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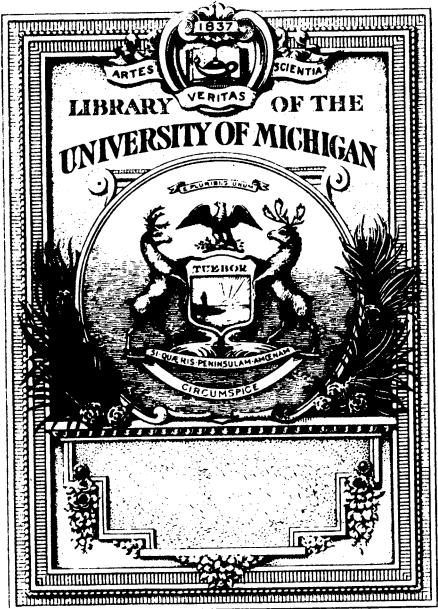
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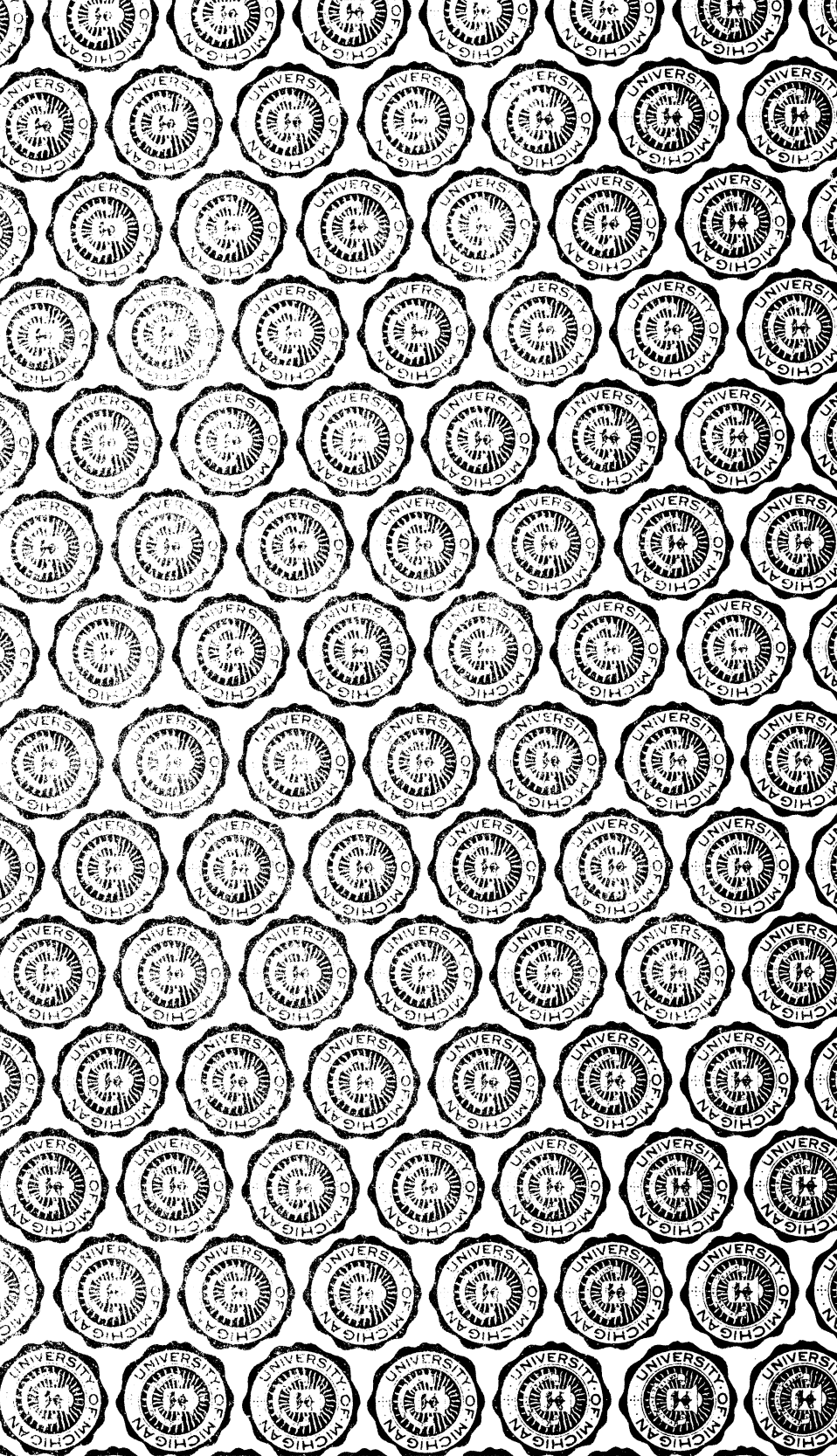
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*Philippine islands. Bureau of science.*

# AN ENUMERATION OF PHILIPPINE FLOWERING PLANTS

BY

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VOLUME I



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## PREFACE

The object of the present work is to enumerate the known species of flowering plants occurring in the Philippines; to adjust the synonymy; to account for all binomials accredited to the Philippines in botanical literature; to give the most important literature references, especially to the special Philippine publications and to the important extra-Philippine ones; to record the numerous local names for the various species; to give the habitat, occurrence, altitudinal range, Philippine distributions, and approximate extra-Philippine distribution of each species admitted; to cite illustrative specimens when necessary or expedient, especially in critical groups; in brief, to summarize in convenient form for consultation our present knowledge of the Philippine flora.

When publication of this work was commenced in 1921, it was planned to issue it in three volumes, of four or five fascicles each. As publication progressed, it was found necessary to abandon the plan of issuing the work in three volumes and the inclusion of the extensive introductory data in the prefatory part of the present volume and to add a fourth volume to contain the general introduction, bibliography, and indices to local and scientific names. In the individual volumes of the actual enumeration merely brief indices have been included covering the family and generic names that appear in each volume. Complete indices to the entire work form a part of volume 4.

In the arrangement of families and of genera the sequence in general follows the Engler and Prantl system, but for convenience in indexing and in consulting the species have been arranged alphabetically under their respective genera. While an attempt has been made to compare the very numerous species within each genus with each other and also with extra-Philippine representatives of the same genera, so far as material has been available, much critical work remains to be done; and future studies must of necessity modify the enumeration, not only as to the validity of numerous admitted species but also as to questions of synonymy and geographic distribution. It should be remembered that most of the actual work has been accomplished on the basis of the material and the literature available in Manila,

and that the local botanical library and the herbarium date only from 1902. While the library is a very excellent working unit, especially for the Indo-Malaysian region, it is far from complete, although practically all the publications appertaining especially to the Philippine flora are represented. The herbarium, containing upward of 250,000 mounted specimens, is especially rich in Philippine material, and contains few local collections made previous to 1902, except a series of approximately 1,200 numbers from Cuming's collections, made between 1836 and 1840, and a fairly large set of duplicates representing Warburg's collections. However, nearly all species described from the Philippines of which the types are extant are represented in the herbarium by types, cotypes, fragments of authentic specimens, photographs or sketches of types, or by critically compared specimens. Types of none of the species described by Blanco in his *Flora de Filipinas*, few of those described by Llanos, or the few described by F.-Villar and Naves are extant. The Blanco and Llanos species have been critically considered in a special publication.\*

The extra-Philippine collections are relatively extensive, the herbarium being rich in material from surrounding regions, received in exchange and by collection, from Formosa, China, Indo-China, India, Ceylon, Burma, Siam, the Malay Peninsula, Sumatra, Java, Borneo, Celebes, the Moluccas, New Guinea, New Caledonia, Australia, the Marianne and the Caroline Islands, and Polynesia.

