in Bot. Mag., t.* 4003.

Wild, **A**, in JAMAICA—R. Brown, Purdie; **B**, GUATEMALA—Skinner, Hartweg, &c., (*v. v. c. et s. sp.*)

I am afraid there is no doubt about all these plants being the same. The identity of *B. maculata* and *guttata* has been overlooked, I presume, in consequence of the figure in the *Bot. Mag.* having been represented with revolute sepals and petals, a circumstance unknown among Brassias. I have lately had an opportunity of examining a specimen in the possession of his Grace the Duke of Northumberland, and I find that this part of the figure is wholly erroneous. The sepals and petals are straight, and in the usual state of disproportion remarked in the genus. It is much handsomer, and more rare than *guttata;* which, however, is a fine variety, with greenish yellow flowers spotted with purple or green; these vary greatly in size; in Hartweg's wild specimens from the Chono they are very small, in a specimen found by Mr. Skinner at San Salvador twice as large, and in a specimen before me, from the garden of the Horticultural Society, larger than even the last.

* 2. **B. Lanceana.** *Lindley, in Bot. Reg., t.* 1784. *Bot. Mag., t.* 3577. *Ib.* 3794 (?)

B. petalis labello æqualibus acuminatissimis, labello oblongo-lanceolato acuminato undulato basi pubescente, lamellis pilosis disjunctis proclivibus cornubus 2 c. dente intermedio antepositis.

(A) Flowers bright yellow, sweet-scented, spotted with brown; the lip whole-coloured. Lateral sepals not twice as long as the lip.

(B) macrostachya. Flowers bright yellow, slightly spotted with brown; lip much paler. Lateral sepals very acuminate, three or four times longer than the lip.

B. macrostachya. *Lindley, Sertum Orchidaceum, t.* 6.

(C) pumila. Flowers pale yellow, stained with dull purple at the base of the sepals, which are clear yellow. Lip contracted in the middle, dirty yellowish brown at base, more than half as long as the lateral sepals.

B. pumila *Linden. Bot. Reg.*, 1845, *misc.* 62.

Wild in the WEST INDIES; **A**, Surinam—Lance; **B**, Demerara—Loddiges; **C**, Caraccas—Linden (*v. v. c.*)

That all these plants are forms of the same species is I fear undeniable, notwithstanding the great differences in colour and the size of the parts, especially in the length of the lateral sepals, which in *macrostachya* are five or more inches long. All are very near *B. caudata* itself, but appear to want the subulate point of the lip, and the aristate sepals of that species. From *B. Lawrenceana* the three teeth (two like horns, one small and intermediate) standing upon the sloping lamellæ may be regarded as the main differences. As to *pumila* which has pale yellow flowers stained with dull purple at the base of the petals, but no purple on the sepals, and the lip very slightly tinted, it is remarkable for a pair of somewhat transparent teeth which stand up in front of the two little customary lamellæ.

* 3. **B. Lawrenceana.** *Lindley, in Bot. Reg.* 1841, *misc.* 6, *t.* 18.

B. sepalis lateralibus labello duplò longioribus, labello oblongo-lanceolato acuminatissimo undulato, lamellis 2 pubescentibus anticè connatis truncatis.

(B) angusta. All the parts very narrow; the lip aristate with a tendency to become concave.

B. cochleata. *Knowles and Westcott, Fl. Cab., t.* 53.
B. angusta. *Lindley, in Bot. Reg.*, 1844, *no.* 3.

Wild in BRAZIL; **B**, Demerara—Henchman, (*v. v. c. et s. sp.*)

Except size and colour I find no safe mark by which to distinguish **A** and **B**. Both are very sweet-scented. The former has bright yellow flowers, spotted with cinnamon; the latter has all the parts narrower, they are dirty yellow with a uniform dull brown stain on the lower half of the petals, and a few dull brown spots near the base of the lip. Both are occasionally received among collections formed in Brazil; if *B. cochleata* is the same as *angusta*, which I can hardly doubt, then it would seem to be from Demerara. The truncate double lamella, with no additional teeth in front, affords an easy mode of identifying the species, and separates it especially from *B. Lanceana*.

* 4. **B. bidens.** *Lindley, in Bot. Reg.* 1844, *misc. no.* 6.

B. sepalis lateralibus labello duplò longioribus, labello rhombeo undulato petalis breviore, lamellis lævibus rectis appendice membranaceâ bilobâ in fronte.

Wild in BRAZIL—Harrison; Regel, no. 694, (*v. v. c. et s. sp.*)

This is nearly allied to *B. caudata*, from which it differs in its longer petals, in the form of its lip, and in having two large teeth connected at their base in front of the lamellæ, which are quite smooth. The lip is spotted with brown on a yellow ground. The sepals and petals appear from the dried flower to be unspotted. Regel's specimen is much mutilated, but seems to belong here.

* 5. **B. caudata.** *Lindley, in Bot. Reg., t.* 832. *LO.*, 212. *Bot. Mag.*, 3451.

B. sepalis lateralibus longissimis acuminatissimis, petalis labello vix longioribus, labello ovato-oblongo apice subulato, lamellis pubescentibus apice liberis dentiformibus.

Epid. caudatum. *L. sp. pl.*, 1349.
Malaxis caudata. *W. sp. pl.*, iv. 93.

Wild in the WEST INDIES; BRAZIL—Regel? (*v. v. c. et s. sp.*)

The shortness of the petals, which are not longer than the labellum, and the very great length of the lateral tail-like sepals are peculiar. The flowers are dull yellow, spotted with broad brown blotches. In Regel's Brazilian specimens, which are very ill-preserved and referred here with some doubt, the lip is obovate and extended into a long bristle-shaped point.

6. **B. peruviana.** *Pöpp. and Endl., gen. et sp., II. t.* 117.

B. foliis elongatis acutissimis, "sepalis anguste linearibus acuminatissimis æqualibus; floribus resupinatis, labello oblongo lanceolato acuto undulato crenulato" sepalis subequali unguiculato basi bicalloso.

Wild in PERU; in dry thickets on the eastern face of the Andes, in the district of Chihuamccala, towards Cuchero —Poppig.

I have never seen anything like this plant. The flowers are represented as growing in one-sided spikes, not exceeding ten in number, about an inch apart, yellowish-green spotted with purple. The perfect equality of the sepals and petals, if it really exists, is a very peculiar feature of the plant, as is also the unguiculate lip.

* 7. **B. villosa.**

B. floribus subcarnosis, sepalis petalisque subæqualibus immaculatis, labello ovali apiculato convexo disco pulverulo, lamellis villosis abbreviatis apice confluentibus verrucis 4 oblongis obliquè antepositis.

Wild at the sources of the MARAÑON—Warczewitz, (*v. s. sp.*)

Flowers smaller and much more fleshy than in any other of the genus (" very sweet-scented "—*W.*). The four warts placed obliquely in front of a short, shaggy, double lamella are very peculiar.

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§ A 2.

* 8. **B. brachiata.** *Lindley, in Plant. Hartweg., p.* 94. *Bot. Reg.,* 1847, *t.* 29.

B. sepalis longissimis (semipedalibus), labello verrucoso basi rotundato dimidiâ superiore subcordatâ acuminatâ undulatâ venâ mediâ leviter carinatâ, lamellis simplicibus glabris apice triangularibus erectis.

Wild in GUATEMALA ; Hacienda de la Laguna—Hartweg, (*v. v. c. et s. sp.*)

The finest species of the genus, with pale green flowers, studded on the lip with green warts, and many rich brown oblong spots on the sepals and petals. I have seen cultivated specimens measuring twelve inches from the point of the dorsal sepal to that of one of the laterals. The wild specimens are much smaller. The great heart-shaped upper half of the lip, and the smooth lamellæ, clearly distinguish the species from *B. verrucosa.*

* 9. **B. verrucosa.** *Lindley, in Bot. Reg.* 1840, *misc.* 66. *Bateman, Orch. Mex. and Guatem., t.* 22.

B. sepalis lateralibus longissimis, petalis angustè caudatis, labello obovato-lanceolato acuto verrucoso, lamellis villosis antice bidentatis recurvis.

? B. odontoglossoides. *Klotzsch in Bot. Zeit.* 1847, *p.* 942.
B. coryandra. *Morren in Ann. Gand., IV.* 295.
B. Cowani. *Hort.*

Wild in GUATEMALA—Barker, (*v. v. c.*)

Flowers many times larger than in *B. aristata*, on long slender scapes, pale green except the lip which is white with green warts. It is impossible to doubt that Morren's *B. coryandra* is to be referred here, for although in his specific character, speaking of the lip, he says, " tuberculis nullis," yet this is entirely contradicted in his French text. Since no such Brassia is known to inhabit Brazil, the statement that the plant came from St. Catharine seems to have been a mistake.

* 10. **B. aristata.** *Lindley, in Bot. Reg.* 1844, *misc. p.* 7.

B. sepalis lateralibus labello quadruplò longioribus, petalis brevioribus ex ovatâ basi acuminatis aristatis, labello obovato basi

angustato sub apice aristato secus medium verrucoso: lamellis glabris apice liberis (nunc 2-dentatis) divergentibus rotundatis.

B. longiloba. *Alph. DC.*, 10 *not. pl. rar. Genev., t. I. A.* (1847.)

Wild in GUATEMALA—Skinner, (*v. s. sp.*)

Flowers among the smallest in the genus; according to M. De Candolle with a white lip and green sepals and petals slightly spotted with purple. Very distinct in the petals ending in bristle points, and in the presence of a distinct awn *beneath* the point of the obovate warted labellum.

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§ B. GLUMACEÆ.

* 11. **B. cinnamomea.** *Linden, in Hort. Gall.*

B. racemo laxo multifloro, bracteis cucullatis acuminatis ovario æqualibus, sepalis petalisque lineari-lanceolatis acuminatissimis patentissimis lateralibus multò longioribus, labello dorsali breviore oblongo setaceo-acuminato lamellis 2 velutinis convexis dentibusque 2 antepositis.

Wild in N. GRENADA; on the Sierra nevada of St. Martha at the elevation of 6-7500 feet—Schlim, 988, (*v. s. sp. comm. cel. Linden.*)

Sepals and petals dull brown, nearly four inches in expansion from tip to tip. Lip whitish speckled with purple. This is also called *B. havanensis* in French Gardens.

12. **B. ocanensis.**

B. racemo paucifloro, bracteis herbaceis acuminatis ovario multò longioribus, sepalis carinatis petalisque ovato-linearibus obtusis carnosis recurvis subæqualibus, labello oblongo acuminato basi cuneato lamellis convexis pilosis dentibus 2 subrotundis glabris antepositis.

Wild in N. GRENADA, in the province of Ocaña—Schlim, (*v. s. sp. comm. cel. Linden.*)

Resembles *B. glumacea*, but the bracts are longer, the sepals and petals short and blunt, and the front teeth of the lamellæ almost globular.

13. **B. glumacea.** *Lindley, Orch. Linden., No.* 91.

B. racemo paucifloro, bracteis herbaceis carinatis ovario æqualibus, sepalis linearibus acuminatis subæqualibus, petalis conformibus brevioribus, labello brevi ovato acuminato convexo lamellis glabris depressis apice obtusè runcinatis.

Wild in MERIDA; from damp forests at the height of 5600 feet —Linden, 646, (*v. s. sp. comm. cel. inv.*)

Flowers yellow spotted with red. The lamellæ are perfectly smooth. Leaves not longer than the racemes, scarcely an inch and quarter broad.

14. **B. imbricata.**

B. racemo paucifloro foliis breviore squamis imbricatis acuminatis vaginato, bracteis herbaceis carinatis ovario æqualibus,

sepalis petalisque a latâ basi setaceo-acuminatis, labello oblongo plano acuminato lamellis pubescentibus depressis apice in dentes assurgentibus.

Wild in SA. MARTHA—Purdie, (*v. s. sp. in hb. Hooker.*)

Very like a larger form of *B. glumacea;* but the leaves are not only full two inches wide, but much longer than the flowering stems. The sepals and petals are also finer pointed, and the lamellæ are conspicuously downy.

15. **B. cinnabarina.** *Linden, MSS.*

B. bracteis ovatis cordatis acutis ovario brevioribus, sepalis petalisque lanceolatis acutis, labello oblongo-lanceolato acuminato glabro lamellis flexuosis venas incrassatas referentibus medio dente obtuso auctis.

Wild in N. GRENADA; in the provinces of Soto and Ocaña at the height of 9000 feet—Schlim, 1035, (*v. s. sp. comm. cel. Linden.*)

Flowers very brilliant orange-red, an inch and half long before expansion. The lamellæ have the appearance of a pair of thick veins extending to two-thirds the length of the lip, and furnished each with a blunt tooth about the middle.

16. **B. Keiliana.** *Rchb. f. in Paxton's Flower Garden,* 1852, *No.* 585. *Bot. Zeit.* 1852, *p.* 761.

B. spicâ pauciflorâ, bracteis navicularibus ovaria superantibus, sepalis lineari-lanceolatis acuminato-aristatis petalis brevioribus, labello oblongo-lanceolato undulato acuminato, lamellis erectis utrinque obtusangulis basin versus velutinis anticè in auriculas excurrentibus, columnâ basi angustatâ.

Wild in LA GUAYRA—Rchb. fil. (*v. s. comm. c. auct.*)

Sepals yellow, then beautifully brownish orange; cinnabarine when dried, lip whitish. Very near *B. cinnabarina*, from which it is readily known by its long navicular bracts.

17. **B. Warczewitzii.** *Rchb. f. in Bot. Zeit.,* 1852, *Oct.* 1.

B. bracteis triangulis concavis acutis pedicellis brevioribus, petalis a latâ basi acuminatis labello æqualibus, labello medio velutino oblongo acuminato basi cuneato lamellis distinctis apice retrorsum falcatis puberulis.

Wild in EQUADOR; near Punt St. Helena and Tipi Happa—Wcwtz.

Flowers said to be the size of *B. glumacea.* The velvety lip is very peculiar. The upper sepal is described as being lanceolate acuminate with a broad base.

ADA.

PERIANTHIUM clausum, apice patulum.

SEPALA subæqualia, acuminata; lateralibus basi paulò obliquis.

PETALA conformia breviora.

LABELLUM elongatum, indivisum, c. columnâ parallelum, eique basi adnatum; lamellis 2, membranaceis, in appendicem linearem truncatum connatis.

COLUMNA aptera, cæterùm Oncidii, basi convexum dilatatum et marginatum. *Stigma* excavatum.

POLLINIA 2, cereacea, posticè sulcata; *caudiculâ* brevi, obovatâ; *glandulâ* circulari. *Anthera* Oncidii, ecristata.

Herba *epiphyta*, Americæ tropicæ, *habitu omnino* Brassiæ *cujusdam glumaceæ*. Scapus *bisquamatus*. Spica *cylindracea*, *simplex*, bracteis *membranaceis*. Flores *xanthini*.

This is a remarkable plant, with brilliant orange-coloured flowers collected in a close raceme enveloped in thin cucullate membranous bracts, and never opening except at their point. The leaf is about six inches long, narrow, and channelled, rather shorter than the scape, which bears two distant membranous sheaths. Mr. Linden referred it to Brassia; from which, however, it differs in some important particulars:—1, the lamellæ of the lip are confluent and membranous; 2, the lip is parallel with the column and solidly united to the base of it; 3, the column is twice as long as in other Brassias, and thin-edged at the base; 4, the caudicle is short and obovate, while the gland is circular. For this reason I place it at the end of the glumaceous Brassias. Possibly it may be related to Rchb.'s genus Brachtia, a plant of which I have no knowledge.

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1. Ada aurantiaca.

Folium canaliculatum. Scapus longior bisquamatus. Bracteæ cucullatæ membranaceæ ovariis subsessilibus multò longiores. Flores apice tantum patuli, sepalis petalisque lineari-lanceolatis acuminatis. Labellum lineari-lanceolatum acutissimum convexum columnæ elongatæ basi adnatum; lamellis membranaceis connatis apice truncatis acutis basi intus pubescentibus.

Wild in NEW GRENADA; in the province of Pamplona, at the height of 8500 feet above the sea—Schlim, 121, (*v. s. sp. comm. cel. Linden*).

POLYCHILOS.

Kuhl and Hasselt, Genera et Sp., Orchid. et Asclep. (1827).

Sepala explanata, carnosa, angusta, libera; lateralibus subfalcatis, leviter incurvis.

Petala conformia, minora.

Labellum posticum, unguiculatum, in disco foveatum, c. columnâ continuum, carnosum, complicatum, tripartitum, laciniis lateralibus apice runcinatis terminali lunato apiculato. Appendix circa foveam membranaceus, semicyathiformis, 5-aristatus, dentibus duobus auctus: altero minore à latere columnæ, altero antico cultrato.

Columna erecta, elongata, semiteres, basi bituberculata, clinandrio proclivi, rostello elongato decurvo. *Stigma* oblongum, excavatum.

Pollinia 2, cereacea, posticè fissa; *caudiculâ* elongatâ, obovatâ; *glandulâ* ovali. *Anthera* . . . . . .

Herba *epiphyta*, Asiæ tropicæ, *caulescens*. Folia *coriacea*, *disticha*. Pedunculus *lateralis*, *erectus*, *multiflorus*; rachi *alatâ*.

A remarkable genus, with the habit of the winged Aerides, for which the name Dendrocolla may be retained, but with a different lip, the appendix of which is a much more complex organ, and with a long narrow column. Perhaps it ought to be combined with Phalænopsis, the sole distinctions between which and Polychilos consist in the foveated lip and complicated appendix of the latter.

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1. **P. Cornu-cervi.** *Kuhl and Hasselt, l. c.*

Wild in Java—on the west side, in the province of Bantam—K. and H., T. Lobb; Moulmein—Id. (*v. s. sp.*)

A distichous-leaved plant, with coriaceous oblong leaves narrowed considerably to the base, where they are very fleshy. The peduncles, which are opposite the leaves and longer, terminate in a broad-winged toothed rachis, which is usually a little branched. The flowers are reddish yellow, not quite two inches across, a little speckled in lines with a deeper red. It appears that only two or three open at a time.

It is only quite recently, by favour of Professor Reinwardt, who most kindly sent me his own copy from Holland, that I have been able to obtain a sight of the very rare work on the Orchids of Java, published in 1827, by Professor Van Breda, from materials collected by the Dutch travellers Kuhl and Van Hasselt, and of which two parts only, in elephant folio, have

appeared. Endlicher, who introduced this work into systematical Botany, was so very unfortunate in his identifications, that the following determination of these travellers' species may be found useful to Botanists :—

Macrostylis disticha . . . = Corymbis disticha.
Sestochilos uniflorum . . . = Sarcopodium Lobbii.
Odontostylis . . . . . = Bolbophyllum.
Octomeria vaginata . . . . = Eria stellata.
Armodorum distichum . . . = Vanda Sulingi.
Styloglossum nervosum . . . = Calanthe curculigoides.
Cionisaccus lanceolatus. . . = Goodyera procera.
Psychechilos gracile . . . . = a species of Monochilos.
Orchipedum plantaginifolium . = Physurus sp.

These are all the plates contained in Professor Reinwardt's copy of Kuhl and Hasselt's book. I believe another part is published, but I have not seen it.

CORYMBIS.

Thouars Hist. des. Pl. Orch. Afr., tt. 37 *and* 38, (1822.)——Macrostylis. *Kuhl and Hasselt, G. and S. Orch.* (1827.)

Sepala linearia, apice dilatata, patula; dorsali columnæ basi altiùs adnato, lateralibus basi æqualibus connatis.

Petala conformia, libera.

Labellum (dorsale) lineare, canaliculatum, columnam involvens, lineis 2 elevatis in callis arcuatis excurrentibus; limbo membranaceo dilatato basi bicalloso.

Columna clavata, teres, post anthesin valdè elongata. *Stigma* ovatum, apice bifidum.

Pollinia 4, geminata, pulverea; *caudiculâ* setaceâ; *glandulâ* subquadratâ. *Anthera* dorsalis, ovata, mutica.

Capsula costata, stylo longissimo indurato coronata.

Herba *terrestris, arundinacea,* Afro-Asiatica, tropica. Folia *membranacea, plicata, vaginantia.* Racemi *brachiati, axillares.* Flores *subsecundi, pallescentes.*

The rude figure published by Du Petit Thouars, although it sufficed to render easy the identification of his Corymbis, gave no distinct information regarding its structure. It was not till the discovery in the Oriental Archipelago of the plant, named by Van Breda Macrostylis, of which perfect specimens have become not very uncommon in herbaria, that its real nature was suspected. It now proves to be very near the American genus Chloidia, from which it differs in little except the adhesion of the back sepal to the base of the column as in Gongora, in a pair of raised lines passing from the base of the lip along its unguis till they lose themselves in as many arched calli at the base of the limb, in the lip not being saccate, and in the great extension of the column.

Corymbis, with Tropidia, Chloidia and Cnemidia, of which last Wight's *Govindovia* is a synonym, form a peculiar group of Neotteous Orchids, analogous to Evelyna and Sobralia in other parts of the order.

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1. C. disticha.

Corymbis. *Thouars, l. c.*
Centrosis ? corymbosa. *Id.*
Macrostylis disticha. *Kuhl and Hasselt, l. c.*

Wild in Bourbon—Thouars; Nossè Bé—Pervillé, (142); I. of St. Thomas on the West coast of Africa—G. Don; Sikkim-Himalaya, at 1-3000 feet, in hot valleys—J. D. Hooker; Madras—Id.; Java—Lobb; in groves on mountains, in the province of Bantam, and on the Kendang ridge—Kuhl and Hasselt; Philippines—Cuming; Malay Archipelago—Id. (2110); Assam—Griffith; Feejee islands—Barclay, (*v. s. sp.*)

Jan. 21, 1854.

This plant appears to have a range unusually great in its order ; from the equatorial island of St. Thomas on the west of Africa, to the Philippine Islands on the extreme east of Asia, is a degree of dispersion to which very few parallels can be found among Orchids ; and yet there seems to be no essential difference among the specimens from such distant localities. The flowers are whitish green and sweet-scented, according to Kuhl and Hasselt, who also call it "a gigantic solitary plant," with stems eight or ten feet high. Du Petit-Thouars says his was only two feet high, and that is the case with Perville's specimens in the Herbier du Muséum ; but with this exception, and a less branched inflorescence, I find nothing worth noting. It must be added, however, that my knowledge of the lip is derived from Kuhl and Hasselt's figure, from Lobb's Java specimens in the Hookerian herbarium, and from Cuming's Philippine specimens. Those from St. Thomas, Nossè Bé, and all the Indian ones are in the state represented in Thouars' plate, with the column full grown, and the parts of the flower reduced to fragments.

Macrostylis galipanensis, Rchb. f. in Bonplandia, January 15, 1854, appears to be a CHLOIDIA, a genus I am not at present inclined to cancel.

SOBRALIA.

Fl. Peruv. Prodr. 120, *t.* 26. *LO.*, *p.* 430.

SEPALA subæqualia, basi connata.

PETALA tenera, conformia v. paulò diversa.

LABELLUM cucullatum, circa columnam convolutum, indivisum v. trilobum, limbo membranaceo subbilobo, venis elevatis aut cristatis; basi bilamellatum v. 2-callosum, aut omninò inappendiculatum.

COLUMNA elongata, marginata, clavata; clinandrii trifidi laciniis carnosis intermediâ apice antheriferâ. *Stigma* excavatum, subrotundum.

POLLINIA pulposo-cereacea, (bis quaterna v. bis terna) conduplicata; *caudiculâ* nullâ. *Anthera* terminalis, stipitata, carnosa, semi-quadrilocularis in clinandrium prona.

FRUCTUS carnosus, aut capsularis costatus.

Herbæ *terrestres*, Americæ tropicæ, *arundinaceæ*, *foliosæ*. Folia *sæpius plicata*. Flores *terminales*, *bracteis variis*, *speciosi*, *carnosi aut membranacei*.

The peculiar habit of this beautiful genus includes species with some diversities of structure, which may hereafter lead to its dismemberment. Such species as *S. sessilis* have a pair of lamellæ at the base of the lip, others like *S. fragrans* and *dichotoma* have a pair of calli, while *S. rosea* has merely a cluster of thickened veins, and *S. chrysantha* and others have no appendage of any kind. So again, *S. dichotoma* and *rosea* have a fleshy indehiscent fruit, others a capsular one; and these differences are scarcely reconcileable with one and the same genus; but I do not venture to use them in the absence of more information respecting structure derived from fresh specimens; many of the species being at present very *insufficiently* examined.

According to Rchb. f. there is no difference between CYATHOGLOTTIS and the present genus.

SUBDIVISIONS OF THE GENUS.

§ A. Flowers in a naked flexuose raceme. Bracts very short.

§ B. Flowers in a flexuose raceme, with distant cymbiform foliaceous bracts.

§ C. Flowers in a cone-like head, or naked.

1. Lip with crested veins.
   * Leafsheaths or bracts naked.
   ** Leafsheaths or bracts hispid with black hairs.
2. Lip with naked veins.
   * Leafsheaths or bracts hispid with black hairs.
   ** Leafsheaths or bracts naked.

§ A. (BRASOLIA, *Rchb. f.*)

1. **S. dichotoma.** *R. and Pav. syst.* 232. *LO.* 176, *and* 431. *Poppig and Endl., n. g. et sp., I. p.* 54.

S. glabra, foliis duris plicatis acuminatis basi angustatis, racemo laterali cernuo dichotomo flexuoso multifloro, bracteis ovatis cucullatis, floribus carnosis, labello cucullato 3-lobo laciniis lateralibus rotundatis integerrimis intermediâ emarginatâ valde undulatâ crispâ lacerâ venis 3—5 apice cristato-laceris, clinandrii dentibus lateralibus abbreviatis truncatis.

Wild in PERU, on the barren summits of calcareous mountains, among ruined rocks, at the higher verge of arborescent vegetation—Pöppig; BOLIVIA—Bridges; NEW GRENADA, on rocks at an elevation of 4500 feet—Linden, 1375; in the province of Ocaña at the height of 6000 feet—Schlim, 188; Mariquita—Triana, 137, (*v. s. sp. comm. cel. Linden.*)

This is the finest of the genus, six to eight feet high according to Linden, from twelve to even twenty feet high, forming impenetrable thickets, according to Pöppig, with stems resembling those of Bamboos. The same author describes the flowers as being two inches long, white externally, violet internally; Linden calls them rose, sometimes whitish rose with a white and purple lip, or the whole deep red. They are fleshy, like those of *Cattleya guttata*, and not very different in mode of expansion. The petals are much narrower than the lower sepals, obtuse, and apparently rather crisp. In my Bolivian specimen the lip is much more lacerated than in those from New Grenada.

It is to be remarked that this, the original Sobralia, is unlike the plants now associated with it, in the sepals being very little if at all united into a long neck. According to Rchb. fil. the anther is panduriform. A specimen with curved fleshy fruit exists in the Fieldingian herbarium, from Pavon, marked "Epidendrum aromaticum," in allusion no doubt to the excessive fragrance of the flowers which Pöppig compares to Wallflowers. The Peruvians call it *Flor del Paraiso.*

2. **S. stenophylla.**

S. glabra, caule stricto rigido, vaginis costatis angulatis, foliis rigidis imbricatis lineari-lanceolatis margine revolutis pungentibus, spicâ nudâ flexuosâ pauciflorâ, bracteis minutis distantibus, sepalis petalisque angustissimis.

Wild in DEMERARA—Schomburgk, (*v. s. sp.*)

Of this species I have seen only two specimens, and one withered unexaminable flower. Its stiff narrow erect imbricated leaves are quite unlike any thing else in the genus. The flower seems to have been deep red and about an inch long.

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§ B.

3. **S. rosea.** *Pöppig and Endl., n. g. et sp., I. t.* 93. *LO.*, 431.

S. leviter furfuracea, vaginis carinatis, foliis rigidis ovalibus acuminatis, spicâ multiflorâ flexuosâ, bracteis foliaceis distantibus

cymbiformibus, labello oblongo indiviso denticulato lævi medio trinervi basi altè sulcato inappendiculato, clinandrii dentibus brevibus incurvis.

S. Ruckeri. *Linden in litt.*

Wild in PERU, in ravines near Cuchero—Pöppig—Mathews, 1874; NEW GRENADA, in marshy places in the province of Ocaña, at the elevation of 9000 feet—Schlim, 32; at Carillos, near Pamplona, at the elevation of 8500 feet—Schlim, 65, (*v. s. sp. comm. cel. Linden.*)

Stem four to six feet high.—*Pöppig.* Leaves finely ribbed. Spike almost a foot long, with great boat-shaped herbaceous or reddish bracts, like those of a Heliconia. The closed flowers are almost three inches long, fleshy, pale lilac, rose colour (*Pöppig*), or bright crimson (*Linden*), most beautiful. There is no doubt about the plant before me being the same as Pöppig's; but I cannot find the setæ that he speaks of upon the upper end of the middle rib of the lip, and which he does not figure. We have nothing in cultivation so fine as *S. dichotoma*, and this *S. rosea.*

There are no calli or lamellæ at the base of the lip of this species, but instead, a pair of callosities produced by the confluence of the veins, which eventually are reduced to three stout ribs as they approach the point of the lip.

4. **S. chrysantha.**

S. glabra, foliis ovali-lanceolatis subcarnosis arctè vaginatis, spicâ flexuosâ triflorâ, bracteis foliaceis lanceolatis basi duris cucullatis, labello obovato retuso crispo costâ mediâ lævi venis lateralibus elevatis rugosis, clinandrii dentibus lateralibus maximis falcatis emarginatis dorso altè carinatis dorsali cucullato antheram dimidiam involvente.

Wild in NEW GRENADA, in the province of Socorro, at the height of 4000 feet—Schlim, 6, (*v. s. sp. comm. cel. Linden.*)

Flowers two inches long, "of a beautiful yellow."—*Schlim.* This remarkable plant has leaves about eight inches long, as nearly as possible alike at either end. The lip has no appendage whatever near the base, but has a stiff middle rib. The lateral teeth of the anther-bed are very large, with a deep wing at their back and an oblique emargination; the middle tooth is fleshy and so much excavated as to half enclose the anther within its sides. The pollen masses were very imperfectly seen by me; they appeared to be two with one or more deep furrows or lobes, too much pressed together to be distinguishable.

5. **S. paradisiaca.** *Rchb. in Linn., XXII.* 816.

S. glabra, foliis oblongis acuminatis basi angustatis, spicâ multiflorâ flexuosâ, bracteis longissimis omnino foliaceis angustis vaginali parte deficiente, labello oblongo basi angustiore antice retuso undulato nudo (concavo?), clinandrii dentibus æqualibus.

Wild in NEW GRENADA; Merida, at 5000 feet—Funk and Schlim, 1489; 7000 feet—Wagener (*v. s. sp. comm. cel. Linden.*)

Flowers handsome, about two inches long, "purple-violet." Mr. Reichenbach finds the flowers more fleshy than in other species: such is not appreciable in my specimens, unless such plants as *S. macrantha, sessilis, violacea,* &c., are intended.

6. **S. Liliastrum.** *LO.*, 177, 432. *Sert.*, *t.* 29.

S. glabra, foliis angustè lanceolatis vaginisque nervosis, racemo plurifloro, bracteis distichis horizontalibus herbaceis pedunculo æqualibus, petalis undulatis, labello undulato-crispo plicato emarginato pubescente venis elevatis flabellatis cristatis, clinandrii dentibus maximis falcatis.

(A) alba. Flowers pure white, with yellow veins.
(B) rosea. Petals and lip rich rose colour, the latter with white veins.

Wild in DEMERARA—Schomburgk; BRAZIL, near Bahia, in sandy thickets—Salzmann, (*v. s. sp.*)

The white and red varieties seem to differ merely in colour; except that the red is represented by Sir R. Schomburgk, in his drawings, as having broader leaves.

7. **S. labiata.** *Warcz. in Bot. Zeit., Oct.* 8, 1852.

S. glabra, vaginis parcè verruculosis, foliis lineari-lanceolatis argutè acuminatis plicatis durè pergameneis, bracteis spathaceis longè acuminatis angustis Heliconiaceis geminis in pedunculum valdè abbreviatum sessilibus, petalis quam sepala multò latioribus, labello flabellato medio subitò dilatato obreniformi crenulato.

Wild in COSTA RICA; Chiriqui—Warczewitz.

Flowers as large as in *S. Liliastrum*, delicate rose-coloured externally.—*Rch. f.* It might be taken for *S. macrantha* in miniature. Leaves narrow, hard, very acute, with shining nervures. Flowers inexpressibly delicate, almost as large as in *S. macrantha*.—*Id. in Fl. des Serres, VIII.* 247.

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§ C. 1.*

8. **S. fimbriata.** *Pöppig and Endl., n. g. et sp., I. p.* 54. *LO.*, 431.

S. "caule simplici vaginato scabrido, foliis latè ovalibus breviter acuminatis, flore solitario, labelli fimbriati disco setis carnosis barbato, petalis lacero-ciliatis."

Wild in PERU; found once only on the fallen trunk of an ancient tree, in a gloomy place near the Hacienda of Pampayaco—Pöppig.

Stem two feet high. Leaves oval, nine-ribbed, five inches long by two broad. Flower snow-white. Sepals setaceo-mucronate.—*Pöppig.* The original specimens are in a very bad state.—*Rchb. f.*

9. **S. candida.** *Rchb. f., in Fl. des Serres, VII. p.* 247.

S. "gracilis, foliis oblongis acuminatis valdè acuminatis, inflorescentiâ secundâ, bracteis oblongis acutis bifariis arctissimè adpressis, sepalis petalisque lanceolatis acutis, labello oblongo apice crenulato obtuso, columnâ subulatâ, clinandrii dente postico obtusatulo lateralibus triangulari-falcatis minutis."

Cyathoglottis candida. *Endl. and Pöppig, n. g. et sp., I.* 56, *t.* 94.

Wild in PERU; along with S. crocea—Pöppig.

Flower solitary, snow-white, very fugacious.—*Pöppig.*

10. **S. Lindleyana.** *Rchb. f., in Bot. Zeit., Oct.* 8, 1852.

S. glabra, vaginis nervosis summis ventricoso-inflatis, foliis oblongis acutis mucronatis nervosis pergameneis vix plicatis basi attenuatis abbreviatis summis basi latissima in vaginis sessilibus, spatha abbreviata apice acuto recurva, bracteis oblongis acutis abbreviatis absconditis, labello flabellato anticè trilobo lobis lateralibus rotundatis medio producto bilobulo crenulato undulato disco apicem versus densiùs basi parcè barbellato.

Wild in COSTA RICA; Chiriqui—Warczewitz.

Flowers nearly as large as in *S. Liliastrum*, snow-white; lip colour of the yolk of egg, with rose-coloured dots.—*Rchb. f.* Much like *S. macrophylla*. Dwarf; leaves short and stiff.—*Id. in Fl. des Serres.*

11. **S. Bletiæ.** *Rchb. f., in Bot. Zeit., Oct.* 8, 1852.

S. glabra, caule gracili, foliis oblongis utrinque attenuatis acutis herbaceo-membranaceis, bracteis oblongis acutis chartaceo-membranaceis abbreviatis, labello cuneato flabellato apice trilobo: lobis lateralibus panduratis falcato-triangulis medio obovato emarginato paulò breviori: venis 5 medianis crispulo-carinatis denticulatis radiantibus.

Wild in COSTA RICA; Chiriqui—Warczewitz.

Flowers as large as in *S. sessilis*, greenish. Lip white, orange-coloured in the middle.—*Rchb. f.*

* 12. **S. fragrans.** *Lindl., in Gard. Chron.*, 1853, *p.* 598, *no.* 5.

S. humilis, glaberrima, caule pedunculoque ancipitibus, spathâ biflorâ carinatâ diphyllâ herbaceâ nunc foliaceâ, floribus parvis parùm apertis, labelli lobo medio cuneato bilobo lacero lateralibus obsoletis integerrimis, venis 9 lacero-cristatis.

Wild in NEW GRENADA, province of Ocaña—Schlim, 1022, (*v. v. c. comm. dom. R. Hanbury, et s. sp. in hb. Linden.*)

Scarcely a foot high, with very smooth rather fleshy leaves, perfectly naked, with a short keeled sheath. The stem is two-edged, as also is the peduncle, which bears at the end a pair of unequal herbaceous keeled spathes, which even grow into leaves. The flowers, said to emit a most delicious smell, are in pairs, about one inch and a half long; the sepals externally dull, dirty purplish green, and keeled; the petals are thin, flat, lanceolate, and pale yellow; the lip is of the same colour, but of a brighter yellow, with the middle lobe deeply fringed, and furnished with nine lacerated crests.

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§ C. 1. **

13. **S. setigera.** *Pöppig and Endl., n. g. et sp., I. p.* 54. *LO.*, 431.

S. "caule simplici vaginato, foliis ovato-oblongis longè acuminatis chartaceis, vaginis terminalibus bracteisque in strobilum

2—3-florum junctis setoso-scabris, labelli fimbriati cristis multifariis ancipitibus."

Wild in PERU; in rocky forests on the mountain ridge between Cuchero and Casapi, at a place called Cussapillo—Pöppig.

Stems six feet high. Bracts six to eight, chesnut-coloured inside, somewhat scarious at the edge. Flowers small for the genus, snow-white. Crests of the lip yellow.—*Pöppig.* The original specimen is in a very bad state.—*Rchb. f.*

14. **S. crocea.** *Rchb. f., in Fl. des Serres, VIII.* 24.

S. "viminea, gracilis, vaginis asperis, foliis oblongo-lanceolatis acutis (3—6), inflorescentiâ pauciflorâ (2—3), bracteis scariosis oblongis acutis subcarinatis, labello oblongo crispulo apice nunc acutiusculo apicem versus medio lamellis trianguli-falcatis ornato circumadditis clavulis carnosis inflexis obtusis, columnâ labello æquali apice argutè bidentato.

Cyathoglottis crocea. *Endl. and Pöppig, n. g. et sp., I.* 55.

Wild in PERU; on trees near the hacienda of Pampayaco, rare—Pöppig.

The flowers are the smallest in the genus; the ovary becomes excessively lengthened while ripening—*Rchb. f.* Flowers one to three, extremely fugacious, yellow.—*Pöppig.*

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§ C. 2.*

15. **S. Galeottiana.** *A. Richard, Orch. Mex., no.* 111.

S. caule ramoso foliisque subtus nigropubescentibus, foliis acuminatissimis oblongo-lanceolatis basi acutis, bracteis imbricatis acutis, flore pedunculato, "labello apice truncato sinuoso."

Wild in MEXICO, in the province of Oaxaca, at the height of 4000 feet—Galeotti, 5317; DEMERARA—Schomburgk, (*v. s. sp. comm. cel. Galeotti, &c.*)

"Flowers rose-coloured." My specimens do not permit the structure of the flower to be examined. They are about the size of *S. sessilis.* No difference between the Mexican and Guayana plant is observable. In Galeotti's Herbarium there exists a plant (no. 5286) found at Talea, near Oaxaca, at the height of 3000 feet, which may possibly belong to this species. If so it has a stem as stout as in *S. violacea*, and a deeply-ribbed straight capsule four inches long.

* 16. **S. sessilis.** *Lindley, in Bot. Reg., misc.* 1841, *no.* 11, *t.* 17.

S. caule foliisque subtus nigropubescentibus, bracteis nullis v. paucis apice foliaceis, flore sessili, labello rhombeo-oblongo glabro basi bilamellato, clinandrii dentibus antherâ longioribus.

Wild in BRITISH GUAYANA—Schomburgk, (*v. v. c. et s. sp.*)

The hairy stems and solitary sessile flowers distinguish this from both *S. decora* and *violacea*, irrespective of the peculiar form of the lip, which is

accurately shown in the *Bot. Reg.* Flowers deep rose-colour with the lower half of the lip white tinged with yellow.

17. **S. Warczewitzii.** *Rchb. f., in Bot. Zeit., Oct.* 8, 1852.

S. nigro-hispida, valida, foliis lato-oblongis acutiusculis coriaceo-pergameneis, bracteis oblongis acutis chartaceis, petalis cuneatis acutis apicem versus crispulis, labello flabellato apice emarginato parte anteriori crispulo; carinula à basi usque ultra medium progrediente verruculis quibusdam in basi, clinandrii dentibus validis falcatis medio intùs carinatis.

Wild in COSTA RICA; Chiriqui, at the height of 6000 feet—Warczewitz.

Flowers very bright purple, larger than in *S. Liliastrum* and *paradisiaca*. Stem and leaves firm and compact.—*Rchb. f.* The lateral teeth of the anther-bed seem to be of the same nature as in *S. chrysantha*.

18. **S. Fenzliana.** *Rchb. f., in Bot. Zeit., Oct.* 8, 1852.

S. nigro-hispida, caule gracili, vaginis asperrimis, foliis oblongis acutiusculis pergameneis latis, bracteis lanceis abbreviatis geminis asperrimis, petalis quam sepala quartâ parte brevioribus obovato-cuneatis acutis, labello flabellato anticè ovato retusiusculo crenulato ceterùm integerrimo ecarinato, clinandrii dentibus antheram æquantibus.

Wild in COSTA RICA; Chiriqui, at the height of 1-2000 feet—Warczewitz.

Flowers rose-coloured, as large as in *S. violacea*.—*Rchb. f.*

19. **S. Klotzscheana.** *Rchb. f., in Linn., XXII.* 815.

S. minutè nigro-hispida, foliis oblongis acuminatis, bracteis oblongis acutis, labello cuneato oblongo anticè margine undulato lineis 5 elevatis mediis non ad apicem progredientibus, clinandrii dentibus subæquilongis.

Wild in PERU; Chicopleyo—Ruiz, 1797.

Flowers white. This species must undoubtedly have larger and finer flowers than *S. macrantha*.—*Rchb. f.*

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§ C. 2. **

* 20. **S. decora.** *Bateman, Orch. Guat., t.* 26.

S. glabra, bracteis obsoletis, flore sessili, labello cuneato subcrispo obsoletè lobato nudo (?), clinandrio indiviso (?)

S. sessilis. *Hooker, in Bot. Mag., t.* 4570.

Wild in GUATEMALA—Skinner.

This differs from *S. sessilis*, not only in being perfectly free from the black hairiness characteristic of that species, but also in being a smaller plant, with

a truly cuneate lip, in having whitish flowers with a rose-coloured lip, and the petals overlying the sepals, so that the back of the former answers to the face of the latter. According to the figure in the *Bot. Mag.* the anther-bed is not three-parted. I never saw the plant.

* 21. **S. violacea.** *Linden. Lindley, Orch. Lind., no.* 133.

S. glabra, vaginis verruculosis, foliis duris lanceolatis altè plicatis, bracteis imbricatis duris subfoliaceis flori subæqualibus, labello rotundato crispo emarginato lævi, clinandrii lobis brevibus.

(A) Flowers pale violet.
(B) Flowers white, with a yellow disk to the lip.

Wild in NEW GRENADA; abundant in the high regions of the province of Merida, at the elevation of 6000 to 8000 feet—Linden, 615 and 617; Santa Martha—Purdie; **B** Merida at 5000 feet—Wagener (*v. s. sp. et* **B** *v. cult.*)

This resembles *S. decora*, but is much stronger, has larger flowers, with imbricated somewhat leafy bracts, and a convolute lip, not unlike that of a Cattleya. The variety **B** flowered with Mr. Rucker in July, 1847.

* 22. **S. macrantha.** *Lindley, Sert., sub t.* 29. *LO., p.* 431. *Bot. Mag.*, t. 4446.

S. glabra, bracteis spathaceis foliaceis imbricatis tubo floris multò longioribus, floribus pluribus maximis, labello nudo: limbo maximo emarginato rotundato plicato-undulato, clinandrii lobis lateralibus retrorsis obtusis intermedio æqualibus.

(A) purpurea. Flowers rich purple.
(B) alba. Flowers very pale rose-colour.

Wild in MEXICO; Shady rocks, Hacienda de la Laguna—Schiede; Hacienda del Carmen—Hartweg; GUATEMALA—Skinner, Warczewitz, (*v. v. c. et s. sp.*)

Stems three to six feet high. Flowers very delicate, rich purple, or nearly white, aromatic, sometimes as much as eight inches in diameter, but very fugitive.

23. **S. macrophylla.** *Rchb. f., in Bot. Zeit., Oct.* 8, 1852.

S. glabra, valida, humilis, foliis lato-ovatis basi attenuatis apice acutis in sicca vernixiis chartaceis, bractea spathacea abbreviata recurva, labello cuneato apice rotundato crispulo producto.

Wild in COSTA RICA; Chiriqui—Warczewitz.

Flowers larger than in *S. Liliastrum*, yellow. Edges of the sepals reddish. —*Rchb. f.* Leaves shining and as if varnished.

* 24. **S. chlorantha.** *Hooker, Bot. Mag., t.* 4632.

S. glabra, humilis, foliis coriaceis carnosis leviter striatis oblongis supremis minoribus in bracteam ovatam cucullatam mutatis, flore sessili, "labello obovato disco striato margine undulato," clinandrii lobis brevibus æqualibus.

Wild in BRAZIL; Para—Yates.

Leaves very fleshy and hardly plicate. Flower large, yellow, whole-coloured, full four inches long. I am unacquainted with this, unless it be the same as Schlim's No. 45, from Ocaña; my specimens of which are too much injured to be fully examinable. That plant has a pair of deep lamellæ extending from the base to the apex of the lip, and the teeth of the column seem to be eroded.

Species excluded.

Sobralia bletioides *Decaisne in Rev. Hortic., I.* 421, *t.* 22, is a plant unknown to me. It is certainly not a Sobralia. M. Ad. Brongniart supposes it to form a new genus of Arethuseæ, allied to Cleistes.

S. biflora. *Fl. Peruv. LO.*, 176.
S. amplexicaulis. *Ib. LO.*, 177. } have "bulbs" and must be excluded.
S. ? Caravata. *LO.*, 177. . .= Evelyna.

CŒLOGYNE.

LO., p. 38.

Sepala conniventia v. patentia, libera, (nunc invicem agglutinata) æqualia, petaloidea, sæpiùs basi obtusa.

Petala conformia, aut multò angustiora.

Labellum cucullatum, trilobum v. indivisum, petaloideum, basi sæpè saccatum, venis 2—3 pluribusve parallelis cristatis; nunc cum basi columnæ connatum.

Columna erecta, libera, alata, apice membranaceo-marginata. *Stigma* prominens, altè excavatum, bilabiatum.

Pollinia 4, libera, incumbentia, materie granulosâ cohærentia. *Anthera* infra apicem columnæ inserta, mobilis, vix decidua.

Herbæ *epiphytæ* vel *terrestres*, Asiæ tropicæ, *pseudobulbosæ*. Folia 1—2, *nervosa*. Racemi, *aut* flores solitarii, *terminales, sæpe e squamis corneis erumpentes*. Flores *albi, rosei, flavidi aut brunneo maculati, immò virescentes, sæpissimè speciosi*.

ANALYSIS OF THE SECTIONS.

§ I. Neogyne. Flowers closed. Sepals carinate, saccate. Lip bisaccate.

§ II. Cœlogyne. Flowers expanded. Lip unisaccate.

1. *Flaccidæ*. Racemes pendulous.
2. *Erectæ*. Racemes erect, simple. Petals similar to the sepals.
3. *Proliferæ*. Racemes emerging from imbricated scales immediately below the flowers, and proliferous.
4. *Filiferæ*. Racemes erect, simple, or flowers solitary. Petals filiform.
5. *Flexuosæ*. Racemes erect, very flexuose, finally naked, with adpressed floriferous bracts at the point.

§ III. Pleione. Flowers large, membranous, appearing before or after the plaited leaves which are membranous and quickly perishable.

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§ I. **Neogyne.** *Rchb. fil., in Bot. Zeit.*, 1852,

* 1. **C. Gardneriana.** *Lindley, in Wall., Pl. as. rar., I.* 33, *t.* 38. *LO., no.* 9.

C. pseudobulbis elongatis ampullaceis teretibus, foliis lanceolatis 5-nerviis acuminatis longè petiolatis, racemis nutantibus densifloris terminalibus radicalibusque foliis multò brevioribus, bracteis latis oblongis cucullatis sterilibus carnosis floriferis petaloideis persistentibus, floribus clausis, sepalis oblongis carinatis basi saccatis, petalis lineari-oblongis, labelli denticulati basi bi-

saccati lobo medio bilobo lateralibus minore, cristâ duplici flexuosâ infra medium evanescente.

C. trisaccata. *Griffith, itin. notes, p.* 72.

Wild in NEPAL—Wallich; KHASIA at Mamloo in woods—Griffith; at the height of 4000 feet—J. D. Hooker, and T. Thomson, (*v. v. c. et. s. sp.*)

This noble plant has large pure white flowers, with a yellowish stain at the end of the lip; they scarcely ever expand, but are placed in long nodding racemes, supported by great fleshy snow-white bracts. The pseudobulbs are very long, and narrow, resembling long flasks. The leaves are as much as eighteen inches long, by three inches broad. The saccate base of the sepals is very remarkable, but hardly enough for the establishment of a new genus.

§ II. CŒLOGYNÆ VERÆ.

1. FLACCIDÆ.

This section is known by the long pendulous racemes. *C. incrassata*, No. 28, may possibly belong here.

* 2. **C. flaccida.** *LO., no.* 1. *Bot. Mag., t.* 3318. *Bot. Reg.* 1841, *t.* 31.

C. pseudobulbis oblongis angulatis squamis coriaceis ustulatis vestitis, foliis lanceolatis v. oblongo-lanceolatis longè petiolatis coriaceis, racemo flexuoso nutante, bracteis deciduis, petalis lineari-lanceolatis, labello ovato trilobo: lineis tribus elevatis flexuosis: lobo medio ovato duplò angustiore basi denticulato.

Wild in NEPAL; near Noakote, on trees—Wallich, (*v. v. c. et s. sp.*)

Flowers in long drooping racemes, with a peculiar and disagreeable odour. Bracts soon thrown off leaving the flowers naked. Sepals white, linear-oblong, scarcely acute. Petals of the same colour, but not more than one-third the breadth, and curved backwards. Lip channelled, ovate, three-lobed, with the middle lobe ovate, acute, wavy, toothed at the base, and turned back at the point; near its base are several crimson veins; towards the apex it is yellow in the centre; along the middle run three raised wavy lines which terminate abruptly a little within the base of the middle lobe. The scales at the base of the raceme are remarkable for their brown scorched appearance.

* 3. **C. testacea.** *Lindley, in Bot. Reg.* 1842, *misc.* 34.

C. pseudobulbis ovalibus angustis angulatis, foliis lanceolatis 3-nerviis, racemo pendulo, bracteis ovatis cucullatis ovarii longitudine persistentibus, sepalis petalisque subæqualibus, labelli oblongi lobis lateralibus rotundatis obsoletis intermedio obtuso: venis 4 ad apicem usque papilloso-cristatis.

Wild in SINCAPORE—Loddiges, (*v. v. c.*)

Leaves lanceolate nine inches long, distinctly petiolate. Flowers not larger than in *C. fimbriata*, in drooping racemes five to six inches long, dirty white with fulvous bracts and some brown blotches on the lip.

* 4. **C. lentiginosa.**

C. racemo paucifloro, bracteis linearibus convolutis persistentibus, petalis linearibus, labello obovato plano lineis duabus elevatis continuis lobis lateralibus rotundatis intermedio subrotundo unguiculato duplò latiore emarginato.

Wild in MOULMEIN—Lobb, (*v. v. c. comm. dom. Veitch.*)

I only know this very distinct species from a fragment communicated by Messrs. Veitch. The flowers are the size of *C. flaccida;* the lip is white finely freckled with brown near the base ; the short lateral lobes are bordered with the same colour ; the middle lobe is tinted with yellow and is rather wavy. The two lamellæ reach about half way up the middle lobe, are slightly curved, and perfectly even.

5. **C. tomentosa.**

C. racemis longissimis laxis pendulis, bracteis magnis longè distantibus convolutis, labelli lobo medio ovali lateralibus obtusis lineis 3 elevatis serratis, ovario tomentoso.

Wild in TROPICAL ASIA (place unknown)—T. Lobb, no. 187 (*v. s. sp. in. hb. Hooker.*)

Of this remarkable plant one specimen exists in Sir Wm. Hooker's herbarium. It consists of a raceme about eighteen inches long, having nineteen or twenty flowers *with a downy ovary;* the bracts are broad convolute bodies fully an inch long. Nothing is known of its colour. The sepals are lanceolate and very acute, as are the petals which are shorter as well as narrower. The flowers spread widely and are about two inches or more in diameter.

* 6. **C. asperata.** *Lindley, in Journ. Hort. Soc., IV.* 221.

C. racemis pendulis densè multifloris subpubescentibus, bracteis subrotundo-ovatis concavis duris siccis, sepalis lanceolatis carinatis, petalis angustioribus conformibus ecarinatis, labelli lobis lateralibus erectis ovatis obtusis intermedio oblongo obtuso crispo : disco densè verrucoso costis 3 inæqualibus lævibus pone basin.

C. Lowii. *Paxton's Mag. Bot., Sept.* 1849, *p.* 225.

Wild in BORNEO—Low, (*v. v. c.*)

Flowers full three inches in diameter, in drooping racemes a foot long ; pale cream colour except the lip, which is richly marked with brownish yellow veins springing from a rugged bright orange central ridge. There is no doubt that *C. Lowii*, above quoted, was this ; but the figure is a very bad one.

* 7. **C. pandurata.** *Lindley, in Gard. Chron., Dec.* 10, 1853.

C. foliis maximis multinerviis, racemo longo pendulo bracteis oblongis cucullatis distantibus persistentibus, petalis sepalisque lineari-oblongis, labello basi concavo cordato-oblongo retuso cis apicem crispo setaceo-mucronato (lateribus deflexis pandurato) lobis basilaribus nanis acuminatis disco lævi tricarinato utrinque cristâ altâ duplici verruculosâ aucto citra cristam copiosè verrucoso.

Wild in BORNEO—Loddiges; common on trees in shady places overhanging water—Low, (*v. v. c. et s. sp. in hb. Hooker.*)

A very fine species, with leaves and raceme respectively eighteen and twenty inches long. The flowers, which are about two inches apart, are green, in a pendent raceme furnished with brown cucullate deciduous bracts as long as the peduncle. Each flower is about four inches across if fully expanded, with pale green sepals and petals, and a singularly warted lip, marked with deep, broad, black veins and stains, upon a greenish yellow ground. The crests are two deep doublewarted lines on each side of a three-ribbed central disk; these crests converge towards the middle of the lip, where they lose themselves in a field of pallid, rugged, irregularly situated, often two-lobed warts. The column is green, slightly expanded into thin rounded edges. The lip, although really oblong, yet, in consequence of the manner in which the sides are bent down, has much the form of a violin. A memorandum in the Hookerian herbarium states the flowers to "emit a beautiful perfume."

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2. ERECTÆ.

The species grouped under this section resemble each other nearly, and perhaps are too much subdivided. No evidence, however, exists in Europe to show the nature of their variation, if any. They are only known from the Filiferous race by their petals not being extremely narrow; in general the flowers of the latter are almost solitary.

8. C. trinervis. *LO., no.* 11.

C. pseudobulbis ovatis in rhizoma crassum squamosum, foliis longis 3-nervibus lanceolatis plicatis in petiolum longum angustatis, racemo brevi stricto vaginâ imbricatâ, bracteis deciduis, petalis lineari-lanceolatis, labelli trilobi lobis rotundatis: intermedio subrotundo undulato lineis tribus flexuosis elevatis æqualibus e basi labelli ortis.

Wild in TAVOY, on the Tenasserim Coast—Wallich, (*v. v. sp.*)

A very pretty species. Leaves fifteen to sixteen inches long, straight and narrow. Raceme not more than five inches high, with about five flowers, the colour of which is unknown.

9. C. breviscapa.

C. pseudobulbis ovatis corrugatis monophyllis, foliis angustè lanceolatis coriaceis petiolatis, scapis paucifloris strictis basi imbricatim squamatis, bracteis latis oblongis concavis persistentibus, labelli lobis lateralibus obtusis intermedio duplò majore subrotundo apiculato venis 2 flexuosis apice incrassatis intermediâ filiformi, columnâ apice tantùm denticulatâ.

C. angustifolia. *Wight, ic. t.* 1641; nec *A. R.*

Wild in CEYLON—Walker; NILGHERRIES, on branches of trees in clumps of forest near Neddawuttim—Wight (*v. s. sp. in hb. Hooker and Wight.*)

This very distinct species is, as Dr. Wight conjectures, distinct from the *C. angustifolia* of Richard (see No. 10). It is readily known by its coriaceous

narrow leaves with two lateral longitudinal folds imitating so many nervures. The inflorescence resembles that of *C. ovalis*. The details of the lip in the *Icones* are in some respects very inaccurate.

10. **C. odoratissima.** *LO., no.* 12.

C. pseudobulbis ovatis sulcatis, foliis 1—2 membranaceis nervosis racemo erecto 2—3-floro brevioribus, bracteis angustis cymbiformibus divaricatis, labelli trilobi 3-cristati lobo medio obtuso subundulato lateralibus brevioribus planis.

(A) Leaves oblong. Middle lobe of lip rounded.

C. odoratissima. *Wight, ic. t.* 1640.

(B) Leaves much narrower. Middle lobe of lip slightly acute and narrower.

C. angustifolia. *A. Rich., in Ann. des Sc., ser.* 2, *XV. t.* 6. *Wight, ic. t.* 1641.

Wild **A,** CEYLON; on the mountain Nuera Ellia—Macrae; NILGHERRIES, on trees—Wight; **B,** NILGHERRIES—Wight, Perrottet, 868, 522, (*v. s. sp.*)

Whole plant from four to six inches high, in dense tufts. Flowers pure white, very fragrant. There is no doubt that *C. angustifolia* is a slight variety; A. Richard's figure, from whom I have an authentic specimen, is very erroneous, especially as to the narrowness of the parts and in the condition of the lip.

* 11. **C. ochracea.** *Lindley, in Bot. Reg.* 1846, *t.* 69. *Bot. Mag., t.* 4661.

C. pseudobulbis ovatis apice tetragonis, foliis angustè lanceolatis in petiolum angustatis racemo paucifloro basi squamis nitidis vaginato apice nutante longioribus, sepalis petalisque angustè lanceolatis, labelli trilobi intus pubescentis lobis lateralibus rotundatis intermedio ovato acuminato obtuso sinu denticulato integrove lamellis 2 rectiusculis integris cis medium apicem evanescentibus lineâ brevi elevatâ apice dentiferâ prope basin interjectâ.

