Range: Mexico (San Luis Potosí, Tamaulipas, Vera Cruz, Puebla, Guerrero and Colima), Guatemala, British Honduras and Honduras.

Lycaste aromatica is mainly a species of the Atlantic slope but one incomplete specimen, which seems to be this species, was collected in the vicinity of Colima volcano.

Lycaste aromatica and *L. consobrina*, in their extreme forms seem to be distinct species but as a series of specimens increases the differences tend to be broken down. Typically *L. aromatica* has a comparatively narrow lip with the mid-lobe quite narrow. In *L. consobrina* the lip is comparatively broad and the mid-lobe is much broader than in typical *L. aromatica*.

2. LYCASTE VIRGINALIS (Scheidw.) Linden in Lindenia 4: p. 22. 1888, *in text*.

Maxillaria virginalis Scheidweiler in Bull. Acad. Roy. Sci. Brux. 9: 25. 1842.

Maxillaria Skinneri Bateman ex Lindley in Bot. Reg. 28: Misc. p. 10. 1842, non *Maxillaria Skinneri* Bateman ex Lindley in Bot. Reg. 26: Misc. p. 48. 1840; Bateman Orch. Mex. & Guat. t. 35. 1842; Hooker in Bot. Mag. 75: t. 4445. 1849.

Lycaste Skinneri Lindley in Bot. Reg. 29: Misc. p. 15. 1843, based on *Maxillaria Skinneri* Bateman, 1842.

Lycaste alba Cockerell in Torreya 19: 11. 1919.

Range: Mexico (Chiapas), Guatemala, El Salvador and Honduras.

There are numerous horticultural forms of this handsome Lycaste.

It is indeed unfortunate that the name of this well known orchid must be changed but there is no choice in the matter inasmuch as the name *Lycaste Skinneri* is based on a homonym.

3. LYCASTE DEPPEI (Lodd.) Lindley in Bot. Reg. 29: Misc. p. 15. 1843.

Maxillaria Deppei Loddiges Bot. Cab. 17: t. 1612. 1830; Hooker in Bot. Mag. 62: t. 3395. 1835.

Deppia mexicana Rafinesque, Fl. Tellur. 2: 51. 1836.

Lycaste chrysoptera Morren in Ann. Soc. Bot. Gand 5: 7, t. 232. 1849.

Maxillaria chrysoptera Beer, Prakt. Orch. 264. 1854.
Lycaste leiantha Beer, Prakt. Orch. 263. 1854.
Maxillaria leiantha Beer, Prakt. Orch. 265. 1854.
Lycaste Deppei (Lodd.) Lindl. var. *punctatissima* Reichenbach filius in Gard. Chron. n. s. 15: 717. 1881.

Range: Mexico (Vera Cruz and Chiapas) and Guatemala.

The second largest species of Lycaste in Mexico. I have seen the plate of *L. chrysoptera* Morr. and it seems not to be distinct from *L. Deppei.*

4. LYCASTE CRUENTA Lindley in Bot. Reg. 29: Misc. p. 16. 1843.

Maxillaria Skinneri Bateman ex Lindley in Bot. Reg. 26: Misc. p. 48. 1840, non *Lycaste Skinneri* (Batem.) Lindl. 1843.
Maxillaria cruenta Lindley in Bot. Reg. 28: t. 13. 1842.
Lycaste balsamea A. Richard ex Lindley in Paxton's Flow. Gard. 1: 126, 1851-52, *nomen.*
Maxillaria balsamea Beer, Prakt. Orch. 264. 1854.

Range: Mexico (Chiapas), Guatemala, El Salvador and possibly also Costa Rica.

We have seen no material with flowers as large as those illustrated by Lindley. The form of the lip, especially the short side lobes, is distinctive among the Mexican species.

5. LYCASTE CRINITA Lindley in Bot. Reg. 30: Misc. p. 39. 1844.

Maxillaria crinita Beer, Prakt. Orch. 264. 1854.

Range: Mexico (Michoacan, Guerrero and Oaxaca).

A rare species which has been collected several times in recent years. It seems to occur only on the Pacific slopes of Mexico. Lindley's type consists of one flower and a drawing.

UNRECOGNIZED SPECIES

LYCASTE MICHELIANA Cogniaux in Rev. Hort. 264. 1900.
Range: Mexico.
Unknown to me.

61. ZYGOPETALUM Hooker in Bot. Mag. 56: t. 2748. 1827.

Epiphytic herbs. Stems short, foliose, soon becoming thickened into pseudobulbs, (ours usually) bifoliate from the summit. Leaves plicate. Inflorescence suprabasal (i.e. the inflorescence not completely basal on the pseudobulb), few-flowered; bracts large and conspicuous (in ours). Sepals subequal, spreading, free or slightly connate at the base; the laterals adnate to the column-foot and with it forming a mentum. Petals similar to the sepals. Lip affixed to the apex of the column-foot, 3-lobed, enfolding the column; the lateral lobes in our species usually somewhat pectinate; the disc with several longitudinal, entire or lobate crests. Column arcuate, semiterete, narrowly winged, the base produced into a foot; anther terminal, operculate, incumbent; pollinia 4, waxy, obovoid. — (*Galeottia* Richard in Ann. Sci. Nat. ser. 3, 3: 25. 1845).

