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AN ENUMERATION OF THE ORCHIDACEAE OF CENTRAL AMERICA, BRITISH HONDURAS AND PANAMA

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INTRODUCTION

THE REGION HERE CALLED CENTRAL AMERICA is the political entity which was formerly the Central American Federation. It consists of five republics today: Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica. The colony of British Honduras and the Republic of Panama are included for they form an integral part of the biological Central American area. Southeastern Mexico, as far as the Isthmus of Tehuantepec, belongs also to biological Central America. The orchids of the Mexican region have not been especially given in the present enumeration but I think that there will be found very few species of orchids in that region that are not also to be found in Central America and consequently in this list.

My interest in the orchids of this region extends back nearly twenty years, when I began keeping notes on my observations on the species of orchids occurring from Mexico to Panama. Parts of these notes were used when the "Orchidaceae of Mexico" was published; still more were used in the Orchidaceae of the "Flora of Panama". During the twenty year period many short papers were published on the orchids of the region.

The present enumeration is not more than that; a list of the orchids that occur in Central America, British Honduras and Panama with their synonyms, bibliography as applied to the region covered and the distribution of the species. The distribution is given by countries for our area and in broader terms outside of the region, for example "South America" or "West Indies" without specifying the exact location. If a species is known from all five Central American countries the range is recorded simply as "Central America".

It is more than possible that some species have been excluded that do grow in our region and that others not known now will be found as exploration continues. Ranges will be extended as new collections are made, which is to be expected.

Many of the species of orchids credited to Central America I have not seen personally nor have I had the opportunity to study them. Many of the types of Central American orchids were lost during the course of the second world war, especially may be mentioned those on which many of Schlechter's species were based, and it may never be possible to place them exactly.

The synonymy presented in this enumeration is often a synthesis that has come down in the literature through the years. Many times it is the accepted opinion of my colleagues of past years, Oakes Ames, Charles Schweinfurth, F. Tracy Hubbard, Donovan Correll, Gordon Dillon and Paul H. Allen. Often it is opinions arrived at in my own study of the orchids of the region. The synonymy will be changed as studies continue, other species will be added and some given here will go to their proper place.

DISTRIBUTION OF CENTRAL AMERICAN, BRITISH HONDURAN AND PANAMANIAN ORCHIDS

Central America, British Honduras and Panama. — We have listed for our region some 1335 species and 41 varieties of orchids. There are 361 of these species and varieties that are found also in Mexico; 105 are in the West

Indies and 195 are recorded as well for South America. A handful of species extend their range into the United States and two or three are found in Africa.

GUATEMALA.—We have recorded 511 species and varieties from Guatemala, distributed in 86 genera. The orchids of Guatemala are fairly well known for the country relatively has been well collected by competent collectors over a long period of time. There are many regions of Guatemala where orchids are abundant and some of these have not been collected in by many people. The Pacific slopes, extending from the Mexican border to about Escuintla, at elevations between 1,000 and 2,000 meters should prove to be the most fertile in additions to the Guatemalan orchid flora.

BRITISH HONDURAS.—We have recorded 97 species from the colony, distributed in 38 genera. There has been relatively little collecting in the country and although a great number of species are not to be expected there perhaps more should be found than are now known.

EL SALVADOR.—We have recorded 100 species and varieties for the republic, distributed in 41 genera. The natural arboreal vegetation of El Salvador has mostly been destroyed and it seems likely that the native orchid flora has largely been exterminated along with the trees.

HONDURAS.—We have recorded 332 species and varieties for the republic, in 73 genera. In 1918 Schlechter could find records of only 18 species known in the country. (I have collected nearly twice that number from one fallen tree.) There are still large areas in Honduras that are botanically unexplored, in fact relatively small portions of the whole have actually been visited by botanists. The mountains facing the Caribbean Sea should yield a large number of species. The most favorable elevations along these slopes would seem to be from about 600 to some 1500 meters. The forests of Honduras are rapidly being cut and burned away and it may be expected that within the foreseeable future the favorable habitats for orchids in the country will be greatly reduced. The highland cloud forests are relatively poor in orchids but contain some that are not

to be found elsewhere. Biological exploration of Honduras has been carried out mostly by foreigners, as is the case with most other countries of our region. Antonio Molina R. is the only native botanist of note and he is probably his country's most capable scientist.

NICARAGUA.—We have recorded 139 species and varieties of orchids for the country, distributed in 45 genera. In biological sciences and scientific exploration Nicaragua is perhaps the least favored of the Central American countries. Very few Nicaraguans have developed scientific interests and foreign scientists have usually avoided the country. There should be many more species found in the country, especially in the highlands which occupy the northwest part of the republic.

COSTA RICA.—We have recorded 907 taxa of orchids for Costa Rica; more than double the number catalogued by Schlechter in 1918. These orchids are distributed in 108 genera. In science Costa Rica has been the most favored country of our region for not only has it developed a number of competent scientists, in a favorable intellectual climate, but it has attracted an endless number of foreign scientists. Even though biological exploration is far more complete in Costa Rica than in any other country of our region the plant and animal life is so rich and varied that almost any collection will bring out unrecorded species. Most all regions of the country still repay biological exploration. Virgin forest areas are disappearing rapidly and with them will disappear many of the orchid species and other kinds of native plants and animals that require a forest habitat. The rich orchid flora of Costa Rica has obviously been supplied with species that might be said to be of Mexican or of Central America origin and of another group that has its origin in South America. The endemic element in the orchids of the country is very high and, of course, supplies some of the most interesting orchids of the country.

PANAMA.—We have recorded 474 taxa of orchids from Panama, four times as many as Schlechter knew in 1918. There are 88 genera listed for the country. The increase in knowledge of Panamanian orchids in recent years has been due largely to the explorations of Paul H. Allen. The

mountains of western and west central Panama still need much biological exploration and it is in this region where most additions to the orchid flora should be found. The forest areas of the region mentioned are being exploited for agricultural lands and for wood. At the present rate of exploitation the virgin forests should mostly be gone from Panama, west of the canal, before the century is out. With the forests will go most of the native plants that require a forest habitat.

ORCHID SPECIALISTS WHO HAVE WORKED WITH THE REGION

Almost all of the orchidologists of the last hundred years have worked with the orchids of our region. It will perhaps be of interest to mention some of them and a bit about them.

LINDLEY.—John Lindley might be called the father of modern orchidology. A large number of Central American species were described by him. The region was nearly pristine, so far as orchids were concerned, when he began his work with the plants of the region. His study of the orchids coincided with the beginning of intensive biological exploration of Central America. Lindley's interest in orchids was worldwide. He was a careful and critical observer.

REICHENBACH FILIUS.—H. G. Reichenbach was a younger contemporary of Lindley's and assisted in the opening of the study of orchids of many new regions of the world just then being explored. The interest in orchids as horticultural plants had come into its own by Reichenbach's time and he participated fully in the horticulturists' interest in orchids and, especially during his later years was the horticulturists' "expert" on the subject.

KRÄNZLIN.—Fritz Kränzlin took up where Reichenbach left off, in point of time. He wrote monographs of many American genera but did relatively little work of a floristic nature.

ROLFE.—R. Allen Rolfe did a small amount of work with Central American orchids, mostly those that got into cultivation at Kew.

SCHLECHTER.—(Friedrich Richard) Rudolf Schlechter was perhaps the most active student of the Orchidaceae of all time. His knowledge was worldwide and he worked with the orchids of all major areas of the world. He undoubtedly knew more about the systematics of orchids than any other botanist and has published literally hundreds of papers on the family. Schlechter is the only one among the students of orchids mentioned on these pages, except Allen, who has had experience with the plants in the tropics. He spent nearly twenty years, 1891-1910, in collecting in the tropics, — Africa, Borneo, Sumatra, Java, New Guinea, Australia and many other regions were visited and collected in by Schlechter. The first critical list of orchids of our region was Schlechter's "Kritische Aufzählung der bisher aus Zentral-Amerika bekanntgewordenen Orchideen" published in 1918. Schlechter died when only fifty three years old.

AMES.—Oakes Ames' interest began with the horticulture of the orchids but it soon expanded to systematics of the Orchidaceae, a field in which he became a specialist. His first important studies were on the orchids of the Philippine Islands and his work on the orchids of that region will remain classical for all time. Ames' interest increased to include orchids from much of the Pacific area and then to include most of the tropical regions of North America and western South America. Ames was a capable administrator and during the last half of his life much of his time was devoted to administrative duties.

HUBBARD.—F. Tracy Hubbard's systematic work in the Orchidaceae has been mostly with the North American species of *Epidendrum*. In addition to his interest in orchids and grasses he is an accomplished bibliographer and has done much work among the grasses and orchids as well as in economic plants

SCHWEINFURTH. — Charles Schweinfurth, as have others, learned the systematics of orchids from Oakes Ames. His interest in the family covered the Pacific and American

areas with special interest in the orchid flora of Peru. Schweinfurth is one of the most meticulous systematists who has worked with the family.

CORRELL.—Donovan S. Correll's interests cover both ferns and orchids as well as economic plants. His main interest is in temperate North American orchids and ferns but he is mainly responsible for the work on the "Orchids of Guatemala", an exceedingly fine bit of descriptive work published by the Chicago Natural History Museum as a part of the "Flora of Guatemala".

ALLEN.—Paul H. Allen is a meticulous field man and observer who has worked extensively with the orchids of Panama, and to a less extent with those of other Central American countries. He probably knows more about Central American orchids in the field than anyone else.

BENTHAM.—George Bentham wrote the Orchidaceae in Bentham & Hooker, "Genera Plantarum", the best generic descriptions ever written for the Orchidaceae. Bentham's concept of genera in the family was conservative for the most part, and well thought out.

PFITZER.—Ernst Pfitzer wrote the account of the Orchidaceae for the "Natürliche Pflanzenfamilien" and the system proposed is the basis for the arrangement followed by most later orchidologists. It is still one of the most useful accounts of the genera.

HEMSLEY.—W. Botting Hemsley prepared the botany of the "Biologia Centrali-Americana" and the list of orchids which it contained. It was the first list to cover the region with which we are concerned. The list is not a critical one.

SPECIAL BIBLIOGRAPHY

There are several publications that have to do with the Orchidaceae of our region or contain enough information about them to make the publication especially useful.

BIOLOGIA CENTRAL-AMERICANA. — The botany of this work, prepared by Hemsley, contains the first list of orchids of our region.

FEDDE REPERTORIUM, BEIHEFTE.—The Beihefte contain several of Rudolf Schlechter's works on Central American orchids, among which may be mentioned: Beiträge zur Orchideenkunde von Zentralamerika, — I. Orchidaceae Powellianae Panamenses (Vol. 17, 1922); II. Additamenta ad Orchideologiam Costaricensem (Vol. 23, 1923); Blütenanalysen neuer Orchideen, II. Mittelamerikanische Orchideen (Vol. 59, part 2, 1931).

BEIHEFTE ZUM BOTANISCHEN CENTRALBLATT (Vol. 36, part 2, 1918) contains Schlechter's "Kritische Anzählung der bisher aus Zentral-Amerika bekanntgewordenen Orchidaceen", the first critical list of Mexican, Central American and Panamanian orchids.

FOLIA ORCHIDACEA and THE GENERA AND SPECIES OF ORCHIDACEOUS PLANTS, both private (and now scarce) publications of John Lindley have much that is basic to Central American orchid study.

ORCHIDACEAE (7 volumes), SCHEDULAE ORCHIDIANAE (10 parts) and THE GENUS EPIDENDRUM IN UNITED STATES AND MIDDLE AMERICA, all private publications of Oakes Ames, are essential to a Central American orchid library.

BOTANICAL MUSEUM LEAFLETS, Harvard University (18 volumes) have many articles on our region by several authors.

CEIBA. Volume 2 contains "The Orchidaceae of Mexico", which is provided with keys and generic descriptions, many applicable to our region.

FIELDIANA: BOTANY. Volume 26 contains the "Orchids of Guatemala", one of the best descriptive works on Central American orchids. There are many excellent plates.

FIELD MUSEUM OF NATURAL HISTORY, BOTANICAL SERIES. Volume 18 contains the "Flora of Costa Rica" in which there is an annotated list of Costa Rican orchids.

ANNALS OF THE MISSOURI BOTANICAL GARDEN. Volumes 33-36 contain the orchid part of the "Flora of Panama", a well illustrated descriptive account.

"THE ORCHIDS OF PANAMA", a reprint from the Orchid Journal with 41 good plates added.

XENIA ORCHIDACEA and BEITRÄGE ZUR ORCHIDEENKUNDE CENTRAL-AMERIKA's private publications of H. G. Reichenbach contain much useful information on Central American orchids.