Some idea of the extent and the value of the extra-Philippine botanical material available in the herbarium of the Bureau of Science may be had from the following data: From India, Burma, Siam, Indo-China, and the Malay Peninsula, more or less extensive collections are available from material secured by the following collectors and botanists: Burkill, Buchanan-Hamilton, Burn-Murdoch, Balansa, Bon, Cave, Clarke, Craib, Curtis, Debeaux, Foxworthy, Eberhardt, Harmand, Gamble, Godefroy, Hole, Hooker f. and Thomson, Jacquemont, Kurz, Kunstler, King, King's collectors, Kerr, Klöss, Meebold, Petelot, Pierre, Prazer, Rock, Robinson, Ridley, Shaik Mokim, Talmy, Thorel, Thwaites, Walker, Wallich, Wight, and Wray. The flora of China, Japan, and Formosa is well represented by collections made by the following individuals: Bodinier, Callery, Cavalerie, Chun, Chung,

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\* Merrill, E. D., *Species Blancoanae: A critical revision of the Philippine species of plants described by Blanco and by Llanos*, Bur. Sci. Publ. 12 (1918) 1-423, map.

Clemens, Dunn, Ducloux, Delavay, Farges, Faurie, Ford, Groff, Henry, Hu, Ito, Kanehira, Katsumada, Kawakami, Levine, Nakahira, Merrill, McClure, Maire, Steward, Sasaki, Taquet, Ts'oong, Tutcher, Wilson, and Wichura. The flora of some parts of the Malay Archipelago is particularly well represented by botanical material from the following collectors and botanists: Achmad, Agama, Amdjah, Backer, Backhuizen, Blume, Beguin, Beccari, Bartlett, Bünnenmeyer, Clemens, Elmer, Forbes, Foxworthy, Gjellerup, Hallier, Haniff, Hose, Kloss, Koorders, Korthals, C. King, La Rue, Lörzing, Mousset, Moulton, Nieuwenhuis, Ramos, Robinson, Raciborski, Schlechter, Teysmann, Topping, Versteeg, Villamil, Warburg, Winkler, Wood, and Yates. The flora of some parts of Polynesia is fairly well represented by collections made by the following individuals: Heller, Hombron, Le Batard, Le Guillou, McGregor, Nelson, Setchell, Thompson, Vaupel, Vesco, and Volkens. The flora of New Caledonia is particularly well represented by an extensive series of collections made by the following individuals: Balansa, Cribbs, Delpêche, Franc, Germain, Lécard, Le Rat, Pancher, and Vieillard.

The duplicates of botanical material secured by the older collectors have in large part been obtained in exchange from European botanical institutions, notably the British Museum (Natural History), the Edinburgh Botanic Garden, the Paris Museum of Natural History, the Berlin Botanic Garden, and the Rijks Herbarium, Leyden; thus, from the Berlin institution more than 8,000 specimens have been secured; from the Paris Museum, more than 12,000 specimens; from the British Museum, about 6,000 specimens; and from the Edinburgh Botanic Garden, 3,500 specimens. An extensive series of exchanges has been carried on with botanic institutions in different parts of India, Malaysia, and Australia; more than 12,000 specimens from the Malay Archipelago have been received from the Buitenzorg Botanic Garden in Java, about 5,000 specimens from the Malay Peninsula have been received from the Botanic Garden at Singapore, and the Australian flora is represented by somewhat over 10,000 specimens secured in exchange with various botanic institutions in Australia. The large exchanges received from the Paris Museum have been particularly rich in material from Indo-China, China, and New Caledonia; the material from the British Museum has been largely from British India, with miscellaneous collections from China and New Guinea; the material received from the Edinburgh Botanic Garden has been largely from India and China. The large amount of extra-Philippine material from

regions surrounding the Philippines has been invaluable for purposes of direct comparison in the prosecution of our work on the Philippine flora.

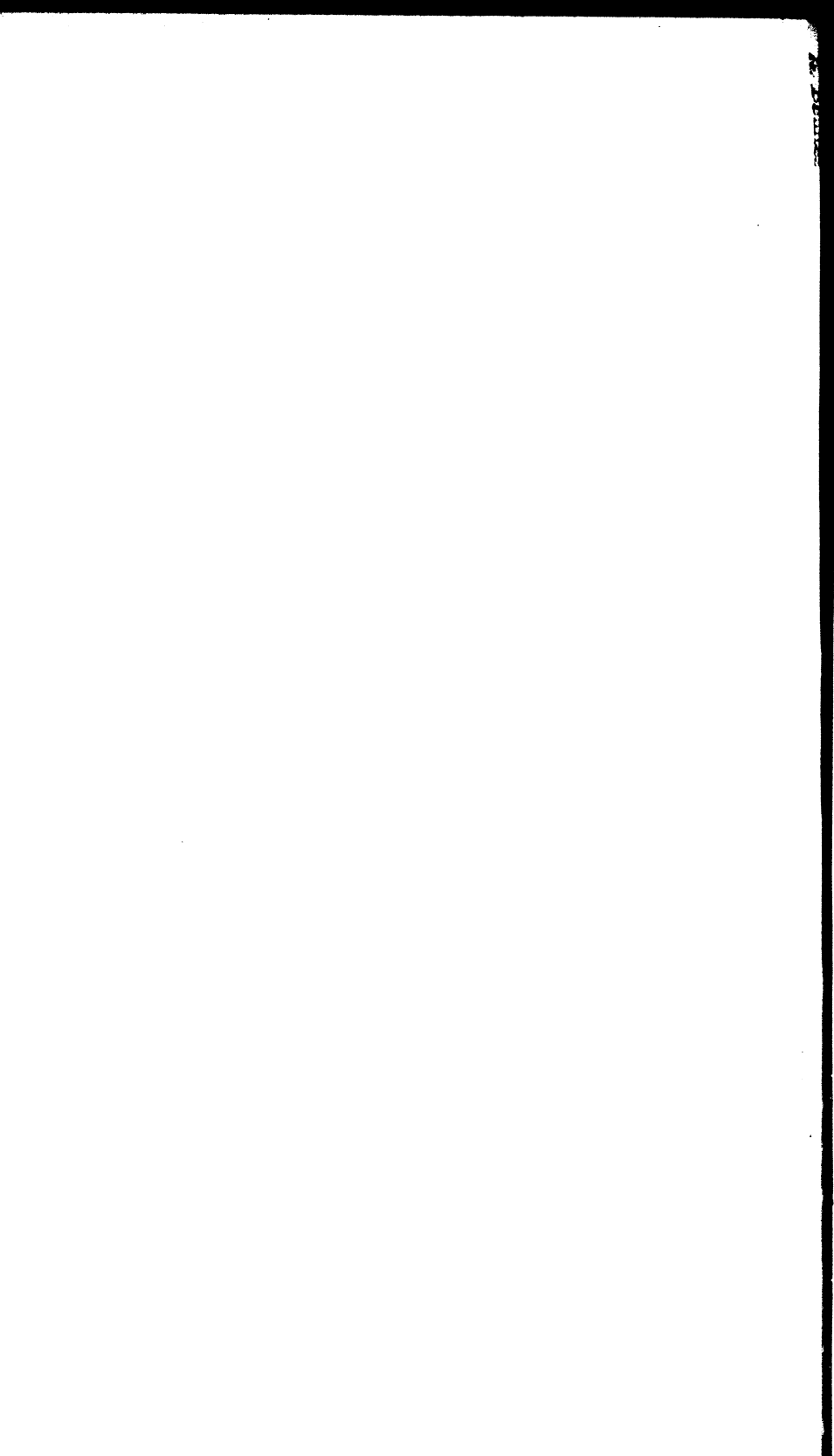
Botanical exploration under the auspices of the Bureau of Science has been confined largely to the Philippines, but members of our staff have prosecuted field work in China (Merrill), Indo-China (Robinson), Borneo (Foxworthy, Ramos), Amboina (Robinson), and Guam (McGregor). Large collections have been submitted for identification from various parts of China, Formosa, Hainan, Indo-China, Burma, Siam, the Malay Peninsula, Sumatra, Java, Borneo, New Guinea, Guam, Samoa, and Tahiti.