Wild in BOOTAN, KHASIA; common on Thumathaya and Lamplangthaya—Griffith, (*v. v. c. et s. sp.*)

Flowers pure white, with bright orange yellow blotches on the lip, very pretty, and extremely sweet-scented. In colour this appears to be variable, sometimes having yellow-brown ocellated blotches on the lip, sometimes having a dull brownish lip with a white border. The absence of supplemental processes to the elevated ridges of the middle lobe of the lip assists much in distinguishing it from *C. ocellata*, &c.

12. **C. nitida.** *LO., no.* 7.

C. pseudobulbis oblongis obtusis squamis nitidis vestitis, foliis lanceolatis basi longè angustatis, racemis strictis basi squamis coriaceis lævigatis imbricatis arctissimè vaginatis quam folia multò longioribus, bracteis deciduis, sepalis petalisque oblongis obtusis membranaceis, labelli lobis lateralibus rotundatis inter-

medio subrotundo cordato-ovato lineis 2 elevatis rectiusculis in limbum interruptis adjectâ parvulâ utrinque.

(?) Cymbidium nitidum. *Roxb. Fl. Ind., III.* 459.
Cœlogyne ? nitida. *Lindley, Coll. Bot., p.* 33.

Wild in NEPAL—Wallich; SIKKIM-HIMALAYA, at 4-7000 feet —J. D. Hooker, (*v. s. sp.*)

What I understand by this name is that distributed by Dr. Wallich under his number 1984. It has the leaves of *C. ocellata*, but much shorter and more dense racemes arising from polished conical imbricated sheaths. The texture of the flowers is much thinner, and the parts so much rounder that the flowers must be almost globular when fresh. They are said to be white and sweet-scented, with a stain upon the lip like those of *C. ochracea*.

13. C. glandulosa.

C. pseudobulbis ovatis sulcatis, foliis 2 oblongo-lanceolatis nervosis subsessilibus racemo erecto nutante multifloro subæqualibus, scapo basi laxè vaginato, bracteis persistentibus oblongis acutis floribus subæqualibus, labello ovato-lanceolato lobis lateralibus obtusissimis intermedio linguæformi lineis 3 elevatis glanduloso-dentatis, columnâ subbilobâ.

C. nervosa. *Wight, ic. t.* 1638; nec *A R.*

Wild on the NILGHERRIES—Wight, (*v. s. sp. in hb. Wight.*)

A larger plant in all respects than *C. nervosa*, with leaves of another form. The lateral lobes of the lip are much more distinct, there is never more than three crested lines, and these are bordered by short teeth resembling glands; the lateral crests are deeper than the middle one.

14. C. nervosa. *A. Rich., in Ann. Sc., ser. 2, XV. p.* 16.

C. pseudobulbis ovatis, foliis 2 coriaceis subrotundo-ovalibus sessilibus racemo erecto 2—4-floro brevioribus, bracteis cymbiformibus patulis ovario longioribus, sepalis petalisque oblongis conformibus, labelli 3—5-cristati lobo medio ovato acuto lateralibus rotundatis obsoletis.

Wild in the NILGHERRIES, on rocks near Neddoubetta—Perrottet, (*v. s. sp. comm. b. Richard*).

A species with the habit of *C. odoratissima*, but with roundish sessile coriaceous leaves, and flowers twice as large. Their colour is unknown. The plant figured under this name in *Wight's Ic., t.* 1638, is different (see no. 13).

15. C. corrugata. *Wight, ic. t.* 1639.

C. pseudobulbis ovatis rugosissimis, foliis 2 oblongis membranaceis undulatis racemo erecto trifloro longioribus, bracteis cymbiformibus oblongis, sepalis petalisque subæqualibus oblongis acutis, labelli medio tricristati lobis lateralibus acutiusculis intermedio ovato acuminato obtuso.

Wild in KHASIA—Lobb; COURTALLUM, PULNEY MOUNTAINS, NILGHERRIES—Wight, (*v. s. sp. comm. cel. Wight et Lobb.*)

Very near *C. nervosa*, but different in having singularly rugose pseudobulbs, and membranous wavy leaves. "Flowers pure white, except the crests and veins of the lip, which are yellow."

16. **C. corymbosa.**

C. pseudobulbis oblongis teretibus, foliis ovalibus basi in petiolum brevem angustatis, racemis 3—4-floris e vaginâ laxâ imbricatâ corymbosis, bracteis citò deciduis, sepalis petalisque lanceolatis, labelli lobis lateralibus rotundatis apice denticulatis intermedio ovato-lanceolato plano integerrimo, lineis 3 elevatis quarum 2 longioribus crispis alterâ abbreviatâ ad sinus labelli utrinque auctis.

Wild in SIKKIM-HIMALAYA, common at 6-9000 feet of elevation; KHASIA at 4-5000 feet—J. D. Hooker, (*v. s. sp. comm. cel. J. D. H.*)

Much resembles *C. ocellata*, from which it differs in the pseudobulbs, short leaves, corymbose racemes, and much longer middle lobe of the lip. Flowers "white, sweet-scented; lip with red veins on the lower half and six ocellate spots at the base of the lower lobe."—*Ic. Hook.*

17. **C. brevifolia.**

C. pseudobulbis ovatis subangulatis nitidis, foliis ovato-oblongis utrinque acutis racemis paucifloris basi nudis brevioribus, racemo laxo erecto paucifloro bracteis deciduis, sepalis petalisque angustè lanceolatis, labelli trilobi intus pubescentis lobis rotundatis lamellis 2 rectiusculis cis apicem medium evanescentibus adjectâ parvulâ utrinque lineâ altâ membranaceâ in axin inferiorem.

Wild in KHASIA, at the height of 4-5000 feet—J. D. Hooker, and T. Thomson, (*v. s. sp. comm. cel. invent.*)

Very like *C. ochracea*, but the leaves are broad and short, the flowers twice as large, and the additional tubercles of *C. ocellata* are present on each side of the middle lobe of the lip.

* 18. **C. ocellata.** *LO., no.* 8. *Bot. Reg.* 1839, *misc.* 25. *Bot. Mag., t.* 3767.

C. pseudobulbis ovatis angulatis squamis nitidis vestitis, foliis lanceolatis basi longè angustatis racemis strictis basi nudis æqualibus, bracteis citò deciduis, sepalis petalisque oblongo-lanceolatis, labelli lobis lateralibus truncatis intermedio ovato, lineis tribus elevatis rectiusculis alterâ abbreviatâ dentatâ ad sinus labelli utrinque auctis.

Wild in SYLHET and SERMORE—Wallich; KHASIA—Lobb; BOOTAN—Griffith; SIKKIM-HIMALAYA, at 7000 feet—J. D. Hooker, (*v. s. sp. et v. c.*)

Leaves nine or ten inches long, very narrow towards the base. Sepals and petals pure white; the lip also white, but with two very bright orange yellow spots on each lateral lobe, and two others smaller, and of the same colour at

the base of the middle lobe, besides which there are some lateral streaks of brown. The column is bordered with brilliant orange yellow. The crests of the lip are three, which converge towards the base of the middle lobe, and there the lateral ones diverge again over a pair of convexities, beyond which they disappear; on each side of them, at the base of the said convexities, and on the outside, is an additional short curled crest. The flowers grow in erect narrow racemes about six inches long, and are themselves an inch or more long. They have none of the loose corymbose arrangement of *C. corymbosa*, nor do they proceed from lax sheaths of imbricated scales. The figure in *Bot. Mag.* is from a starved specimen.

* 19. **C. Cumingii.** *Lindley, in Bot. Reg.*, 1840, *misc.* 178, 1841, *t.* 29. *Bot. Mag.*, *t.* 4645.

C. pseudobulbis ovatis, foliis geminis lanceolatis 5-nerviis utrinque acuminatis racemo paucifloro longioribus, scapo basi nudo, bracteis convolutis floribus longioribus, petalis linearilanceolatis, labelli trilobi lobis lateralibus rotundatis intermedio ovato acuto revoluto basi crispo, lamellis 3 crispis continuis adjectis 2 abbreviatis prope apicem.

Wild in SINGAPORE—Cuming, (*v. v. c.*)

Flowers handsome, snow-white, except the middle of the lip, which is yellowish, with orange tips to the crested lamellæ. Closely allied to *C. trinervis*, which is however readily known by its very long narrow leaves, its shorter bracts, smaller flowers, and much shorter middle lobe to the lip, which also appears to want the outlying processes on either side of the ridges.

* 20. **C. cristata.** *Lindley, Coll. Bot., p.* 33. *LO., no.* 2. *Bot. Reg.*, 1841, *t.* 57. *Paxton's Fl. Gard., ic. xyl., no.* 312.

C. pseudobulbis oblongis demùm angulatis, rhizomate crasso squamoso, foliis lineari-lanceolatis, racemo erecto 3—5-floro foliis breviore basi squamis corneis vaginato, bracteis oblongis divaricatis persistentibus, petalis oblongo-lanceolatis undulatis, labelli trilobi cristâ triplici interruptâ: infimâ brevi 5-lamellatâ intermediâ multifidâ pectinatâ supremâ bilamellatâ denticulatâ, lobo medio rotundato parvo plano obtusè subtridentato.

Cymbidium speciosissimum. *Don prodr. nep.* 35.

Wild in NEPAL, SYLHET, KAMAON—Wallich; at Champawat at 5500 feet—Strachey and Winterbottom; Darjeeling—Griffith; SIKKIM, at the elevation of 5-8000 feet—J. D. Hooker, (*v. v. c. et s. sp.*)

One of the most striking of the white-flowered Indian Orchids. It forms oblong or ovate two-leaved pseudobulbs upon a hard scaly rhizome. The leaves are lanceolate, tough and flaccid, with some waviness at the edge. The flowers appear in imbricated racemes, in the beginning concealed by brown dry spathes, which afterwards sheathe the ovary and its stalk. When expanded they are each fully four inches in diameter. The sepals and petals are white, lanceolate, and acuminate. The lip, also white, is concave, and three-lobed; the lateral lobes half-oblong, truncate at the upper end, and somewhat wider than the transverse roundish middle lobe. Along the middle run five parallel veins covered by delicate yellow glandular fringes;

at the base of each of the three central is a wavy plate, and at the upper end of the two which stand on each side the middle vein is another solid plate terminating abruptly in front and more or less toothed.

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3. PROLIFERÆ.

All the species here collected agree in having a number of hard imbricated scales immediately below the flowers, and not at the foot of the scape. They often, perhaps always, produce a second scaly sheath beyond the first series of flowers, and out of that sheath arises a second series of flowers. *C. barbata* distinctly combines this group with the last, through *C. cristata*.

21. **C. barbata.** *Griffith, Itin. Not., p.* 72 ; *Notul., p.* 280 ; *ic. t.* 291, *fig.* 2.

C. pseudobulbis subampullaceis, foliis oblongo-lanceolatis longè petiolatis valdè coriaceis undulatis, scapo stricto rigido apice squamis coriaceis arctè imbricato, racemo subflexuoso sessili, bracteis maximis cucullatis citò deciduis, sepalis oblongis, petalis lanceolatis, labello trilobo basi saccato margine anteriore costisque tribus ciliato-fimbriatis.

Wild in BOOTAN—Griffith ; KHASIA, near Mamloo—Id., Lobb, 4-5000 feet, J. D. Hooker and T. Thomson, Churra Punjee—Griffith, (*v. s. sp. comm. W. G., J. D. H. and T. T.*)

This is perhaps the finest of this fine genus. The coriaceous leaves are more than fifteen inches long ; the scapes are erect, very stiff, as long as the leaves, and furnished at the apex with an imbricated sheath of hard scales, out of which appears a flexuose raceme four to six inches long, composed of very large blunt deciduous bracts. The flowers are fully two inches and a half in diameter, pure white, except very long hairy fringes, which are brown at their base where they border the lip, and wholly brown where they cover the veins, and form three shaggy crests. Judging from excellent dried specimens, I should suppose that the whole of the middle lobe of the lip is brown also ; but this is not mentioned by Griffith, whose figure is a bad one.

* 22. **C. elata.** *LO., no.* 5. *Wall. Pl. As., III.* 12, *t.* 218. *Bot. Reg.* 1839, *misc.* 151.

C. pseudobulbis oblongis angulatis, foliis oblongis coriaceis basi attenuatis longè petiolatis, scapo rigido stricto foliis breviore apice squamis distichis coriaceis vaginato, racemo rectiusculo sessili, bracteis "lanceolato-navicularibus" citò deciduis, petalis lineari-lanceolatis, labelli plani medio bicristati lobo medio cordato-ovato crenulato lateralibus obsoletis.

Cœlogyne——— *Griffith, ic. t.* 290.

Wild in NEPAL and SYLHET—Wallich ; BOOTAN—Griffith ; SIKKIM-HIMALAYA, 4-6000 feet—J. D. Hooker ; KAMAON in the Sarjee Valley, at 3700 feet—Strachey and Winterbottom, (*v. v. c. et s. sp.*)

Leaves more than a foot long ; scape seated upon a large oblong pseudo-bulb, and terminated by a sheath formed of numerous imbricated bracts, out

of which appear eight or nine white flowers, stained with yellow near the point of the lip, and having an unpleasant smell, very like that of the Barberry blossom. The two wavy crests proceed from the base to half way up the middle lobe ; they are rich orange yellow towards the point, white otherwise. I presume this is No. 840 of *Griffith's Itinerary Notes, p.* 163, found on rocks near Panukka, in Bootan.

* 23. **C. prolifera.** *LO. no.* 6.

C. pseudobulbis elongatis subcompressis teretibus, foliis lanceolatis longè petiolatis, scapo terminali gracili erecto foliis duplò longiore sæpiùs prolifero sub quoque racemo squamis distichis arctè vaginato, bracteis deciduis, sepalis oblongis discoloribus, petalis linearibus, labelli trilobi lobo medio retuso denticulato lateralibus obtusissimis lineis 2 elevatis continuis.

Wild in NEPAL, near Noakote and Toka, on trees and rocks—Wallich; KHASIA, at 5000 feet—J.D.Hooker and T.Thomson; SIKKIM-HIMALAYA, 2-4000 feet—J. D. H., (*v. v. c. et s. sp.*)

When fresh the flowers are greenish yellow ; when dried the sepals are dark glaucous purple, and almost glumaceous. The specimens which I have examined vary in the condition of the point and margin of the lip, which is finely toothed or entire, and retuse or slightly acute.

24. **C. flavida.** *J. D. Hooker, ined.*

C. pseudobulbis ovatis subangulatis, foliis lanceolatis petiolatis, scapo terminali gracili erecto foliis subæquali prolifero sub quoque racemo squamis distichis arctè vaginato, bracteis deciduis, sepalis ovatis, petalis filiformibus, labelli trilobi oblongi obtusissimi lobis lateralibus nanis obtusis intermedium cordatum imbricantibus: lineis 2 elevatis in sinus abeuntibus, columnâ subapterâ.

Wild in KHASIA—Lobb ; SIKKIM-HIMALAYA—Cathcart, (*v. s. sp. et ic. pict.*)

Flowers pale green, not larger than in Pholidota, to which this species forms a transition, by its almost wingless column and obsolete short crests.

25. **C. longipes.**

C. pseudobulbis cylindraceis teretibus, foliis lanceolatis acutissimis in petiolum gracilem angustatis, scapo terminali filiformi foliis longiore prolifero sub quoque racemo squamis distichis arctè vaginato, bracteis deciduis, sepalis ovatis, petalis filiformibus, labelli trilobi lobis lateralibus obtusis divergentibus intermedio obovato-subrotundo ; lineis 2 elevatis ad basin decurrentibus, columnâ latè alatâ.

Wild in KHASIA, at 4-5000 feet—J. D. Hooker and T. Thomson, (*v. s. sp. comm. cel. inventores.*)

The very long narrow pseudobulbs distinguish this from the other pro-

liferous species. The flowers are intermediate in size between *C. prolifera* and *flavida*. The sepals and lip are as much saccate at the base as in *C. Gardneriana*.

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4. FILIFERÆ.

Erect, solitary, or racemose flowers, with extremely narrow, usually thread-shaped petals are characteristic of this little group, which, moreover, never has the hard shining pseudobulbs and sheathing scales of the erect section.

* 26. **C. fuscescens.** *LO., no.* 10.

C. pseudobulbis elongatis teretibus, foliis latis oblongis plicatis utrinque acutis, racemo nutante paucifloro, bracteis deciduis, petalis acuminatis linearibus, labelli lobo medio amplo ovato acuto undulato lateralibus nanis; lineis 3 elevatis juxta basin.

(A) Lateral lobes of lip quite obsolete.
(B) brunnea. Lateral lobes of the lip acute, dull brown. Elevated lines of the crest reddish orange.
C. brunnea. *Lindley, in Gard. Chron.* 1848, *p.* 71, *c. ic.*

Wild, **A** in NEPAL on trees—Wallich. **B** KHASIA, at the height of 3000 feet—J. D. Hooker, and T. Thomson; SIKKIM-HIMALAYA, 4000 feet—J. D. Hooker, (*v. s. sp. comm. cel. invent. et v. c.*)

Leaves ten inches long by three broad. Raceme drooping, five to six-flowered. Flowers brownish green. The dorsal sepal broader than the others. Lip with four cinnamon spots, one on each of the small lateral lobes; and two at the base of the middle lobes. The *C. brunnea* differs in having short well-defined lateral lobes to the lip; but its habit is so much the same that I can now only regard it as a variety.

* 27. **C. speciosa.** *LO., p.* 39. *Bot. Reg.* 1847, *t.* 23.

C. pseudobulbis ovato-oblongis costatis monophyllis, foliis oblongo-lanceolatis 5—7-nerviis, pedunculis 1—2-floris pseudobulbis parum longioribus, petalis linearibus reflexis, labelli trilobi laciniis lateralibus anticè denticulatis intermediâ bilobâ rotundatâ cristis duabus muricatis crassis sub apice ipso labelli confluentibus tertiâ brevi tenui basilari interjectâ.

Chelonanthera speciosa. *Blume, Bijd.* 384, *t.* 51.

Wild in JAVA; in the woods of M. Salak—Blume, Lobb, (*v. v. c.*)

Flowers in pairs at the end of a slender peduncle, about four inches long. Sepals and petals pale tawny; lip pitch-brown. Column broad, white; lip with a pure white termination. Flowers nearly four inches in diameter when fully expanded.

28. **C. incrassata.** *LO., no.* 4.

C. "bulbis oblongis subtetragonis, foliis lanceolatis nervosis, pedunculo nutante multifloro, labello intus bicristato nudo, limbi lobo medio ovato incrassato." *Blume.*

Chelonanthera incrassata. *Blume, p.* 384.

Wild in JAVA; in woods on M. Pantjar—Blume.

"Flowers dirty white, transparent. Limb of the lip brown, wavy." I have never seen this. It is placed by the learned author of the name next *C. speciosa*. Can it be *C. tomentosa*, No. 52.

* 29. **C. fimbriata.** *Lindley, in Bot. Reg., t.* 868. *Ib.* 1838, *misc.* 172. *Bot. Cab., t.* 1425.

C. pseudobulbis subrotundo-oblongis estriatis, foliis ovali-lanceolatis undulatis acutis pedunculo basi vaginato paucifloro longioribus bracteis concavis cartilagineis deciduis floribus longioribus, petalis filiformibus reflexis, labelli trilobi lobis lateralibus rotundatis in fronte denticulatis intermedio angustiore ovato pilis fuscis fimbriato, lamellis 2 elevatis rectis parum denticulatis.

Wild in CHINA—J. D. Parks; KHASIA MOUNTAINS, at 4000 feet—J. D. Hooker, and T. Thomson, (*v. v. c. et s. sp.*)

An inconspicuous creeping species, the smallest in the genus. Pseudobulbs perfectly even. Flowers pale dirty yellow, with a dull purple fringed lip in the Chinese plant; "pale olive brown, with the lip paler, fasciated, crested and fimbriated with dark purple" (*J. D. H.*) in the Khasia plant.

* 30. **C. ovalis.** *Lindley, in Bot. Reg.* 1838, *misc.* 171.

C. pseudobulbis fusiformi-ovalibus striolatis, foliis ovali-lanceolatis acutis spicâ longioribus, pedunculo basi vaginato sub-4-floro, bracteis concavis cartilagineis floribus longioribus, petalis reflexis filiformibus, labelli trilobi lobis lateralibus in fronte pectinatis intermedio ovato emarginato pilis fuscis villoso et fimbriato, lamellis 2 elevatis crispis, columnâ apice subintegrâ.

C. fimbriata. *Lindley, in Wall. Cat., no.* 1957. *Griff. ic., t.* 291, 1.

Wild in NEPAL and KAMAON—Wallich, (*v. v. c. et s. sp.*)

Much like *C. fimbriata*, but far larger in all its parts. The pseudobulbs are narrowly oval, not roundish oblong; the flowers are twice the size with a far more shaggy lip, and crisp not straight crests. It is sometimes known in continental gardens as *C. fuscescens*, which is a totally different species.

* 31. **C. fuliginosa.** *Lindl. in Lodd. Cat. Bot. Mag., t.* 4440.

C. pseudobulbis angustis fusiformibus rhizomate ramoso ascendente, foliis lanceolatis undulatis racemo 2—00-floro longioribus, bracteis deciduis, petalis filiformibus, labelli trilobi lobis lateralibus vix intermedio latioribus acutis in fronte fimbriatis intermedio oblongo retuso fimbriato, lamellis 2 flexuosis versus basin subitò interruptis.

Wild in the KHASIA MOUNTAINS, at 5000 feet—J. D. Hooker and T. Thomson; SIKKIM-HIMALAYA, on rocks, in valleys, at 5000 feet—J. D. Hooker, (*v. v. c. et s. sp. comm. cel. invent.*)

A fine species, with broad orange-yellow flowers and a brown lip. It is very near *C. fimbriata* and *ovalis*, from which its crests, interrupted somewhere above the base, seem to distinguish it clearly. The Sikkim and Khasia

specimens from Hooker and Thomson have flowers much smaller than the cultivated plant; but, beyond size, I find no marks of distinction.

In like manner there is among Hooker and Thomson's Khasia plants (No. 130) a very large-flowered imperfect specimen of this breed, beyond size undistinguishable by the materials before me. It is probably another species.

32. **C. simplex.**

C. pseudobulbis ovalibus elongatis teretibus, foliis 2 oblongis multinerviis racemis erectis paucifloris basi imbricatim vaginatis longioribus, bracteis elongatis citò deciduis, floribus campanulatis, petalis filiformibus, labello ovali vix trilobo acuto subcarnoso plano lineis 2 continuis elevatis tertiâ brevi ad basin lobi medii adjectâ.

Wild in JAVA—Lobb, (*v. s. sp. comm. dom. Veitch.*)

Flowers about the size of *Hyacinthus nutans*, four to six in an erect raceme; the flower-buds only wrapped in bracts, as in *C. longifolia.*

33. **C. miniata.** *LO., no.* 16.

C. pseudobulbis ovatis sulcatis in rhizoma ramosum annulatum, foliis 1-2 oblongo-lanceolatis racemo erecto brevi flexuoso longioribus, sepalis ovatis, petalis linearibus "labello intùs lineis 2 elevatis; limbo erecto acutiusculo."

Chelonanthera miniata. *Blume, p.* 385.

Wild in JAVA; near the cataracts of the R. Tjikundul, on M. Gede, and on the lofty parts of M. Salak on trees—Blume.

There is a drawing among Professor Reinwardt's, under the name of *Dendrobium miniatum*, which I suppose to be this plant. It has the habit of *Pholidota articulata*, with racemes from one to two inches long, and pinkish flowers three-quarters of an inch long. The bracts are deciduous and like those of *C. odoratissima.*

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5. FLEXUOSÆ.

34. **C. longifolia.** *LO., no.* 15.

C. pseudobulbis sulcatis ovatis, foliis striatis longo-lanceolatis, racemo elongato flexuoso multifloro, bracteis cum floribus simul decidentibus supra flores arctissimè imbricatis, sepalis carinatis, petalis filiformibus, labello oblongo emarginato plano bilamellato.

Chelonanthera longifolia. *Blume Bijdr.* 385, *t.* 51.

Wild in JAVA—Lobb; near the source of the river Tjiburree on M. Gede, and on M. Salak, near Passir Java, on trees—Blume, (*v. s. sp. in hb. Hooker, et ic. pict.*)

Leaves eighteen inches long, or less. Raceme from five to fifteen inches long, with a flexuose rachis like that of a grass, or a Pholidota. Only one flower opens at a time, all the previous ones having fallen off, while the upper part

of the inflorescence is included in long closely imbricated glumaceous bracts. Flowers cinnamon-brown about an inch long, with a greenish stain between two raised lines. A figure of it occurs among Professor Reinwardt's valuable collection of drawings, marked *Cymbidium stenopetalum*.

35. **C. bilamellata.**

C. foliis oblongis 5-nerviis racemo elongato flexuoso multifloro brevioribus, bracteis c. floribus simul decidentibus suprà flores arctissimè imbricatis, sepalis carinatis, petalis filiformibus, labelli angusti basi sigmoidei lobis lateralibus falcatis lamellâ duplici apice rotundatâ interpositâ intermedio ovali bilineato apice crispo.

Wild in the PHILIPPINES—Cuming, (*v. s. sp.*)

The broad leaves and 3-lobed lip with a double lamella distinguish this from *C. longifolia*, of which it has all the habit. I have only seen a single flower.

36. **C. Rumphii.**

Angræcum nervosum. *Rumph. Herb. Amb., VI. t.* 48.

Wild in AMBOYNA; on trees—Rumphius.

I only know this from the above figure. It is evidently very near *C. bilamellata* and *longifolia*, to the latter of which Blume refers it. But it bears a broad ribbed leaf twelve or fifteen inches long by four wide, and the racemes are only three or four-flowered. It is nearest *C. bilamellata*, but its flowers are four times as large, resembling a flying hornet, according to Rumphius, who states them to be yellowish white outside, and variegated with brown in the inside.

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§ III. **PLEIONE.** *Don. Prodr. Nep.*, 37.—Gomphostylis, *Wallich.*

There is something so peculiar in the plants called Pleione by Don, that it would be desirable to find some means of separating them from Cœlogyne. Occasionally I have imagined that they might be defined by such characters as a saccate lip, an undivided lip furnished by bearded not lamellate veins, or by the divisions of the flower tapering to the base instead of being obtuse. But the last peculiarity, on which I had most relied, is so entirely set aside by *C. Hookeriana*, which has the form of *C. cristata*, that after all I find it necessary to leave them as an Alpine form of Cœlogyne, in the hope that future observers will discover some sound generic character. All the species are Alpine. Dr. Royle describes the *P. præcox* as being found ornamenting with its large, richly-coloured flowers the branches of Oaks on Loudour, at 7500 feet of elevation, in 30° N. Lat., but only during the moisture of the rainy season. The secret of their successful cultivation in England lies in keeping them cool and dry while at rest, and forcing them with heat, moisture, and bright light as long as they are inclined to grow.

37. **C. Hookeriana.**

C. pseudobulbis ovatis glabris, foliis synanthiis oblongis scapo longioribus vaginis lævibus, bracteâ ovario breviore, sepalis petalisque erectis oblongis acutis, labello transverso rhomboideo retuso basi circulari serrato venis 7 villosis, clinandrio cuneato.

Wild in SIKKIM-HIMALAYA; Darjeeling, on rocks in woods at 7-10,000 feet—J. D. Hooker, (*v. s. sp. comm. cel. invent. et ic. pict.*)

A pretty little plant, about four inches high, with almost the habit of *Cypripedium guttatum*. Flower more than an inch and a half long, with bright rose-coloured sepals and petals, and a white lip tinged or daggled with pink. The lip is not united to the column in any degree, the parts of the flower do not taper to the base, and the leaves and flowers all appear at the same time, in which circumstances this differs from other *Pleiones*.

38. **C. diphylla.**

C. pseudobulbis oblongis medio constrictis, foliis geminis angustis subcoriaceis acuminatis, pedunculo flore ter longiore, bracteâ obtusâ inflatâ apiculatâ ovarii longitudine, labello obtusè trilobo emarginato venis fimbriatis 5—7 interruptis alterâ brevi adjectâ utrinque juxta apicem.

Pleione diphylla. *Lindley, in Paxton's Fl. Gard., sub t.* 51.

Wild in KHASIA—Griffith, (*v. s. sp. comm. beat. invent.*)

I have specimens of this plant from Mr. Griffith, who found it on the Khasia Mountains, in shaded rocky places at Churra: and whose memorandum appears in his *Itinerary Notes, p.* 44, *No.* 684. From this it appears that the leaves are somewhat coriaceous, and grow in pairs on the summit of oblong pseudobulbs, contracted in the middle, and spotted with purple on a green ground. The flowers are said to be very handsome, and white; the lip being stained and lined inside with violet and crimson, and decorated with from seven to nine lines of yellow fringes.

* 39. **C. lagenaria.** *Lindley, in Paxton's Fl. Gard., t.* 39, *fig.* 2.

C. pseudobulbis lagenæformibus nebulosis, bracteâ cucullatâ acutâ basi longe angustatâ, sepalis petalisque lineari-lanceolatis acuminatis, labello rotundato integerrimo emarginato lineis 5 barbatis.

Pleione lagenaria. *Lindley, in Paxton's Fl. Gard., t.* 39, *fig.* 2.

Wild on the ALPS OF INDIA—T. Lobb, (*v. v. c.*)

Flowers deep rose-colour with very acuminate segments. Lip white, with a yellow disk and crimson streaks at the edge.

* 40. **C. maculata.** *Lindley, in Wallich, Pl. as. rar., I.* 45, *t.* 53. *Bot. Mag., t.* 4691. *Griffith, Not. III.* 281.

C. pseudobulbis unicoloribus umbonatis crassis basi angustatis, bracteâ brevi subrotundâ cucullatâ inflatâ, sepalis petalisque ovalibus acutis, labello rotundato integerrimo emarginato lineis 7 barbatis.

Pleione maculata. *Lindley, in Paxton's Fl. Gard., t.* 39, *fig.* 1.

Wild in KHASIA, on the trunks of trees and among moss—Wallich; 4-5000 feet—Hooker and Thomson; ASSAM—Simons, (*v. v. c. et s. sp.*)

Flowers pure white except the lip, which is yellow on the disk and marked with crimson streaks at the edge. The native name is *Atia-Chakarpate* according to Wallich.

* 41. **C. humilis.** *LO., p.* 43.

C. pseudobulbis lagenæformibus, bracteâ oblongo-lanceolatâ petaloideâ ovario longiore demum retractâ pedunculo denudato, sepalis petalisque lineari-lanceolatis patentibus planis, labello ciliato emarginato lineis 6 fimbriatis distantibus venis totidem coloratis interjectis.

Pleione humilis. *D. Don. Fl. nep., p.* 37. *Paxton's Fl. Gard., t.* 51.

(A) Lip spotted and veined with rose-colour.

(B) Lip spotted and stained with yellow. Column with a few crimson spots.

Wild on the INDIAN ALPS ; Upper Nepal, among moss, on the trunks of trees—Buchanan Hamilton ; Bootan mountains, in dense forests towards Santagong at the elevation of 8000 feet above the sea—Griffith ; the Khasia hills at Sanahda, at the height of 7000 feet—T. Lobb ; Sikkim, at 7-8000 feet —J. D. Hooker and Cathcart, (*v. v. c. et s. sp.*)

This differs from both *C. maculata* and *lagenaria* in the form of its pseudobulbs, in the narrowness of the sepals and petals, and especially in the long fringes that border the lip, and which also occur upon six of the veins on the inside of the lip. The bract too is quite different, petaloid and pale violet at first, then shrinking and shrivelling till it leaves the peduncle naked, remaining at the base of the peduncle like an old-fashioned leather buskin. Flowers white with orange veins and spots on the lip. Dr. Hooker observes that the lip is very distinctly adnate to the base of the column, and that the flowers vary somewhat in colour and spotting.

* 42. **C. præcox.** *LO.* 20.

C. pseudobulbis turbinatis umbonatis, foliis 3-plurinerviis vaginis tuberculatis, bracteis obovatis ovario longioribus, labello subrepando apice bifido dimidiâ apicali lacerâ, venis 5 disci dentato-cristatis, clinandrii 4-partiti laciniis intermediis inflexis.

(A) Leaves green. Bracts very deciduous. Lip lacerated at the end ; with the crests reaching nearly to the point.

Epidendrum præcox. *Smith, Exot. Fl., t.* 97.
Pleione præcox. *Don. prodr.*, 37.
C. Wallichiana. *Griffith, notul. p.* 402. *Bot. Mag., t.* 4496.

(B) Sanguinea. Leaves crimson. Bracts more permanent. Lip as in **A.**

(C) Wallichiana. Leaves green. Bracts deciduous. Lip plaited and toothed at the end, with the teeth of the crests very short and confined to the disk.

C. Wallichiana. *LO., p.* 43. *Wall. Pl. as. rar., I. t.* 54. *Bot. Reg.* 1840, *t.* 24.
Pleione Wallichiana. *Lindley, in Paxton's Fl. Gard., sub t.* 51.

Wild in the HIMALAYAS; **A** Khasia at 4-7000 feet—Hooker and Thomson; Myrung wood on rocks—Griffith; Nipal—Buchanan Hamilton; branches of oaks on Loudour, at 7500 feet, during the moisture of the rainy season—Royle; **B** Sikkim, on trees at 5-8000 feet—J. D. Hooker; **C** Pundua—Wallich, (*v. v. c. et s. sp.*)

Flowers very showy, deep rose-coloured, fully three inches long, solitary, or occasionally in pairs. The two first varieties above mentioned differ not only in the colour of the leaves, which are green in the one and crimson in the other, but in the form and texture of the flowers which are shorter and more fleshy in **B** than in **A**. In both the pseudobulbs are richly spotted with crimson. A most beautiful plant, with faintly scented flowers.—*J. D. H.* Called *Caybu swa* in Nipal according to Buchanan Hamilton.

With regard to *C. Wallichiana*, I am obliged to confess that it must be regarded as a mere variety. I have seen no wild specimen, unless perhaps a plant gathered by Griffith, and forming no. 1017 of one of his series. Undoubtedly it has the end of the lip more abruptly separated from the sides than in **A** or **B**, and plaited as well as toothed; and, moreover, the crests of the lip are very short and confined to the disk. But these are not distinctions upon which it is safe to rely. Griffith's *C. Wallichiana* is in all respects **A**. Mr. Bateman has well described the general appearance of **C**. "The pseudobulb has much the form and hue of a truffle, and loses its leaf before the appearance of the flowers, which come up one on either side. They are almost as large as those of *Cattlega labiata*, and are of a uniformly rich transparent rose-colour, except in the interior of the lip, which is decorated with a broad streak of yellow on its disk and traversed by five parallel ridges of white tubercles. There are also a few deep crimson stains scattered on its surface." The native name is *Atia-Palangcha*, according to Wallich.

43. C. javanica.

Bolborchis. *Moritzi in Verzeich. der Pflanz. Zolling., p.* 89.

Wild in JAVA; near Tjikoya, on the ground, under young coffee-bushes, Oct. 11, 1842—Zollinger.

It does not appear from what is said in the work above quoted how this differs from *Pleione*. The plant is described as being two to four inches high, with leaves appearing after the flowers. "Pseudobulb sphærical. Scape 1-flowered, with leafless membranous sheaths, often piercing through the dead leaves. Sepals and petals linear-lanceolate, yellowish-green, erect. Lip large, white, not saccate, fringed and bearded. Column white, petaloid, nearly linear, somewhat 3-lobed at the point." This should be sought for by collectors in Java.

DOUBTFUL SPECIES.

44. **C. caulescens,** *Griffith, Notulæ, p.* 282, from swampy places at MALACCA, near Pulo Bisar, on the coast, is certainly not a species of this genus. It is said to have tolerably large, white, very fugitive flowers; and to be three to four feet high. I

possess a specimen, but not in a state for examination. The inflorescence is that of Bromheadia. It may be a Pholidota.

Cœlogyne uniflora.
——— parviflora. } = Panisea.

PANISEA.

LO., p. 44. *Cœlogynis sect.*

Sepala membranacea; lateralibus basi obtusis v. obliquis.

Petala conformia, parùm minora.

Labellum indivisum, membranaceum, omninò calvum, basi sigmoideum, omninò liberum.

Columna Cœlogynis.

Pollinia 4, collateralia, cereacea; *caudiculâ glandulâque* nullis (nisi materies pulverea saltèm in quibusdam). *Anthera* membranacea, mobilis, bilocularis, infra apicem columnæ inserta.

Herbæ *epiphytæ* Indicæ, *cæspitosæ, pseudobulbosæ.* Folia *sæpiùs graminea, semper tenuia.* Racemi *radicales, erecti,* 1—00-*flori;* bracteis *membranaceis.* Flores *mediocres, pallidi.*

The absence of crests or elevated lines from the lip of the plants now assembled under this name, together with the membranous texture, the perfectly simple form, and the sigmoid base of that organ, afford ample points of distinction from Cœlogyne.

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1. **P. parviflora.** *LO., p.* 44, *sub Cœlogyne.*

P. foliis angustè ovalibus, racemis multifloris bracteis ovatis pedicellis brevioribus, sepalis petalisque erectis obtusiusculis, labello lineari-lanceolato.

Dendrobium demissum. *Don Prodr.* 34.

Wild in Nepal, and Gossain Than—Wallich, (*v. s. sp.*)

2. **P. reflexa.**

P. foliis ovalibus solitariis longè petiolatis racemis nutantibus multò longioribus, bracteis ovatis setaceo-acuminatis pedicellis longioribus, sepalis petalisque reflexis, labello lineari spathulato versus basin margine crispo.

Androgyne. *Griffith, Notul. III.* 279.

Wild in Assam, on oaks, among species of Microstylis, Oberonia, &c., in Nov.—Griffith; Khasia, at Myrung in woods—Id. (*v. s. sp.*)

Pseudobulbs diaphanous, cellular-membranous; lip white, with yellow spots near the base—*Griffith.* The same author mentions a pair of bracts to each flower, but this seems to be accidental.

Jan. 28, 1854.

3. **P. apiculata.**

P. folio angustè ovali petiolato racemo nutante bifloro multò longiore, bracteis linearibus canaliculatis ovario triptero breviori-bus, sepalo dorsali reflexo, labello oblongo retuso apiculato ungue sigmoideo saccato.

Wild in MOULMEIN, at 5000 feet—T. Lobb, (*v. s. sp.*)

"Flowers greenish brown," rather smaller than in the next.

4. **P. uniflora.** *LO., p.* 42, *sub Cœlogyne.*

P. pseudobulbis bifoliis vaginis scariosis imbricatis, foliis gramineis, pedunculis unifloris ultra vaginas parùm exsertis, sepalis carinatis petalisque patulis acutis, labello obovato obtuso, ovario angulato.

Wild in NEPAL—Wallich; SIKKIM-HIMALAYA, in hot valleys—J. D. Hooker, (*v. s. sp. comm. cel. J. D. H.*)

Of this rare plant I possess very imperfect specimens. The leaves in pairs, and the obovate lip are peculiar. According to Wallich's MSS. the lip has three orange-coloured blotches from which four slightly elevated lines descend; but I can now find in the Sikkim plant neither these lines nor the short falcate lateral lobes of the lip spoken of in *LO.* It is not improbable that some confusion exists among the specimens bearing this name. Of the original *C. uniflora* I never examined *a flower.*

in the order of publication, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, wholly unknown, or very imperfectly known, to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Osyricera *Blume.*
Chrysoglossum *Blume.*
Titania *Endlicher.*
Platystylis *Blume.*
Gastroglottis *Blume.*
Macrostomium *Blume.*
Diploconchium *Schauer.*
Diglyphis *Blume.*
Epicrianthes *Blume.*
Thelychiton *Endlicher.*
Cochlia *Blume.*
Aphyllorchis *Blume.*
Acanthoglossum *Blume.*
Collabium *Blume.*
Pachystoma *Blume.*
Calostylis *Blume.*
Ceratium *Blume.*
Pachychilus *Blume.*
Microsaccus *Blume.*
Lichenora *Wight.*
Ceratostylis *Blume.*

Ephippium *Blume.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Adenoncos *Blume.*
Glomera *Blume.*
Conchochilus *Hasskarl.*
Todaroa *Ach. Richard.*
Cuitlauzina *La Llave.*
Psittacoglossum *La Llave.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Didymoplexis *Griffith.*
Haplostellis *Ach. Richard.*
Chlorosa *Blume.*
Rophostemon *Blume.*
Ocampoa *Ach. Richard.*
Plexaure *Endlicher.*
Eucosia *Blume.*
Macodes *Blume.*
Galera *Blume.*
Hysteria *Reinwardt.*

Scaredederis *Thouars.*
Acronia *Presl.*
Sclerοpteris *Scheidweiler.*
Apetalon *Wight.*
Podanthera *Wight.*
Ambiostoma *Scheidweiler.*
Leucorchis *Blume.*
Pseuderiopsis *Reichenb. fil.*
Aclinia *Griffith.*
Cybele *Falconer.*
Cryptosanus *Scheidweiler.*
Pseudepidendrum *Reichenb. fil.*
Ponerorchis *Rchb. f.*
Mesospinidium *Rchb. f.*
Paradisanthus *Rchb. f.*
Pescatorea *Rchb. f.*
Chaubardia *Rchb. f.*
Sarcadenia *Hort. Par.*
Guebina *Hort. Par.*

And any of the new genera proposed by the younger Reichenbach, Klotzsch or others.

ABBREVIATIONS.

L O.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

LIST OF GENERA IN THIS PART.

MILTONIA	4	pages
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Parts VI. & VII.] **NOVEMBER, 1855.** **[Price 5s.**

FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

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CALANTHE.

R. Brown in Bot. Reg. 578, *absq. charact.* (*Oct.* 1821.) *LO.*, 249.

This well-marked genus approaches Phaius very nearly, as Griffith has pointed out, but the adhesion of the pollen-masses to a separable gland is constant, unless the flowers are examined too early. *Limatodis* differs in having a lateral inflorescence as well as a free cucullate lip. The callosities on the lip afford excellent specific marks, but cannot be employed in the generic character, as will be evident from the following enumeration.

SPECIERUM ANALYSIS.

§ I. GHIESEBREGHTIA. Calcar 0, v. brevissimum.

A. Calcar 0.
- *a.* Labelli lobus medius major lamellatus . . 1. *tricarinata.*
- *b.* ——— minor nudus . . . 2. *puberula.*

B. Calcar brevissimum.
- *a.* Labellum lamellatum.
  - lamellis 5 . . . . . 3. *occidentalis.*
  - ——— 3 . . . . . 4. *brevicornu.*
- *b.* Labellum secus axin callosum, lobo medio maximo bilobo . . . . . 5. *biloba.*
- *c.* Labellum nudum et petala tomentosa nana . . 6. *mexicana.*
- *d.* ——— "basi cum tuberculo hirsutum" . . 7. *abbreviata.*

§ II. EUCALANTHE. Calcar elongatum.

A. Labellum indivisum . . . . . 8. *alpina.*

B. Labelli lobus medius maximus.
- Petala retusa, sepalis diversa . . . . 9. *conspicua.*
- —— acutiuscula, sepalis similia.
  - Lab. lobus medius acutus, calcare uncinato . 10. *curculigoides.*
  - ——— subrotundus emarginatus.
    - basi bicallosus.
      - calcare clavato.
        - scapo bivaginato, spicâ rarâ . . . . } 11. *angustifolia.*
        - scapo multivaginato, spicâ densâ . . . . } 12. *clavata.*
      - calcare lineari.
        - labelli lac. lat. linearibus . 13. *galeata.*
        - ——— minutis . 14. *emarginata.*
    - basi triplici serie verrucosus.
      - verrucis subæqualibus . . . 15. *sylvatica.*
      - verrucis basilaribus multò majoribus
        - foliis subtus glabris, bract. foliaceis ovario æq. . . } 16. *versicolor.*
        - ———, bract. pedicello brevioribus . . } 17. *Masuca.*
        - foliis subtus pilosis . . 18. *purpurea.*

Nov. 1, 1854.

C. Labelli 3-4-lobi laciniæ subæquales.
  a. Labellum basi hispidum aut seriatim verrucosum.
    calcar inflexum . . . . . 19. *uncata.*
    —— rectum.
      labello æquale.
        labelli lobi lat. majores; verrucæ plurimæ seriatæ . . . . . } 20. *parviflora.*
        ———— minores; —— paucæ gyratæ . . . . . } 21. *angusta.*
      elongatum.
        Labelli laciniæ laterales maximæ . 22. *furcata.*
        ———— subæquales.
          scapo vaginis densè imbricato . 23. *vaginata.*
          ———— paucis distantibus.
            floribus nutantibus campanulatis . . . . } 24. *Perrotetti.*
            ——— erectis explanatis.
              verrucis liberis confusis 25. *veratrifolia.*
              ——— in cucullum connatis . . } 26. *gracillima.*
  b. Labellum basi callo magno dentato auctum . . 27. *alismæfolia.*
  c. Labellum lamellatum.
    lamellæ 3 ponè basin
      lobus medius bilobus, laciniis rotundatis imbricatis . . . . . } 28. *discolor.*
      ———— emarginatus apiculatus . . 29. *bicolor.*
    lamella 1 juxta apicem . . . . . 30. *Griffithi.*
  d. Labellum bicallosum.
    calcar ovario brevius . . . . . 31. *speciosa.*
    ———— longius . . . . . 32. *densiflora.*
  e. Labellum basi costis tribus elevatis.
    trilobum . . . . . 33. *plantaginea.*
    quadrilobum . . . . . 34. *herbacea.*
  f. Labellum basi nudum.
    Inflorescentia hirsutissima pendula . . . 35. *vestita.*
    ———— tomentosa erecta.
      labelli 4-lobi laciniis subrotundis æqualibus . 36. *chloroleuca.*
      ———— lateralibus minoribus acutis . . . . . } 37. *fulgens.*
D. Vix nota . . . . . 38. *odora.*

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§ I. GHIESEBREGHTIA. *A. Richard, in Ann. Sc. ser.* 3, *III. p.* 28.

1. C. tricarinata. *LO., no.* 18.

Wild in NEPAL—Wallich, (*v. s. sp.*)

2. C. puberula. *LO., no.* 19. *Griffith, ic. t.* 313. *A.*

Wild on the mountains of SYLHET—Wallich; KHASIA MOUNTAINS—Griffith, at the height of 5-6000 feet—Hooker and Thomson; N. W. HIMALAYA, at 5000 feet—T. Thomson; ASSAM—Mack; SIKKIM, Dorjeeling, at 3000 feet—J. D. Hooker, (*v. s. sp.*)

Flowers rose-colour, with linear yellowish petals, and a purple lip. The middle lobe of the lip varies in form from linear-lanceolate and entire to obovate oblong, or lanceolate and serrate.

3. **C. occidentalis.**

C. scapo ovarioq. tomentosis, labelli basi conici lobo medio subrotundo crispo 5-lamellato.

Wild in the N. W. HIMALAYA; Sirmur, at 6-7000 feet—T. Thomson, Jacquemont, (*v. s. sp. comm. cel. Thomson, et in hb. Mus. Par.* 841.)

The five lamellæ planted upon a nearly orbicular lip, with a very short conical spur, plainly distinguish this. I know nothing of its colour.

4. **C. brevicornu.** *LO., no.* 16. *Sertum Orchid., t.* 9.

Wild in NEPAL—Wallich; KAMAON—Namik, at 9000 feet—Strachey and Winterbottom; SIKKIM, in woods, in May, at 5-6000 feet—J. D. Hooker, (*v. s. sp.*)

Flowers brick-red, striped with white.

5. **C. biloba.**

C. spicâ densâ cylindraceâ, sepalis acuminatis patentissimis, petalis linearibus, labelli basi conici lobis lateralibus obsoletis intermedio unguiculato cuneato bilobo laciniis acutis per axin carnoso.

Wild in SIKKIM, at 4000 feet—J. D. Hooker, (*v. s. sp. comm. cel. inventor.*)

Flowers in long spikes, dull wine-red. The pollen-masses are represented in a drawing among Mr. Cathcart's collection, as adhering to a wedge-shaped caudicle, as broad and nearly as long as themselves.

6. **C. mexicana.** *Rchb. f. Orch. Europ., t.* 355, *fig.* 5. 6. 7. *Bot. Zeit.* 1853, *p.* 493.

C. spicâ conicâ, floribus omninò tomentosis, petalis nanis, labello paulò longiore obovato apiculato cornu brevi laciniis lateralibus erectis nanis.

Ghiesebreghtia calanthoides. *A. Rich. l. c. Lindley in Orch. Linden., No.* 128.

Wild in MEXICO—Galeotti, Leibold; in CUBA on the edges of the forests of Mount Liban and the Sierra Maestre, at the height of 3000 feet, August—Linden, (*v. s. sp.*)

"Petals yellowish white, dotted with rose."—*Linden.* Although I adopt Mr. Reichenbach's view, and refer this new-world plant to the old-world genus Calanthe, it is necessary to observe that, in its dwarf petals and lip, and in the *double* gland of the pollen-masses, it is sufficiently distinguishable, and more deserving of distinction than many so-called genera. Its habit is however the same as that of Calanthe.

7. **C. abbreviata.** *LO., no.* 15. (Amblyglottis *Blume.*)

Wild in JAVA, near the cataracts of the river Tjikundul in the mountains of Gede—Blume.

Flowers white, in May.

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§ II. EUCALANTHE.

8. **C. alpina.** *J. D. Hooker, MSS.*

C. spicâ secundâ, labello subrotundo inciso basi nudo, calcare pendulo filiformi-conico duplò longiore.

Wild in SIKKIM, at Lachen, in pine woods, at 10,000 feet, in July—J. D. Hooker, (*hab. s. sp. comm. cel. inventor.*)

Flowers greenish yellow, "scentless;" lip yellowish, very irregularly striated with red.

9. **C. conspicua.**

C. sepalis oblongo-lanceolatis æqualibus, petalis retusis paulò latioribus, labelli lobo medio obcordato basi cuneato versus columnam hispido . . . . . ., calcare compresso clavato incurvo labello æquali.

Wild in the PHILIPPINES; Bohol—Cuming, (*hab. s. sp.*)

A noble species with the habit of *C. Masuca* and *fulgens*, but with flowers twice as large as in either; their colour is unknown. Leaf broad, like that of *C. veratrifolia*, slightly pilose beneath. Raceme short, roundish. Flowers nearly smooth, two-and-a-half inches long, at least, from the setting on of the pedicel to the end of the lip. Sepals narrowly oblong, one-and-a-half inch long, acute, equal-sided, three to five-veined; petals the same length, rather broader, quite retuse. Side lobes of lip truncate recurved, middle one broadly obcordate, slightly denticulate. The surface of the base, owing to the fleshiness of the parts and the pressure to which they have been subjected, cannot be exactly ascertained. There is however no doubt that there is a line of small soft teeth, as in *C. sylvatica*, and I believe the mouth of the spur is stopped by some large warts. The spur is remarkably club-shaped and curved like a sabre.

Among Reinwardt's *Icones inedita*, is a plant with pale lilac flowers which may belong to this species.

* 10. **C. curculigoides.** *LO., no.* 13. *Bot. Reg., t.* 8, 1847.

Styloglossum nervosum. *Kuhl and Hasselt.*
? Amblyglottis pulcra. *Blume Bijdr.* 371.
? Calanthe pulcra. *LO., no.* 9.

Wild in MALACCA—Griffith; PENANG and SINGAPORE—Wallich; JAVA, in the woods of the mountains of Seribu—Blume, (*v. v. c. et s. sp.*)

Spike erect, a foot long in vigorous specimens. Flowers bright yellow.

11. **C. angustifolia.** *LO., no.* 12. (Amblyglottis *Blume.*)

Wild in JAVA—Lobb; in shady places on the mountains of the province of Buitenzorg—Blume, (*v. s. sp.*)

I have wild specimens from Mr. Lobb, in one of which the leaves are three times as broad as in the other. The spike is thin and few-flowered, with deciduous bracts. Two inflated sheaths clothe the scape. In Reinwardt's unpublished figures, where it is called *Limodorum striatum*, the flowers are represented as white with a pale orange-coloured lip. I find the latter to be four-lobed, with rounded equal lobes and a pair of calli at the base.

12. **C. clavata.** *LO., no.* 11.

Wild in SYLHET—Wallich; KHASIA, at 4000 ft.—Hooker and Thomson; SIKKIM, at 4-5000 feet—J. D. Hooker, Cathcart, (*hab. s. sp. et v. ic. pict.*)

A fine species with primrose flowers in a dense cylindrical raceme.

13. **C. galeata.**

C. (racemo paucifloro secundo), sepalis petalisque galeatis, labello basi bicalloso laciniis lateralibus linearibus brevibus intermediâ obcuneatâ calcari acuto curvo æquali.

Wild in SIKKIM, at 4000 feet, near Dorjeeling—J. D. Hooker, (*v. ic. pict.*)

Dr. Hooker's herbarium contains no specimen of this very distinct species, which is founded on a sketch by himself, preserved among his collections. It represents a plant with the following peculiarities. Scape rather more than a foot high, with a pair of young leaves at the base, from among which rises a nodding raceme of four flowers; the full-grown leaf is about eighteen inches long, broadly oval tapering into a channelled petiole. The sepals and petals are dull olive striped with crimson, and "converge over the anther." The lip is white with a rose-coloured spur. There is nothing in the genus to which this can be referred even if the few-flowered raceme and nodding flowers, which may be accidental, are disregarded. The capsules are pyriform, triangular and about one-and-a-half inch long. The drawing is dated May 9, 1848.

14. **C. emarginata.** *LO., no.* 4. (Amblyglottis *Blume.*)

Wild in JAVA, in the primæval woods of M. Gede—Blume.

Flowers large, violet, with orange-coloured callosities on the lip.

* 15. **C. sylvatica.** *LO.* 6.

Centrosis sylvatica. *Thouars Orch. afr., tt.* 35, 36.

(B) natalensis. *Rchb. f. in Linn. XIX.* 374.

Wild in MAURITIUS and BOURBON—Thouars, Bouton, &c.; fields in elevated situations—Bojer; La Pouce—Gardner; **B,** Port Natal—Rchb. f. (*v. v. c. et s. sp. in hb. Hooker*, &c.)

Flowers white, gradually changing to bright yellow without fading, so that the upper part of the long spike is pure white, the lowest very yellow, the middle a delicate cream colour. Within the hollow of the column lower down than the tubercles, I find a pair of fleshy calli.

The Natal plant which Mr. Reichenbach regards as a variety, I have seen nowhere. It would seem to have a more slender habit, shorter bracts, and a finer spur.

* 16. **C. versicolor.** *Lindl. Sert. Orch., t.* 42. *Bot. Reg.* 1844, *sub t.* 37.

Wild in the EAST INDIES; locality unknown, (*v. v. c.*)

Flowers white, with a purple lip, changing to yellow.

* 17. **C. Masuca.** *LO., no.* 3. *Bot. Reg.* 1844, *t.* 37. *Bot. Mag., t.* 4541.

C. emarginata. *Wight. ic.* 3. *t.* 918.

Wild in NEPAL—Wallich; Sikkim—Cathcart; NILGHERRIES—Lobb, (*v. v. c. et s. sp.*)

Flowers large, purple, with three long rugged white or orange-coloured callosities on the base of the lip. The Ceylon and Java localities indicated in *LO.* must now be expunged, as uncertain.

* 18. **C. purpurea.** *LO., no.* 2. *Bot. Reg.* 1844, *sub t.* 37.

Wild in CEYLON—Macrae, Walker, (*v. v. c. et ic. pict.*)

The three preceding species are very difficult to distinguish, and possibly *C. versicolor*, the wild locality of which is unknown, may be a mere variety of *C. Masuca.* What differences I most rely upon will appear from the following contrast :—

	versicolor.	*Masuca.*	*purpurea.*
LEAVES . .	smooth on both sides .	pilose beneath .	softly hairy beneath
RACEME .	close	open	close.
BRACTS . .	leafy, larger than the ovary	shorter than the pedicels . .	as long as pedicels.
SEPALS AND PETALS .	white	purple . . .	purple.
LIP . . .	broad	broad	narrow.
Do. side-lobes . .	oblique	oblique . . .	round.
SPUR . .	nearly straight, not longer than the pedicel	curved, longer than the pedicel	nearly straight, shorter than the pedicel.

I should add that for the characters of *C. purpurea* I am obliged to rely chiefly upon an Indian drawing, all the Ceylon specimens that I have seen being much decayed and hardly examinable, except a small uncharacteristic one in Sir W. Hooker's Herbarium, collected by Mrs. Walker.

19. **C. uncata.**

C. racemo angusto, bracteis foliaceis ovario multò longioribus, labelli basi hispidi lobis lateralibus dimidiatis acutis intermedio bilobo, calcare uncinato.

Wild in SIKKIM; Dorjeeling—Griffith, (*h. s. sp.*)

Flowers small, the lowest scarcely longer than the bracts. Spur remarkably hooked upwards. I have seen only a single specimen, sent me by Griffith.

20. **C. parviflora.** *Lindl. in Paxt. Fl. Gard. sub t.* 61.

Wild in JAVA—Lobb (334), (*v. s. sp. comm. dom. Veitch.*)

A slender species, with a downy spike, sometimes as much as a foot long. Leaves from two and a half to four and a half inches broad. Bracts much reflexed. The lateral lobes of the lip are conspicuously larger than the deeply bifid middle one ; the warts are very numerous and extend from the sinus to the base in crowded rows. The pollen-masses are almost sessile on an obovate gland.

21. **C. angusta.**

C. racemo tomentoso denso angusto, labelli lobis lateralibus intermedio bipartito minoribus, verrucis paucis gyratis, calcare subclavato apice inflexo ovario paulò longiore.

Wild in KHASIA—Lobb, (*v. s. sp.*)

Leaves very small, not more than four inches long, petiole included. Scape a foot high and more, with a few distant ovate sheaths. Raceme very dense and narrow, with short downy ovate bracts, resembling that of *C. veratrifolia* on a small scale. The warts at the base of the lip form a kind of circle with two or three smaller in the middle, and one or two outside in the direction of the point.

* 22. **C. furcata.** *Bateman in Bot. Reg.*, 1838, *misc.* 34.

Wild in the PHILIPPINES—Cuming ; JAVA—Junghuns (308), De Vriese, (*v. s. sp.*)

A plant with the habit of *C. veratrifolia.* Flowers white. Mr. Reichenbach has rightly pointed out the fact that the spur of this species is variable, sometimes being emarginate, sometimes not, and either longer or shorter than the lip. The same fact is observable in my wild specimens. It chiefly differs from *C. veratrifolia* in the larger size of the lateral lobes of the lip. It is probably the *Amblyglottis veratrifolia* of Blume.

23. **C. vaginata.**

C. scapo vaginis densè imbricato, racemo denso conico tomentoso, bracteis floribus longioribus, labelli 4-lobi laciniis æquilatis obtusis cristâ verrucosâ antrorsum hispidâ, calcare labello longiore.