An extremely rare genus in Mexico. I know only of the plant presumably collected by Galeotti.

The genus Galeottia seems to have no characters of generic worth which would separate it from Zygopetalum.

1. ZYGOPETALUM GRANDIFLORUM (A. Rich.) Bentham & Hooker ex Hemsley in Godman & Salvin, Biol. Centr.-Am. Bot. 3: 251. 1883.

Galeottia grandiflora A. Richard in Ann. Sci. Nat. ser. 3, 3: 25. 1845.

Batemannia grandiflora Reichenbach filius in Bonplandia 4: 323. 1856.

Range: Mexico (state not known), Guatemala and Costa Rica.

62. CHONDRORHYNCHA Lindley, Orch. Lind. 12. 1846.

Caespitose or short repent epiphytic herbs. Stems short, several leaved, usually not thickened into pseudobulbs but sometimes reduced pseudobulbs present. Leaves plicate, contracted into a petiole. Inflorescence from the base of the stem or pseudobulbs, slender, 1-flowered. Flowers usually large and somewhat showy. Sepals subequal; the dorsal erect; the laterals

sometimes reflexed. Petals broader than the sepals, often obovate. Lip articulated to the apex of the column-foot, simple or nearly so, with a bidentate callus near the base. Column semiterete, narrowly winged or auriculate toward the apex, with a short column-foot; anther terminal, operculate, incumbent; pollinia 4, waxy. — (*Kefersteinia* Reichenbach filius in Bot. Zeit. 10: 633. 1852.)

A small genus which, in some species, is usually easily distinguished by the reflexed lateral sepals.

Lip mostly 1 cm. or less long.
2. *C. lactea*

Lip mostly about 2 cm. or more long.
1. *C. Lendyana*

1. CHONDRORHYNCHA LENDYANA Reichenbach filius in Gard. Chron. n.s. 26: 103. 1886.

Range: Mexico (Chiapas), Guatemala and Costa Rica.
The genus and the species are new to the Mexican flora.

2. CHONDRORHYNCHA LACTEA (Reichb.) L. O. Williams in Caldasia No. 5: 16. 1942.

Zygopetalum lacteum Reichenbach filius in Gard. Chron. 1290. 1872.
Kefersteinia lactea Reichenbach filius ex B. D. Jackson in Index Kew. 2: 4. 1895.

Range: Mexico (Oaxaca) and Costa Rica.
The specimens are much more robust than any specimens previously seen. The species is new to Mexico.

63. MAXILLARIA Ruiz & Pavón, Fl. Peruv. & Chil. Prodr. 116, t. 25. 1794; Pfitzer in Engler & Prantl Nat. Pflanzenf. 8, Abt. 6: 187. 1889.

Epiphytic herbs. Stems rhizome-like and distichophyllous or forming 1-2-leaved pseudobulbs or both. Leaves coriaceous, thick or thin. Inflorescence lateral from the base of the pseudobulbs or from the axils of leaves; peduncles 1-flowered, single or fasciculated. Flowers large to small. Sepals similar, free, the laterals forming a mentum. Petals similar to the sepals but usually smaller. Lip attached to the apex of the column-

foot, articulate or rigidly attached, sometimes with a short claw, entire or 3-lobed, plain, cucullate or rarely subsaccate at the base, with or without calluses or carinae. Column usually arcuate, slender or somewhat thickened, wingless or rarely with a very narrow wing; anther terminal, incumbent, operculate; pollinia 4, waxy. — (*Ornithidium* Salisbury in Trans. Hort. Soc. 1: 293. 1812; *Camaridium* Lindley in Bot. Reg. 10: t. 844. 1824; *Heterotaxis* Lindley in Bot. Reg. 12: t. 1028. 1826; *Psittacoglossum* Llave & Lexarza, Nov. Veg. Descr., Orch. Opusc. 29. 1825; *Dicrypta* Lindley, Gen. & Sp. Orch. Pl. 44. 1830.)

Maxillaria is a large and diversified genus of the American tropics and subtropics. There are probably about 200 species.

