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THE ORCHIDACEAE OF MEXICO

LOUIS O. WILLIAMS

(Continued)

32. HOMALOPETALUM Rolfe in Hooker Icon. Pl. t. 2461. 1896.

Small epiphytic herbs with repent rhizomes. Pseudobulbs short, unifoliolate, approximate. Leaves short, very fleshy. Inflorescence terminal, 1-flowered. Sepals subequal, erect and spreading. Petals similar to the sepals. Lip simple or minutely auriculate at the base, free. Column arcuate, slender, wingless; anther incumbent, operculate; pollinia 8, 4 large and 4 small, in pairs, one large and one small joined by a caudicle, ceraceous.

1. HOMALOPETALUM PUMILIO (Reichb. f.) Schlechter in Fedde Repert. Beihefte 19: 48. 1923.

Brassavola Pumilio Reichenbach filius in Linnaea 18: 402. 1844.

Bletia Pumilio Reichenbach filius in Walp. Ann. 6: 433. 1862.

Pinelia Tuerckheimii Kränzl. in Ann. Naturh. Mus. Wien, 44: 326. 1930.

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

It is possible that *Homalopetalum costaricense* Schltr. is a synonym of *H. pumilio*.

33. PONERA Lindley, Gen. & Sp. Pl. 113. 1831; Bot. Reg. 28: Misc. p. 19. 1842; Correll in Bot. Mus. Leafl. Harv. Univ. 9: 129-151. 1941.

Epiphytic herbs from a repent rhizome. Stems slender, non-pseudobulbous, simple or rarely branching. Leaves alternate, distichous, almost grass-like, more than two and usually many on the stem. Inflorescence a subsessile raceme, terminal or at the nodes of the defoliated stem. Sepals subequal; dorsal sepal free; lateral sepals broader, base adnate to the column-foot and forming a mentum. Petals subequal to the dorsal sepal or narrower. Lip subarticulated to the apex of the column-foot; claw incumbent; lamina recurved-spreading, nearly entire or 3-lobed, usually deeply emarginate. Column short, wingless, produced into a foot at the base; anther terminal, operculate, incumbent, the loculi provided with a longitudinal septum; pollinia 4, equal, ceraceous, uniseriate, compressed laterally. — (*Nemaconia* Knowles & Westcott, Floral Cab. 2: 127. 1838).

The following key is adapted from Dr. Correll's revision cited above.

Plants small, grass-like; stems less than 2 mm. in diameter; leaves linear, less than 3 mm. broad; inflorescence a terminal 2-3-flowered raceme; lip distinctly 3-lobed.

Floral bracts prominently rugose; stems about 15 mm. long; petals narrowed above the base.

2. *P. graminifolia*

Floral bracts smooth or at most inconspicuously rugose; stems usually much more than 15 mm. long; petals not narrowed above the base.

1. *P. juncifolia*

Plants rather large, reed-like; stems more than 2 mm. in diameter; leaves narrowly lanceolate, tapering to the apex, more than 4 mm. broad; inflorescence composed of solitary flowers or few-flowered subsessile racemes or glomerules, both terminal and lateral; lip simple, not distinctly 3-lobed.

Inflorescence composed of dense stalked glomerules; flowers nearly concealed by the densely imbricated bracts.

6. *P. glomerata*

Inflorescence composed of a solitary flower or several clustered flowers; flowers completely exposed, not concealed by the bracts.

Petals much longer than the dorsal sepal; sepals and ovary densely verrucose; leaf-sheaths smooth; plant normally branching.

5. *P. longipetala*

Petals about as long as the dorsal sepal; sepals and ovary smooth; leaf-sheaths densely verrucose; plants normally unbranched.

Inflorescences subtended by several large clasping, imbricated bracts; flowers usually sessile, clustered; lamina of the lip typically oblong-cuneate, thin.

4. *P. striata*

Inflorescences subtended by inconspicuous bracts; flowers pedunculate; lamina of the lip subquadrate, fleshy-thickened.

3. *P. subquadrilabia*

1. *PONERA JUNCIFOLIA* Lindley, Gen. & Sp. Orch. Pl. 114. 1831; Correll in Bot. Mus. Leafl. 9: 134, figs. 1941, in part.

Range: Mexico (Mexico and Guerrero).

Ponera junciflora resembles *Isochilus linearis* (Jacq.) R. Br. very closely in vegetative habit.