Wild in ASSAM—Major Jenkins, (*v. s. sp. in hb. Hooker.*)

I have only seen a solitary scape, remarkable for the very numerous loose leafy scales with which it is invested. The inflorescence is unusually dense. No leaves accompany the specimen. Possibly the flowers may appear before them, as Griffith says is the case with his *C. odora* (See No. 38).

24. **C. Perrotetti.** *A. Rich. in Ann. Sc. ser.* 2, *XV.* 68. *Wight. ic. pl., t.* 1664.

Wild in the NILGHERRIES—Lobb ; frequent in clumps of forest, in moist soil, from July to August, or even as early as May—Wight, (*v. s. sp. comm. cel. Wight et Veitch.*)

Flowers delicate lilac, according to Wight, the lip with a deeper tinge. They are twice as large as in *C. veratrifolia*, and appear to have in all cases the sepals and petals erect, and presenting a somewhat campanulate appearance, whereas in that species the lateral sepals are completely reflexed. Differs from *C. purpurea* and its allies in the lateral lobes of the lip being as long as the middle one or nearly so.

* 25. **C. veratrifolia.** *R. Br. in Bot. Reg., t.* 720. *LO., no.* 1. *Griffith ic., t.* 283, *fig.* 4.

(A) Flowers pure white.
(B) discolor. A dwarf form with a dirty brownish lip, and a pale purple central stain.
(C) australis. Flowers white changing to buff.
Amblyglottis flava. *Blume Bijdr.*, 370. *t.* 64.
Flos triplicatus. *Rumph. Amboyn., VI. t.* 52, *f.* 2.
(D) comosa. Raceme very dense ; bracts broad, very downy.
C. comosa. *Rchb. f. in Linn., XIX.* 374.

Wild in many tropical parts of Asia ; **A**, Ceylon, up to 6000 feet —Mrs. Walker ; CONTINENT OF INDIA ; **B**, Ceylon—Macrae ; **C**, AUSTRALIA, in the Illawarra district, South of Port Jackson—A. Cunningham ; AMBOYNA—Rumphius ; JAVA—Blume ; **D**, CEYLON—J. D. Hooker ; NILGHERRIES—Rchb. f. (*v. v. c. et s. sp.*)

This is a very extensively dispersed plant, varying somewhat in appearance according to soil, place and climate. The varieties above enumerated might without inconvenience be disregarded, or they might be greatly multiplied. The size of the bracts, the denseness of the inflorescence, and the degree of downiness are very variable circumstances.

26. **C. gracillima.**

C. racemo gracillimo pubescente, bracteis ovatis acutissimis, sepalis lateralibus subrotundis reflexis petalis angustioribus, labelli 5-lobi laciniis linearibus obtusis, verrucis paucis sub cucullo plicato latentibus, calcare recto labello longiore.

C. veratrifolia. *Hooker in Beechey's Voyage, p.* 71.

Wild in the SOCIETY ISLANDS—Beechey, (*v. s. sp. in hb. Hooker.*)

A very slender plant with a narrow raceme sometimes as much as eighteen inches long, with straight sharp narrow by no means undulated bracts and very little down. The flowers are much like those of *C. veratrifolia*, but the lateral sepals are roundish, equal-sided and five-veined, while the petals are narrower and three-veined ; and the crest at the base of the lip consists of a fleshy hood beneath which lurk a few warts, terminating forwards in a narrow elevated plate. By this circumstance it is abundantly distinguished from *C. veratrifolia*, independent of its different habit. The only leaf in Sir W. Hooker's herbarium is more than eighteen inches long, by three-and-a-half broad, and seems to be smooth on both sides.

27. **C. alismæfolia.**

C. foliis ovato-subrotundis longissimè petiolatis subtùs glaucescentibus, labelli quadrilobi laciniis lateralibus linearibus intermediâ altè obcordatâ callo maximo carnoso tuberculato juxta basin, calcare labello vix æquali.

Wild in SIKKIM in hot valleys at 2000 feet—J. D. Hooker; in KHASIA, at 4000 feet—Hooker and Thomson, (*h. s. sp. comm. cel. viatores; et v. ic pict.*)

Leaves with much the appearance of *Alisma Plantago;* inflorescence nearly smooth; bracts ovate, squarrose; flowers white tinged with pink, except the sepals, which are roundish and somewhat green. The very remarkable callosity at the base of the lip is bright yellow.

* 28. **C. discolor.** *Lindl. in Sert. Orch., sub t.* 9. *Bot. Reg.* 1840, *t.* 55.

Wild in JAPAN—Zollinger, (*v. v. c. et s. sp. comm. cel. Sonder.*)

Sepals and petals claret-coloured; lip white tinged with pink.

29. **C. striata.** *R. Br., in Bot. Reg.*, 578.

Limodorum striatum. *Banks, Ic. Kæmpf., t.* 2.
C. bicolor. *Lindley, in Sert. Orch., sub t.* 9.

Wild in JAPAN—Kæmpfer, (*v. v. c. comm. dom. de Mechelynck.*)

Flowers yellow, cinnamon-brown at the back. The lip has a bifid linear downy callosity at the base, beyond which rise three lamellæ extending almost to the point, each having a minute lamellula at its own base.

30. **C. Griffithi.** *Lindl. in Paxt. Fl. Gard., sub t.* 61.

C. racemo laxo multifloro, labelli lobis lateralibus linearibus obtusis intermedio subrotundo truncato denticulato sub apice dente unico magno aucto, calcare recto pendulo.

Wild in BOOTAN; To Chuku, on wet banks at 6000 feet, and above Telagong—Griffith, (*v. s. sp. comm. cel. inventor.*)

A plant with the habit of *C. puberula.* Spur straight, about as long as the lip. A single compressed tooth just within the apex of the lip.

31. **C. speciosa.** *LO., no.* 8. (Amblyglottis *Blume.*)

Wild in JAVA; in the dense woods in the mountainous parts of Bantam and Buitenzorg—Blume.

Flowers orange-coloured.

* 32. **C. densiflora.** *LO., no.* 10. *Bot. Reg., t.* 1646.

Wild in SYLHET—Wallich; ASSAM—Griffith; KHASIA, at 4000 feet—Thomson and Hooker, (*v. v. c. et s. sp.*)

When young the raceme forms a globular mass, completely covered by roundish ovate, thin, deciduous bracts. Each scape is furnished with three inflated sheaths. The column is remarkable for being extended into a long constricted neck above its junction with the lip. Flowers apricot-yellow.

33. **C. plantaginea.** *LO., no.* 7. *Sertum Orch., t.* 24. *Griff. ic., t.* 339, *A.*

Wild in NEPAL and KEMAON — Wallich; Namik, at 9000 feet—Strachey and Winterbottom; BOOTAN, between Tussulling and Chindrippa, 7-7500 feet—Griffith; SIKKIM—Cathcart, (*v. s. sp.*)

Flowers pale rose-colour or violet with a darker lip.

34. **C. herbacea.**

C. foliis latis subsessilibus, labelli basi tricostati 4-lobi lobo intermedio altè obcordato, calcare sigmoideo.

Wild in SIKKIM, in hot valleys at 1-4000 feet—J. D. Hooker, (*v. s. sp. et ic. pict.*)

Sepals and petals lanceolate, green. Lip pure white. Spur doubly curved yellowish.

* 35. **C. vestita.** *LO., no.* 5. *Paxton Fl. Gard.*, 147, *c. ic. Bot. Mag., t.* 4671.

Cytheris Griffithii. *Wight ic., t.* 1751.
Preptanthe vestita. *Rchb. f. in Bot. Zeit.* 1853. 493.

Wild in BURMA—Griffith, Wallich, (*v. v. c. et s. sp.*)

Flowers pale cream-colour. Inflorescence extremely shaggy. In a variety there is a deep crimson blotch at the base of the lip. Mr. Rchb. having examined this plant before the pollen-masses adhered to their gland, supposed it to be a distinct genus, which he called Preptanthe, and placed among Epidendreæ.

36. **C. chloroleuca.**

C. racemo raro secundo, labelli nudi 4-lobi laciniis æqualibus rotundatis.

Wild in SIKKIM, in hot valleys at 2000 feet—J. D. Hooker, (*v. s. sp. et ic. pict. comm. cel. viator.*)

Flowers rich yellowish green. Lip white, with a dull yellowish stain at the base.

37. **C. fulgens.**

C. racemo capitato paucifloro, labelli 4-lobi nudi laciniis lateralibus dimidiatis intermedio bilobo lunato multò majore, calcare pedicello longiore.

Wild in SIKKIM, in hot valleys at 2-3000 feet—J. D. Hooker, (*v. s. sp. et ic. pict. comm. cel. viator.*)

A beautiful plant. Flowers nearly three inches across, deep warm crimson, with a deep purple lip, having at its base a pair of naked yellow streaks.

38? **C. odora.** *Griffith, notul. III.*, 365.

Wild in UPPER ASSAM, in grassy places; Suddyah, April 10—Griffith.

I have not seen any specimen which agrees with the account given of this plant, which may perhaps not be a Calanthe. Griffith says it has—1. *Scapes appearing before the leaves;* 2. *Flowers large, white and showy,* with the smell of Hyacinths; 3. *Leaves rather glaucous underneath;* 4. *A spur two-toothed at the end;* and 5. *Eight pollen-masses with as many pulverulent caudicles!* The only species of Calanthe that may correspond with the first char. is *C. vaginata,* No. 23; but it is uncertain whether the only specimen of that species at present known, may not be accidentally rather than naturally unaccompanied by leaves, and it differs in all other particulars. Griffith describes the flowering stem of his plant as being a foot and half high.

I am acquainted with one other species, but too imperfectly to define it. Viz.:

Amblyglottis pilosa of Prof. de Vriese's Sumatra collection, with white flowers, narrow hairy sepals, naked petals, and a nearly equally four-lobed lip, with a curved sharp spur not half its own length.

Supposed species now referred elsewhere.

C. gracilis, *Lindley.* = Limatodis gracilis.
C. viridi-fusca, *Hooker.* = Ania latifolia.
C. Gebina, *Loddiges.* = Bletia Gebina.

ONCIDIUM.

Swartz act. Holm. 239 (1800). *Brown, in Hort. Kew., V.* 215. *LO.* 196.

For the distinction between this well-known genus and ODONTOGLOSSUM, the reader is referred to that article.

In some of the sections, whether artificial or natural, into which Oncidium is here divided, the limits of the species are clearly definable; in others it is extremely doubtful whether some which the author still retains ought to be admitted as anything more than forms of one common type, as for example, among the PLURITUBERCULATA. It will also be found that supposed species are absolutely reduced without hesitation to an extent which the author once thought improbable; but many months' very careful critical re-examination of all the copious materials at his command leaves no doubt upon his mind that at least those supposed species which are now cancelled ought never to have been elevated to that rank; he must, however, add that the badness of materials, the imperfection of drawings and descriptions, and the misinformation so common in gardens concerning countries, have rendered such errors unavoidable, even if no account is taken of the haste with which a botanist working without leisure must necessarily act.

He would add, that in the revision of this genus his thanks are not only due to his usual correspondents, but most especially to Professor H. G. Reichenbach, Jun., of Leipsig, a most acute and experienced orchidologist, without whose invaluable assistance it would have been impossible to form an opinion concerning many species published by continental writers; he has also to acknowledge his special obligations to the Administration of the Museum of Natural History, Paris; to Messrs. Linden and Galeotti; to Mr. Miers; and to Sir W. J. Hooker; all whose materials have been placed in his hands without reserve.

ANALYSIS OF THE SECTIONS.

Labellum nanum coriaceum (*Cyrtochilum H. B. K.*) § 1. MICROCHILA.

Labellum dilatatum membranaceum. Clinandrium margine nudum.

Folia equitantia . . . . . § 2. EQUITANTIA.
—— teretia . . . . . § 3. TERETIFOLIA.
—— plana.
Sepala lateralia connata . . . . TETRAPETALA.
Labellum margine barbatum . . . § 4. BARBATA.
—— —— læve
Petala *multò* majora . . . . . § 5. MACROPETALA.
—— subæqualia . . . . . § 6. MICROPETALA.
Sepala lateralia libera . . . . . PENTAPETALA.
Petala *multò* majora . . . . . § 7. MACROPETALA.
Petala subæqualia.
Labellum indivisum v. apice tantum lobatum v. basi utrinque unidentatum. § 8. INTEGRILABIA.
Labellum auriculatum panduratum basi angustius, v. lobo terminali æquali.
cristâ pulvinatâ s. villosâ . . § 9. PULVINATA.
—— tuberculatâ.
tuberculis 2—4 . . . . § 10. PAUCITUBERCULATA.
—— 3—00 . . . . § 11. PLURITUBERCULATA.
—— 5—00, adjectis verrucis circumstantibus. § 12. VERRUCITUBERCULATA.
basi manifestè latius . . . . § 13. BASILATA.

Labellum dilatatum membranaceum. Clinandrium lacerum vel glandulosum. § 14. GLANDULIGERA.

From this arrangement, the most important part of which was first proposed in "Paxton's Flower Garden," vol. i. t. 6, although certainly very artificial, there seems no good reason for departing, until much more has been learned of the genus by minute and exact examination of living specimens. Hereafter, the condition of the column and the rostellum may have more importance attached to them.

§ 1. MICROCHILA.

ANALYSIS OF THE SPECIES.

A. Sepalis auriculatis. (AURICULATA.)

Labellum sagittatum.
- laciniis lat. lanceolatis, lamellis cristæ integris . . . . 1. *macranthum.*
- ——————— lamellis cristæ laceris . . . . 2. *cordatum.*
- —— acinaciformibus intermediâ medio dente magno acinaciformi auctâ } 3. *hastiferum.*

Labellum hastatum.
- Columnæ alis dolabrif. apice recurvis lacinulis 2 porrectis membranaceis adjectis } 4. *trifurcatum.*
- —— horizontalibus setaceis . . . . . 5. *trilingue.*
- ——— cuneatis . . . . . 6. *serratum.*
- ——— acinaciformibus erectis cristâ triplici adnatâ verrucis plurimis acutis à fronte } 7. *falcipetalum.*

Labellum basi rotundatum v. angulatum.
- lineare canaliculatum.
  - sepalis petalisq. orbicularibus . . . . . 8. *æmulum.*
  - ——— lateralibus petalisq. ovatis.
    - cristæ dente unico magno crenato . . . . . 9. *superbiens.*
    - ——— valido tuberculis denticulisque utrinque 10. *halteratum.*
- obovatum . . . . . 11. *diceratum.*

B. Sepalis nudis. (EXAURITA.)

Labellum trullæforme apice elongatum.
- basi rotundatum
  - alæ minutæ acutæ triangulares . . . . . 12. *ventilabrum.*
  - ——— ligulatæ pendulæ denticulatæ . . . . 13. *refractum.*
  - ——— ovatæ cuspidatæ laceræ . . . . . 14. *mandibulare.*
- basi acutangulum.
  - crista depressa gyrosa . . . . . 15. *undulatum.*
  - —— oblonga 5-loba 5-sulcata denticulis 5 à fronte verrucisque quibusdam utrinque } 16. *zebrinum.*
  - —— carinata.
    - carina media erecta acuta, 2 laterales pronæ adnatæ denticulis 2 à fronte verrucisq. pluribus utrinque ; alæ retusæ } 17. *orgyale.*
    - carinæ paucæ erectæ acutæ verrucis paucis sinuosis utrinque ; alæ triangulares } 18. *tenense.*

Labellum panduratum.
- integrum, columnâ apterâ . . . . . 19. *corynephorum.*
- retusum, laciniis lateralibus parvis triangularibus ; columna basi utrinque auriculata } 20. *loxense.*

Labellum rotundum aut equilateri-triangulare convexum.

(*Cimicifera.*)

- oblatum trilobum . . . . . 21. *microchilum.*
- circulare.
  - sep. lat. linearibus elongatis. . . . . 22. *cimiciferum.*
  - sep. omnibus ovatis . . . . . 23. *cocciferum.*
- triangulare.
  - alis col. obsoletis . . . . . 24. *trulla.*
  - alis col. acuminatis . . . . . 25. *examinans.*

A. AURICULATA.

All the species of this section have very large flowers, the prevailing tint of which is cinnamon-brown, with or without a mixture of yellow. Their panicles are usually straggling or twining, sometimes reaching to a great length. Scarcely any are in cultivation, though most of them have been sent home by either Warczewicz, or Hartweg, or Mr. Linden's collectors. The tough leathery lip is an essential characteristic.

1. **O. macranthum.** *LO.* 205. *Paxton Fl. Gard., II.* 126.

Wild in CENTRAL AMERICA, common; Guayaquil—hb. Lambert; PERU—Mathews, 1919; at the foot of Tunguragua, 11,000 ft. above the sea—Hartweg; descent from Alausi to Jaquachi, at 7000 ft.—Jamieson, in hb. Hooker, (*v. s. sp.*)

A magnificent species, with a climbing panicle. Flowers three inches in diameter. Sepals purplish brown, petals yellow. Lip purple, with a white crest, consisting of a central keel, with two acute reversed teeth on either side.

2. **O. cordatum.** *Lindley, Sert. Orch. sub t.* 25. *Paxt. l. c.*

Wild in PERU; rocks on the road to Pangoa—Mathews, (*v. s. sp.*)

Flowers two inches and a quarter in diameter, apparently brown, bordered with yellow. Crest consisting of five short acute plates, of which the three middle are two-lobed, and the lateral smaller, oblique, and lacerated, with a filiform tooth at the base of each lateral lobe of the lip. It appears to have a strong twining panicle.

3. **O. hastiferum.** *Rchb. f. in Bonplandia, Ap.* 15, 1854!

O. labelli laciniis lateralibus acinaciformibus denticulatis intermediâ lanceolatâ acuminatâ, cristæ dente valido acinaciformi lamellâ utrinque prostratâ introrsâ, c. alis ligulatis obliquis.

Wild in PERU, near Loxa—Warczewicz.

Near *O. macranthum*. Upper sepal ovate, wavy; laterals longer, wedge-shaped, oblong, obtuse. Petals ovate, blunt, somewhat cordate, with very short broad claws.—*Rchb. f.* I have a sketch of this from the author, which shows it to be distinct from all the others here enumerated. A great fleshy hooked carina rises from the middle of the lower lobe of the lip.

4. **O. trifurcatum.** *Lindley, in Ann. N. H., XV.* 384.

Wild in PERU—Hartweg, (*v. s. sp.*)

Flowers large, with yellow on the edges of the petals. Lat. sepals twice as large as dorsal. Crest consisting of three fleshy truncate ribs, of which two lie over the third. The two wings of the column are fleshy and scymetar-shaped, with a pair of lancet-shaped appendages projecting below them. Near *O. serratum*.

* 5. **O. trilingue.** *Lindley, in Paxton's Fl. Garden, I. no.* 63; *II. t.* 63.

Wild in PERU; at the sources of the Marañon—Warczewicz, (*v. s. sp. et v. c.*)

A large inelegant scrambling plant. Flowers cinnamon-brown, very crisp. Crest of three dagger-shaped blades, with a few callosities in addition.

* 6. **O. serratum.** *Lindley, Sert. Orch. sub t.* 48. *Paxt. Fl. Gard., II. p.* 126.

Wild in PERU—Mathews, (*v. ic. et v. c.*)

Flowers very crisp, lower sepals included, cinnamon-brown, with the upper half of the petals yellow. The crest consists of six parallel carinæ, placed alternately $\frac{3}{3}$ close together. Column-wings wedge-shaped, toothletted. It has flowered in M. Pescatore's rich collection.

7. **O. falcipetalum.** *Lindley, Orch. Linden. no.* 76.

Wild in VENEZUELA—Fünck in hb. Hooker; forests of Merida, at the height of 5-6000 ft.—Linden, 626; Caraccas, at 6000 ft. —Wagener, (*v. s. sp. comm. cel. Linden.*)

A very fine species, with a scrambling panicle twenty feet long. Flowers more than three inches in diameter, brown. The angular base of the lip, and a cluster of sharp tubercles in front of the main ridge of the crest, clearly distinguish this; the former are smaller and more numerous in Fünck's Venezuela specimen in Sir W. Hooker's herbarium than in Linden's in my possession.

7 *bis.* **O. Pavonii.** *Rchb. f. MSS.*, of whose lip and column I am favoured with a sketch by the learned author, appears to be a variety of this. A fragment from Pavon exists in Boissier's herbarium.

8. **O. æmulum.** *Rchb. f. in Bonplandia, Ap.* 15, 1854.

Wild in PERU—Warczewicz; NEW GRENADA, in the province of Ocaña, at 7500 ft.—Schlim, 413; near la Baja in Pamplona, at 10,000 ft.—Schlim, 1198 (fide Rchb.), (*v. s. sp. comm. cel. Linden et Warczewicz.*)

A noble species, with dense cinnamon-brown flowers two inches and a half in diameter, arranged upon a climbing panicle, which reaches to the top of trees twenty-five or thirty feet high.—*Schlim.* When dried it looks like *O. macranthum*, but is quite different in the lip, which is dilated and angularly rounded at the base, linear and channelled in the middle lobe, with a downy convex crest, crenated in front and arching over several small round warts. One of the leaves in Schlim's specimen is almost two feet long.

9. **O. superbiens.** *Rchb. f. in Linnæa, XXII.* 843!

Wild in NEW GRENADA—Purdie in hb. Hooker; in the province of Ocaña, at 8-9000ft.—Schlim (fide Rchb.); VENEZUELA —Fünck and Schlim, 1433, (*v. s. sp. comm. cel. Linden et Rchb.*)

Much like *O. halteratum*, to which I refer Schlim's 387 as it stands in my own herbarium, although Mr. Reichenbach's specimens having the same number belong to this. It differs in having the petals very much sinuated, with the upper half yellow, and the lower banded with the same colour. The crest of the lip consists of one large blunt lobed tooth, with a wavy line on each side. The flowers appear to be deep chocolate-red, and to belong to a large showy panicle.

10. **O. halteratum.** *Lindl. Orch. Linden., no.* 75. *Paxt. l. c. Rchb. f. in Bonplandia, March,* 1855.

(A) luteum. Flowers yellow. Middle tooth of crest strong, prominent.
(B) fuscum. Flowers brown, with a yellow border to the petals, and lip. Middle tooth of crest short, rounded.

Wild in NEW GRENADA; **A**, in the forests of Quindiu at the height of 7800 ft.—Linden, 1289; **B**, in the prov. of Ocaña, at the height of 7500 ft.—Schlim, 31 and 387; Warczewicz. (*v. s. sp. comm. cel. Linden et Warczewicz.*)

This differs from *O. falcipetalum* in the base of the lip being round, not angular, and in the crest consisting of one strong blunt tooth, with an uncertain number of others placed at its sides, but not in front. These are more numerous in the brown variety than in the yellow; the former Mr. Reichenbach refers to *O. falcipetalum* (*Orch. Schlim.*), but the plant I possess from Mr. Linden numbered 31 is certainly this species. *O. halteratum* and *falcipetalum* are much alike, and very fine though not showy plants, with great climbing panicles of flowers three inches across. The petals are almost sessile.

11. **O. diceratum.**

O. paniculâ volubili, sepalis petalisque subconformibus ovatis, labello obcordato basi dilatato rotundato, cristæ callis 4 parallelis (⁰⁄₀) adjectis verruculis quibusdam utrinque à fronte, columnæ alis brevibus carnosis cornutis.

Wild in PERU; in woods near Pasto, at 10,000 ft.—Jamieson, (*v. s. sp. in hb. Hooker.*)

None of the Auriculate Microchiles except this has an obcordate lip. The flowers are smaller than any in its section, not two inches across, apparently dark brown, with the tip of the lip yellow. Dr. Jamieson remarks that he has not distributed it, from which it seems to be a rare plant.

B. EXAURITA.

*** There are no very large-flowered species in this group, which approaches Odontoglossum nearly in *O. cimiciferum*, &c. The leathery lip remains characteristic, for which reason I doubt whether *O. scansor* can belong here.

12. **O. ventilabrum.** *Rchb. f. in Bonplandia, Ap.* 15, 1854!

Wild in PERU—Warczewicz, (*v. s. sp. comm. cel. inventor.*)

This plant is very much like *O. orgyale*, and the figure of *O. undulatum* in "HBK.;" but I think they are rightly distinguished by Rchb., who has pointed out the peculiarities of the crest. In this species it consists of five erect keels, of which three are parallel, and in front of two which diverge almost at a right angle, in addition to which there are several lateral tubercles. The colours of the flower are also different. According to Warczewicz, *O. orgyale* has whole-coloured flowers with brown sepals and deep violet lip, but *O. ventilabrum* has cinnamon-brown sepals and petals, with the upper half of the latter yellow, and a deep rose-coloured lip yellow at the base.

13. **O. refractum.** *Rchb. f. in Bonplandia, Ap.* 1, 1854!

Wild in NEW GRENADA—Purdie (Rchb.)

I cannot. find this among Purdie's plants; but I have some flowers from Professor Rchb. It appears to be a distinct species, having spathaceous bracts, a loose pyramidal panicle, and undulated sepals and petals convolute at the point; reddish-brown, with red bands in a dried state. The column is abruptly bent back, and united to the lip by a quarter of its length. The lip is bluntly lozenge-shaped at the base, and is extended into a strap as long as the sepals; the crest consists of an elevated keel, with depressed lamellæ crenulated at the edge, two near the base resting by their points on broader ones in front. Column slender, with minute ligulate wings, lacerated at the drooping points, and placed on the lower edge of the stigma. In the single flower I examined I only found a pair of thick deep wrinkled lamellæ in the middle of the lip, which is very fleshy and convex except at the edge. The lozenge-form only appears upon flattening the base.

14. **O. mandibulare.** *Rchb. f. in Bonpl., Dec.* 1, 1854.

Wild in NEW GRENADA; Pamplona, Pedro Alonzo, at 6000 ft. January, 1849—Schlim, 1179 (Rchb.)

A very large plant. Flowers half as large as in *Oncidium falcipetalum*, brown and yellow. Rchb. describes the lip, &c., thus: "*labello* basi ovato convexo apice in ligulam longam producto, *carina* antice rostrata, bisulcata in disco, utrinque tuberculata, linea lunata carinata sulcis transversis quodammodo polyodonta (sed retusa—dentium incisivorum hominis instar) utrinque extrorsa ante marginem, *gynostemio* basi alte cum labello connato, dein refracto, *alis ovatis cuspidatis laceris* parvis deflexis in inferiori limbo foveæ transversæ." A sketch with which Prof. Rchb. has favoured me corresponds with this. The lateral sepals are represented as linear-lanceolate, very wavy, and connate at the base; which separates the plant from any form of *O. halteratum*.

15. **O. undulatum.** *Lindl. Sert. Orch., sub t.* 48. *Rchb. f. in Bonplandia, May* 1, 1854.

Cyrtochilum undulatum. *HBK., I. t.* 84. *LO., p.* 210.

Wild in NEW GRENADA; near the villages of La Ascension and Paramo de los Papas, at 6270 ft.—H. B.

This is still unknown to me. It is said to have brown flowers spotted with white and yellow; a lip pink outside, yellow within, variegated with red and white spots; scape as high as a man, according to Kunth. It is near *O. orgyale* and *ventilabrum*. Mr. Reichenbach who has examined an authentic specimen, thus describes the lip, the form of which is imaginary in Turpin's figure: "labellum triangulo-ligulatum, anguli in ima basi acutiusculi, carina depressa gyrosa a basi per tertiam infimam, addita utrinque pone angulum carina gyrosa ante medium extrorse acuta, gynostemium humile recurvum, fovea dilatata limbo producto, alis angustis linearitriangulis minutis obliquis utrinque in ima basi."—*Bonplandia, May* 1, 1854.

16. **O. zebrinum.** *Rchb. f. in Bonpl., Ap.* 1, 1854!

Odont. zebrinum. *Id. in Linn., XXII.* 849. *Fol. Orch. no.* 40.

Wild in the CARACCAS; Moritz, (*v. s. sp. comm. cel. Sonder et Rchb. f.*)

Undoubtedly this is an Oncidium, as Rchb. has now pointed out. Since the article Odontoglossum was written, I have received it from the collections of Moritz, and find it to be a plant with a straggling, twining paniele of flowers

resembling those of *O. trilingue* (no. 5), but smaller. Its long lip acutely angular at the base, and its crest are characteristic ; the latter consists of a central ridge formed of five long confluent lamellæ with as many sharp teeth in front and several straggling warts on either side.

17. **O. orgyale.** *Rchb. f. in Bonplandia, Ap.* 15, 1854 !

O. caule longo ramoso volubili, bracteis subrotundis amplexicaulibus, sepalis undulatis unguiculatis lateralibus basi connatis lanceolatis dorsali ovato, petalis ovato-oblongis subsessilibus, labello oblongo basi acutangulo apice linguæformi deflexo columnæ adnato, lamellis tribus in medio quarum laterales pronæ media rhombea erecta dentibus 2 in fronte verrucisque pluribus in lineam obliquam ordinatis, columnæ clavatæ glabræ alis obsoletis dentiformibus obtusis v. emarginatis.

Wild in NEW GRENADA; in the province of Mariquita—Triana, 133 ; Warczewicz ; in the province of Pamplona, at the height of 9000 ft., flowering in November—Schlim, no. 3, no. 1167 hb. Hooker, no. 1168 Rchb., (*v. s. sp. comm. cel. Linden et Warczewicz.*)

Flowers one inch and a half in diameter, dark violet. Leaves a foot and more long, by one inch and a half wide, acute, narrowed and channelled at the base. The crest consists of three plates, of which the middle one is triangular and erect, the laterals adnate, all vanishing towards the foot of the column ; in addition to which there are two small teeth in front, and a diagonal line of warts on each side. The column was certainly not apterous in any of the specimens examined by me.

18. **O. tenense.** *Rchb. f. in Bonplandia, May* 1, 1854.

Wild in NEW GRENADA ; near the village of Tena, in the province of Bogota—Hartweg ; Warczewicz, (*v. s. sp.*)

Prof. Reichenbach rightly compares this for appearance to *O. falcipetalum*. It is distinguished by the two small triangular wings being stationed at the base of the stigma, and by the crest, which consists of a few triangular keels pointing forwards, and some sinuous roundish warts standing on either side between it and the lower edge of the lip. I do not find that the lip is retuse and tridentate as described by Rchb., who seems to have examined an injured specimen.

19. **O. corynephorum.** *Lindley, Sert. Orch. sub t.* 25.

Cyrtochilum volubile. *Pöppig, n. g.* 1. 35, *t.* 61 !

Wild in PERU ; Mayobambo—Mathews in hb. Hooker ; tall trees on the mountains of Casapillo, near the hacienda of Cuchero—Pöppig, (*v. s. sp. in hb. Hooker.*)

Scapes twining, fifteen to twenty feet long. Sepals dull brown ; petals pale cinnamon, white on the upper half ; lip deep crimson, white at the base. The crest consists of three connate parallel ribs, and a few round tubercles on each side. Column absolutely apterous. I have a flower of the original specimen in Pöppig's collections, from Rchb.

20. **O. loxense.** *Lindley, in Paxt. Fl. Garden, II.* 126.

Wild in PERU; on the Cordillera near Loxa—Hartweg, (*v. s. sp.*)

This seems to be a very rare plant. Hartweg found but a single specimen, the panicle of which was nine feet long. The flowers are as in *falcipetalum*; their colour seems to be purple, judging from the dried specimen.

Cimicifera.

* 21. **O. microchilum.** *Bateman, in Bot. Reg.* 1843, *t.* 23.

Wild in GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

Flowers in a large glaucous branching panicle. Sepals dull brown; petals dull purple with a yellowish border; lip spotted, crimson and yellow in the centre, pure white on the side lobes. Wings of column yellow, painted with purple.

22. **O. cimiciferum.** *Rchb. in litt.!*

Odontogl. cimiciferum. *Rchb. f. in Linn., xxii.* 849. *Fol. Orch. no.* 43.
Cyrtochilum flexuosum. *HBK. LO. p.* 210.
Oncidium flexuosum. *Lindl. Sert. Orch. sub t.* 48, *not of Sims.*

Wild in NEW GRENADA; at the foot of the lofty mountain Paramo de las Achupallas, between Almaguer and Sa. Cruz, at 9500 ft.—H. and B.; VENEZUELA, near Agua de Obispo, at 8000 ft.—Funck and Schlim, 1027; Merida, at 8000 ft.—Schlim fide Rchb., (*v. s. sp.*)

A small-flowered species with a great straggling climbing panicle. Flowers brownish with a yellow stain on the lip. We owe to Mr. Rchb. the identification of this with "HBK.'s" *Cyrtochilum flexuosum*, which had been previously a mere puzzle.

23. **O. cocciferum.** *Rchb. f. in Bonplandia, April* 15, 1854!

Wild in PERU; at the sources of the Marañon—Warczewicz; NEW GRENADA, Mesa Rica, in the province of Ocaña, at 9000 ft.—Schlim, 30; St. Miguel in the Sierra Nevada of Sa. Martha—Purdie in hb. Hooker, (*v. s. sp.*)

A species with great panicles of small brown flowers. Distinguished from the last by the crest, and by the lateral sepals being ovate and hardly longer than the lip.

24. **O. Trulla.** *Rchb. f. in Bonplandia, Ap.* 15, 1854!

Wild in NEW GRENADA—Warczewicz.

Said by Rchb. to resemble *O. cimiciferum* (no. 22). The bracts are described as very minute, the panicle three feet long, the lip triangular, about as long as the petals, angular at the base, the crest composed of one narrow erect keel sloping to the base, having a few lobes and hooks on each side, and a downy space in front of the keel. The flowers are smaller than in *O. cimiciferum*. A fragment communicated by Rchb. shows that this is a correct statement. The plant is very near *O. examinans.*

* 25. **O. examinans.**

O. folio lato-ensiformi canaliculato paniculâ divaricatâ ramosissimâ multò breviore, ramis ramulisque arctè flexuosis bracteis

minutis, sepalis subrotundis acutis unguiculatis, petalis subsessilibus latioribus, labello obtusè triangulari: cristâ carinatâ utrinque bicallosâ verrucâ remotâ utrinque, col. erostri basi bigibbâ alis semiovatis acutis erectis.

Wild in the CARACCAS; Santa Martha—Purdie, (*v. s. sp. comm. cel. Hooker.*)

This is a strong growing plant with oblong pseudobulbs, leaves 18 inches long, and a stiff branching straggling panicle at least twice as high. The flowers are small, apparently brown, and as thickly clustered on the branches as a swarm of bees. It differs from *O. trulla* in its large acute column-wings, less simple crest, with a pair of outlying papillæ. A small specimen was sent some years ago from M. Pescatore's collection under the name of *O. dichromaticum*, applied by Rchb. to a different species.

§ 2. EQUITANTIA.

ANALYSIS OF THE SPECIES.

A. Scapus foliis subæqualis, pauciflorus.

Labellum cristâ lamellatâ . . . . . 26. *iridifolium.*
Labellum cristâ incisâ
barbatâ . . . . . 27. *glossomystax.*
antrorsùm lacerâ . . . . . 28. *Pumilio.*

B. Scapus elongatus.

Labellum indivisum, cristâ maximâ hirtâ hexurâ . . . 29. *Henckeni.*
Labelli lobi subæquales.
3, lobo medio acuto, cristâ 0 . . . . . 30. *triquetrum.*
4, lobo medio bilobo, cristâ lamellatâ . . . . . 31. *pulchellum.*
Labelli lobi valde inæquales.
Flores lutei.
cristæ lamellis integris.
Petala cuneata retusa . . . . . 32. *Lemonianum.*
——— obovata apiculata . . . . . 33. *urophyllum.*
cristæ lamellis quibusdam laceris . . . . . 34. *mirabile.*
Flores albi v. rosei.
Sepala disjuncta . . . . . 35. *onustum.*
——— lateralia connata.
apice libera acuta . . . . . 36. *tetrapetalum.*
apice indivisa obtusa.
labelli lobus medius sessilis. . . . . 37. *velutinum.*
labelli lobus medius unguiculatus . . . . . 38. *variegatum.*

A. SCAPUS FOLIIS SUBÆQUALIS, PAUCIFLORUS.

* 26. **O. iridifolium.** *HBK. LO., p.* 202.

Wild in tropical America; MEXICO, province of Mirador—Linden; GUATEMALA—Skinner; GUAYAQUIL, on trees—Jamieson; PERU—Maclean; N. GRENADA—Lobb, Purdie; GUAYANA—Schomburgk; BRAZIL, on the trees near Para—Spruce, 104 **, 106, (*v.v. c. et s. sp.*)

This very common plant seems to occur everywhere within the tropics of

America; but other species are no doubt sometimes mistaken for it. According to Descourtilz it is found in Brazil exclusively on branches of the Orange and Lemon tree, choosing dry places exposed to the sun; but Mr. Spruce gathered it on the Sapotilla. The plant figured under this name in the "Botanical Register," t. 1911, is no doubt quite distinct as Prof. Reichenbach has pointed out (*B. Zeit.*, 1852, *p.* 697). See *O. decipiens* hereafter (no. 68).

27. **O. glossomystax.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 697!

Wild in Guatemala—Skinner; Peru—Rchb., Mathews in hb. Hooker; Mexico, Vera Cruz, on Mimosas, near rivulets, very rare—Galeotti, 5133, (*v. s. sp.*)

Very like the last, with which it is no doubt confounded; the crest consists of four linear arms, each terminated by a tuft of hairs. Apparently Schlim's 1023 from Ocaña is the same, but my solitary flower is not sufficiently examinable.

28. **O. Pumilio.** *Rchb. f., l. c.*

Wild in Brazil—Martius hb. 564, (*v. fl. sol. a cel. Rchb. f.*)

This is said to be very like the last, but different in the lip and column. The former has a double crest, the lower half of which is rather the longer, with a few finger-like lobes, the upper half shorter, deeper, with upper edge lacerated. The wings of the column are described as quadrangular and nearly entire. A flower from Prof. Rchb. shows it to be very distinct from the preceding.

B. Scapus elongatus.

29. **O. Henekenii.** *Schomb. in litt.*

O. foliis cultratis obtusis denticulatis scapo subpaniculato multò brevioribus, rachi flexuosâ, sepalo inferiori bifido 2-carinato, labello obovato emarginato pubescente, cristâ maximâ hirtâ antice bipartitâ caudis 2 utrinque, columnâ basi dente truncato antice auctâ: alis minimis linearibus.

Wild in St. Domingo; Ponton, on Cacti, Randia and other prickly bushes—Schomburgk, (*v. s. sp. comm. cel. inventor.*)

This very curious plant might be mistaken, when out of flower, for *O. variegatum*, but its remarkable zigzag rachis, dark brown flowers, and strange hairy crest, are unlike anything else in the genus. This crest resembles a shaggy plate, nearly as large as the lip itself, cloven by a deep anterior slit, and divided on each side into three parts, of which the two basal are taper and tail-like, while that in front is half-lanceolate. The stigma is a *projecting* cucullate space, almost as much raised above the level of the anther-bed as in a Neottia.

* 30. **O. triquetrum.** *R. Br. LO.*, 205. *B.M. t.* 3393.

Wild in Jamaica—Macfadyen, (*v. v. c. et s. sp. in hb. Hooker.*)

Very pretty for a small species. Flowers rose bordered with white, and deeply stained and spotted with crimson.

* 31. **O. pulchellum.** *Hooker, B.M. t.* 2773. *LO.*, 206. *Bot. Cab. t.* 1984. *B.R. t.* 1787. *Paxton's Fl. Gard. sub t.* 33.

Wild in Jamaica—Bancroft, &c.; Demerara, (*v. v. c. et s. sp.*)

Flowers large, in a close panicle, white, with a tinge of pink, a yellow crest, and rosy column wings. The upper sepal is boat-shaped, and the round lateral lobes of the lip are as large as half the middle lobe.

* 32. **O. Lemonianum.** *Lindley, in Bot. Reg. t.* 1789.

O. Guibertianum. *Ach. Rich. in De la Sagra hist. fisic. pol. y. nat. Cub., p.* 245 (*tab.* 84).

Wild in Cuba; on old Coffee-trees of the Sierra Maestre, and on scrubby trees on the plain of Guantanama—Linden, 1758; Antigua—Uhde in hb. Rchb. (*v. v. c. et s. sp.*)

Raceme simple. Flowers bright yellow, dotted with crimson. Column wings half ovate, obtuse, repand; lip with the middle lobe serrate and deeply lobed. I am indebted to Prof. Rchb. for Richard's specific character of *O. Guibertianum* in De la Sagra's work on Cuba, which is not within my reach. There is no doubt that it is a synonym of *O. Lemonianum*. Prof. Rchb. informs me that the copy of the work in the Berlin library wants the plate referred to by Richard in the text.

33. **O. urophyllum.** *Lodd. Cat. ed.* 2, *no.* 1381. *Lindley, in Bot. Reg.* 1842, *t.* 54.

Wild in Brazil—Loddiges, (*v. v. c.*)

Flowers in a loose panicle, deep yellow above, pallid beneath, with crimson stains about the crest and at the base of the petals.

34. **O. mirabile.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 697.

Wild in Veragua, Chiriqui—Warczewicz.

Said to be founded upon *a single flower!* The lip is said to be five-lobed, but is described as consisting of a pair of ligulate divaricating lobes, which gradually pass into the unguis of a two-lobed suddenly obreniform middle lobe. The crest consists of two rows of double-edged teeth, proceeding from the base of the lip to the middle edge of the middle lobe, the exterior being lacerated. The column very small, with quadrilateral wings. Compare this with *O. Widgreni* (no. 50); its leaves are unknown, and it is very likely to be misplaced.

35. **O. onustum.** *LO., p.* 203.

Wild in Panama and Western Columbia—Cuming, 1208, (*v. s. sp.*)

Flowers large, very densely arranged in a nodding raceme, apparently white. Column very short, with two long linear arms. Lip with a crest consisting of three rounded concave lobes. By mistake this has been hitherto misplaced in the genus, its equitant leaves having been overlooked.

* 36. **O. tetrapetalum.** *W. LO., p.* 198.

(**A**) Flowers small, dingy brown, with rose-coloured speckles.

O. pauciflorum. *LO., p.* 198.

(**B**) Flowers large, in a close panicle, brilliantly coloured white green and crimson.

O. tricolor. *Hooker, Bot. Mag. t.* 4130.

Wild in the West Indies; **A**, JAMAICA—Swartz; MEXICO —Pavon; N. GRENADA—Lobb; **B**, JAMAICA?—Purdie? CUMANA—Finck, 293, in hb. Hooker, (*v. v. c. et s. sp.*)

A very common and rather variable West Indian plant, always having a lip snow-white, except around the crest. There is no difference between **A** and **B**, except that the latter is on a larger scale, and has very bright green sepals and petals banded with crimson. A narrow-leaved var. found by Lobb in N. Grenada occurs in Sir W. Hooker's herbarium. It is evident that the plant varies much in size.

37. **O. velutinum.** *Lindley, in Paxton's Fl. Gard. under t.* 33.

Wild in CUBA—Linden, 1759; ST. BARTHOLOMEW'S—Fornström in hb. Rchb., (*v. s. sp.*)

In general appearance, this and *O. variegatum* correspond, as also in the ragged edge of the foliage; but they differ in the flowers of this being downy, the wings of the column blunt, the middle lobe of the lip perfectly sessile, and the lateral lobes joining it by a broad base. The crest, too, consists of five tubercles, of which the uppermost are much the longest. The plant is stated by Mr. Linden to vary with white or rose-coloured flowers, as well as in stature—a large form growing in the Pine forests of Yatara, in Cuba, the smaller on Coffee-trees in the Sierra Maestre, and on the Liban mountain.

* 38. **O. variegatum.** *Swartz. LO., p.* 198. *Paxton's Fl. Gard. t.* 33.

Wild in the WEST INDIES; St. Domingo, Mackenzie, chiefly in the Cibao district, where it is called "Angelida"—Schomburgk; Cuba—Sir C. Lemon, (*v. v. c. et s. sp.*)

When in health the leaves are fleshy, three or four inches long, equitant, sharp-pointed, and very much broken at the edge. The panicle is a foot and a half high, erect, with flat, pink flowers, richly stained with cinnamon-red on the petals, and at the base of the sepals and lip. The lower sepals form a blunt spoon-shaped body; the petals are large, obovate, almost retuse, with an intermediate point; the lip has the middle lobe distinctly placed upon a somewhat serrated isthmus; the crest consists of two sets of tubercles, one lying on the other, the upper set made up of two large lateral ones, and a minute one in the middle, the lower set, of three equal blunt ones, the intermediate of which is curved upwards.

§ 3. TERETIFOLIA.

ANALYSIS OF THE SPECIES.

Alæ et crista obsoletæ	39. *nudum.*
——— conspicuæ.	
tuberculum cristæ solitarium	40. *stipitatum.*
——— 3-plura.	
alæ rotundatæ, petala obtusa majora	41. *Sprucei.*
alæ lunatæ	42. *Cebolleta.*
alæ lineares incurvæ; cristæ tub. 7	43. *ascendens.*

* 39. **O. nudum.** *Bateman, in Bot. Reg. sub t.* 1994.

Wild in the CARACCAS—Bateman; Venezuela—Fünck and Schlim, 481, (*v. v. c. et s. sp.*)

Flowers smallest in this §. Lip yellow. Sepals and petals greenish with crimson spots. Leaves about seven inches long.

* 40. **O. stipitatum.** *Lindley, in Bot. Sulphur. p.* 172.

O. lacerum. *Lindl. B. R.* 1846, *t.* 27.

Wild in PANAMA—Sinclair, (*v. v. c. et s. sp.*)

Flowers larger than in the last, pale sulphur-yellow, with sepals and petals dotted with crimson, and a crimson stain below the crest. Middle lobe of lip with a long narrow isthmus, coarsely-toothed and two-lobed ; lateral lobes falcate. Wings of downy column half ovate, acute.

41. **O. Sprucei.**

O. racemo paniculato, rachi flexuosâ, sepalis petalisq. obovatis obtusis, labelli lobo medio transverso bilobo angustè unguiculato lateralibus obovatis, cristæ tuberculis 3 medio erecto rotundato compresso lateralibus acutis pronis, columnæ alis circularibus.

Wild in BRAZIL ; common on trees at the junction of R. Negro and Solimaes—Spruce, 1526 : on trees to S. of Oeiras—Gardner, 2732 ; common on the branches of a species of Geoffræa between Icó and Crato—vernac. Rabo de Satú or Armadillo's tail, (*v. s. sp.*)

Leaves furrowed, sometimes two feet seven inches long, and two and three quarter inches in circumference. Sepals and petals yellow, coloured with red above. Lip yellow, stained with red at base, and spotted with red at back.—*Spruce.* This seems to be distinct from any of the forms of *O. Cebolleta*. Mr. Gardner distinguished it under the name *O. urophyllum*, now otherwise applied.

* 42. **O. Cebolleta.** *Swartz. LO.* 206. *B.R. t.* 1994. *B.M. t.* 3568.

(A) Flowers smaller ; lateral lobes of lip small, obliquely ovate. Leaves very long, erect.

O. juncifolium. *Lindl. Coll. Bot. p.* 27.
O. Cepula. *Hoffmgg.*

(B) Flowers with the lateral lobes of lip obliquely ovate-oblong. Leaves very short, erect.

O. brachyphyllum. *Lindl. in B. R. sub t.* 4.

(C) Flowers large, in a dense panicle. Lateral lobes of lip dolabriform. Sepals and petals very blunt. Leaves long, spreading on the ground.

O. longifolium. *Lindl. in B. R.* 1841, *misc.* 56, 1842, *t.* 4.

Wild in the WEST INDIES, &c. ; **A**, Carthagena in woods—Jacquin ; Brazil, near Santarem in Para—Spruce ; Sa. Martha—Purdie ; Mexico, in the prov. of Mirador—Linden, 225 ; **B**, Mexico—Hartweg ; **C**, Mexico—Hartweg, (*v. v. c. et s. sp.*)

Different as these plants often are, I feel persuaded that they are only forms of one common variable species. The peculiarities of the leaves seem to depend on the place of growth. **C** is the most distinct of the three. In some states the corolla is spotted with rose-colour at the back, in others it is quite whole-coloured. Although seldom cultivated, even the worst of the forms makes a gay addition to a collection.

* 43. **O. ascendens.** *Lindley, in Bot. Reg.* 1842, *sub t.* 4.

Wild in SA. LUCIA—herb. Banks; GUATEMALA—Hartweg; MEXICO, Chinantla near Oaxaca, at 2000 ft.—Galeotti, 5351, (*v. v. c. et s. sp.*)

Flowers scarcely larger than in *O. nudum*, yellow with red in the region of the crest, and in the form of stains on the sepals and petals. The linear incurved column-wings are characteristic.

§ 4. TETRAPETALA BARBATA.

ANALYSIS OF THE SPECIES.

Scapi foliis sub-æquales.
- pseudobulbis monophyllis; pedunc. subunifloro, cristâ polydactylâ } 44. *uniflorum.*
- ——— diphyllis; pedunc. 2—5-floro, cristâ tomentosâ ⅘ } 45. *longipes.*

Scapi elongati paniculati.
- petalis acuminatis sepalisq. undulatis conformibus . 46. *trichodes.*
- petalis obtusis sepalis subæqualibus.
  - sepalis basi connatis . . . . . 47. *barbatum.*
  - ——— ultra medium connatis . . . . . 48. *micropogon.*
- petalis maximis circularibus labello subæqualibus . 49. *macropetalum.*

* 44. **O. uniflorum.** *Lindley, in Bot. Reg.* 1843, *t.* 43.

Wild in BRAZIL; on trees in the Organ Mountains, in forests—Gardner, 5873 and 640, (*v. v. c. et s. sp.*)

This and the next are much alike; but the crest of this consists of an oblong cluster of numerous small smooth fingers, and the wings of the column are conspicuously two-lobed; on the contrary, in *O. longipes* the crest is downy, with four blunt teeth standing some way behind three others which are larger, and the wings of the column are rudimentary. Flowers in both greenish, with a bright yellow lip.

* 45. **O. longipes.** *Lindley, in Paxton's Fl. Gard., I. no.* 76.

O. janeirense. *Rchb. f. in Bonpl. Ap.* 1. 1854!

Wild in BRAZIL; near Rio Janeiro—Morel, (*v. v. c. comm. cel. Morel.*)

A specimen in Prof. Rchb.'s herbarium has five flowers instead of two, as in the plant described by me.

* 46. **O. trichodes.**

O. sepalis petalisque lanceolatis acuminatis undulatis omninò conformibus, labelli lobo medio minore oblato apiculato sinubus pilis laciniisq. filiformibus fimbriatis, cristæ callis ⅓ verrucis utrinque adjectis.

O. barbatum. *Paxt. Fl. Gard. ic. xyl. no.* 150.

Wild in BRAZIL; Para—Knowles, (*v. v. c.*)

Sepals and petals dark dusky brown. Lip clear yellow, with a few crimson spots on the crest. Panicle one foot and a half long and branched.

* 47. **O. barbatum.** *LO., p.* 200. *Coll. Bot. t.* 27.

(A) verum. Sepals and petals cinnamon-brown. Middle lobe of lip very short and emarginate.

O. microglossum. *Klotzsch, in Allg. Gartenz.*, 1855, *p.* 234.

(B) ciliatum. Sepals and petals cinnamon-brown. Middle lobe of lip apiculate and as large as the side ones.

O. ciliatum. *LO. p.* 200. *B. R. t.* 1660.

O. ciliatulum. *Hffmgg. in Bot. Zeit.* 1. 834.

(C) limbatum. Sepals and petals cinnamon-brown, spotted, with a clear yellow border. Centre of the lip very large, circular, and bright yellow.

(D) fimbriatum. Sepals and petals dull brown. Middle lobe of lip larger than the laterals.

O. fimbriatum. *Hffmgg. l. c.*

O. ciliolatum. *Id?*

O. subciliatum. *Id?*

Wild in TROPICAL AMERICA; **A**, BRAZIL—Gardner, Swainson; **B**, Brazil—Hoffmannsegg, Luschnath; **C**, Guatemala—Rchb. f. in litt.; **D**, Brazil—Hoffmgg. (*v. v. c. et s. sp.*)

With the assistance of Prof. Rchb. I have been able to settle on a more satisfactory basis the limits of this difficult species. It is evident that it varies much in the magnitude and form of the middle lobe of the lip; and that the *O. ciliatum* of the "G. et Sp. O." is nothing more than a variety of the *O. barbatum* figured by Sir W. Hooker, in the "Collectanea Botanica." Both have the five-lobed crest so common in the order, with an outlying tooth or two. The *O. barbatum* of "Paxt. Fl. Garden" is quite distinct, and has just been mentioned under *O. trichodes*. The varieties **C** and **D**, of which I have only seen single flowers kindly sent me by Mr. Rchb., require further examination, particularly **C**, especially as regards the condition of their crest. Copies of Hffgg.'s drawings, from the same invaluable correspondent, are my authority for the synonyms under D.

* 48. **O. micropogon.** *Rchb. Bonpl. Ap.* 1, 1854! *Xenia ined.*

(A) Flowers spotted with brown.

O. dentatum. *Klotzsch, in Allg. Gartenz.* 1855, *p.* 234.

(B) chrysopterum, *Rchb. f.* Flowers all yellow.

O. macropetalum. *Klotzsch in Allg. Gartenz. Sept.* 1, 1855.

Wild in ——— (*v. flores* 3 *s. comm. cel. Rchb.*)

Certainly different from the preceding in its larger flowers, with the lateral sepals united fully half their length, and in the large flat obtuse petals, approaching in form those of *O. macropetalum*. For the synonym I am indebted to Prof. Rchb. I have not seen a wild specimen.

49. **O. macropetalum.** *Lindley, Sert. Orch. sub t.* 48.

(A) Sepals and petals banded with brown; lateral lobes of lip very short and rounded; isthmus serrated.

(B) chrysopterum. Sepals and petals much smaller, whole-coloured; lateral lobes of lip linear, obtuse, acinaciform; isthmus entire.

Wild, **A**, in BRAZIL—Gardner, 4359; **B**, Matto Grosso—c. Weddell, No. 40; BOLIVIA, in the province of Chiquitos—hb. Weddell, 3476, (*v. s. sp.* **B**, *in hb. Mus. Par.*)

The general appearance of **A** is that of a thin, straggling specimen of *O. flexuosum*; the petals are nearly as large as the lip; the crest consists of

three linear lobes in front, then of a cluster of smaller papillæ, and at the base of a middle ridge, with a broad plate on each side. **B** is probably a distinct species; but I dare not establish it on the materials before me, consisting of a sketch and a bad dried specimen, with two half-decayed flowers. It is a smaller plant, the little panicle not bearing more than four or five flowers; the crest is unascertainable, but seems to consist *inter alia* of a pair of horn-like spreading tubercles. I am not even sure that the specimen from Bolivia and the sketch from Matto Grosso really belong to the same species; it is to the latter that the name is more particularly intended to attach.

§ 5. TETRAPETALA MACROPETALA.

ANALYSIS OF THE SPECIES.

Scapi foliis æquales.	
Lab. unguic. cristâ serie longâ duplici fimbriatâ . .	50. *Widgreni.*
——— —— cristâ bicorni	51. *cuneatum.*
Scapi foliis multò longiores.	
Labellum integrum.	
lamellis 4 acutis. Volubile	52. *acinaceum.*
cristâ transversâ !	53. *candidum.*
Labellum trilobum.	
lac. lat. linearibus elongatis.	
sep. lat. acutissimis	54. *fimbriatum.*
——— unguic. obtusis	55. *cornigerum.*
lac. lat. auriculæformibus.	
Bracteæ maximæ spathaceæ	56. *Warczewiczii.*
——— minutæ.	
Lab. auriculæ obsoletæ	57. *Gardneri.*
——— manifestæ.	
crista inappendiculata divergenti-biloba (bicruris).	
clinandr. crispo-marginatum.	
petala retusa. Alæ c. apicales . . .	58. *amictum.*
—— acuta. Alæ basilares	59. *tripterygium.*
clinandr. immarginatum, alæ acinaciformes	60. *Forbesi.*
cristæ verrucis circumstantibus rectilineis	
Lab. subrotundum. Alæ maximæ . . .	61. *crispum.*
— cuneatum flabellatum quadrilobum .	62. *pectorale.*
cristæ verrucis circumstantibus gyratis . .	63. *curtum.*
	64. *hæmatochrysum.*

50. O. Widgreni.

O. racemo simplici erecto folio æquali, sepalo dorsali petalisq. cuneatis retusis repandis lateralibus semiconnatis acutis, labello longè unguiculato secus unguem et ultrà dentibus crebris biseriatis aucto laciniis lateralibus linearibus incurvis intermedio cuneato bilobo, columnæ alis pubescentibus obtusis falcatis.

Wild in BRAZIL; Minas Geräes—Widgren, 774, (*v. s. sp.*)

Leaf solitary, three to four inches long, narrowly oblong. Raceme eight-flowered. Petals as large as the lip. This remarkable species can only be compared with the next.

OCT. 18, 1855.

* 51. **O. cuneatum.** *Scheidweiler, in Allg. Gartenzeit.* 1842, 309. *Bot. Reg.* 1843, *misc.* 15.

Wild in BRAZIL; on the summit of the Serra de Morroqueimado, nowhere except upon cleared land where new sorts of ligneous plants have made their appearance—Pinel, (*v. s. sp. et ic. pict. comm. amiciss. Pinel.*)

It seems that this originally flowered in Germany with Count Aremberg: but it had been lost sight of until my friend the Chevalier Pinel re-discovered it. The flowers are dirty-white, in a small diffuse panicle, stained and spotted with purple; the column-wings are also purple. It is so like the last as to be easily mistaken for it, but, instead of a double fringe of teeth, the lip bears a pair of subulate recurved horns for the crest.

52. **O. acinaceum.** *Lindley, Sert. Orch. sub t.* 48.

Wild in PERU; on trees in Chachapoyas—Mathews, 3186, in hb. Hooker, (*v. ic. pict. et s. sp.*)

I have now seen a dried specimen of this in the Hookerian Herbarium, but it adds little to the information formerly afforded by the drawing. The oval pseudobulbs bear three leaves. The scape is spotted with purple, straight for ten or eleven inches, when it becomes a twining raceme, of which about ten inches bearing flowers are present in the plant before me. The sepals are linear, retuse, white; the petals broad, obovate, violet bordered with white, the lip of the same colour, concave, streaked with crimson, having four collateral sharp-pointed lamellæ. The anther downy; column furnished with two great acinaciform ears, terete at the base, with a pair of vertical quadrangular valve-like plates just below the stigma. No other species is much like this.

* 53. **O.?? candidum.** *Lindley, in Bot. Reg.* 1843, *misc.* 76.