The genus has been separated into three genera by most authors from Bentham & Hooker to the present, Maxillaria, Ornithidium and Camaridium. We have placed the three genera together because we find no characters by which they may be separated. The separation of the genus into three genera has ocasionally led to the description, by the same author, of a single species, as new, under at least two of the genera. It is better to have the genera inclusive enough so at least the specialist can recognize them rather than to have them so exclusive that no one can recognize them.

a. Lip entire, not lobed in any way nor pandurate (cf. also *M. cobanensis* and *M. Nagelii*).
  b. Pseudobulbs 2-4-leaved at the apex.
    1. *M. Friedrichsthalii*
  bb. Pseudobulbs unifoliate at the apex.
    c. Inflorescence a fascicle of several flowers from the base of the pseudobulbs.
      15. *M. densa*
    cc. Inflorescence one- or at most few-flowered from the base of a pseudobulb.
      d. Leaves bunched and the bases appearing to be subequitant.
        13. *M. crassifolia*
      dd. Leaves not bunched nor the bases appearing to be subequitant.
        e. Pseudobulbs strongly flattened.
          7. *M. elatior*
        ee. Pseudobulbs subcylindric or fusiform.
          f. Sepals mostly less than 1.5 cm. long.
            8. *M. variabilis*

ff. Sepals mostly more than 2 cm. long.
g. Mature leaves linear, less than 8 mm. broad.
5. *M. tenuifolia*
gg. Mature leaves lanceolate or elliptic, 12 mm. or usually more broad.
6. *M. Houtteana*

aa. Lip 3-lobed, sometimes obscurely so, or pandurate (cf. *M. cobanensis* and *M. Nagelii*).
h. Lip less than 5 mm. long.
x. Apical portion of lip largest; leaves coriaceous.
2. *M. Oestlundiana*
xx. Apical portion of lip smallest; leaves fleshy.
12. *M. histrionica*
hh. Lip more than 8 mm. long.
i. Mid-lobe of the lip retuse.
3. *M. cobanensis*
ii. Mid-lobe of the lip not retuse.
j. Mature leaves less than 7 mm. broad.
k. Petals conspicuously broader than the sepals.
14. *M. pulchra*
kk. Petals narrower than the sepals.
4. *M. meleagris*
jj. Mature leaves more than 7 mm. broad, usually much broader.
l. Mature leaves less than 12 cm. long (mostly less than 9 cm.); petals obtuse.
2. *M. Oestlundiana*
ll. Mature leaves more than 12 cm. long, usually much more; petals acute or acuminate.
m. Lip pandurate or the lateral lobes nearly basal.
n. Plant long repent; lip pandurate or the lateral lobes basal and obscure.
9. *M. Nagelii*
nn. Plant subcaespitose; lip with the lateral lobes small but definite.
4. *M. meleagris*
mm. Lip not pandurate, the lateral lobes extending nearly to the middle of the lip or beyond.
o. Apices of the lateral lobes of the lip extending to or nearly to the middle of the lip; lateral sepals mostly less than 2.5 cm. long.
11. *M. cucullata*
oo. Apices of the lateral lobes of the lip extending much beyond the middle of the lip; lateral sepals usually 3 cm. or more long.
10. *M. ringens*

1. MAXILLARIA FRIEDRICHSTHALII Reichenbach filius in **Bot. Zeit. 10: 858. 1852.**

Maxillaria turialvae Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 414. 1918.
Maxillaria rhodosticta Kränzlin in Fedde Repert. 24: 223. 1928.

Range: Mexico (Campeche, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras, Nicaragua, Costa Rica and Panama.

Common in Central America and extremely variable as to size.

2. MAXILLARIA OESTLUNDIANA L. O. Williams in Am. Orch. Soc. Bull. 11: 133, t. 4. 1942.

Range: Mexico (Guerrero).

Maxillaria Oestlundiana is somewhat allied to *M. flava* A. H. & S., a Costa Rican species.

3. MAXILLARIA COBANENSIS Schlechter in Fedde Repert. 10: 295. 1912.

Range: Mexico (Chiapas), Guatemala, Honduras and Costa Rica.

This is probably the smallest species of Maxillaria in Mexico. It is new to the Mexican flora.

4. MAXILLARIA MELEAGRIS Lindley in Bot. Reg. 30: Misc. p. 3. 1844.

?Maxillaria galeata Scheidweiler in Allgem. Gartenzeit. 10: 309. 1842, *non* Lindley 1831; Reichenbach filius in Walp. Ann. 6: 521. 1863; Xenia Orch. 3: 130, t. 274, figs. III, 4-10, 1894.
Maxillaria Lindeniana Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 24. 1845.

Range: Mexico (Vera Cruz, Puebla, Guerrero and Chiapas), Guatemala and Panama.

The three specific names given above have usually been kept distinct but we have been able to find no distinguishing characters by which they might be kept separate. There is some difference in size but of a minor nature. We have seen only Reichenbach's rather poor figure of *Maxillaria galeata* Scheidw. and hence are somewhat dubious about it.

5. MAXILLARIA TENUIFOLIA Lindley in Bot. Reg. 23: sub t. 1986. 1837; in Bot. Reg. 25: t. 8. 1839.

Range: Mexico (Vera Cruz and Campeche), British Honduras, Guatemala, Honduras, Nicaragua and (?) Costa Rica.

Maxillaria tenuifolia is a plant of low elevations along the Atlantic coast. It grows from sea level up to about 1000 meters.

6. MAXILLARIA HOUTTEANA Reichenbach filius in Hamb. Gartenzeit. 14: 212. 1858; Hooker filius in Bot. Mag. 123: t. 7533. 1897.