No attempt has been made to cite all the collections and numbers, as this procedure would have added enormously to the extent of the present publication and would have added very little to its value. In general, well-known and widely distributed species are merely enumerated with their synonyms, occurrence, distribution, etc., without the citation of specimens. In critical groups selected representative specimens only are cited. Generally speaking, when only one or two collections are cited under a species these represent the only collections extant. It should be noted that in approximately 1,800 cases Philippine records for individual species are based solely on single collections, while in about 900 additional cases individual species records are based on two collections only. This will give some idea of the great amount of work still remaining to be done before we can hope to have a reasonably complete knowledge of the very rich Philippine flora. Collections cited in parentheses—for example, (*Warburg 14231*), (*Loher 4250*)—indicate specimens not examined by me during the actual preparation of this work, although most of these were seen by me in various European herbaria in 1907 and 1908.

While most of the identifications on which this enumeration is based have been made by me, in certain groups much of this work in earlier years was done by former botanists connected with the Bureau of Science; notably, the late Dr. C. B. Robinson (Myrtaceae, Urticaceae, and certain groups of Euphorbiaceae, especially) and Dr. F. W. Foxworthy (Dipterocarpaceae and Taxaceae). Mr. Oakes Ames has made practically all of the identifications of the Orchidaceae since 1903. Many of the Pandanaceae have been determined by Dr. U. Martelli, while most of the Palmae were identified by the late Dr. O. Beccari. Many identifications in the Gramineae were made by Dr. E. Hackel, especially previous to 1907; while in the Cyperaceae the Bureau of Science has had the benefit of the extensive knowledge



of the late Mr. C. B. Clarke and of the Rev. G. Kükenthal. The Araceae have been largely identified by Dr. A. Engler, and the Dioscoreaceae by Sir David Prain and Mr. I. H. Burkill. The Piperaceae have largely been identified by the late Dr. C. de Candolle. Dr. L. Diels has named many of the Menispermaceae. Dr. J. Perkins in addition to her general work on earlier collections in various families has identified many of the Monimiaceae. The late Mr. O. Focke has named or examined many of the *Rubus* specimens. Practically all of the Sapindaceae have been named or examined by Dr. L. Radlkofer. The *Impatiens* material was named by the late Sir J. D. Hooker. Many of the Symlocaceae were determined by Dr. A. Brand. Dr. R. Schlechter has identified or examined most of the species of Asclepiadaceae. Dr. F. Kränzlin accomplished considerable work on the Gesneriaceae. The late Mr. C. B. Clarke identified numerous representatives of the Acanthaceae. Numerous individual identifications and comparisons with type material have been made by other botanists in various European countries, the United States, Japan, Java, Singapore, India, and Australia.



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# AN ENUMERATION OF PHILIPPINE FLOWERING PLANTS

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Director and Botanist, Bureau of Science

## GYMNOSPERMAE

### CYCADACEAE

#### 1. CYCAS Linnaeus

**CYCAS CAIRNSIANA** F.-Muell. Fragm. 10 (1876-77) 63?

*Cycas* sp. Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 151.

Culion, Merrill 657. In open grasslands at low altitudes. A curious species, of which only the leaves are known, perhaps representing the above Australian species.

**CYCAS REVOLUTA** Thunb. Fl. Jap. (1784) 229; A. DC. Prodr. 16<sup>2</sup> (1868) 526; F.-Vill. Novis. App. (1880) 212; Vidal Cat. Pl. Prov. Manila (1880) 46; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 151; Merr. Fl. Manila (1912) 65.

A native of China and Japan, introduced into the Philippines for ornamental purposes and now occasionally cultivated in Manila and in other large towns in the Archipelago. It never produces flowers or fruits in the Philippines so far as our records show.

Local name: Oliva (Sp.).

**CYCAS RUMPHII** Miq. in Bull. Soc. Phys. Nat. Néerl. (1839) 45; F.-Vill. Novis. App. (1880) 212; Merr. Interpret. Herb. Amb. (1917) 74, Sp. Blancoanae (1918) 52.

*Cycas circinalis* Blanco Fl. Filip. (1837) 745, ed. 2 (1845) 513, ed. 3, 3 (1879) 146; F.-Vill. Novis. App. (1880) 212; Vidal Sinopsis Atlas (1883) 43, t. 99; Warb. Monsunia (1900) 178; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 24, 3 (1908) Bot. 394, Fl. Manila (1912) 65; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 151 (non Linn.?).

*Cycas riuimintana* Porte ex Regel in Gartenflora 12 (1863) 16, fig., Ill. Hort. 28 (1881) 32; A. DC. Prodr. 16<sup>2</sup> (1868) 528; F.-Vill. Novis. App. (1880) 212.

Batan Islands and northern Luzon to Palawan and Mindanao. Chiefly along or near the seashore, sometimes in forests; of rather local occurrence. Malaya to Polynesia.

The common coastal form may not be specifically distinct from *C. circinalis* Linn. A form from the forests of Mt. Mariveles (Merrill 3257, Whitford 269, 1325, etc.), with small ♂ cones and small fruits may be specifically distinct. A second form from Mindoro and Batangas with small fruits may also be distinct (*B. S. 22391 Ramos*).

Local names: Báit (Sul.); báyit (Yak.); bitógo (Tag.); olíva (Sp.); patúbo (Tag.); patúgo (Tag.); pitógo (Tag.); pitúgo (P. Bis.); sáuang (Ilk.); ulíba (Tag.).

**CYCAS** sp. Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 152, t. 27.

Palawan, *F. B. 3842 Curran*. Leaves like those of *C. rumphii* Miq., but the ♂ cones are entirely different. Probably an undescribed species.

## TAXACEAE

### 1. PODOCARPUS L'Héritier

**PODOCARPUS AMARUS** Blume Enum. Pl. Jav. (1827) 88, *Rumphia* 3 (1847) 213, t. 170; Pilger in Engl. Pflanzenreich 18 (1903) 68, f. B, A-D, Warb. Monsunia (1900) 192; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 159.

*Podocarpus euryncha* Miq. Fl. Ind. Bat. 2 (1859) 1074; F.-Vill. Novis. App. (1880) 211.

Luzon (Benguet, Lepanto), Mindoro, Mindanao (Davao), *Elmer 11682, Merrill 5703, F. B. 10895, 10951 Curran, 18356 Alvarez, 18029 Merritt*. In the mossy forest, altitude 1,600 to 2,400 m. Java, Sumatra, Lombok; also reported from tropical Australia.

Local names: Pasuig (Ig.); tumpís (Bag.).