Wild in GUATEMALA—Hartweg, (*v. v. c.*)

All the evidence I possess regarding this consists in a sketch from the live plant, made in 1843. Specimens have been lost, and the growing individual has disappeared. The flowers are about an inch in diameter, white, with a yellow crest, and are described as having appeared in a few-flowered raceme. To what was said in the "B. R.," the following should be added: Sepalum dorsale oblongo-lineare, erectum; lateralia in unum breve concavum emarginatum connata. Petala ovata obtusa, sepalis multò majora. Labellum patens ovatum, obtusum, etiam majus, basi columnæ per tuberculum adnatum quod à fronte marginulo denticulato transverso circumdatur. Columna brevis, stigmate circulari, alis cuneatis brevibus denticulatis. Pollinia 4, *geminata caudiculis 2 cuneatis glandulæ circulari adnata!* If the sketch before me is accurate, this cannot be an Oncidium, as the words in italics show; but until the plant shall have been re-examined, it is safest to leave it where it stands.

* 54. **O. fimbriatum.** *LO., p.* 199.

Wild in BRAZIL—hort. reg. Kew. (*v. ic. Bauer.*)

Known only from a drawing of a single flower, formerly seen by me in the portfolio of Francis Bauer. That drawing now forms no part of the Kew collection. The plant seems very near *O. cornigerum.*

* 55. **O. cornigerum.** *LO.* 199. *B.R. t.* 1542. *B.M. t.* 3486.

Wild in BRAZIL—Miers; Rio—Gardner, 639; on trees above

the Serra do Mar, and near Hytu, in the province of St. Pauls—Martius, (*v. v. c. et s. sp.*)

Flowers in a close panicle, yellow and brown. Column and anther downy. *Anther-bed cucullate.* Pseudobulbs always one-leaved.

56. **O. Warczewiczii.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 693!

Wild in COSTA RICA and VERAGUA, on Oaks at 8-10,000 ft.—Warczewicz. The thermometer stood at 41° Fahr. in November, and the plant perishes as soon as it descends into the warm zone.—*Rchb.*

Flowers as large as in *O. maculosum*, golden yellow, except the side of the middle lobe of the lip and the points of the crest. Raceme with from eight to twelve flowers. According to Rchb. f. *the bracts are very large and glumaceous*, as long as the stalked ovaries ; lower sepal with two acute lobes. Petals somewhat blunt. Lip scarcely unguiculate, rounded on either side, narrow, auriculate, then ligulate. Crest narrow, three-toothed in front, the lateral teeth turned outwards and prostrate, that in the middle a keel. Column long, with three-lobed column-wings, the upper lobe being ligulate, the lower oblong and crenulate. This exactly agrees with a flower given me by Prof. Rchb.

57. **O. Gardneri.** *Lindley, in Lond. Journ. Bot., II.* 662.

Wild in BRAZIL ; on trees in the forests of the Organ Mountains—Gardner, (*v. s. sp.*)

Very near *O. crispum* and *Forbesi*, from which it differs in the form and tuberculation of the lip, and the very small column wings. Flowers moderately large, brown, with a yellow lip.

* 58. **O. amictum.** *Lindley, in Bot. Reg.* 1847, *t.* 66.

Wild in BRAZIL—Hort. (*v. v. c.*)

Flowers large, yellow and brown, very handsome ; the middle lobe of lip transversely lozenge-shaped and bifid ; anther-bed hairy, with a membranous frill ; column-wings ciliated ; crest of a pair of diverging lancet-shaped lobes in front, and two smaller at their back.

59. **O. tripterygium.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 694.

Wild in PERU ; near Loxa—Warczewicz.

Flowers as large as in *O. pectorale*, golden yellow and brown. Dorsal sepal acuminate, lower with two acute lobes. Lip panduriform, with the basal lobes blunt and crisp, the middle one very large, subsessile and two-lobed. Anther-bed with a membranous microscopically toothletted border. Crest of lip carinate, toothletted, rather muricated, with a pair of legs in front.—*Rchb. f.*

* 60. **O. Forbesi.** *Hooker, Bot. Mag. t.* 3705.

Wild in BRAZIL ; Minas Geräes—Widgren, 770 ; rare on trees in virgin forests of the Organ Mountains—Gardner, 5872, (*v. v. c. et s. sp.*)

A very fine plant resembling *O. crispum*, with large brown flowers broken up with yellow *near the edges.* Its *sharp* column-ears always *banded* with lines of violet are characteristic. In general, the crest consists of five rugged equidistant warts ⁂ but the two middle ones are sometimes obsolete.

* 61. **O. crispum.** *Lodd. B. C. t.* 1854. *LO. p.* 197. *Bot. Reg. t.* 1920. *Bot. Mag. t.* 3499.

Wild in BRAZIL; on the Organ Mountains on dead trees—Harrison, (*v. v. c. et s. sp.*)

Flowers often fifty or sixty in a bending raceme, very large, deep brown, broken up with yellow near the centre. Crest three-lobed, ovate, acuminate, supported closely on either side by straight, smooth, terete warts. Flowers vary in diameter from one and a half to two inches.

* 62. **O. pectorale.** *Lindley, Sert. Orch. t.* 39.

Wild in BRAZIL—Loddiges, (*v. v. c.*)

Flowers very large, in an erect spreading panicle, with a brilliant deep yellow lip, and crimson stains on the yellow sepals and petals. Lip, middle lobe of flabelliform, deeply two-lobed, with a very narrow base.

* 63. **O. curtum.** *Lindley, in Bot. Reg.* 1847, *t.* 68.

Wild probably in BRAZIL; its true origin unknown, (*v. v. c. in Hort. Veitch.*)

Flowers large brown, except the lower half of the lip and some bands on the sepals, which are yellow. The short white crop-eared column with a hairy anther, and the lateral tubercles of the crest arranged in a somewhat circular manner, separate this species from all the preceding.

* 64. **O. hæmatochrysum.** *Rchb. in Linnæa, XXII.* 844 (1849).

Wild in BRAZIL; near Rio Janeiro, whence it was sent to Count Hoffmannsegg, with whom it bloomed in 1844.—*Rchb. f.*

Pedunculus gracilis supernè furcatus (nunc pluriramosus ?), partitione utrâque pauciflorâ (3—5); sepala obovata acutiuscula, lateralibus connatis, *apice bidentatis.* Petala sepalo supremo subæqualia. Labellum panduratum, parte basilari quadratum, unguiculatum, auricula lanceolata, obtusiuscula in utroque angulo posteriore; crista crassa gyrosa, nunc in tres partes sulcis 2 transversis divisa, callis 4—6 minutis papillaribus in utroque latere, parte mediana labelli constricta, antica transversa rotundata, antice biloba, lobo utroque nunc bi-trilobulato; columnæ alæ subquadratæ, margine externo denticulatæ. Such is the more important part of the description given by Rchb. f. I have seen no specimen or sketch. Flowers handsome, golden yellow and crimson, with the exception of the column-wings. I can't distinguish it from *O. curtum.*

(**O. ochmatochilum** Rchb. f., placed by the learned author in § BASILATA, should be compared with the species in the present §.)

§ 6. TETRAPETALA MICROPETALA.

ANALYSIS OF THE SPECIES.

Labellum indivisum.
- ovatum emarginatum . . . . . 65. *concolor.*
- obovatum acutum . . . . . 66. *cochleatum.*
- cuneatum rotundatum ; alis c. maximis laceris . . 67. *aureum.*

Labellum panduratum.
- scapus uniflorus . . . . . 68. *decipiens.*
- ——— racemosus v. paniculatus.
  - Crista paucituberculata (verrucis segregatis o).
    - clinandrium cucullatum v. manifestè marginatum.
      - crista ecornuta parva . . . . . 69. *cucullatum.*
      - —— bicornis . . . . . 70. *pubes.*
    - clinandrium immarginatum.
      - crista unicornis . . . . . 71. *unicorne.*
      - —— mutica.
        - Lab. lob. med. lin. spath. acutus. . . . . 72. *incurvum.*
        - ——— reniformis.
          - Racemus simplex ; crista utrinque digitata 73. *bifolium.*
          - Panicula,
            - ramosa diffusa cristæ dentibus 5 . . . 74. *Martianum.*
            - angusta racemosa crist. papill. acervatis 75. *maculosum.*
  - Crista verrucituberculata (dentibus aliquot segregatis).
    - Flores racemosi.
      - sepalis lateralibus basi tantum connatis . . . 76. *Blancheti.*
      - ——— semiconnatis . . . . . 77. *viperinum.*
    - Flores paniculati.
      - cristâ simplici convexâ anticè tridentatâ . . 78. *disciferum.*
      - —— multiplici.
        - Labelli lobus medius sessilis quadrilobus . . 79. *varicosum.*
        - ——— unguiculatus.
          - C. alis rotundatis, cristâ multifidâ . . . 80. *isopterum.*
          - —— ovatis fornicatis, cristâ basi convexâ pulvereâ } 81. *flexuosum.*

82. *hæmatoxanthum*

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* 65. O. concolor. *Hooker, in Bot. Mag. t.* 3752.

Cyrtochilum citrinum. *Hooker, in Bot. Mag. t.* 4454.
Onc. unguiculatum. *Klotzsch in Allg. Gartenzeit., XVII.* 91.

Wild in BRAZIL ; MEXICO ?—*Klotzsch,* (*v. v. c.*)

This is one of the handsomest of the genus, on account of its large rich whole-coloured yellow flowers, by which and its ovate retuse lip it is immediately recognised. Its origin is doubtful. On the authority of the Woburn collection Sir W. Hooker reported it to have been found on the Organ Mountains by Gardner ; at a later period Central America was given to it upon the assurance of Mrs. Lawrence's gardener. Neither source of information is trustworthy. I have seen nothing like it in the multitudes of wild specimens that have passed under my observation. In a memorandum in my herbarium Mr. Bateman reports that it exists in the Royal Berlin Collection, No. 4049, where is a specimen gathered in Brazil by Sellow.

66. O. cochleatum. *Lindley, Sert. Orch. sub t.* 25.

Wild in PERU ; Paramo de Suraguru—Jamieson, (*v. s. sp. in hb. Hooker.*)

Of this I have only seen a flower-stem with half-a-dozen densely packed flowers, less than an inch in diameter.

* 67. **O. aureum.** *Lindley, Sert. Orch. sub t.* 25.

Odontoglossum festatum. *Rchb. f. in Bonpl., Ap.* 1854 !

(A) Lip as broad as long. Crest of two vertical plates, emarginate in the middle, with five slender intermediate equidistant teeth.

(B) stenochilum. Lip longer than broad. Crest of two vertical plates, emarginate in the middle, with an intermediate tooth.

Odont. hemichrysum. *Rchb. f. in Bonpl., Ap.* 15, 1854 !

Wild in PERU; **A,** high mountains near Andimarca—Mathews, 1068; **B,** sources of the Marañon—Warczewicz, (*v. s. sp.* **A,** *in hb. Hooker;* **B,** *comm. cel. inventor.*)

Bracts glumaceous. Flowers one inch and a half apart, in an erect, loose, stiff panicle; apparently with a golden yellow lip, and olive-coloured sepals. The plant must be in cultivation, good healthy specimens having been sold by Mr. Stevens in 1853. The differences in the crest and form of lip between the two varieties are very remarkable.

* 68. **O. decipiens.**

O. iridifolium. *Lindley, in Bot. Reg. t.* 1911.

Wild in MEXICO; near Oaxaca at 3000 ft.—Galeotti, 5289; GUATEMALA—Skinner in hb. Hooker, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

Very much like *O. iridifolium* (no. 26) from which it differs in having flat leaves, a crest of five flat rounded plates instead of a deep middle tooth with concave appendages on each side, and an additional toothlet on the outer edge, in the petals being very small, not as long as the side lobes of the lip, and in the wings of the column being merely eroded, not coarsely toothed.

* 69. **O. cucullatum.** *Lindley, Sert. Orch. sub t.* 21. *Paxt. Fl. Gard. t.* 87.

(A) maculosum. Raceme many-flowered, nodding. Lip violet spotted with purple, with small auricles. Sepals and petals deep red.

(B) sanguinolentum. Raceme few-flowered. Lip rose-colour, crenulated, spotted with crimson, with auricles wider than the middle lobe. Sepals and petals green, with a few crimson streaks.

Leochilus sanguinolentus. *Lindley, in Bot. Reg.* 1844, *misc.* 91.

(C) spathulatum. Raceme many-flowered, nodding. Lip spotted only at the base, which is narrower than the middle lobe. Sepals and petals spotted.

(D) nubigenum. Raceme few-flowered, erect. Lip narrow at the base, with a lobed and nearly sessile middle division, without spots, as well as the sepals and petals.

O. nubigenum. *LO. p.* 197.

(E) macrochilum. Raceme many-flowered, very flexuose. Lip whole-coloured, one inch and a half broad.

Wild in PERU and NEW GRENADA; **A,** in the province of Mariquita, in the forests of Quindiu, at the height of 8700 ft., where it is called *Hierba Buenal* and *La Mesa*—Linden, 1287; trunks of trees on the western declivity of Pichincha —Jamieson; Soto, at 6000 to 7500 ft.—Schlim, 1004; las

Velas, at 10,000 ft.—Schlim, 1726; Soto, Ocaña, &c., at 7500 to 9000 ft. on the Sierra Nevada of Sa. Martha—Schlim, 411; Sa. Martha—Purdie; **B**, La Guayra—Barker; **C**, Peru—Wm. Lobb; **D**, Woods of Machache near Quito, at 11,000 ft.—Hartweg; ridge of Assuay, but only on the W. side, which to a certain height is clothed with forest trees, at 11,000 ft.—Jamieson; **E**, Quitinian Andes, on trunks of trees, at 13,000 ft.—Jamieson, (*v. v. c. et s. sp.*)

A most variable plant, of which **D** is, I now doubt not, merely an alpine form, in which the crest consists of three rounded tubercles; in **C** the tubercles are acute, and there are two minute additional teeth on each side; in **B** there are three tubercles, the middle one of which is very small, and the laterals abruptly rostrate; in **A** there are three only, and acute; in all there is a tuft of hairs at the foot of the column, on the crest. The leaves are equally changeable; in **A** they vary from oblong to narrowly lorate, and in **C** they are spathulate. In the colour and size of the flowers differences are equally abundant. All are very handsome, most especially **E** which is by far the finest Alpine Orchid yet discovered.

* 70. **O. pubes.** *LO.* 199. *B. R. t.* 1007. *B. M.* t. 3926.

O. bicornutum. *Bot. Mag. t.* 3109.

Wild in BRAZIL; in thin forests round the table-land of Bom Jesus de Bananal—Descourtilz; Miers, (*v. v. c. et s. sp.*)

Flowers small, in a pyramidal panicle, brown edged with yellow, or chiefly yellow with crimson streaks snd stains.

* 71. **O. unicorne.** *Lindley, Bot. Reg.* 1839, *misc.* 76.

O. monoceras. *Hooker, Bot. Mag. t.* 3109.

Wild in BRAZIL; Minas Geräes—Regnell, (*v. v. c. et s. sp. comm. cel. Sonder.*)

Panicle thin, straggling. Flowers small, pale yellow.

* 72. **O. incurvum.** *Barker, in B. R. misc.* 174, 1845, *t.* 64.

O. alboviolaceum. *Rich. and Gal., Orch. Mex.*

Wild in MEXICO; Talea in the province of Oaxaca, at 4-5000 ft. very rare—Galeotti, 5021, (*v. v. c. et s. sp. comm. cel. Galeotti.*)

Flowers small for the genus, white banded with purple, sweet-scented, much like those of *O. ornithorhynchum.*

* 73. **O. bifolium.** *Sims, in Bot. Mag. t.* 1491. *B. C. t.* 1845. *LO., p.* 197.

Wild near MONTEVIDEO—hort., (*v. v. c.*)

This appears to be one of the plants brought to Montevideo by Indians from the country to the northward, and used in that city for the decoration of balconies; with its precise habitat I am unacquainted. Flowers large, yellow, with rich brown bars on the sepals and petals. Raceme nodding, 8—10-flowered.

* 74. **O. Martianum.** *Lindley, in Bot. Reg. sub t.* 1920.

Wild in BRAZIL; woods in the province of Mines—Martius.

(A) Flowers whole-coloured.

(B) **bicolor.** Sepals and petals and base of lip spotted with brown.

O. bicolor. *Lindley, in Bot. Reg. t.* 66, 1843.

The two varieties differ only in colour; both have bright yellow flowers, almost white at the back. They form, when vigorous, a great branching panicle. The lateral sepals are joined at the base, but only for a short distance. The figure of *bicolor* in the "B. R." is from a poor weak specimen; the two elevated lines below the middle tooth of the crest are not sufficiently elevated or tooth-like at the base.

* 75. **O. maculosum.** *Lindley, in Bot. Reg. sub t.* 1920.

Wild in BRAZIL; in the province of Mines—Martius, (*v. s. sp. in hb. Martius.*)

Leaves two, lanceolate, four to five inches long. Scape nearly two feet high, with a small, somewhat panicled raceme. Lip about an inch broad.

76. **O. Blancheti.** *Rchb. f. in Linnæa, XXII.* 845.

Wild in BRAZIL; Bahia—Blanchet, 3343, (f. Rchb.); Minas Geräes—Widgren, 772, (*v. s. sp. comm. cel. Sonder.*)

A grass-leaved plant, with a close cylindrical erect raceme of small flowers. Bracts somewhat glumaceous, not more than one line and a half asunder. The crest consists of five excessively rugged tortuous lines near the base, as many shorter and broad-ended ones of the same character in front, and a couple of little tubercles at a short distance on each side.

* 77. **O. viperinum.** *LO. p.* 197.

O. confragosum. *Lindley, in Bot. Reg.* 1838, *misc.* 92.

Wild on the URUGUAY; on dead trunks of trees—Tweedie; Buenos Ayres—Miers, (*v. s. sp. in hb. Hooker and Miers.*)

Lip much smaller than in *O. bifolium*, and the crest quite different. Flowers pale straw-colour. Misled by Garden inaccuracy I was led to make out of this another species, *O. confragosum*, falsely said to be Mexican.

78. **O. disciferum.**

O. folio oblongo apiculato, scapo à basi paniculato paniculâ pyramidali, sepalo inferiore bilobo, petalis obovatis acutis, labelli lobo medio subrotundo-reniformi apiculato lateralibus semicircularibus, cristâ oblongâ discoideâ dentibus 3 antepositis aliisque minutis circumstantibus, columnæ alis minutis triangulis obtusis sub lente pruinosis.

Wild in BOLIVIA—Bridges, (*v. s. sp.*)

Whole plant a foot high. Pseudobulbs oblong, ribbed. Flowers apparently with a yellow lip, and olive-green whole-coloured sepals and petals.

* 79. **O. varicosum.** *Lindley, in Bot. Reg. sub t.* 1920. *Journ. of Hort. Soc., V.* 143.

Wild in BRAZIL—Prince Max. of Wied Neuwied in hb. Martius, (*v. s. sp. et v. c.*)

A glaucous strong-growing species, of considerable beauty. The leaves are firm and ligulate-lanceolate. The scapes which are strong, very glaucous,

and about three feet long, have a great branching panicle, loaded with from eighty to ninety large showy flowers. The sepals and petals are pale dull green banded with dull brown. The lip is large, very bright yellow, with two ovate lateral ears, somewhat crenate in front, and a four-lobed middle lobe. The crest consists of two triple teeth, one standing before the other, and of a little ring of varicose veins placed on each side of it. The wings of the column are oblong, whole-coloured, and finely notched.

80. **O. isopterum.** *Lindley, in Bot. Reg. sub t.* 1920.

Wild in BRAZIL; Serra do Gram Mogol, in elevated open places, in the province of Mines—Martius, (*v. s. sp. in hb. Mart.*)

This should be re-examined. My sketch of the original specimen represents a plant with two recurved channelled leaves about three inches long, a scape about five inches long, where it forks into two unequal flexuose racemes. The flowers are very like those of *O. flexuosum*, except in the crest, which seems to be formed of one great central tooth and several smaller ones on each side, without any pulverulent cushion at the base. The sepals are acute, not obtuse, and the wings of the column which are rounded, as in *O. flexuosum*, are of nearly the same size as the two cheeks at the base of the column, which are themselves, in the original definition, called additional wings.

* 81. **O. flexuosum.** *Sims, in B. M. t.* 2203. *LO. p.* 199.

Wild in BZAZIL—Miers, 3479, &c. (*v. v. c. et s. sp.*)

Flowers bright yellow with clear brown spots, in a large branching panicle. It varies much in the size of the flowers, and also in the condition of the crest, which is, however, always cushion-shaped and downy or pulverulent at the base. In front of the cushion are sometimes three small ridges, in other cases four teeth are interposed between them and the cushion; in others there are a few off-lying warts. I have never met with the ridges fingered as represented in the "Bot. Mag."

* 82. **O. hæmatoxanthum.** *Rchb. f. in litt.*

Under this name I have from Prof. Rchb. a sketch of the flowers of a species said to be near *O. flexuosum*, but by no means the same. The flowers seem to be the size of *O. isopterum*, but the middle lobe of the lip is almost sessile; the base is "purplish with yellow calli."

§ 7. PENTAPETALA MACROPETALA.

ANALYSIS OF THE SPECIES.

Pedunculus uniflorus. Caulis volubilis pseudobulbifer . 83. *scansor.*
——— paniculatus.
Rostellum muticum.
Alæ columnæ carnosæ triangulares. . . . . 84. *sarcodes.*
——— membranaceæ.
crista triloba convexa verrucis segregatis.
labelli basis obtusè triangularis . . . . . 85. *excavatum.*
——— circularis . . . . . 86. *polyadenium.*
crista multiplex.
labelli lobus intermedius acutus altè cordatus . 87. *cardiochilum.*
——— emarginatus
sepala lat. linearia, labellum angustum. . . 88. *iricolor.*
——— spathulata.
alæ columnæ obsoletæ . . . . . 89. *pictum.*
——— expansæ
clinandr. dorso appendiculatum . . 90. *ampliatum.*
clinandr. nudum.
heterantha, labello bilobo. . . . 91. *Jamiesoni.*
homœantha.
labellum reniforme . . . . . 92. *formosissimum.*
——— bilobum.
petala basi latiora.
c. alæ max. acinaciformes lobatæ, } 93. *leopardinum.*
c. alæ subrotundæ emarginatæ, } 94. *hieroglyphicum.*
petala spathulata . . . . . 95. *obryzatum.*
Rostellum subulatum.
Labellum sexlobum crispum, petalis sepalisq. parvis acutis, } 96. *Crista galli.*
——— quadrilobum basi latius.
col. alæ lineares elongatæ divergenti-bilobæ . . 97. *Chrysopyramis.*
——— latæ cuneatæ angulis productis . . . . 98. *pyramidale.*
labellum trilobum basi angustius, c. al. max. inæq. 2-lob. } 99. *lancifolium.*

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83. **O. scansor.** *Rchb. f. in Linn., XXII.* 844!

O. convolvulaceum. *Lindl., in Paxt. Fl. Garden, Vol. I. under t.* 21.

Wild in NEW GRENADA—Warczewicz; near Ocaña, at the height of 5400 ft.—Schlim, 1013; VENEZUELA—Fünck and Schlim, 1444, (*v. s. sp.*)

This has the twining stem of a Convolvulus. Flowers solitary, two inches in diameter, with a large yellow lip.

* 84. **O. sarcodes.** *Lindl. in Journ. Hort. Soc., XIV.* 260.

O. Rigbyanum. *Paxt. Mag., Oct.* 1849.

Wild in BRAZIL, according to Garden authority, (*v. v. c.*)

The habit is that of *O. pubes* and *amictum*. Flowers large, bright yellow blotched with brown-red. Column white with blood-red, fleshy, truncated wings.

* 85. **O. excavatum.** *Lindl. in Sert. Orch. sub t.* 25. *B. R.* 1839, *misc.* 150. *Paxt. Fl. Gard., I. under t.* 21.

(B) aurosum. Flowers deep brown in the middle. Crest very rugose, with a thin vertical plate interposed between the front lateral ridges.

O. aurosum. *Rchb. f. in Bonplandia, May* 1, 1854 !

Wild in PERU; Chachapoyas—Mathews in hb. Hooker; sources of the Marañon—Warczewicz, (*v. v. c. et s. sp.*)

Flowers bright yellow with brown stains near the base of the lobes. The crest is very convex, excavated in front, studded with small white tubercles, has a decurrent lamella from either side of the base, a small toothed ridge, and a pair of outlying teeth on each side. *O. aurosum* Rchb. can hardly be distinguished from *O. excavatum*. The crest is certainly rather different, and the flowers perhaps larger and more compactly arranged.

* 86. **O. polyadenium.**

O. paniculâ contractâ pyramidali, petalis sepalisq. retusis, labello basi circulari undulato denticulato lobo medio subrotundo bilobo latiore, cristâ convexâ seriatim verruculosâ anticè excavatâ lamellis 4 anticis denticulatis decurrentibus, verrucis pluribus segregatis, columnæ alis obliquis obtusis subemarginatis.

Wild in PERU—W. Lobb, (*v. s. sp. comm. dom. Veitch.*)

Living plants were sold for Mr. Veitch at one of Mr Stevens's sales in 1847, and the species is probably in cultivation. In a dried state it resembles *O. excavatum*, but the flowers are larger, apparently whole-coloured, in a close pyramidal panicle. The large circular base of the lip, numerous outlying lateral teeth, and five rows of little tubercles on the convexity of the crest abundantly distinguish it.

* 87. **O. cardiochilum.**

O. paniculâ ramosissimâ intricatâ divaricatâ, sepalis petalisque acuminatis, labelli pandurati lobis lateralibus cordatis convexis rotundatis intermedio parùm latiore reniformi-cordato acuto, cristâ carinatâ utrinque tridactylâ, col. alis obsoletis buccis convexis elongatis.

Wild in NEW GRENADA—Purdie; GUATEMALA—Skinner, (*v. s. sp. comm. cel. Hooker et Skinner.*)

A fine species, with a singularly entangled branching divaricating panicle. Flowers as large as in *O. rupestre* or *Odontoglossum hastilabium*. The Guatemala form has a much thinner panicle, but does not seem to be different otherwise.

* 88. **O. iricolor.** *Rchb. f. in Bonplandia, Ap.* 1, 1854 !

Wild in——

Seen in cultivation in the garden of Mr. Frege. Said to differ from all others in having a four-toothed velvety crest, and a whitish-lilac colour. The crest is further described as being oblong, notched on each side, and two-toothed at the end, hence appearing four-toothed. In one place, Mr. Reichenbach calls the column-wings *tri*angular and obtuse; in another *rect*angular, entire, and divaricating. The only flower I have seen, and an accompanying sketch, has extremely narrow sepals and a peculiarly thin texture. Is it not an accidental form of *O. incurvum*, with free sepals ?

89. **O. pictum.** *HBK., I. t.* 81. *LO. p.* 201.

Wild in the temperate parts of POPAYAN, at the height of 3240 ft.—HBK.; PERU—Mathews, 1920, (*v. s. sp*).

A species with a fine large pyramidal panicle of yellow flowers. It certainly belongs here, and not to the plurituberculate set.

* 90. **O ampliatum.** *LO. p.* 202. *B. R. t.* 1699.

Wild in CENTRAL AMERICA; Cuming, 1312; Costa Rica, on the shore in the gulf of Nicaya, also Nicaragua and Escuintla, in a climate the maximum of which is 85°—Skinner; Sa. Martha — Purdie; Columbia—Sinclair; Chagres—Fendler, (*v. v. c. et s. sp.*)

There are two varieties in cultivation, differing only in the size of the flowers. Panicle ample. Flowers yellow, much paler at the back than in front. The crest at the back of the anther-bed is remarkable.

91. **O. Jamiesoni.** *Lindl. in Paxt. Fl. Gard., I. under t.* 21.

Wild in PERU; Quito—Jamieson, (*v. s. sp.*)

Flowers yellow, with a brown base to the petals, a few imperfect ones mixed with the others—the only case of the kind in the present group.

92. **O. formosissimum.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 694!

Wild in PERU; Loxa — Warczewicz; Andes of Quito — Jamieson, (*v. s. sp.*)

Sepals and petals dark purple, upper half yellow; lip wholly yellow. Petals four times as large as sepals, quite sessile. Lip very large; its lateral lobes oblong, two-lobed, small; the middle one very broad, unguiculate, reniform, or rather crescent-shaped. Crest small, with five collateral equal downy, round tubercles, in front of which is a thin three-lobed arched membrane. Column-wings very large, hatchet-shaped, with the angles rounded. This is one of the finest of the genus. It differs from *O. Jamiesoni* in its uniform flowers, which are much larger, with far larger column-wings.

93. **O. leopardinum.**

O. paniculâ laxâ diffusâ flexuosâ, petalis ovatis obtusis apiculatis subunguiculatis, labelli auriculati lobo medio unguiculato transverso emarginato, cristâ anticè 5-carinatâ carinis lateralibus anticis longioribus falcatis posticè sinuosâ dentibus confluentibus duplici serie circumdatâ, c. alis maximis cordatis sublobatis retrorsum falcatis.

Wild in PERU; sources of the Marañon—Warczewicz, (*v. s. sp. comm. cel. inventor*)

Apparently a plant with a loose straggling panicle. Flowers the size of those of *O. pyramidale*, or smaller, with very dark distinct bands on the sepals and petals, and at the base of the lip. The crest consists at the base of a lobed sinuous centre surrounded by a double line of half confluent teeth; in front of five teeth, of which the two basal are short, the central twice as long as they, and the two in front still longer and curving outwards.

* 94. **O. hieroglyphicum.** *Rchb. f. in Allg. Gartenz., Sept.* 2, 1854!

Wild in PERU—Warczewicz.

Related, but not very nearly, to *O. excavatum.* Lip flat, deeply two-lobed. Space below the stigma three-chambered at the upper end. Crest velvety. Column-wings small and two-lobed, the upper lobe small and passing into the larger, *Rchb.*, who examined a living specimen in the garden of Senator Jenisch of Hamburgh. "Pseudo-bulbis caespitosis ovalibus laevibus disciformibus monophyllis; foliis papyraceis oblongis acutis undulatis brevibus; racemo simplici; bracteis lanceolatis acuminatis; perigonii foliolis subreflexis undulatis sordide fusco-maculatis apicem versus flavidis, sepalis brevi unguiculatis, petalis sessilibus subduplo latioribus; labello trilobo, lobo medio latissimo flavido profunde bilobo undulato, lateralibus oblongo-obovatis horizontalibus erectis sellaeformibus, cristâ septemgibbâ minutissime puberulâ; c. alis brevibus sub-emarginatis.'—*Klotzsch in Allg. Gartenzeit.*, 16 *Sept.* 1854, *mutatis mutandis.* The three cavities on the column beneath the stigma are remarkable. I have seen a solitary flower and a sketch from Mr. Rchb.

95. **O. obryzatum.** *Rchb. f. in Bonpl., May* 1, 1854!

Wild in PERU—Warczewicz, (*v. s. sp. comm. cel. Rchb.*)

This seems to have the habit of *O. excavatum*, but the flowers are rather smaller. Its very narrow obtuse spathulate unguiculate sepals are remarkable. The crest consists of a downy middle keel, two broad thin teeth on either side its point, and a small wart at the base of each of these.

96. **O. crista galli.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 697.

Wild in PERU—Warczewicz; Jurgensen, 646, *fide Rchb. in litt.*

Lip very large in proportion to the small, acute, flat sepals and petals, its whole margin crisp, the middle lobe very broad, stalked, four-lobed, the lateral lobes rounded, those in front ligulate and parallel!—*Rchb.* I have only seen a sketch of this, which appears to be a very distinct species.

97. **O. chrysopyramis.** *Rchb. f. in Bonpl., May* 1, 1854!

Wild in NEW GRENADA and the WESTERN CORDILLERA—Warczewicz, (*v. s. sp. comm. cel. Rchb.*)

Near *O. pyramidale* (Rchb.)——from which it differs in having much smaller flowers, a thinner and weaker panicle, and very narrow deeply two-lobed column-wings, whose halves curve away from each other.

98. **O. pyramidale.** *Lindl. in Ann. Nat. Hist., XV.* 384.

Wild in PERU; near Pasto, in the woods of Meneses, on trees —Hartweg, (*v. s. sp.*)

Scape six inches long. Panicle nearly a foot more, not more than four inches wide, with stiff lateral zigzag branches, each bearing six or seven flowers on an average. Its broad terminal wedge-shaped two-lobed column-wings are very remarkable.

99. **O. lancifolium.** *Lindl. in Plant. Hartweg., p.* 151.

Wild in PERU; Cordillera near Loxa—Hartweg, (*v. s. sp.*)

This is very much like *O. pyramidale*, from which it is distinguished by its column-wings being lateral not terminal, and by its crest consisting of five nearly equal spreading fingers. The definition of the crest in the "Pl. Hartweg." is, owing to some inexplicable accident, wholly erroneous.

N.B. **O. fasciferum,** Rchb., will be found among the PLURITUBERCULATA.

O. sessile, Lindl., has the petals so little different in size from the sepals, that it is better stationed in the PAUCITUBERCULATA.

O. stenopetalum, Klotzsch in Allg. Gartenzeit. Sept. 1, 1855, is not to be identified or accepted as new, in the absence of a more sufficient specific character.

§ 8. INTEGRILABIA.

ANALYSIS OF THE SPECIES.

Labellum basi latius.
- Scapus 2—3-florus, foliis subæqualis . . . . . 100. *meirax.*
- ——— paniculatus.
  - Panicula heterantha . . . . . 101. *ornithocephalum.*
  - ——— homœantha.
    - cristæ tuberculis lævibus
      - sepalis lat. oval. filiformi-unguiculatis . . . 102. *Magdalenæ.*
      - sepalis lat. spathulatis acutis. . . . . 103. *deltoideum.*
    - cristæ tuberculis aggregatis hispidis.
      - labellum equilateri-triangulare . . . . . 104. *Hartwegi.*
      - ——— isosceli-triangulare . . . . . 105. *nigratum.*

Labellum basi angustius.
- apice trilobum . . . . . 106. *pumilum.*
- —— bi-trilobum dilatatum v. integrum.
  - paniculâ densâ folio acuto vix longiore . . . . 107. *nanum.*
  - ——— v. racemo elongato.
    - cristâ convexâ oblongâ emarginatâ . . . . . 108. *gracile.*
    - —— digitatâ . . . . . 109. *Barbaceniæ.*
    - —— bicarinatâ rostro interposito . . . . . 110. *graminifolium.*
  - scapo 1—2-floro . . . . . 111. *brachyandrum.*
- lunatum, ungue lineari auriculatum . . . . . 112. *lunatum.*
- apice acutum, lobulo acuto antrorso utrinque . . . 113. *maculatum.*
- apice obtusum rhombeum . . . . . 114. *linguiforme.*
- oblongum acutum indivisum.
  - c. alæ minim. triangulares . . . . . 115. *mentigerum.*
  - ——— maxim. dolabriformes . . . . . 116. *miserrimum.*

100. **O. Meirax.** *Rchb. f. in Bonpl., II.* 12, 1854. *Xenia, p.* 42, *t.* 18, *f.* 3.

Wild in the CARACCAS—Wagener.

A singular little plant only a few inches high. Leaves solitary on the oblong pseudobulbs, slightly emarginate. Scape two-flowered, shorter than the leaves. Lip cordate, acuminate. Sepals and petals linear, a little narrowed to the base. Prof. Rchb. places it among the *Cimiciferous microchiles,* p. 9.

* 101. **O. ornithocephalum.**

O. paniculâ gracili tenui ab ipsâ basi rectangulè ramosâ heteranthâ, sepalis petalisque linearibus acuminatis reflexis,

labello circulari apiculato, cristâ multilobâ $\frac{5}{4}$ verrucis quibusdam segregatis utrinque, columnâ basi hirsutâ alis maximis acutis fornicatis, stigmate rostrato.

Wild in NEW GRENADA; near Sa. Maria, in the province of Ocaña—Schlim, 296, (*v. s. sp. et v. c. comm. cel. Linden.*)

I received a living specimen of this delicate and graceful thing from Mr. Linden, in April, 1852. It bears very few small yellow flowers, spotted with bright brown, amidst numerous stellate abortions.

102. **O. Magdalenæ.** *Rchb. in Bonpl., March,* 1855.

O. paniculâ gracili rectangulè ramulosâ homœanthâ, sepalis petalisque unguiculatis spathulatis acutis, labello cordato obtusè acuminato, cristâ multilobâ $\frac{1}{3}$ verrucis 0 segregatis, columnæ alis maximis obtusè dolabriformibus, stigmate rostrato.

Wild on the R. MAGDALENA; Pericos, at the height of 7000 ft. —Wagener, (*v. s. sp. comm. cel. Rchb.*)

Very like *O. ornithocephalum*, but not heteranthous. The flowers are larger, yellow, with a deep brown stain at the base of all the parts. The lateral sepals have filiform ungues longer than the oval limb; the dorsal sepal is nearly sessile; the petals finely unguiculate, but much shorter than the lateral sepals.

* 103. **O. deltoideum.** *Lindl. in B. R. t.* 2006. *Paxt. Fl. G., II. ic.* 257.

Wild in PERU; Chachapoyas—Mathews, (*v. v. c. et s. sp.*)

Flowers in a large, stiff, compact panicle. Sepals and petals whole-coloured. Crest of the lip reaching more than half way from the base to the point, consisting of numerous straggling warts and teeth.

* 104. **O. Hartwegii.** *Lindl. Pl. Hartw., p.* 151. *Paxt. Fl. G., II. ic.* 133.

O. micranthum. *Skinner in Hort.*

Wild in PERU; on rocks near Loxa—Hartweg, (*v. v. c. et s. sp.*)

Flowers dirty brown, in a loose spreading panicle. Tips of the sepals, petals, and lip, alone dirty yellow. Differs from *O. deltoideum* not only in colour but in the crest, half-buried in hair, consisting of nine closely packed papillæ.

* 105. **O. nigratum.** *Lindl. in Paxt. Fl. Gard., I. no.* 122.

Wild in GUAYANA—Schomburgk, fide Loddiges, (*v. v. c.*)

Flowers cream-coloured in branched panicles, with dark blackish brown spots and bands. The sepals and petals are linear-lanceolate, equal, and wavy.

* 106. **O. pumilum.** *LO.* 205. *B. R. t.* 920. *Bot. Cab. t.* 1732. *B. M. t.* 3581. *Paxt. Fl. G., II. ic.* 132.

Epidendr. ligulatum. *Arrab. fl. flum.* ix. 15.

Wild in BRAZIL; on branches of Crescentia, Rio Comprido—

Gardner, 124, Grisebach, Miers; Cabeja de Fradre, Serra d'Estrella—Luschnath, (*v. v. c. et s. sp.*

Flowers small, yellow, in a dense erect branching panicle. The crest consists of a pair of parallel converging ridges, reaching as far as the re-entering angles of the lip. The pollen masses are very narrow, furrowed at the back, and stand upon a sagittate caudicle. Prof. Rchb. remarks to me that if it were prudent to dismember Oncidium, this plant would deserve to be removed.

* 107. **O. nanum.** *Lindl. in Bot. Reg.* 1842, *misc.* 80. *Paxt. Fl. G., II. ic.* 130.

Wild in GUAYANA—Loddiges; BRAZIL, on trees, at the junction of the R. Solimões and R. Negro—Spruce, 1525, (*v. v. c. et s. sp.*)

Resembles *O. pumilum*, but is totally different in the form of the parts of the flower. The wings of the column have a secreting gland at the point, as in some other species.

* 108. **O. gracile.** *Lindl. in B. R. sub. t.* 1920. *Paxt. Fl. G., II. ic.* 123.

Wild in BRAZIL; dry ferruginous rocks near Villa Rica—Martius; Minas Geräes—Weddell, in hb. mus. Par., (*v. v. c. et s. sp.*)

Scape slender, eighteen inches long, with a very few flowers at the end. Lip yellow. Sepals and petals chocolate-brown. This flowered in 1840 with the late Mr. Barker.

109. **O. Barbaceniæ.**

O. scapo paucifloro foliis gramineis longiore, sepalis *lateralibus* parvis unguiculatis concavis, labello obovato reduplicato emarginato, cristæ papillis liberis anterioribus brevioribus dorsali rostrato elongato.

Wild in BRAZIL; Barbacenia, in the province of Minas Geräes—Weddell, (*v. ic. pict. in hb. mus. Par.*)

I have only seen a sketch of this, which seems to be quite different from all the other known Brazilian species. Its lip is large and yellow. The sepals and petals are very small, and brownish green, spotted.

* 110. **O. graminifolium.** *Lindl. Sert. Orch. sub t.* 48.

(A) holochilum. Lip obovate, undivided. Raceme as long as the scape or nearly so. Sepals and petals brownish, clouded.
Cyrtochilum graminifolium. *Lindl. in Ann. Nat. Hist., IV.* 384, 1840.

(B) filipes. Lip emarginate, somewhat lobed. Raceme confined to the end of the scape. Sepals and petals brownish, clouded.
O. filipes. *Lindl. Sert. Orch. sub t.* 48.
Cyrtochilum filipes. *Id. in B.R.* 1841, *t.* 59.

(C) Wrayæ. Lip emarginate, somewhat four-lobed. Flowers panicled. Sepals and petals bright yellow, with deep brown spots.
O. Wrayæ. *Hooker in B.M. t.* 3854.

Wild in MEXICO; **A**, Hacienda del Carmen—Hartweg; Cerro del Capulalpan, Oaxaca, on the ground, at 8-9000 ft. of

elevation—Galeotti, 5177 ; **B**, Guatemala—Skinner, Hartweg ; **C**, Mexico—Hort., (*v. v. c. et s. sp.*)

A further comparison of these plants has convinced me that they are all forms of one species, which, like *O. maculatum*, assumes different forms, according as it is influenced by locality or other causes. The long slender graceful raceme or panicle, and the broad obovate or reniform yellow lip, distinguish it readily from that species.

111. **O. brachyandrum.** *Lindl. Sert. Orch. sub t.* 25.

Wild in Mexico—Karwinski; St. Jago el Grande, Oaxaca—Grisebach, 26, (*v. s. sp.*)

The leaves &c. are unknown. Of my two specimens, one is one-flowered, the other two-flowered. The lateral sepals are so close at the base, as to give the flowers the appearance of being tetrapetalous.

* 112. **O. lunatum.** *Lindl. in Bot. Reg. t.* 1929. *Paxt. Fl. G., II. ic.* 122.

Wild in Demerara—Loddiges, (*v. v. c.*)

The figure in the "Bot. Reg." represents the base of the lip as provided with a pair of inflexed teeth. This is a mistake of the artist. It is really a thin circular downy membrane, curved inwards over the central ridge. Prof. Rchb. suggests to me that this may be nearer *Solenidium*, than the present genus. It does not, however, appear to me anything more than a somewhat anomalous form of Oncidium. The lacerated membrane at the back of the anther-bed has its parallel in *O. ampliatum*, and the uneven number of lobes of the crest, so characteristic of Oncidium, is made up by the presence of a tooth at the base of the lip, overlooked in the "B. R." The most remarkable features consist in the presence of a broad wedge-shaped recurved peak to the anther, and in the absence of the buccæ or cheeks, which belong to the column of true Oncidia. I add a few memoranda, made upon re-examining a dried flower. Sep. lat. basi imâ connata. Labellum basi auriculis circularibus indivisis incurvis ; crista ante columnam dente aucta. Columna semiteres, sursùm angustior ; buccis nullis ; alis dimidiato-ovatis membranaceis acutis. Clinandrium dorso in membranam ovatam dentatam productum. Stigma circulare, prominens. Anthera unilocularis, apice membranacea elongata cuneata refracta. Pollinia &c. Oncidii.

* 113. **O. maculatum.** *Lindl. Sert. Orch. sub t.* 48.

(A) herbaceum. Sepals and petals green, blotched with purple. Lip with four simple carinæ, cuspidate, broadest at the point, with the lateral lobes at or above the middle.

Cyrtochilum maculatum. *Lindl. in Bot. Reg.* 1838, *t.* 44. *Sertum Orch. t.* 25. *Hooker in B. M. t.* 3836.

(B) Russellianum. Sepals and petals pale green, with very large well-defined deep purple blotches. Crest with a pair of curved teeth at the base. Flowers much larger.

Cyrt. maculatum. var. *B. M. t.* 3880.
Oncid. tigrinum. *Hort. Angl.*

(C) parviflorum. Flowers smaller. Lateral lobes of lip larger. Lateral sepals more or less connate.

Cyrt. maculatum parviflorum. *B. R.* 1841, *misc.* 87.

(D) Lindleyi. Flowers in a large spreading panicle, coloured as in **B.** Lip hastate, owing to the side lobes being near the base, and the middle lobe much elongated. Keels of the crest toothed and wavy.

Odontoglossum Lindleyi. *Galeotti in litt.!*
Oncid. maculatum Donianum. *Rchb. f. in Bonpl., Aug.* 1, 1855 !

Oct. 23, 1855.

(E) vinosum. Sepals and petals dull brown, very little blotched with greenish yellow. Lip yellowish, with the lower half claret-coloured; its lateral lobes short and near the base; the middle lobe ovate, acute, not cuspidate; keels of the crest toothed, lobed, and curved.

(F) psittacinum, *Rchb. f.* Flowers large. Sepals and petals with small distinct circular spots on a yellow ground. Keels of crest simple.

O. psittacinum. *Linden! fid. Rchb.*

Wild in MEXICO and GUATEMALA, very common, (*v. v. c. et s. sp.*)

There seems to be no line of distinction between these six forms, different as is the appearance of some of them. They are all deliciously scented, and among the most valuable to cultivators. At one time I thought that the form of the lip and the keels of the crest, which are much lobed or toothed in **D** and **E**, might be taken as specific marks; but I fear they are inconstant and accidental. **E** was cultivated in 1840, by the late Mr. Barker, but I have not seen it since. Of **C**, no specimens are now in my herbarium.

* 114. **O. linguiforme.** *Lindl. Orch. Linden.* 77.

O. umbrosum. *Rchb. f. in Bonpl., Ap.* 1, 1854!
Odont. umbrosum. *Id. in Linn., XXII. p.* 848. *Fol. Orch., no.* 13.

Wild in VENEZUELA; province of Merida, at 5000 ft. of elevation—Linden, 672; shady forests—Moritz, 1096, (*v. v. c. et s. sp.*)

A flower sent by Rchb. enables me to identify these synonyms. The plant has narrow leaves almost two feet long, and a weak branching panicle, the divisions of which are very thinly occupied by flowers, of a dirty yellow colour, with a wine-red lip and column. It flowered in 1854, with Sir Philip Egerton; and is not worth cultivation.

115. **O. mentigerum.**

O. paniculâ ramosissimâ elongatâ pyramidali, sepalis lateralibus elongatis petalisq. lanceolatis acutis, labello sessili oblongo acuto carinis cristæ 2 antrorsum attenuatis, columnæ alis obsoletis triangulis buccis nullis.

Odontoglossum mentigerum. *Rchb. f. in Bonpl., Ap.* 15, 1854!

Wild in PERU; sources of the Marañon—Warczewicz, (*v. s. sp. comm. cel. Warc.*)

Of this species the habit is that of *O. pyramidale.* It has very small flowers on rather distant spreading or ascending branches. It approaches nearly the Myanthian Odontoglots, to which Prof. Reichenbach perhaps refers it rightly, especially considering its resemblance to *Odont. megalophium.* The lip is certainly not three-lobed as Rchb. describes it. The flowers seem to be whole-coloured, with a paler lip.

116. **O. miserrimum.** *Rchb. in Bonpl., March,* 1855.

Wild in VENEZUELA; Ocaña—Wagener.

This seems to be nearly related to the last, from which it differs in having a crest with two keels and three off-lying tubercles in front, very large, blunt, hatchet-shaped column-wings, and the lateral sepals not very different from the petals.

§ 9. PULVINATA.

ANALYSIS OF THE SPECIES.

Pulvinus villosus inappendiculatus.
simplex.
labelli lobis lateralibus serratis . . . . . 117. *sphegiferum.*
——————— crispis . . . . . 118. *pulvinatum.*
quadrilobus, lab. lob. lat. integris . . . . . 119. *divaricatum.*
Pulvinus dentibus 5 ascendentibus circumdatus . . . 120. *Harrisonianum.*

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* 117. **O. sphegiferum.** *Lindl. in B. R.* 1843, *misc.* 23. *Paxt. Fl. Gard., II. ic.* 124.

Wild in BRAZIL—Loddiges, &c., (*v. v. c.*)

Flowers brilliant yellow, with rich crimson spots on the lip, and a dull purple stain on the sepals and petals. Base of the lip flat and serrated, not crisp ; cushion-like crest, oblong obovate, not circular.

* 118. **O. pulvinatum.** *Lindley, in Bot. Reg.* 1838, *misc.* 115, 1839, *t.* 42. *Paxt. Fl. G., II. ic.* 126.

Wild in BRAZIL; Minas Geräes—Regnell, (*v. v. c. et s. sp. comm. cel. Rchb.*)

Much like the preceding, from which the crisp base of the lip, circular cushion, and broad middle lobe of the lip appear to separate it.

* 119. **O. divaricatum.** *LO.* 205. *B. R. t.* 1050. *Bot. Cab. t.* 1212.

Wild in BRAZIL; trunks of high trees, on the mountains of Serra das Argoas, in Ilha Grande—Descourtilz, (*v. v. c.*)

The short concave coriaceous leaves assist in separating this from the preceding, as does the entire flat edge of the lateral lobes of the lip. I also believe the four-lobed cushion to afford a good mark. The flowers are sometimes yellow with a great deal of copper-red staining and spotting, and sometimes of one uniform dull coppery tint.

* 120. **O. Harrisonianum.** *LO.* 202. *B. R. t.* 1569.

O. pallidum. *Lindl. in B. R.* 1840, *misc.* 108.
O. pantherinum. } *Hffmgg. fide Rchb. fil.*
O pentaspilum. }
O. ramiferum. *Hort. Germ., fide Klotzsch.*
O. acrobotryum. *Klotzsch, in Allg. Garten-Zeit., Sept.* 15, 1855.

Wild in BRAZIL; Organ Mountains—Miers; on the ascent of the S. de Piedade, province of Mines—Martius, (*v. s. sp. in hb. Miers et v. c.*)

The dull grey horn-like recurved leaves, and most remarkable crest, render it impossible to mistake this pretty little plant, whose brilliant yellow flowers are enlivened by rich crimson linear stains. It is not very unusual for Oncidia to have a terminal inflorescence, as in the *O. acrobotryum* of Klotzsch, which is unquestionably a mere monster of this.

§ 10. PAUCITUBERCULATA.

*** The following plants are all that properly belong to this division. They have never an uneven number of lobes to the crest. *O. serpens* has two—and the others four. If in some other instances there are four principal tubercles only, it will be found that rudimentary ones occur either in front or at the sides, and indicate a tendency to the formation of five or more.

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121. **O. serpens.** *LO.* 204. *Paxt. Fl. G., II. ic.* 125.

Wild in PERU; Patacocha, road to Esmeraldas, at 6000 ft., on trunks of trees—Hall, (*v. s. sp. in hb. Hooker.*)

This must be extremely rare, no other specimen having occurred among the numerous Peruvian collections seen by me, except that gathered by Col. Hall. The flowers are said to be yellow, spotted with dark brown.

* 122. **O. hians.** *Lindley, in Bot. Reg.* 1838, *misc.* 124.

O. quadricorne. *Klotzsch, in Allg. Gartenzeit., Aug.* 7, 1852.
O. leucostomum. *Hffgg. fide Rchb. f.*

Wild in BRAZIL—Hort., (*v. v. c.*)

A little species with small yellow and brown flowers, and a great fleshy white erect four-lobed crest. The stigma is rostrate. The column has no cheeks.

* 123. **O. stramineum.** *Lindl. in Bot. Reg.* 1838, *misc.* 63; 1840, *t.* 14.

O. Columbæ. *Hort.*
O. Columbiæ. *Hort.* } *fide Rchb.*
O. Lindeni. *Hort.*

Wild in MEXICO; near Vera Cruz—Hartweg, (*v. v. c.*)

Flowers straw-coloured, with a few dark specks on the lip, in a dense pancile. The sessile almost rectangular petals are very remarkable.

* 124. **O. cheirophorum.** *Rchb. f. in B. Z.* 1852, *p.* 695! *Xenia ined.*

Wild in VERAGUA; volcano of Chiriqui—Warczewicz, (*v. s. comm. cel. Rchb.*)

A very curious plant nearly allied to *O. stramineum*. Flowers not a quarter the size, clear yellow, whole-coloured. Column with large falcate wings, curved downwards as in the Sarcopterous Plurituberculate race, but not at all fleshy; in front it has a strong recurved tooth. Stigma rostrate. Crest of lip membranous, arched, and two-lobed in front, with a pair of teeth at its base. It exists in Senator Jenisch's garden in Hamburgh.

* 125. **O. Warneri.**

Odontoglossum Warneri. *Lindl. in B. R.* 1845, *misc.* 54; 1847, *t.* 20.
(**A**) **sordidum.** Sepals and petals yellowish, streaked with purple.
(**B**) **purpuratum.** Sepals and petals white, streaked with bright purple.

Wild in MEXICO—Loddiges, (*v. v. c.*)

A plant with conical cæspitose pseudobulbs, and recurved grassy leaves longer than the short raceme. Lip bright yellow, equally four-lobed. Sepals and petals purple, equal, recurved at the points.

§ 11. PLURITUBERCULATA.

*** This large group, consisting as it does of species, or perhaps forms, exceedingly difficult to distinguish, may be classified in the following manner:

1. ROSTRATA.—A small number have the stigma extended into a long slender beak.

2. SARCOPTERA.—Others have the column-wings fleshy, and curved downwards, with a somewhat glandular apex. All these agree in having the gland of the pollen hard, horny, and furnished with a triangular erect process on each side of the sessile pollen-masses.

3. HYMENOPTERA.—The remainder have neither a rostrate stigma nor fleshy column-wings, and the pollen apparatus is in the usual state. A few have dimorphous flowers——*HETERANTHA*; in the rest the flowers are all alike——*HOMŒANTHA*; the last again have column-wings nearly or very considerably obsolete——*obsoleta*; in others the column-wings are expanded into a conspicuous membrane——*expansa*.

Undoubtedly this is quite an artificial arrangement, with the exception of the Rostrata and Sarcoptera: but, in the present state of the genus, with so much more to learn as to the true value of characters, and the exact structure of the flowers of many, no other than an artificial arrangement seems to me to be attainable.

ANALYSIS OF THE SPECIES.

I. ROSTRATA.

Columnæ alis integris	126. *Boothianum.*
——— bipartitis hastatis, laciniis linearibus .	127. *Weddelli.*
——— bilobis hastatis lac. acuminatis . . .	128. *Schlimii.*
——— obtusè reniformibus	129. *tigratum.*

II. SARCOPTERA.

Columnæ alis bilobis.	
Labellum basi et apice æquilatum.	130. *Carthaginense.*
——— angustius.	
Cristæ tubercula 5, v. pluria	131. *luridum.*
——— 3, dentic. 2 adjectis	132. *hæmatochilum.*
Columnæ alis integris.	
Crista carinata dente valido utrinque	133. *Lanceanum.*
—— elevata linearis; tuberc. baseos 2, apicis 3 connatis.	
Labellum basi et apice æquilatum	134. *Cavendishianum.*
——— angustius	135. *bicallosum.*

III. HYMENOPTERA.

A. *HETERANTHA.*

Labellum apice et basi æquilatum	136. *pentadactylon.*
——— basi multò angustius.	
sepala et petala acuta	137. *cultratum.*
———retusa	138. *retusum.*

B. *HOMŒANTHA : * obsoleta.*

Bracteæ magnæ spathaceæ : terminalibus convolutis . 139. *bracteatum.*
——— herbaceæ haud solito majores.
Columna breviss. buccis cartilagineis alisq. rotund. subæq. } 140. *fasciferum.*
——————— basi uncinata; crist. rhomb. rostr. dent. } 141. *planilabre.*
——— elongata arcuata, buccis prominentibus.
petalis latioribus unguiculatis . . . . . 142. *tipuloides.*
—— sepalisq. conformibus.
143. *citrinum.*
144. *picturatum.*
Col. elong. semiteres, v. buccis ferè obsoletis.
racemus pauciflorus simplex.
Col. alæ simplices . . . . . 145. *Pardalis.*
——— utrinque duo distantes . . . . . 146. *cardiostigma.*
panicula (v. racemus basi paniculatus).
Col. al. utrinque 2 distantes, cristâ basi lunatâ. 147. *tetrotis.*
——— rotundatæ.
indivisæ . . . . . 148. *lentiginosum.*
lobatæ.
panic. rami refracti . . . . . 149. *lineoligerum.*
——— – ascendentes . . . . . 150. *altissimum.*
Col. alæ basi extensæ obtusæ.
folia ensiformia.
pet. et sep. in alabastro apice recurva, 151. *sphacelatum.*
——— recta col. alæ multilobatæ, . 152. *Kappleri.*
folia oblonga obtusa ; p. et s. obl. apic. . . 153. *caminiophorum.*
Col. alæ utrinque acutæ . . . . . 154. *Baueri.*

C. *HOMŒANTHA : * * expansa.*

Volubilia.

Col. alæ utrinque acutæ, crista multifida . . . . . 155. *Schillerianum.*
——— dolabriformes, crista carinata utrinque 4-dentata, } 156. *Volvox.*

Recta.