Range: Mexico (Guerrero, Oaxaca and Chiapas) and Guatemala.

Maxillaria Houtteana is very closely allied to *M. tenuifolia* and especially to *M. curtipes* Hook. The cauline sheaths do not develop into leaves.

7. MAXILLARIA ELATIOR Reichenbach filius in Walp. Ann. 6: 532. 1863; Stapf in Bot. Mag. 154: t. 9206. 1928.

Dicrypta elatior Reichenbach filius in Linnaea 18: 403. 1844.

Maxillaria triangularis Lindley in Bot. Reg. 31: Misc. p. 9. 1845.

Camaridium xylobiichilum Kränzlin in Saertyrk. Vidensk. Medd. Dansk Naturh. Foren. 71: 174. 1920.

Range: Mexico (Vera Cruz and Chiapas), Guatemala, Honduras and Costa Rica.

Closely allied to *Maxillaria curtipes* Hook. differing principally in that the stem sheaths develop into leaves, while those of *M. curtipes* remain only as sheaths.

8. MAXILLARIA VARIABILIS Bateman ex Lindley in Bot. Reg. 23: sub. t. 1986. 1837.

Maxillaria variabilis Batem. var. *unipunctata* Lindley in Bot. Reg. 24: Misc. p. 23. 1838.

Maxillaria angustifolia Hooker Ic. Pl. 4: t. 348. 1841.

Maxillaria Henchmanni Hooker in Bot. Mag. 64: t. 3614. 1837.

Maxillaria Lyonii Lindley in Bot. Reg. 31: Misc. p. 17. 1845.

Maxillaria revoluta Klotzsch in Allgem, Gartenzeit. 20: 186. 1852.
Maxillaria chiriquiensis Schlechter in Fedde Repert. Beihefte 17: 68. 1922.
Maxillaria panamensis Schlechter in Fedde Repert. Beihefte 17: 70. 1922.
Maxillaria costarricensis Schlechter in Fedde Repert. Beiheft 19: 232. 1923.

Range: Mexico (Durango, Sinaloa, Vera Cruz, Hidalgo, Mexico, Puebla, Nayarit, Colima, Michoacan, Guerrero, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras, El Salvador, Costa Rica and Panama.

A variable but easily distinguished species which is quite common in Central America. The flowers vary from nearly white to dark red.

9. MAXILLARIA NAGELII L. O. Williams in Lloydia 10: 212. 1947.

Camaridium Türckheimii Schlechter in Fedde Repert. 10: 296. 1912, non *Maxillaria Türckheimii* Schlechter, 1912.

Range: Mexico (Chiapas) and Guatemala.

There are apparently some slight differences between the flowers of our specimens and Schlechter's description but these are mostly inconsequential.

10. MAXILLARIA RINGENS Reichenbach filius in Walp. Ann. 6: 523. 1863; Schweinfurth in Bot. Mus. Leafl. Harv. Univ. 4: 91. 1937.

Maxillaria yzabalana S. Watson in Proc. Am. Acad. 23: 286. 1888.
Maxillaria Türckheimii Schlechter in Fedde Repert. 10: 295. 1912.
Maxillaria Rousseanae Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 413. 1918.
Maxillaria pubilabia Schlechter in Fedde Repert. Beihefte 17: 71. 1922.
Maxillaria Amparoana Schlechter in Fedde Repert. Beihefte 19: 54. 1923.
Maxillaria Brenesii Schlechter in Fedde Repert. Beihefte 19: 231. 1923.

Maxillaria lactea Schlechter in Fedde Repert. Beihefte 19: 233. 1923.

Range: Mexico (Guerrero, Oaxaca and Chiapas), Guatemala, Honduras, Nicaragua, Costa Rica and Panama, probably also South America.

Since Schweinfurth's account of this species we have added three additional synonyms, *M. yzabalana*, *M. lactea* and *M. Brenesii*. The species is quite variable.

11. MAXILLARIA CUCULLATA Lindley in Bot. Reg. 26: t. 12. 1840; Hooker in Bot. Mag. 68: t. 3945. 1842.

Maxillaria rhombea Lindley in Bot. Reg. 26: sub. t. 12. 1840.

Maxillaria hematoglossa Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 24. 1845.

?Psittacoglossum atratum Llave & Lexarza Nov. Veg. Descr., Orch. Opusc. 30. 1825.

Maxillaria atrata Reichenbach filius in Beitr. Orch. Centr.-Am. 31, t. 6, figs. I, 1-3. 1866.

Maxillaria praestans Reichenbach filius in Gard. Chron. n.s. 23: 566. 1885.

Range: Mexico (Vera Cruz, Puebla, Mexico, Morelos, Michoacan, Guerrero, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras and Costa Rica.

Maxillaria cucullata is a rather variable species as to size of plant and flowers as well as length of peduncle.

Maxillaria atrata Reichenbach filius should probably be considered as a distinct species not based on *Psittacoglossum atratum* Llave & Lexarza in as much as Reichenbach indicated it as "Maxillaria atrata n. sp." and questioned whether *Psittacoglossum atratum* was a synonym. Furthermore Reichenbach's specimen came from Guatemala.