**PODOCARPUS BLUMEI** Endl. Syn. (1847) 208; Parl. in DC. Prodr. 16<sup>1</sup> (1868) 508; Pilger in Engl. Pflanzenreich 18 (1903) 60; Merr. in Govt. Lab. (Philip.) Publ. 17 (1904) 5, Philip. Journ. Sci. 1 (1906) Suppl. 24, 2 (1907) Bot. 258; Foxw. op. cit. 6 (1911) Bot. 158.

*Podocarpus latifolius* Blume Enum. Pl. Jav. (1827) 89; C. B. Rob. in Bull. Torr. Bot. Club. 35 (1908) 63, non R. Br. (1825).

Luzon (Cagayan, Apayao, Bataan), Mindoro, Sibuyan, Panay, Samar. *Whitford 1353, Williams 399, 753, 1035, Merrill 5728, Elmer 12360, B. S. 23348 Fénix, F. B. 23937, 23918, 23940 Cortes & Knapp, 25949 Knapp, 16738, 17200, 17616 Curran, 20888 Hinoban, 194, 147 Barnes*. In primary forests, altitude 300 to 1,800 m. Java, Moluccas, Celebes, New Guinea.

Local name: Makopulá (P. Bis.).

**PODOCARPUS BREVIFOLIUS** (Stapf) Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 160, t. 29, f. 2.

*Podocarpus nerüfolius* Don var. *brevifolia* Stapf in Trans. Linn. Soc. Bot. 4 (1894) 249; Pilger in Engl. Pflanzenreich 18 (1903) 93.

Luzon (Zambales), Mindanao (Bukidnon), *B. S. 5002 Ramos, 38500 Ramos & Edaño, F. B. 9511 Curran & Merritt*. In elfinwood on exposed ridges, altitude 2,000 m. Borneo.

**PODOCARPUS COSTALIS** Presl. Epim. (1849) 236, p.p. quoad spec. Haenke; Walp. Ann. 3 (1852-53) 448; F.-Vill. Novis. App. (1880) 211; Miq. Fl. Ind. Bat. 2 (1859) 1074; Ceron Cat. Pl. Herb. (1892) 187; Warb. Monsunia (1900) 193; Pilger in Engl. Pflanzenreich 18 (1903) 161; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 161.

*Podocarpus* sp. Vidal Sinopsis Atlas (1883) 43, t. 97, f. D.

Luzon (Laguna, Tayabas), *Haenke, Merrill 7506, Loher 2140, 7128, B. S. 19581 Ramos, 2393, 2423 Foxworthy, F. B. 7913 Curran & Merritt*. In the mossy forest on Mt. Banahao, altitude 1,700 to 2,200 m. Endemic.

**PODOCARPUS GLAUCUS** Foxw. in Philip. Journ. Sci. 2 (1907) Bot. 258, 6 (1911) Bot. 159, t. 29, f. 1.

Mindoro, *Merrill 5672*. Border of an open heath on Mt. Halcon, altitude about 2,400 m. Endemic.

**PODOCARPUS JAVANICUS** (Burm. f.) Merr. in Philip. Journ. Sci. 19 (1921) 338.

*Thuja ? javanica* Burm. f. Fl. Ind. (1768) 202, t. 64, f. 3.

*Podocarpus imbricatus* Blume Enum. Pl. Jav. (1827) 89; Pilger in Engl. Pflanzenreich 18 (1903) 56; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 157; W. H. Br. op. cit. 12 (1917) Bot. 317, t. 17.

*Podocarpus cupressina* R. Br. ex Mirb. in Mém. Mus. Paris 13 (1825) 75, *nomen nudum*; Benn. Pl. Jav. Rar. (1838) 35, t. 10; Miq. Fl. Ind. Bat. 2 (1859) 1074; F.-Vill. Novis. App. (1880) 211; Vidal Sinopsis Atlas (1883) 43, t. 97, f. B, Phan. Cuming. Philip. (1885) 160, Rev. Pl. Vasc. Filip. (1886) 295; Warb. Monsunia (1900) 191.

*Podocarpus cumingii* Parl. in DC. Prodr. 16<sup>2</sup> (1868) 521.

*Nageia cumingii* O. Kuntze Rev. Gen. Pl. 2 (1891) 800.

*Podocarpus imbricatus* Blume var. *cumingii* Pilger in Engl. Pflanzenreich 18 (1903) 56, Perk. Frag. Fl. Philip. (1904) 44; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 324.

Luzon (Abra, Lepanto, Bontoc, Benguet, Zambales, Tayabas), Mindoro, Negros, Panay, Mindanao. Common on the higher mountains in the mossy forest, altitude 1,300 to 2,500 m. Burma to Indo-China, Sumatra, Java, Borneo, Celebes, Timor, and New Guinea.

Local names: Apilum (Buk.); baginsóloi (Ting.); banyás (Mang.); dionaí (Sub.); haluko (Ig.); iguem (Ig.); igum (Ig.); rorogón̄gon (Lan.); sarambrum (Bag.).

**PODOCARPUS NERIIFOLIUS** Don in Lamb. Pin. (1824) 21; Parl. in DC. Prodr. 16<sup>2</sup> (1868) 514; Pilger in Engl. Pflanzenreich 18 (1903) 80, Perk. Frag. Fl. Philip. (1904) 44; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 24, 2 (1907) Bot. 258; Foxw. op. cit. 6 (1911) Bot. 162 (incl. var. *brevipes* Blume).

Luzon (Abra, Benguet, Tayabas), Polillo, Mindoro, Sibuyan, Mindanao, Jolo, *Merrill 1992, 5768, 5615, F. B. 25285 Somonte, 26834 Hirro, 10894, 10826 Curran, 14422 Darling, B. S. 25522 Yates, 10779 McGregor*. In primary forests at low and medium altitudes. India to southern China through Malaya to New Guinea.

Local names: Dilang-butikí (Tag.); pasuik (Ig.).

**PODOCARPUS PHILIPPINENSIS** Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 163, t. 30.

*Podocarpus rumphii* Foxw. op. cit. 6 (1911) Bot. 164, non Blume.

Luzon (Ilocos Sur, Bataan, Pampanga), Mindoro, *B. S. 1660, 5174, 10844 Foxworthy, F. B. 27786, 13253 Paraiso, 17523, 17594, 6326, 6325, 6537, 7512, 8987, 17664, 17723 Curran, 2743 Borden, Merrill 5553, 3917*. In primary forests, altitude 400 to 800 m. Endemic.

Local name: Kasirai (Ilk.).

**PODOCARPUS PILGERI** Foxw. in Philip. Journ. Sci. 2 (1907) Bot. 259, 6 (1911) Bot. 160.

*Podocarpus celebicus* Warb. Monsunia (1900) 192; Pilger in Engl. Pflanzenreich 18 (1903) 78, non Hemsl. (1896).

Mindoro, Negros, Mindanao (Agusan, Misamis), *Merrill 5754, Phil. Pl. 241, Elmer 14086, F. B. 4673 Mearns & Hutchinson*. In the mossy forest on the higher mountains, altitude 1,400 to 2,500 m. Celebes.

Local names: Lúbang-lúbang (Mbo.); tambiayang (Bag.).

**PODOCARPUS POLYSTACHYUS** R. Br. ex Mirb. in *Mém. Mus. Paris* 13 (1825) 75; *Endl. Syn.* (1847) 215; *Parl. in DC. Prodr.* 16<sup>2</sup> (1868) 515; *Pilger in Engl. Pflanzenreich* 18 (1903) 79; *Merr. in Philip. Journ. Sci.* 3 (1908) Bot. 394; *Foxw. op. cit.* 6 (1911) Bot. 161.