Col. alæ obtusæ semicirculares v. parùm obl.
racemus, labello sepalis multò longiore . . . . . 157. *tigrinum.*
panicula erecta stricta.
sep. et pet. reflexa acuminata.
lab. basi et apice æquilatum, auriculis runcinatis, } 158. *reflexum.*
lab. basi angustius, auriculis rectangulis . . 159. *cæsium.*
sep. et pet. obl. patula . . . . . 160. *pirarense.*
panicula divaricata
crista convexa 5-tuberc. anticè 2-cruris . . . . 161. *suave.*
—— rostrata utrinque denticulata . . . . . 162. *ansiferum.*
——————— dentibus 2 anticis maximis runcinatis, } 163. *microstigma.*
Col. alæ triangulares.
panic. elong. angusta polyclada, bracteis spathaceis. 164. *polycladium.*
racemus effusus paniculatus.
foliis oblongis . . . . . 165. *tenue.*
—— gramineis . . . . . 166. *Suttoni.*

Col. alæ valde obliquæ apice acutæ.
cristæ lobis digitiformibus . . . . . 167. *leucochilum.*
cristâ tuberculatâ.
petalis oblongis obtusis, sepalis acutis . . . . 168. *oblongatum.*
—— sepalisq. conformibus acuminatis.
labellum basi et apice æquilatum . . . . . 169. *delumbe.*
———— multò angustius.
crista 5-dentata lævis . . . . . 170. *nebulosum.*
—— 7-loba rugosa . . . . . 171. *caldense.*
Col. alæ utrinque acutæ (nunc quadratæ).
hastatæ acuminatissimæ . . . . . 172. *Reichenbachii.*
bilobæ acuminatissimæ . . . . . 173. *maizæfolium.*
indivisæ.
sep. et pet. oblonga obtusa . . . . . 174. *sessile.*
———— acuminata.
crista anticè bicruris.
7-loba . . . . . 175. *ensatum.*
3-loba . . . . . 176. *dichromaticum.*
crista triloba.
lobis æqualibus . . . . . 177. *guttulatum.*
lobo medio rostrato pubescente . . . . . 178. *cruciferum.*
———— multò breviore oblongo pubescente, } 179. *cerebrigerum.*

I. ROSTRATA.

* 126. **O. Boothianum.** *Rchb. f. in Bonplandia, Ap.* 1, 1854! *Xenia Orch. ined.*

Wild in VENEZUELA; province of Carabobo, Cumbre de Valencia, at 5000 ft.—Fünck and Schlim, 629; Wagener, (*v. s. sp. comm. cell. Linden, Rchb.*)

Panicle long, slender, drooping, narrow. Flowers small. Sepals and petals very blunt. Lip narrow with a long isthmus, and very round flat auricles.

127. **O. Weddelli.**

O. paniculâ ramosissimâ heteranthâ ramulis flexuosis intricatis, sep. petalisq. lineari-obovatis secundis, labello basi acutè rhombeo anticè elongato in lobum med. reniformem emarginatum expanso, cristâ tomentosâ 5-lobâ dentibus 8 liberis acutis circumstantibus, columnâ tereti tomentosâ alis bipartitis linearibus buccis horizontalibus oblatis.

Wild in BOLIVIA; in the valleys of Tipani and Apolobamba, in the province of Larecaja and Caupolican, among grass—Weddell, (*v. s. sp. in hb. mus. Par.*)

A most curious plant with the habit of *O. pyramidale.* Flowers equally small. Column terete, with a pair of horizontal oval cheeks, and column-wings each divided to the base into two linear lobes, of which the two upper arch over the anther.

* 128. **O. Schlimii.** *Linden. Lindl. in Paxton's Fl. Garden, no.* 444.

Wild in New Grenada, in the province of Ocaña, at the height of 3-4000 ft.—Schlim, 1012, (*v. v. c. et s. sp.*)

Owing to some confusion in my references to Linden's numbers, no one has been able to identify this well-marked plant The panicle is widely spreading, loose, and compound. Flowers bright yellow, spotted with brown. Its two-lobed column-wings, with the lobes divaricating and tapering to fine points, and the rostrate stigma mark it well. In *O. tigratum* the two-lobed column-wings are truncate or even emarginate.

129. **O. tigratum.** *Rchb. f. in Bonpl., May* 1, 1845 !

Wild in Peru—Warczewicz, (*h. fl. s. comm. cel. Rchb.*)

Flowers deep-yellow, with dark crimson blotches. Column-wings so deeply two-lobed, as to be bluntly lunate. Differs from *Weddelli* in the lobes of the column-wings being broader, the column smooth not downy. I have only seen a single flower and a sketch.

II. SARCOPTERA. (Miltoniastrum. *Rchb. f.*)

* 130. **O. carthaginense.** *Swz. act. Holm.* 1800, *p.* 240. *LO.* 201.

(A) Swartzii. Flowers whitish, variegated with ferruginous and purple. Petals paler.

E. undulatum. *B. M. t.* 777.
O. carthaginense. *Swz. fl. ind. occ.* 1479.
E. carthaginense. *Jacq. Amer.* 228, *t.* 133, *fig.* 4.

(B) Oerstedii. Flowers pure white, variegated with various shades of rose.

O. Oerstedii. *Rchb. in Bonpl., Ap.* 1, 1854 !

(C) sanguineum. Flowers smaller than usual, pale yellow, with bright irregular crimson spots.

O. sanguineum. *Lindl. Sert. Orch. t.* 27.
O. Huntianum. *B. M. t.* 3806.
O. roseum. *Lodd. Cat., ed.* 2, *no.* 1318.
O. luridum Henchmanni. *K. & W. Fl. Cab. t.* 97.
O. Henchmanni. *Lodd. Cat., ed.* 2, *no.* 1323.
O. pandurifer um. *HBK., I.* 346, *t.* 82. *LO.* 203.

(D) Klotzschii. Flowers larger than the last, dirty white, marked with round spots of deep rose.

O. Carthaginense. *Lk. Klotzsch & Otto. Ic. t.* 6.

Wild in Tropical America; **A,** Jamaica, on trunks and large branches of trees—Swartz; thick forests of Carthagena—Jacquin; **B,** Nicaragua—Oersted; **C,** La Guayra—Loddiges; Santa Martha—Purdie, in hb. Hooker; **D,** Caraccas—Wagener, (*v. v. c. et s. sp.*)

I return to my original view of the distinctness of this and *O. luridum*, which never has the dorsal sepal arched over the column with a longer unguis than others, nor the base of its lip nearly as broad as the middle lobe, to say nothing of minor distinctions. Prof. Rchb. was led by an inaccurate drawing into proposing *O. Oerstedii*, as I was by the same cause in the case of *O. sanguineum*, whose crest is most incorrectly given in the "Sertum;" it in reality consists of the usual five tubercles, of which one central and two in front are plump and even, while the two in the rear are shrivelled and sinuous. Similar negligence has been shown by the artist who prepared the plate for Link, Klotzsch, and Otto's "Icones," the crest of which bears no resemblance to truth. With regard to this *O. sanguineum*, there is no doubt that the *O. Huntianum* of the "B. M." and it are identical.

Sir Wm. Hooker was misled by the assurance from Woburn, that the plant sent him from that place was Brazilian, not the only misrepresentation which has found its way into public out of that establishment.

O. obsoletum, an unpublished ? name of Galeotti's, evidently belongs to some variety of this, as I learn from Prof. Rchb. To the same acute observer is due the discovery that *O. panduriferum* is nothing more than some common form of *O. carthaginense :* probably of var. *sanguineum*, judging from a flower with which he has favoured me.

* 131. **O. luridum.** *Lindl. in B. R. t.* 727.

(A) olivaceum. Flowers olive-green, with dusky brown blotches. *B. M. t.* 3603.

(B) guttatum. Flowers dull yellow, spotted with cinnamon-brown. *B. R.* 1839, *t.* 16.

Ep. guttatum. *Linn. sp. pl.* 1351.
Cymbidium guttatum. *Willd.* 4, 102.
O. Boydii. *Hort.*
O. cuneatum. *Lindl. Coll. Bot. sub t.* 27.

(C) atratum. Flowers dull olive, with a very dark brown whole-coloured lip. *Hort. Soc. Journ., VI., c. ic. xyl.*

O. Lindeni. *Lodd. Cat.*

(D) intermedium. Flowers dull yellow, marked with circular brown spots. Panicle stiff, narrow, with rigid flexuose branches.

O. intermedium. *Knowles and Westcott Fl. Cab. t.* 60, bad.

(E) Morreni. Flowers pale rose-colour, spotted with crimson and tipped with yellow. Lip cinnamon-brown.

O. cosymbephorum. *Morren. Ann. Gand. t.* 275.

Wild in TROPICAL AMERICA ; **A**, Martinique—Sieber ; Trinidad, —Hooker ; Mexico—Schiede (Rchb.) ; **B**, Jamaica—Hort. ; **C**, Mexico, near Tampico—Hartweg ; **D**, Santiago in CUBA, on the Sierra Maestre, at the height of 5000 ft.—Linden, (*v. v. c. et s. sp*)

Many more varieties might be enumerated, were it desirable—for this is evidently a most variable plant, constant however in the form and proportion of its parts, the column and column-wings, and also in the crest, with the exception that in **D**, which may be a distinct species, an additional tubercle or two appears on the outside of the others.

* 132. **O. hæmatochilum.** *Lindl. in Paxt. Fl. Gard. t.* 6.

Wild in NEW GRENADA—Loddiges, (*v. v. c.*)

Intermediate as it were between *O. Lanceanum* and *luridum*. Sepals and petals green mottled with crimson. Lip crimson mottled with white. Pollen-masses and appendages those of *O. luridum*.

* 133. **O. Lanceanum.** *Lindl. in Hort. Trans. n. s., II.* 100, *t.* 7. *Bot.Reg. t.* 1887.

Wild in SURINAM—Lance, Regel 1786, Hostmann 342, (*v. v. c. et s. sp.*)

This beautiful plant seems confined to Surinam. Its sepals and petals are greenish richly mottled with brown ; its lip rose-colour, deep violet on the lower half. The flowers are fragrant, like Vanilla, and vary in the depth of colour; but this seems to depend on cultivation only.

* 134. **O. Cavendishianum.** *Bateman Orch. Mex. t.* 3.

O. pachyphyllum. *Hook. Bot. Mag. t.* 3807.

Wild in GUATEMALA—Skinner, (*v. v. c. et s. sp.*)

Flowers large yellow, in a stiff panicle, with a tinge of green on the sepals and petals. Base of lip much wider than the middle lobe. *O. pachyphyllum* has some crimson spots on the sepals and petals.

* 135. **O. bicallosum.** *Lindl. in Benth. Pl. Hartw. p.* 94. *B. R.* 1843, *t.* 12. *B. M. t.* 4148.

Wild in GUATEMALA—Hartweg, (*v. v. c. et s. sp.*)

Much like the last; but the basal lobes of the lip are very much smaller, the flowers are always larger, and they usually (always?) grow in a raceme instead of a panicle. Sir W. Hooker suggests that it may be a variety: but the differences indicated seem constant.

III. HYMENOPTERA. A. *HETERANTHA.*

136. **O. pentadactylon.** *Lindl. in Ann. Nat. Hist., XV.* 383.

Wild in PERU; Quito—herb. Hooker; village of Tambillo—Hartweg, Jamieson, in hb. Hooker; CARACCAS, Paramo of Ruiz—Purdie, (*v. s. sp.*)

Flowers small, in a long narrow many-flowered panicle, fragrant (Purdie), apparently gaily blotched with brown on yellow.

137. **O. cultratum.** *Lindl. in Ann. Nat. Hist., XV.* 384.

Wild in POPAYAN; in woods on the ascent to Sotara—Hartweg, (*v. s. sp.*)

A small species, about six inches high, with a stiff curving slightly panicled raceme.

138. **O. retusum.** *Lindl. in Bot. Reg. sub t.* 1920. *Paxt. Fl. G., II. ic.* 136.

Wild in PERU; M. Pariahuanca—Mathews, 1066, (*v. s. sp. in hb. Hooker.*)

Perhaps the rarest of its race. Flowers marked with intensely brown bands nearly up to the edge.

B. *HOMŒANTHA:* * *obsoleta.*

139. **O. bracteatum.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 695!

Wild in VERAGUA; Chiriqui, on trees, at 6-9000 ft.—Wagener.

A few flowers from Prof. Rchb. do not enable me to examine this satisfactorily. Its scabrous peduncles and great spathaceous bracts are remarkable. "The end of the inflorescence is terminated by convolute bracts." —*Rchb. in litt.*

140. **O. fasciferum.** *Rchb. f. in Bonpl., May* 1, 1854!

Wild in PERU; at the sources of the Marañon—Warczewicz, (*v. s. sp.*)

A tall branching wide panicle, with acuminate spathaceous bracts half as long as the peduncle, and an extremely short column, with small circular wings and cartilaginous cheeks of the same form, and not much larger, are characteristic of this well-marked plant. The crest consists of a broad blunt carina, on each side of which stands a pair of notched teeth, one a little in front of the other. I have a fine specimen from Warczewicz.

* 141. **O. planilabre.** *Lindl. in Journ. Hort. Soc., VI.* 59, *c. ic. xyl.*

Wild in BRAZIL; locality unknown, (*v. v. c.*)

Flowers dull olive-brown, except the lip, which is clear yellow, and cinnamon coloured at the base. The singular rhomboidal denticulate crest with the anterior angle produced and resting upon a pair of unequal teeth on either side is very peculiar.

142. **O. tipuloides.** *Rchb. f. in B. Zeit.* 1852, *p.* 856!

Wild in PERU; Cuchero—Pöppig.

Sepals lanceolate, wavy, narrower than the oblong acute unguiculate petals. Lip hastate, very narrow at the base, tapering into a long narrow unguis expanding into a bluntly crescent-shaped emarginate middle lobe. Crest small, consisting of a horse-shoe ridge, whose convexity is extended into a keel, with a small wart at the base on either side. Flowers yellow, very narrow, with a few reddish-brown flecks. From a sketch communicated by Rchb. and his description.

* 143. **O. citrinum.** *Lindl. in B. Reg. t.* 1758.

Wild in TRINIDAD—Loddiges, (*v. v. c.*)

Flowers bright yellow, with a few dull clouds on the sepals and petals. This must be near *tipuloides*, which I have not seen. The cheeks of the column are more conspicuous than in any of the succeeding of this section.

144. **O. picturatum.** *Rchb. f. in Bonpl., Ap.* 1, 1854!

Wild in the CARACCAS—Warczewicz, (*v. s. c. comm. cel. Rchb.*)

Extremely like *O. citrinum*, except that the flowers have olive-green sepals and petals, spotted like those of *O. leucochilum*. This and the last require to be compared in a living state.

145. **O. Pardalis.** *Rchb. f. in Bonpl., Ap.* 1, 1854! *Xenia ined.*

Wild in LA GUAYRA—Wagener.

Apparently a small species with the habit of *O. cardiostigma*. Scape few-flowered, racemose. Sepals and petals exactly alike, lanceolate. Lip nearly as broad at the point as the base, denticulate at the incurved sides. Column slender and without projecting cheeks; wings merely two inconspicuous membranous teeth. Flowers yellow with blue! (*blauen*) flecks. I have a flower from Prof. Rchb.

* 146. **O. cardiostigma.** *Rchb. f. in Bonpland., Ap.* 1, 1854.

Wild?; said to come from Mexico, (*v. s. c. comm. cel. Rchb.*)

Seen in cultivation with Booth and Sons, of Hamburgh. Pseudobulb slender, narrow, two-edged, furrowed. Leaf about four inches long, narrow,

complicate, oblique at the point. Scape shorter than the leaf, three or four flowered. Flowers small, with brown sepals and petals, the last of which are the widest ; lip yellow, brown at the base. Column with two small auricles on each side, instead of column-wings.

147. **O. tetrotis.** *Rchb. f. in Bonpl., May* 1, 1854 !

Wild in NEW GRENADA—Warczewicz.

Panicle long, with short branches. Flowers as large as in *O. Baueri*. Sepals and petals brown. Lip yellow. Crest horse-shoe-shaped at the base, with the convexity next the column ; in the curve lies a papillose convexity, and in front of all are about four small warts. Two very minute rudiments placed one above the other on either side of the stigma represent the column-wings. From a sketch by Rchh. and his description.

* 148. **O. lentiginosum.** *Rchb. f. in Bonpl., Ap.* 1, 1854 ! *Xenia ined.*

Wild in the CARACCAS—Wagener, (*v. s. sp. comm. cel. Rchb.*)

Pseudobulbs small, furrowed. Panicle is described as ample, with few-flowered divaricating branches. The specimen before me is a slender lateral, with the flowers one inch and a half, and the branchlets two inches apart. The flowers are thin, delicate, as large as in *altissimum*, clear yellow, with minute brown freckles on the sepals and at the base of the lip. The crest consists of five very small carinulæ, $\frac{2}{3}$ with a rudimentary tooth or two in addition. In German gardens.

149. **O. lineoligerum.** *Rchb. f. in Bonpl., May* 1, 1854 !

Wild in PERU—Warczewicz.

A sketch of the flower and a few fragments are before me : but they do not enable me to add anything to Prof. Rchb.'s description. It seems to be very near *O. altissimum*, if indeed it be distinct, which is questionable.

* 150. **O. altissimum.** *Swartz. LO.* 200. *B. R. t.* 1851. *B. M. t.* 2990.

Wild in the WEST INDIES, (*v. v. c.*)

Racemes sometimes thirteen feet long, almost simple except quite at the base. Sepals and petals brown and yellow. Lip bright yellow. The column is rather short ; its wings wavy and somewhat lobed.

* 151. **O. sphacelatum.** *Lindley, Sert. Orch. sub t.* 48. *B. R.* 1842, *t.* 30.

(A) minus. Flowers small. Raceme panicled at the base.
(B) majus. Flowers larger. A complete panicle.

Wild in GUATEMALA; Malpais—Skinner; Honduras—Loddiges; MEXICO—Oaxaca, on trees and rocks, at 2-3000 ft.—Galeotti, 5176 ; Tabasco—Linden, 1223, (*v. v. c. et s. sp.*)

Remarkable for its brilliant yellow, and the rich brown of the sepals and petals. Its column-wings are always brown at the edge. The two varieties in cultivation seem to be constant in the peculiarities of their respective inflorescence. The buds always, before expansion, *curve back* the points of the sepals and petals in the form of five recurved horns.

152. **O. Kappleri.** *Rchb. f. in litt.*

Wild in SURINAM; Paramaribo, at 1600 ft.—Kappler, (*v. s. sp. comm. cel. Rchb.*)

Leaves ensiform, in which respect it resembles *O. altissimum.* Column-wings crisp, lobed, extended into a toothed truncated ligulate appendage at the base, resting on a pair of projecting angles. Crest $\frac{5}{3}$. Rchb. distinguishes this which seems very near *O. altissimum.* I have described the details of a sketch sent me by Rchb.: but I have had no opportunity of examining the plant satisfactorily.

* 153. **O. caminiophorum.** *Rchb. f. in Bot. Zeit.* 1852, *p.* 857 !

Wild in the CARACCAS; Carabobo—Wagener.

From a sketch of the foliage sent me by Prof. Rchb., this seems to have the habit of *O. flexuosum.* The leaves are bluntly emarginate. The flowers rather smaller, "yellow with much brown; lip yellow," with some brown in front of the crest. Column slender with no projecting cheeks; the wings very narrow. Crest with one long blunt principal tooth, at the base of which are three small sharp diverging ones on each side, and at the point two little warts. Rchb. who saw it alive in a German garden, compares it to *Suttoni* or *tenue.*

* 154. **O. Baueri.** *LO.* 200.

O. altissimum. *B. Reg. t.* 1651.

Wild in the WEST INDIES and CONTINENT; Dominica—Imray in hb. Hooker, (*v. v. c.*)

Often mistaken for *O. altissimum,* from which it differs in its scape being panicled from the very base, in its longer pseudobulbs, and sharply truncated column-wings.

C. *HOMŒANTHA* : * * *expansa.*

* 155. **O. Schillerianum.** *Rchb. f. in Bonpl., Ap.* 1, 1854 !

Wild in ——— (*v. v. c. comm. dom. Booth.*)

An undetermined specimen of this from Messrs. Booth and Co., of Hamburgh, has been in my herbarium since 1846. Flowers greenish yellow, clouded with brown. It is a very distinct species, of little beauty, with a loose few-flowered twining panicle. The crest consists of teeth and lamellæ placed thus, $_5{}^3{}_5$ $_2$ $_2$ $_2$

* 156. **O. volvox.** *Rchb. in Bonpl., April* 1, 1854 !

Wild in the CARACCAS—Wagener, (*v. s. sp. comm. cel. Rchb.*)

Another convolvulaceous species, but with bright yellow flowers. The crest consists of a central keel, with a pair of teeth at its base, and on either side two other keels, one behind the other, and each deeply two-lobed. Cultivated in German gardens.

* 157. **O. tigrinum.** *Llav. & Lex. Orch. Mex., p.* 36. *LO.* 203.

O. Barkeri. *Lindl., in B. R.* 1841, *misc.* 174. *Sertum Orchidaceum, t.* 48.

Odontoglossum tigrinum. *Lindl. Folia, no.* 10.

(B) unguiculatum. *Lindl. in Journ. of Hort. Soc., I.* 303, *c. ic. xyl. Paxt. Fl. Gard., II. ic.* 134.

O. ionosmum. *Hort.*

Wild in MEXICO; on the Irapæan mountains, near Valladolid and Paracho—Lexarza; Mechoacan—Ghiesbreght, (*v. v. c.*

I have seen no wild specimens of this noble plant, whose panicle of flowers richly spotted with brown, is sometimes a yard high. The flowers, which have a large yellow lip, smell delightfully of violets. **B** has smaller flowers in a panicle, but is hardly worth distinguishing even as a variety. We owe to the acuteness of Prof. Reichenbach the unexpected identification of *O. tigrinum*, the "Flor de Muertos" of the Mechoacans, with my *O. Barkeri*, which I have every reason to believe was obtained by the late Mr. Barker from the West of Mexico. For the reasoning upon which the descriptions of Llave and Lexarza is made to suit *O. Barkeri*, see *Bonplandia*, Aug. 1, 1853.

* 158. **O. reflexum.** *Lindley, in Bot. Reg., sub t.* 1920. *Rchb. f. Xenia, t.* 36, *fig.* 1.

(**A**) Sepals and petals regularly speckled with brown. *Lip* with a few red specks at the base.

(**B pelicanum.** Flowers larger. Sepals bright yellow, spotted with crimson near the base. Lip with a rich crimson stain round the crest.

O. pelicanum. *Martius. Bot. Reg.* 1840, *misc.* 216, 1847, *t.* 70.

Wild in MEXICO, (*v. v. c.*)

In reconsidering these critically, I doubt their distinctness. They both have the same habit, and the same column and lip; but in **B** *the crest is* smooth and seven-toothed, while in *reflexum* it is downy and five-toothed. But I fear such distinctions are not permanent.

* 159. **O. cæsium.** *Rchb. f. in Regel's Gartenflora, t.* 80! *Xenia Orch. t.* 36, *f.* 2.

Wild in ———. Described from a German Garden, (*v. floreum virum comm. cel. Rchb.*)

Very like *O. reflexum*, under which name it was received in Mr. Keil's garden at Leipsig, from Allardt of Berlin. Prof. Rchb. distinguishes it by the short ears of the lip, the larger flowers with a very much more *refracted* dorsal sepal, and its cæsious colour. A fresh flower with which he has favoured me corresponds exactly with his statement.

160. **O. pirarense.** *Rchb. f. in Linnæa, XXII.* 846!

Wild in GUIANA; near Pirara—R. Schomburgk.

Very different from the species near it, except *O. sessile* in its large flowers with broad bluntish spreading, not reflexed sepals and petals. The crest, which is remarkable, is described by Rchb. as a single callosity *with* three lobes, of which the lateral are angular and obtuse, the middle one longer and emarginate.

* 161. **O. suave.** *Lindley, in Bot. Reg.* 1843, *misc.* 22. *Part. Fl. G., II. ic.* 135.

O. Wendlandianum. *Rchb. f. in Bonpl., Ap.* 1, 1854!
O. macropterum. *A. Rich. & Galeott. Orch. Mex.*
O. Tayleuri. *Hort.*

Wild in MEXICO—Schiede, Galeotti; near Oaxaca, at Teoxomulco, on Pinus Teocote—Karwinski in hb. Monac., (*v. v. c. et s. sp.*)

Its brown reflexed sepals and petals, yellow lip with a broad cinnamon stain at the base, rounded column-wings, and peculiarly straggling inflorescence mark this satisfactorily. In *O. Wendlandianum*, from the garden of Herrnhausen, for which I am indebted to Prof. Rchb., the leaves are longer and broader than usual. *O. macropterum* from Galeotti himself (no. 5046 *bis*), is also from Oaxaca, and no doubt must be also referred to this place.

162. **O. ansiferum.** *Rchb. f. in B. Zeit.* 1852, *p.* 695!

Wild in VERAGUA; Chiriqui, at 8000 ft.—Warczewicz, (*v. s. sp. comm. cel. Rchb.*)

Well distinguished from *O. suave*, which it is very near, not only by the middle point of the crest being prolonged into a downy beak, but by longer and more wavy sepals and petals, a very short column, the cheeks of which, although very prominent, are scarcely discoverable above the crest, and by the crest itself having a lobed tooth on either side at its base.

* 163. **O. microstigma.** *Rchb. f. in Bonpl., April* 1, 1854!

Wild in ————. Obtained by Rchb. from Consul Schiller's garden.

"Sepals and petals orange-yellow; lip pale, almost white." I have a single flower and a drawing. From the latter it appears that the crest is very different from that of *O. suave*, to which I should have otherwise referred it; the centre of the crest consists of three equal sharp teeth, with a very small one in the angles; in addition to which there are two large front teeth, which stand below the others, and curve *backward*. It is described as having the habit of *O. ansiferum*.

164. **O. polycladium.** *Rchb. MSS.*

O. folio lanceolato-lorato, paniculâ homœanthâ longâ angustissimâ ramulis spathaceo-bracteatis valdè flexuosis sub-4-floris, sepalis petalisq. lanceolatis undulatis acutis, labelli lobis lateralibus runcinatis subitò in intermedium duplò latiorem subrotundum bilobum transeuntibus, cristâ trilobâ adjectis dentibus 2 sub apice et 2 alteris juxta basin, columnæ alis triangularibus acutis buccis conicis.

Wild in COSTA RICA, VERAGUA; Chiriqui—Warczewicz, (*v. s. sp. comm. cel. Rchb.*)

Flowers seem to be coloured as in *O. Baueri*; but they are as small as in *O. pentadactylon*, and appear in a long, very narrow raceme, the lateral branches of which are not more than one inch and a half long, in about four-flowered right-angled zigzags. The spathaceous bracts are as long as the internodes, or even longer.

* 165. **O. tenue.** *Lindley, in Journ. Hort. Soc., III.* 76, *c. ic. xyl.*

Wild in GUATEMALA — Hartweg; MEXICO, near Oaxaca—Galeotti, 5324, (*v. v. c.*)

Pseudobulbs extremely thin. Flowers in a straggling raceme or imperfect panicle; the size of those of *O. suave*. I have had it from Sir Philip Egerton with pseudobulbs as broad as the hand, and a panicle four feet long. The supposed variety mentioned in the seventh Vol. of the "Hort. Soc. Journal" will be mentioned further on (see no. 169).

* 166. **O. Suttoni.** *Bateman in B. R.* 1842, *misc.* 8. *Paxton Fl. Gard., II. ic.* 129.

Wild in GUATEMALA; Medio Monte, where it grows with O. ornithorhynchum—Skinner, (*v. v. c. et s. sp.*)

A species of little interest, with narrow grassy leaves, and very long drooping panicled racemes, of dull yellow and brown flowers.

* 167. **O. leucochilum.** *Bateman B. R. t.* 1920. *Orch. Mex. t.* 1.

Cyrtochilum leucochilum. *Planchon, Fl. des Serres, t.* 522.

(B) digitatum. Fingers of the crest nine at least, instead of five.

O. digitatum. *Lindl. in Benth. Pl. Hartweg., p.* 94. *Paxton l.c. ic.* 138.

Wild in MEXICO; on mountains near Malacatan—Hartweg; GUATEMALA, in the cold districts—Skinner, (*v. v. c. et s. sp.*)

Many varieties in colour of this beautiful plant are found in Gardens; one with chocolate-brown stains on the flowers, another with brown flecks on a green ground, and a third of one dull olive-brown tint. In all of them the lip is snow-white when first open, becoming yellowish afterwards. But I have seen with Sir Philip Egerton a flower *just opened*, the lip of which was perfectly yellow; the other flowers having white lips as usual. According to Mr. Skinner, the summer temperature of the country where this species grows wild is between 55° and 70°; he adds that in December, 1839, the thermometer in Guatemala, at 6 A.M., in the open air, for three days, averaged 36°, and yet the plants continued to shoot their young stems.

* 168. **O. oblongatum.** *Lindl. in B. Reg.* 1844, *misc.* 11. *Paxton l.c. ic.* 137.

O. xanthochlorum. *Klotzsch, fide Rchb. in litt.*

Wild in MEXICO—Loddiges, (*v. v. c.*)

Flowers large, clear sulphur-yellow, with a few pale reddish-brown spots. Petals rather wider than sepals, and much more blunt. Lip with the middle lobe deeply fissured, inclining to four-lobed, the outline being bluntly angular. I have a sketch of this with three stigmatic glands; one in the usual place, and the two others at the base of the two column-wings.

* 169. **O. delumbe.**

O. tenue grandiflorum. *Lindl. in Hort. Soc. Journal, VII.* 271. *ic. xyl.*

Wild in GUATEMALA—Skinner, (*v. v. c.*)

Whole habit that of *O. tenue*, with the same thin pseudobulbs and loose straggling panicle. But the flowers are larger, the back sepal is so much reflexed as to be almost parallel with the peduncle, giving the flower a broken-backed appearance, the lip is broad at the base, &c.

* 170. **O. nebulosum.** *Lindl. in Bot. Reg.* 1841, *misc.* 175.

O. Geertianum. *Morren in Ann. Gand., Feb.* 1848.
O. Klotzschianum. *Rchb. f. in B. Z.* 1852, p. 695!

Wild in GUATEMALA—Skinner; VERAGUA, Chiriqui, at 4-5000 ft.—Warczewicz, (*v. v. c.*)

A flower from Prof. Rchb. identifies the second synonym. The plant is rarely seen in gardens. Like so many others this varies in the size of its flowers, which, however, are always pale yellow, with faint spots of brown at the base of the lip, and on both sepals and petals.

* 171. **O. caldense.** *Rchb. f. in Linnæa, XXII.* 846!

Wild in BRAZIL; Minas Geräes — Regnell; Gongosoco — Loddiges, (*v. v. c. et s. sp. comm. cel. Rchb.*)

A straggling plant, with yellow flowers spotted with brown. The petals are broader than the sepals, more ovate, and like them very acute. The crest consists of five long, blunt, somewhat cylindrical, rugged processes next the column, and three others rather larger in front. It is much like *ramosum* (no. 185), but the crest is totally different, with none of the additional threads and varicosities of that species. It also seems to be a plant with a more lax panicle.

172. **O. Reichenbachii.**

O. foliis oblongo-loratis obtusiusculis, paniculâ elongatâ angustâ debili ramulis retrofractis flexuosis, sepalis petalisq. lineari-lanceolatis acuminatis undulatis, labello obtusè lunato bilobo lobis posticis rectangulis rotundatis latiore, cristæ dentibus juxta columnam acervatis in fronte tribus filiformibus, columnæ alis hastatis acuminatissimis.

Wild in NEW GRENADA; in the province of Ocaña, at 5000 ft. —Schlim, 27; VENEZUELA, at Laguneta, in the province of Merida, at 7000 ft.—Fünck and Schlim, 1030, (*v. s. sp. comm. cel. Linden et Rchb.*)

The very imperfect definition given of *O. maizæfolium* in the "Orch. Lindenianæ" has led to this plant being taken for it by Prof. Reichenbach. It differs in the lower angle of the column-wings not being extended downwards into an acute lobe, and in its long narrow panicle, with divaricating branches. The flowers are said to be "yellow spotted with brown" in Ocaña, and "yellow spotted with red" in Merida. My specimens of the first are also stronger than the other, with less zigzag side branches. I propose to name it in honour of my very sharp-sighted and indefatigable fellow-workman in this difficult mine.

* 173. **O. maizæfolium.** *Lindl. Orch. Lind. no.* 78.

Wild in VENEZUELA; forests on the slope of the Sierra Nevada, in the province of Merida, at 7000 ft.—Linden, (*v. s. sp.*)

Leaves nearly one inch and a half wide, coarsely ribbed (when dry). Flowers in a very large entangled branching panicle. "Petals bright yellow, spotted with red. Lip pale yellow." Very distinct from the preceding. I have it from Mr. Rchb. as *O. Schlimii?* gathered in N. Grenada, by Warczewicz.

* 174. **O. sessile.** *Lindley, in Paxton's Fl. Garden, t.* 21.

Wild in the CARACCAS; Santa Martha—Purdie, (*v v. c.*)

The large golden-yellow flowers rival those of *Cavendishianum*. Their broad oblong sepals and petals, with a few cinnamon spots at the base, are remarkable. *O. pirarense* (no. 160), with flowers of a similar form, has long auricles to the lip, and a totally different crest.

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* 175. **O. ensatum.** *Lindl. in B. Reg.* 1842, *misc.* 15.

Wild in GUATEMALA — Skinner; MEXICO, near Oaxaca — Hartweg, (*v. v. c.*)

Panicle very open, once only branched, gracefully bending at the point, with conspicuous herbaceous mucronate bracts. Leaves narrow, like a straight two-edged sword.

* 176. **O. dichromaticum.** *Rchb. f. in Bonpl., Ap.* 1, 1855 !

Wild in ———. Cultivated by Booth and Sons, of Hamburgh.

The leaves of this are undescribed, and I am not certain how it is to be distinguished well from *O. ensatum*. The flowers are smaller, and the sepals and petals shorter, the latter being somewhat the widest. In the crest it would seem that more distinctions occur; for according to a sketch by Mr. Rchb., that of *O. dichromaticum* is two-lobed at the base, with only a pair of long legs in front, and a short tooth between, while in *O. ensatum* it is distinctly five-lobed, in addition to the two front legs. These would seem to be sufficient differences.

* 177. **O. guttulatum.** *Rchb. f. in litt.*

Wild in ———. Obtained from the garden at Herrenhausen, (*v. s. c. comm. cel. Rchb.*)

The following is Prof. Rchb.'s description :—"*Sepala* lanceolata, acuta, undulata, ultra medium basin usque brunneo picta. Tepala (*Petala*) latiora, undulata, apicibus inflexis. *Labelli* sessilis auriculæ basilares obtusæ in isthmum obcuneatum constrictæ; apex basi æquilatus, reniformis, bilobulus. Isthmus brunneo fasciatus. Callus baseos (*crista*) depressus, minutè pulverulus, p nduratus, apice tridentatus, lateribus hinc minutè serrulatus, albidus, fusco-guttatus. Gynostemium (*Columna*) curvatum, gracile; rostellum trilobum; *alæ* angustæ quadratulæ, utrinque obtusangulæ."—The appearance of the specimen before me is that of *Onc. lentiginosum*.

178. **O. cruciferum.** *Rchb. f. in Bonpl., May* 1, 1854 !

Wild in PERU—Warczewicz.

Near *O. excavatum*, but with a cruciform crest toothletted at the end beaked in the disk, with retuse somewhat lobed column-wings. Panicle long, with a few distant straight branches, the lowest of which are five-flowered. Intermediate as to petals between the macropetalous and micropetalous groups. Auricles of the lip with long narrow ungues.—*Rchb. f.* In my solitary flower the isthmus connecting the base and apex of the lip is very long, and the crest is remarkable for a long downy incurved horn standing at right angles to a pair of flat emarginate teeth; in addition to which there are four warts, two below the teeth, and two at the base of the horn.

179. **O. cerebriferum.** *Rchb. f. in B. Zeit.* 185?, *p.* 695 !

Wild in VERAGUA; Chiriqui, at 4-6000 ft.—Warczewicz.

Much like the last in the form of the flowers; but the column is very short, with its cheeks verruciform, prominent, and almost hidden by the crest. Of the latter the centre is occupied by a thick, downy, blunt tooth, on each side of which are about four smoother short tubercles. It is very much like *O. ansiferum* (no. 162), with which it must be further compared.

§ 12. VERRUCITUBERCULATA.

ANALYSIS OF THE SPECIES.

Columna aptera . . . . . 180. *panchrysum.*
——— alata.
alæ angulatæ
excisæ basi acutæ.
sep. et pet. linearia obt. apiculata . . . . . 181. *auriferum.*
——— lanceolata acuminata . . . . . 182. *armillare.*
excisæ basi cordatæ . . . . . 183. *foveatum.*
alæ indivisæ rotundatæ.
crista varicosa rugosa, panic. corymbosa . . . 184. *rupestre.*
crista lamellata, panic. sæpius divaricata . . . 185. *Batemannianum.*

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* 180. **O. panchrysum.** *Lindl. in Journ. Hort. Soc., IV.* 267, *c. ic. xyl.*

O. anomalum. *Rchb. f. in Linnæa, XXII.* 845. *Bonpland., Dec.* 1, 1854 !

Wild in NEW GRENADA; province of Pamplona, at 8000 ft.—Funck and Schlim, 1432; province of Ocaña and Sota, at 7500 ft.—Schlim, 1018; Socorro—Linden, 123, (*v. v. c. et s. sp.*)

A very pretty species, with small pure yellow flowers in a close pyramidal panicle, all the green parts covered with a delicate bloom, wherefore I once gave a specimen from Mr. Linden the name of *O. glaucescens.* I have never seen the crest in the state described in the "Linnæa;" but have invariably found it to consist of a central three or four-toothed ridge, with a pair of elevated lines in front, and a few free warts on either side.

181. **O. auriferum.** *Rchb. f. in Linnæa, XXII.* 847. *Bonplandia, Ap.* 1, 1854 !

Wild in NEW GRENADA; Merida, at 7000 ft. — Fünck and Schlim; Wagener, (*v. s. sp. comm. cel. Linden.*)

Very like *O. panchrysum*, from which its great column-wings distinguish it. Its flowers are not whole-coloured, but marked with brown even on the lip.

182. **O. armillare.**

O. habitu omninò O. auriferi, floribus majoribus, sepalis petalisque lanceolatis acuminatis, cristæ carinis 3 flexuosis anticè in dente valido evanescentibus verruculis circumstantibus.

Wild in PERU—W. Lobb, (*v. s. sp. comm. dom. Veitch.*)

Another form, extremely like that of *panchrysum*, but with the column-wings of *auriferum.* Than the latter the flowers are larger, the sepals and petals lanceolate acuminate, not linear and obtuse with a point, and the crest has three deep wavy keels, each terminating in front in a strong upright tooth. Two other teeth of the same form and size rise in front of these, and about four emarginate warts form a curve on each side.

183. **O. foveatum.**

O. habitu O. panchrysi, sed floribus duplò majoribus intensè luteis cinnamomeo fasciatis, labelli lobo medio maximo basi auricularum loco circulari, cristâ basi foveatâ anticè bicruri verruculis pluribus interjectis et circumstantibus, columnæ alis dimidiatis acuminatis cordatis medio emarginatis.

Wild in PERU; sources of the Marañon—**Warczewicz**, (*v. s. sp.*)

From the three preceding, of which it has the habit, this is immediately distinguished by its large bright yellow flowers banded with brown, peculiar column-wings, which might rather be called column-ears, and the form and crest of the lip.

* 184. **O. rupestre.** *indl. in Plant. Hartw.*, 151.

(B) Skinneri. Lip apiculate. Bracts adpressed.

O. Skinneri. *Lindl. in Gard. Chron.* 1855, *p.* 629.

Wild in PERU; on walls and rocks in and about Loxa—Hartweg, (*v. s. sp.*; **B**, *v. c.*)

A very stout species, with leaves ten to fifteen inches long and two broad, and a stiff pyramidal panicle two feet high and a foot wide. The plant I have called *O. Skinneri* should, I think, upon final consideration, be regarded as a variety, with close pressed bracts, and an apiculate lip. The other differences which were supposed to exist are probably referable to the different condition of the dried and recent specimens. It is a very fine plant. The branches of the panicle are covered by a most delicate bloom. The flowers, as large as the largest form of *O. ampliatum*, are a brilliant golden yellow, with about three cinnamon blotches at the base of each division, and a stain of the same colour across the lip immediately below the crest and at the base of its side lobes. The numerous sinuosities of the crest are white.

* 185. **O. Batemannianum.** *Knowles and Westc. Fl. Cab., III.* 183, *t.* 137.

(A) spilopterum. Flowers racemose. Sepals and petals green outside, red inside; middle front tooth of the crest much larger than the others.

O. spilopterum. *Lindl. in B. Reg.* 1844, *misc.* 76, 1845, *t.* 40.
O. gallopavinum. *Morren in Ann. Gand., I.* 13.

(B) ramosum. Fowers in a very large panicle. Brilliant yellow, with the sepals and petals banded with rich chocolate.

O. ramosum. *Lindl. in B. Reg. sub fol.* 1920.
O. Pinellianum. *Hort. HS. Journ., Jan.* 1848, *c. ic. xyl.*

Wild in BRAZIL; Itacolumi, near Villa Rica, in the province of Mines—Martius, (*v. v. c. et s. sp. in hb. Martius.*)

A tall dense erect branching panicle belongs to this, which has the lower sepals much narrower than the petals, which are rather broader than the dorsal one. Its crest consists of three to five short plates at the base, and three others in front, diverging and irregularly lobed; around which are several other processes, besides a few varicosities towards the edge of the lip. It was formerly cultivated by Mr. Barker, who called it *O. anomalum*, because its flowering stem grew from the apex of the pseudobulb. Flowers large, brilliant yellow, with the isthmus of the lip and the sepals and petals blotched with the richest chocolate in one variety, and dull red, green outside, in another. A very fine and complete specimen in my herbarium shows how

variable the flowers are in size, some on the same panicle being hardly half an inch across, while others are more than an inch. It has evidently a tendency to pass into the dimorphous state. After the most careful examination of the original evidence, I can come to no other conclusion than that all the supposed species, now reduced to one, are mere forms of one another. I also fear that *O. caldense* (no. 171) must be reduced to this. That all are Brazilian is unquestionable ; and yet it is asserted in gardens that some come from Mexico. Rchb. refers *O. stenopetalum* of Klotzsch to this species.

§ 13. BASILATA.

ANALYSIS OF THE SPECIES.

Panicula heterantha.
- Labellum trilobum apice acutum . . . . . 186. *abortivum.*
- ——— panduratum, alis dolabriformibus . . . 187. *heteranthum.*
- ——— alis obsoletis . . . . . 188. *chrysomorphum.*

Panicula homœantha.
- Stigma rostratum
  - lab. lob. med. 2-lobo . . . . . 189. *ornithorhynchum.*
  - lab. lob. med. acuto. . . . . 190. *trulliferum.*
- Stigma muticum.
  - lab. lob. medius ovatus acutus.
    - sepalis petalisque linearibus longissimis acuminatis. } 191. *phymatochilum.*
    - ——— lanceolatis . . . . . 192. *hastatum.*
  - petalis latioribus sep. lat. connat. . . . . 193. *ochmatochilum.*
  - lab. lobus medius reniformis.
    - labelli lob. lat. acutis . . . . . 194. *raniferum.*
    - ——— dilatatis rotundatis.
      - isthmo elongato cuneato . . . . . 195. *Wentworthianum.*
      - ——— brevi repando . . . . . 196. *pergameneum.*

186. **O. abortivum.** *Rchb. f. in Linnæa, XXII.* 847.

Wild in the CARACCAS—Wagener, Moritz, (*v. flores comm. cel. Rchb.*)

Flowers panicled, for the most part abortive, of a very thin texture. Sepals and petals which are broader, very acute. Lip equally three-lobed, the middle lobe acute. Crest many-fingered. Column-wings ligulate, recurved, denticulate at the end. Stigma rostrate.

187. **O. heteranthum.** *Pöppig & Endl. N. G. and Sp., I.* 34, *t.* 60.

Wild in PERU ; on trees near Pampayaco—Pöppig ; Mathews, 1917, (*v. s. sp.*)

What I take to be this plant has a long drooping panicle, with compound flexuose divaricating branches about two inches long at the longest. The column-wings are coarsely serrated. The crest consists of nine to eleven blunt equal teeth, forming a narrow line thus $\begin{smallmatrix} & 2 & \\ & 3 & \\ 2 & \text{or} & 4 \\ & 2 & \end{smallmatrix}$

* 188. **O. chrysomorphum.** *Lindl. in Bot. Mag. ined.*

O. foliis loratis obtusis, paniculâ pyramidali heteranthâ ramis recurvantibus flexuosis basi spathaceis, sepalis petalisq. obovatis obtusis reflexis, labelli basi latioris apice bilobi isthmo oblongo lobis imbricantibus, cristâ 3-carinatâ utrinque versus basin crenatâ callo crenato utrinque adstante, columnâ ferè apterâ basi planâ elevatâ.

Wild in the CARACCAS; Santa Martha—Purdie, (*v. s. c. in hb. Hooker.*)

Leaves like those of *panchrysum*, but broader and stouter. Panicle rather taller, about a foot high, with a stiff peduncle clothed with three or four spathaceous sheaths, and similar conspicuous bracts at the base of each branch; quite erect, every division flexuose, with the lateral branches curving downwards. Flowers pure golden yellow, with paler ends, the size of *O. panchrysum*, with remarkably obtuse sepals and petals.

* 189. **O. ornithorhynchum.** *HBK. LO.* 204. *Bateman Orch. Mex. t.* 4. *B. R.* 1840, *t.* 10. *B. M. t.* 3912.

Wild in MEXICO; llano verde — Hartweg; Mechoacan — Humb. and Bonpl.; Oaxaca—Galeotti, 5019; Vera Cruz—Linden, 195; GUATEMALA—Skinner; PERU; woods near Pasto—Jamieson, in hb. Hooker, (*v. v. c. et s. sp.*)

This well-known plant, remarkable for its clear rose-coloured flowers, with scarcely a tinge of yellow, in a genus so very generally of that colour, varies much in the size and tint of their parts. In some states the flowers are large and deep-coloured; in others they are small, pallid, and unattractive. It naturally inhabits shady damp places, where the temperature varies between 68° and 75°.

* 190. **O. trulliferum.** *Lindl. in Bot. Reg.* 1839, *t.* 57.

Wild in BRAZIL; Pedro Bonito—Miers, (*v. v. c. et s. sp.*)

Panicle short, with a few densely-flowered drooping branches springing from coarse spathaceous bracts. The petals are wider than the sepals, but not much. The crest requires to be re-examined in a fresh state. When dried it loses all form. The stigma is rostrate. Flowers yellow and brown.

* 191. **O. phymatochilum.** *Lindl. in Paxton's Fl. Gard. no.* 123, *ic. sub t.* 18.

Wild in ———, (*v. v. c.*)

The native country of this beautiful thing is unknown. Prof. Rchb. who, like myself, has seen no wild specimen, informs me that the Hamburgh gardeners are unanimous in asserting that it came from Brazil. In this country it is reputed Mexican. Its long linear-lanceolate green sepals, banded with brown, remind one of Brassia; while its ivory lip and column just stained with yellow near the base, is that of a genuine Oncidium.

* 192. **O. hastatum.** *Lindl. in Paxton's Fl. Garden, vol. I., No.* 2.

Odontoglossum phyllochilum. *Morren in Ann. Gand. t.* 27.
Odontoglossum hastatum. *Bateman Orch. Mex. t.* 20.

(A) flavescens. Lip straw-colour.
(B) atratum. Lip claret-colour.

Wild in MEXICO; Oaxaca, at 4000 ft.—Galeotti, 5085; Mechoacan—Ghiesbreght, (*v. v. c. et s. sp. comm. cel. Rchb.*)

Lip always hastate, with the basal lobes white and quadrate. The middle lobe of the crest is so rudimentary, that it may easily escape observation. The crest consists of two parallel principal keels, a point between them, and a short accessory keel on either side at the base.

193. **O. ochmatochilum.** *Rchb. f. in Botanische Zeitung* 1852, *p.* 698!

Wild in VERAGUA; Chiriqui—Warczewicz, (*v. s. sp. comm. cel. Rchb.*)

This is described with olive-green flowers, flecked with golden. Lip white, with brown and violet flecks and bands. Its affinity is undoubtedly with *O. phymatochilum;* but its lateral sepals are connate at the base, and its petals are three times as wide; on which account it would rather seem referable to the Tetrapetalous macropetalous group (see p. 17). My specimen, for which I am indebted to Prof. G. Reichenbach, is a portion of a long zigzag panicle, the bracts of which are almost obsolete. The flowers are much smaller than in *O. phymatochilum*, and apparently of a firmer texture. The lateral sepals are linear-lanceolate, canaliculate, united for about a quarter their length, and longer than the other parts. The dorsal sepal and petals are alike lanceolate acuminate and recurved as well as channelled at the end; but the latter are at least twice as wide. The lip is hastate with the lateral lobes rounded, passing into an inversely cuneate isthmus which expands into an ovate lobe much narrower than the base. The crest consists of six thick short plates, the middle basal one of which has a slightly elevated crest. The column has a pair of very prominent narrow cheeks; its wings are reduced to a pair of pointed rudiments opposite the base of the stigmatic cavity. It would seem to be a very pretty plant when fresh.

* 194. **O. raniferum.** *Lindl. in B. R. sub t.* 1920. 1838, *t.* 48. *B. M. t.* 3712.

Wild in BRAZIL; Organ mountains—Gardner, 637, (*v. v. c. et s. sp.*)

The flowers are too diminutive to render this useful to cultivators; they are wholly yellow, except the crest and base of the lip, which are reddish-brown. Sometimes the panicle becomes leafy, with a few scattered flowers only at the end of its branches.

* 195. **O. Wentworthianum.** *Bateman, in B. R.* 1840, *misc.* 194. *Paxton Fl. Gard., II. ic.* 127.

Wild in GUATEMALA—Skinner; mountains of Santa Rosa, in May—Hartweg, (*v. s. sp. et v. c.*)

There are two varieties in cultivation, of which one, sent me by Sir Philip Egerton, has brilliant yellow flowers much larger than in the original, and barred with the richest possible brown.

* 196. **O. pergameneum.** *Lindl. in Benth. Plant. Hartw. p.* 93. *B. R.* 1842, *misc.* 7.

Wild in GUATEMALA; montaña en medio, Aug. — Hartweg. (*v. s. sp. et v. c.*)

To the pseudobulbs and leaves of *O. tenue* this almost adds the flowers of *Wentworthianum*, with the same broad base of the lip and similar spotting. The crest is formed by a heap of about nine short stumpy tubercles. The inflorescence is that of *O. suave*.

§ 14. GLANDULIGERA.

*** It is difficult to find a satisfactory place for *O. Papilio*; and now that a second species is known, equally furnished with petals and dorsal sepal much longer than the laterals, it seems desirable to associate them in one small group quite apart from the others.

* 197. **O. Papilio.** *LO.* 203. *B. Reg. t.* 910. *Bot. Mag. t.* 2795. *B. Cat. t.* 1086.

(A) Lip yellow, mottled all over with brown.
(B) **limbatum.** Lip yellow, with a cinnamon-brown border. *B.M. t.* 3733. *B. Cab. t.* 1086.
(C) **albiflorum.** Flowers white. (A specimen once found in the Caraccas, according to Rchb. f.)
(D) **Kramerianum.** *Rchb. f. in litt. Xenia, t.* 33! Flowers denticulate and crisp over all their edge, bright yellow with a few brown spots.

Wild in TRINIDAD—Woodford; CARACCAS, near Merida, at the height of 4-5000 ft., on precipitous cliffs—Wagener; Dominica—Imray, in hb. Hooker, "not indigenous;" **D**, on Chimborazo, at 3000 ft.—Warczewicz, (*v. v. c. et s. sp. comm. cel. Rchb.*)

This well-known plant is remarkable not only for its very long linear dorsal sepal and petals, but also for the singular glands which surround the anther-bed. They vary somewhat in number and position; but I do not see how any distinction can be derived from their condition.

* 198. **O. Limminghii.** *E. Morren. f. in litt.*

O. sepalo dorsali petalisq. lanceolatis inferioribus quadruplò majoribus, labelli basi latioris auriculis rotundatis isthmo obcuneato elongato in laminam subrotundo-reniformem expanso, cristâ . . . columnæ alis 4 laceris fimbriatis: 2 lateralibus angustioribus 2 apicilaribus inflexis.

Wild in the CARACCAS—Edward Morren, (*v. s. cult.*)

For this very curious plant I am indebted to Mr. Edward Morren, of Liège, who has named it after Count Alfred de Limminghe, a distinguished Orchidophilist. M. Morren informs me that it was sent to Belgium, it is *believed*, from the Caraccas, by Mr. Van Lousberghe, consul for the Netherlands. It has entirely the aspect, at first sight, of *O. Papilio* on a very small scale. Pseudobulbs roundish, compressed, wrinkled, about three quarters of an inch long. Leaf solitary, sessile, cordate ovate acute, an inch long, speckled with dull crimson. Flower solitary, little more than an inch across. Peduncle filiform, terete, between four and five inches long, with three membranous close-pressed acute sheaths. The sepals and petals appear to be dull olive-green; the lip the same colour, but paler. The structure of the crest cannot be determined without destroying my solitary flower.

SPECIES INSUFFICIENTLY KNOWN.

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

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

O. Forkelii *Scheidw.*; "pseudobulbis monophyllis; foliis coriaceis, oblongis, acutis; vaginis ciliatis; scapo erecto punctato, trifloro, foliis breviore. Sepalis lateralibus liberis, oblongo-ovatis, acuminatis, superiore ovato undulato; petalis oblongis margine undulatis; labello trilobo, lobis lateralibus minoribus, intermedio maximo rotundato baseos callis duobus instructo, anteriore compresso bicorni, posterioris lamina plicata: gynostemio alato, alis lilacinis: Anthera carnosa galeata, pollinia duo in glandulam bicornutam sessilia. Folia 10-12 pollices longa, 3-4 poll. lata. Sepala extus virentia intus fusco-maculata, petala apice virentia basi fuscata, labellum lilacinum."—*Mexico.*—Flowered at Lacken. Flowers "an inch in diameter, greenish yellow, spotted with crimson; petals clear violet, lip large and round, with small side lobes." ("*O. hæmatochilum?*" Rchb.)

O. obovatum *Presl. reliq. H.* 1. 99; pseudobulbus 4-poll. Folia ignota. Scapus terminalis, pedalis, erectus, vaginis membranaceis albidis vestitus, apice paniculatus. Panic. simpl. pat. 4-poll. Bract. lineari-lanc. acut. membr. inferiores ½-poll. long. Perianth. erecto-patens. Sep. lin. lanc. acut. æq. 5 lin. longa. Labell. æquilong. obovat. integr. erecto-patens, basi supra cristatum. Columna apicem versus alata, apice 3-dentata, dente medio in rostrum rotundatum prolongato.—*Mexico.*—Known only

from Presl, whose habitat is possibly wrong. If the scape is really terminal, this plant is perhaps not an Oncidium.

O. globuliferum *HBK. LO., p.* 202; "bulbo subgloboso, foliis oblongis brevissimè mucronatis, scapis simplicibus subunifloris, foliolis calycis subæqualibus crenulato-undulatis, labello subreniformi apice emarginato-bilobo, gynostemio apice alâ crenulatâ cincto?"—*Popayan.*—Flowers red, spotted. Lip very large, with small lateral lobes. Is not this *O. cucullatum?*

O.? emarginatum *Meyer, LO., p.* 206; "foliis lanceolato-linearibus obtusis emarginatis, floribus terminalibus, labello obovato integerrimo, gynostemii alis ovato subrotundis."—*Essequebo.*—Caules spithamæi, sulcati. Folia 2—2½-poll. longa. Flores parvi, purpurei, punctis argenteis notati. Sepala oblongo-lanceolata, acuminata, inferiora 2 paululùm breviora, oblonga, acuta. Labellum obovatum, basi attenuatum, integerrimum, planum, supra tuberculis rugæformibus notatum. Columna brevis, apice alis 2, parvis, patenti-erectis, rotundatis instructa.

O. rariflorum *Ach. Richard in Ann. Sc. Jan.* 1845; "pumilum; pseudobulbis ovoideis compressis, 1-phyllis; folio lanceolato acuto; scapo radicali 2-floro; gynostemio bialato; labello 3-lobo, lobo medio obcordato."—*Mexico.*

O. brevifolium *A. Richard l. c.*; "pseudobulbis ovoideis 2-phyllis, fol. ellipticis acutis coriaceis, brevibus; scapo paniculato, subsimplici; flor. luteis maculatis: labelli lobis lateralibus augustis intermedio orbiculari bifido.—*Mexico.*

O. amœnum *A. Richard l. c.*; "pumilum; pseudobulbis oblongis compressis diphyllis, flor. parvulis paniculatis, sepalis oblongis, reflexis, obtusis, pallide brunneis: labello luteo trilobo, lobo medio obovato, spathulato, emarginato.—*Mexico.*

O. Ghiesbreghtianum *A. Richard l. c.*; "pseudobulbis compressis ovoideis 1—2-phyllis; fol. lanceolatis acutis; flor. pallide purpureis, racemo simplici: labelli lobis lateralibus obtusis, intermedio late obcordato."—*Mexico.*

O. flabelliferum *Pinel in Paxt. Mag. Bot., XVI. p.* 65, is referred to *pubes* by Rchb. f. (*Walp. ann., III.* 555.)

CATALOGUE NAMES ONLY.

sciurus, *Linden.*
volubile, *Linden.*
emarginatum, *Beer.*
elegans, *Beer.*
Gærtneri, *Beer.*
galeatum, *Beer.*
Huntleyanum, *Beer.*
polychromum, *Beer.*
tricolorum, *Beer.*
auriculatum, *Schiller.*
densiflorum, *Schiller.*

Supposed species now referred to other genera.

O. echinatum, *HBK.* . . . . . = Erycina.
O. mystacinum, *Gardens*
O. Bictoniense, *Gardens* . . . . . = Odontoglossum.
O. Candelabrum, *Linden* . . . . . = Odont. coronarium.
O. hyalinobulbon, *Llave*
O. diaphanum, *Rchb. f.*
O. macrantherum, *BM.* . . . . . = Leochilus.

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LIMATODIS.

Blume, Bijdr. 375. *t.* 62. *LO., no. CLXVI.*

Differs from *Calanthe* in having the column not merely free but rolled up in the lip. The inflorescence is always lateral not terminal, and the flowers, when dried, acquire a peculiarly thin texture.

---

1. **L. pauciflora.** *Bl. l. c. LO. no.* 1. *Paxt. Fl. G. sub t.* 81.
L. pedunculo bifloro foliis oblongis multò breviore, calcare brevi incurvo.

Wild in JAVA; in the thick woods of Mount Salak—Blume, Lobb, (*v. s. sp.*)

"Flowers white." Stem long, leafy at the end only.

* 2. **L. rosea.** *Lindl. in Paxton's Fl. Gard. t.* 81.
L. racemo tomentoso multifloro foliis longiore, calcare brevi incurvo.

Wild in MOULMEIN—T. Lobb, (*v. v. c.*)

Flowers bright rose-colour.

* 3. **L. gracilis.**
L. racemis multifloris pubescentibus foliis brevioribus, calcare nullo.

Calanthe gracilis. *LO. no.* 17. *Bot. Mag. t.* 4714. *Griffith Not.* 3. 367.

Wild in SYLHET—Wallich; CHINA, Hong-Kong—Champion; KHASIA, at 3-4000 feet—Hooker and Thomson; SIKKIM—Cathcart, (*v v. c. et s. sp.*)

Flowers pale yellow, or according to a drawing of Cathcart's nearly white. Varies much in size.