Maxillaria obscura Linden & Reichenbach was said to have been based on horticultural material from Colombia. All of the North American material which we have seen determined as *M. obscura* Lind. & Reichb. f. is *M. cucullata* Lindl.

12. MAXILLARIA HISTRIONICA (Reich. f.) L. O. Williams in Ceiba 1: 189. 1950.

Ornithidium histrionicum Reichenbach filius in Bonplandia 4: 324. 1856.

Range: Mexico (Guerrero and Chiapas).

There are three sheets of records copied from Reichenbach's herbarium in the Ames Herbarium. Like many of Reichenbach's sketches they are rather indecisive but the specimens seen probably belong here.

13. MAXILLARIA CRASSIFOLIA (Lindl.) Reichenbach filius in Bonplandia 2: 16. 1854; Schweinfurth in Bot. Mus. Leafl. Harv. Univ. 3: 136. 1935.

Epidendrum sessile Swartz Prodr. Veg. Ind. Occ. 122. 1788, not *Maxillaria sessilis* Lindl., 1845.

Heterotaxis crassifolia Lindley in Bot. Reg. 12: t. 1028. 1826.

Dicrypta Baueri Lindley, Gen. & Sp. Orch. Pl. 44. 1830; Bauer & Lindley in Ill. Orch. Pl. Gen. t. 5. 1833.

Dicrypta crassifolia Lindley ex Loudon, Hort. Brit. suppl. 3: 536. 1839.

Maxillaria gatunensis Schlechter in Fedde Repert. Beihefte 17: 68. 1922.

Maxillaria sessilis Fawcett & Rendle, Fl. Jam. 1: 120, t. 25, figs. 7-12. 1910, not *Maxillaria sessilis* Lindley, 1845.

Range: Florida (U.S.A.), Mexico (Vera Cruz and Chiapas), British Honduras, Guatemala, Honduras, Costa Rica, Panama, the West Indies, Venezuela and Brazil.

Maxillaria crassifolia is a widespread species but is uncommon in Mexico.

14. MAXILLARIA PULCHRA (Schltr.) L. O. Williams in Lloydia 10: 212. 1947.

Camaridium pulchrum Schlechter in Fedde Repert. 10: 251. 1911.

Range: Mexico (Oaxaca), British Honduras, Guatemala and Honduras.

Maxillaria pulchra is closely allied to *M. Camaridii* Reichb. f.

15. MAXILLARIA DENSA Lindley in Bot. Reg. 26: t. 1804. 1835.

Ornithidium densum Reichenbach filius in Bonplandia 3: 217. 1855; in Saunders Ref. Bot. 2, t. 105. 1872.

Range: Mexico (Vera Cruz, Oaxaca and Chiapas), British Honduras, Guatemala and Honduras.

A distinctive species of the Ornithidium type.

EXCLUDED OR OBSCURE SPECIES

MAXILLARIA GALEOTTIANA A. Richard in Ann. Sci. Nat. ser. 3, 3: 24. 1845.

Range: Mexico.

The species is unknown to me except by the short description. There does not seems to be a specimen or drawing of it in Paris.

MAXILLARIA GLOMERATA Galeotti, Cact. & Orch. Brux. p. 6, *nomen.*

This appears to be merely a nurseryman's list with prices. We do not know the date of publication.

MAXILLARIA ORNITHOGLOSSA Loddiges ex W. Baxter in Loudon, Hort. Brit. ed. 3: 586.

We have not been able to place this.

MAXILLARIA PSITTACINA Bateman ex Steudel, Nomen. ed. 2: 107. 1841, *nomen.*

This name, which is credited to Mexico, is a *nomen* only.

MAXILLARIA PUMILA Hooker in Bot. Mag. 64: t. 3613. 1837; Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 497. 1918.

Reported from Mexico by Schlechter but probably does not occur. It is a native of British Guiana.

64. MORMOLYCA Fenzl in Denkschr. Acad. Wiss. Math. Nat. Wien 1: 253, t. 29. 1850.

Epiphytic herbs. Stems very short, soon forming fleshy, globose, unifoliate pseudobulbs. Leaves coriaceous, contracted at the base. Peduncle slender, long, arising from the rhizomes, with several distant bracts, 1-flowered. Sepals similar, free, not forming a mentum. Petals smaller than the sepals. Lip suberect, much shorter than the sepals and petals, 3-lobed; lateral lobes erect; disc fleshy, subcallose. Column arcuate, wingless, footless or the base slightly protruded; anther terminal, operculate, incumbent; pollinia 4, waxy.

Mormolyca, as constituted, is a monotypic genus. It is very near to Maxillaria and perhaps should not be separated generically. In Maxillaria the base of the lateral sepals form a mentum while there is none in Mormolyca. The column of Mormolyca is footless or at best the column is protruded slightly at the base, while Maxillaria has a column foot of greater or lesser extent. These seem to be the only characters by which the genera may be separated and they are not strong characters.