ENUMERATION

SELENIPEDIUM Reichb. f., Xenia Orch. 1: 3. 1854.

A small genus of terrestrial orchids with only the following species in our region.

SELENIPEDIUM CHICA Reichb. f., Xenia Orch. 1: 3 fig. 1, 2-5. 1854; Ames, Sched. Orch. 2: 1, t. 1. 1923; L. Wms. in Ann. Mo. Bot. Gard. 33: 144, f. 64. 1946.

Cypripedium chica Kränzl., Orch. Gen. & Sp. 1: 36. 1897.

One of the tallest of the orchids in our region. Panama.

CYPRIPEDIUM L., Sp. Pl. ed. 1. 2: 951. 1753.

A boreal genus of which only the following species reaches into the tropics.

CYPRIPEDIUM IRAPEANUM Llave & Lex., Nov. Veg. Descr. fasc. 2: 10. 1824.

Cypripedium molle Lindl. in Benth., Pl. Hartw. 72 1840; Lindl., Gen. & Sp. Orch. Pl. 256. 1840.

A showy plant and the only *Cypripedium* known in Central America.

Mexico and Guatemala.

PHRAGMIPEDIUM (Pfitzer) Rolfe in Orch. Rev. 4: 331. 1896.

Paphiopedilum § *Phragmopedilum* Pfitzer in Engler, Bot. Jahrb. 25: 527. 1898.

There are two species of the genus known in our area and about a dozen in South America. Often cultivated.

PHRAGMIPEDIUM CAUDATUM (Lindl.) Rolfe in Orch. Rev. 4: 332. 1896.

Cypripedium caudatum Lindl., Gen. & Sp. Orch. Pl. 531. 1840.

Cypripedium Humboldtii Warsz. ex Reichb. f. in Bot. Zeit. 10: 691. 1852.

Cypripedium Warszewiczianum Reichb. f., 1. c. 692.

Paphiopedilum caudatum Pfitzer in Engler, Bot. Jahrb. 19: 41. 1894.

Cypripedium caudatum var. *Warszewiczii* Hort. in Kerch., Orch. 454. 1894.

Cypripedium caudatum var. *roseum* Hort. in Kerch., 1. c.

Phragmopedilum Warszewiczianum Schltr. in Fedde Rep. Beih. 17: 9. 1922.

Mexico, Guatemala, Honduras, Panama and South America.

PHRAGMIPEDIUM LONGIFOLIUM (Warsz. & Reichb. f.) Rolfe in Orch. Rev. 4: 33. 1896.

Cypripedium longifolium Warsz. & Reichb. f. in Bot. Zeit. 10: 690. 1852; Hook. f. in Bot. Mag. 98. t. 5970. 1872.

Selenipedium longifolium Reichb. f., Xenia Orch. 1: 3. 1854.

Cypripedium Hincksianum Reichb. f. in Gard. Chron. n. s. 9: 202. 1878.

Paphiopedilum longifolium Pfitzer in Engler & Prantl, Nat. Pflanzenf. II. 6: 84. 1888.

Paphiopedilum longifolium Kerch., Orch. 455. 1894.

Paphiopedilum Hincksianum Pfitzer in Engler, Bot. Jahrb. 19: 41. 1894.

Costa Rica, Panama and Colombia.

HABENARIA Willd., Sp. Pl. 4: 44. 1805; Kränz. Orch. Gen. & Sp. vols. 1 & 2: 1897-1903; Ames, Orch. vol. 4: 1910.

* *Bonatea* Willd., 1. c. 43.

Platanthera L. C. Rich. in Mém. Mus. Par. 4: 4. 1818.

A genus of worldwide distribution, polymorphic and often split into many genera.

HABENARIA ALATA Hook., Exot. Fl. 3: t. 169. 1826; Ames, Orch. 4: 273. 1910; Ames in Bot. Mus. Leaf. 3: 20, fig. 1934.

Habenaria platantheroides Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 372. 1918.

West Indies, Mexico, Central America and South America.

HABENARIA AMPAROANA Schltr. in Fedde Rep. Beih. 19: 6. 1923.

Costa Rica.

HABENARIA AVICULA Schltr. in Fedde Rep. 17: 138. 1921.

Habenaria patentiloba Ames in Proc. Biol. Soc. Wash. 34: 151. 1921.

Panama.

HABENARIA AVICULOIDES A. & S., Sched. Orch. 10: 1. 1930.

Costa Rica.

HABENARIA BICORNIS Lindl., Gen. & Sp. Orch. Pl. 309. 1835.

West Indies and Panama.

HABENARIA CLYPEATA Lindl., Gen. & Sp. Orch. Pl. 308. 1835.

Not common in Central America but abundant and much described from South American material.

Mexico, Guatemala, Honduras and South America.

HABENARIA BRENESII Schltr. in Fedde Rep. Beih. 19: 159. 1923.

Costa Rica.

HABENARIA CLYPEATA Lindl., Gen. & Sp. Orch. Pl. 311. 1835.

Habenaria lactiflora Rich. & Gal. in Ann. Sci. Nat. ser. III, 3: 28. 1845.

Habenaria spithamea Schltr. in Fedde Rep. 15: 195. 1918.

Allied to *H. entomantha* from which it is distinguished, in part, by the white flowers.

Mexico, Guatemala, Honduras, Costa Rica and Panama.

HABENARIA COSTARICENSIS Schltr. in Fedde Rep. 17: 138. 1922.

Costa Rica.

HABENARIA CRASSICORNIS Lindl., Gen. & Sp. Orch. Pl. 311. 1835; Ames, Orch. 4: 233, t. 72. 1910.

The glandular pubescence of various parts of the flower, and often of the inflorescence, will help to distinguish this species from *H. entomantha*.

Mexico, Guatemala and Honduras.

HABENARIA DISTANS Griseb., Cat. Pl. Cuba 270. 1866; Ames, Orch. 4: 202. 1910.

Habenaria Tuerckheimii Schltr. in Fedde Rep. 2: 129. 1906; Ames, Orch. 4: 206, t. 68. 1910.

Habenaria jamaicensis Fawc. & Rendle in Journ. Bot. 47: 126. 1909.

Habenaria distans var. *jamaicensis* Cogn. in Urb., Sym. Antill. 6: 300. 1909.

Florida, West Indies, Mexico, Guatemala and Costa Rica.

HABENARIA ENDRESIANA Schltr. in Fedde Rep. Beih. 19: 159. 1923.

Costa Rica.

HABENARIA ENTOMANTHA (Llave & Lex.) Lindl., Gen. & Sp. Orch. Pl. 311. 1835; Ames, Orch. 4: 242, t. 74. 1910.

Habenaria flexuosa Lindl., 1. c.

Habenaria tetranema Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 273. 1918.

Habenaria hondurensis Ames in Bot. Mus. Leaflet. Harv. Univ. 5: 36, t. 1934.

Mexico, British Honduras, Guatemala and Honduras. Reported from Venezuela.

HABENARIA EUSTACHYA Reichb. f. in Ber. Deut. Sch. Bot. Gesell. 3: 274. 1885.

West Indies, Mexico, Guatemala and Honduras.

HABENARIA GYMNADENIODES Schltr. in Fedde Rep. Beih. 19: 271. 1923.

Costa Rica.

HABENARIA HEPTADACTYLA Reichb. f. in Linnæa 22: 812. 1849.

Panama and South America.

HABENARIA IRAZUENSIS Schltr. in Fedde Rep. Beih. 19: 271. 1923.

Costa Rica.

HABENARIA JIMENEZII Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 372. 1918.

Costa Rica.

HABENARIA LAATIANA Schltr. in Fedde Rep. 21: 330.
1925.

Guatemala.

HABENARIA LANKESTERI Ames, Sched. Orch. 4: 2.
1923.

Costa Rica.

HABENARIA LIMOSA (Lindl.) Hemsl. in Godm. & Salv.,
Biol. Ccntr.-Am. Bot. 3: 305. 1894; Ames, Orch. 4: 109.
1910.

Platanthera limosa Lindl. in Ann. Nat. Hist. 4: 381.
1840.

Platanthera guatemalensis Schltr. in Fedde Rep. 15:
193. 1918.

Southwestern United States, Mexico, and Guatemala.

HABENARIA MESODACTYLA Griseb., Fl. Br. W. Indies
644. 1864; Ames, Orch. 4: 211, t. 70. 1910.
West Indies, British Honduras. (Lundell 6712).

HABENARIA MONORRHIZA (Sw.) Reichb. f. in Ber. Deut.
Bot. Gesell. 3: 274. 1885.

Orchis monorrhiza Sw., Nov. Gen. & Sp. Prodr. 118.
1788.

West Indies, Central America and South America.

HABENARIA NOVEMFIDA Lindl. in Benth., Pl. Hartw. 94.
1842; Ames in Bot. Mus. Leaf. Harv. Univ. 3: 27, t. 1934.

Habenaria diffusa R. & G. in Ann. Sci. Nat. ser. 3, 3:
28. 1845.

Habenaria dippleura Schltr. in Fedde Rep. 15: 194.
1918.

Habenaria quinquefila Schltr., l. c. 195.

Allied to *H. entomantha* but is easily recognized by the
taller stems and the large leaves.

Mexico, Guatemala, El Salvador, Honduras and Costa
Rica.

HABENARIA OERSTEDII Reichb. f. in Bonpl. 3: 213.
1855.

I have never seen this plant.
Nicaragua.

HABENARIA PAUCIFLORA (Lindl.) Reichb. f. in Bonpl.
2: 10. 1854.

Bonatea pauciflora Lindl., Gen. & Sp. Orch. Pl. 329.
1835.

Habenaria setifera Lindl. in Ann. Nat. Hist. 4: 381.
1840.

Habenaria spathacea R. & G. in Ann. Sci. Nat. ser. 3.
3: 29. 1845.

Mexico to Argentina.

HABENARIA PETALODES Lindl., Gen. & Sp. Orch. Pl.
316. 1835.

Habenaria petalodes var. *micrantha* Reichb. f., Beitr.
Orch. Cent. Am. 5. 1866.

Habenaria Warszewiczii Schltr. in Anex. Mem. Inst.
Butantan 12: 25. 1921.

Panama and South America.

HABENARIA QUINQUESETA (Michx.) Sw., Adnot. Bot.
46. 1829.

Orchis quinqueseta Michx., Fl. Bor. Am. 2: 155. 1803.

Habenaria macroceratitis Willd., Sp. Pl. 4: 44. 1805.

Habenaria macroceratitis var. *brevicalcarata* Ames,
Orch. 4: 224. 1910.

Southeastern United States, Mexico, British Honduras,
Guatemala, Honduras, El Salvador, Nicaragua and
South America.

HABENARIA REPENS Nutt., Gen. N. Am. Pl. 2: 190.
1818; Ames in Bot. Mus. Leaf. Harv. Univ. 3: 35, f. 1934.

Southeastern United States, West Indies, Central America
and South America.

HABENARIA STRICTISSIMA Reichb. f. in Linnaea 18: 407. 1844; Ames, Orch. 4: 272. 1910.

Habenaria latipetala Schltr. in Fedde Rep. 15: 194. 1918.

Mexico, Guatemala, Honduras and Nicaragua.

HABENARIA STRICTISSIMA var. ODONTOPETALA (Reichb. f.) L. Wms. in Bot. Mus. Leaf. Harv. Univ. 7: 184. 1939.

Habenaria odontopetala Reichb. f. in Linnaea 18: 407. 1844.

Habenaria Selerorum Schltr. in Bull. Herb. Boiss. 7: 539. 1899.

Florida, West Indies, Mexico, Guatemala, Honduras and Costa Rica.

HABENARIA VERECUNDA Schltr. in Fedde Rep. Beih. 19: 6. 1923.

Costa Rica.

HABENARIA WERCKLEI Schltr. in Fedde Rep. Beih. 19: 7. 1923.

Costa Rica.

POGONIA Juss., Gen. 65. 1789.

Triphora Nutt., Gen. N. Am. Pl. 2: 192. 1818; Ames, Orch. 7: 9, 39. 1922.

Psilochilus Barb. Rodr., Orch. Nov. 2: 272. 1882.

Cleistes L. C. Rich. in Mém. Mus. Paris 4: 31. 1818.

It is a matter of choice whether the genera given above, as synonyms of *Pogonia*, be maintained separately or not. I prefer the more conservative course.

There is a need to study critically the species of this group. There are almost certainly more names represented here than there are valid species.

Prof. Ames in his *Orchidaceae*, vol. 7, has proposed separation of several of the "*Pogonia* genera" as represented in our region. When I studied this group for the "*Orchidaceae* of Mexico", on more ample material than Prof. Ames had, I found no line at which generic lines could

be drawn. I still know of no method of separating these plants into distinct genera.