2. *PONERA GRAMINIFOLIA* (Knowl. & Westc.) Lindley in Bot. Reg. 25: Misc. p. 17. 1839; in Bot. Reg. 28: Misc. p. 19. 1842.

Nemaconia graminifolia Knowles & Westcott in Floral Cab. 2: 127. 1838.

Range: Mexico (Vera Cruz).

Mexico: Hort. Barker; Nagel & Juan G. [onzáles] 4721.

We interpret Nagel & Juan G. [onzáles] 4721 as representing this species. We have seen no authentic record of the type. Correll in his review of the genus has reduced *P. graminifolia* to the older *P. juncifolia* Lindl. We feel, however, that it is best kept distinct until authentic specimens can be studied. *Ponera graminifolia*, in contrast to *P. juncifolia*, seems to offer the following differences; smaller plants with slender stems; narrower subfiliform leaves with only three prominent nerves in place of 5-7 nerves; inflorescence, in comparison, much shorter; bracts of the inflorescence smaller and the surface smooth or only slightly rugose; slightly different shape of the lip; slightly different shape of the petals, especially in regard to the narrowed base; it is a plant of the Atlantic

slope (Kalappa, the locality given by Knowles and Westcott, is doubtless the same as Jalapa), not of the Pacific slope as is *P. juncifolia* Lindl.

3. PONERA SUBQUADRILABIA Correll in Bot. Mus. Leaflet. Harv. Univ. 9: 141, fig. 1941.

Range: Mexico (Vera Cruz, Puebla and Chiapas).
Very close to *Ponera striata* Lindl.

4. PONERA STRIATA Lindley in Bot. Reg. 28: Misc. p. 19. 1842; Correll in Bot. Mus. Leaflet. Harv. Univ. 9: 137, fig. 1941.

?*Sobralia polyphylla* Kränzlin in Vidensk. Medd. fra Dansk Naturh. Foren. 71: 138. 1920.

Range: Mexico (Vera Cruz and Campeche), British Honduras, Guatemala, Honduras, El Salvador, Costa Rica, Venezuela and Brazil.

I examined the type of *Sobralia polyphylla* Kränzlin and at the time considered it to be a synonym of *Ponera striata* Lindl. Due to the subsequent segregation of this species into four species by Correll we are not sure to which of these species it may be referred.

5. PONERA LONGIPETALA Correll in Bot. Mus. Leaflet. Harv. Univ. 9: 135, figs. 1941.

Range: Mexico (Guerrero).

6. PONERA GLOMERATA Correll in Bot. Mus. Leaflet. Harv. Univ. 9: 132, figs. 1941.

Range: Mexico (Chiapas) and Guatemala.
Vegetatively the largest species of *Ponera*.

34. JACQUINIELLA Schlechter in Fedde Repert. Beihefte 7: 123. 1920.

Small caespitose epiphytic herbs with slender stems and short fleshy distichous leaves. Inflorescence a terminal one-flowered fascicle. Sepals free or shortly connate at their bases, subequal, fleshy. Petals similar to the sepals but small-

er. Lip free, with a short claw and an oblong, rotund or sub-rhombic, concave lamina, simple or 3-lobed. Column short, terete, free from the lip; column-foot short and inconspicuous; pollinia 4, waxy, laterally compressed.

Jacquiiniella is very closely allied to Isochilus and may not be distinct.

Claw of the lip straight, short; lamina very deeply concave. Not uncommon in Mexico.

1. *J. leucomelana*

Claw of the lip geniculate, about as long as the lamina; lamina concave but not deeply so. Dubiously from Mexico.

2. *J. globosa*

1. JACQUINIELLA LEUCOMELANA (Reichb. f.) Schlechter in Fedde Repert. Beihefte 7: 123. 1920.

Epidendrum leucomelanum Reichenbach filius in Saunders Ref. Bot. 2: sub t. 140. 1872.

Range: Mexico (Vera Cruz, Jalisco, Oaxaca and Chiapas).

Vegetatively very similar to *Jacquiiniella globosa* (Jacq.) Schltr. but easily distinguished by floral characters.

2. JACQUINIELLA GLOBOSA (Jacq.) Schlechter in Fedde Repert. Beihefte 7: 124. 1920.

Epidendrum globosum Jacquin, Sel. Stirp. Am. Hist. 222, t. 133. 1763; Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 462. 1918.