1. MORMOLYCA RINGENS (Lindl.) Schlechter, Orchideen 436. 1914.

Trigonidium ringens Lindley in Bot. Reg. 26: Misc. p. 57. 1840.
Mormolyca lineolata Fenzl in Denskschr. Akad. Wiss. Math, Nat. Wien 1: 253, t. 29. 1850.

Range: Mexico (Vera Cruz, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras and Costa Rica.

65. TRIGONIDIUM Lindley in Bot. Reg. 23: t. 1923. 1837.

Epiphytic herbs. Stems very short, soon thickened into fleshy, 1-2-leaved pseudobulbs. Leaves coriaceous, linear to oblong. Peduncles usually long and slender, many-sheathed, 1-flowered. Sepals similar, connate into a tube at the base, free above. Petals much shorter than the sepals. Lip suberect, shorter than the petals, 3-lobed; lateral lobes erect; disc callous. Column short, wingless, footless; anther terminal, operculate, incumbent; pollinia 4, waxy.

A small genus of perhaps a dozen species. It is not well distinguished from Maxillaria.

1. TRIGONIDIUM EGERTONIANUM Bateman ex Lindley in Bot. Reg. 24: Misc. p. 73. 1838.

Maxillaria brachyglossum Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 24. 1845.
Trigonidium brachyglossum Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 499. 1918.

Range: Mexico (Vera Cruz, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras, Nicaragua, Costa Rica, Panama and Colombia.

66. TRICHOCENTRUM Poeppig & Endlicher, Nov. Gen. ac Sp. Pl. 2: 11, t. 115. 1837*.

Epiphytic herbs. Stems very short, finally thickened into small, 1-flowered psedobulbs. Leaves coriaceous. Peduncles short or rarely nearly as long as the leaves, with several sheaths, 1 rarely 2-flowered. Sepals and petals similar, free, spreading. Lip suberect, simple or obscurely 3-lobed, with a single spur. Column short, thick, adnate almost to its apex with the lip, with a prominent wing or auricle on each side toward the apex, footless; anther terminal, operculate, incumbent; pollinia 2, waxy, sulcate. — (*Acoidium* Lindley in Bot. Reg. 23: sub. t. 1951, 1837, *nomen.*)

Spur as long as the lip or longer.
2. *T. fuscum*

Spur shorter than the lip.
Lip emarginate.
Dorsal sepal and petals obtuse; lip 10-12 mm. long.
1. *T. albiflorum*
Dorsal sepal and petals acute or acutish; lip about 20 mm. long.
4. *T. Hoegii*

Lip not emarginate.
3. *T. capistratum*

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* The date generally given for this volume and the one found on the title page is 1838. However at least a part of it must have appeared earlier for Lindley (in Bot. Reg. 23: t. 1951. 1837), cited the generic name Trichocentrum and the place of its publication on April 1, 1837. Otto Kuntze (Rev. Gen. Pl. 3: 160. 1898) apparently tried to call attention to this but because of two stenographic errors his note is meaningless.

1. TRICHOCENTRUM ALBIFLORUM Rolfe in Kew Bull. 336. 1893.

Range: Mexico (Vera Cruz).
Mexico: *Finck; Nagel 4175.*
Possibly not distinct from *T. candidum* Lindl. Rolfe says "sepalis petalisque obovato oblongis obtusis" which applies to the petals and dorsal sepal of the Nagel specimen cited but the lateral sepals are elliptic-lanceolate and acute.

2. TRICHOCENTRUM FUSCUM Lindley in Bot. Reg. 23: t. 1951. 1837; Hooker in Bot. Mag. 69: t. 3969. 1842.

Acoidium fuscum Lindley in Bot. Reg. 23: t. 1951. 1837.

Range: Mexico (state unknown).
I have seen no wild specimens of this species.

3. TRICHOCENTRUM CAPISTRATUM Reichenbach filius in Gard. Chron. 1257. 1871.

Range: Mexico? (If Mexican the state is not known).
México: *Liebmann.*
Reichenbach's description of this species is rather fanciful in that he says that the species has five spurs. According to a record which we have from Reichenbach's herbarium it, like all others of the genus, has a single spur. The spur is 5-dentate or 5-lobulate.
The original locality of the species was dubiously given as Costa Rica but the record which we have gives the collector as Liebmann in which case the specimen was probably from Mexico.

4. TRICHOCENTRUM HOEGEI Reichenbach filius in Gard. Chron. n.s. 16: 717. 1881; Xenia Orch. 3: 69, t. 234. 1890.

Range: Mexico (Vera Cruz ? and Guerrero).
Reichenbach's plate of this species is inconsistent and perhaps not to be trusted.