4. **L. mishmensis.** *Lindl. in Paxt. Fl. Gard. sub t.* 81.
L. racemo paucifloro longè pedunculato caule folioso breviore, floribus glabris, labello obovato obtuso 4-lobo per axin ramentaceo, calcare incurvo.

Wild in ASSAM, on the lower ranges of the Mishmee Hills—Griffith, (*v. s. sp.*)

OCT. 20, 1854.

5. **L. punctata.**

L. racemis subsessilibus paucifloris brevissimis, calcare recto infundibulari, labello undulato acuto.

Wild in SUMATRA, (*v. ic. pict. penes cel. de Vriese.*)

A broad-leaved plant, with the vaginæ copiously dotted with dull purple. Peduncles numerous, horizontal, two to four-flowered. Flowers white, with a yellowish lip.

GEODORUM.

Jackson in B. Rep. t. 626. (1810.) *R. Br. in H. Kew, V.* 207. *LO., no. CII.*

The species of this well-marked genus are undistinguishable in a dried state, unless attention is paid to the processes which appear upon the surface of the lip. The not knowing this and the badness of materials led to a very imperfect set of definitions in *LO.*, as was indeed hinted in a note to that work. Even now the species require to be studied carefully in a live state.

SPECIERUM ANALYSIS.

Scapo foliis longiore, labello acuto . . . . . 1. *purpureum.*
——— breviore, labello obtuso.
Labellum infra apicem callosum,
callo semilibero.
Lab. apice dilatatum bilobum . . . 2. *dilatatum.*
——— angustatum emarginatum.
Folia subsessilia . . . . . 3. *pictum.*
—— longè petiolata . . . . 4. *rariflorum.*
callo omninò adnato.
bicostato . . . . . 5. *fucatum.*
tricostato.
Flores carnosi, vaginis angust. depaup. . 6. *javanicum.*
—— membranacei, vaginis maxim. membr. . . . . } 7. *semicristatum.*
Labellum nudum.
ante sacculum bicallosum . . . . . 8. *candidum.*
ante saccum nudum . . . . . 9. *citrinum.*

1. **G. purpureum.** *R. Br. LO., no.* 1.

Limodorum nutans. *Roxb. Coron., I. t.* 40 ; *Fl. ind., III.* 470.
Malaxis nutans. *Willd. sp. pl.* 4. 93.

Wild in the INDIAN PENINSULA; moist valleys amongst the Circars—Roxburgh.

This species is distinguished by two circumstances ; the scape is longer than the leaves, and the lip is acute. I have seen no specimen. Roxburgh says that the spike is oblong and pendulous, with distant flowers of a beautiful rose-colour.

* 2. **G. dilatatum.** *R. Br. Bot. Reg., t.* 675 (*bad*). *LO., no.* 3. *Wight. ic.* 3. *t.* 912.

Limodorum recurvum. *Roxb. Coromandel plants, I. t.* 39.
Malaxis cernua. *Willd. IV.* 93.
Otandra cernua. *Salisb. in Hort. Trans., I.* 261.
Geodorum pallidum. *Don. prodr. fl. Nep.* 31.

Wild in the EAST INDIES; moist valleys among the Circars—Roxb.; CEYLON—Macrae, Walker; SIKKIM, at 3000 feet—J. D. Hooker; SYLHET—Wallich, (*v. s. sp.*)

A common Indian species, with whitish flowers, marked with pink streaks and yellow. It has large falcate bracts, which in a dried state are membranous. The lip is either crenulate or entire at the edge. The scape is the tallest of any except *G. purpureum*.

3. **G. pictum.** *LO., no.* 2.

Wild in tropical NEW HOLLAND—R. Brown; Wide Bay—Bidwill, (*hab. s. sp. comm. cel. Hooker.*)

This plant has broad nearly sessile leaves, and a dense oblong refracted raceme. The bracts and vaginæ are not membranous when dried.

4. **G. rariflorum.**

G. foliis longè petiolatis, scapo breviore, vaginis bracteisque parvis herbaceis, racemo raro, labello basi scrotiformi ovato obtuso emarginato callo sublibero minimo bidentato cæterùm nudo.

Wild in ASSAM—Jenkins (*v. s. sp. comm. cel. Hooker.*)

I found some specimens of this, under the name of *Limodorum candidum*, among some miscellaneous Assam plants given me by Sir W. Hooker. It has a more distinct spur than any other, and narrow spreading sepals. There is no callosity at the mouth of the pouch.

* 5. **G. fucatum.** *Lindl. in Bot. Reg., t.* 1687.

Wild in CEYLON—Walker, (*v. s. sp. in herb. Hooker.*)

A very pretty rose-coloured species, readily known by the pair of parallel fleshy ribs which represent the free callus of the preceding species, and by its gibbous lip.

6. **G. javanicum.**

G. foliis oblongis sessilibus scapo univaginato æqualibus, bracteis herbaceis angustissimis ovario æqualibus, floribus carnosis, labello retuso callo 3-costato tuberculoque didymo ad ostium sacci.

Cistella cernua. *Blume Bijdr.* 293, *t.* 55.

Wild in JAVA—Lobb; near Buitenzorg, very rare—Blume, (*v. s. sp. in hb. Hooker.*)

The figure in Blume is so bad that no one could suppose it belonged to the plant now before me; and yet I presume there can be no doubt about the matter. The bracts are small, very narrow and herbaceous, and the flowers when dry have a singularly fleshy texture. It is a small species with no apparent stalks to the leaves. Colour of flowers unknown.

7. **G. semicristatum.**

G. foliis oblongo-lanceolatis petiolatis, vaginis 3 maximis

membranaceis, bracteis setaceis, labello ovato emarginato callo retuso 3-costato adnato tuberculoque didymo ad ostium sacci, (floribus carnosis).

Wild in the PHILIPPINES—Cuming, (*v. s. sp.*)

Very much like *G. dilatatum* in habit. Colour of flowers unknown.

8. **G. candidum.** *Wall. Cat., no.* 7374.

Limodorum candidum. *Roxb. fl. Ind., III.* 470.

(**A**) Lip contracted at the point and nearly even. Leaves sessile.
(**B**) Lip wider at the point and rugose. Leaves with long stalks; flowers smaller.

Wild in SYLHET—Roxburgh; MOULMEIN—Griffith, Wallich; **B**, KHASIA—Lobb, (*v. s. sp.*)

This species, although one of the smallest in stature, has larger flowers than any. The leaves in **A** are sessile, the raceme very dense and somewhat globular, and the sepals and petals very acute; the lip is ovate with a slightly dilated emarginate point, within which it is nearly smooth; the sac of the lip is a mere dimple and hardly visible externally, although its origin is overlooked by a pair of large callosities. Flowers white; in **A** they are very like the figure of *G. citrinum* in Andrews' Repository. Probably the two supposed varieties will be hereafter distinguished. They are very different in habit.

* 9. **G. citrinum.** *Jackson in B. Rep., t.* 626. *LO., no.* 5.

Wild in Pulo Penang—Jackson; CHITTAGONG—Wallich, (*v. s. sp.*)

This, the original species of the genus, is known by its pale-yellow flowers, and lip without a trace of appendage or callosity upon its surface. The flowers are no doubt exaggerated as to size in the figure in Andrews' Repository; according to Dr. Wallich's Chittagong specimen, they are about as large as in *G. dilatatum*.

ABBREVIATIONS.

L.O.—The author's Genera and Species of Orchidaceous Plants.

* prefixed to a species signifies that it exists in a cultivated state in Europe.

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FOLIA ORCHIDACEA.

AN ENUMERATION OF

THE KNOWN SPECIES OF

ORCHIDS.

By PROFESSOR LINDLEY.

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AT 5, CHARLES STREET, COVENT GARDEN, LONDON.

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THE work upon which the present Enumeration is founded was commenced in April, 1830, and terminated in October, 1840. Twenty-nine years have therefore elapsed since its commencement, during which period the advance of discovery has been so rapid that numerous genera have been added to what were then known, others have been subdivided or wholly remodelled, and multitudes of species have been introduced, and published in so many different works, that their identification has become attended with very great difficulty. Imperfect materials, or inexact observations, have led to many unavoidable errors, of which the author must claim his full share. In 1830 the Orchidaceous plants of tropical America were scarcely known in either Gardens or Herbaria; of late years they have multiplied enormously; those of the Philippines were unheard of; and the numerous Javan species were only puzzles which none but the Dutch had the means of unravelling. At the present day we have actually in cultivation a greater number of Orchids than were known in 1830 from books and herbaria taken together. As an example the genus Masdevallia may be mentioned; in 1833 supposed to consist of only three species, and to belong to the section called Vandeæ, it is now known to include between thirty and forty species, and to be a true Malaxeous genus, nearly related to Pleurothallis.

The author feels that under such circumstances it is time that the ground over which he formerly passed should be re-examined, and that he should once more endeavour to collect into a scientific form the copious materials still unpublished, or scattered through volumes which are inaccessible to those who have not constant access to large libraries.

In doing this, however, the nature of the subject compels him to follow an unusual plan of publication. Although the greater part of the genera of this Natural Family have now been examined by himself and reduced to order, their true structure ascertained, and their place in a systematical arrangement determined, yet there is still a considerable number concerning which he has no sufficient information. If genera were to follow in the present work in regular sequence, according to some established plan of arrangement, it must necessarily happen that an insufficiently known genus would require to be introduced as soon as it was reached in the publication, whether useful information concerning it had been gained or not; and the possible result would be to place it in the classification where it has no claim to remain. For the purpose of avoiding this inconvenience each genus will be paged separately—or printed on a single leaf if it does not require more space. By this means no genus need appear until something certain is known about it: and the best known genera can be taken first. At the completion of the work they can all be arranged according to whatever method further experience and accumulated information shall show to be most expedient. In the mean while the reader can either retain the genera in the order of publi-

STELIS.

Swartz, Fl. ind. occ. p. 1549.

Sepala basi connata, campanulata, æqualia v. inæqualia. Petala minima, margine incrassata, columnam et labellum involventia. Labellum conforme aut difforme, subæquale. Columna nana, truncata, rostello conspicuo, angulisque anticis stigmatiferis (brachiis *m.*; col. tridentatâ *Swz.*); anthera 2-locularis; poll. 2 pyriformia. Capsula——Herbæ *cæspitosæ aut procurrentes, rhizomate tenui tenaci.* Folia *apice sæpius tridentata.* Caules *simplices, monophylli, vaginati.* Flores *racemosi, sæpiùs minuti.* Bracteæ ferè semper *ochreatæ.*

Stelis is distinguished from Pleurothallis by a short truncate 3-lobed column, the front angles of whose antherbed are uniformly mucilaginous like a rostellum, and in S. tristyla, &c. even extended into arms glandular at the point. The species are excessively difficult to arrange, it being almost impossible in some cases to determine with exactness the structure in which experience shows that the most certain characters are to be found. The following classification is in fact quite temporary and artificial in the Eustelides and must remain so until the species can be studied in their wild state. Of the 132 now described I have only seen 6 alive, and they were insufficiently observed.

Such characters as are now employed, appear to be constant, and it is believed determine the limits of species. A renewed study of the genus extended over many months, and repeated dissections of the flowers have shown that the form of the calyx, its veins, and the exact structure of the lip, rarely described with even tolerable accuracy, owing to their extreme minuteness, furnish the most precise distinctions. If they have been here made subordinate to the organs of vegetation it has been owing to the impossibility of dissecting satisfactorily some of the minuter species, and from the insufficient account that has been given of those which I have not been able to examine myself.

One of the great difficulties, perhaps the greatest, in reducing the species to order, consists in the singular similarity of structure observable among them ——a similarity so great that in the 132 species of which the genus now consists the following are the only instances of much deviation from the common type. Stelis lancea, 14, has a column with scarcely any stigmatic arms; S. fissa, 28, has no arms at all, but great lateral tumours on the antherbed; in S. tenuilabris, 20, the lip is a mere membrane; in S. purpurascens, 62, 8 pollen masses have been found ! !; S. lentiginosa, 58, has a long column with very large stigmatic arms; in like manner S. columnaris, 114, has a tall terete column, but the stigmatic arms are nearly absent.

The measurements given in the following notes are always taken from the parts when full grown. Exactness they cannot have; but they will be convenient guides to the identification of species.

It may also be useful to state that all the minuter examination has been made with a simple half-inch lens.

It would seem from an observation of Loddiges that the flowers are irritable. Speaking of S. ophioglossoides he remarks that the flowers "open and shut at various times, and that suddenly; they close directly as soon as removed or touched." *Bot. Cab. t.* 442.

Nov. 1, 1858.

Calyx subæqualiter tripartitus . . . . . § I. EUSTELIS.
Bracteæ magnæ distichè imbricatæ . . . . . A *Distichæ.*
——— parvæ vix imbricatæ
Racemi plures . . . . . B. *Polystachyæ.*
——— solitarii . . . . . C. *Monostachyæ.*
Calyx calvus. Caulis vix ullus . . . . . 1. apodæ.
Calyx calvus. Caulis maturo folio vix longior . . . 2. brachypodæ.
* Labellum truncatum
** ——— planum aut cavum indivisum
*** ——— tridentatum v. rhombeum
Calyx calvus. Caulis maturus folio maturo multò longior 3. macropodæ.
Calyx intus pilosus . . . . . 4. barbatæ.
Calyx manifestè irregularis,
bilobus (sep. lat. maximâ pro parte connatis) . . . . . § II. DIALISSA.
bilabiatus (sep. lat. subliberis supremo crassiore multo minoribus) . . . . . § III. LABIATÆ.

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§ I. EUSTELIS; A. *Distichæ.*

1. **S. disticha** (Pöppig et Endl. n. g. et sp. 1. 47, t. 81); f. lanc. acuto basi sensim angustato spicæ subæquali caule 3plò longiore, ss. altè connatis rotundatis, pp. labelloq. truncatis——*Peru*, Pöppig; Mathews (*Casapi* 1913) h. s. sp.——

2. **S. spathulata** (Pöppig et Endl. n. g. et sp. 1. t. 80); f. spath. acut. caule multo longiore spicâ ad spatham floridâ breviore, bract. distichè imbr. membr. acum., fl. secund., ss. lin. acut., pp. angustis cuneatis trunc., lab. acutè 3-fido——*Peru*, Mathews, 1912, Pöppig; *Venezuela*, Linden, 638; h. s. sp.——Very narrow spathulate coriaceous leaves, pale diaphanous imbricated bracts and yellow flowers with an acutely 3-fid lip render this unmistakeable. It is much like S. Serra, No. 84, with which in a natural arrangement it might be associated.

3. **S. foveata**; f. subsess. obl. spath. acut. coriac. caule longiore spicâ strictâ distichâ multò breviore, bracteis latis obliquè ochreatis patentibus pergameneis floribus æq., ss. carn. ovat. conc. aveniis, pp. carn. apice inv. obl. cun. aven., lab. lato. cun. plan. 3-foveato——*Peru*, Jameson (*Wooded ridges above the village of Guachapala, at* 10000′) v. s. sp. in hb. Hooker——This looks like a large form of spathulata, but is remarkably different in the structure of the flowers; the 3 deep excavations in the lip, one at the point and 2 at the base, have no parallel in the genus—Flowers and bracts green. Leaf 3″ × 5‴, stem nearly 2″ with loose furrowed sheaths. Spike 7″.

4. **S. loxensis** (Lindl. in Pl. Hartw. p. 149); rhizom. prorepente laxè vaginato, f. coriaceo obovato-lanc. spicis geminis laxè distichis breviore caule angulato longiore, ss. semiconnatis rotundatis, lab. ovato pp.que truncatis——*Peru*, Hartweg (*Loxa*) h. s. sp.——Flowers purple.

5. **S. triplicata**; f. oblongo sess. caule longiore, spicâ duplò longiore latè distichâ, ss. triangulis confluentibus ad sinus plicatis, pp. trunc. dorso gibbosis, lab. minore trunc.——*Peru*, Jameson (*Eastern Cordillera near Pacha*) h. s. sp. ——Flowers large, pallid. Bracts large, loose.

6. **S. muscifera**; f. obovato spatulato rotundato caule duplò longiore, racemo triplò longiore laxè disticho, ss. subcordatis obtusis venis 5 confluentibus, pp. truncatis, labello cuneato apiculato cristulâ transversâ infra apicem——*Venezuela*, Fendler (*Tovar* 1460) v. s. sp. in hb. Hooker——Flowers middle-sized deep purple, with pedicels nearly as long as the bracts.

7. **S. attenuata**; f. angusto obl. obt. coriaceo caule triplò longiore, spicâ tenui strictâ spirali pluriès longiore, bracteis adpressis infimis distantibus acum., floribus parvis spiralibus subglobosis, ss. labelloq. truncato rotundatis margine carnosis——*New Grenada*, Purdie, v. s. sp. in hb. Hooker——Leaf 3½″, spike 9″. Flowers dark purple, half closed. Lip with an elevated rim.

8. **S. ochreata**; f. ovali acuto abruptè petiolato caule duplò breviore, spicâ duplò longiore tenui densè distichâ basi bracteis laxis distantibus sub-

truncatis ochreatâ, ss. cordatis, pp. cucullatis, lab. cuneato apice rotundato carnoso——*Peru*, Jameson, h. s. sp.——Flowers small, dark purple, secund.

9. **S. glumacea**; f. ovato acuto abruptè petiolato caule tereti medio laxè vaginato duplò breviore, spicâ folio longiore, floribus bracteis densis brevioribus, ss. semiconnatis acutis, lab. truncato pp. conformibus majore——*Peru*, Jameson (*Andes of Quito, on the road to Nanegal*) h. s. sp.——Stem 8½". Leaf 4¼" × 1¾". Spike not unlike a many-flowered locusta with distant florets. The loose solitary vagina in the middle of the long stem is to be remarked.

§ I. EUSTELIS; B. *Polystachyæ*.

10. **S. Fendleri**; f. obl. spatulato petiolo angustissimo caule laxè vaginato 3plò longiore spicis subgeminis capillaribus erectis subæq., fl. membr. quaquaversis, ss. membr. ovat. ½ trinerviis, pp. rotund. margine incrassatis, lab. truncato minore——*Venezuela*, Fendler (*Tovar* 1470) v. s. sp. in hb. Hooker ——Very like Pöppig's figure of S. intermedia, but the leaves are twice as broad and very blunt, and the spikes are not longer than the leaves. Flowers minute, pale green.

11. **S. hirta**; f. spath. caule longiore, spicis 1—3 folio æq. paucifloris secundis bracteis patulis, ss. ovatis æq. hirsutis, pp. labelloq. 3-striato rotundatis membr. subæqualibus——*Eastern Andes of Peru*, Jameson (*Forests near Papallada*) h. s. sp.——Plant about 3" high. Flowers green. Stalk of leaf as long as blade.

12. **S. setacea**; f. lin. lanc. cauli tenui subæquali, racemis 2 setaceis rarifloris fol. brevioribus, ss. oval. semitrinerviis basi tantum connatis, pp. rotund. dorso gibb., lab. truncato——*Bolivia*, Bridges, h. s. sp.——Flowers small, purple. Leaves 3″ × 3‴, sometimes rather falcate. Racemes often solitary.

13. **S. viridipurpurea**; f. obl. obt. caule laxè vaginato duplò longiore, racemis 2 tenuibus fol. triplò longioribus, floribus quaquaversis, bracteis minutissimis, ss. trinerviis dorsali majore subrotundo, pp. rotund., lab. truncato ——*Brazil*, Spruce (3368, *on Uaiavaka*) h. s. sp.——Flowers small, green tinged with purple. Resembles S. ophioglossoides in habit.

14. **S. lancea**; f. lanc. membranaceo petiolo angustissimo cauli tenui subæq., racemis 1—2 filiformibus fol. paulò longioribus, bracteis ustulatis apiculatis, ss. ovat. obt., pp. truncatis, lab. plano oblato 3-nervi subtrilobo lamellis 2 transversis infra apicem——*Peru*, Jameson (*Western declivity of the Andes on trunks of trees; Mountains of Pulzhum at* 11000′) h. s. sp.—— Leaves 3½″ to 4½″ long; rhizome branching among moss. Racemes filiform. Flowers very small. In habit this is much like S. trichorhachis, No. 41.

15. **S. campanulifera**; f. lanceolato angustè petiolato caule duplò breviore, racemis geminis filiformibus folio longioribus, bracteis obliquè campanulatis apiculatis ustulatis, ss. oblongis, pp. labelloq. medio bidentato carnosis concavis rotundatis——*Bolivia*, Bridges, h. s. sp.——Stem 4″, slender, somewhat flexuose, with one long deeply furrowed sheath keeled near the point which ends in a rather long slender mucro. Flowers very small, deep purple, with yellow petals and lip.

16. **S. reflexa**; f. obl. obt. coriaceo mucronato brevè petiolato caule tenui distantèr bivaginato duplò breviore, spicis 3—5 duplò longioribus bracteis adpressis distantibus, ss. ovato-rotundis reflexis, pp. cucull. membr., lab. plano ovato rotundato infra medium carnoso angustiore multò breviore——*Andes of Quito*, Jameson (*Forest on the W. declivity of Pichincha at* 9000′) h. s. sp. ——Stems 4—5″, very slender, each with two long closepressed sheaths. Leaves 2¼″. Spikes slender, erect. Reflexed sepals are found in no other species.

17. **S. euspatha** (Rchb. f. in Bonpl. Aug. 1, 1855); f. obl. brevè petiolato parùm coriaceo caule tenui laxè bivaginato duplò breviore, spicis 5—7 tenuibus

folio longioribus, bracteis floribusq. minutis, ss. membr. obl. uninerv. carinatis pp. cuneatis obtusè trilobis subcarnosis, lab. oblato conc. in apicem subulatum producto lamellis 2 obliquis juxta basin——*Bolivia*, Bridges, h. s. sp.—Habit that of the last, but flowers much smaller, leaves less coriaceous and spikes much slenderer.

18. **S. floribunda** (H. B. K. n. g. et sp. 1. 362); "spicis subquaternis f. obl. obt. coriaceo duplò longioribus, fl. subnutant., ss. ovatis acutiusculis trinerviis intùs pubescentibus subæq."—— *Popayan*, Humb. et Bonpl.——Stems 3″—4″. Leaf 3″ × 14‴. Spikes 2″—4″ long, 2, 3 or 4. Flowers violet. Lip ovate, concave. I should have thought that the last and this were identical had not this been described as having leaves 14 lines broad. Nor is there anything in the appearance of S. euspatha to suggest the epithet floribunda.

19. **S. angustifolia** (H. B. K. l. c.); "sp. subgeminis f. obl. lanc. obtusiusculum subcoriaceum æquantibus, fl. subnutant., ss. ovatis acutiusculis 3-nerv. internè pubesc. subæq."—— *New Grenada*, Humb. et Bonpl.—— Kunth suggests that this may be a var. of the last.

20. **S. tenuilabris**; f. obl. obt. coriaceo cauli subæq., spicis 2—4 multò brevioribus bracteis glumaceis adpressis floribus patentissimis quaquaversis, ss. obl. membr. æq. altè partitis ⅓ trinerviis subcarinatis, pp. rotundatis labelloque cuneato membranaceis—— *Venezuela*, Fendler (*Tovar* 1471) v. s. sp. in hb. Hooker——No other species has a lip so perfectly membranous; with no appendage except a slight elevation across it next the base. Flowers pale green.

21. **S. polybotrya**; f. obl. coriaceo obt. caule breviore, spicis copiosis folio 3plò brevioribus, bracteis membr. inflatis, ss. carnosis ovatis acutis æq. 1-nerviis, pp. rotundatis membr., lab. conc. rotundato basi bilamellato—— *Peru*, Jameson (*E. Cordillera, on trees at* 13000′) h. s. sp.——*Leaf* 4″. Sheaths of stem 2, loose, membranous. Flowers purple, small.

22. **S. braccata** (Rchb. f. in Bonpl. May 1, 1854); "f. carnoso linear-ligulato acuto racemis capill. minutifl. longiore, ss. obl. lanc., pp. cuneatis bis emarg. apice callosis lobulo medio minore producto, lab. rhombeo-ligulato retuso, col. curvatâ——*New Grenada*, Warczewitz——Leaf 3″—4″. Stem 1″—1½″. Near S. truncata, scabrida, argentata." *Rchb.* I have nothing like this.

23. **S. gutturosa** (Rchb. f. in Bonpl. Jan. 15, 1854); "f. spatulato angustato caule breviore, spathâ membr. basi gutturosâ, spicis 1—3 fol. brevioribus minutifloris, ss. ovatis apiculatis, pp. cuneatis retus. trinerv., lab. pandurato carinulis 2 semilunatis in disco"——*Caraccas*, Wagener——Middle sheath of stem large, acute, thin. *Rchb.*

24. **S. hylophila** (Rchb. f. in Bonpl. Sept. 1. 1855); f. obl. brevè petiolato carnoso caule tenui multò breviore, spicis 1—3 erect. fol. longioribus, fl. parvis secundis, ss. ovatis acutis membr. 1-nerv., pp. membr. oblatis, lab. duplò minore plano tridentato disco carnoso——*Peru*, Jameson (*Forests of the Andes at* 8000′, *Jameson*, 687 *in hb. Hooker; western declivity of Pichincha on trees, at* 9000′, Id.) h. s. sp.——Jameson's original specimens were not very good; those before me are excellent. Leaf 2½″. Spikes 3″—5″. Stem 2″—5″. Flowers membranous, green.

25. **S. mononeura**; f. coriac. obl. petiol. caule exili ferè nudo multò spicis paulò breviore, fl. spiral. distant. bract. multò longioribus, ss. oblongis obt. æq. uninerviis intùs parcè pilosis, pp. trunc. apice scabr. uninerv., lab. minimo 3-dent. basi obliquè bicalloso, clinandr. dente post. maximo quadrato—— *Peru*, Jameson (*Woods near Pasto*) v. s. sp. in Hooker——Very like S. hylophila in manner of growth and the size of the parts, except that the flowers are much larger and wide apart, and the stems far more slender. Spikes 3—5.

26. **S. striolata**; f. lanc. caule breviore, racemis geminis secundis folio subæqualibus ferè ad basin floridis, bracteis membranaceis arctè adpressis, ss. tristriatis subcarnosis, pp. cuneatis transversis, lab. obov. acuto infra apicem

transversè excavato——*Peru*, Jameson (*Western Andes on trees*) h. s. sp.——Leaf scarcely coriaceous, 6″, with a rather long petiole. Stem somewhat longer. Flowers small, pallid, strongly striated in a dried state.

27. **S. florea** (Pleurothallis chamæstelis, Rchb. f. in Linnæa xxii.); f. obl. coriaceo spicis quaternis erectis ad basin floridis duplò breviore, caule longiore laxè vaginato, floribus numerosissimis minutis membranaceis quaquaversis bilabiatis, ss. ovato-lanceolatis, pp. oblatis membr., lab. apice plano membr. rotundato medio constricto infra med. carnoso canalic. truncato——*Venezuela*, Funck and Schlim (1195 *hb. Linden*) h. s. sp.——This remarkable species, bearing innumerable minute flowers all open at the same time down to the very base of the spikes has certainly the column of Stelis. Leaf 4″ strongly keeled just below the apex. Stem 6″—7″, with a long loose sheath in the middle. Since the plant is neither dwarf, nor a Stelis, it has become necessary to alter my learned friend Reichenbach's name.

28. **S. fissa**; f. lato obl. caule breviore, spicis 2—4 folio æq., bracteis acuminatis subimbricatis hinc fissis, ss. subrotundis trinerviis, pp. cuneatis transversis acutangulis, lab. minore carnoso marginato apiculo inflexo——*Peru*, Jameson (*Quito*) h. s. sp.——In habit much like S. striolata, No. 26, but the leaves are more membranous and larger ($5\frac{1}{2}'' \times 1\frac{1}{2}''$), and the bracts, which are long slightly ochreate and therefore deeply slit, approach in length and imbrication the distichous division. Flowers green, larger and thinner. Arms of the column obsolete, but replaced by two large glandular tumours on the antherbed.

29. **S. Lindeni** (Lindl. Orch. Lind. no. 17); f. maximo ovato-obl. obtuso racemis 3—4 erectis æquali caule valido breviore, bracteis acutissimis distantibus patulis, ss. subrotund. altè connatis sub 5-nerviis, pp. cuneatis, lab. carnoso obtusè tridentato——*Venezuela*, Linden (679, *forests in the valley of Merida at* 6000′) h. s. sp.——Leaf $8'' \times 2\frac{1}{2}''$. Flowers middle-sized, yellow.

30. **S. grandis** (Rchb. f. in Bonpl. March 15, 1855); f. obl. spicis 3—4 strictis breviore, caule valido vaginâ maximâ membranaceâ, bracteis acutissimis distantibus patulis, ss. subrotundis cord. 3-nerv., pp. oblatis cucullatis, lab. carnoso truncato apiculato (quasi tridentato) callis 2 infra apicem——*Venezuela*, Funck and Schlim (*Merida at* 6000′, 1019) h. s. sp.——Resembles the last, but the leaves are not ovate, the sepals are cordate, and there is a very large loose sheath on the stem. Flowers yellowish.

31. **S. Purdiæi**; f. lato obl. caule valido 2plò breviore, racemis 3—6 strictis secundis fol. multò longioribus, ss. subcord. 3-nerv., pp. trunc., lab. oblato infra ap. transversè canaliculato——*New Granada*, Purdie. h. s. sp. comm. cel. Hooker——The tallest species yet found. Leaf $7'' \times 1\frac{3}{4}''$. Stem 8″, furrowed, with one large sheath above the middle. Racemes more than a foot long in large specimens. Flowers small, deep purple. A specimen said to come from Peru in hb. Hooker seems to be the same as this.

32. **S. macrocarpa** (H. B. K. n. g. et sp. 1. 363); "f. obl. obt. subcoriaceo spicis subgeminis breviore, ss. subrotundo-ovat. acutiusculis subquinquenerviis subæq."——*New Grenada*, Humb. and Bonpl.——Leaf 3″ and more. Stems 4″—6″. Spikes 6″. Flowers as large as those of the Lily of the valley, violet? Lip roundish-ovate, unguiculate, somewhat cucullate. Capsule $\frac{1}{2}''$. *Kunth.*

*** N.B. S. scansor, No. 75, has sometimes a double spike.

§ I. EUSTELIS; C. *Monostachyæ*; 1, Apodæ.

** All the one-spiked species may have occasionally a second dead spike of the previous year, or its remains.

33. **S. cæspitosa** (Lindl. in Comp. B. M. 2. 353); f. ovali obtuso racemis strictis 2plò breviore, ss. ov. obt., pp. conformibus, lab. ovato——*Brazil*, Descourtilz (*Every where near rivers and lakes and cascades, forming large tufts*

of a beautiful green colour. Desc. ic. t. 43)——Only known from the unpublished figure in the Lessertian library.

34. **S. concinna** Lindley in Hook. Journ. Bot. 1, p. 11); f. ovali acuto marginato racemo capillari flexuoso multò breviore, ss. subrotund. obt. conc., pp. labelloque subrotundis——*Peru*, Col. Hall. v. s. sp. in hb. Hook.——A very small plant with the thin conspicuous membranous petals of Pleurothallis, but the column of Stelis.

35. **S. pusilla** H. B. K. n. g. et sp. 1. 361); "f. lanc. acut. coriac. spicâ solitar. [illegible] breviore, ss. subrotundis obt. trinerv."——*Peru*, Humb. et Bonpl. (*Kinchum of Quito at* 7380')——Stem ¼", with striated sheaths. Leaf [illegible]. Spikes 1½". Flowers violet! I find nothing like this among Jameson's very extensive collections from Quito.

36. **S. Porpax** Rchb. f. in Bonpl. Aug. 1, 1855. Xenia 1. 175. t. 60): "f. obl. obt. carnoso basi ang., spicâ solitar. æquilongâ, ss. acutis 3-nerv., pp. cord. [illegible] 1-nerv., lab. 3-lob. lobo med. productiore"——*Caraccas*, Wagener——This char. is taken from Rchb.'s description and figure. May it not be St. pusilla, No. 35?

§ I. EUSTELIS: C. *Monostachyæ*: 2, Brachypodæ, labello truncato.

*** The species proceed from the smallest-flowered to the largest.

37. **S. filiformis**; f. sessili angustè obl. basi sensim angust. spicâ filiformi [illegible] breviore, bracteis membranaceis inferioribus obtusis, flor. minutissimis [illegible], ss. ovatis, pp. labelloq. truncatis conformibus——*Brazil*, Spruce (*on trees on the banks of Lake Vasiva* 3438) h. s. sp.——A good deal like S. ophioglossoides, but the flowers are not half the size. Possibly a mere form of it.

38. **S. intermedia** (Pöpp. et Endl. n. g. et sp. 1. 46. t. 79); f. sess. lin. lanc. obtusato membranaceo spicâ quaquaversâ multò breviore, ss. ovat. acut. 3-nerv., pp. semilunatis, lab. conformi —— *Peru*, Pöppig —— Flowers small, sulphur-coloured. Sheaths of the stem purplish. *Pöppig*. Flowers much more numerous than in S. ophioglossoides.

39. **S. barrensis**; f. obl. pergam. basi canalic. spicâ exili multò breviore caule laxè vaginato longiore, spathâ carinatâ nervosâ intra folii canalem, bract. min. diaph. trunc., ss. subrotundo-ov. venis 3 evanescentibus, pp. lunatis 1-venis marg. carn., lab. rotund. plan. convex. unguic. lamellâ carnosâ transversâ——*Brazil*, Spruce (*Barra, shady forest on trees*, 1656) h. s. sp. —— "Stems subrepent. Sepals greenish, papillose within, at very base dull purple. Petals purple and green." *Spruce*. Differs from S. papaquerensis, as it would seem, in not having a stout spike, nor a crenulate lip; nor is the point of the leaf more 2-lobed than is usual in the genus. S. tristyla has very much larger flowers and bracts, 5-veined sepals, and a lip without a transverse ridge. S. ophioglossoides has coriaceous leaves without large loose sheaths, the 3 veins of the sepals confluent, the petals cuneate not lunate, and the lip without any cross ridge. Leaves vary in size from 3¼" × 5''' to 3½" × 1".

40. **S. tridentata**; caulescens, f. membr. lato-lanc. acum. 3-dentato spicâ densâ exili breviore, bracteis diaph. trunc. apic., fl. minutiss. secund., ss. ovat. acut. obsoletè 3-nerv., pp. lunat., lab. multò minore truncato —— *Peru*, Jameson. h. s. sp.——Much like S. ophioglossoides, but the leaves are broader and thinner and the flowers much smaller. A full grown leaf, equally acuminate at each end, measures 3" × ¾"; and terminates in the same way as so many Lepanthes. A second spike is occasionally present.

41. **S. trichorhachis** (Rchb. f. in Bonpl. 15 March, 1855); f. obl. lanc. cuspidato longè petiol. spicâ tenui rarâ flexuosâ paulò breviore, bract. minutis acum., ss. latis ovatis, pp. subrotund. trunc., lab. solido truncato membranaceo-marginato —— *New Grenada*, Schlim, 168. h. s. sp. —— It will be

found that more than one dead spike is sometimes associated with the solitary living spike characteristic of this section.

42. **S. ophioglossoides** (Swartz, f. Ind. occ. p. 1551. Lodd. Bot. Cab. t. 442. Bot. Reg. t. 935, bad. Rchb. Orch. Europ. t. 4, fig. 20-23, very doubtful.) f. sessili. lin. obl. basi angust. spicâ secundâ breviore, ss. subrotund. venis lat. cum centrali confluentibus, pp. labelloque truncatis acutangulis——*Tropical America* (*Guayana*, Schomb. 1025; *Cuba*, Wright, 658; *Jamaica*, Swartz) h. s. sp.——Flowers variable in colour, green deepening to purple in the centre according to Wright.

43. **S. Heylidyana** (Focke in Tijdschrift nederl. II. 201); f. obl. lanc. coriac. obt. emarg. spicâ secundâ multò breviore, fl. minutis 3gonis, ss. deltoideis cordatis acutis, pp. labelloque truncatis æqualibus——*Surinam*, Focke——

44. **S. Hallii** (Lindl. in Hook. Journ. Bot. 1. p. 12); f. lin. obl. petiolato spicâ capill. basi ferè nudâ duplò breviore, ss. subrotund. ovat. dorsali completè trinervi majore, pp. carnosis conc. obsoletè trilobis, lab. truncato——*Peru*, Hall (*on trees at Surucucho, near Cuenca*, hb. Hooker) h. s. sp.——Resembles S. ophioglossoides, but the flowers are larger and fewer, the bracts at the base of the spike are slender and obsolete, and the sepals unequal.

45. **S. Tweediana** (S. grandiflora β. Tweediana, Lindl. in Comp. Bot. Mag. 2. 353); f. obl. obt. subsess. spicâ strictâ secundâ breviore, bracteis obtusissimis, ss. ovato-subrotundis ½ trinerv. dorsali majore, pp. membr. oblat. subrhomb., lab. truncato carnoso marginato, columnæ brachiis elongatis ——*Brazil*, Tweedie (*St. Catharines, on trees*) h. s. sp.——Flowers very small "varying in colour from green to deep yellow," *Tweedie*.

46. **S. papaquerensis** (Rchb. f. in Linn. 23. 821); "f. obl. bilobulato denticulo interjecto, caulis vaginis amplis cinnamomeis, spicâ (validâ) secundâ plurimiflorâ, bracteis retusis, ss. ovat. subacut., pp. cuneatis lunatis, lab. subquadrato crenulato callo transverso per medium"——*Brazil*, Beyrich (*on trees near the River Papaquera*).——

47. **S. scabrida** (Lindl. in Ann. Nat. hist. 4. 115); f. obl. acutè 2-dent. marg. longè petiol., caule brevi vaginâ sulcatâ, spicâ secundâ folio longiore, bracteis acutissimis, floribus minutis globosis, pp. truncatis vertice scabridis, lab. conformi brevi, anth. pubesc.——*Dominica*, Henslow; h. s. sp.——Leaf 2½″. Stem ¾″.

48. **S. muscosa**; f. lin. obl. obt. emarg. caulibus densè cæspitosis longiore, vag. striat., spicâ f. subæq. bracteis obtusis discoloribus, floribus minutissimis globosis, pp. lunatis, lab. truncato rotundato marginato——*Venezuela*, Fendler (*Tovar, no.* 1468) v. s. sp. in hb. Hooker——A dwarf cæspitose plant. Leaf 1″ × 2‴. Infl. resembles a Jungermannia; flowers apparently purple.

49. **S. parvula**; f. obov. emarg. longè petiol. caule longiore, spic. secund. fol. longiore bract. rotundatis, ss. subrotundo-ovatis trinerviis, pp. cuneatis trunc. lab. trunc. rotundato duplò minoribus——*Nicaragua*, Wright in Ringold and Rodgers' expedition, No. 9.——A small cæspitose plant, resembling the last, but the flowers are larger, appear to be green, and are much more distant, and the leaf is 1″ × 5‴.

50. **S. lutea**; f. obl. sess. obt. spicâ strictâ basi nudâ duplò breviore caule omninò vaginato longiore, bract. obt., ss. rotundo-ovatis dorsali majore quinquenervi, pp. margine carnosis rotundatis, lab. rotundato carnoso marginato ——*Venezuela*, Fendler (*near Tovar*, 1461) v. s. sp. in hb. Hooker——Stem 3″, completely hidden in the sheaths, of which there are three, the upper herbaceous and twice as long as the others. Leaf 4″ × 9‴. Flowers yellow. The short blunt bracts are quite different from the long narrow ones of the next species. (Nos. 211 & 5110 of Galeotti's Mexican Collection in Hooker's herb. are very near this, but different; the specimens of them before me are too imperfect for dissection.)

S. tricuspis Lindl. in B. R. 1838, misc. 69 ; f. obl. sem. subl. ... ...

60. **S. discolor** (Rchb. f. in Bonpl. Sept. 1, 1855); f. angusto obl. coriac. caule longiore spicâ strictâ secundâ duplè breviore, ss. ovat. obt. 3-nerv., pp. transvers. membr. 3-nerv. margine superiore carnosioribus, lab. minore unguic. condupl. subrotundo-ovato acuto medio calloso sub lentè scabr.——*Peru*, Jameson (*towards the base of Pichincha in ravines*, 691 *in hb. Hooker*) v. s. sp. ——Leaves 1½″—2″ long by 4‴ broad, with short petioles. Spikes 4″—5″. Flowers purple. This character is drawn from the same source as that of Rchb. but differs much in details. It is probable that he had no good materials at command. The varnished appearance of leaves and the papulose-velvety surface of the sepals inside, do not exist in the Hookerian specimens.

61. **S. gladiata**; f. gladiato coriac. longè petiolato caule paulo longiore spicâ pauciflorâ breviore, bract. apic. ustulatis, ss. in orbem ferè connatis 3-nerv. lat. minoribus venis valdè obliq., pp. trunc. carn. subrot, lab. minore subrotundo conc. medio carnos. condupl.——*Peru*, Jameson (*Quito*, 99) v. s. sp. in hb. Hooker——Very near the last, but distinct in its leaves shaped like a Roman sword-blade, its much shorter spikes, larger ustulate bracts and in the sepals being almost confluent into a circle without sinuses, the veins of the two laterals which are much smaller curving from the base to the point. Full-grown leaf-blade 1¼″ × 3‴; petiole 7‴—8‴. Stem 1″—1½″, closely sheathed, with projecting angles. Spike 2″. Flowers apparently green.

62. **S. purpurascens** (Ach. Richard et Galeotti in Ann. Sc. Nat. 3rd ser. 3. 18); f. lin. obl. obt. membr. spicâ spirali multò breviore, ss. ovatis subinæq. 3-nerv., pp. transv. margine carnos. dorso gibbos. absolutè 3-nerv., lab. subquadrato lateribus incurv. disco abruptè carnoso——*Mexico*, Meisner (1112) hab. s. sp.——A plant with the size and habit of S. ophioglossoides, or perhaps rather larger. Flowers deep purple. In such flowers as contained pollen, and as I have examined there have been *eight pollen-masses!* a case at present without parallel.

63. **S. Jamesoni** (Lindl. in Hook. Journ. Bot. 1. 11); f. obl. carnos. racemo tenui apice paucifloro multò brev., pedicellis bracteis multò longioribus, ss. obl. obt., pp. subrotund. concav., lab. obl. paulò minore ciliolato basi latè bicarinato infra apicem foveato——*Peru*, Jameson. hab. s. sp.——Very easily known by the raceme consisting of 5 to 10 distant very longstalked purple (?) flowers. Leaf 2″ to 3″ long, and 4‴ to 8‴ wide. Raceme 3½″—4½″ long, with slender acuminate distant sheaths towards the base.

64. **S. ascendens** (Lindl. in Comp. to B. Mag. 2. 353. Humboldtia oblonga, Hb. Willd. 16906); rhizomate ascendente, f. obl. carnos. subsessili spicâ secundâ multò breviore, ss. ovatis acut., pp. subrotund. membr. plan. semi-3-nerv., lab. carnoso conformi acutiore.——*Peru*, Hall and Jameson (*valley of Lloa, at* 8000′; *towards the base of Pichincha on sides of ravines; forest of Nanegal*)——A well-marked species, readily known by the well defined veins of the petals terminating abruptly, as if clavate. Flowers purple (?)

65. **S. lamellata** (Hooker ic. t. 62. Lindl. in Comp. B. Mag. 2. 353); rhizomate ascendente, f. carn. lin. lanc. mucronato longè petiolato spicâ secundâ multò breviore, ss. obl. æq., pp. trunc., lab. multò minore subrotundo-ovato acuto concavo basi obliquè bilamellato——*Peru*, Jameson, &c. (*Pichincha on the declivity of Guagua near Quito at* 10000′—11000′) h. s. sp.——Varies in size from the height of 4″ to 8″; and in the form of leaves from linear-lanceolate to spathulate. Flowers apparently pale.

66. **S. barbicollis**; f. obl. carnosissimo condupl. petiol. caule arctè vaginato duplò longiore spicâ secundâ breviore, bract. minut. cupul., ss. ovat. semi-3-nerv., pp. carnos. oblatis apiculatis, lab. ovat. apic., medio convexo, columnâ basi barbatâ, clinandrii lob. dors. maximo subtrident. quadrato——*Peru*, Jameson (*Base of Pichincha, in the suburbs of Quito*) v. s. sp. in hb. Hooker——Stem 1″—2″. Leaf 3″ × 5‴. Spike usually much longer than the leaf, sometimes of the same length. Flowers purple or green, size of St. micrantha. The shaggy beard at the base of the column occurs in no other species.

67. **S. costaricensis** (Rchb. f. in Bonpl. Aug. 1, 1855); f. carnosissimo cun. obl. caule amplè vaginato racemoque 2—3 longiore, bracteis distichis, pp. trunc. c. mucr., lab. ov. acut. utrinquè ante basin calloso medio squamuloso canaliculato——*Costa Rica*, Oersted——Flowers greenish yellow. Said to be near S. lamellata, but the stems are described as 2″—4″ high, and the leaves 2ce or 3ce as long, while the spikes are twice as short as the leaves: characters quite at variance with that species.

68. **S. alba** (H. B. K. nov. gen. et sp. 1. 363); cæspitosa, f. lin. obl. v. spat. caule multò longiore spicâ strictâ capill. spirali multò breviore, ss. ov. v. obl., pp. rotundatis membr., lab. multò minore sub-quadr. apic. disco carnoso sulc.——*Peru* (*near Loxa*, Hartweg; *forests of the Andes*, Jameson, *Popayan*, Humb. and Bonpl.) h. s. sp.——Flowers pallid, membranous. Leaves variable in length and breadth; divisions of the calyx also uncertain in breadth, but always equal, and very distinctly 3-nerved beyond the middle. The apiculate furrowed lip is characteristic.

69. **S. polyclada**; rhizomate ascendente, f. lin. versus apicem spathulato mucronato spicâ spirali breviore, ss. obl. æq., pp. truncatis acutangulis, lab. unguic. subrotundo acuto carinâ sub lentè scabrâ disco carnoso apice bicalloso ——*Peru*, Jameson. h. s. sp.——Resembles a small S. lamellata. Leaves extremely narrow, and very deciduous. Flowers the size and colour (?) of S. alba.

70. **S. stenophylla** (Rchb. f. in Bonpl. 15 March, 1855); f. lin. lig. petiolato obtusè acuto cauli spicæq. secundæ æquali, ss. ov. obt., pp. transv. obl., lab. cordato-triangulari hinc minutè serrul. disco incrassato——*Ocaña*, Wagener (*Agua de la Virgen, Enllanada*, 3′—6000′)——Stem slender 3″. Leaf 3″ × 3‴. Flowers brown, rather smaller than in St. lamellata. Near S. ophioglossoides. *Rchb.*

71. **S. myriantha**; densè cæspitosa, f. lineari acutiss. spica capill. duplò breviore, ss. ov. 3-nerv., pp. subrotund. membr. 1-nerv. labello cochleari utrinquè acutang. medio carnoso æqualibus——*Peru*, Jameson. h. s. sp.—— Much more cæspitose than the preceding. Leaves nearly 1¼″ long and not more than ½‴ broad.

72. **S. humilis**; f. spathul. carnoso obt. sess. spicâ breviore, vaginarum caulis brevis unâ maximâ, ss. ov., pp. trunc. acutang., lab. minore hemisphærico marginato carnoso acuto disco anticè tridentato.——*Venezuela*, Fendler (*Colony of Tovar*, 1467) v. s. sp. in hb. Hooker——A stiff erect species. Stem ¾″ high, entirely concealed by the upper of three sheaths, which is much longer than the others. Leaf 2″ × 4‴. Spikes secund, bearing small (yellow?) flowers nearly to the base.

73. **S. herbiola**; f. lineari petiol. carnos. spicâ pauciflorâ breviore, ss. obl. conspicuè 3-nerv. dorsali carinato, pp. membr. subrhomb., lab. pandurato apiculato carinis 2 apice divergentibus in discum——*New Grenada*, Holton, (*Quindiu*) v. s. sp. in hb. Hooker 193——An inconspicuous species scarcely more than 2″ high, in dense tufts. Flowers brown (?), in a thin slender spike.

74. **S. microphylla**; rhizomate flexuoso ascendente, f. lin. spath. carn. spicâ secundâ 5—6-florâ longiore, ss. obt. lateralibus 1-nerv. dorsali 3-nerv. paulò brevioribus, pp. cun. trunc., lab. apice oblato basi oblongo medio constricto disco carnoso——*Peru*, Jameson (*Eastern Cordillera, on trunks of Escallonia, at* 13,000′) h. s. sp.——Another very small species, with weak ascending flexuose racemes. Full grown leaf 8‴ × 1‴.

75. **S. scansor** (Rchb. f. in Bonpl. 1 Sept. 1855); rhizomate prorepente crasso, f. ovali subsessili caule paulò longiore spicæ erectæ densæ ad basin usquè floridæ æquali, ss. lin. obl. membr. basi tantum obscurè 3-nerv., pp. subrotund. membr. acut. aveniis, lab. minore unguic. cochl. carnoso——*Peru*, Jameson (*near Pasto, in woods*, 448) v. s. sp. in hb. Hook.——Not unlike some Bolbophyllum in habit. Leaf 1½″ × 5‴. Rhizome, as thick as a crow's quill,

articulated, but not scaly, runs along the ground among Hypnum. To this I refer with some doubt a plant in hb. Hooker from the Cerro de Upar, with thin spikes varying in number from 1 to 2; which seems to be an older state of the plant described by Rchb.

76. **S. apiculata**; densè cæspitosa, f. lin. obl. apic. longè petiol. spicâ capillari multò breviore, fl. minutissimis, alabastris 3-gonis, pp. angustè cuneatis uninerv., lab. ovato apiculato enerv.——*Peru*, Jameson (*Forest of Papallada in the E. Andes*) h. s. sp.——Leaf 14‴ × 1‴. Flowers ½‴, distant from each other 2‴. This and the next have the smallest flowers in the genus.

77. **S. graminea**; densè cæsp., f. lin. spath. longè petiolato spicâ capill. multiflorâ brevioribus, ss. ovatis acutis uninerv., pp. oblatis membr., lab. multò minore cuneato rotundato margine inflexo infra ap. foveato——*Peru*, Jameson h. s. sp.——Much like the last, but flowers very numerous and as long as the internodes, while the lip and petals are wholly different. Flowers green.

§ I. EUSTELIS; C. *Monostachyæ*: 2, Brachypodæ, labello tridentato.

*** All the species of this section are small-flowered.

78. **S. cymbiformis**; f. lin. obl. carnoso subsess. mucronulato caule spicâq. recurvâ secundâ longiore, ss. ovalibus 3-nerv. dorsali minore, pp. rotundatis, lab. cymbiformi acuto utrinquè acutangulo——*Venezuela*, Fendler (*near Tovar*, 1465) v. s. sp. in hb. Hooker——Much like S. muscosa and humilis, with the same long third sheath to the short stem. Flowers deep purple in a recurved spike shorter than the leaf. The lip is only to be seen 3-lobed when flattened, and then hardly so.

79. **S. atra** (Lindl. in Orch. Linden. No. 15); f. obl. lanc. utrinquè angustato spicæ strictæ æq. caule longiore, ss. subrotundo-ovat. absolutè trinerviis dorsali majore, pp. labelloq. 3dent. truncatis——Venezuela, *Linden* (*Paramo de la Tulata*, 687) h. s. sp.——Leaf 2½″ × 4‴. Flowers purple.

80. **S. capillaris** (Lindl. in Comp. B. Mag. 2. 353); cæspitosa, f. lin. obl. membr. spicâ capillari breviore, caule multò longiore, bracteis minutis, pp. cuneatis truncatis acutangulis, lab. lobis acutis lateralibus abbreviatis intermedio producto——*Peru*, Mathews (*Casapi*, 1909) h. s. sp.——Leaf 3″ × 2½‴. Flowers very minute. Spike 4″.

81. **S. crassifolia** (Lindl. in Bot. Reg. 1842, misc. 12); f. lineari semitereti spicâ breviore, bract. obt., floribus cernuis, ss. subrotundo-ovatis disjunctis 3-nerv., pp. oblatis membr., lab. subtrilobo carnoso conc. lobis lat. rotund. intermed. elong. acum.——*New Grenada*, Holton (*La Paita*, 160) v. s. sp. in hb. Hooker and v. v. cult.——Leaf 2½″ × 1½‴. Flowers very small, green. In the wild plant, the spike is from 4 to 5 inches long.

82. **S. catharinensis** (Lindl. in Comp. B. Mag. 2. 353); f. coriac. linearispath. mucron. in petiolum angustato caule longiore spicâ subdistichâ breviore, pp. trunc., lab. trident. lob. med. elongato——*Brazil*, Tweedie (*St. Catharines*) h. s. sp.——Much like the last, but smaller. Bracts membranous longer than the minute purple flowers. Spike covered with flowers nearly to the base.

83. **S. aprica** (Lindl. in Comp. B. Mag. 2. 353); f. angust. obl. coriaceo in petiolum angustato caule gracili arctè vaginato paulò longiore spicæ gracili subæquali, pp. oblatis membranaceis concavis, lab. minore carnoso trilobo lobis obtusis lateralibus minoribus——*Brazil*, Hindes (*St. Catharines; on exposed stones*, v. Martius) h. s. sp.——Resembles a small specimen of S. micrantha. Full grown leaf 3½″ × 3‴. Stem 2″. Flowers very small.

84. **S. Serra** (Lindl. in Ann. Nat. Hist. 12. 397); f. obl. coriac. marg. basi angust. spicâ breviore, bracteis altè ochreatis distichis, ss. rotund., pp. membr. retusis, lab. minore cuneato trilobo —— *Peru*, Mathews (*Chachapoyas*) v. s. sp. ex. hb. Hooker——Leaf 1½″ × 3½‴. Stem ½″. See S. spathulata No. 2.

85. **S. Miersii** (Lindl. in Ann. Nat. Hist. 12. 397); f. lin. spath. caule tenui longiore spicâ spirali breviore, bracteis hyalinis truncatis apic., ss. ovatis obt. semi- 3-nerviis, pp. membr. rhomb. uninerv., lab. carnoso acutè 3-dentato disco abruptè carnoso dentibus lateralibus minoribus intermedio concavo—— *Brazil*, Miers. h. s. sp. —— Leaf 2″ × 2‴. Flowers small, pale green, covering the whole spike down to the spathe.

86. **S. cæspitifica** (Rchb. f. in Bonpl. 15 March 1855); f. lin. lanc. longè petiolato spicâ multò breviore, ss. triang. lanc., pp. ovatis retus. c. apic., lab. 3-lob. lobo medio producto obtusè triang. disci carinulis 2 transversis—— *Ocaña*, Wagener——Stem 1″. Leaf 2″ × 2½‴. Spike 4″—8″. Flowers secund, dense near the upper end. Spathe hyaline. Flowers yellowish brown in the dried state.

87. **S. nitens** (Rchb. f. in Bonpl. 15 Jan. 1854); f. obl. spathulato basi valdè attenuato spicâ subsecundâ duplò breviore, bracteis amplis apiculo setaceo porrecto, ss. obl. 3-ang. obt. 3-nerv. altiùs connat., pp. obscurè trilob., lab. cuneato 3-lob. lobo medio latissimo quadrato brevi obtusangulo—— *Caraccas*, Wagener——The form of the middle lobe of the lip in this is remarkable.

§ I. EUSTELIS; C. *Monostachyæ*; 3, Macropodæ.

*** The species proceed from the smaller-flowered to the larger.

88. **S. micrantha** (Swartz, Fl. ind. occ. 1553. Hooker, exot. fl. t. 158. Smith, exot. fl. p. 31, t. 75); f. lato obl. apic. subsess. spicâ breviore, bract. adpr. membr., ss. ovatis æq. 3-nerv. altiùs connatis, petalis cuneatis labelloq. apice excavato truncatis——*Jamaica*, Swartz (*on the sides of rocks on the Blue Mountains*) h. s. sp.——This is now seldom seen in collections. My specimens are out of James Donn's herbarium, probably collected by Masson. The figure in Exotic flora is a very exact representation of general appearance. Flowers green (whitish, *Swz.*). Cultivated specimens from Jamaica in hb. Hooker have longer spikes and narrower leaves than wild ones.

89. **S. oblongifolia**; f. lato ovali utrinquè obt. subsess. caule tenui prolifero duplò longiore spicâ basi amplè ochreatâ breviore, ss. semiconn. 3-nerviis venis lateralibus confluentibus subrotundo-ovat., pp. truncatis, lab. oblato acuto callis 2 distantibus incurvis in discum——*Peru*, Jameson, h. s. sp. ——Leaf 3″ × 1″. Stem 4″. Spike 5″. Flowers purple.

90. **S. acuifera**; f. obl. breve petiol. caule laxè vaginato spicâq. pendulâ multò breviore, bracteis inferioribus longè distantibus (omnibus herbaceis?), ss. cordatis ½-connatis reflexis quinquenerviis æq. sinubus plicatis, pp. trunc. 5-nerviis apice carnos. rugosis, lab. minore unguic. margine scabriusc. concavo basi lunato apice rotund. processu subulato e cavitate exserto——*New Grenada*, Goudot (*Bogota. El Salto, on the trunks of trees.*) v. s. sp. in hb. Hooker—— Stem stout, 7″, with the upper sheath loose and separate from the others. Leaf 7″ × 1½″. Spike pendulous 1′. Flowers dirty green (?). A subulate process rising from the hollow of the lip is very remarkable.

91. **S. elatior** (Lindl. in Comp. B. Mag. 2. 353); f. obl. coriaceo subsess. caule et spicâ multò breviore, bracteis hyalinis truncatis, ss. ovatis subæq., pp. trunc. transv. labello obl. carnoso minoribus——*Peru*, Mathews 1914. h. s. sp.——Stem 4″—5″. Leaf 3½″ × 1″. Stem 4″. Spike erect, flexuose, 8″. Flowers purplish green (?).

92. **S. chachapoyensis** (Rchb. f. in Bonpl. 1 Aug. 1855 ?). caule prolifero stricto, f. carn. ovali apic. brevè petiolato spicâ rigidâ spirali multò breviore, floribus carnosis, ss. subrotundo-ovatis ad basin liberis 5-nerviis dorsali paulò minore, pp. subrotund. 3-nerv. apice carnosis apiculatis, lab. cuneato mucronato acutangulo (hinc 3-dent.) lamellâ transversâ infra apicem——*Peru*, Mathews (*Chachapoyas, on rocks*) v. s. sp. in. hb. Hooker——I have some doubt whether the plant here described is the same as Rchb.'s. Yet it is the only

Chachapoyas species from Mathews to which my learned friend's description will at all apply. It is an upright plant, with the stem producing lateral flowering branches that root at their base. Stem, when full grown 2½″. Leaf ¾″ × ½″. Spike stiff erect 5″ Flowers fleshy deep purple.