POGONIA CUBENSIS Reichb. f. in Nederl. Kruidk. Arch. 4: 322. 1850, as *rubensis*.

Triphora cubensis Ames, Sched. Orch. 7: 35. 1924.

Florida, West Indies, Mexico, Guatemala and Honduras.

POGONIA DEBILIS Schltr. in Fedde Rep. 15: 196. 1918.

Triphora debilis Schltr., l. c. 17: 139. 1921.

Guatemala.

POGONIA MACROPHYLLA Lindl. in Ann. & Mag. Nat. Hist. ser. 3, 1: 335. 1854.

Psilochilus macrophyllus Ames, Orch. 7: 45, t. 1922. West Indies, Guatemala and South America.

POGONIA MEXICANA S. Wats. in Proc. Am. Acad. 26: 154. 1891.

Triphora mexicana Schltr. in Fedde Rep. 17: 139. 1921.

Mexico, Guatemala, Honduras and Panama.

POGONIA NITIDA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 373. 1918.

Triphora nitida Schltr. in Fedde Rep. 17: 139. 1921. Costa Rica.

POGONIA ROSEA (Lindl.) Hemsl. in Godm. & Salv. Biol. Cent.-Am. Bot. 3: 304. 1884.

Cleistes rosea Lindl., Gen. & Sp. Orch. Pl. 410. 1840. Costa Rica, Panama and South America.

POGONIA TRIANTHOPHORA (Sw.) Britt., Sterns & Poggenb., Prelim. Cat. Anth. & Pterido. N. Y. 52. 1888.

Arethusa trianthophoros Sw., Kongl. Sven. Vet. Akad. nya Handl. 21: 230. 1800.

Triphora trianthophora Rydb. in Brit., Man. Fl. N. States & Canada ed. 1, 298. 1901.
United States, possibly Guatemala.

POGONIA WAGNERI (Schltr.) L. Wms. in Ann. Mo. Bot. Gard. 33: 19. 1946.

Triphora Wagneri Schltr. in Fedde Rep. 17: 139. 1921.
Panama.

VANILLA Sw. in Nov. Act. Upsal. 6: 66. 1799.

A genus distributed in the tropics of the world, containing some fifty ill-defined species. The vanilla of commerce is made from the fruits of species of this genus.

VANILLA INODORA Schiede in Linnaea 4: 574. 1829.

Almost certainly in Central America but I have seen no specimens that could be so identified without question.
West Indies, Mexico and northern South America.

VANILLA PFAVIANA Reichb. f. in Gard. Chron. n. s. 20: 230. 1833; Ames in Bot. Mus. Leaf. Harv. Univ. 4: 26, f. 1936.

Vanilla Preusii Kränzl. in Notizbl. Bot. Gart. Mus. Berlin 7: 320. 1919.
Mexico, British Honduras, Guatemala and Costa Rica.

VANILLA PLANIFOLIA Andrews, Bot. Repos. 8: t. 538. 1808; Dillon in Am. Orch. Soc. Bull. 10: 339, t. 11. 1942.

Myrobroma fragrans Salisb., Parad. Lond. t. 82. 1807.
Vanilla fragrans Ames, Sched. Orch. 7: 36. 1924.

Vanilla insignis Ames in Bot. Mus. Leaf. Harv. Univ. 2: 101, t. 1934.

This is the common vanilla of commerce and is grown as a plantation crop in several parts of the world. Wild fruits of this are occasionally collected in Central America and used to prepare vanilla.

Vanilla rubra (Lam.) Urban may eventually prove to be the proper name of this species.

Florida, West Indies, Mexico, British Honduras, Central America, Panama and South America. Widely cultivated.

VANILLA POMPONA Schiede in Linnaea 4: 573. 1829.

Vanilla Pittieri Schltr. in Fedde Rep. 3: 103. 1906.

This species has been in cultivation, and probably still is.

West Indies, Mexico, Central America and South America.

EPISTEPHIUM Kunth, Synops. Pl. Aequin. 1: 340. 1822.

EPISTEPHIUM SP.

There is a specimen in the Ames Herbarium at Harvard University that seems to belong to this genus but it is not satisfactory for description. The genus is not known otherwise in North America.

British Honduras.

ELLEANTHUS Presl, Rel. Haenk. 1: 97. 1827.

Epilyna Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 375. 1918.

A genus with but few species in our region but with a large number in the Andes of South America. The taxonomy is difficult.

ELLEANTHUS ALBERTII Schltr. in Fedde Rep. Beih. 19: 162. 1923.

Costa Rica.

ELLEANTHUS AURANTIACUS (Lindl.) Reichb. f. in Walp. Ann. 6: 482. 1863.

Evelyna aurantiaca Lindl. in Benth., Pl. Hartw. 149. 1844.

Elleanthus Tondusii Schltr. in Fedde Rep. 8: 567. 1910.
Honduras, Costa Rica, Panama and South America.

ELLEANTHUS BRENESEI Schltr. in Fedde Rep. 11: 44.
1912.
Costa Rica.

ELLEANTHUS CAPITATUS (P. & E.) Reichb. f. in Walp.
Ann. 6: 475. 1862.

Evelyna capitata Poepp. & Endl., Nov. Gen. ac Sp.
Pl. 1: 32. 1835.

Bletia capitata R. Br. in Ait., Hort. Kew. ed. 2, 5: 206.
1913.

West Indies, Mexico, Central America, Panama and
South America.

ELLEANTHUS CARICOIDES Nash in Bull. Torr. Bot. Club
24: 119. 1907.
Nicaragua and Costa Rica.

ELLEANTHUS CURTH Schltr. in Fedde Rep. Beih. 19:
79. 1923.
Costa Rica.

ELLEANTHUS GLAUCOPHYLLUS Schltr. in Fedde Rep.
7: 567. 1910.
Costa Rica.

ELLEANTHUS HYMENOPHORUS Reichb. f. in Walp.
Ann. 6: 480. 1861.

Evelyna hymenophora Reichb. f. in Bot. Zeit. 10: 710.
1852.

Costa Rica, Panama and South America.

ELLEANTHUS JIMENEZII (Schltr.) C. Schweinf. in Bot.
Mus. Leafl. Harv. Univ. 5: 38. 1937.

Epilyna Jimenezii Schltr. in Beih. Bot. Centralbl. 36,
Abt. 2: 375. 1918.
Costa Rica.

ELLEANTHUS LAXUS Schltr. in Fedde. Rep. 12: 213.
1913.
Costa Rica (?) and Panama.

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ELLEANTHUS LINIFOLIUS Presl, Rel. Haenk. 1: 97.
1827.

Isochilus linifolius Lindl., Gen. & Sp. Orch. Pl. 113.
1831.

West Indies, Mexico, British Honduras, Central Amer-
ica to South America.

ELLEANTHUS MUSCICOLA Schltr. in Fedde Rep. Beih.
19: 10. 1923.

The small persistent leaves are curious in the genus.
Costa Rica and Panama.

ELLEANTHUS POIFORMIS Schltr. in Fedde Rep. Beih.
19: 164. 1923.
Guatemala and Costa Rica.

ELLEANTHUS TRICALLOSUS A. & S., Sched. Orch. 8:
51, t. 1924.
Costa Rica.

ELLEANTHUS TRILOBATUS A. & S. in Sched. Orch. 8:
53. 1924.

Probably a synonym of *E. Brenesii*.
Costa Rica and Panama.

ELLEANTHUS WERCKLEI Schltr. in Fedde Rep. Beih.
19: 11. 1923.
Nicaragua and Costa Rica.

SOBRALIA Ruiz & Pavón, Fl. Peruv. & Chil. Prodr.
120, t. 26. 1794.

Fregea Reichb. f. in Bot. Zeit. 10: 712. 1852.

Lindsayella A. & S. in Bot. Mus. Leafl. Harv. Univ.
5: 33. 1935.

The center of distribution of *Sobralia* is probably in
Central America and Panama. The flowers are often large
and showy but fugaceous which makes the group difficult
to study. It is certainly one of the most difficult genera in
Central America and whether or not it can be satisfactorily
worked out is questionable.

SOBRALIA ALLENII L. Wms. in Ann. Mo. Bot. Gard.
29: 336, t. 30. 1942.
Panama.

SOBRALIA AMABILIS (Reichb. f.) L. Wms. in Ann. Mo.
Bot. Gard. 33: 30. 1946.

Fregea amabilis Reichb. f. in Bot. Zeit. 10: 712. 1852.
Costa Rica and Panama.

SOBRALIA AMPAROAE Schltr. in Fedde Rep. Beih. 19:
6. 1923.
British Honduras and Costa Rica.

SOBRALIA ATRORUBENS A. & S., Sched. Orch. 10: 2.
1930.
Costa Rica

SOBRALIA BLETTIAE Reichb. f. in Bot. Zeit. 10: 713.
1852.
Panama.

SOBRALIA BOUCHEI A. & S., Sched. Orch. 10: 4. 1930.
Closely allied to *Sobralia blettiae* Reichb. f. and possibly
a synonym of it.
Panama.

SOBRALIA BRADEORUM Schltr. in Fedde Rep. Beih. 19:
80. 1923.
Costa Rica.

SOBRALIA CALLOSA L. Wms. in Ann. Mo. Bot. Gard.
33: 31. 1946.

Lindsayella amabilis A. & S. in Ann. Mo. Bot. Gard.
5: 34. 1937, non *S. amabilis* (Reichb. f.) L. Wms.
Panama.

SOBRALIA CORAZOII Lank. & Ames, Sched. Orch. 7:
34. 1924.
Costa Rica.

SOBRALIA DECORA Batem., Orch. Mex. & Guat. t. 26.
1841.

Mexico, British Honduras, Guatemala, Honduras, Ni-
caragua and Costa Rica.

SOBRALIA DECORA var. AERATA Allen & L. Wms. in Ann.
Mo. Bot. Gard. 29: 337, t. 31. 1942.
Panama.

SOBRALIA FENZLIANA Reichb. f. in Bot. Zeit. 10: 714.
1852.
Nicaragua, Costa Rica and Panama.

SOBRALIA FRAGRANS Lindl. in Gard. Chron. 598. 1853.
Sobralia eublepharis Reichb. f. ex Kränzl. in Fedde
Rep. 26: 255, t. 78. 1929.
British Honduras, Honduras, Costa Rica and Panama.

SOBRALIA LABIATA Warsc. & Reichb. f. in Bot. Zeit. 10:
714. 1852.
Costa Rica and Panama.

SOBRALIA LEPIDA Reichb. f., Beitr. Orch. Cent. Am. 68.
1866.
Costa Rica.

SOBRALIA LEUCOXANTHA Reichb. f., Beitr. Orch. Cent.
Am. 68: 1866.

Sobralia Powellii Schltr. in Fedde. Rep. Beih. 17: 11.
1922.
Costa Rica and Panama.

SOBRALIA LINDLEYANA Reichb. f. in Bot. Zeit. 10: 713.
1852; Xenia Orch. 2: 156, t. 163. 1868.
Costa Rica and Panama.

SOBRALIA LUTEOLA Rolfe in Kew Bull. 199. 1898.
"Tropical America".

SOBRALIA MACRA Schltr. in Fedde Rep. Beih. 19: 161.
1923.
Costa Rica.

SOBRALIA MACRANTHA Lindl., Sert. Orch. sub t. 29.
1836.

Sobralia macrantha (A) *purpurea* Lindl., Fol. Orch. Sobralia 8. 1854.

Sobralia macrantha (B) *alba* Lindl., 1. c.

A beautiful and often abundant plant.

Mexico, British Honduras, Guatemala, El Salvador, Honduras and Costa Rica.

SOBRALIA MACROPHYLLA Reichb. f. in Bot. Zeit. 10: 713. 1852.

Panama.

SOBRALIA MUCRONATA A. & S., Sched. Orch. 8: 54. 1924.

Sobralia Edwardsii Ames in Bot. Mus. Leaf. Harv. Univ. 1, No. 10: 1. 1933.

Guatemala, Honduras and Costa Rica.

SOBRALIA NEGLECTA Schltr. in Fedde Rep. Beih. 19: 161. 1923.

Costa Rica.

SOBRALIA PANAMENSIS Schltr. in Fedde Rep. Beih. 17: 11. 1922.

Sobralia panamensis var. *albiflos* Schltr., 1. c.

Panama.

SOBRALIA PFAVII Schltr. in Fedde Rep. Beih. 19: 272. 1923.

Costa Rica.

SOBRALIA PLEIANTHA Schltr. in Fedde Rep. 3: 79. 1909; Ames in Bot. Mus. Leaf. Harv. Univ. 4: 47, t. 1936.

Costa Rica.

SOBRALIA ROLFEANA Schltr. in Fedde Rep. Beih. 17: 12. 1922.