Cymbidium globosum Swartz, Fl. Ind. Occ. 3: 1467. 1799.
Isochilus globosus Lindley, Gen. & Sp. Orch. Pl. 112. 1831.

Range: Mexico (?), Guatemala, Nicaragua, Costa Rica and Panama.

Reported by Schlechter from Mexico but we have seen no specimens from the country.

35. ISOCHILUS R. Brown in Aiton, Hort. Kew. ed. 2, 5: 209. 1813.

Caespitose epiphytic herbs with slender stems and distichous leaves. Inflorescence a terminal, densely flowered often unilateral raceme. Sepals subequal, free or connate into a short

tube at the base, sometimes more or less saccate at the base. Petals about as long as the sepals. Lip subequal to the petals, simple, adnate to the base of the column or to the column-foot, often sigmoid-flexuose below the middle. Column erect, semiterete, wingless; column-foot very short and inconspicuous; pollinia 4, waxy, elongated and laterally compressed.

Isochilus is closely allied to *Jacquiniella* and also to *Ponera*. Species of *Ponera* and *Isochilus* are vegetatively very similar.

Flowers in a loose, unilateral or distichous raceme, few to one; leaf sheath usually verrucose.

Leaves oblong to linear-lanceolate, short, erect-spreading.

1a. *I. linearis*
var. *carosiflorus*

Leaves linear, strict or erect-spreading.

Flowers mostly less than 8 mm. long.

1. *I. linearis*

Flowers mostly more than 10 mm. long.

1a. *I. linearis*
var. *unilateralis*

Flowers in a dense, compact, unilateral or scorpioid raceme, usually many; leaf sheaths usually smooth, and green-spotted or verrucose.

Leaves linear-lanceolate, somewhat spreading or usually strict.

2. *I. major*

Leaves linear, strict, often closely appressed to the stem.

2a. *I. major*
var. *Amparoanus*

1. *ISOCHILUS LINEARIS* (Jacq.) R. Brown in Aiton Hort.

Kew. ed. 2, 5: 209. 1813.

Epidendrum lineare Jacquin, Select. Stirp. Am. Hist. 221, t. 131, f. 1. 1763.

Oncidium lineare Willdenow, Sp. Pl. 4: 97. 1805.

Isochilus latibracteatus Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 22. 1845.

Isochilus Langlassei Schlechter in Fedde Repert. 16: 422. 1920.

Range: Mexico (Tamaulipas, San Luis Potosí, Vera Cruz, Morelos, Mexico, Michoacan, Colima, Guerrero, Oaxaca and Chiapas), Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, the West Indies and in South America to northern Argentina.

Isochilus linearis is a variable species which, perhaps, includes more of the described species than have been placed in synonymy here.

1a. *ISOCHILUS LINEARIS* var. *CARNOSIFLORUS* (Lindl.) Correll in Bot. Mus. Leafl. Harv. Univ. 10: 7. 1941.

Isochilus carnosiflorus Lindley in Paxton's Mag. Bot. 11: 213. 1844.

Isochilus crassiflorus Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 22. 1845.

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

Isochilus carnosiflorus is very closely allied to *I. linearis* (Jacq.) R. Br., from which it may not prove distinct when the group is studied critically.

1b. *ISOCHILUS LINEARIS* var. *UNILATERALIS* (Rob.) Correll in Bot. Mus. Leafl. Harv. Univ. 10: 9. 1941.

Isochilus unilaterale Robinson in Proc. Am. Acad. 29: 323. 1894.

Range: Mexico (Tamaulipas, San Luis Potosí and Puebla).

Hardly distinct from the species.

2. *ISOCHILUS MAJOR* Chamisso & Schlechtendal in Linnaea 6: 60. 1831.

Range: Mexico (Vera Cruz and Puebla).

Closely allied to *I. linearis* (Jacq.) R. Br. but perhaps distinct by means of the larger flowers and of the inflorescence.

2a. *ISOCHILUS MAJOR* var. *AMPAROANUS* (Schltr.) Correll in Bot. Mus. Leafl. Harv. Univ. 10: 11. 1941.

Isochilus Amparoanus Schlechter in Fedde Repert. Beihefte 19: 27. 1923.

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

Very close to *I. linearis* and perhaps intermediate between that and *I. major*.