Batan Islands, Luzon (Ilocos Norte), Palawan, Bucas, *B. S. 27146 Ramos, 26902 Edaña, 3586 Félix, 20771 Escritor, 13202 Foxworthy & Ramos, 904 Foxworthy, F. B. 24264 Bernardo, 3854 Curran, Merrill 5268*. In forests at low and medium altitudes, sometimes along the seashore. Malay Peninsula, Sumatra, Java, Borneo.

Local name: Bantígi (Neg.).

## 2. DACRYDIUM Solander

**DACRYDIUM ELATUM** (Roxb.) Wall. in *Hook. Journ. Bot.* 2 (1843) 144, *t. 2*; *Blume Rumphia* 3 (1847) 221, *t. 172 B, f. 1, t. 172 C, f. 2*; de *Boer Conif. Archip. Ind.* (1868) 29; *Parl. in DC. Prodr.* 16<sup>2</sup> (1868) 494; *Rendle in Journ. Bot.* 34 (1896) 355; *Merr. in Philip. Journ. Sci.* 2 (1907) Bot. 257; *Pilger in Engl. Pflanzenreich* 18 (1903) 51; *Foxw. in Philip. Journ. Sci.* 6 (1911) Bot. 154.

*Juniperus elata* Roxb. *Fl. Ind. ed. 2, 3* (1832) 838.

Luzon (Nueva Ecija), Mindoro, Negros, Panay, Mindanao, *B. S. 26510, 34497 Ramos & Pascasio, F. B. 4547, 4548, 4731 Mearns & Hutchinson, 4227 Everett, 4419, 8527 Merritt, 13612, 13621 Curran & Foxworthy, Merrill 5789*. Chiefly in the mossy forest, altitude 1,200 to 2,400 m. on the east coast of Mindanao occurring as low as 200 m. Indo-China, Malay Peninsula, Sumatra, Borneo, Celebes.

Local names: Hamo-hamo (Neg.); hinubáyan (Buk.); lokínai (Sub.); maglíging (Mbo.).

**DACRYDIUM FALCIFORME** (Parl.) *Pilger in Engl. Pflanzenreich* 18 (1903) 45; *Merr. in Philip. Journ. Sci.* 2 (1907) Bot. 257; *Foxw. op. cit.* 6 (1911) Bot. 153, *t. 28, f. 1*.

*Podocarpus falciformis* Parl. in *DC. Prodr.* 16<sup>2</sup> (1868) 685; *Rendle in Journ. Bot.* 34 (1896) 355; *Warb. Monsunia* (1900) 193.

*Nageia falciformis* O. Kuntze *Rev. Gen. Pl.* 2 (1891) 800.

Luzon (Nueva Ecija), Mindoro, Panay, Mindanao (Davao, Surigao), *F. B. 27746 Cruz, 4425 Merritt, 26478 Mallonga, 26394 Ramos & Edaña, Merrill 5744*. Chiefly in the mossy forest, altitude 1,000 to 2,000 m. Borneo, Malay Peninsula, Lingga.

Local name: Bináton (Mbo.); magíbus (C. Bis.); maradayónit (Neg.).

## 3. PHYLLOCLADUS L. C. and A. Richard

**PHYLLOCLADUS HYPOPHYLLUS** Hook. f. *Ic.* 9 (1852) *t. 889*; *Carr. Conif.* (1867) 706; *Parl. in DC. Prodr.* 16<sup>2</sup> (1868) 499; *Pilger in Engl. Pflanzenreich* 18 (1903) 99.

*Phyllocladus protractus* *Pilger in Engl. Pflanzenreich* 18 (1903) 99, *Perk. Frag. Fl. Philip.* (1904) 44; *Foxw. ex Merr. in Philip. Journ. Sci.* 2 (1907) Bot. 259, 6 (1911) Bot. 165, *t. 31*.

*Phyllocladus hypophyllus* Hook. f. var. *protracta* Warb. *Monsunia* (1911) 194.

Luzon (Isabela, Abra, Ifugao, Lepanto, Bontoc, Benguet), Mindoro, Mindanao (Bukidnon, Lanao, Misamis, Davao), *Merrill 4753, 5788, Loher 5203, Elmer 11463, F. B. 27235 Niebert, 18364, 18567 Alvarez, 10957 Curran, 14587 Darling, 4679 Mearns & Hutchinson, B. S. 37757, 38738 Ramos & Edaña*. In the mossy forest on the higher mountains, altitude 1,200 to 2,400 m. Borneo.

The supposed differences between *P. protractus* Pilger and *P. hypophyllus* Hook. f. break down entirely on comparison of a large series of Kinabalu and Philippine specimens.

Local names: Aransisingit (Ig.); dǎlung (Ting.); galingkinga (Sub.); salumayag (Bag.).

#### 4. TAXUS Linnaeus

*TAXUS WALLICHIANA* Zucc. in *Abh. Bayr. Akad. Wiss.* 3 (1843) 803, t. 5; Foxw. in *Philip. Journ. Sci.* 6 (1911) Bot. 166.

*Taxus baccata* Linn. subsp. *wallichiana* (Zucc.) Pilger in *Engl. Pflanzenreich* 18 (1903) 112, *Perk. Frag. Fl. Philip.* (1904) 44.

*Taxus baccata* Merr. in *Philip. Journ. Sci.* 5 (1910) Bot. 324, non Linn.

*Cephalotaxus mannii* Rendle in *Journ. Bot.* 34 (1896) 355, non Hook. f.

Luzon (Benguet, Lepanto, Laguna, Tayabas). In the mossy forest, altitude 2,000 to 2,600 m; south of the Mountain Province known in the Philippines only from Mt. Banahao; represented by numerous collections. India to Burma, Sumatra and Celebes.

Local name: Amugáuen (Ig.).

### PINACEAE

#### 1. AGATHIS Salisbury

*AGATHIS ALBA* (Lam.) Foxw. in *Philip. Journ. Sci.* 5 (1910) *Gen. Sci.* 173, 6 (1911) Bot. 167; Merr. *Interpret. Herb. Amb.* (1917) 76, *Sp. Blancoanae* (1918) 52.

*Dammara alba* Lam. *Encycl.* 2 (1786) 259; Parl. in *DC. Prodr.* 16<sup>3</sup> (1868) 374.

*Agathis loranthifolia* Salisb. in *Trans. Linn. Soc. Bot.* 8 (1807) 311; Blanco *Fl. Filip.* ed. 2 (1845) 528, ed. 3, 3 (1879) 170; F.-Vill. *Novis. App.* (1880) 211; Vidal *Sinopsis Atlas* (1883) 43, t. 98, f. A, Phan. *Cuming. Philip.* (1885) 160, *Rev. Pl. Vasc. Filip.* (1886) 295.

*Dammara rumphii* Presl *Epim.* (1851) 236.

*Podocarpus philippeanus* Benth. ex Parl. in *DC. Prodr.* 16<sup>3</sup> (1868) 375, in syn.

*Agathis philippinensis* Warb. *Monsunia* (1900) 185, *Perk. Frag. Fl. Philip.* (1904) 36; Merr. in *Philip. Journ. Sci.* 1 (1906) *Suppl.* 24, 2 (1907) Bot. 257.

*Agathis borneensis* Warb., *beccarii* Warb., *celebica* Warb. et *macrostachys* Warb. *Monsunia* (1900) 184, 185.

Babuyan Islands and northern Luzon to Palawan and Mindanao, in most islands and provinces. Always in the primary forest, chiefly at medium and higher altitudes; represented by over 60 individual collections. Indo-China through the Malay Peninsula and Archipelago to the Moluccas.