Panama.

SOBRALIA ROSEO-ALBA Reichb. f., Beitr. Orch. Cent. Am. 7. 1866.

"Central America".

SOBRALIA SUAVEOLENS Reichb. f. in Gard. Chron. n. 3. 9: 622. 1878.

Sobralia epiphytica Schltr. in Fedde Rep. 12: 213. 1913.

Panama.

SOBRALIA UNDATOCARINATA C. Schweinf. in Bot. Mus. Leaf. Harv. Univ. 6: 197. 1938.

Costa Rica.

SOBRALIA VALIDA Rolfe in Kew Bull. 65. 1909.

Panama.

SOBRALIA WARSCEWICZII Reichb. f. in Bot. Zeit. 10: 714. 1852.

Panama.

SOBRALIA **Wercklei** (Schltr.) L. Wms., comb. nov.

Fregea Wercklei in Fedde Rep. Beih. 19: 9. 1923.
Honduras and Costa Rica.

SOBRALIA WILSONIANA Rolfe in Gard. Chron. 2: 378. 1890.

"Central America".

SOBRALIA XANTHOLEUCA Hort. ex Williams, Orch. Growers Man. ed. 6: 576. 1885.

Mexico and Guatemala.

PALMORCHIS Rodr., Gen. & Sp. Orch. Nov. 1: 169. 1877; Schweinf. & Correll in Bot. Mus. Leaf. Harv. Univ. 8: 112-119. 1940.

Rolfea Zahlb. in Journ. Bot. 36: 439. 1898.

A small genus with most of the species in South America.

PALMORCHIS POWELLII (Ames) Schweinf. & Correll in Bot. Mus. Leaf. Harv. Univ. 8: 119. 1940.

Rolfea Powellii Ames, Sched. Orch. 7: 32, f. 6. 1924.
Panama.

PALMORCHIS TRILOBULATA L. Wms. in Ann. Mo. Bot. Gard. 28: 415, t. 20. 1941.
Costa Rica and Panama.

CRYBE Lindl., Nat. Syst. Bot. ed. 2, 446. 1836; in Bot. Reg. 9: t. 1872. 1836.

A monotypic genus with the aspect of a *Bletia*.

CRYBE ROSEA Lindl., Nat. Syst. Bot. ed. 2, 446. 1836; in Bot. Reg. 9: t. 1872. 1836.

Arethusa rosea Benth. ex Hemsl. in Godm. & Salv., Biol. Cent. Am. Bot. 4: 304. 1884.
Mexico, Guatemala and Honduras.

WULLSCHLAEGELIA Reichb. f. in Bot. Zeit. 21: 131. 1863.

There are three species of the genus in the West Indies, Central and South America, — only one in our region.

WULLSCHLAEGELIA APHYLLA (Sw.) Reichb. f. in Bot. Zeit. 21: 131. 1863.

Cranichis aphylla Sw., Prodr. 120. 1788.

West Indies, Guatemala, Honduras and South America.

STENOPTERA Presl, Rel. Haenk. 1: 95. 1827.

Gomphichis Lindl., Gen. & Sp. Orch. Pl. 446. 1840.

STENOPTERA COSTARICENSIS AHS. in Bot. Mus. Leaflet. Harv. Univ. 3: 37. 1934.
Costa Rica.

ALTENSTEINIA HBK., Nov. Gen. ac Sp. 1: 332, t. 72-73. 1815.

Aa Reichb. f., Xenia Orch. 1: 18. 1858.

Terrestrial orchids of the high Andes of South America. The genus is new to North America.

ALTENSTEINIA SP.

I have a specimen from the highlands of Costa Rica but have not been able to identify it yet. The specimen is good.

PRESCOTTIA Lindl. in Hook., Exot. Fl. 2: t. 115. 1825.

A small genus of terrestrial orchids.

PRESCOTTIA OLIGANTHA (Sw.) Lindl., Gen. & Sp. Orch. Pl. 454. 1840.

Cranichis oligantha Sw., Prod. Veg. Ind. Occ. 120. 1788.

Prescottia panamensis Schltr. in Fedde Rep. 16: 357. 1920.

Florida, West Indies, Mexico, Guatemala, Costa Rica, Panama and South America.

PRESCOTTIA STACHYODES (Sw.) Lindl. in Bot. Reg. 22: sub. t. 1916. 1836.

Cranichis stachyodes Sw., Fl. Ind. Occ. 3: 1427. 1799.

Prescottia colorans Lindl. in Bot. Reg. 32: t. 1916. 1836.

The West Indies, Mexico to Brazil.

PRESCOTTIA TUBULOSA (Lindl.) L. Wms. in Bot. Mus. Leaflet. Harv. Univ. 7: 137. 1939.

Cranichis tubulosa Lindl., Gen. & Sp. Orch. Pl. 451. 1840.

Mexico and Guatemala.

PSEUDOCENTRUM Lindl. in Journ. Linn. Soc. 3: 63. 1859.

A genus with a single species in our region. The lateral sepals are united and form a broad spur or sac.

PSEUDOCENTRUM HOFFMANNII Reichb. f., Beitr. Orch. Cent. Am. 102. 1866.
Costa Rica.

PTERICHIS Lindl., Gen. & Sp. Orch. Pl. 444. 1840.

The following species is the only representative of the genus in North America.

PTERICHIS COSTARICENSIS A. & S., Sched. Orch. 10: 10. 1930.
Costa Rica.

CRANICHIS Sw., Nov. Gen. & Sp. Prodr. 120. 1788.
A small genus of terrestrial orchids.

CRANICHIS ACUMINATISSIMA A. & S., Sched. Orch. 10: 12. 1930.
Costa Rica.

CRANICHIS APICULATA Lindl. in Benth., Pl. Hartw. 92. 1839.

Cranichis cylindrica Ames in J. D. Smith, Enum. Pl. Guat. 7: 49. 1905.
Mexico, Guatemala and El Salvador.

CRANICHIS CILIATA (HBK.) Kunth, Syn. Pl. Aeq. 1: 324. 1822.

Ophrys ciliata HBK., Nov. Gen. & Sp. Pl. 1: 334, t. 74. 1815.

Cranichis Curtii Schltr. in Fedde Rep. Beih. 19: 83. 1923.

Cranichis irazuensis Schltr., 1. c. 84.
Mexico, Guatemala, Honduras, Costa Rica and South America.

CRANICHIS CUCULLATA Schltr. in Fedde Rep. 14: 115. 1915.
Mexico, Guatemala and South America.

CRANICHIS DIPHYLLA Sw., Prodr. Veg. Ind. Occ. 20. 1788.

Cranichis guatemalensis Schltr. in Fedde Rep. 2: 129. 1906.

Cranichis nigrescens Schltr., 1. c. 10: 482. 1912.

Cranichis ovatilabia Schltr. in Fedde Rep. Beih. 7: 59. 1920.

Cranichis Alfredii Schltr., 1. c. 19: 82. 1923.
West Indies, Mexico and Central America.

CRANICHIS HIEROGLYPHICA Ames & Correll in Bot. Mus. Leaf. Harv. Univ. 10: 61, t. 2. 1942.
Mexico, Guatemala and Honduras.

CRANICHIS LANKESTERI Ames, Sched. Orch. 4: 5. 1923.
Costa Rica.

CRANICHIS MEXICANA (Rich. & Gal.) Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 430. 1918.

Ocampoa mexicana Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 31. 1845.
Mexico and Guatemala.

CRANICHIS MUSCOSA Sw., Nov. Gen. & Sp. Prodr. 8, 120. 1788.

Florida, West Indies, Mexico, Costa Rica, Panama and South America.

CRANICHIS PITTIERI Schltr. in Fedde Rep. 11: 41. 1912.
Costa Rica.

CRANICHIS RETICULATA Reichb. f., Beitr. Orch. Cent. Am. 62. 1866.
Costa Rica.

CRANICHIS SACCATA Ames, Sched. Orch. 4: 6. 1923.
Costa Rica.

CRANICHIS SCHAFFNERI Reichb. f. in Bonpl. 3: 238. 1855.
Mexico and Guatemala.

CRANICHIS SYLVATICA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 30. 1845.

Cranichis pseudociliata Schltr. in Fedde Rep. 12: 202. 1913.
Mexico, Guatemala, Honduras.

CRANICHIS WAGENERI Reichb. f. in Linnaea 41: 19. 1876.

Cranichis subcordata Schltr. in Fedde Rep. 2: 130. 1906.

Cranichis costaricensis Schltr. in Fedde Rep. Beih. 19: 12. 1923.
Guatemala, Honduras and Costa Rica.

PONTHIEVA R. Br. in Aiton, Hort. Kew. ed. 2, 5: 199. 1813.

PONTHIEVA EPHIPPIUM Reichb. f. in Linnaea 28: 382. 1856.
Mexico, Guatemala, Honduras and Panama.

PONTHIEVA GRACILISCAPA Schltr. in Fedde Rep. Beih. 19: 166. 1923.
Costa Rica.

PONTHIEVA MACULATA Lindl. in Ann. & Mag. Nat. Hist. 15: 385. 1845.

Ponthieva Brenesii Schltr. in Fedde Rep. Beih. 19: 165. 1923.
Mexico to Panama and South America.

PONTHIEVA PARVULA Schltr. in Fedde Rep. 10: 394. 1912.
Guatemala.

PONTHIEVA PULCHELLA Schltr. in Fedde Rep. 15: 196. 1918.
Guatemala.

PONTHIEVA RACEMOSA (Walt.) Mohr in Contrib. U. S. Nat. Herb. 6: 460. 1901; A. & S., Sched. Orch. 10: 14. 1930.

Arethusa racemosa Walt., Fl. Carol. 222. 1788.

Neottia glandulosa Sims, Bot. Mag. 21: t. 842. 1805.

Ponthieva glandulosa R. Br. in Ait., Hort. Kew. ed. 2, 5: 200. 1813.

Ponthieva rostrata Lindl. in Ann. Nat. Hist. 15. 385. 1845.

Ponthieva guatemalensis Reichb. f., Beitr. Orch. Cent. Am. 63. 1866.

Ponthieva costaricensis Schltr. in Fedde Rep. Beih. 19: 84. 1923.

Virginia to Florida, Louisiana, the West Indies, Mexico, Guatemala, Honduras, Costa Rica, Panama and northern South America.

PONTHIEVA TRILOBATA Schltr. in Fedde Rep. 9: 25. 1910.
Guatemala.

PONTHIEVA TUERCKHEIMII Schltr. in Fedde Rep. 3: 47. 1906.
Mexico, Guatemala, Costa Rica.

SOLENOCENTRUM Schltr. in Fedde Rep. 9: 163. 1911.

SOLENOCENTRUM COSTARICENSE Schltr. in Fedde Rep. 9: 163. 1911.

The lip forms a long, free spur. A rare species.
Costa Rica.

SPIRANTHES L. C. Rich. in Mém. Mus. Par. 4: 50. 1818, *nomen conservandum*.

Gyrostachis Pers., Syn. Pl. 2: 511. 1807.

Stenorrhynchus L. C. Rich., 1. c. 59.

Pelexia L. C. Rich., 1. c. 59.

Sarcoglottis Presl, Rel. Haenk. 1: 95, t. 15. 1827.

Cyclopogon Presl, 1. c. 93.

Galeotiella Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 360. 1920.

Beloglottis Schltr., 1. c. 367.

Mesadenus Schltr., 1. c. 367.

Schiedeella Schltr., 1. c. 379.

Dierogyne Schltr., 1. c. 426.

Funkiella Schltr., 1. c. 430

Mesadenella Pabst & Garay in Arq. Jard. Bot. (Rio)
12: 209. 1952.

The synonyms listed above have all been accredited to Central America, as genera, at one time or another. I consider them all to belong to *Spiranthes* in the broad sense.

The most comprehensive account of the group is Schlechter's "Versuch einer systematischen Neuordnung der Spiranthinæ" in Beih. Bot. Centralbl. 37, Abt. 2: 317-seq. 1920. There are 24 genera given as components of the group of which I consider 23 to belong to *Spiranthes* and one seems to me not to belong in the "Spiranthinae". I recognise three genera of the "Spiranthinae" for our region, *Spiranthes*, *Eurystyles* and *Lankesterella*.

SPIRANTHES ACAULIS (J. E. Sm.) Cogn. in Fl. Bras.
3⁴: 221. 1895.

Neottia acaulis J. E. Sm., Exot. Bot. 2: 91, t. 105. 1806.

Arethusa picta Anderson in Trans. Soc. Arts. 25. 1807.

Neottia picta R. Br. in Ait., Hort. Kew. ed. 2, 5: 199.
1813; Sims in Bot. Mag. 37: t. 1562. 1813.