36. SCAPHYGLOTTIS Poeppig & Endlicher, Nov. Gen. ac Sp. Pl. 1: 58. 1835, in part.

Epiphytic caespitose or repent herbs. Stems indurated or pseudobulbous, simple, branched or fasciculately branched above. Leaves 1-3 from the apex of the sections of the stem or the pseudobulbs, thin and grass-like to fleshy and terete. Inflorescence a fascicle or raceme, terminal. Sepals subequal, erect. Petals similar to the sepals but usually smaller. Lip articulated from the tip of the column-foot or subarticulated, straight, geniculate, reflexed or curved, clawed or clawless, entire, 3-lobed or emarginate. Column short, wingless or narrowly winged or auriculate, produced into a more or less distinct column-foot at the base; anther terminal, operculate, incumbent, the loculi provided with longitudinal septa; pollinia 4 or 6, if six then all of equal size or two smaller than the others, ceraceous, laterally compressed (at least 4 of each set compressed). (*Cladobium* Lindley, Nat. Syst. Bot. ed. 2: 446. 1835; *Hexadesmia* Brongniart in Ann. Sci. Nat. ser. 2, 17: 44. 1842; *Hexopia* Bateman ex Lindley in Bot. Reg. 26: Misc. p. 46, *nomen*. 1840; ex Lindley in Bot. Reg. 30: Misc. p. 2, *in synon*. 1844; *Tetragamestus* Reichenbach filius in Bonplandia 2: 21. 1854; *Pachysteles* Schlechter in Fedde Repert. Beihefte 19: 28. 1923; *Ramonia* Schlechter in Fedde Repert. Beihefte 19: 294. 1923.)

A difficult and interesting genus which may be divided into five fairly distinct sections, four of which occur in Mexico.

The author believes that the correct name for this aggregation of species is *Cladobium* Lindl.

Inflorescence 1-flowered or rarely with a fascicle of flowers; stems fasciculately branched above.

1. § *Cladobia*

Inflorescence a 1-several-flowered raceme on a slender peduncle; stems not fasciculately branched above.

Leaves thin, at least neither fleshy nor subterete.

Leaves very narrow and with the sides nearly parallel; pollinia 4 or 6, if six then two of them reduced in size.

2. § *Crurigera*

Leaves not narrow, elliptic; pollinia 6 of equal size.

3. § *Hexadesmia*

Leaves fleshy and subterete.

4. § *Pachyphylla*

1. § CLADOBIA. Stems indurated or pseudobulbose, caespitose or secondary stems from a rhizome, simple, superimposed or fasciculately branched above. Inflorescence usually 1-flowered, sometimes fasciculated, from the axis of a leaf and much shorter than the leaf, usually subtended by several scarious subequitant bracts. Pollen masses 4 or 6, if six then two often smaller. Two species in Mexico.

Stems vernicose.

2. *S. confusa*

Stems not vernicose.

1. *S. livida*

2. § CRURIGERA. Stems with one fusiform thickening, often stipitate, caespitose or as secondary stems from a rhizome, not branched above. Inflorescence usually a raceme on a slender peduncle, subtending bracts not conspicuously subequitant or not at all so. Pollen masses 4 or 6, if six then two more or less reduced. Five species in Mexico.

Lip not emarginate.

3. *S. oblonga*

Lip emarginate.

Inflorescence about as long as or longer than the subtending leaves.

Inflorescence about as long as or somewhat shorter than the subtending leaf; lip usually indented on both sides at about the middle.

6. *S. pumila*

Inflorescence longer than the subtending leaf; lip not indented on the sides.

4. *S. tenuis*

Inflorescence not half as long as the subtending leaf.

Pseudobulbs unifoliate; petals oval to ovate.

5. *S. Reedii*

Pseudobulbs normally bifoliate, rarely trifoliate; petals oblong or narrower.

Lip about 4 mm. broad at the base.

7. *S. hondurensis*

Lip about 2 mm. broad at the base.

8. *S. crurigera*

3. § HEXADESMIA. Stems with one fusiform thickening, long stipitate, caespitose or from a rhizome. Leaves usually broad and elliptic. Inflorescence a short several-flowered raceme. Flowers largest of the genus. Pollen masses 6, of equal size.

A single species in Mexico.

8. *S. Lindeniana*

4. § PACHYPHYLLA. Small repent epiphytes with small, thick, approximate, unifoliate pseudobulbs. Leaves thick and fleshy, channeled or nearly terete. Inflorescence a single flowered, rarely 2-flowered, raceme. Pollen masses 4 or 6, if six then two of them much reduced. — This section is restricted to south central Mexico.