67. IONOPSIS Humboldt, Bonpland & Kunth, Nov. Gen. & Sp. 1: t. 83. 1815.

Epiphytic herbs. Stems leafy, short, not pseudobulbous or pseudobulbous. Leaves coriaceous, narrow, imbricated. Pedun-

cles one to three, subterminal or lateral, elongated, slender. Inflorescence simple or paniculate. Sepals subequal, erect or spreading, dorsal free, the laterals connate into a short sac below the lip. Petals similar to the dorsal sepal. Lip adnate to the base of the column, unguiculate, two or more times longer than the sepals. Column short, erect, thick, wingless footless; anther terminal, operculate, incumbent. Pollinia 2, waxy. — (*Iantha Hooker*, Exot. Fl. 2: t. 113. 1824).

A small genus of a few local species and one widespread species. Incipient pseudobulbs are usually present in our species.

1. IONOPSIS UTRICULARIOIDES (Sw.) Lindley, Coll. Bot. t. 39A. 1821; L. O. Williams in Bot. Mus. Leafl. Harv. Univ. 6: 49. 1938.

Epidendrum utricularioides Swartz, Prodr. Veg. Ind. Occ. 122. 1788.

Dendrobium utricularioides Swartz in Nov. Act. Ups. 6: 83. 1799.

Ionopsis paniculata Lindley in Bot. Reg. 22: sub t. 1904. 1836; Bateman in Bot. Mag. 91: 5541. 1865.

Range: Florida (U.S.A.), Mexico (Vera Cruz, Guerrero, Tabasco, Yucatan, Oaxaca and Chiapas), British Honduras, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, the West Indies and south to Paraguay.

One of the most widely distributed species of American orchids.

OBSCURE SPECIES

IONOPSIS BREVIFOLIA Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 26. 1845.

Range: Mexico (state unknown).

I have seen no specimens and the type is apparently not in Paris. The species may be a synonym of *I. utricularioides* (Sw.) Lindl.

68. COMPARETTIA Poeppig & Endlicher, Nov. Gen. ac Sp. Pl. 1: 42, t. 73. 1835.

Epiphytic herbs. Stems short, soon thickened into small, unifoliate pseudobulbs. Leaves coriaceous. Inflorescence from the base of the pseudobulbs, elongated, simple or compound.

Flower rather small but showy. Sepals subequal in length, erect; dorsal sepal free; lateral sepals connate, extended into a long spur-like mentum at the base. Petals broader than the sepals. Lip adnate to the base of the column, longer than the sepals and petals, produced at the base into two long linear terete appendages or caudicles which are included in the spur-like mentum of the lateral sepals. Column erect, wingless, footless; anther incumbent, terminal, operculate; pollinia 2, waxy.

A small genus of about a dozen species. It is new to the flora of Mexico.

1. COMPARETTIA FALCATA Poeppig & Endlicher, Nov. Gen. ac Sp. Pl. 1: 42, t. 73. 1835; Hooker in Bot. Mag. 83: t. 4980. 1857.

Comparettia rosea Lindley in Bot. Reg. 26: Misc. p. 78. 1840.

Range: Mexico (Vera Cruz and Oaxaca), Guatemala, Honduras, Costa Rica, the West Indies, Colombia and Peru.

The species is new to the flora of Mexico.

69. TRICHOPILIA Lindley, Nat. Syst. Bot. ed. 2: 446. 1836.

Caespitose or short repent epiphytic herbs. Pseudobulbs often slender and stem-like, sometimes ancipitous, unifoliate. Inflorescence simple, 1- or few-flowered. Flowers often large and showy. Sepals similar, free, usually spreading, narrow. Petals similar to the sepals. Lips with the claw adnate to the base of the column, the lateral lobes usually enfolding the column. Column erect, footless, biauriculate or bidentate at the apex; clinandrium large, entire or lobed, usually dentate or fimbriate; anther terminal, operculate, incumbent; pollinia 2, waxy.

A small genus, some species with rather handsome flowers.

Sepals and petals twisted; clinandrium 3-lobed and lacerate-dentate.

2. *T. tortilis*

Sepals and petals plane; clinandrium not lobed, dentate.

1. *T. Galeottiana*

1. TRICHOPILIA GALEOTTIANA A. Richard in Ann. Sci. Nat. ser. 3, 3: 26. 1845; Reichenbach filius Xenia Orch. 2: 103. 1867; Veitch, Man. Orch. Pl. 9: 181. 1893.

Trichopilia picta Lemaire, Illustr. Hort. Misc. p. 68, t. 225. 1859.

Trichopilia turialvae Reichenbach filius *sensu* Bateman in Bot. Mag. 91: t. 5550. 1865, *non* Reichenbach filius.

Range: Mexico (Oaxaca and Chiapas).

I have seen no wild specimens of this species. My knowledge of it is based on the literature cited.

2. TRICHOPILIA TORTILIS Lindley, Nat. Syst. Bot. ed. 2: 446. 1836; in Bot. Reg. 22: t. 1863. 1836; Hooker in Bot. Mag. 66: t. 3739. 1839.

Range: Mexico (Vera Cruz, Oaxaca and Chiapas), Guatemala, El Salvador, Costa Rica and Panama.

I am of the opinion that *Trichopilia turialvae* Reichenbach filius is not to be distinguished. The differences seem to be distinctly minor.