Sarcoglottis picta Kl. in Allg. Gartenz. 10: 106. 1842;
Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 419. 1920.

Spiranthes assurgens Reichb. f. in Beitr. Orch. Cent.
Am. 66. 1866.

Gyrostachys picta O. Kuntze, Rev. Gen. Pl. 2: 664.
1891.

Sarcoglottis valida Ames, Sched. Orch. 2: 12. 1923.

Spiranthes picta var. *assurgens* A. & C. in Bot. Mus.
Leafl. Harv. Univ. 10: 67. 1942.

The West Indies, Mexico to Argentina.

SPIRANTHES ADNATA (Sw.) Benth. ex Fawc., Fl. Pl.
Jam. 40. 1893.

Satyrium adnatum Sw., Nov. Gen. & Sp. Pl. Prodr.
118. 1788.

Pelexia adnata Poiteau ex L. C. Rich. in Mém. Mus.
Par. 4: 59. 1818.

Pelexia spiranthoides Lindl. in Bot. Reg. 12: t. 985.
1826.

West Indies, Mexico, British Honduras and South
America.

SPIRANTHES AMABILIS Ames, Sched. Orch. 2: 8. 1923.
West Indies and Guatemala.

SPIRANTHES AURANTIACA (Llave & Lex.) Hemsl. in
Godm. & Salvin, Biol. Cent. Am. Bot. 3: 300. 1885.

Neottia aurantiaca Llave & Lex., Nov. Veg. Descr. 2:
2. 1825.

Stenorrhynchus aurantiacus Lindl., Gen. & Sp. Orch.
Pl. 479. 1840.

Gyrostachys aurantiaca O. Kuntze, Rev. Gen. Pl. 2:
664. 1891.

One of the most colorful of the *Spiranthes* and when
abundant on open hillsides it is very attractive.
Mexico, Guatemala and Honduras.

SPIRANTHES BICAUDATA Ames, Orch. 7: 126. 1922.

Closely allied to *S. costaricensis* and reduced to it by
Ames and Correll in Fieldiana Bot. 26: 106. 1952. I believe
that the species are distinct.

West Indies, Mexico, Guatemala, El Salvador, Costa
Rica.

SPIRANTHES bracteosa (A. & S.) L. Wms., comb. nov.

Stenorrhynchus bracteosus A. & S., Sched. Orch. 8: 6.
1925.

Costa Rica.

SPIRANTHES CERINA Lindl. in Bot. Reg. 28: Misc. p. 20. 1842.

Sarcoglottis cerina W. Baxter in Loud., Hort. Brit. Suppl. 3: 634. 1839.

Sarcoglottis lobata W. Baxter, 1. c.

Spiranthes lobata Lindl. in Bot. Reg. 30: Misc. p. 11. 1844.

Curiously enough the names published by Lindley are not based on those of Baxter but were independently published as novelties.

Mexico and Guatemala.

SPIRANTHES CINNABARINA (Llave & Lex.) Hemsl. in Godm. & Salv., Biol. Cent. Am. Bot. 3: 300. 1885.

Neottia cinnabarina Llave & Lex., Nov. Veg. Descr. 2: 3. 1825.

Stenorrhynchus montanus Lindl. in Benth., Pl. Hartw. 95. 1842.

Spiranthes montana Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Spiranthes montana Hemsl., 1. c. 301.

Gyrostachys montana O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

An uncommon species nearly allied to *S. aurantiaca*.
Mexico and Guatemala.

SPIRANTHES COSTARICENSIS Reichb. f. in Bonpl. 3: 214. 1855.

Beloglottis costaricensis Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 365. 1920.

Gyrostachys costaricensis O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Spiranthes subpandurata A. & S., Sched. Orch. 8: 4, f. 1. 1925.

West Indies, Mexico, Guatemala, Honduras, Costa Rica and Panama.

SPIRANTHES CRANICHOIDES (Griseb.) Cogn. in Urban, Symb. Ant. 6: 338. 1909; Ames & Correll in Fieldiana Bot. 26: 106, f. 29. 1952.

Pelexia cranichoides Griseb., Cat. Pl. Cub. 269. 1866.
Florida, West Indies and British Honduras.

SPIRANTHES ECALLOSA A. & S., Sched. Orch. 10: 7. 1930.
Costa Rica.

SPIRANTHES ELATA (Sw.) L. C. Rich. in Mém. Mus. Par. 4: 59. 1818.

Satyrium elatum Sw., Nov. Gen. & Sp. Prodr. 119. 1788.

Neottia elata Sw. in K. Vet. Akad. Handl. 21: 226. 1800; Sims, Bot. Mag. 45: t. 2026. 1818.

Spiranthes comosa Reichb. f. in Linnaea 18: 408. 1844.

Sauroglossum Richardii Ames, Orch. 1: 44. 1905.

Sauroglossum nigricans Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 379. 1918.

Cyclopogon elatus Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 387. 1920.

Cyclopogon miradorensis Schltr. in Fedde Rep. 21: 332. 1925.

Florida, West Indies, Central America and south to Argentina.

SPIRANTHES ENSIFOLIA Reichb. f. in Bonpl. 6: 211. 1856.

"Central America". The species not known to me.

SPIRANTHES ERIOPHORA Rob. & Greenm. in Am. Journ. Sci. ser. 3, 50: 165. 1895.

Schiedeella eriophora Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 380. 1920.
Mexico and Guatemala.

SPIRANTHES FUNCKIANA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Pelexia Funckiana Schltr. in Fedde Rep. 15: 197. 1918, as *P. Funkiana*.

Pelexia guatemalensis Schltr., 1. c.

Pelexia congesta A. & S., Sched. Orch. 10: 5. 1930.

Mexico, Guatemala, Honduras, Panama and possibly South America.

SPIRANTHES FUNCKIANA var. *OLIVACEA* (Rolfe) A. & C. in Bot. Mus. Leaflet. Harv. Univ. 10: 66. 1942.

Pelexia olivacea Rolfe in Kew Bull. 200. 1891.

Pelexia hondurensis Ames, Sched. Orch. 2: 4. 1923.

Pelexia subaequalis Ames, 1. c. 5.

Pelexia callosa Ames, 1. c. 7: 15. 1924.

Mexico, Guatemala, Honduras, Nicaragua, Costa Rica and South America.

SPIRANTHES GRAMINEA Lindl. in Benth., Pl. Hartw. 25. 1840.

Gyrostachys graminea O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Closely allied to *Spiranthes vernalis* and difficult to distinguish from it.

Mexico, Guatemala, British Honduras and Nicaragua.

SPIRANTHES GUTTEROSA Reichb. f., Beitr. Orch. Cent. Am. 67. 1866; Xenia Orch. 2: 187, t. 179. 1873.

Sarcoglottis gutterosa Ames in J. D. Sm., Enum. Pl. Guat. 7: 49. 1905.

Mexico and El Salvador.

SPIRANTHES GUYANENSIS (Lindl.) Cogn. in Mart., Fl. Bras. 3^a: 209, t. 42. 1895; L. Wms. in Ann. Mo. Bot. Gard. 33: 47. 1946.

Spiranthes aguacatensis Reichb. f. in Bonpl. 5: 214. 1855; Ames, Sched. Orch. 2: 7. 1923.

Goodyera guyanensis Lindl., Gen. & Sp. Orch. Pl. 494. 1840.

Brachystele guyanensis Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 373. 1920.

Brachystele aguacatensis Schltr., 1. c.

Gyrostachys aguacatensis O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Spiranthes Brenesii Schltr. in Fedde Rep. 10: 418. 1912.

Brachystele Brenesii Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 372. 1920.

Mexico, Guatemala, Honduras, Costa Rica, Panama and South America.

SPIRANTHES HEMICHREA Lindl., Gen. & Sp. Orch. Pl. 437. 1840.

Spiranthes Nelsonii Greenm. in Proc. Am. Acad. 35: 307. 1900.

Spiranthes pulchra Schltr. in Fedde Rep. 15: 198. 1918.

Dierogyne hemichrea Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 427. 1920.

Dierogyne pulchra Schltr., 1. c. 428.

Sarcoglottis hemichrea Ames, Sched. Orch. 2: 9. 1923.

Gyrostachys hemichrea O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Mexico, Guatemala and El Salvador.

SPIRANTHES HONDURENSIS Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 378. 1918.

This species is probably a synonym of *Spiranthes trilinata* var. *thelymitra*. I have seen no authentic material. Honduras.

SPIRANTHES HYEMALIS Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Stenorrhynchus pauciflorus Reichb. f. in Bonpl. 4: 211. 1856, not *Spiranthes pauciflora* Rich. & Gal.

Funkiella hyemalis Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 431. 1920.

Mexico, Guatemala and Honduras.

SPIRANTHES LANKESTERI Standl. & L. Wms. in Ceiba 3: 110. 1952.

Costa Rica.

SPIRANTHES LLAVEANA Lindl. in Benth., Pl. Hartw. 72. 1842.

Neottia micrantha Llave & Lex., Nov. Veg. Descr. 2: 5. 1825, non *Spiranthes micrantha* Rodr.

Spiranthes transversalis Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Schiedeella Llaveana Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 380. 1920.

Schiedeella transversalis Schltr., l. c. 381.

Mexico, Guatemala and Honduras.

SPIRANTHES LLAVEANA var. VIOLACEA (Rich. & Gal.) A. & C. in Bot. Mus. Leaflet. Harv. Univ. 10: 67. 1942.

Spiranthes violacea Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Cyclopogon violaceus Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 396. 1920.

Mexico and Guatemala.

SPIRANTHES MINUTIFLORA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845; A. & S. in Bot. Mus. Leaflet. Harv. Univ. 3: 130. 1935.

Mesadenus minutiflorus Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 368. 1920.

Mexico, Guatemala and Costa Rica.

SPIRANTHES NAVARRENSIS (Ames) L. Wms. in Ann. Mo. Bot. Gard. 29: 337. 1942.

Stenorrhynchus navarrensis Ames, Sched. Orch. 9: 13, f. 3. 1925.

This species is closely allied to *Spiranthes speciosa*.
Costa Rica and Panama.

SPIRANTHES NUTANTIFLORA Schltr. in Fedde Rep. 2: 131. 1906.

Ames & Correll, in the Orchids of Guatemala, reduce this species to *Spiranthes minutiflora*. They may be correct.
Guatemala.

SPIRANTHES OBTECTA C. Schweinf. in Bot. Mus. Leaflet. Harv. Univ. 4: 106. 1937.
Guatemala.

SPIRANTHES ORCHIOIDES (Sw.) L. C. Rich. in La Sagra, Fl. Cub. Fan. 11: 252. 1853.

Satyrium orchioides Sw., Nov. Gen. & Sp. Prodr. 118. 1788.

Neottia orchioides Sw., Fl. Ind. Occ. 1411. 1799.

Stenorrhynchus orchioides L. C. Rich. in Mém. Mus. Par. 4: 59. 1818.

Stenorrhynchus guatemalensis Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 376. 1918.

Spiranthes orchioides is found on hillsides soon after the first rains of the rainy season (or spring). It is variable in color, from white to usually brick red. Leaves follow the flowering stalks.

United States, West Indies, Mexico, Central America, Panama and south to Argentina.

SPIRANTHES PARASITICA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845; A. & C. in Fieldiana Bot. 26: 120, t. 32. 1952.

Schiedeella parasitica Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 381. 1920, as *S. paratica*.

Texas, Arizona, Mexico and Guatemala.

SPIRANTHES PARASITICA var. *VALERIOI* (A. & S.) L. Wms. in Ceiba 1: 186. 1950.

Spiranthes Valerioi A. & S., Sched. Orch. 10: 8. 1930.

The cinnabar red, spongy thickening on the lip of the species is lacking in the variety.

Costa Rica.

SPIRANTHES PAUCIFLORA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 32. 1845.

Gyrostachys pauciflora O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Sarcoglottis pauciflora Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 418. 1920.

One of the largest flowered species of *Spiranthes*. Although often abundant in the field it is difficult to find due to coloration similar to the grasses among which it grows.

Mexico, Guatemala, El Salvador and Honduras.

SPIRANTHES POLYANTHA Reichb. f. in Linnæa 18: 408. 1844; A. & C. in Fieldiana Bot. 26: 122, t. 1952.

Gyrostachys polyantha O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Mesadenus polyanthus Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 369. 1920.

Florida, West Indies, Mexico and Guatemala.

SPIRANTHES PRASOPHYLLA Reichb. f., Beitr. Orch. Cent. Am. 65. 1866; L. Wms. in Ann. Mo. Bot. Gard. 33: 48, t. 78. 1946

Gyrostachys Prasophyllum O. Kuntze, Rev. Gen. Pl. 2: 664. 1891

Spiranthes epiphytica Schltr. in Fedde Rep. 2: 130. 1906.