93. **S. sesquipedalis** (Lindl. in. Orch. Linden, No. 16.); f. lato ovali brevè petiolato caule spicâq. rigidâ basi ebracteatâ breviore, fl. secundis (majoribus), ss. subrotundo-ovat. obt. 3-nerv. dorsali paulò minore, pp. membr. oblatis, lab. conformi cucullato—*Venezuela*, Linden (*forests on the slope of the Sierra Nevada*, 632) h. s. sp.—Leaf 4″ × 1½″. Spike 7″ to 10″. Flowers pale yellow.

94. **S. pentodonta** (Rchb. f. in Linn. 23. 821); f. obl. basi cun., spicâ validâ secundâ, ss. obl., pp. ovat. trunc. bis emarg., lab. quadrato basi obtusè angulato apice 1-dent. lamellis 2 in discum longitudinalibus—*Tropical America*—Described from No. 16904 of Willdenow's herbarium, being part of Humboldt and Bonpland's collection.

§ I. EUSTELIS; C. *Monostachyæ*; 4, Barbatæ.

*** None of these are either large-flowered, or very small-flowered.

95. **S. pachystachya**; f. lato obl. 2-lob. subsess. caule longiore spicâ crassâ ad basin usquè floridâ 3plò breviore, ss. subrotundo-obl. intùs pubesc., pp. subrotund. incurvis, lab. obl. carnoso carinis 2 parallelis distantibus rotundatis carnosis—*New Grenada*, Purdie (*Mountains of Ocaña*) v. s. sp. in hb. Hooker—Leaf 3″ × 11‴. Stem 2″, with thin loose sheaths. Spathe membranous. Spike 7″, with green spiral flowers.

96. **S. vittata**; f. obov. brevè petiol. spicâ sursùm tantùm floridâ duplò longiore, bracteis minutis pedicellis brevioribus, floribus quaquaversis, ss. intùs pub., pp. subrotundis 3-vittatis, lab. unguic. orbic. carnoso medio depresso—*Peru*, Jameson (*Valley of Lloa*, 92, 322) h. s. sp.—Not unlike a large S. Jamesoni. Leaf 3″ × 7‴ rather membr. Spike 9″, the lower half naked, with small obsolete sheaths. Flowers purple. The veins of the petals are broad brown clavate bands.

97. **S. sphærochila**; f. lin.-obl. obt. spicæ æq. caule longiore, ss. obl. intùs pubesc., pp. apice carnosis rotund. altè marginatis, lab. globos. apic. versus basin utrinquè unidentato—*Venezuela*, Fendler (*near Tovar*, 1464) v. s. sp. in hb. Hooker—Leaf 3″ × 3‴, channelled. Bracts very small. Flowers green. Teeth of the lip linear and ciliated.

98. **S. atroviolacea** (Rchb. f. in Bonpl. 15 March, 1855); f. ligulato spath. spicæ distich. æq., ss. obl. intùs velutinis, pp. renif. unguic., lab. flabellato anticè rotundato utrinquè extùs acuto lamellâ transv. ante apicem—*Ocaña*, Wagener—Stem 2″. Leaf 2″, very coriaceous. Flowers very firm, deep purple, like those of S. ophioglossoides. Seems to be near the last, as far as I can understand the published description.

99. **S. eublepharis** (Rchb. f. in Bonpl. 1 Sept. 1855); f. obov. angustè petiol. spicâ breviore, floribus distantibus pedicellis bracteis longioribus, ss. intùs lanatis, pp. membr. oblat. 3-nerv., lab. minimo oblongo disco carnoso —*Peru*, Jameson (*Pululagua, on trunks of trees*, 264; *trunks of trees near Lloa at* 9000′; hb. Hooker) h. s. sp.—Leaf 2¼″ × 5‴ rather membranous. Stem 1½″. Spike bearing flowers nearly to the base. Sepals greenish purple (!) with a lining of thin white wool.

100. **S. lanata**; f. obl. coriaceo petiolato caule laxè bivaginato breviore, racemis subgeminis erectis folio duplò longioribus, ss. carnosis subclausis ovatis nervosis intùs lanatis !, pp. cuneatis membr., lab. majore oblato plano medio carnoso lineâ transversâ elevatâ—*Andes of Quito*, Jameson (*on trunks and branches of trees on both slopes of the Cordillera, up to* 12,000 *feet on the East side*) h. s. sp.—A most remarkable species with its dark purple calyx densely

woolly inside. Leaves 2½" to 3" × 3"'—3½"'. Stems 3" or less. Possibly may be the same as S. angustifolia, No. 19.

101. **S. Tricardium**; f. coriac. sputh. spicâ breviore, fl. subsecundis, bract. lanc. erectis, ss. æq. cord. intùs pubesc., pp. cuneatis carnosis, lab. angulato medio carnoso canalic., clinandrii dente dorsali quadrato serrulato——*Peru*, Jameson (*Quito*) v. s. sp. in hb. Hooker——Although imperfect, the specimens in hb. Hooker show that this is a quite distinct species. The sepals are remarkably cordate, dull purple in the middle, fading into a pale margin. The pubescence within them, although fine, is observable with a less magnifying power than is necessary to make out the petals and lip.

102. **S. ciliaris** Lindl. in Comp. Bot. Mag. 2. 853. S. atropurpurea, Hooker in Bot. Mag. t. 3975); f. lato obl. basi angustato spicâ infra nudâ sursum densâ recurvâ breviore, ss. ovatis ciliatis, pp. oblato-rhombeis carnosis, lab. ovat. carn. basi canaliculato——*Mexico*, Linden (*Mirador, in the Province of Vera Cruz*, 213) v. v. cult.——Flowers deep purple, with long fringes to the calyx. Spike naked half way up, then closely covered with flowers.

103. **S. argentata** Lindl. in B. Reg. 1842. misc. 78); f. lin. obl. coriac. emarg. in petiolum angustato spicâ tenui distantiflorâ breviore caule longiore, ss. æq. ovat. acutissimis subdiaph. pubesc., pp. labelloque subæq. trunc.——*Guayana*, Schomburgk. v. v. cult.——Flowers green. The silvery points on the petals and lip, which gave rise to the name, were probably bundles of subcutaneous raphides.

104. **S. pauciflora** Lindl. in Ann. Nat. Hist. 12. 397); f. obov. lanc. obt. 3-dent. in petiolum angustato, spicâ nutante fol. subæq., floribus distant., ss. subrotund. æq. ciliatis intùs pilosis, pp. ciliatis labelloq. carnosis——*Brazil*, Miers. h. s. sp.——Much like the last but far smaller, and with truncate ciliated petals. Requires to be re-examined with better specimens.

105. **S. fraterna**; f. lin. obl. coriac. brevè petiol. spicâ tenui spirali densiflorâ breviore caule longiore, ss. ovatis acutis ciliatis dorsali paulò majore, pp. rotundatis carnosis, lab. ovato obtuso canaliculato——*Brazil*, Hort. Angl. v. v. cult.——Much like S. argentata; but flowers purple, smaller, and very closely arranged, bracts broader, and petals by no means truncate.

106. **S. flexuosa** (Lindl. in Ann. Nat. Hist. 12. 397. S. capillipes, Rchb. f. in Bonpl. 1 Sept. 1855); f. tenui obovato marginato mucron. longè petiol. racemo flexuoso multifloro multò breviore, pedicellis bracteis minutis duplò longioribus, ss. obl. obt. margine araneosis, pp. membr. cun. subrhombeis, lab. obov. emarg. apiculato callo magno obovato 2-lobo per discum——*Peru*, Jameson, Mathews (*forests of the Andes at* 10,000') h. s. sp.——Varies in height from 3" to 6". Flowers small dark purple. The character of petals and labellum is taken from Reichenbach.

§ II. DIALISSA. *Lindl. in Ann. Nat. Hist.* 15. 107.

* *Distichæ.*

107. **S. Dialissa** (Rchb. f. in Bonpl. 15 March, 1855. Dialissa pulchella, Lindl. l. c.); f. lanc. utrinquè acum. spicâ multò breviore, caulis vaginis maculatis acum., bract. distich. canalic. retrorsùm falc., s. inf. bilobo, pp. ovatorhomb. membr. semi- triveniis, lab. obov. rotund. semi- 3-venio lamellis 2 convergentibus transversis——*Popayan; N. Grenada; Andes of Quito* (*Paramo de Guanacas*, Hartweg, 1413; *forests on the slope of the peak of Tolima at* 10—11,000', Linden, 1275; *from the descent on the eastern flank of the Andes at* 12,000', Jameson) h. s. sp.——Terrestrial. Spike 1'—1½', with a few thin bracts towards the base, densely distichous in the upper half. "Flowers yellow," *Linden*.

108. **S. acutissima**; f. obl. obt. spicâ distichâ multò breviore, bract. acum. adpr. floribus brevior. infimis vacuis maximis, s. inf. 2-dent., pp. labelloq. apiculato rotundatis margine carnosis——*Peru*, Jameson (*Western side of Pichincha*) h. s. sp.——Leaf 4" × 1". Stem longer, with the upper sheath

loose, acute, at some distance from the leaf, not speckled as in the last. Flowers much larger than in the last.

** *Polystachyæ.*

109. **S. nutans**; f. pergam. ovali acuto angustè petiol. caule exili spicisq. 2—3 nutantibus multò breviore, floribus minutissimis subglobosis, s. inf. 2-carin. emarg., pp. cun., lab. subrotund. transv. lamellato——*Peru*, Jameson (*Forest of Nanegal*) h. s. sp.——Stem very slender, with long inconspicuous close-pressed sheaths, 7″. Leaf 4″ × 1¼″. Spikes 6″ with almost obsolete bracts. Spathe acuminate, transversely corrugated. (Small specimens are not more than 6″ high from the root to the point of the spike. The lip sometimes appears as if 3-dentate, probably from contraction.)

110. **S. flacca** (Rchb f. in Bonpl. 1 Sept. 1855); f. pergameneo angust. oval. longè petiolato caule spicisq. geminis breviore, bract. brev. obl., s. dorsali ovali 3-nervi antico multò majore 6-nervi bidentato, pp. crassis truncatis, lab. minimo conc. trident. disco carnoso——*Peru*, Jameson (*Western side of Pichincha, on trees*, 735 *in hb. Hooker; forests of the Andes*) h. s. sp.——Leaf 2¾″ × ⅜″. Stem very slender. Flowers dark purple, rather large. I cannot find in the specimens before me (quite certainly authentic) the kind of lip described by Rchb. f.

111. **S. parvilabris** (Lindl. in Ann. Nat. Hist. vol. 15.); f. ovali acutiss. coriac. spicis strictis et caule longiore, bract. latis acutiss., fl. triang., s. inf. subrotund. retuso, pp. orbic. membr., lab. min. conform. carinato disco tuberculato——*Popayan*, Hartweg (*Paramo de Guanacas, very scarce, at* 10,000′) h. s. sp.——In close tufts. Stem 1½″. Leaf 3″ × ⅝″ very coriaceous. Flowers nearly as large as in S. flacca.

112. **S. cupuligera** (Rchb. f. in Bonpl. 1 May, 1854); caule valido, f. obl. acut. basi cun., racemis 2—3, bract. brev. cupulatis longè triang. quam ovario brevioribus, s. dors. triang., pp. minutis rhomb. versus apicem carnosis, lab. rhomb. 3-carin.——*Peru*, Warczewitz——Leaf 5″ × 1″. Spathe ribbed, lanceolate acute. "Very like S. maxima but only half the size."

*** *Monostachyæ, lab. truncato.*

113. **S. connata** (Presl. reliq. Haenk. 1. 103. Pleurothallis spiralis, L. O. 10); f. coriaceo obl. acut. spicâ spirali breviore, bract. internodiis æqualibus adpressis, s. supremo angustè ovato: antico multò majore divaricato emarg. 5-venio venis lat. furcatis, pp. labelloq. truncatis——*Peru*, Hartweg; *Bolivia*, Bridges. h. s. sp.——Stem 2½″, with very loose sheaths. Leaf 3″ × ¾″. Flowers purple 6‴ from point to point when expanded.

114. **S. columnaris**; f. obl. obt. spicâ multò breviore, ss. integerr. antico majore ventricoso, pp. rotund. carnos. columnâ erectâ tereti duplò brevioribus, lab. æq. unguic. peltato carnoso semicirculari——*Peru*, Jameson (*W. side of Andes, on trunks of trees*) h. s. sp.——Lamina of leaf 1″ × 4‴. Stems 7‴ on an ascending rhizome. Spike 3″. Flowers small, dark purple. The long erect column is unique in the genus, and has scarcely any stigmatic arms; both it and the petals are velvety under the microscope. The pollen-masses are hollowed out behind. The centre of the peltate lip is hollow in the dried specimen.

115. **S. truncata** (Lindl. in Comp. B. Mag. 2. 353); f. obl. coriac. brevè petiol. apice recurvo caule prolifero spicâq. strictâ breviore, bract. acum. adpr. membr. internodiis æq., ss. subæq. dorsali 5-nerv. antic. subrotund. 2-dent. 8-nervi, pp. rotundatis labelloq. cuneato trunc.——*Peru*, Mathews (*Province of Chachapoyas*) h. s. sp.——Full grown leaf 3″ × ½″. Flowers appear to be green, middle sized.

116. **S. maxima** (Lindl. in Ann. N. Hist. 1845, p. 106. Rchb. f. in Bonpl. May 1, 1854); f. lat. obl. coriac. subsess. cauli laxè vaginato subæq. spicâ

[illegible] spadix [illegible], f. membranis, s. dorso ovat. 3-ne [illegible] 3-seri. 12-seri. [illegible] apiculatum, pp. connatis lunatis: [illegible] carnosis. [illegible] ——*Peru*, [illegible] h. s. sp. ——*By far the large* [illegible] *Stem* [illegible] *Leaf* [illegible] with a petiole [illegible] *half the length* [illegible] *Flowers purple, sepals* [illegible] *much long. The p* [illegible] *Wagner's name differs according to the description of* [illegible] *in the form of the parts of the flower. The character here given* [illegible] *seems to* [illegible] *a careful re-examination of perfect flowers. The vena* [illegible] *the sepals* [illegible] *three principal veins traverse it, on either side* [illegible] *with a few slight ones, next the side veinings is a slight* [illegible] *translucent space, and between it and the margin is another very slig-* [illegible] *veins at maturity.*

S. melanosticta Bull. f. in Bonpl. 15 March. 1855.; f. [illegible] *petiolum tenuem involvit, ss.* ——, *pp. unguic. reniform.* [illegible] *in unum apice mucronatum in lacunam* ——; *carnosa, Wagner.* [illegible] *Leaf* [illegible] *not half the size. Above a foot high.* [illegible] ——[illegible] *Bracts "triangular cuspidate convolute."* [illegible] *same as the last. Stigmatic arms quadrate. Endl. f.*

S. densiflora f. ovali-ovat. crassè petiol. caule pauci- [illegible] *f. ovatis lunatis acutis, s. antico dorsali multò m.* [illegible] *triplicata, lab. minore oblongo apice truncato——Peru, Matthews* [illegible] *Leaf* [illegible] *Baker——Leaf full grown* 3½" × ¾". *Spike* [illegible] *Flowers purple* [illegible] *Bracts ciliate.*

**** *Monostachyæ, labello pleno v. connexo.*

S. ventricosa. caule ascendente, f. lanceol. longè petiol. *caulis* [illegible] *f. ovato-lanc. s. dorsali 3-nervi antico bilobo, pp. concavis trinervia* [illegible] *f. antico semilunato apice emarginato——Bolivia, Bridges. h. s. sp.——* Stem [illegible] *with a close sheath above, and a loose one lower down.* [illegible] ½" × ½". *Flowers below the middle size. Very like S. tricsta, No. 126.*

S. Bisetula; f. ovali-lanc. utrinquè acum. caule prolifero spicâque [illegible] *pp. dorsali 3-nervi antico bilobo ovatis acuminatis——Peru, Jameson* [illegible] *h. s. sp.——Resembles S. ventricosa, but is very much smaller. The bracts and bracteoles together give the spike the appearance of a two-edged saw. The upper sepal larger than the lower.*

S. aristata. f. ovali longè petiolato caulí aq. spicâ ramiferâ multò [illegible] *ss. ovatis dorsali 3-nervi antico 2-dent. pp. connatis, lab. ovato con-* [illegible] *antico bisetoso——Peru, Jameson (Andes of Quito) h. s. sp.——Leaf* [illegible] *its lamina* 1½" × 5". *its petiole* 6". *Spike* 6", *with a very* [illegible] *and 1 linear acuminate bracte below the flowers which are pale green. The unexpanded flower resembles a bird's head.*

***** *Monostachyæ, labello tridentato.*

S. nana: f. ovali pergam. angustè petiol. caule laxè vaginato spicâq. [illegible] *ss. semiovat. antico concavo integerr. dorsali* [illegible] *3-nerv., pp. lunatis carnosis, lab. minimo cum 3-dent.——Peru, Jameson, h. s. sp.——Lamina of leaf* 2" × ¾": *petiole* ¼". *Spike dense* 1½". *Flowers* [illegible] *size. Bracts large, membr. obtuse.*

S. alismæfolia: f. ovali pergam. angustè petiol. caule exili spicâq. [illegible] *ss. ovatis antico 2-dent., pp. lunatis dorso subcarinat., lab. min. quadrato 3-dent.——Peru, Jameson Forest on the Western side of Pichincha, on trunks of trees, fl. h. s. sp.——Full grown leaf without petiole* 2¼" × ⅛". *Flowers size of S. fasciata, apparently purple. Stigmatic arms unusually long.*

S. depauperata; densè cæspitosa, f. tenui ovali-lanc. angustissimè petiolatis spicâ brevissimâ, caule laxè vag., ss. pubescent. obtusis antic. subrotund.

128. **P. Fockei** (P. tricarinata, Focke in Bot. Zeit. 1853, p. 341, nec Pöppig); folio lanceolato caule nudo tereti breviore, spicâ pauciflorâ, sepalis glabris carinatis dorsali ovato acuminato lateralibus in unum latum oblongum basi valde gibbum ferè connatis, petalis lanceolatis serratis, labello unguiculato subrotundo-cordato acuto glanduloso-hirto——*Surinam*, Focke. h. ic. pict. comm. cel. inv.——Leaf 2⅛" × 8‴. Flowers dull purple. Lip brighter and covered with minute spots.

129. **P. inæqualis** (Lindl. in Bot. Reg. 1842, misc.); folio oblongo obtuso caule tereti pluries breviore, spicâ densâ, ovario pubescente, sepalis pubescentibus dorsali quinquevenio oblongo lateralibus disjunctis ovatis 3-veniis duplo majore, petalis nanis inæquilateris integris, labello oblongo fimbriato. ——*Brazil*, Miers. v. s. sp. comm. cel. inv.

130. **P. Hoffmannseggiana** (Rchb. f. in Linnæa xxii. 827); folio oblongo crasso basi et apice angustato caule angulato æquali (?) spicâ pauciflorâ multò longiore, bracteis imbricatis, sepalis tomentosis oblongis subæqualibus lateralibus basi connatis gibbosis, petalis obtusè rhombeis serrulatis, labello oblongo truncato "lineis 2 incurvatis elevatis supra margines basilares ortis apicis medio excurrentibus"——*Brazil*, Hoffmannsegg. h. s. comm. cel. Rchb. ——In habit similar to P. ophiocephala, No. 94, but with different flowers and inflorescence. Flowers so close to each other that their bracts somewhat overlap.

131. **P. truxillensis** (Rchb. f. in Bonpl. Jan. 15, 1854); folio oblongo crasso, pedunculis 4-5-floris floribusque densè tomentosis, sepalis 2 dorsali ligulato acuto antico oblongo bidentato, petalis obtusè rhombeis serrulatis, labello unguiculato ovato-ligulato serrulato lamellis 2 semilunatis juxta basin, androclinio fimbriolato——*New Grenada*, Schlim——"Stem stout with 2-3 joints. Flowers white, with lilac dots and stripes."

132. **P. auriculata** (Lindl. in comp. Bot. Mag. 2. 356); folio oblongo, racemis laxis nutantibus, sepalis ovatis glabris concavis subæqualibus, petalis brevioribus oblongis ciliatis, labelli plani 3-lobi ad isthmum bilamellati lobis acutis lateralibus minoribus——*Brazil*, Miers, Descourtilz (*near the river Macahé, abundant in old woods*), h. s. sp. comm. cel. Miers——The leaf varies in breadth from 3‴ to 7‴, but is always about 2" long. Flowers dull brown. Petals white. According to Descourtilz's drawings, in the Delessert library the lateral lobes of the lip are terminated by a dark globular gland, and the border of the antherbed is entire. But Mr. Miers's specimens, which I have carefully dissected, do not confirm that representation. I find no glands, and the border of the antherbed is distinctly 3-lobed.

133. **P. Smithiana** (Lindl. in Bot. Reg. 1843, misc. 79. Hort. Soc. Journ. ii. 247, c. ic.); folio crasso oblongo, racemi stricti pauciflori pedunculo intra spatham incluso, sepalis pubescentibus dorsali oblongo 3-nervi antico triplo latiore bidentato bicarinato, petalis rhombeis unguiculatis serratis, labello oblongo obtuso bilamellato sagittulato utrinque juxta basin lobulo aucto——*Brazil*, Miers, h. s. sp. et v. v——Leaf 2½" × ¾". Flowers 2-6, the size of P. aphthosa, white with purple spots.

134. **P. amœna** (Ach. Rich. Orch. Mex. in Ann. Sc. 3, ser. iii. 16); "folio lanceolato acuto, spicâ 3-florâ, floribus pedicellatis intensè purpureis, sepalis inferioribus omninò coalitis, labello trilobo lobo medio acuto"——*Mexico* ——Compare this with P. memor, No. 51.

135. **P. Acianthera** (Acianthera punctata, Scheidw. in Allg. Gartenzeit. 1842, p. 292); folio ovato obtuso glauco utrinque purpureo-punctato, racemis paucifloris cernuis, sepalis 2 villosis dorsali galeato, petalis nanis cuneatis apice dilatatis, labelli trilobi lobis lateralibus acutis intermedio obtuso—— *Brazil*, Scheidweiler——A very small plant, with oval leaves, and five or six greenish grey flowers speckled inside with purple. It possibly belongs to the Lepanthiform division.

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136. **P. pubescens** (Lindl. in Comp. Bot. Mag. 2. 355); folio lanceolato coriaceo canaliculato racemis nutantibus fasciculatis duplò longiore, sepalis pubescentibus dorsali lanceolato antico bidentato, petalis lanceolatis serratis, labello oblongo membranaceo glabro acutiusculo lobis lateralibus brevibus rotundatis inflexis, clinandrio serrulato——*Mexico*, Barker. v. v. c. olim——My specimens of this plant having disappeared, I can add nothing to the original specific character. Flowers dull purple, striped with bright purple, smooth inside.

** *Folium caule longius v. subæquale.*

137. **P. strupifolia** (Lindl. in Bot. Reg. 1839, misc. 3. P. picta, Bot. Mag. t. 3897. P. bicolor, Lindl. in Bot. Reg. 1842, misc.); folio longissimo loriformi, racemis brevibus fasciculatis pendulis ad spatham usque floridis, sepalis 2 pubescentibus dorsali lanceolato recurvo antico oblongo bidentato, petalis nanis lineari-lanceolatis integris, labello oblongo obtuso carnoso excavato lobulo utrinque juxta basin inflexo——*Brazil*, Loddiges (*Rio*), v. v. c.——Leaves like long straps, 18″; sometimes shorter and broader. Racemes 3″—4″, with loose short funnel-shaped spreading bracts. Dorsal sepal, petals and lip white spotted and striped with purple; front sepal all purple speckled. The native country is uncertain. According to the labels at Woburn it is Mexican (see B. M.); but the careless manner in which records were kept by the late D. of Bedford's gardener renders it impossible to place any confidence in his statements.

138. **P. recurva** (Lindl. in Bot. Reg. 1841, misc. 1); folio coriaceo obovato-oblongo obtusissimo caule crasso multò longiore, spicâ brevi recurvâ, sepalis acutis pubescentibus lateralibus connatis basi gibbosis, petalis nanis lanceolatis, labello membranaceo ovato obtuso medio constricto, columnæ margine petaloideo incurvo——*Native country uncertain.* v. v. c.——A good deal like P. obovata. Flowers leathery, yellowish brown.

139. **P. ochreata** (Lindl. in Bot. Reg. sub t. 1797); folio crasso oblongo-lanceolato complicato mucronato spicâ densâ nutante pauciflorâ duplò longiore, sepalis alato-carinatis acutis lateralibus semiconnatis, petalis nanis truncatis apiculatis, labello . . . . . .——*Brazil*, Martius (*on the rocks of the Serra do Monte Santo in the province of Bahia*), v. s. sp. in hb. Martius ——Calyx red. Petals yellow. *Martius.*

140. **P. ciliata** (Knowles' Floral Cabinet, t. 19); folio coriaceo ovali, racemis nutantibus paucifloris basi nudis, ovario pubescente, sepalis glabriusculis dorsali lanceolato antico multò latiore acuto basi gibboso, petalis nanis ciliato-serratis, labello sessili carnoso obovato acuto serrulato per medium excavato——*Demerara* hort. v. v. c.——Leaf 2½″ × 11‴. Flowers orange-coloured, pubescent only near the ovary.

141. **P. Bufonis** (Klotzsch in Allg. Gartenz. July 22, 1854); folio oblongo erasso recurvo carinato spicâ 5-florâ duplò longiore, sepalis acuminatis puberulis antico oblongo bidentato, petalis obovatis acutis unguiculatis hispido-ciliatis, labello oblongo acuto serrato—— *Venezuela*, Wagener——Flowers pale green, streaked and dotted with dark purple. Petals spotted with deep purple at the edge. Lip deep purple, dotted.

142. **P. hypnicola** (Lindl. in Bot. Reg. 1842, misc. ? P. fusca, Lindl. in Comp. Bot. Mag. 2. 354); folio pergameneo obovato acuto in petiolum longum angustato caule duplò longiore, vaginis 2 castaneis acutissimis cauli subæqualibus, pedunculo capillari apice pauciforo pedicellis quam flores duplò longioribus, sepalis glabris ovatis disjunctis, petalis nanis rhombeis unguiculatis acutis, labello unguiculato ovato obtuso acuminato——*Brazil*, Miers (*among Hypna*); Descourtilz (*in the deepest and most gloomy parts of virgin woods*), h. s. sp. & v. ic. pict.——Sheaths of stem 2, dark chesnut colour. Leaf 3″ × ¾″. I suspect my P. fusca to be a mere iteration of P. hypnicola. But I have no memoranda respecting it.

143. **P. longirostris** (Focke in Bot. Zeit. 1853, 341); folio lato-lanceolato recurvo basi angustato canaliculato, pedunculo capillari 3-floro, sepalis acuminatis antico obtuso emarginato, petalis rhombeis rostratis multò brevioribus, labello nano obtuso linguiformi medio dilatato——*Surinam*, Focke, h. ic. pict. comm. cel. invent.——Flowers dirty yellowish brown. Raceme scarcely ½d so long as the leaf.

144. **P. ephemera** (Lindl. in Bot. Reg. 1842, misc.); folio oblongo v. obovato acuto mucronato cauli basi vaginato æquali, pedunculo capillari bifloro, ovario triptero, sepalis acuminatis alato-carinatis lateralibus connatis, petalis nanis lanceolatis acuminatis, labello lineari recurvo——*Brazil*, Miers, Descourtilz (*on trees overhanging torrents descending from the Terra das Aguas, in the district of Ilha Grande; also near Bananal, where it covers whole trees, emitting a slight odour of Lily of the Valley*, Desc.), h. s. sp. comm. cel. Miers——Flowers orange yellow, nearly an inch long. I much suspect this to be identical with P. longirostris, with which I should have united it had not the remarkable winged keels of the sepals been omitted in Judge Focke's drawing of the latter.

145. **P. glanduligera** (Lindl. in Comp. Bot. Mag. 2. 355); folio ovali carnoso racemis trifloris triplò longiore, caule nudo canaliculato, sepalis 2 glabris dorsali galeato acuto antico basi gibboso bidentato longiore, petalis nanis rhombeis acutis grossè dentatis, labello ovato oblongo obtuso apice piloso margine utroque juxta basin inflexo glanduloso——*Brazil*, Loddiges, v. v. c.——A small species. Leaf 2″ × ¾″. Flowers pale yellowish green, faintly streaked with dull purple.

146. **P. emarginata** (Epidendrum? monophyllum, Hooker. Exot. Fl. t. 109. Specklinia emarginata, LO. 3, excl. syn.); folio oblongo emarginato, caule tenui pedunculoque capillari bifloro longiore, sepalis lineari-lanceolatis æqualibus lateralibus semiconnatis, petalis conformibus nanis, labello basi saccato et utrinque acutangulo lineari-lanceolato serrulato, columnæ cucullo grossè dentato——*Jamaica*, Wiles——Leaf about 1½″. Sepals green, ovary which is warted, and lip rose colour, petals white with a rose-coloured midrib.

147. **P. Sonderana** (Rchb. f. in Linn. xxv. 238); folio carnoso lineari acuto triquetro cauli subæquali pedunculo bifloro breviore, sepalis teneris acutis æqualibus altè carinatis, petalis nanis linearibus obtusis, labello conformi apice serrulato utrinque juxta medium carnosiore abruptè inflexo, columnæ cucullo subgloboso undulato——*Brazil*, Regnell (*Minas Geräes*), h. s. sp. comm. cell. Rchb. & Sonder——Leaf about ½ inch long or rather more. Stem of the same length. Flowers very small, diaphanous when dried.

148. **P. stenostachya** (Rchb. f. in Linnæa xviii. 399); folio lanceolato petiolo tenui longissimo, racemis fasciculatis erectis paucifloris petiolo brevioribus, sepalis patentissimis disjunctis linearibus acutis altè carinatis, petalis linearibus acutis duplò brevioribus, labello longiore ligulato obtuso carnoso aspero basi plicatâ transversâ, columnâ quadratâ utrinque alatâ antice acutangulâ——*Mexico*, Leibold (*Xalapa*); Galeotti 5168 (*on rocks at 3000′—4000′, in the province of Vera Cruz*), h. s. sp. comm. Rchb. & v. s. sp. in hb. Hooker——Leaf including petiole 1½″. Stem about ¾″. Flowers orange, among the smallest in the genus.

B. *Vaginæ caulis ostio marginatæ ciliatæ;* LEPANTHIFORMES.

*** See P. Acianthera, No. 135, which may belong to this group.

149. **P. orbicularis** (Specklinia orbicularis, Lindl. in Bot. Reg. 1838, misc. 41. P. biflora, Focke in Tijdschr. nederl. ii. 147. Bot. Zeit. 1849, p. 638); folio subrotundo-oblongo v. ovali marginato cauli subæquali, vaginis 3-deciduis, pedunculis sessilibus bifloris, sepalis glabris dorsali lineari acuminato lateralibus conformibus semiconnatis basi gibbosis, petalis nanis serratis acuminatis, labello lineari-linguiformi ciliato in aristam producto——*Surinam*,

Focke: *Demerara*, Loddiges; v. v. c. & ic. pict. com. cel. Focke——Whole plant between 2" and 3". Flowers dull purple. (Column with a subtrifid hood. Pollen-masses 2.)

150. **P. villosa** (Knowles & Westc. Flor. Cab. 2. p. 78. P. lepanthiformis Rchb. f. in Linnæa 18, 398. Bonpl. Jan. 15, 1854. Specklinia ciliaris, Lindl. in Bot. Reg. 1838, misc. 40): folio angusto oblongo-lanceolato petiolato racemo duplò longiore, caulis folio æqualis vaginis 4 supremis foliaceis, sepalis carinatis ciliatis dorsali lineari patulo antico duplò latiore bidentato obtuso basi saccato, petalis nanis linearibus obtusis, labelloq. obovato-oblongo obtuso ciliatis——*Mexico*, Loddiges. v. v. c.——Whole plant 4". Flowers small, purple. (Column with a ciliated tridentate hood. Pollen-masses 2.)

151. **P. memor** (Rchb. f. in Bonpl. Oct. 15. 1856); folio oblongo-lanceolato coriaceo, caulis vaginis navicularibus ostio ciliatis, bracteis ancipitibus limbo velutinis, sepalis pubescentibus obtusis lateralibus semiconnatis, petalis ligulatis fimbriatis retusis, labello ciliato mediò trilobo lobis lateralibus semioblongis medio ligulato obtuso——*Native country unknown.* Flowered at Lacken.——Stem 2"—3". Leaf purple beneath, 1½" × 1". Stem sheaths 4-5. Spikes half as long as leaf. Flowers small, deep purple. ("Carina antice barburi per axin androclinii lobulato ciliatulo," *Rchb.* What does this mean?)

152. **P. pruinosa** (Lindl. in Bot. Reg. 1842, misc. Rchb. f. in Nederl. kruidk. arch. iv.): folio lanceolato caule capillari longiore, vaginis deciduis acutis costatis, spicis filiformibus erectis pauciforis, sepalis subrotundo-ovatis concavis subæqualibus carinatis extus pruinosis antico obtuso emarginato, petalis linearibus subæquilongis, labello nano ovato acuto utrinque infra medium obtusangulo——*Jamaica*, Wilson; *Surinam*, Focke, Splitgerber (*on branches of Crescentia*); *French Guiana*, Leprieur, 115. h. s. sp.——Flowers yellowish. A small tufted plant about 2½" high.

153. **P. Quitensis** (Rchb. f. in Bonpl. Sept. 1, 1855); folio rigido obovato lanceolato marginato cuspidato cauli subæquali, vaginis 4 costatis ostio scabris quintâ spathaceâ, racemis fasciculatis laxis folio duplò brevioribus bracteis ferè campanulatis apiculatis, "sepalo dorsali amplo lanceolato acuminato lateralibus duplò angustioribus, petalis nanis ligulatis obtusis emarginatis, labello ligulato cordato basi obsoletè tricarinato petalis longiore"——*Equador*, Jameson, 65. Adest in hb. Hooker——About 3 inches high. Leaves remarkably hard in the dried state. I have not examined the flower.

[**P. disticha** (A. Rich. & Gal., Orch. Mex.). Of this I have a tracing kindly communicated by Rchb. It represents a plant with a stem 4 inches high, an oval leaf 1¾" × 1", a short distichous pedunculated raceme of flowers, and from 5 to 9 Lepanthine sheaths on the steam. There are no details of fructification, and I can have little doubt that the plant is some Lepanthes. It is probably the same as a specimen in the Banksian herbarium collected by Shakspeare in "America meridionalis."]

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§ VIII. ELONGATÆ; foliis basi angustatis, caulibus teretibus, racemis folio multò longioribus, sepalis haud acuminatis.

*** P. teres, No. 118, should in strictness stand here, but it is left among the Brachystachyæ on account of its habit.

A. LEPANTHIFORMES; continued from last §.

(See P. xiphochila among the Apodæ cæspitosæ.)

154. **P. Chamælepanthes** (Rchb. f. in Bonpl. Sept 1, 1855); folio oblongo marginato petiolulato caule 3plò breviore, vaginis pubescentibus nunc foliaceis, racemo capillari pauciforo, "sepalo utroque lanceo subulato antico bifido

margine scabriusculo, petalis ligulatis brevissimis, labello basi trilobo "—— *Peru*, Jameson, 313 (*valley of Lloa on trees*), v. s. sp. in hb. Hooker——Stem 2″—3″, inclined to be proliferous, with a sheath now and then developed into a true leaf. Flowers extremely small.

155. **P. floripecten** (Rchb. f. in Bonpl. Jan 15, 1854); folio ovali petiolato pedunculis capillaribus apice tantum densè floridis multò breviore, vaginis glabris supremo subfoliaceo, floribus transversis invicem tangentibus, "sepalo dorsali ovali abbreviato antico elongato lobis apicis divaricatis, petalis ovatis nanis, labello ovali obtusè sagittato"——*Caracas*, Wagener. h. s. sp. comm. cel. Rchb.——A very remarkable plant, 3″—4″ high, with dense flowers, placed horizontally. ("Rostel broad, 3-lobed; the lateral lobes ligulate, the middle dentiform. Anther dorsal.")

156. **P. punctata** (Lindl. in B. Reg. sub t. 1797); folio crasso ovali v. subrotundo plano-convexo caule capillari breviore, vaginis minimis summis tantum ostiolatis, sepalis 2, petalis lanceolatis apice pubescentibus, labello longè unguiculato cordato-sagittato obtuso carnoso apice membranaceo——*Brazil*, hort.——A very small plant, not more than an inch high. Leaves dotted with purple beneath. Flowers dark purple. (Column long, concave, thin-edged, with the antherbed 2-toothed in front.)

B. Vaginæ caulis rectæ, adpressæ.

1. *Tomentosæ*; sepalis tomentosis.*

* *Petala serrata.*

157. **P. plumosa** (Lindl. in Bot. Reg. 1842, misc. P. minax, Rchb. f. in Bonpl. Jan. 15, 1854); folio coriaceo ovali spicâ pauciflorâ apice tantum floridâ paulo breviore caule multò longiore, sepalo dorsali lineari sub apice intùs convexo antico duplò latiore obtuso basi gibbo, petalis nanis argutè inciso-serratis, labello concavo rhombeo serrulato papilloso —— *Venezuela*, Fendler, 2152; *Caracas*, Wagener; *Trinidad*, Loddiges. v. v. c. & h. s. sp. —— Leaf 2″ × ½″. Flowers green in gardens, orange coloured wild, with a little purple dotting on the inside. Fringe of petals very long. The dissection of a flower of his P. minax given me by Prof. Rchb. and Fendler's specimens show that plant not to be distinct from P. plumosa.

158. **P. Lanceana** (Lodd. Bot. Cab. t. 1767); folio carnoso lato oblongo cauli æquali spicâ pendulâ breviore, sepalis lineari-lanceolatis antico bidentato, petalis setaceo-acuminatis fimbriatis, labello unguiculato ovato bilineato emarginato——*Surinam*, Lance. v. v. c.——Flowers yellow, crimson at the base inside. I am not certain that the flowers of this are downy, my specimen having been lost.

** *Petala integra.*

159. **P. Schiedei** (Rchb. f. in Linnæa xxii. 826); folio ovali basi cuneato, caule bivaginato, pedunculo filiformi paucifloro, sepalis pilosis dorsali obovato acutiusculo lateralibus semiconnatis basi saccatis, petalis subretusis basi angustioribus, labello unguiculato trullæformi retuso venis 3 incrassatis lateralibus furcatis——*Mexico*, Schiede.——(Antherbed with a membranous denticulate border.)

160. **P. Meridana** (Rchb. f. in Linnæa xxii. 829); folio oblongo angusto margine recurvo in petiolum longum canaliculatum angustato racemo denso erecto subæquali, sepalis ligulatis obtusis disjunctis intùs villosis, petalis nanis linearibus, labello ligulato unguiculato lamellis 2 maximis erectis versus apicem evanidis —— *Venezuela*, Funck & Schlim, 1441. h. s. sp. —— Leaf

* Some of the Apodæ cæspitosæ, especially P. hians, immersa, crenata, &c. might perhaps be better placed here. See those species.

4" × ½", thinner than usual so that the edges roll back. Stem of the same length, angular, with 2 long principal sheaths. The flowers are larger than in any allied species, apparently orange-colour; sepals though smooth on the outside quite shaggy within. (Column with a large denticulate hood.) The spikes are rather too short for this §.

161. **P. saurocephala** (Lodd. Bot. Cab. t. 1571. Bot. Mag. t. 3030. Bot. Reg. t. 1968), folio coriaceo lato oblongo cauli angulato univaginato æquali, spicis erectis strictis imbricatis tomentosis, sepalis coriaceis dorsali oblongo antico 2-plò latiore ovali bilobo, petalis nanis rhombeis unguiculatis, labello subrotundo-ovato obtuso lamellis 2 carnosis——*Brazil*, Loddiges. v. v. c.——Leaf 4" × 2". Flowers yellowish green, changing to light brown, closely dotted with purple inside.

2. *Alatæ*: sepalis alato-carinatis.

162. **P. gigantea**; folio carnoso oblongo carinato caule brevi pluries longiore, vaginis 2 coriaceis laxis supremâ cauli æquali, spicâ crassâ acutangulâ flexuosâ folio duplò longiore, bracteis distantibus duris ochreatis apice herbaceo carinato incurvo obtuso, ovario scabro, sepalo dorsali ovato-oblongo complicato lateralibus posticis alato-carinatis semiconnatis minore, petalis lanceolatis basi hinc tuberculo pedicellato auctis, labello unguiculato hastato lobis lateralibus erectis falcatis intermedio ovato-lanceolato longiore supra unguem brevem bituberculatis——*Peru*, Mathews. h. s. sp.——This very remarkable plant bears little resemblance to any other. Its short stem (1½") is more than ½" in diameter; the leaf 6" × 1"; the flower stem 1', and as thick at the base as a goose-quill. The unguis of the lip is channelled with thick edges; column winged lanceolate with a great arched rostel; the anther horned at back; the pollen-masses 2, thin. This and the next might perhaps be separated as representing a distinct genus; but I am not yet sufficiently acquainted with the meaning of some part of their structure.

163. **P. erinacea** (Rchb. f. in Bonpl. Dec. 1. 1854); folio obovato basi cuneato, spicâ obtusangulâ flexuosâ distichâ, bracteis alato-carinatis herbaceis margine scariosis, ovario aspero, sepalis angustè triangulis disjunctis dorsali breviore lateralibus carinatis, petalis lanceolatis basi utrinque unicallosis, labello unguiculati hastati lobis lateralibus setaceis emarginatis intermedii trilobi serrati laciniis lateralibus nanis terminali ligulatâ——*Ocaña*, Wagener. h. fructum semimaturum & v. ic. comm. cel. Rchb.——This is evidently a close relation of the last, with the same calli at the base of the petals, and a pair of setaceous arms at the base of the lip instead of the falcate plates of the last. "Leaf 3" × 1¼". Stem short, its point only seen. Spike more than 1'. Flowers, the stalks included, above 1"."

164. **P. tripterantha** (Rchb. f. Xenia 1. 73. t. 28); folio oblongo utrinque angustato caule multò longiore, (racemo pendulo?), ovario triptero, sepalis acutis alato-carinatis, petalis nanis ligulatis acutis, labello scabriusculo rhombeo retuso lamellulâ utrinque intra angulos——*Caracas*, Wagener——Leaf 3"—4" × 1". Raceme 3"—4". Flowers purple, speckled. (See No. 213.)

165. **P. tripterygia** (Rchb. f. Xenia 1. 74. t. 28);——*Caracas*, Wagener——A very doubtful plant, described from fragments which it would have been better to pass over. The wings of its sepals seem to be shallower than in the last and the lip narrower and acute. It is probably not different from the last.

166. **P. tricarinata** (Pöppig & Endl. n. g. & sp. 1. 49. t. 87); folio angusto oblongo basi attenuato spicâ strictâ distichâ duplò breviore caule longiore v. æquali, bracteis acutis margine membranaceis, ovario sepalisque 2 alato-carinatis obtusiusculis antico latiore, petalis linearibus acutis, labello lineari-lanceolato margine carnoso ante apicem membranaceum evanido, cucullo columnæ integro——*Peru*, Pöppig (*on trees near Pampayan and Cuchero*); *Bolivia*, Bridges, Weddell, 3658 (*near Azero, in woods on the trunks of trees*), h. s. sp.——Flowers dull yellow. Stem 2", with the principal sheath inserted near the base. Leaf 2", quite flat. Spikes 4½" to 5".

167. **P. glumacea** (Lindl. in Comp. to Bot. Mag. 2. 355). This is probably the same as the last; differing, according to the account given by Descourtilz, in having a nodding spike, and a blunt lip, both requiring verification——*Brazil*, Descourtilz in bibl. Delessert (*fallen trees blocking up the course of rivers, and often vegetating although under water; Rio de Pirahy and on the road from St. Paul's to Rio Janeiro*)——Flowers yellow, scentless.

168. **P. ligulata**; folio carnoso ligulato basi attenuato caule ascendente longiore, vaginis infimis rugosissimis, spicâ secundâ folio paulò longiore, bracteis distichis membranaceis, sepalis lineari-oblongis carnosis obtusis carinatis lateralibus parum connatis, petalis cuneato-oblongis 3-veniis, labello breviore conduplicato basi oblongo truncato apice in lobum angustiorem producto——*Peru*, Jameson (*Stelis No.* 2), v. s. sp. in hb. Hooker——Resembles P. gilva in the general appearance of the flowers, but the leaves are totally different, as well as the short scabrous sheaths at the base of the lip.

169. **P. pachyphylla** (Rchb. f. in Linn. xxii. 824); folio oblongo coriaceo carinato basi obtuso cauli æquali, spicâ distichâ strictâ duplò longiore, bracteis ochreatis acutis membranaceis, sepalis carinatis antico bidentato concavo basi saccato margine reflexo, petalis subquadratis apiculatis uninerviis subdentatis, labello longiore carnoso cordato unguiculato acuto conduplicato, columnæ cucullo grossè dentato——*Brazil*, Miers (*Iguassú in the prov. of Rio Janeiro*), v. s. sp.——Resembles P. tricarinata in habit, but is very distinct in structure. My plant does not quite agree with Rchb.'s description, as will be seen by comparison.

170. **P. Boliviana** (Rchb. f. in Bonpl. Aug. 1, 1855); folio oblongo-ligulato caule longiore spicis geminis distichis duplò breviore, bracteis sepalisq. 2 carinatis antico bicuspide, petalis lanceolato-ovatis acuminatis, labello ligulato utrinque ante basin obtusangulo, columnæ cucullo in ligulam producto——*Bolivia*, Bridges——Stem 1", triangular. Leaf $1\frac{1}{2}$" × 4‴.

171. **P. trilineata**; folio angusto oblongo basi canaliculato caule angulato breviore, vaginâ supremâ carinatâ, spicis 1-2 distichis strictis folio longioribus, bracteis carinatis fuscis ciliolatis, sepalis disjunctis oblongis carinatis intùs puberulis, petalis nanis linearibus 3-veniis, labello breviore rhombeo acutangulo lineis 3 atris per medium——*Peru*, h. s. sp. comm. am. Hooker——Leaf 3" × $\frac{1}{2}$". Flowers apparently brown. (Column very short, cucullate.)

172. **P. crassipes**; folio lato oblongo petiolato spicæ subæquali, caule conico elongato angulato, spicâ distichâ bracteis diaphanis obtusis, sepalis oblongo-linearibus carinatis dorsali recurvo lateralibus semiconnatis, petalis nanis lanceolatis, labello carnoso trilobo lobis obtusis concavis lateralibus minoribus——*Venezuela*, Funck & Schlim, 189. h. s. sp. comm. cel. Linden. ——Stem much thicker at the base than summit. Leaf 4" × $1\frac{1}{4}$". Inseparable from this group, although the spikes appear to be rather shorter than the leaves. (Column longer than in the last, with a 3-toothed decurrent hood.)

173. **P. velaticaulis** (Rchb. f. in Linnæa xxii. 824); folio oblongo-lanceolato pergameneo longè petiolato caule distanter bivaginato breviore, spicis (2) secundis folio paulò longioribus, sepalis disjunctis acutis carinatis, petalis nanis linearibus carinulatis acutis, labello obtusè trilobo lobis lateralibus hinc emarginatis intermedio brevioribus venis tribus elevatis cis basin confluentibus——*Caracas*, Otto; *Venezuela*, Fendler, 1472. h. s. sp.——Leaf 7" × $1\frac{1}{4}$", of which $1\frac{3}{4}$" is occupied by the stalk. Stem 6"—7", angular, with two thin brown tubular sheaths the tip of the lower being $1\frac{1}{2}$" below the base of the upper. I presume that the difference between Rchb.'s description and the foregoing has arisen from his having had some ill-grown garden specimen before him. The carinate sepals compel a place for this which is, alas! very unnatural.

3. *Tristes;* racemis laxis secundis, floribus magnis atratis cernuis, labello apice carnoso.

174. **P. restrepioides** (Lindl. in Bot. Reg. 1842, misc.); folio oblongo subpetiolato caulis proliferi articulis subæquali, racemis strictis elongatis, bracteis tubulosis, sepalis oblongis acuminatis subæqualibus concavis antico emarginato, petalis lanceolatis obtusè acuminatis paulò brevioribus, labello oblongo concavo apice abruptè ligulato carnoso——*Peru*, Mathews (*Chachapoyas*), h. s. sp.——Flowers large, ⅝" long, strongly marked with purple on a green (?) ground. Racemes stout, some as much as 9" long.

175. **P. Fritillaria** (Rchb. f. in Bonpl. Sept. 1, 1855); folio oblongo v. ovali racemo secundo triplò breviore, bracteis membranaceis tubulosis, sepalis ovato-lanceolatis lateralibus semiconnatis, petalis rhombeo-lanceolatis acuminatis 3-nerviis apice carnosis duplò brevioribus, labello longiore spathulato intùs binervi apice carnoso serrulato——*Peru*, Jameson (*western declivity of the Andes, on rocks and precipices*), h. s. sp.——I have only the end of the stem. Largest leaf 4½" × 1½". Racemes slender 9"—12". Flowers ⅝" long, deep purple.

176. **P. scabrata;** folio coriaceo ovali caule longiore racemo paulo breviore, bracteis tubulosis, sepalis lanceolatis obtusis antico majore, petalis lanceolatis acuminatis ultra medium scabratis, labello membranaceo subrotundo adjecto lobo terminali linguiformi serrato——*Bolivia*, Bridges. h. s. sp.——Leaf 6" × 1½". Stem much longer, thick as a crow's-quill. Flowers not half the size of the two preceding.

4. *Filiferæ;* petalis filiformibus sepalis æqualibus, labelli trifidi lobo medio abruptè deflexo.

177. **P. saltatoria;** folio ovali acuminato pergameneo articulis caulis proliferi æqualibus, racemo secundo folio duplò longiore, sepalis ovatis antico majore, petalis filiformibus patentissimis, labello brevi acute tridentato callis 2 in medio——*Bolivia*, Bridges. h. s. sp.——Leaf 4" × 1¼". Spike 6". Flowers 5"' long, quite smooth. Petals spreading at right angles to the sepals, giving the expanded flowers the appearance of a dancing object steadying itself by a tiny balance-pole.

178. **P. antennifera;** folio ovato-oblongo pergameneo, caule tenui multò longiore articulo ultimo brevi carinato vaginâ ventricosâ acutâ, spicâ secundâ folio triplò longiore, sepalis ovato-oblongis antico majore, petalis erectis obtusis, labello brevi lobo medio triangulo scabriusculo acutato lateralibus nanis obtusis——*Peru*, Jameson (*ravines of Pichincha*), h. s. sp.——Stem slender 6"—7". Leaf 3" × 1". Spike 7". Flowers 3"' long, pale green. (Column terete, truncate.)

179. **P. incurva;** folio ovato-oblongo basi obtuso pergameneo, caule tenui multò longiore articulo ultimo ancipiti, spicis 2 secundis folio paulò longioribus, sepalis ovato-oblongis antico majore, petalis erectis acuminatis, labello brevi æqualiter 3-partito lobis acutis trinerviis lateralibus erectis incurvis——*Peru*, Jameson (*Andes of Quito*), h. s. sp.——Very much like the last, but clearly different in the points indicated in the specific character. (Column terete, truncate, with an erect subulate rostel.)

5. *Densifloræ;* floribus apteris glabris brevipedicellatis membranaceis, petalis nanis.

180. **P. incompta** (Rchb. f. in Bonpl. Jan. 15, 1854); folio lineari-oblongo apice rotundato basi angustato caule univaginato longiore, spicâ secundâ folio longiore basi nudâ, "sepalo dorsali oblongo-lanceolato acuto galeato antico

elliptico bidentato, petalis ovato-lanceolatis paulo brevioribus, labello sepalis æquali oblongo obtuso supra medium pandurato constricto"——*Caracas*, Wagener; *Venezuela*, Fendler, 1462. h. s. sp.——A short stem with one thin long sheath, and a blunt leaf with margins almost exactly parallel, plainly mark this.

181. **P. Magdalenæ** (Rchb. f. in Bonpl. Dec. 1, 1854); folio spathulato oblongo acutiusculo, sepalis triangulo-ligulatis disjunctis, petalis ligulatis basi inferiori acutangulis, labello ligulato obtuso utrinque ante basin angulato——*Magdalena*, Schlim.——Stem clothed with sheaths. Leaf 2″ × ½″. Whole plant 5″—6″ high. *Rchb.*

182. **P. longissima** (P. racemiflora, Lindl. in Hook. Exot. Fl. t. 123, nec Swartzii); folio spathulato caule duplò longiore, spicâ longissimâ secundâ, sepalis ovalibus antico latiore bidentato, petalis patulis oblongis 3-veniis sepalis duplò brevioribus, labello lineari canaliculato obtuso decurvo subcordato——Said to come from *Jamaica*, Loddiges. v. v. c.——I have nowhere found wild specimens of this, and much question its inhabiting Jamaica. It is not the Dendrobium racemiflorum *Swz.* as I formerly supposed, and as will be shown hereafter at No. 203. Flowers green. Raceme more than a foot long. (Column cucullate.)

183. **P. rubens** (Lindl. in B. Reg. sub t. 1797); folio coriaceo ovali obtuso petiolato caule longiore, spicâ secundâ ter longiore, sepalis disjunctis acutis, petalis oblongis 1-veniis vix duplò brevioribus, labello ligulato obtuso medio constricto lamellis 2 carnosis sigmoideis infra isthmum——*Brazil*, Regnell (*Minas Geräes*), h. s. sp. comm. cel. Sonder——In habit like the last, but with quite different leaf and flowers. Regnell's specimen is scarcely more than 6″; that of hb. Martius 1′. (Column with a long rostrate hood.)

184. **P. foveata**; folio oblongo subsessili cauli æquali, spicâ debili duplò longiore, bracteis fuscis scariosis, sepalis ovatis subliberis ciliolatis, petalis spathulatis uninerviis, labello breviore rhombeo supra carinato basi foveato et utrinque acutangulo——*Peru*, Jameson. h. s. sp.——Leaf 4½″ × 1″. Spike 10″, with about 5 distant empty bracts near the base, which arises from a brown membranous spathe 1″ long. Flowers small, apparently white.

185. **P. longicaulis** (Lindl. in Bot. Reg. 1842, misc.); folio angusto oblongo spicis brevibus breviore, caule multò longiore apice ancipiti, sepalis acutis lateralibus apice liberis, petalis lanceolatis duplò brevioribus, labello ovali trifido acuto laciniis lateralibus nanis lineis 2 elevatis intra isthmum——*Brazil*, Miers. h. s. sp.——Leaf 2″ × ½″. Stem 7″. Flowers green.

186. **P. quadrifida** (Lindl. in Bot. Reg. 1842, misc. Dendrobium quadrifidum, La Llave 2. 40. P. Ghiesbreghtiana, Ach. Rich. in Ann. Sc. ser. 3. 3. 16); "folio cuneato-oblongo carnoso lucido vaginante, caule elongato, racemis fasciculatis longissimis erectis, sepalis 2 apice reflexis, petalis sublinearibus erectis acutis, labello trilobo carinato."——*Mexico*, La Llave (*near Valledolid, about Jesus del Monte*)——Can this be P. longissima incorrectly described? it seems very like it. "Flowers lemon-scented towards evening." Or is it P. velaticaulis, No. 173.?

6. *Laxiflorœ*; floribus apteris glabris membranaceis longipedicellatis distantibus, petalis nanis.

187. **P. trulla** (Rchb. f. in Bonplandia, May 1, 1854); folio crasso oblongo utrinque angustato, racemis 3 apice tantum floridis secundis, sepalo dorsali lineari-oblongo antico latiore ovali bidentato basi gibboso, petalis obovatis trinerviis sepalis paulò brevioribus, labello membranaceo multò minore unguiculato subrotundo-cordato obtusè acuminato utrinque intra marginem bilamellato medio subaspero——*Peru*, Warczewitz. h. flores 3 et frustulum, comm. cel. Rchb.——In the fragment I have of this the pedicels are curved

and extend 3‴ beyond the bracts. "Stem somewhat 4-cornered. Leaf 3″—5″ × 1½″. Raceme 2″—5″."

188. **P. trichophora** (Lindl. in Taylor's Ann. Nat. Hist. ser. III. i. 326); folio ovali obtuso caule laxe vaginato paulò breviore, racemo capillari floribus distantibus, sepalis disjunctis ovatis obtusè acuminatis, petalis linearibus acuminatis elongatis, labello unguiculato subrotundo-ovato 2-lamellato, columna cucullata crispâ trilobâ——*Cuba*, Wright, 659, h. s. sp.——Flowers dark red or purple.

189. **P. pachyglossa** (Lindl. in Bot. Reg. 1840, misc. 146); folio angusto ovali petiolato racemo capillari multò breviore caule longiore, sepalis acutissimis membranaceis antico bidentato, petalis nanis obovatis carnosis dorso sub apice verrucosis, labello petalis duplò longiore unguiculato crassissimo obtuso linguiformi basi auriculato per axin villoso dorso verrucoso——*Mexico*, Barker. v. v. c.——Raceme with scarcely more than four flowers, divided from each other by intervals of nearly an inch, with semitransparent purple sepals. Leaf 3″ × 7‴. Upper sheath as long as the stem itself.

190. **P. rhodotantha** (Rchb. f. in Linnæa xxii. 825); folio coriaceo oblongo basi cuneato, spicis 5—6 capillaribus elongatis multifloris, sepalo dorsali oblongo acuto galeato lateralibus lanceolatis acutis imâ basi connatis, petalis nanis oblongis obtusis, labello trilobo abbreviato lobis lateralibus in paginam lobi medii transgredientibus——*New Grenada*, Funck & Schlim, 1442 (*Pamplona at* 9000′)——Stem 5-angled. Flowers yellow streaked with rose.

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§ IX. ACUMINATÆ; foliis basi angustatis, caulibus teretibus aut angulatis, racemis folio longioribus, sepalis acuminatissimis.

A. LEPANTHIFORMES.

191. **P. Dinotherii** (Rchb. f. in Bonpl. May 1, 1854); folio membranaceo acuto petiolato caule prolifero multò breviore, vaginis vittatis, spicis capillaribus elongatis, sepalis ovato-lanceolatis acuminatis dorsali galeato costato lateralibus subliberis retrorsum falcatis basi valdè obliquis, petalis ligulatis ciliolatis columnâ longioribus, labello longiore linguiformi obtuso bilamellato velutino——*Peru*, Warczewitz. h. s. sp. comm. cel. Rchb.——Leaf 1″ × 3‴. Stem 3″, with about 6 short sheaths. Flowers much smaller than in P. arbuscula. (Column with a 3-lobed hood, of which the side divisions are rounded and much larger than the dorsal, which is flat and truncate.) Compare this with P. diptera, No. 279.