Callus at the base of the lip, margins free.

12. *C. pachyphyllum*

Callus not only at the base of the lip, margins not free.

Callus of the lip Y-shaped at the base; petals elliptic-lanceolate.

10. *C. Kienastii*

Callus of the lip not Y-shaped at the base; petals oblong.

11. *C. Bergeriana*

1. SCAPHYGLOTTIS LIVIDA (Lindl.) Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 457. 1918.

Isochilus lividus Lindley in Bot. Reg. 25: Misc. p. 36. 1839.

Isochilus dubius Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3: 26. 1845.

Ponera dubia Reichenbach filius in Bonplandia 4: 327. 1856.

Scaphyglottis dubia "Bentham & Hooker" ex Hemsley in Godman & Salvin, Biol. Centr.-Am. Bot. 3: 219. 1883.

?*Scaphyglottis Cogniauxiana* De Wildeman in Gard. Chron. ser. 3, 37: 33. 1905.

Scaphyglottis Purpusii Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2: 399. 1918.

Pachystele dubia Schlechter in Fedde Repert. Beihefte 19: 114. 1923.

Range: Mexico (Vera Cruz and Oaxaca) and Honduras.

2. SCAPHYGLOTTIS CONFUSA (Schltr.) Ames & Correll in Bot. Mus. Leafl. Harv. Univ. 10: 85. 1942.

Hexadesmia confusa Schlechter in Fedde Repert. 10: 361. 1912.

Pachystele confusa Schlechter in Fedde Repert. Beihefte 19: 114. 1923.

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

New to the flora of Mexico. The localities of all of the specimens seen are very near the Guatemalan border.

3. SCAPHYLOTTIS OBLONGA L. O. Williams in Am. Orch. Soc. Bull. 10: 77, t., figs. 3-5. 1941.

Range: Mexico (Michoacan).

Scaphyglottis oblonga is similar to *S. Reedii* (Reichb. f.) Ames and *S. tenuis* L. O. Williams but has an entire, oblong-subpandurate lip, narrower subacute petals and sepals and petals all 1-nerved.

4. SCAPHYLOTTIS TENUIS L. O. Williams in Am. Orch. Soc. Bull. 10: 77. t. 1941.

Range: Mexico (Nayarit).

Scaphyglottis tenuis is allied to *S. Reedii* (Reichb. f.) Ames but is easily distinguished by the smaller flowers with differently shaped lip and by the long slender raceme.

5. SCAPHYLOTTIS REEDII (Reichb. f.) Ames in Am. Orch. Soc. Bull. 10: 49. 1941.

Hexadesmia Reedii Reichenbach filius in Saunders Ref. Bot. 2: t. 113. 1872.

Range: Mexico (Mexico, Colima, Michoacan and Guerrero).

Although *S. Reedii* was described from horticultural material said to have come from Brazil the specimens seen certainly belong here and cast serious doubts on the stated origin of the type.

6. SCAPHYLOTTIS PUMILA Ames in Am. Orch. Soc. Bull. 10: 49, t. 2. 1941.

Range: Mexico (San Luis Potosí and Hidalgo).
The smallest of the Mexican species of the genus.

7. SCAPHYGLOTTIS HONDURENSIS (Ames) L. O. Williams
in Ceiba 1: 127. 1950.

Hexadesmia hondurensis Ames in Bot. Mus. Leafl. Harv.
Univ. 1, No. 6: 1, t. 1933.

Range: Mexico (Oaxaca) and Honduras.

Scaphyglottis hondurensis is new to the flora of Mexico.

8. SCAPHYGLOTTIS CRURIGERA (Batem.) Ames & Correll
in Bot. Mus. Leafl. Harv. Univ. 10: 85. 1942.

Hexopia crurigera Bateman ex Lindley in Bot. Reg. 26:
Misc. p. 46, *nomen*. 1840; ex Lindley in Bot. Reg. 30:
Misc. p. 2. 1840, *in synonym*.

Hexadesmia crurigera Lindley in Bot. Reg. 30: Misc.
p. 2. 1844.

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

Scaphyglottis crurigera is new to the flora of Mexico.

9. SCAPHYGLOTTIS LINDENIANA (Rich. & Gal.) L. O.
Williams in Ann. Mo. Bot. Gard. 28: 423. 1941.

Hexadesmia fasciculata Brongniart in Ann. Sci. Nat. ser.
2, 17: 44. 1842, non *Scaphyglottis fasciculata* Hook.