Cyclopogon prasophyllum Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 393. 1920.

An epiphytic species allied to *Spiranthes elata*. Guatemala, Honduras, Costa Rica and Panama.

SPIRANTHES PRASOPHYLLUM var. *CLEISTOGAMA* A. & C. in Bot. Mus. Leaflet. Harv. Univ. 10: 65. 1942.
Guatemala and Costa Rica.

SPIRANTHES PYRAMIDALIS Lindl., Gen. & Sp. Orch. Pl. 472. 1840.

Gyrostachys pyramidalis O. Kuntze, Rev. Gen. Pl. 2. 664. 1891.

Spiranthes cobanensis Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 377. 1918.

Schiedeella cobanensis Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 380. 1920.

Schiedeella pyramidalis Schltr., 1. c. 381.
Mexico, Guatemala and El Salvador.

SPIRANTHES ROSULATA (W. Baxt.) Lindl. in Bot. Reg. 29: Misc. p. 60. 1843.

Sarcoglottis rosulata W. Baxter in Loud., Hort. Brit. Suppl. 3: 634. 1839.

Sarcoglottis orbiculata Ames, Sched. Orch. 2: 10. 1923.
Very closely allied to *Spiranthes acaulis*.
Mexico, Guatemala, El Salvador and Honduras.

SPIRANTHES RUBRICALLOSA Rob. & Greenm. in Am. Journ. Sci. 50: 165. 1895.

Spiranthes porphyricola Schltr. in Fedde Rep. 3: 18. 906.
Mexico and Guatemala.

SPIRANTHES SARCOGLOSSA Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 31. 1845.

Galiottiella sarcoglossa Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 361. 1920.

A curious *Spiranthes* much like *Habenaria* in aspect.
Mexico and Guatemala.

SPIRANTHES SCEPTRODES Reichb. f. in Bonpl. 5: 214. 1855.

Reported from Guatemala and Nicaragua. I know nothing of it.

SPIRANTHES SCHAFFNERI Reichb. f. in Linnaea 28: 382. 1856.

Gyrostachys Schaffneri O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Sarcoglottis Schaffneri Ames in J. D. Sm., Enum. Pl. Guat. 7: 50. 1905.

Pelexia saccata Rolfe in Kew Bull. 7. 1893.

Sarcoglottis Zamororae Ames, Sched. Orch. 2: 13. 1923.

Mexico and Guatemala.

SPIRANTHES SEMINUDA Schltr. in Fedde Rep. 3: 18. 1906.

Mexico and Guatemala.

SPIRANTHES SMITHII Reichb. f. in Gard. Chron. 842. 1868.

Gyrostachys Smithii O. Kuntze, Rev. Gen. Pl. 2: 664. 1891.

Spiranthes Bradei Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 376. 1918.

Sarcoglottis Smithii Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 422. 1920.

Sarcoglottis Bradei Schltr., l. c. 415. Costa Rica.

SPIRANTHES SPECIOSA (J. F. Gmel.) A. Rich. in La Sagra, Fl. Cub. Fan. 11: 252. 1853.

Satyrium plantagineum L., Veg. Syst. ed. 10: 1244. 1758-59, non *Spiranthes plantaginea* Lindl., Spreng., nor Torr.

Serapias speciosa J. F. Gmel., Syst. 59. 1791.

Neottia speciosa Jacq., Ic. Pl. Rar. 3: t. 600. 1793.

Spiranthes colorata N. E. Br. in Gard. Chron. n. s. 19: 210. 1883.

Spiranthes colorans N. E. Br. ex Hemsl. in Godm. & Salv., Biol. Cent. Am. Bot. 3: 300. 1884.

Normally an epiphytic species found in wet or cloud forests. It is quite colorful in its native habitat.

West Indies, Mexico, Guatemala, Honduras, Costa Rica, Panama and South America.

SPIRANTHES STANDLEYI (Ames) L. Wms. in Ceiba 1: 128. 1950.

Stenorrhynchus Standleyi Ames, Sched. Orch. 9: 14, f. 3. 1925.

One of the most handsome species of the genus. It has done well in cultivation in Costa Rica.

Costa Rica.

SPIRANTHES STOLONIFERA Ames & Correll in Bot. Mus. Leaf. Harv. Univ. 10: 63, t. 3. 1942. Guatemala.

SPIRANTHES TONDUZII Schltr. in Fedde Rep. 9: 26. 1910.

Stenorrhynchus Tonduzii Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 448. 1920.

Mesadenella Tonduzii Pabst & Garay in Arq. Jardim Botânico (Rio) 12: 209. 1952. Costa Rica.

SPIRANTHES TORTILIS (Sw.) L. C. Rich. in Mém. Mus. Par. 4: 59. 1818.

Neottia tortilis Sw., Kongl. Sven. Vet. Akad. nya Handl. 21: 226. 1800.

Southeast United States, West Indies, Guatemala, British Honduras, Honduras and Nicaragua.

SPIRANTHES TRILINEATA Lindl. in Benth., Pl. Hartw. 94. 1842.

Deiregyne trilineata Schltr. in Beih. Bot. Centralbl. 37, Abt. 2: 428. 1920. Guatemala.

SPIRANTHES TRILINEATA var. *THELYMITRA* (Reichb. f.)
L. Wms. ex Correll in *Lloydia* 10: 209. 1947.

Spiranthes thelymitra Reichb. f., *Beitr. Orch. Cent. Am.* 66. 1866.

Gyrostachys thelymitra O. Kuntze, *Rev. Gen. Pl.* 2: 664. 1891.

Deiregyne thelymitra Schltr. in *Beih. Bot. Centralbl.* 37, Abt. 2: 428. 1920.

Sarcoglottis thelymitra Ames in *Bot. Mus. Leaflet Harv. Univ.* 2: 76, 84. 1934.

Mexico, Guatemala, El Salvador, Honduras, Costa Rica.

SPIRANTHES VERNALIS Engelm. & Gray in *Boston Journ. Nat. Hist.* 5: 236. 1845.

United States, Mexico and Guatemala.

SPIRANTHES WERCKLEI Schltr. in *Fedde Rep.* 10: 482. 1912.

Costa Rica.

SPIRANTHES WOODSONII L. Wms. in *Ann. Mo. Bot. Gard.* 29: 337. 1942.
Panama.

EURYSTYLES Wahra in *Oestr. Bot. Zeitschr.* 13: 223. 1863.

A small genus with a half dozen species in Brazil and Central America. Mostly or all epiphytes.

EURYSTYLES AURICULATA Schltr. in *Fedde Rep. Beih.* 19: 86. 1923.
Costa Rica.

EURYSTYLES STANDLEYI Ames, *Sched. Orch.* 9: 9, f. 2. 1925.
Costa Rica.

LANKESTERELLA Ames, *Sched. Orch.* 4: 3. 1923.

A small genus allied closely to *Spiranthes*. There is one species in Central America and possibly several in South America.

LANKESTERELLA COSTARICENSIS Ames, *Sched. Orch.* 4: 3. 1923.

Costa Rica.

GOODYERA R. Br. in *Ait., Hort. Kew.* ed. 2, 5: 197. 1813.

Epipactis of authors.

GOODYERA EROSA (A. & S.) AHS. in *Bot. Mus. Leaflet Harv. Univ.* 3: 37. 1934.

Epipactis erosa A. & S., *Sched. Orch.* 10: 9. 1930.
Costa Rica.

GOODYERA MAJOR A. & C. in *Bot. Mus. Leaflet Harv. Univ.* 10: 68, t. 4. 1942.
Guatemala.

GOODYERA MICRANTHA Schltr. in *Fedde Rep. Beih.* 19: 274. 1923.
Costa Rica.

GOODYERA MODESTA Schltr. in *Fedde Rep. Beih.* 19: 89. 1923.
Costa Rica.

GOODYERA OVATILABIA Schltr. in *Fedde Rep. Beih.* 19: 274. 1923.
Costa Rica.

GOODYERA STRIATA Reichb. f. in *Linnaea* 18: 409. 1855.

Epipactis striata A. A. Eaton in *Proc. Biol. Soc. Wash.* 21: 66. 1908.
Mexico, Guatemala and Honduras.

GOODYERA TURIALBAE Schltr. in *Fedde Rep. Beih.* 19: 275. 1923.
Costa Rica.

ERYTHRODES Blume, Bidjr. Fl. Nederl. Ind. 410, t. 72. 1825; Ames, Orch. 7: 63. 1922.

Physurus L. C. Rich. in Mém. Mus. Par. 4: 55. 1818, *nomen nudum*.

Erythrodes occurs in the tropics of both hemispheres.

ERYTHRODES CALOPHYLLA (Reichb. f.) Ames, Orch. 7: 68. 1922.

Physurus calophyllus Reichb. f., Beitr. Orch. Cent. Am. 64. 1873.

Costa Rica.

ERYTHRODES CLAVIGERA (Reichb. f.) Ames, Orch. 7: 70. 1922.

Physurus claviger Reichb. f. in Bonpl. 4: 11. 1856.

This species is obscure.

Costa Rica.

ERYTHRODES KILLIPII Ames in Proc. Biol. Soc. Wash. 34: 150. 1921.

Costa Rica and Panama.

ERYTHRODES LEHMANNII (Schltr.) Ames, Orch. 7: 71. 1922.

Physurus Lehmannii Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 379. 1918.

Costa Rica.

ERYTHRODES LOXOGLOTTIS (Reichb. f.) Ames, Orch. 7: 71. 1922.

Physurus loxoglottis Reichb. f., Beitr. Orch. Cent. Am. 64. 1866.

Guatemala.

ERYTHRODES NIGRESCENS (Schltr.) Ames, Orch. 7: 74. 1922.

Physurus nigrescens Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 380. 1918.

Costa Rica.

ERYTHRODES OVATILABIA A. & C. in Bot. Mus. Leaflet. Harv. Univ. 10: 70, t. 5. 1942.

Mexico and Guatemala.

ERYTHRODES PURPUREA Ames, Orch. 5: 28. 1915.

Physurus purpureus Ames, Orch. 2: 259. 1908.

Physurus lunifera Schltr. in Fedde Rep. 15: 199. 1918.

Physurus argyrosticta Schltr., 1. c. 16: 440. 1920.

Erythrodes argyrosticta Ames, Orch. 7: 66. 1922.

Erythrodes lunifera Ames, 1. c. 71.

Mexico, Guatemala, Honduras and Costa Rica.

ERYTHRODES QUERCITICOLA (Lindl.) Ames, Orch. 5: 29. 1915.

Physurus querciticola Lindl., Gen. & Sp. Orch. Pl. 505. 1840.

Physurus vaginatus Hook., Ic. Pl. t. 449. 1842.

Erythrodes vaginata Ames, Orch. 7: 77. 1922.

Physurus humidicola Schltr. in Fedde Rep. 15: 198. 1918.

Physurus trilobatus Schltr., 1. c. 99.

Florida to Texas, West Indies, Mexico, Central America and South America.

ERYTHRODES STICTOPHYLLA (Schltr.) Ames, Orch. 7: 76. 1922.

Physurus stictophyllus Schltr. in Fedde Rep. 10: 249. 1911.

Guatemala.

ERYTHRODES TRIDAX (Reichb. f.) Ames, Orch. 7: 76. 1922.

Physurus tridax Reichb. f., Beitr. Orch. Cent. Am. 64. 1866.

Costa Rica.

ERYTHRODES TUERCKHEIMII (Schltr.) Ames, Orch. 7: 77. 1922.

Physurus Tuerckheimii Schltr. in Fedde Rep. 2: 132. 1906.

Physurus polygonatus Ames, Orch. 2: 259. 1908.

Erythroides polygonata Ames, Orch. 5: 28. 1915.
Guatemala, Honduras and Costa Rica.

ERYTHRODES VENUSTULA Ames, Orch. 5: 28. 1915.

Physurus venustulus Ames, Orch. 2: 261. 1908.

Erythroides querciticola var. *venustula* Correll in Lloydia 10: 210. 1947.

Guatemala, Honduras and Costa Rica.

ERYTHRODES VESICIFERA (Reichb. f.) Ames, Orch. 7: 78. 1922.

Physurus vesiciferus Reichb. f., Beitr. Orch. Cent. Am. 63. 1866.

Mexico, Guatemala, Costa Rica and Panama.

TROPIDIA Lindl. in Wall., Cat. No. 7386. 1832; in Bot. Reg. 19: sub t. 1618. 1833.

A small genus found in the tropics or subtropics of both hemispheres.

TROPIDIA POLYSTACHYA (Sw.) Ames, Orch. 2: 262. 1908.

Serapias polystachya Sw., Fl. Ind. Occ. 1415. 1799.

Cloidia vernalis Lindl., Gen. & Sp. Orch. Pl. 484. 1840.