Local names: Adiãngau (Bik.); alinságo (Ig.); almáciga (Sp.); alintágau (Ig.); aniãga (Ig.); anano (S. L. Bis.); anting (Neg.); aríãga (Klg.); bagtík (Kuy.); bálau (C. Bis.); baltík (Tagb.); bidiãngau (P. Bis.); badiãngau (P. Bis.); biáyo (Bis.); bunsóg (Ig.); buntóg (Ig.); dadiãngau (C. Bis., Tag.); dadúãgoi (Bik.); dinar (Bag.); gala-gála (Tag., Tagb.); ladiãngau (Bik., Tag.); makáu (C. Bis.); olinságo (Ig.); sálang (Neg.); sáleng (Neg.); sálong (Tag., Bik.); titau (Ting.); uli (Sbl.); uniãgát (Ilk.).

## 2. PINUS Linnaeus

**PINUS INSULARIS** Endl. Syn. Conif. (1847) 157; Presl Epim. (1851) 37; Parl. in DC. Prodr. 16<sup>2</sup> (1868) 390; F.-Vill. Novis. App. (1880) 212; Vidal Sinopsis Atlas (1883) 43, t. 98, f. C, Phan. Cuming. Philip. (1885) 160, Rev. Pl. Vasc. Filip. (1886) 296; Merr. in Forest. Bur. (Philip.) Bull. 1 (1903) 15, Govt. Lab. Publ. (Philip.) 6 (1904) 6, Philip. Journ. Sci. 5 (1910) Bot. 325, Sp. Blancoanae (1918) 53; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 170; Shaw Gen. Pinus (1914) 60, t. 23, f. 208-210.

*Pinus taeda* Blanco Fl. Filip. (1837) 767, ed. 2 (1845) 528, ed. 3, 3 (1879) 169, t. 453, non Linn.

*Pinus insularis* × *merkusii* Perk. Frag. Fl. Philip. (1904) 35.

*Pinus kasya* Royle ex Parl. in DC. Prodr. 16<sup>2</sup> (1868) 390; F.-Vill. Novis. App. (1880) 212; Merr. in Forest. Bur. (Philip.) Bull. 1 (1903); 15 (*khasya*).

Luzon (Ifugao, Bontoc, Lepanto, Benguet, Nueva Vizcaya, Nueva Ecija). The dominant species in the Mountain Province, its altitudinal range being from about 1,000 to 2,700 m. Burma and Indo-China.

Local names: Alal (Ig.); balibo (Ig.); bariat (Bon.); bata (Bon.); batáng (Bon.); bebe (Bon.); bolbol (Ig.); bubu (Ig.); bulbúl (Ig.); olol (Ig.); parúa (Ilk.); sáhing (Tag.); sáleng (Bon., Ilk., Ig., Ting.); sálit (Sbl.); talang (Gad.); tapúlau (Sbl.).

**PINUS MERKUSII** Jungh. & DeVr. in Pl. Nov. Ind. Bat. Orient. 5 (1845) t. 2, Bot. Zeit. 4 (1846) 13; Miq. Fl. Ind. Bat. 2 (1859) 1069; F.-Vill. Novis. App. (1880) 211; Vidal Sinopsis Atlas (1883) 43, t. 98, f. B, Rev. Pl. Vasc. Filip. (1886) 296; Perk. Frag. Fl. Philip. (1904) 35; Merr. in Forest. Bur. (Philip.) Bull. 1 (1903) 15, Govt. Lab. Publ. (Philip.) 6 (1904) 6; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 169; Shaw Gen. Pinus (1914) 58, t. 23, f. 198-200.

Luzon (Zambales), Mindoro. Very similar to *P. insularis* Endl. but with only two leaves in a fascicle instead of three; in places it occurs as low as 100 m altitude. Burma, Indo-China, Sumatra, ? Borneo.

Local names: Agú (Mang.); agúu (Mang.); sálit (Sbl.); sálong (Sbl.); tapúlau (Sbl.).

The following species of Pinaceae have been credited to the Philippines, but are all introduced and but rarely cultivated and have no claims to be considered as representatives of the Philippine flora:

**ARAUCARIA EXCELSA** R. Br.; F.-Vill. Novis. App. (1880) 211.

This does not thrive in the Philippines and never reaches maturity here.

**CUPRESSUS TORULOSA** Don; F.-Vill. l. c.

This is rarely cultivated and is commonly known by its Spanish name *cipres*.



*JUNIPERUS OCCIDENTALIS* Hook.; Usteri Beitr. Ken. Philip. Veg. (1905) 134.  
Cultivated according to Usteri; I have seen no specimens.

## GNETACEAE

## 1. GNETUM Linnaeus

**GNETUM ARBOREUM** Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 174, t. 32.

Luzon (Rizal, Nueva Ecija, Tayabas), *B. S. 9439 Robinson, 29635, 26388 Ramos & Edaño*. In the mossy forest, altitude about 900 m. Endemic.

Additional collections show this to be a vine, not a tree, as Robinson and Foxworthy supposed.

Local name: Lapiñgat (Neg.).

**GNETUM GNEMON** Linn. Mant. 1 (1867) 125; Blume Rumphia 4 (1848) 3, t. 176, 178 B, f. 5; Parl. in DC. Prodr. 16<sup>2</sup> (1868) 349; Blanco Fl. Filip. (1837) 747, ed. 2 (1845) 514, ed. 3, 3 (1879) 147; F.-Vill. Novis. App. (1880) 210; Vidal Phan. Cuming. Philip. (1885) 160, Rev. Pl. Vasc. Filip. (1886) 295; Karsten in Ann. Jard. Bot. Buitenz. 11 (1893) 203; Merr. Forestry Bur. (Philip.) Bull. 1 (1903) 16, Philip. Journ. Sci. 1 (1906) Suppl. 24, Sp. Blancoanae (1918) 53; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 173.

*Gnetum vinosum* Elm. Leaf. Philip. Bot. 7 (1915) 2673.

Luzon (Ilocos Norte, Bataan, Batangas, Laguna, Tayabas, Camarines), Mindoro, Palawan, Sibuyan, Panay, Samar, Leyte, Siargao, Bucas Grande, Mindanao. In forests at low and medium altitudes. Tropical Africa and Asia through Malaya to New Guinea.

Local names: Babayong (Sub.); bágo (Buk., Bik., Bag., C. Bis., Mbo., Tag.); bágo-sili (C. Bis.); banágo (Bis.); kugítis (Mbo.); kúman (Mand.); lamparan (Tag.); magatúñgal (Mag.); nábo (Bik.).

**GNETUM GNEMONOIDES** Brongn. in Duperry Voy. Bot. (1829) 12; Merr. Interpret. Herb. Amb. (1917) 78.

*Gnetum rumphianum* Becc. Malesia 1 (1877) 182.

*Gnetum verrucosum* Karst. in Ann. Jard. Bot. Buitenz. 11 (1893) 216.

*Funis gnemoniformis* Rumph. Herb. Amb. 5 (1747) 12, t. 8.

Luzon (Tayabas, east coast), Basilan, *B. S. 15496 Reillo, 29096 Ramos & Edaño*. In forests at low or medium altitudes. Moluccas, New Guinea.

**GNETUM INDICUM** (Lour.) Merr. Interpret. Herb. Amb. (1917) 77, Sp. Blancoanae (1918) 53.

*Abutua indica* Lour. Fl. Cochinch. (1790) 630.