192. **P. dura**; folio duro petiolato caule simplici multò breviore, vaginis costatis, spicis capillaribus elongatis, floribus secundis laxis nutantibus, sepalis rectis liberis carinatis, petalis ligulatis columnæ longitudine basi angustioribus, labello ligulato sulcato velutino canaliculato supra basin obtusangulo——*Peru*, Jameson (*Forests of the Andes*), h. s. sp.——Very like the last, but the stem is not proliferous. Flowers (yellow?) whole coloured, larger. (Column with a three-lobed hood, of which the side divisions are somewhat falcate and blunt, and much larger than the dorsal which is spoon-shaped.)

193. **P. Arbuscula** (Lindl. in Bot. Reg. 1842. misc.); folio ovali acuto petiolato caule prolifero multò breviore, spicis densis secundis nutantibus, sepalis disjunctis linearibus, petalis nanis oblongis, labello glabro ligulato duplò longiore medio sulcato——*Peru*, Hartweg, 37 (*near Loxa*), h. s. sp.——The proliferous stems are 6″, with a tendency to form leaves in the axil of the sheaths. Flowers about 7‴ long, with the sepals but little spreading.

194. **P. intricata** (Lindl. in Orch. Linden, No. 4); folio oblongo coriaceo obtuso petiolato juniore ciliato caule subbivaginato paulò breviore, racemis laxis capillaribus erectis flexuosis multò longioribus, sepalis apice setaceis lateralibus liberis parallelis, petalis nanis lanceolatis acutis, labelli trilobi laciniis lateralibus obtusis membranaceis antrorsum productis intermediâ

carnosâ lineari elongatâ——*New Grenada*, Linden (668, *at* 10000′ *in Merida; also* 122, *Triana, in the Prov. of Mariquita*), h. s. sp.——Much like P. dura. Flowers apparently purple. Linden's 122 with thin ciliated leaves seems to be the young state of his 668.

B. Vaginæ caulis rectæ adpressæ.

1. *Filiferæ;* petalis setaceis v. filiformibus sepalis subæqualibus.

195. **P. glossopogon** (Rchb. f. in Bonpl. Mar. 15, 1855); folio oblongo utrinque angustato, sepalis 2 velutinis ovato-lanceolatis, petalis setaceis, labello "basi humerato" tripartito laciniis lateralibus lineari-lanceis introrsum hamatis intermediâ multò longiore ligulatâ basi bicarinatâ per medium et apice barbatâ——*Caracas*, Wagener. h. fl. s. comm. cel. Rchb. cum. 2 seq.——Stem 6″. Raceme few-flowered. Flowers 2″. Sep. purple. Pet. white.

196. **P. biserrula** (Rchb. l. c.); folio oblongo valdè carnoso basi cuneato, sepalis 2 glabris antico bicuspide, petalis setaceis basi undulatis crenulatis, labello cordato ligulato tricarinato utrinque argutè retrorsum serrato-dentato——*Caracas*, Wagener (*San Pedro*), h. fl. s.——Leaf 4″—5″ × 2″. Peduncles 2, a fourth part longer than the leaf. Flowers 1½″ dark purple.

197. **P. Sirene** (Rchb. l. c.); folio oblongo angustato subacuto valdè coriaceo, sepalis 3 glabris, petalis setaceis, labello tripartito basi humerato laciniis lateralibus nanis lineari-ligulatis intermediâ ligulatâ subrhombeâ basi utrinque carinatâ antice serrulatâ——*Caracas*, Wagener. h. fl. s.——Leaf 3″. Racemes one or more, twice or thrice as long. Flowers 1½″ watery brown streaked with purple.

*** These three species are very remarkable with large dull-coloured flowers, long sepals, and weak bristle-like petals.

2. *Densifloræ;* petalis nanis, floribus subspicatis.

198. **P. acuminata** (Lindl. in Bot. Reg. 1842, misc. Rchb. f. in Bonplandia, Jan. 15, 1854. Dendrobium acuminatum, H.B.K. 1. 357); folio oblongo utrinque angustato valdè coriaceo racemo ad basin florido sextuplò breviore, caule angulato brevi, sepalis lineari-lanceis subæqualibus, petalis nanis oblongis acutis, labello oblongo utrinque angustato emarginato venis 3 carinatis——*Peru*, Humb. Bonpl.——The above is abridged from Rchb. who examined the original specimen. If it were not for the wholly different form of leaf it might be identified with the next. (Hood of column toothletted.)

199. **P. ramulosa;** folio oblongo obtuso petiolato pergameneo caule prolifero angulato breviore racemo ad basin florido pluries breviore, sepalis linearibus setaceis disjunctis, petalis nanis oblongis uninerviis ecallosis, labello oblongo obtuso venis 3 elevatis——*Peru*, Jameson (*Quito, W. Andes*), h. s. sp.——Leaf about 1¾″ × ¾″. Stem 2½″. Racemes 5-6. Flowers about 1″, apparently yellow. (Hood of column slightly wavy.)

200. **P. stenopetala** (Lindl. in Bot. Reg. 1838, misc. 182. P. listrostachys, Rchb. f. in Bonpl. March 15, 1855); folio oblongo obtuso petiolato carnoso racemis multò breviore, sepalis linearibus disjunctis intùs pilosis, petalis nanis oblongis obtusis uninerviis sub apice unicallosis, labello oblongo versus basin dilatato concavo lineis 2 carnosis intra marginem——*Brazil*, Weddell (*Minas Geräes*); *British Guyana*, Schomburgk; *Venezuela*, Funck & Schlim, Feudler, 2153; *Peru*, Jameson, 327 (at *Pululagua*), h. s sp. & v. v. c——It seems that this unusually dispersed plant varies somewhat in the size of the flowers, and in their colour, which is either pale sulphur or absolutely yellow. There is nothing of importance by which P. listrostachys can be separated. The lateral fleshy lines of the lip, very obvious in the dried specimen, are not observable when fresh.

201. **P. aurea** (Lindl. in Ann. Nat. Hist. xii. 397); folio oblongo nunc

basi angustato racemo secundo basi modo multò breviore, sepalis dorsum linearibus obtusis basi latioribus intus glanduloso-scabris, petalis nanis linearibus acutis univeniis subcarinatis, labello cuneato apice rotundato 3-venio 2 crassioribus, columnæ cucullo denticulato——*Caracas*, Linden. *Grows at Sierra Nevada at Merida*, h. s. sp.——Leaf 3½″ × ¾″, sometimes shorter and broader. Racemes 7″. Flowers yellow, greenish outside. This must not be confounded with P. aurea *A. Rich.* to me unknown.

202. **P. asperilinguis** (Rchb. f. in Bonpl. May 1, 1854), folio oblongo apiculato basi cuneato racemo dimidio breviore, sepalis 3 æqualibus dorsali triangulo apice lineari, petalis ovatis acutis triveniis, labello cuneato oblongo 5-venio apice aspero carinâ marginali utrinque, columnæ cucullo denticulato ——*Peru*, Rchb ——Leaf 2″ × ½″. Raceme flowering to the base, 10-flowered 3″—4″. Flowers yellow, half the size of P. aurea.

203. **P. racemiflora** (Dendrobium racemiflorum, Swartz, Fl. Ind. Occ. 1543. P. oblongifolia, Lindl. in Comp. Bot. Mag. 2. 355); folio oblongo petiolato racemo duplò breviore, spathâ elongatâ, sepalis intus glabris lateralibus connatis carinatis, petalis nanis oblongis obtusis 3-venis apice serrulatis dorso pubescentibus, labello ovato obtusè acuminato in ipso medio 3-venio——*Jamaica*, Swartz (*on the highest mountains on the S. side of the island*); *Cuba*, Wright, 616; *Venezuela*, Fendler, 1463. h. s. sp. & v. v. c.——Original specimens from Swartz in the Banksian and Linnean herbarium show that this, not No. 182, is the plant meant by Swartz as his D. racemiflorum. Flowers purple. Fruit 6-ribbed. Fendler's specimens are smaller than those from Jamaica and Cuba.

204. **P. sclerophylla** (Lindl. in Bot. Reg. sub t. 1797); folio oblongo petiolato obtuso carnoso racemo capillari multò breviore, sepalis linearibus disjunctis, petalis nanis linearibus obtusis univeniis sub apice callosis, labelli trilobi laciniis lateralibus nanis rotundatis intermediâ productâ ovatâ glanduloso-pilosâ, columnæ cucullo apiculato integro——*Brazil*, Martius (*Serra de Piedade, in the prov. of Minas; and on rocks in open plains near St. Paul's*), v. s. olim in hb. Martius——Leaf 2½″ × ¾″. Stem 2″. Raceme 4″. Looks like a dwarf P. stenopetala.

205. **P. serrifera;** folio sessili oblongo pergameneo racemis strictis gracilibus rectis breviore, bracteis minutis, floribus pubescentibus bilabiatis, sepalis linearibus acutissimis antico bidentato, petalis nanis acutis serratis, labello ovato acuto utrinque acutangulo apice serrato basi intra marginem bicalloso, columnæ cucullo trilobo laciniis lateralibus semiovatis falcatis—— *Brazil*, Spruce, 2724 (*Caatingas, Panuré*), h. s. sp.——Leaf 4″ × 1″. Racemes 4, from 6″—7″ long. Stem quite naked for 2″ below the summit; its full length unknown.

206. **P. verrucosa** (Rchb. f. in Bonpl. Jan. 15, 1854. Masdevallia verrucosa, id. in Linnæa xxii. 819); folio oblongo basi cuneato apice angustato, pedunculo valido verrucoso, racemo sparsifloro, sepalo dorsali linearilanceolato apice dilatato lateralibus apice setaceis, petalis triangulis acutis, labello medio rotundo apice ligulato retuso denticulato callis 2 semilunatis laceris——*Caracas*, Funck & Schlim, 1439——Leaf 3½″ × 1½″. Raceme somewhat longer. Flowers 4‴—5‴ long, yellow green with purple stripes.

3. *Laxifloræ;* floribus longè pedicellatis.

207. **P. arcuata;** folio angusto ovali petiolato racemo disticho triplò breviore, bracteis carinatis incurvis, sepalis angustis alato-carinatis acuminatis membranaceis antico bidentato, petalis nanis carnosis cuneatis tridentatis, labello cordato-ovato membranaceo, columnâ apice denticulatâ postice ligulatâ dentatâ——*Brazil*, Miers. h. s. sp. comm. cel. Miers——Stem 2″, with loose brown sheaths. Raceme 9″—12″, flexuose. Leaf 3½″ × ¾″. The petals are thickly occupied by gland-like cysts which give them a dotted appearance.

208. **P. alpestris** (*LO. 14.* Dendrobium alpestre, Swartz, Fl. Ind. Occ.

; folio ovato-lanceolato basi acuminato racemis filiformibus laxis breviore, s lanceolatis integris conniventibus lateralibus semiconnatis, petalis ovatis acutis, labello ovato obtuso concavo, carinis capsularum muricatis *Jamaica*, Swartz (*on the Blue Mountains in the Spring*), v. s. sp. in hb. s——Stem 2". Leaf 2"—3". Flowers yellowish-green. Lip deep purple.

9. **P. prostrata** (Lindl. in Ann. Nat. Hist. ser. III. i. 327); folio oblongo-olato obtuso caule prostrato duplò longiore racemis capillaribus flexuosis ali, sepalis ovatis acutis antico bifido, petalis nanis lanceolatis acutis eniis, labello obtusè rhombeo 3-venio minutè denticulato concavo, carinis ularum muricatis——*Cuba*, Wright, 629. h. s. sp.——Stem 1". Leaf 2". wers dull purple. Differs from the last in the proportion of stem and leaf ell as other particulars. It is better placed here than among the Muscosæ w Apodæ) to which I originally referred it.

10. **P. laxa** (LO. 13. Dendrobium laxum, Swartz. Fl. Ind. Occ. 1547); o oblongo acuminato basi acuto leviter carinato racemo laxo flexuoso subæ-li, sepalis ovato-lanceolatis dorsali patente lateralibus suberectis semiconnatis, alis nanis linearibus acutis, labello ovato canaliculato apice reflexo, capsulæ inis nudis.——*Jamaica*, Swartz (*Blue Mountains in Spring*), v. s. sp. in hb. nks——Stem 2"—4" with long lax carinate sheaths. Flowers dark purple, iped. Lip bluish. (Pollen-masses deep blue ! ! *Swartz.*)

211. **P. Sprucei**; folio papyraceo lanceolato caule sulcato nudo longiore cemo paucifloro capillari æquali, floribus pubescentibus, sepalis acutissimis orsali angustiore recurvo, petalis lanceolatis fimbriatis, labello glabro ungui-ılato acuto basi lamellis 2 obtusangulis carnosis aucto——*Brazil*, Spruce, 725 (*low sandy woods called Caatingás by the river Uaupés, on trees*), h. s. sp. ——"Leaves pallid. Flowers orange-coloured." *Spr.* Very near P. laxa, but erfectly distinct. Leaf $2\frac{3}{4}'' \times \frac{1}{2}''$. Stem $1\frac{1}{2}''$.

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§ X. APODÆ CÆSPITOSÆ; caulibus subnullis cæspitosis.

A. Pedunculi multiflori elongati, folio sæpiùs longiores.

* CALVÆ; *i.e.* sepalis omninò pilis destitutis.

1. *Petala integerrima, (nunc angulata).*

212. **P. procumbens**; folio lanceolato subcoriaceo basi angustato, pedunculis laxis multifloris flexuosis procumbentibus, sepalis obtusè acuminatis alato-carinatis lateralibus cohærentibus, petalis nanis obovatis acutis trinerviis, labello lineari-acuto basi truncato apice acuto aspero——*Caracas*, Purdie (*S. Martha*), v. s. sp. in hb. Hooker——Extremely like P. prostrata in general appearance, but quite different in structure. Leaf 5" × $\frac{1}{2}''$. Racemes about 3". (Column winged, equally 3-lobed at the hood.)

213. **P. tripterantha** (Rchb. f. in Bonpland. Jan. 15, 1854. Xenia 1. p. 73. t. 28); folio oblongo utrinque angustato racemo recto (pendulo?) breviore, sepalis alato-carinatis acutis disjunctis, petalis nanis 3-nerviis subrhombeis, labello oblongo retuso utrinque obtusangulo scabro 3-nervi carinulâ utrinque intramarginali ad angulum——*Caracas*, Wagener——Leaf 3"—4" × 1". Raceme 3"—4". Flowers purple with darker spots of the same colour. (See No. 164.)

214. **P. gracillima**; folio spathulato longè petiolato pedunculo erecto multò breviore, spicâ elongatâ secundâ, ovario papilloso, sepalis acutis antico bidentato, petalis nanis oblongis 1-veniis erosulis, labello oblongo obtuso infra medium dilatato, columnæ cucullo acutè trifido——*Peru*, Jameson (*Western Andes on trees; forest on the road to Nanegal*), h. s. sp.——Leaf 5", not at all coriaceous. Peduncle and spike together 11". Flowers the size of P. longissima (No. 182), and much like them, pale green with coloured keels.

215. **P. misera**; folio oblongo-spathulato longè petiolato pedunculo erecto multò breviore, spicâ rarâ secundâ, sepalis ovatis patentissimis, petalis conformibus minoribus, labello ovato canaliculato solido carnoso——*Peru*, Mathews, 3197 (*Chacapoyas*), h. s. sp.——Much like the last in habit, but rather smaller. Flowers among the smallest in the genus. (Column short, with a nearly entire hood. Pollen-masses spheroidal.)

216. **P. perpusilla** (Seemann in Botany of Herald, 215. Rchb. Xenia 1. 173. t. 60); folio spathulato longè petiolato spicis erectis breviore, sepalis ovatis patentissimis, petalis minoribus conformibus, labello concavo carnoso apice inflexo, columnæ cucullo trilobo——*Panama*, Seemann, 1565 (*Boquete*), v. s. sp. in hb. Hooker——Very much like a pigmy state of the last, but the lip is different; by no means, however, slipper-shaped as it appeared to Rchb. Extreme height, including spikes, 3½".

217. **P. rufobrunnea**; folio spathulato longè petiolato spicâ erectâ distichâ multò breviore, bracteis cucullatis apiculatis ovario æqualibus, sepalis ovatis acutis concavis marginatis carinatis lateralibus parùm connatis, petalis nanis cuneatis 3-dentatis, labello ovato carnoso obtuso excavato——*Mexico*, Galeotti, 5036 (*on rocks near Oaxaca at* 6500′), v. s. sp. in hb. Hooker——Whole plant not more than 2" to the tip of the spike. Flowers fleshy, very minute. "red-brown" with white petals. (Column quite fleshy, with an imperfect hood.)

218. **P. declivis**; folio lineari-spathulato acuto longè petiolato pedunculo capillari multò breviore, spicâ secundâ horizontali v. decurvâ, sepalis lateralibus erectis linearibus 1-veniis disjunctis dorsali duplò breviore subrotundo concavo, petalis nanis 1-veniis truncatis, labello oblongo concavo carnoso plicâ transversâ in medio, columnâ cucullatâ indivisâ petalis multò longiore——*Peru*, Jameson (*trunks of trees on the mountains of Pillzhum*), v. s. sp. in hb. Hooker——Leaves much like those of P. rufobrunnea. Peduncle about 2" to the origin of the spike which bends down abruptly and almost horizontally for about 1".

219. **P. pisifera**; folio lineari-spathulato longè petiolato pedunculo erecto capillari apice laxè racemoso secundo multò breviore, sepalis obtusè acuminatis, petalis aristatis parùm brevioribus, labello nano lineari aristato——*Peru*, Jameson (*Surucucho, near Cuenca*), v. s. sp. in hb. Hooker——Leaf not more than 1½". Raceme 3"—4". Fruit globular, smaller than the smallest peas. (Column very dwarf, with a great entire hood.)

220. **P. zephyrina** (Rchb. f. in Bonpl. March 15, 1855); folio angusto spathulato conduplicato longè petiolato, pedunculo tenui ascendente folio longiore, pedicellis 3-4 capillaribus flore duplò longioribus, sepalis petalisq. æqualibus a basi lanceâ aristatis, labello nano ligulato basi utrinque acutangulo ——*Caracas*, Wagener (*Aspasica*), h. s. sp. comm. cel. Rchb.——Much like a small specimen of P. intricata. Height between 2″ and 3″. Leaf 1″ × 3‴ in the widest part. Flowers yellowish.

221. **P. Grobyi** (Lindl. in Bot. Reg. t. 1797. Bot. Mag. t. 3682); folio obovato emarginato petiolato racemo multifloro laxo pluriès breviore, sepalis costatis acutis antico bidentato, petalis membranaceis acutis, labello carnoso oblongo obtuso 1-sulcato, polliniis angustis pyriformibus——*Brazil*, Martius (*Serra d'Estrella*), Grisebach, 22, (*growing on Myrtus pedunculata*); *Cuba*, Wright, 651. h. s. sp. & v. v. c.——The leaves, which are short, rather fleshy, and very blunt, form small dark-green tufts, from amidst which rises a capillary peduncle having a single obsolete sheath near its middle, and terminating in a zigzag lax raceme of about a dozen small yellow flowers streaked with crimson. It is very near the next, which see.

222. **P. picta** (Lindl. in Bot. Reg. sub f. 1797, t, 1825. P. surinamensis, Focke in Tydschr. nederl. 2. 194. Miquel Stirpes Surinam, t. 64. b); folio lineari-spathulato petiolato racemo multifloro laxo duplò breviore, sepalis acutis antico bifido, petalis membranaceis acutis, labello carnoso lineari obtuso 1-sulcato, polliniis angustis pyriformibus——*Demerara*, hortul.; *Surinam*,

Leprieur 113, Hostman 279, Focke 702a. h. s. sp. & v. v. c.——Very much like the last, but the differences seem constant. The narrow spathulate leaves are longer than the peduncle, and overtop the lowest flowers, instead of being very much shorter; the sepals are smaller and want the strong ribs, and the raceme is nearly straight instead of being flexuose. The figure in Miquel is a very bad one. P. picta, Bot. Mag. 3897, is a totally different plant (see No. 137).

223. **P. subsinuata** (P. trichopoda, Rchb. f. in Bonpl. Oct. 15, 1856, nec Rich.); folio valido crasso a basi lineari ovali pedunculo capillari multifloro apice racemoso breviore, sepalo dorsali triangulo antico acuto, petalis rhombeis labelloq. ligulato ante apicem sinuatis——*Native country* unknown——Flowers green, much smaller than those of P. picta, with which Rchb. compares it. Petals 1-veined; lip 3-veined. Described from Consul Schiller's Garden.

224. **P. cabellensis** (Rchb. f. in Linnæa, 25. 238); folio oblongo sulcato longè petiolato, pedunculis plurifloris (8) capillaribus flexuosis folio longioribus, sepalis disjunctis ovatis aristatis, petalis acutis obtusè rhombeis, labello unguiculato ligulato basi obtusangulo medio angustato apice papilloso——*Venezuela*, Funck & Schlim (*near P°. Cabello*)——"Flowers red-brown. (Column semiterete, clavate, with an undivided membranous edge to the antherbed.)"

225. **P. marginata** (Lindl. in Bot. Reg. 1838, misc. 70); folio obovato biconvexo marginato petiolato pedunculo capillari apice 4-floro multò breviore, sepalis carinatis acutis antico bifido, petalis linearibus obtusis apice callosis, labello oblongo retuso canaliculato, polliniis sphæricis——*Guatemala*, Skinner. v. v. c.——Much like a small specimen of P. Grobyi, but the petals and pollen-masses are quite different.

226. **P. florulenta** (Rchb. f. in Bonplandia, Aug. 1, 1855); folio cuneato ligulato tenuissimè petiolato pedunculo capillari multifloro duplò breviore, sepalis lanceis acuminatis antico deflexo, petalis cuneato-ovatis obtusis, labello oblongo medio dilatato——*New Grenada*, Linden. h. s. c. comm. cel. Rchb. ——"Flowers yellow, with the veins of the flowers dark purple." Near the last, but abundantly distinct.

227. **P. segoviensis** (Rchb. f. in Bonpl. Aug. 1, 1855); folio cuneato ligulato pedunculo longiore racemo flexuoso multifloro, sepalis alato-carinatis acutis antico bifido, petalis nanis oblongis apiculatis, labello duplò longiore lineari obtuso bilamellato lobis lateralibus falcatis——*Costa-rica*, Oersted (*Segovia*), h. s. sp. comm. cel. inv.——Leaf 4″ × ¼″. Peduncle and raceme 5½″. A remarkable plant, with long falcate membranous lateral lobes of an otherwise fleshy lip, on which the lamellæ are straight and deep.

228. **P. scariosa** (Lindl. in Bot. Reg. 1842, misc. Dendrobium scariosum, Llave. 239); folio ovali carnoso margine scarioso, pedunculis flexuosis paucifloris, sepalis concavis disjunctis, petalis nanis, labello 3-partito——*Mexico*, Llave (*near Arúmbaro*)——Sepals yellowish green. Petals white with a purple middle line and border. Lip deep purple. "Planta exigua."

229. **P. pandurifera** (Lindl. in Bot. Reg. 1842, misc.); folio oblongo marginato basi angustato racemis capillaribus plurifloris duplò breviore, sepalis diaphanis ovatis antico bidentato, petalis nanis spathulatis, labello pandurato lobo terminali angustiore, columnâ et androclinio alatis integris ——*Brazil*, Miers, h. s. sp. comm. cel. inv.——Whole plant little more than 1″ high.

230. **P. Centranthera** (Centranthera punctata, Scheidweiler in Allg. Gartenzeit. 1842, p. 293),——*Brazil*, Scheidw.——"Folium ovatum obtusum glaucum utrinque fusco-punctatum, unciale. Racemi cernui. Sepala villo-sissima intus fusco ocellata, supremum galeatum lateralia connata. Petala minora cuneiformia. Labellum trilobum, lobis lateralibus acutis, intermedio plano obtuso. Columnæ cucullus lacerus."

2. *Petala fimbriata v. lacera.*

231. **P. crassifolia** (Focke in Tijdschr. Natuur. Wetensch. Bot. Zeit. 1849, p. 638—nec. Rchb. f.); folio elliptico acuto subcarnoso racemo cernuo breviore, sepalis in tubum triang. acuminatum cohærentibus dorsali semilibero lateralibus connatis, petalis serratis aristatis dimidio brevioribus, labello linguiformi obtuso basi bilamellato——*Surinam*, Focke. h. ic. pict.——In habit this resembles P. prostrata et procumbens. For the sketch in my possession I am indebted to the liberality of the learned discoverer. Why not a Physosiphon?

232. **P. setigera**; folio tenui ovali lucido marginato basi angustato racemis laxis flexuosis multò breviore, sepalis ovatis disjunctis acuminatissimis, petalis obovatis laceris in setam longam productis, labello rhombeo conduplicato medio carnoso margine scabro——*Peru*, Jameson (*among Selaginellas*), h. s. sp.——A beautiful little thing the size of P. picta. Flowers apparently streaked with purple.

233. **P. aristata** (Hooker in Ann. Nat. Hist. 2. 329, t. 15); præcedenti simillima; sed sepala ciliata, petala lanceolata acuminata haud in setam producta, et labellum hispidum basi læve auriculatum——*Demerara*, Parker; *Dominica*, Henslow. h. s. sp.——Flowers apparently purple marked with yellow.

234. **P. longilabris** (Lindl. in Ann. Nat. Hist. ser. III. i. 328); folio longè petiolato lanceolato acuto marginato racemo capillari laxo flexuoso breviore, sepalis disjunctis acutis, petalis nanis linearibus acutis laceris, labello sepalis æquali unguiculato auriculato pandurato hispido secus axin papilloso——*Cuba*, Wright, 651 (*on Palms and other trees in dense woods*), h. s. sp.——Flowers dark red. (Column short, sessile, hooded, quite entire.)

235. **P. delicatula**; folio acuto marginato petiolato racemis multifloris flexuosis laxis multò breviore, sepalis disjunctis linearibus obtusè acuminatis dorsali carinato, petalis unguiculatis cuneatis incisis, labello sepalis paulo breviore oblongo convexo pubescente basi auriculato serrato, columnâ unguiculatâ margine superiore dilatato serrulato lacinulis 3 post antheram——*Jamaica*, Purdie. v. s. sp. in hb. Hooker——Whole plant about 1½″.

** PILIFERÆ; *i. e.* sepalis intus v. extus pilosis aut velutinis.

236. **P. immersa** (Rchb. f. in Bonpl. Aug. 1, 1855); folio obovato obtuso pergameneo racemo rigido multifloro flexuoso duplò breviore, sepalis alato-carinatis intùs velutinis antico bidentato, petalis ovatis apiculatis, labello rhombeo venis lateralibus carinatis——*New Grenada*, Linden. h. s. c. comm. cel. Rchb.——Leaf about 6″ × 1″. Peduncle tightly embraced in the hollow of the lower end of the leaf, whence the name. Flowers as large as in P. aphthosa.

237. **P. crenata**; folio obovato coriaceo racemo rigido laxo multifloro breviore, bracteis truncatis castaneis carinatis deciduis, sepalis velutinis alato-carinatis disjunctis, petalis rhombeis dimidio brevioribus, labello ovato obtuso carnoso excavato intra apicem piloso——*Mexico*, Loddiges. v. v. c.——Leaf 3¼″ × 1″. Flowers the size of the last. Petals and lip purple, bordered with purple well defined spots on a clear yellow ground, which gives them the appearance of being crenated. (Column white, short, thick, half terete, with a denticulate edge to the antherbed terminated in front by two sharp teeth.)

238. **P. hians** (Lindl. in Bot. Reg. sub 1797); folio obovato racemo laxo stricto multifloro multò breviore, sepalis divergentibus lineari-oblongis intùs velutinis lateralibus connatis apice liberis, petalis nanis cuneatis acutis, labello ovato apice ciliato basi conduplicato, columnâ truncatâ subtridentatâ apice pilosâ——*Brazil*, hb. Hooker (*Organ Mountains*), v. s. sp. et ic. pict. in hb. Hooker——Flowers dirty brown. Plant varying in height from 6″ to 10″. There is

here a stem 1½″ long, with a sheath in the middle, so that this species ought strictly to go to the Elongatæ, but it cannot be well separated from Kefersteiniana and flexuosa.

239. **P. flexuosa** (Lindl. in Bot. Reg. 1842, misc. Specklinia flexuosa, Pöppig, n. g. & sp. 1. t. 90); folio erecto lineari-lanceolato racemis flexuosis pauciforis breviore, sepalis intùs pilosis dorsali ovali antice subrotundo emarginato, petalis nanis unguiculatis lunatis, labello oblongo apice triangulari——*Peru*, Pöppig (*on trees near Pampayaco*); Mathews, 1911. Adest in hb. Hooker——Flowers white finely dotted with purple.

240. **P. Kefersteiniana** (Rchb. f. in Bonpl. Jan. 15, 1854); folio papyraceo marginato basi angustato racemo capillari laxo flexuoso multò breviore, sepalis duobus oblongis intùs arachnoideis, petalis rotundatis carnosis, labello....——*Caracas*, at 4000′. Rchb. f. h. s. c. ab ipso aut.——I am unable to discover where this species has been described. It is merely mentioned at the place quoted, as having flowered with Mr. Keferstein and in the Hamburgh garden. It is certainly a very distinct species. The flowers are spotted with purple, and are about the size of the last.

241. **P. barbata** (Westcott in Phytologist, i. 54); folio ovato-lanceolato carnoso carinato, sepalis subæqualibus patentibus velutinis lateralibus reflexis basi connatis dorsali reflexo, petalis nanis acutis subciliatis, labello linguiformi acuto recurvo glabro subtus barbato——*Brazil*, Westcott (*Para*)——About 3″ high. Flowers minute, 2 or many, purple. A strong beard on the underside of the lip appears to be the great mark of this.

242. **P. rupestris** (Lindl. in Bot. Reg. sub 1797); folio tereti mucronato sulcato spicâ strictâ rigidâ paulo breviore, sepalis ovatis carinatis lateralibus semiconnatis, petalis nanis lanceolatis ciliatis, labello oblongo utrinque in medio obtusangulo lamellis 2 carnosis acutis planis basi connatis furcam referentibus——*Brazil*, Martius (*rocks in the prov. of Mines*), v. s. s. olim in hb. Martius——This has the habit of a Leptotes. Peduncle reddish green. Sepals purplish. Petals purple.

B. Pedunculi nani, sæpius pluriflori.

243. **P. tribuloides** (LO. 6. Dendrobium tribuloides, Swartz, Fl. Ind. Occ. 1525. Pl. spathulata, A. Rich. in Ann. Sc. ser. 3. iii. 16. P. fallax, Rchb. f. in Bonpl. Aug. 1, 1855); folio obtuso spathulato petiolato, floribus clandestinis, sepalis 2 velutinis linearibus, petalis nanis oblongis, labello lineari recurvo pubescente, capsulâ echinatâ——*Costa-rica*, Oersted (*on Mt. Irasù*); *Mexico*, Galeotti, Leibold; *Cuba*, Wright, 663; *Jamaica*, Purdie (*on Calabash trees*); Macfadyen. h. s. sp.——Flowers red, buried among scarious sheaths at the base of the leaves. This is No. 16893 of Willdenow's herbarium.

244. **P. Lingua** (Lindl. in Bot. Reg. 1842, misc.); folio lanceolato petiolato, floribus clandestinis, sepalis calvis linearibus acutatis lateralibus apice liberis, petalis nanis obovatis apiculatis, labello lineari obtuso apice convexo——*Brazil*, Miers (*Organ Mountains*), h. s. sp.——Not more than 1″ high.

245. **P. sarcophylla** (Rchb. f. in Bonpl. Aug. 1, 1855); folio cuneato retuso carnoso, pedunculo bifloro brevissimo, sepalis villosis apice conglutinatis fenestratis, petalis spathulatis, labello rhombeo apice denticulato basi transversè plicato——*Caracas*, Rchb. (only seen out of Consul Schiller's garden)——Leaf 1″ × 4‴ spotted with purple beneath. Flowers purple.

246. **P. violacea** (Rich. & Gal. in Ann. Sc. ser. 3. iii. 16); folio ovato petiolato racemo 4-floro multò longiore, sepalis ovatis pilosis acutis, petalis filiformibus, labello sagittato acuminato unguiculato supra unguem bilamellato——*Mexico*, Galeotti. v. ic. pict.——Leaf 3″ × 1″. Flowers greenish violet.

?? 247. **P. dubia** (Rich. & Gal. in Ann. Sc. ser. 3. iii. 16); "minima, folio elliptico oblongo obtuso, floribus luteis subdistichis minimis"——*Mexico*, Galeotti.

C. Pedunculi 1-2-flori, elongati.

1. *Petala serrata.*

248. **P. semperflorens** (P. acuminata, Focke in Tijdschr. natuur. wetensch. 2. 194. Miquel. Surp. Surinam. t. 646): folio ovali emarginato pedunculo breviore, sepalis disjunctis ovatis acuminatis, petalis nanis rhombeis serratis, labello oblongo velutino infra medium dilatato, clinandrio tridentato——*Surinam*, Focke (*in woods along the river Commewyne, always in flower*) h. s. sp.——A little tufted species 1" high. Flower in Focke's plant solitary; and if constantly so then Schomburgk's Demerara specimens must be different, for in them several flowers seem to have been clustered in the place of the solitary flower of this plant.

249. **P. Lanceola** (Spreng. Syst. 3. 731. Specklinia Lanceola LO. 2. Dendrobium Lanceola, Swartz, Fl. Ind. Occ. 1539): folio lineari utrinque acuto, pedunculo capillari bifloro, sepalis lanceolatis obtusis patentibus, petalis nanis ovatis ciliatis, labello oblongo obtuso recurvo——*Jamaica*, Swartz (*on the Blue Mountains*)——This is No. 16854 of the herbarium of Willdenow. Leaf 1½". Flowers very small, orange coloured.

250. **P. minutalis** (P. crassifolia, Rchb. f. in Linnæa 25. 238. Xenia. t. 60, not of Focke): folio crassissimo spathulato emarginato, pedunculo 1-floro capillari, sepalis triangulis acutis, petalis lanceolatis acuminatis serrulatis, labello cordato-lanceolato verruculoso——*Mexico*, Ehrenberg.——One of the smallest of known species.

2. *Petala integra; labello barbato v. tomentoso.*

251. **P. seriata** (Lindl. in Bot. Reg. 1840. misc. 175); folio obovato acuto marginato pedunculo bifloro capillari breviore, sepalis ovalibus antico latiore bidentato, petalis nanis unguiculatis subrotundis convexis, labello oblongo tomentoso medio exarato basi utrinque lobulo obtuso auriculato——*Brazil*, hortul. (*Rio Janeiro*), v. v. c.——Leaf 2" × ½". Peduncle 2½". Flowers yellowish green, with rows of purple dots.

252. **P. trifida** (Lindl. in Bot. Reg. 1842. misc.): folio lineari-lanceolato basi angustato caule tenui duplò longiore, sepalo dorsali lineari obtuso antico oblongo concavo emarginato, petalis duplò brevioribus spathulatis 3-veniis apice triangulis, labello oblongo retuso scabro utrinque dilatato, columnâ petaloideâ spathulatâ trifidâ——*Brazil*, Miers (*Organ Mountains*), h. s. sp.——Whole plant in tufts 1½' high; the stem is longer than usual in the present group.

253. **P. barbulata** (P. barbata, Focke in B. Zeit. 1853, 227, nec Westcott): folio obovato obtuso basi angustato pedunculo subbifloro longiore, sepalis reflexis antico duplò latiore bidentato, petalis acutissimis parum brevioribus, labello linguæformi bilamellato margine et apice barbato——*Surinam*, Focke, v. ic. pict.——One of the smallest in the genus, not more than 4''' high. Flowers dirty white, with a tinge of pink. I have a drawing from my excellent correspondent Judge Focke.

254. **P. leontoglossa** (Rchb. f. in Linnæa 25. 238); folio lineari basi cuneato, pedunculo capillari medio vaginato, sepalis acutis carinatis antico bidentato, petalis oblongis acutis, labello subpandurato bilamellato subdenticulato apice papilloso——*Brazil*, Beyrich (*Organ Mountains, on the trunks of trees*)——Rchb. assigns to this "caulis gracilis densè vaginatus," which throws some doubt upon its true position. But, on the other hand, he places it in my old § Muscosæ, which answers to the present group. "Flowers dull red. Lip blackish violet. Hood of column membranous 3-lobed denticulate."

3. *Petala integra ; labello lævi.*

255. **P. muscoidea** (Lindl. in Bot. Reg. 1838, misc. 165); folio ovali biconvexo, pedunculo setaceo 2-floro, sepalis linearibus acuminatis disjunctis rictu folio æquali, petalis duplò brevioribus linearibus acutis, labello nano lineari concavo lineis 2 parallelis elevatis——*Brazil*, hortul. v. v. c.——The smallest orchid known. Leaf only 2½‴ long. Flowers chocolate colour, with dirty yellow edges.

256. **P. uniflora** (Lindl. in Comp. Bot. Mag. 2. 355) ; folio lineari-lanceolato pedunculo 1-floro capillari paulò longiore, sepalis linearibus acutis clausis antico emarginato, petalis subfalcatis, labello lineari-lanceolato obtuso basi concavo——*Brazil*, Descourtilz (*on old fallen trees in high Macahé and near Bananal*), olim v. ic. pict. in bibl. Deless.——Leaf about 2″ long. Much like P. hymenantha.

257. **P. parvifolia** (Lindl. in Comp. Bot. Mag. 2. 355); folio parvo ovali pedunculo 1-floro multò breviore, sepalis ringentibus oblongis antico duplò latiore emarginato, petalis subconformibus duplò brevioribus, labello subrotundo concavo nano——*Brazil*, Descourtilz (*Damp and gloomy forests at Macahé and in all the interior of Brazil*), olim v. ic. pict. in bibl. Deless.—Leaf 4—5‴. Peduncle 7‴—10‴. Opening of the flower 5‴. Lip spotted at the point.

258. **P. marginalis** (Rchb. f. in Bonpl. Aug. 1, 1855) ; folio oblongo crassissimo marginato pedunculo capillari 2-floro sexiès breviore, sepalis ligulatis acutis dorsali triangulo antico deflexo bidentato, petalis rhombeis acutis, labello ligulato carnoso obtusè acuto basi "humerato" petalis paulò longiore ——*Brazil*, Hort. Berol. (*Rio Janeiro*)——Leaf 6‴ × 3‴, thin edged, dotted with deep violet. Flowers yellow. Peduncle 3″.

259. **P. plantaginea** (Lindl. in Bot. Reg. 1842. misc. Specklinia plantaginea, Pöppig & Endl. n. g. & sp. 1. 51. t. 59); folio lineari-spathulato pedunculo capillari 1-floro subæquali, sepalis basi connatis campanulatis acutis, petalis subæqualibus obliquis acutis leviter repandis, labello lineari-lanceolato obtuso——*Peru*, Pöppig (*near the farm of Casapi, scarce*)——Flowers transparent, green with purple veins. Lip purple.

260. **P. trichopoda** (A. Rich. in Ann. Sc. ser. 3. iii. 16); "folio oblongo-lineari obtuso, scapo a basi limbi folii enato capillari 2-floro, floribus pallidè luteis, labello oblongo-lineari obtuso integro"——*Mexico*, Galeotti.

261. **P. microphylla** (A. Rich. l. c.) ; "folio suborbiculari apice obtuso, scapo gracili foliis longiore bifloro, floribus minimis luteis, labello oblongo erecto obtuso integro"——*Mexico*, Galeotti.

262. **P. pusilla** (Lindl. in Bot. Reg. 1842. misc. Dendrobium pusillum H.B.K. 1. 357) ; folio elliptico coriaceo acutiusculo pedunculis 1-2-floris duplò breviore, sepalis oblongo-lanceolatis acuminato-filiformibus dorsali latiore concavo lateralibus planis, petalis oblongis triplò brevioribus, labello oblongo ——*Peru*, Humb. & Bonpl. (*on trees near Loxa*)——A very doubtful plant, admitted by Kunth to require more exact examination. Leaf 3‴. Stem 6‴. Flowers 2‴, yellowish.

263. **P. aristulata**; folio carnoso lanceolato obtuso basi angustato pedunculis 2-floris paulò longiore, sepalis linearibus acuminatis disjunctis, petalis paulò minoribus in setam productis, labello nano lineari obtuso subundulato ——*Brazil*, Miers. h. s. sp.——Leaf about 1″ long.

264. **P. striata** (Focke, Tijdschr. v. Wiss. u. Natuurk. 4. 63); folio ovali utrinque acuto pedunculo capillari unifloro longiore, sepalis oblongis acutis antico emarginato, petalis nanis obliquè rhombeis, labello acutè rhombeo—— *Surinam*, Focke. h. ic. pict.——Leaf about 1″ and, according to a sketch with which Mr. Focke has favoured me, seated on a very slender short stem Flowers pale yellow with nankeen streaks.

[illegible] **P. corniculata** (Lindl. in Bot. Reg. 1842. misc. P. nubigena, id. in [illegible] Nat. Hist. ser. 3. [illegible] forma latifolia. P. alata, A. Rich. & Galeott. [illegible] Dendrobium corniculatum, Swartz. Fl. Ind. [illegible] ovali v. oblongo petiolato pedunculo 1-floro capillari subæquali, [illegible] sepalis linearibus acuminatis recurvis conniventibus antico emarginato, petalis [illegible], labello rhombeo 3-venio obtuse acuminato —— *Jamaica*, Swartz (*on old trunks of trees in the interior*); Purdie (*on logwood* [illegible] *near Rodney Hall*); *Cuba*, Wright. 657; *Mexico*, Galeotti. h. s. sp.—— Specimens of this rare little plant, exactly agreeing with Swartz's description, exist in hb. Hooker. My Cuban P. nubigena has shorter and blunter leaves, but is certainly the same. As to the P. alata of A. Richard, a tracing of that Botanist's unpublished figure, for which I owe thanks to Prof. Rchb., shows that if not the same it stands in the nearest relationship, appearing indeed to differ in having a largest bract immediately below the flower instead of a small one in the middle of the peduncle, and spotted flowers which, according to Swartz, are merely "pallid" in P. corniculata.

[illegible] **P. hymenantha** (Lindl. in Bot. Reg. sub 1797); folio lineari v. l. lanceolato pedunculo capillari subæquali, sepalis acutis lateralibus ½-disjunctis, petalis acuminatis parum brevioribus, labello obtusè rhombeo undulato concavo —— *Brazil*, Martius (*on old trees near Retiro in the prov. of Rio Janeiro*); [illegible] Wright, v. s. sp. [illegible] in hb. Martius—— I am not certain that Wright's Cuba plant is the same as that from Brazil, his flowers not being examinable. They are, however, extremely similar, only my rough sketch of Martius' plant shows broader leaves and a 2 flowered peduncle; while in the Cuba plant it is 1-flowered; but being in half ripe fruit one pedicel may have disappeared.

[illegible] **P. xiphochila** (Rchb. f. in Linnæa 22. 831. Xenia 1. 173. t. 60); folio carnoso subrotundo-emarginato pedunculo 1-floro multò breviore, sepalis petalisq. ovatis acutis, labello ovato longè cuspidato—— *Venezuela*, Moritz (*near Merida*)—— Here again are stems as long as the leaves, the sheaths of the former being Lepanthiform. It might therefore be transferred to the Elongates, were it not for its solitary flowers. The latter are deep violet.

[illegible] **P. vilipensa** (Rchb. f. in Hamb. Garten Zeit xiii. 3); folio lanceolato [illegible], pedunculo subbifloro, sepalo dorsali ovato acuto antico bidentato, petalis semiovatis acutis basi obliquis 2-veniis, labello ligulato hastato [illegible] lamellis in hastæ lobis evanidis—— *Central America*, Warczewitz in hort. Berol.—— Whole plant 2", the peduncle included. Leaf 1". Flower ochraceous.

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§ XI. APODÆ PROREPENTES: caulibus subnullis, rhizomate prorepente.

[illegible] **P. Miersii** (Lindl. in Bot. Reg. 1842. misc.); folio ovali apiculato marginato pedunculo unifloro capillari breviore, sepalo dorsali ovato acuminato lateralibus ovatis semiconnatis, petalis lanceolatis serrulatis, labello oblongo convoluto acuto—— *Brazil*, Miers. h. s. sp.—— Leaves 2''' with a short well defined petiole.

271. **P. tenuissima** (Rchb. f. in Linnæa 18. 399); folio coriaceo lineari-lanceolato obtuso tridentato, pedunculo folio breviore capillari 1-2-floro, sepalis omnibus basi subconnatis petalisque minoribus lanceolatis acutis, labello lineari-oblongo—— *Mexico*, Leibold, Galeotti (*on trees at 3000' in the prov. of Vera Cruz*), v. s. sp. in hb. Hooker—— This is very near P. sertularioides, if not a narrow leaved form of the same.

271. **P. sertularioides** (Spreng. syst. 3. 731. Specklinia sertularioides, LO. 1. Dendrobium sertularioides, Swartz. Fl. Ind. Occ. 1541); rhizomate annulato vaginis membranaceis tecto, folio lanceolato acuto, pedunculo capillari 1-floro in medio bibracteato, sepalis patulis basi gibbosis petalisque minoribus

lanceolatis acuminatis, labello lanceolato apice recurvo basi gibboso —— *Jamaica*, Swartz (*in the deep antique woods*), v. s. defl. in hb. Willd. 16895—— The specimen in hb. Willd. from Swartz, which I formerly examined by favour of Dr. Klotzsch, has flat leaves about ¾ inch long, and a closely jointed rhizome not unlike a Sertularia. In one flower there was a somewhat large bract at the base of the flower, but I could not find the "squamulæ duæ spathaceæ in medio pedunculo" of which he speaks, and which do not exist in the last species. "Flowers minute, whitish, with yellow tips." *Swz.*

272. **P. Gardneri** (Lindl. in Bot. Reg. 1842, misc.); folio ovali marginato angustato pedunculo capillari unifloro multò breviore, sepalis linearibus acuminatis lateralibus semiconnatis, petalis conformibus æquilongis versus apicem serrulatis, labello rhombeo acuto 3-nervi lamellis 2 magnis triangularibus juxta basin——*Brazil*, Miers; Gardner, 5865——Leaves including petiole 5‴. Peduncles 16‴, destitute of any sheaths. Flowers pale green, 6" from tip to tip of sepals.

273. **P. macrorhiza** (Lindl. in Hooker's Journ. Bot. 1. 9.); rhizomate crasso decumbente vaginis imbricatis membranaceis, folio lineari-lanceolato coriaceo carinato marginibus recurvis pedunculo sub-3-floro longiore, sepalis ovatis disjunctis lateralibus cohærentibus, petalis oblongo-linearibus univeniis, labello majore obtuse rhombeo concavo apice carnosiore scabriusculo—— *Peru*, Jameson 1 (*Mountain ridge between Azogues and Pante, at* 11,000′, *terrestrial*); Hartweg (*Mountain of Azogues at Hato de la Virgin near Cuenca*), h. s. sp.——Rhizome as thick as a goosequill, sometimes erect, sometimes decumbent, and throwing out great coarse white roots. Flowers about 6‴ long, distant, in a loose raceme of 3 or 4 flowers; sometimes even solitary.

274. **P. clandestina;** folio ovali v. obovato marginato pedunculo solitario duplò longiore, sepalis acutis lateralibus connatis basi gibbosis multò majoribus, petalis æquilongis setaceo-acuminatis, labello obovato plano margine densè glanduloso, columnâ membranaceâ cucullo lacero——*Venezuela*, Fendler, 2148. h. s. sp.——A very curious species unlike any except P. testæfolia. The leaf is 4"; the lateral sepals, which are dorsal, are brownish purple and much larger than the other which, with the petals, is green with purple margin. The lip is brownish purple, with a yellow termination, and fringed with long white clavate gland-like hairs. In a sketch of Fendler's the yellow end of the lip is represented as a roundish tubercle, a structure that I could not find in the only flowerbud I have been able to dissect.

275. **P. testæfolia** (Lindl. in Ann. Nat. Hist. ser. 3. i. 326. Cymbidium testæfolium, Swartz, Fl. Ind. Occ. 1461); folio oblongo subrotundo basi unifloro, bracteâ carinatâ membranaceâ dorso lacerâ, sepalis oblongis acutis pilosis dorsali breviore lateralibus semiconnatis, petalis unguiculatis cuneatis, labello horizontali oblongo lacero medio aspero ad basin altè bilamellato ungue elongato erecto, columnæ cucullo maximo crispo——*Jamaica*, Swartz (*on moss-covered rocks and the trunks of trees among the mountains*); *Cuba*, Wright, 648 (*woods on trees upon the Monte Verde*); *Venezuela*, Fendler, 1459. h. s. sp.——Leaf 8‴ × 5‴, speckled with dark brownish red. Flowers dark purple or deep red.

276. **P. spiculifera;** folio lineari carinato mucronato pedunculo capillari unifloro duplò breviore, sepalis disjunctis linearibus obtusis erectis, petalis æquilongis filiformibus pendulis, labello paulò breviore ovato-oblongo trilobo laciniis obtusis intermedio productiore——*Brazil*, Spruce, 3154 (*San Carlos, on trees in woods*), h. s. sp.——In habit this and the following much resemble P. tenuissima. "Fl. pale purple." *Spr.*

277. **P. acutissima;** folio lineari carinato mucronato pedunculo racemoso duplò breviore, sepalis disjunctis petalisque acuminatis erectis subæqualibus, labello paulò breviore acutè trifido laciniis lateralibus brevioribus—— *Brazil*, Spruce, 2302 (*the Caatingas, about S. Gabriel, on the bark of trees*), h. s. sp. ——Differs from the last in the few-flowered racemes erect broader petals, and

very shortly divided lip. "Sepals pallid, with a pink stripe along the middle." *Spr.*

[illegible] **P. articulata** Lindl. in Bot. Reg. 1842, misc. : rhizomate ascendente [illegible] caule [illegible] articulato vaginis pedunculiformibus erecto-[illegible] apice [illegible] racemoso, floribus [illegible] lateralibus semiconnatis, petalis sepalisque [illegible] subæqualibus, labelli [illegible] parte pubescente utrinque tricobo laciniâ intermedia [illegible] emarginata retusis brevioribus——*Brazil, Blanchet*, n. 1 & sp. mixta. [illegible]——A long decumbent plant, not rising far in the ground like the preceding, and thus forming a link between that and the succeeding little group. Peduncle 3" long.

[illegible] **P. [illegible]** rhizomatis [illegible] caule erecto polyphyllo, [illegible] alternis.

P. diptera: caule filiformi vaginis lepanthiformibus, foliis ovalibus [illegible] margine, nervo [illegible] uninervibus, sepalis disjunctis linearibus [illegible] dorsali carinatis, petalis [illegible] linearibus obtusis 1-venïis, labello subcordato lineari margine scabro, columnæ alis maximis quadratis——*Peru*, Jameson. [illegible] in the wood to Nanapa'. h. s. sp.——Much like P. Dinotheri, and thus forming a close connection with the Acuminatæ. The flowers appear to be green streaked with purple.

P. caulescens Lindley in Hooker's Journ. Bot. 1. 9 ; caulibus [illegible] erectis complanato-[illegible] vaginatis, foliis distichis linearibus basi cucullatis [illegible] acutis, spatha [illegible] secundis, sepalis ovatis acutissimis [illegible] connatis, petalis conformibus multo minoribus, labello nano [illegible] utrinque ante medium unidentato——*Peru*, Jameson. [illegible] in woods of [illegible], h. s. sp. ——This striking species varies in height from 2" to 4". Its flowers are about 3" long and appear to be yellow. It is near that in this case the sheaths of the stem found in other species are [illegible] and acute.

Species the station of which is indeterminable.

1. ? [illegible] *Reem. et Pavon. manuscr.* vol. 2. 196.
2. ? [illegible] *Lindl. et Paxt. in Ann. & Mag. Nat. hist.* 2. iii. 16.
3. ? [illegible] *Lindl. in Bot. Reg.* 1842, misc. Dendrobium retusum. *Lindl.* 2. 40

Species to be excluded from the genus.

1. ? [illegible] *Ruiz & Pav.* = Stelis ferox n.
2. ? [illegible] *Sw.* = Polystachya.
3. ? [illegible] *Lindl.* = Physosiphon.
4. ? [illegible] *Poepp. et Endl. in Bot. Mag.* 72 = Gomesa.
5. ? [illegible] *Poepp.* = Stelis.
6. ? [illegible] *Lindl.* = Restrepia.
7. ? [illegible] *Forst.* = Stelis.
8. ? [illegible] *Lindl. in Bot. Reg.* = Xanthis.
9. ? [illegible] *Lindl.* = Stelis.

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cation, or place them temporarily in alphabetical order, or arrange them in the manner proposed in the author's "Vegetable Kingdom." No inconvenience will attend disturbing the work as it proceeds, because no pages will be used for the short genera, and each large genus will be paged by itself; the date of publication being indicated at the bottom of the first page of each. This will be readily understood by a reference to the first part of the work.

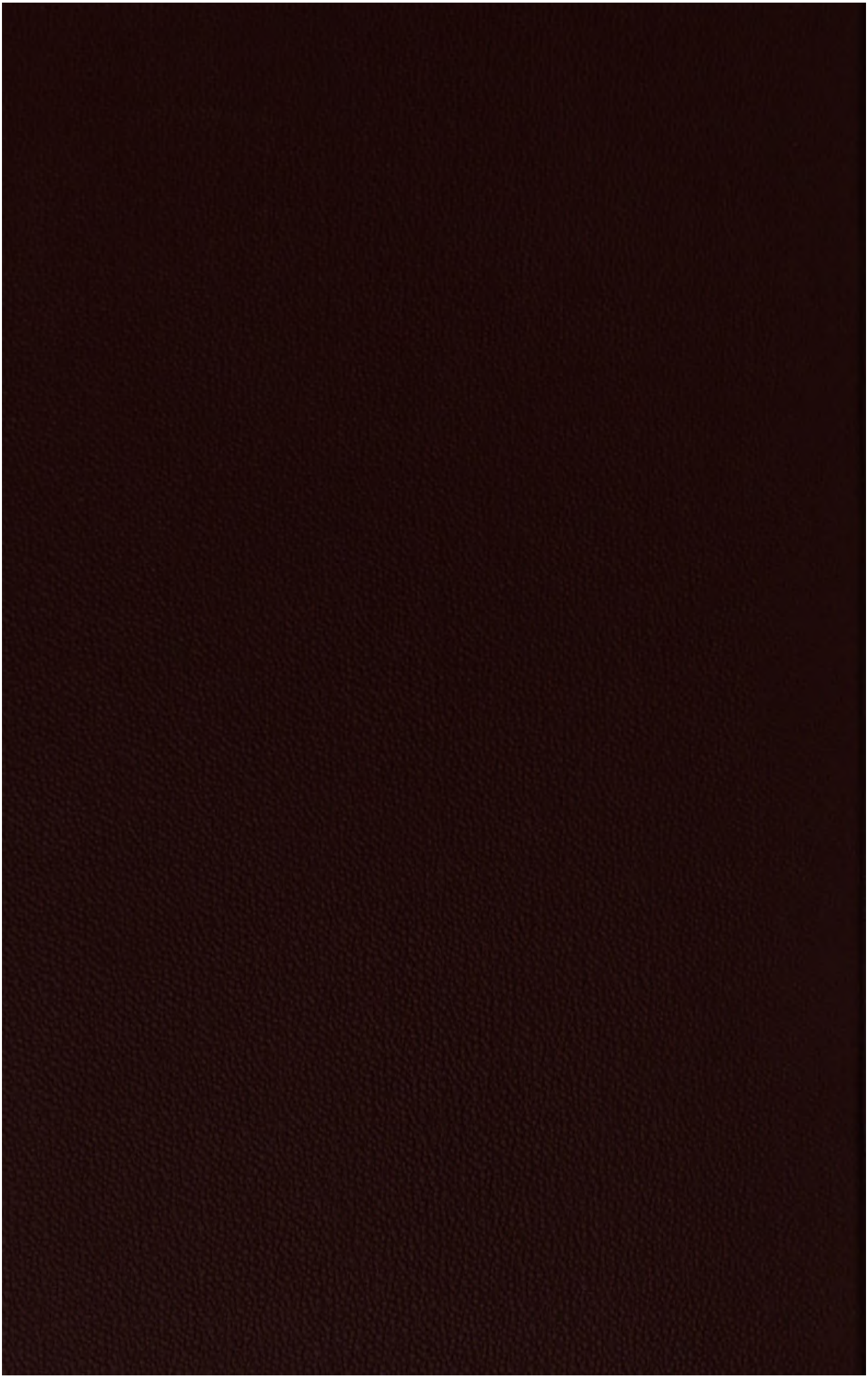
The author would solicit continued assistance from those botanists who can render it, especially as regards the Orchids of Polynesia, South Peru, the north-west coast of New Holland, Borneo, New Guinea, and the Dutch possessions in Asia. The materials which his correspondents may place at his disposal will be carefully examined and acknowledged in the work as it advances. But he is obliged to request, firstly, that all specimens may be good and examinable, such fragments as are frequently sent him being wholly useless for scientific purposes; and, secondly, that they may be in all cases duplicates only; for he cannot undertake to send back dried plants unless there is some express engagement to that effect. In return for assistance of any extent, his correspondents will receive a copy of the work as it appears, provided they will favour him with the address of some person in London who will take charge of it.

List of genera, imperfectly known to the author, evidence concerning which is particularly requested, and of which even single flowers, if with authentic names, would be useful.

Epicrianthes *Blume.*
Cochlia *Blume.*
Aspegrenia *Pöppig.*
Collabium *Blume.*
Pattonia *Wight.*
Ceratochilus *Blume.*
Echioglossum *Blume.*
Conchochilus *Hasskarl.*
Siagonanthus *Pöppig.*
Diadenium *Pöppig.*
Cyathoglottis *Pöppig.*
Pogochilus *Falconer.*
Chlorosa *Blume.*
Rophostemon *Blume.*
Scaredederis *Thouars.*
Androgyne *Griffith.*
Cybele *Falconer.*
Bolborchis *Moritzi.*

ABBREVIATION.

LO.—The author's Genera and Species of Orchidaceous Plants.

LIST OF GENERA IN THIS PART.

PLEUROTHALLIS CONCLUDED 47 pages.