Cloidia polystachya Reichb. f. in Walp. Ann. 6: 644. 1863.

Corymborchis polystachya O. Kuntze, Rev. Gen. Pl. 2: 658. 1891.

Florida, West Indies, Mexico, Guatemala, Costa Rica and Galapagos Islands.

CORYMBORCHIS Thouars, Orch. Iles Afr. t. 37, 38. 1822.

Corymbis Thouars, 1. c.

A pantropic genus with only the two following species in the western hemisphere.

CORYMBORCHIS FLAVA (Sw.) O. Kuntze, Rev. Gen. Pl. 2: 658. 1891.

Serapias flava Sw., Nov. Gen. & Sp. Pl. Prodr. 119. 1788.

Corymbis flava Hemsl. in Godm. & Salv., Biol. Cent. Am. Bot. 3: 297. 1884.

West Indies, British Honduras, Costa Rica, Panama and South America.

CORYMBORCHIS FORCIPIGERA (Reichb. f.) L. Wms. in Bot. Mus. Leaflet. Harv. Univ. 12: 237. 1946.

Macrostylis forcipigera Reichb. f. in Bonpl. 2: 96. 1854.

Corymborchis cubensis Acuña in Bol. Téc. 60, Est. Exp. Agron. Santiago de las Vegas 51. 1939; Correll in Bot. Mus. Leaflet. Harv. Univ. 8: 125. 1940.

West Indies, Guatemala, British Honduras, El Salvador, Costa Rica and South America.

STELIS Sw. in Schrader's Journ. f. Bot. 2: 239. 1799; in Svenska Vet.-Akad. Handl. 21: 248. 1800, *nom. conserv.*

Stelis is a rather large genus and technically a difficult one. Oakes Ames took special interest in the genus and understood them better than anyone else. His interest was principally in the Mexican and Central American species.

STELIS AEMULA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 385. 1918.

Stelis sarcodantha Schltr., 1. c. 392.
Costa Rica and Panama.

STELIS ALFARO A. & S., Sched. Orch. 8: 14. 1925.
Costa Rica.

STELIS ALLENII L. Wms. in Ann. Mo. Bot. Gard. 29: 338, t. 32. 1942.
Panama.

STELIS ATRORUBENS L. Wms. in Ann. Mo. Bot. Gard. 29: 339, t. 32. 1942.
Panama.

STELIS BIDENTATA Schltr. in Fedde Rep. 10: 358. 1912.
Mexico, Guatemala and Honduras.

STELIS CARNOSIFLORA A. & S., Sched. Orch. 8: 15. 1925.
Costa Rica.

STELIS CHIHOBENSIS Ames, Sched. Orch. 4: 11. 1923.
Guatemala and Costa Rica.

STELIS CILIARIS Lindl. in Comp. Bot. Mag. 2: 353. 1836; Ames in Bot. Mus. Leaf. Harv. Univ. 3: 166, t. 1935.
Stelis atropurpurea Hook. in Bot. Mag. 69: t. 3975. 1842.

Stelis Jimenezii Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 389. 1918.
Mexico, British Honduras, Guatemala and Costa Rica.

STELIS CLEISTOGAMA Schltr. in Fedde Rep. 15: 203. 1918.
Guatemala and Honduras.

STELIS COLLINA Schltr. in Fedde Rep. Beih. 17: 15. 1922.
Panama.

STELIS CONMIXTA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 387. 1918.
Costa Rica.

STELIS COOPERI Schltr. in Fedde Rep. 3: 276. 1907.
Stelis leptophylla in Fedde Rep. Beih. 19: 174. 1923.
Stelis elliptica A. & S., Sched. Orch. 8: 16. 1925.
Costa Rica and Panama.

STELIS COSTARICENSIS Reichb. f. in Bonpl. 3: 233. 1855.

Stelis minutiflora A. & S., Sched. Orch. 8: 18. 1925.
Costa Rica.

STELIS CRESCENTICOLA Schltr. in Fedde Rep. 16: 442. 1920; Ames in Bot. Mus. Leaf. Harv. Univ. 3: 175, t. 1935.

Stelis Isthmii Schltr. in Fedde Rep. Beih. 17: 16. 1922.
Stelis praemorsa Schltr., 1. c. 17.
Costa Rica and Panama.

STELIS CRYSTALLINA Ames in Bot. Mus. Leaf. Harv. Univ. 3: 45, t. 1935.
Costa Rica.

STELIS CUCULLATA Ames, Sched. Orch. 6: 52. 1923.
Costa Rica.

STELIS CUSPIDATA Ames, Sched. Orch. 3: 2. 1923.
Costa Rica.

STELIS DESPECTANS Schltr. in Fedde Rep. 8: 453. 1910.

Stelis chiriquensis Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 386. 1918.

Stelis nutantiflora Schltr., 1. c. 390.

Stelis subinconspecta Schltr. in Fedde Rep. Beih. 19: 19. 1923.

Stelis micragrostis Schltr., 1. c. 95.

Stelis inconspicua "Schltr.", ex Ames in Field Mus. Nat. Hist. Bot. 18: 297. 1937, *spahlm*.
Guatemala, Costa Rica and Panama.

STELIS EFFUSA Schltr. in Fedde Rep. 3: 247. 1906.

Stelis distantiflora Ames, Sched. Orch. 6: 53. 1923.
Costa Rica.

STELIS ENDRESII Reichb. f. in Gard. Chron. 1373. 1870; Ames in Bot. Mus. Leaf. Harv. Univ. 1, No. 9: fig. on p. 9. 1933.

Stelis parvibracteata Ames, Orch. 7: 131. 1922.

Stelis glandulosa Ames, Sched. Orch. 3: 3. 1923.

Stelis propinqua Ames, l. c. 6: 55. 1923.

Stelis praesecta Schltr. in Fedde Rep. Beih. 19: 175. 1923.

Stelis violascens Schltr., l. c. 176.

Mexico, Guatemala, Costa Rica and Panama.

STELIS GLOSSULA Reichb. f. in Gard. Chron. 1373. 1870; Ames in Bot. Mus. Leaf. Harv. Univ. 3: 151, t. 1935. Costa Rica.

STELIS GRACILIFOLIA C. Schweinf. in Bot. Mus. Leaf. Harv. Univ. 17: 36, t. 15. 1955. Costa Rica.

STELIS GRACILIS Ames, Orch. 3: 47, t. 52. 1909.

Mexico, Guatemala, Honduras, Nicaragua and Costa Rica.

STELIS GUATEMALENSIS Schltr. in Bull. Herb. Boiss. 7: 541. 1899.

Stelis patula Schltr. in Fedde Rep. 10: 359. 1912. Mexico, Guatemala, Honduras and Costa Rica.

STELIS HYMENANTHA Schltr. in Fedde Rep. 10: 291. 1912.

Stelis cuspidatilabia Schltr. in Fedde Rep. Beih. 19: 17. 1923.

Stelis seliniglossa Schltr., l. c. 97.

Mexico, Guatemala, Costa Rica and Panama.

STELIS INAEQUALIS Ames, Sched. Orch. 4: 12. 1923; in Bot. Mus. Leaf. Harv. Univ. 3: 155, t. 1935. Honduras and Panama.

STELIS JOHNSONII Ames in Proc. Biol. Soc. Wash. 35: 87. 1922.

Guatemala.

STELIS LANKESTERI Ames, Sched. Orch. 3: 4. 1923; in Bot. Mus. Leaf. Harv. Univ. 4: 21, t. 1936.

Costa Rica.

STELIS LATIPETALA Ames in Bot. Mus. Leaf. Harv. Univ. 3: 53, t. 1935.

Costa Rica.

STELIS LEUCOPOGON Reichb. f., Beitr. Orch. Cent. Am. 95. 1866.

Stelis Bernoulei Schltr. in Fedde Rep. 15: 201. 1918.

Stelis cascajalensis Ames, Sched. Orch. 4: 11. 1923.

Stelis eximia Ames, l. c. 6: 54. 1923.

Guatemala, Costa Rica and Panama.

STELIS LONGIPETIOLATA Ames, Sched. Orch. 1: 6. 1922.

Panama.

STELIS MACROSTACHYA Lodd. ex Loud., Hort. Brit., suppl. 3: 643. 1832. "Cent. Am."

STELIS MAXONII Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 389. 1918.

Costa Rica and Panama.

STELIS MICROCHILA Schltr. in Fedde Rep. 9: 289. 1911.

Stelis barbata Rolfe in Kew Bull. 141. 1913.

Stelis costaricensis Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 388. 1918.

Stelis cinerea Schltr., l. c. 444.

Stelis bryophila Schltr. in Fedde Rep. Beih. 19: 16. 1923.

Guatemala, Costa Rica and Panama.

STELIS MONTANA L. Wms. in Ann. Mo. Bot. Gard. 27: 272. 1940.
Panama.

STELIS NUBIS Ames, Sched. Orch. 9: 18. 1925.
Costa Rica.

STELIS **obliquipetala** (A. & S.) L. Wms., *comb. nov.*
Physosiphon obliquipetalus A. & S., Sched. Orch. 8: 12, 22. 1925.
Costa Rica.

STELIS OVATILABIA Schltr. in Fedde Rep. 15: 211. 1918;
Ames in Bot. Mus. Leaf. Harv. Univ. 3: 159, ff. 1935.

Stelis cyclopetala Schltr. in Fedde Rep. Beih. 19: 279. 1923.

The column of this species is longer than the petals.
Mexico, Guatemala and Costa Rica.

STELIS PANAMENSIS Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 391. 1918.
Panama.

STELIS PARDIPES Reichb. f., Beitr. Orch. Cent. Am. 96. 1866; Ames in Bot. Mus. Leaf. 3: 134, f. 1934.

Stelis longicuspis Schltr. in Fedde Rep. 9: 28. 1910.

Stelis Alberti Schltr. in Fedde Rep. Beih. 19: 279. 1923.
Costa Rica and South America.

STELIS PARVULA Lindl., Folia Orch. Stelis 7. 1858;
Ames, Sched. Orch. 9: 20. 1925.

Stelis microstigma Reichb. f., Beitr. Orch. Cent. Am. 94. 1866.

Stelis obscurata Reichb. f., 1. c. 95.

Stelis microtis Reichb. f., 1. c.

Stelis Bradei Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 385. 1918.

Stelis rhodochila Schltr., 1. c. 392.

Stelis Amparoana Schltr. in Fedde Rep. Beih. 19: 16. 1923.

Stelis platycardia Schltr., 1. c. 18.

Stelis Barbae Schltr., 1. c. 94.

Stelis Brenesii Schltr., 1. c. 172.

Stelis brevis Schltr., 1. c. 172.

Stelis ramonensis Schltr., 1. c. 176.
Guatemala, Honduras, Nicaragua and Costa Rica.

STELIS PENDULISPICA Ames in Bot. Mus. Leaf. Harv. Univ. 2: 85, t. 1934.
Costa Rica.

STELIS PERPLEXA Ames, Sched. Orch. 1: 7. 1922.
Guatemala.

STELIS PERSIMILIS Ames in Bot. Mus. Leaf. Harv. Univ. 2: 14, t. 1934.
Costa Rica.

STELIS PLANIPETALA Ames in Bot. Mus. Leaf. Harv. Univ. 6: 13, t. 1938.
Costa Rica.

STELIS POASENSIS Ames, Sched. Orch. 1: 10. 1922.
Costa Rica.

STELIS POWELLII Schltr. in Fedde Rep. Beih. 17: 16. 1922.

Stelis bracteata Schltr. in Fedde Rep. Beih. 19: 171. 1923.

Stelis Acostaei Schltr., 1. c. 278.
Costa Rica and Panama.

STELIS PURPURASCENS Rich. & Gal. in Ann. Sci. Nat. sér. 3, 3: 18. 1845.

Stelis curvata Schltr. in Fedde Rep. 10: 358. 1912.

Stelis Carioi Schltr., 1. c. 15: 202. 1918.

Stelis fulva Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 388. 1918.
Mexico and Central America.

STELIS RHODOCHILA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 392. 1918.
Costa Rica.

STELIS ROWLEEI Ames, Sched. Orch. 1: 11. 1922.
Costa Rica.

STELIS RUBENS Schltr. in Fedde Rep. 8: 564. 1910;
Ames in Bot. Mus. Leaf. Harv. Univ. 2: 2, f. 1934.

Stelis Tuerckheimii Schltr., 1. c.
Mexico, British Honduras, Guatemala and Honduras.

STELIS RUBENS var. OXYPETALA (Schltr.) Ames in Bot. Mus. Leaf. Harv. Univ. 2: 23, ff. 1934.

Stelis oxypetala Schltr. in Fedde Rep. 15: 203. 1918.
Guatemala.