70. ODONTOGLOSSUM Humboldt, Bonpland & Kunth, Nov. Gen. & Sp. Pl. 1: 350, t. 85. 1816.

Epiphytic herbs. Stems very short, becoming pseudobulbous. Pseudobulbs 1-3-leaved at the apex and with usually 2 or more subtending distichous leaves. Leaves coriaceous or fleshy. Inflorescence lateral from the base of a pseudobulb, from 1-flowered to paniculate-racemose and many-flowered. Flowers large and showy to small and inconspicuous. Sepals subequal, spreading, free or the lateral sepals connate. Petals similar to the sepals, sometimes broader. Lip entire or 3-lobed; base of the lip parallel to the column, sometimes shortly adnate with it; lateral lobes (if present) erect; terminal lobe usually strongly deflexed; disc of the lip at the base variously cristate, lamellate, callused or nude. Column usually long and slender (*in comparison to Oncidium*), wingless at the apex or with the clinandrium prominent and sometimes toothed or lobed; anther terminal, operculate, incumbent; pollinia 2, waxy, entire or sulcate. — (*Cuitlauzina* Llave & Lexarza, Nov. Ver. Descr.,

Orch. Opusc. 32. 1824; *Lichterveldia* Lemaire, Illustr. Hortic. 2: 59. 1855; *Osmoglossum* Schlechter, in literature as generic name but never published).

A genus of about 100 species. The species, mainly, are found in the mountains from Mexico to Bolivia. Some species have very attractive flowers and are cultivated.

Odontoglossum is very near to Oncidium. Although they have a facies of their own, in most cases, I do not know of a character which will always separate the species of Odontoglossum from those of Oncidium.

I have retained as Odontoglossum some of the species which Rolfe referred to Miltonia. They seem to do less violence to the former genus than to the latter.

a. Pseudobulbs 1-leafed.
  b. Lip pandurate, 3-lobed.
    1. *O. beloglossum*
  bb. Lip triangular, subcordate to orbicular, simple.
    c. Sepals and petals similar; lip suborbicular to ovate, lacerated.
      5. *O. stellatum*
    cc. Sepals and petals dissimilar, petals usually much the broadest; lip triangular to subcordate or nearly so, not lacerated.
      d. Column auriculate toward the apex.
        e. Auricles of the column obtuse.
          7. *O. Cervantesii*
        ee. Auricles of the column acute.
          6. *O. Galeottianum*
      dd. Column not auriculate toward the apex.
        f. Petals long acuminate.
          2. *O. cordatum*
        ff. Petals not long acuminate.
          h. Floral bracts less than 1 cm. long; small plants; inflorescence 1-2-flowered.
            4. *O. Ehrenbergii*
          hh. Floral bracts more than 1 cm. long; medium sized plants; inflorescence usually more than 2-flowered.
            i. Terminal parts of the callus developed into two distinct sharp prongs; lip usually maculate.
              3. *O. maculatum* 1
            ii. Terminal part of the callus not developed into two entirely distinct prongs or the prongs obtuse if present; lip usually not maculate.
              8. *O. Rossii* 1

1 Although these species seem distinct they are difficult to key.

aa. Pseudobulbs 2- or more leaved.
j. Leaves linear or nearly so.
g. Lip with basal lobes.
x. Column with fimbriated auricles.
20. *O. pulchellum*
xx. Column without fimbriated auricles.
22. *O. convallarioides*
gg. Lip entire.
21. *O. Egertonii*
jj. Leaves not linear.
k. Lip pandurate or at least oblong.
l. Column lacking membranaceous auriculate wings at the apex.
11. *O. Reichenheimii*
ll. Column with auriculate membranaceous wings at the apex.
m. Petals obovate, obtuse (see *Oncidium oliganthum*).
mm. Petals lanceolate, acute.
n. Lip 2.5-3.5 cm. long; column less than 1/2 as long as the lip.
12. *O. Karwinskii*
nn. Lip 2 cm. or less long; column about 1/2 as long as the lip.
o. Lip linear-oblong, up to 4.5 mm. broad; auricles of the column relatively narrow.
13. *O. stenoglossum*
oo. Lip not linear-oblong, mostly about 1 cm. broad; auricles of column relatively broad.
14. *O. laeve*
kk. Lip not pandurate or oblong, mostly cordate, flabellate or obovate.
p. Apex of the column not auriculate.
q. Lip flabellate, retuse.
16. *O. Londesboroughianum*
qq. Lip oblong to cordate, not obtuse.
9. *O. nebulosum*
pp. Apex of the column auriculate.
r. Auricles lanceolate, acuminate.
10. *O. Insleayi*
rr. Auricles not lanceolate nor acuminate.
s. Lip flabellate, retuse.
x. Auricles glabrous.
16. *O. pendulum*
xx. Auricles densely pubescent, especially within.
17. *O. grande*
ss. Lip cordate or triangular-cordate, not retuse.
19. *O. bictoniense*

(To be continued).