*Gnetum funiculare* Brongn. in Duperry Voy. Bot. (1829) 12; Miq. Fl. Ind. Bat. 2 (1859) 1068; F.-Vill. Novis. App. (1880) 211.

*Gnetum latifolium* Blume Fam. Nov. (1833) 30, Rumphia 4 (1848) 5, t. 174; Presl Epim. (1851) 236; Miq. Fl. Ind. Bat. 2 (1859) 1067; Parl. in DC. Prodr. 16<sup>2</sup> (1868) 350; F.-Vill. Novis. App. (1880) 210; Vidal Phan. Cuming. Philip. (1885) 160, Rev. Pl. Vasc. Filip. (1886) 295, Sinopsis Atlas (1883) 42, t. 97, f. A; Warb. Monsunia (1900) 195; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 25; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 174.

*Thoa pendula* Blanco Fl. Filip. (1837) 746.

*Thoa edulis* Blanco Fl. Filip. ed. 2 (1845) 514, ed. 3, 3 (1879) 146, non Willd.

*Gnetum philippinense* Warb. *Monsunia* (1900) 196.

*Gnetum scandens* F.-Vill. *Novis. App.* (1880) 211, non Roxb.

*Gnetum laxifrutescens* Elm. *Leafl. Philip. Bot.* 4 (1912) 1478.

Luzon (Cagayan to Sorsogon), Mindoro, Palawan, Sibuyan, Panay, Leyte, Samar, Siargao, Mindanao. In forests at low and medium altitudes; distinctly variable in vegetative characters. Represented by very numerous collections. India to southern China and Malaya.

Local names: Biás (Tag.); bias-biás (Tag.); bulso (Buk.); dadaotum (Mbo.); kadiát (Itn.); kalát (Ig., Ilk.); kaliát (Ilk.); kandiát (Ig.); konjât (Ig.); koliát (Tag.); kuliád (Ibn.); kuliát (Bik., Tag., Pamp., Mang.); lamparahan (Tag.); malaigot (S. L. Bis.); nonok (P. Bis.); tobal (Tag.).

**GNETUM MINUS** Foxw. in *Philip. Journ. Sci.* 6 (1911) *Bot.* 176, t. 33.

Luzon (Benguet), *B. S.* 2513 *Mearns.* In forests or thickets, altitude probably about 1,500 m. Endemic.

#### EXCLUDED SPECIES

**GNETUM NEGLECTUM** Blume; F.-Vill. *Novis. App.* (1880) 211.

### ANGIOSPERMAE

#### MONOCOTYLEDONAE

##### TYPHACEAE

##### 1. TYPHA Linnaeus

**TYPHA CAPENSIS** Rohrb. in *Verh. Bot. Ver. Brandenb.* 11 (1869) 96; Hallier f. in *Lorenz Nova Guinea* 8 (1913) 911.

*Typha angustifolia* Blanco *Fl. Filip.* (1837) 687, ed. 2 (1845) 477, ed. 3, 3 (1879) 91; *Naves Novis. App.* (1882) 297, non Linn.

*Typha angustifolia* Linn. subsp. *javanica* Graebn. in *Perk. Frag. Fl. Philip.* (1904) 42, *Merr. Fl. Manila* (1912) 66, *Sp. Blancoanae* (1918) 53, non Schnizl.

Luzon (Laguna), Mindoro, Negros, *Merrill 895, Sp. Blancoanae 38, Piper 74, B. S. 9881 Robinson, F. B. 9775 Merritt.* In fresh water swamps at low altitudes. Africa and Madagascar, Philippines, New Guinea.

Local names: Balangót (Tag., S. L. Bis.); homai-homai (Bis.); kaidkéd (Pang.); lampakánai (C. Bis.); tubal-tubal (C. Bis.).

**TYPHA DOMINGENSIS** Pers. *Syn.* 2 (1807) 532; Graebn. in *Engl. Pflanzenreich* 2<sup>1</sup> (1900) 14; Hallier f. in *Lorenz Nova Guinea* 8 (1913) 912, in nota.

Mindoro, Panay, Negros, Cebu, *F. B. 13371 Curran, 25893 Tamesis & Azurin, B. S. 11125 Ramos.* In swamps at low altitudes. Tropical America; Java, Timor.

Local names: Balangót (P. Bis.); buhai-búhai (P. Bis.); lampakánai (C. Bis.).

**TYPHA SHUTTLEWORTHII** Koch & Sonder in *Koch Syn. ed.* 2 (1844) 786; Hallier f. in *Lorenz Nova Guinea* 8 (1913) 913, in nota.

*Typha angustifolia* Vidal *Rev. Pl. Vasc. Filip.* (1886) 280, non Linn.

*Typha orientalis* Presl *Epim.* (1851) 239; C. B. Rob. in *Bull. Torr.*

Bot. Club 35 (1908) 63; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 394.

*Typha shuttleworthii* Koch & Sond. subsp. *orientalis* Graebn. in Engl. Pflanzenreich 2<sup>1</sup> (1900) 10, quoad syn. Presl.

Luzon (Benguet, Bontoc, Sorsogon), Cebu, Mindanao (Bukidnon, Lanao), *Cuming 1767, Elmer 6382, 16244, Clemens 856, B. S. 24984 Félix*. In swamps at low and medium altitudes, ascending to 1,400 m. Europe to China.

Local names: Anibung (Bon.); badok-badok (Ilk.); dosi-dosi (Ig.); palabog (Buk.).

I have arbitrarily followed Hallier f. in this classification of the Philippine forms but am by no means satisfied that the identifications are correct.

## PANDANACEAE

### 1. FREYCINETIA Gaudichaud

**FREYCINETIA ACUTIFOLIA** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 267.

Luzon (Camarines), Catanduanes, *B. S. 30319 Ramos, 33561 Ramos & Edaño*. In damp primary forests at low altitudes. Endemic.

**FREYCINETIA ANGULATA** C. B. Rob. ex Martelli in Webbia 3 (1910) 16, 309.

Luzon (Albay), Samar, Panay, *B. S. 6221 Robinson, 24813 Edaño, 32393 McGregor*. In forests at low altitudes. Endemic.

**FREYCINETIA APAYAOENSIS** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 269.

Luzon (Apayao, Ilocos Norte), *B. S. 28034 Félix, 33111 Ramos*. In forests along streams at low altitudes. Endemic.

**FREYCINETIA APOENSIS** Martelli in Leaf. Philip. Bot. 3 (1911) 1111.

Mindanao (Davao), *Elmer 10781*. In forests along streams, altitude about 1,200 m. Endemic.

Local name: Rasrás (Bag.).

**FREYCINETIA ATOCENSIS** Martelli in Webbia 3 (1910) 28, 309.

Luzon (Benguet), (*Loher 1570*). Probably in forests, altitude at or above 1,000 m. Endemic.

**FREYCINETIA AURICULATA** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 312; Martelli in Webbia 3 (1910) 15, 309.

Palawan, *B. S. 876 Foxworthy*. In forests at low or medium altitudes. Endemic.

**FREYCINETIA BANAHAENSIS** Elm. Leaf. Philip. Bot. 1 (1907) 215; Martelli in Webbia 3 (1910) 29, 309.

Luzon (Laguna, Tayabas), *Elmer 7902, 18424*. In primary forests, altitude 800 to 2,000 m. Endemic.

**FREYCINETIA BATANENSIS** Martelli in Webbia 3 (1910) 29, 309.

Batan Islands, Luzon (Ilocos Norte), *B. S. 3806 Félix, 33301 Ramos*. In forests, altitude about 1,000 m. Endemic.