Hexadesmia Lindeniana Richard & Galeotti in Ann. Sci.
Nat. ser. 3, 3: 23. 1845.

Hexadesmia rhodoglossa Reichenbach filius in Bonplandia
4: 328. 1856.

Hexadesmia pachybulbon Schlechter in Fedde Repert.
Beihefte 17: 26. 1922.

Range: Mexico (Vera Cruz, Guerrero and Chiapas), Gua-
temala, Costa Rica and Panama.

Scaphyglottis Lindeniana is an extremely variable spe-
cies as to flower size.

10. SCAPHYGLOTTIS KIENASTII (Reichb. f.) Hemsley in
Godman & Salvin, Biol. Centr.-Am. Bot. 3: 219. 1883.

Ponera Kienastii Reichenbach filius in Gard. Chron. 810.
1877.

Range: Mexico (Puebla and Guerrero).

11. *SCAPHYGLOTTIS BERGERIANA* (Schltr.) L. O. Williams in *Ceiba* 1: 188. 1950.

Hartwegia Bergeriana Schlechter in *Fedde Repert.* 3: 78. 1906.

Range: Mexico (probably Vera Cruz).

We have seen no material of this species but we do have an analysis of the species made by Dr. Schlechter. The species is closely allied to *S. pachyphylla* L. O. Williams but it is distinguished by the base of the lip and by the callus.

12. *SCAPHYGLOTTIS PACHYPHYLLA* L. O. Williams in *Bot. Mus. Leafl. Harv. Univ.* 12: 244. 1946.

Range: Mexico (Mexico, Guerrero and Michoacan).

An interesting species which seems to be confined to the mountains of Michoacán, Guerrero and adjacent Mexico. The species is allied to *S. Bergeriana* (Schltr.) L. O. Williams.

EXCLUDED AND OBSCURE SPECIES

HEXADESMIA SESSILIS Reichenbach filius in Saunders Ref. *Bot.* 2: sub t. 113. 1872; *Linnaea* 41: 84. 1877.

Range: Mexico (Oaxaca?).

Mexico: Galeotti (or Jürgensen) 5331.

We have seen only a drawing of the above cited specimen from Reichenbach's herbarium. The species is closely allied to *Scaphyglottis crurigera* (Batem.) A. & C., from which it is said to differ mainly in having non-stipitate pseudobulbs. Reichenbach's specimens were apparently incomplete and it is possible that the stems below the pseudobulbs were broken and thus appeared to be sessile.

HEXADESMIA BIFIDA Reichenbach filius in Saunders Ref. *Bot.* 2: sub t. 113. 1872.

Schlechter, in *Beihefte Bot. Centralbl.* 36, Abt. 2: 455. 1918, gives the country of origin as Mexico but a record which we have from Reichenbach's herbarium gives the country of origin as Costa Rica.

It is possible that the species is referable to the variable *Scaphyglottis Lindeniana* (Rich. & Gal.) L. O. Williams.

37. ARPOPHYLLUM Llave & Lexarza, Nov. Veg. Descr., Orch. Opusc. 19. 1824; Correll in Lloydia 10: 214-217. 1947.

Epiphytic herbs from a rhizome. Rhizomes simple or branched. Stems indurated or pseudobulbous, covered or partly covered with scarios sheaths, unifoliate and with a large spathaceous bract subtending the inflorescence. Leaves fleshy, deciduous. Inflorescence terminal, raceme usually spicate. Sepals subequal, spreading, the laterals often a little gibbous at the base, adnate to the column. Petals similar to the sepals but usually a little smaller. Lip about as long as the petals, decidedly gibbous or saccate at the base, anterior portion often flabellate. Column erect, somewhat arcuate, wingless; column-foot short; pollinia 8, pyriform, waxy.

There seems to be no doubt about the plant intended by Llave and Lexarza hence we feel it is quite safe to accept the genus.

The Arpophyllums are difficult to distinguish and the simple reduction proposed by Correll, which we follow here, may be satisfactory.

Lip more than 8 mm. long.

2. *A. alpinum*.

Lip less than 8 mm. long.

1. *A. spicatum*.

1. ARPOPHYLLUM SPICATUM La Llave & Lexarza, Nov. Veg. Descr. 2, Orch. Opusc. 20. 1825.

Arpophyllum giganteum Hartweg ex Lindley in Ann. & Mag. Nat. Hist. 4: 384. 1840.