STELIS SANCHOI Ames, Sched. Orch. 4: 13. 1923.
Costa Rica.

STELIS SKUTCHII Ames in Bot. Mus. Leaf. Harv. Univ. 6: 17, t. 1938.
Costa Rica and Panama.

STELIS STANDLEYI Ames, Sched. Orch. 9: 21, t. 1925.
Costa Rica.

STELIS STORKII Ames in Bot. Mus. Leaf. 3: 54, t. 1935.
Costa Rica and Panama.

STELIS TENUISSIMA Schltr. in Fedde Rep. 15: 204. 1918.
Mexico and Guatemala.

STELIS THECOGLOSSA Reichb. f., Beitr. Orch. Cent. Am. 93. 1866.

Stelis coiloglossa Schltr. in Fedde Rep. 8: 453. 1910.

Stelis Alfredii Schltr. in Fedde Rep. Beih. 19: 93. 1923.
Honduras and Costa Rica.

STELIS TONDUZIANA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 393. 1918; Ames in Bot. Mus. Leaf. Harv. Univ. 2: 23, t. 1934.

Stelis mirabilis Schltr. in Fedde Rep. Beih. 19: 96. 1923.
Costa Rica.

STELIS TRANSVERSALIS Ames in Bot. Mus. Leaf. Harv. Univ. 2: 91, t. 1934.
Costa Rica.

STELIS TRIANGULABIA Ames, Sched. Orch. 9: 23. 1925.
Costa Rica.

STELIS VESTITA Ames, Sched. Orch. 6: 56. 1923.
Costa Rica and Panama.

STELIS WERCKLEI Schltr. in Fedde Rep. Beih. 19: 20. 1923.

Stelis fractiflexa A. & S., Sched. Orch. 8: 17. 1925.
Costa Rica.

STELIS WILLIAMSI Ames, Orch. 7: 133. 1922 and 5: 14. 1923.
Panama.

PHYSOSIPHON Lindl. in Bot. Reg. 21: sub t. 1797. 1835.

Physosiphon is a most unsatisfactory assemblage of plants and the type species is perhaps the only North American species that belongs here. Several South American species have been assigned to the genus but there is a question whether or not they really belong here. Physosiphon may well prove to be monotypic.

PHYSOSIPHON TUBATUS (Lodd.) Reichb. f. in Walp. Ann. 6: 18. 1861.

Stelis tubata Lodd., Bot. Cab. t. 1601. 1830.

Physosiphon guatemalense Rolfe in Kew Bull. 197. 1891.

Mexico and Guatemala.

EXCLUDED.

Physosiphon Cooperi Ames is *PLEUROTHALLIS MINOR* (Rendle) L. Wms.

Physosiphon minor Rendle is *PLEUROTHALLIS MINOR* (Rendle) L. Wms.

Physosiphon minutiflorus A. & S. is *PLEUROTHALLIS*

SCHWEINFURTHIANA L. Wms.

Physosiphon obliquipetalus A. & S. is *STELIS OBLIQUI-PETALA* L. Wms.

CRYPTOPHORANTHUS Barb. Rodr., Gen. & Sp. Orch. Nov. 2: 79. 1882; Kränzlin in Fedde Rep. Beih. 34: 220-232. 1925.

A small genus closely allied to *Masdevallia* and *Pleurothallis*.

CRYPTOPHORANTHUS ENDRESIANUS Kränzlin in Fedde Rep. 17: 437. 1921.
Costa Rica.

CRYPTOPHORANTHUS GRACILENTUS (Reichb. f.) Rolfe in Gard. Chron. 3, 2: 269. 1887.

Masdevallia gracilentia Reichb. f. in Gard. Chron. n. s. 19: 98. 1875.
Costa Rica.

CRYPTOPHORANTHUS LEPIDOTUS L. Wms. in Ann. Mo. Bot. Gard. 29: 340, t. 30. 1942.
Panama.

CRYPTOPHORANTHUS OBLONGIFOLIUS Rolfe in Kew Bull. 5. 1895.
Costa Rica and South America.

CRYPTOPHORANTHUS PECTINATUS Schltr. in Fedde Rep. Beih. 19: 277. 1923.
Costa Rica.

MASDEVALLIA Ruiz & Pavón, Fl. Peruv. & Chil. Prodr. ed. 1, 122. 1794; Woolward, Genus *Masdevallia*, 1896; Kränzlin in Fedde Rep. Beih. 34: 1-202. 1925.

A large and technical genus. A half century or more ago the species of *Masdevallia* were much sought after and the rarer ones often brought fabulous prices. They are still fine plants but somewhat "out of fashion".

MASDEVALLIA ALLENII L. Wms. in Ann. Mo. Bot. Gard. 27: 273, f. 31. 1940.
Panama.

MASDEVALLIA ANURA Kränzlin in Fedde Rep. 17: 433. 1921.
Costa Rica.

MASDEVALLIA ATTENUATA Reichb. f. in Gard. Chron. 834. 1871.

Masdevallia Laucheana Kränzlin ex Woolward, Genus *Masdevallia* t. 19. 1896.
Costa Rica and Panama.

MASDEVALLIA BORUCANA P. H. Allen in Ceiba 3: 147, t. 1952.
Costa Rica.

MASDEVALLIA CALURA Reichb. f. in Gard. Chron. n. s. 20: 230. 1883.
Costa Rica.

MASDEVALLIA CARPOPHORA Kränzlin in Fedde Rep. 17: 427. 1921.

This entity is possibly a *Pleurothallis*. I have not seen material.
Costa Rica.

MASDEVALLIA CHONTALENSIS Reichb. f. in Otia Bot. Hamb. 17. 1778.

Masdevallia diantha Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 384. 1918.
Guatemala, Nicaragua, Costa Rica and Panama.

MASDEVALLIA COLLINA L. Wms. in Am. Orch. Soc. Bull. 11: 93, t. 3. 1942.
Panama.

MASDEVALLIA CRYPTOCOPIS Reichb. f. ex Kränzl. in Fedde Rep. Beih. 34: 182. 1925.
Costa Rica.

MASDEVALLIA CUPULARIS Reichb. f., Beitr. Orch. Cent. Am. 93. 1866.
Costa Rica.

MASDEVALLIA ECAUDATA Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 384. 1918.
Costa Rica and Panama.

MASDEVALLIA ERINACEA Reichb. f. in Linnæa 41: 11. 1877.

A gem which was recently discovered in Costa Rica by C. H. Lankester.
Costa Rica and South America.

MASDEVALLIA ERYTHROCHAETE Reichb. f. in Gard. Chron. n. s. 18: 392. 1882.

Masdevallia Gaskelliana Reichb. f. in Gard. Chron. n. s. 20: 294. 1883.
Guatemala and Costa Rica.

MASDEVALLIA EXIGUA A. & S., Sched. Orch. 10: 17. 1930.
Costa Rica.

MASDEVALLIA FLAVEOLA Reichb. f. in Gard. Chron. 1: 638. 1884.
Costa Rica.

MASDEVALLIA FLORIBUNDA Lindl., Bot. Reg. 29: Misc. 72. 1842.

Masdevallia Tuerckheimii Ames, Orch. 2: 265. 1908.
Mexico, Guatemala, Honduras and Costa Rica.

MASDEVALLIA GORGO Reichb. f. ex Kränzl. in Fedde Rep. Beih. 34: 136. 1925.
Costa Rica.

MASDEVALLIA LATA Reichb. f. in Gard. Chron. n. s. 7: 653. 1877.
Costa Rica.

MASDEVALLIA LIVINGSTONIANA Roezl & Reichb. f. in Gard. Chron. ser. 2, 2: 322. 1874; Ames, Sched. Orch. 5: 9, t. 12. 1923.

Scaphysepalum panamense Schltr. in Fedde Rep. 12: 205. 1913.

Masdevallia panamensis Ames, Sched. Orch. 4: 9. 1923.
Costa Rica and Panama.

MASDEVALLIA MARGINELLA Reichb. f. in Gard. Chron. n. s. 20: 38. 1883.

Masdevallia costaricensis Rolfe in Gard. Chron. 3, 8: 183. 1890.
Costa Rica.

MASDEVALLIA MOLOSSOIDES Kränzl. in Fedde Rep. 17: 416. 1921.
Costa Rica.

MASDEVALLIA NIDIFICA Reichb. f. in Otia Bot. Hamb. 18. 1878.

Masdevallia demissa Reichb. f. in Gard. Chron. 3, 2: 9. 1887.

Masdevallia cyathogastra Schltr. in Beih. Bot. Centralbl. 36, Abt. 2: 383. 1918.

Masdevallia tenuicauda Schltr. in Fedde Rep. Beih. 19: 15. 1923.

Masdevallia demissa var. *superflua* Kränzl. in Fedde Rep. Beih. 34: 80. 1925.
Costa Rica and South America.

MASDEVALLIA ODONTOCHILA Schltr. in Fedde Rep. 9: 29. 1910.

Masdevallia reflexa Schltr. in Fedde Rep. Beih. 19: 276. 1923.
Costa Rica.

MASDEVALLIA PICTURATA Reichb. f. in Otia Bot. Hamb. 16. 1878.
Costa Rica and South America.

MASDEVALLIA PUSILLA Rolfe in Kew Bull. 359. 1912.
Guatemala, Costa Rica and South America.

MASDEVALLIA PYGMAEA Kränzl. in Fedde Rep. Beih. 34: 92. 1925.
Costa Rica.

MASDEVALLIA REICHENBACHIANA Endres in Gard. Chron. n. s. 4: 257. 1875.
Costa Rica.

MASDEVALLIA REICHENBACHIANA var. FUNEBRIS (Endres & Kränzl.) Kränzl. in Fedde Rep. Beih. 34: 83. 1925.
Masdevallia funebris Endres & Kränzl. in Fedde Rep. 17: 435. 1921.
Costa Rica.

MASDEVALLIA RHOPALURA Schltr. in Fedde Rep. Beih. 19: 14. 1923.
Costa Rica.

MASDEVALLIA ROLFEANA Kränzl. in Gard. Chron. 3, 9: 488. 1891.
Costa Rica.

MASDEVALLIA SIMULA Reichb. f. in Gard. Chron. n. s. 3: 8. 1875.

Masdevallia guatemalensis Schltr. in Fedde Rep. 15: 201. 1918.

Masdevallia linearifolia Ames, Sched. Orch. 5: 7. 1923.

Guatemala, Honduras, Costa Rica, Panama and South America.

MASDEVALLIA TENUISSIMA C. Schweinf. in Bot. Mus. Leaf. Harv. Univ. 4: 111. 1937.
Panama.

MASDEVALLIA TONDUZII Woolward in Bull. Herb. Boiss., ser. 2, 6: 82. 1906.
Costa Rica.

MASDEVALLIA TRIARISTELLA Reichb. f. in Gard. Chron. n. s. 6: 226. 1876.
Costa Rica and South America.

MASDEVALLIA TRICHAETE Reichb. f. in Gard. Chron. n. s. 20: 360. 1883.
Costa Rica, possibly.

MASDEVALLIA TRIDACTYLITES Reichb. f. in Gard. Chron. n. s. 19: 784. 1883.
Costa Rica.

MASDEVALLIA TUBIFLORA Ames, Orch. 2: 265. 1908.
Guatemala, British Honduras, Honduras and Costa Rica.

MASDEVALLIA ZAHLBRUCKNERI Kränzl. in Fedde Rep. 17: 413. 1921.
Costa Rica.

SCAPHYSEPALUM Pfitzer in Engler & Prantl, Nat. Pflanzenf. II, 6: 139. 1889.
This genus might very well be referred to *Masdevallia*.

SCAPHYSEPALUM ANCHORIFERUM (Reichb. f.) Rolfe in Journ. Bot. 28: 136. 1890.

Masdevallia anchorifera Reichb. f. in Gard. Chron. n. s. 21: 577. 1884.
Costa Rica.

SCAPHYSEPALUM ELASMATOPUS Schltr. in Fedde Rep. 12: 204. 1913.

Scaphysepalum longirepens Ames in Proc. Biol. Soc. Wash. 34: 153. 1921.

This species might well be placed in the genus *Pleurothallis*.

Panama.

SCAPHYSEPALUM ENDRESIANUM Kränzl. in Fedde Rep. 17: 435. 1921.

Costa Rica.

SCAPHYSEPALUM NAVICULARE Kränzl. in Fedde Rep. 17: 436. 1921.

Costa Rica.

SCAPHYSEPALUM PITTIERI Schltr. in Fedde Rep. 3: 78. 1906.

Costa Rica.

SCAPHYSEPALUM STANDLEYI Ames, Sched. Orch. 9: 24, t. 4. 1925.

Costa Rica.

(To be continued.)