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

2. ARPOPHYLLUM ALPINUM Lindley in Bentham, Pl. Hartw. 93, 1842.

Arpophyllum medium Reichenbach filius, Beitr. Orch. Cent. Am. 89. 1866.

Range: Mexico (Puebla and Chiapas), Guatemala and Honduras.

OBSCURE OR EXCLUDED SPECIES

ARPOPHYLLUM CARDINALE Linden & Reichenbach filius in *Bonplandia* 2: 282. 1854.

Originally described from Venezuela and possibly does not occur in Mexico.

ARPOPHYLLUM LAXIFLORUM Pfitzer in *Gartenwelt* 3: 138. 1898.

Described from unlocalized horticultural specimens. If Mexican unknown to me if it is distinct from those given.

38. COELIA Lindley, *Gen. & Sp. Orch. Pl.* 36. 1830; in *Bot. Reg.* 28: t. 36. 1842.

Epiphytic herbs, caespitose or with a short repent rhizome. Stem a swollen pseudobulb with about three leaves from its apex, the rolled petioles sometimes simulating a stem. Inflorescence terminal, from new pseudobulbs (which apparently give rise to leaves the following year). Sepals similar, spreading, the lateral somewhat concave at the base, free from the column. Petals similar to the sepals but smaller. Lip simple or obscurely 3-lobed, a little shorter than the petals; claw broad, thickened. Column erect, very short, wingless or nearly so, column foot very short; pollinia 8, waxy. Ovary prominently winged.

The genus *Coelia* seems always to have been more or less confused although no one seems to have realized the fact. All of the species which have been referred to *Coelia*, except the type species, belong to *Bothriochilus*. The generic description in Bentham & Hooker, *Genera Plantarum*, is a mixture of characters apparently taken from *Coelia triptera* (Smith) G. Don and *Coelia macrostachya* Lindl. (= *Bothriochilus macrostachya* (Lindl.) L. O. Williams.)

The genus *Coelia* as now delimited is monotypic with only the following species.

1. COELIA TRIPTERA (Smith) G. Don ex Steudel, *Nom. ed.* 2, 1: 394. 1840.

Epidendrum tripteron Smith, *Ic. Pict.* t. 14. 1793.

Cymbidium tripterum Swartz in Nov. Act. Ups. 6: 70. 1799.

Coelia Baueriana Lindley, Gen. & Sp. Orch. Pl. 36. 1830; Bauer & Lindley, Ill. Orch. Genera t. 3. 1830-33; Lindley in Bot. Reg. 28: t. 36. 1842.

Coelia glacialis Houtte ex Heynhold, Nom. 2, 152. 1846, *nomen*.

?*Coelia Galeottiana* Houtte ex Heynhold, Nom. 2, 152. 1846, *nomen*.

Range: Mexico (Vera Cruz), Guatemala and the West Indies.

39. BOTHRIOCHILUS Lemaire, Illustr. Hort. 3, Misc. p. 31. 1856.

Epiphytic (or terrestrial ?) caespitose herbs with stems reduced to ovoid or lageniform pseudobulbs. Pseudobulbs several-leaved at their apices, the petioles of the leaves simulating stems. Inflorescence lateral from juvenile pseudobulbs. Lateral sepals adnate to the column-foot and with it forming a conspicuous mentum. Dorsal sepal free. Petals similar to the dorsal sepal but usually shorter. Lip simple or obscurely 3-lobed, about as long as the petals, shortly but sharply declined or even short saccate at the base, if saccate the sac sometimes didymous. Column erect, long and slender, wingless or nearly so; column-foot about as long as the column or longer; pollinia 8, waxy. Ovary wingless.

To this genus belong all of the species previously referred to *Coelia* except the type species of *Coelia*.

Flowers about 1 cm. long.

1. *B. macrostachyus*

Flowers about 5 cm. long.

2. *B. bellus*

1. BOTHRIOCHILUS MACROSTACHYUS (Lindl.) L. O. Williams in Bot. Mus. Leaflet. Harv. Univ. 8: 148. 1940.

Coelia macrostachya Lindley in Bentham, Pl. Hartw. 92. 1842; Hooker in Bot. Mag. 79: t. 4712. 1853; Reichenbach filius, Beitr. Orch. Centr.-Am. 1866.