Local name: Uyód (Iv.).

**FREYCINETIA BOTULIFORMIS** Merr. in Philip. Journ. Sci. 13 (1918)  
Bot. 268.

Luzon (Sorsogon), *B. S. 23363 Ramos*. In primary forests at medium altitudes. Endemic.

**FREYCINETIA BULUSANENSIS** Merr. in Philip. Journ. Sci. 13 (1918)  
Bot. 268.

Luzon (Sorsogon), Panay, *B. S. 23686 Ramos, 32571 McGregor, Elmer 14973, 16294* as *F. vulcanica* Elm. Apparently in the mossy forest, altitude at or above 900 m. Endemic.

**FREYCINETIA CUERNOSENSIS** Martelli in Webbia 3 (1910) 26, 310.

Luzon (Sorsogon), Negros, *Elmer 9677, 16314, 14914*. In forests at medium altitudes. Endemic.

**FREYCINETIA CUMINGIANA** Gaudich. Bot. Voy. Bonite (1839-46),  
*t. 37, f. 12-14, t. 60*; C. B. Rob. in Bull. Torr. Bot. Club 35 (1908)  
64; Martelli in Webbia 3 (1910) 19, 310.

*Freycinetia luzonensis* Presl Epim. (1851) 238 (incl. var. *heterophylla* Presl); Walp. Ann. 3 (1852-53) 494; Miq. Fl. Ind. Bat. 3 (1856) 172; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 280; Naves Novis. App. (1882) 286; Warb. in Engl. Pflanzenreich 3 (1900) 35, *f. 10, D-E*; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 311; C. B. Rob. op. cit. 6 (1911) Bot. 193.

Luzon (Cagayan, Camarines, Sorsogon), *Cuming 1455, Weber 1585, Elmer 15394* as *F. membranifolia* Elm., *15930, 16016* as *F. leuteocarpa* Elm., *B. S. 13874 Ramos, F. B. 11361 Curran*. In forests at low and medium altitudes. Endemic.

Local name: Alapúnti (C. Bis.).

**FREYCINETIA CURRANII** Merr. in Philip. Journ. Sci. 3 (1908) Bot 312;  
Martelli in Webbia 3 (1910) 14, 310.

Luzon (Camarines, Sorsogon), Catanduanes, Panay, Camiguin de Misamis, *F. B. 11359 Curran, 23789 Alvarez, B. S. 35735 Martelino & Edaña, 14642, 30267, 30317 Ramos, Elmer 16590*. In primary forests at low and medium altitudes. Endemic.

**FREYCINETIA DISCOIDEA** Martelli in Leaf. Philip. Bot. 3 (1911) 1113.  
Sibuyan, *Elmer 12197*. In forests, altitude about 300 m. Endemic.

**FREYCINETIA ENSIFOLIA** Merr. in Govt. Lab. Publ. (Philip.) 17 (1904)  
5, Philip. Journ. Sci. 1 (1906) Suppl. 25, 3 (1908) Bot. 315; Martelli  
in Webbia 3 (1910) 32, 310; Elm. Leaf. Philip. Bot. 3 (1911) 1118.

Luzon (Bontoc, Benguet, Bataan, Pampanga), Mindoro, Negros, *Merrill 3242, Elmer 6840, Whitford 329, B. S. 1944 Foxworthy, F. B. 6285 Curran, 1347 Borden, 2624 Meyer, B. S. 39472 Ramos*. In the mossy forest, altitude 1,200 to 1,600 m. Endemic.

Local names: Kañgīngai (Ig.); kakaag (Bon.).

**FREYCINETIA FEROX** Warb. in Engl. Pflanzenreich 3 (1900) 33; Merr  
in Philip. Journ. Sci. 3 (1908) Bot. 310; Martelli in Webbia 3  
(1910) 13, 310.

*Freycinetia lucbanensis* Elm. Leaf. Philip. Bot. 1 (1907) 212; Martelli in Webbia 3 (1910) 14, 312.

Luzon (Tayabas), *Warburg* in herb. Berol., *Elmer 8230*. In primary forests, altitude about 500 m. Endemic.

**FREYCINETIA GITINGIANA** Martelli in Leaf. Philip. Bot. 3 (1911) Bot. 1112.

Sibuyan, *Elmer 12358*. In forests, altitude about 500 m. Endemic.

**FREYCINETIA INSIPIDA** Martelli in Leaf. Philip. Bot. 3 (1911) 1114.

Sibuyan, *Elmer 12426*. In forests along streams, altitude 500 to 600 m. Endemic.

Local name: Bagánot (P. Bis.).

**FREYCINETIA JAGORII** Warb. in Engl. Pflanzenreich 3 (1900) 39; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 313; Martelli in Webbia 3 (1910) 25, 311.

Luzon (Sorsogon), Biliran, Samar, Leyte, Mindanao (Agusan, Lanao, Zamboanga), *Elmer 15378, 16210, 15057, 13717, Wenzel 306, Merrill 8300, Clemens, B. S. 18852 McGregor, 17395 Ramos, 37032 Ramos & Edaño*. In forests at low and medium altitudes. Endemic.

Local name: Magalop (Sub.).

**FREYCINETIA LEPTOPHYLLA** Martelli in Webbia 3 (1910) 20, 312.

Luzon (Rizal, Laguna), (*Loher 5450*), *B. S. 15006 Ramos*. In forests at medium altitudes. Endemic.

**FREYCINETIA LOHERI** Martelli in Webbia 3 (1910) 15, 312.

Luzon (Lepanto, Rizal), (*Loher 1577, 1578, 5469*). Probably from forests at or above 1,200 m altitude. Endemic.

**FREYCINETIA MAXIMA** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 310; Martelli in Webbia 3 (1910) 13, 312, Leaf. Philip. Bot. 3 (1911) 1111.

Luzon (Laguna, Tayabas, Camarines, Albay, Sorsogon), Samar, *F. B. 10754, 1238 Curran, 25374 Mabesa, B. S. 23343, 17444 Ramos, 6345 Robinson, Elmer 17530, 14697, 18152*. In primary forests at low and medium altitudes, ascending to 500 m. Endemic.

**FREYCINETIA MEGACARPA** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 314; Martelli in Webbia 3 (1910) 31, 312, Leaf. Philip. Bot. 3 (1911) 1117.

Mindanao (Agusan, Lanao), *Clemens, Elmer 14242*. In forests, altitude about 650 m. Endemic.

**FREYCINETIA MERRILLII** Elm. Leaf. Philip. Bot. 1 (1907) 216; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 314; Martelli in Webbia 3 (1910) 31, 313.

Luzon (Cagayan, Tayabas), *Elmer 9010, B. S. 10727 McGregor*. In forests along streams, altitude about 600 m. Endemic.

**FREYCINETIA MONOCEPHALA** Elm. Leaf. Philip. Bot. 1 (1906) 78 bis, (1907) 218; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 314; Martelli in Webbia 3 (1910) 31, 313; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 193.

Luzon (Rizal, Laguna, Tayabas), *Elmer 7380, 9012, Whitford 971, Merrill Phil. Pl. 423, F. B. 13094 Curran, B. S. 29372 Ramos & Edaño*. In forests, altitude about 700 m. Endemic.

**FREYCINETIA MONTALBANICA** Martelli in *Webbia* 3 (1910) 18, 313; C. B. Rob. in *Philip. Journ. Sci.* 6 (1911) Bot. 193.

Luzon (Rizal), (*Loher s. n.*, 5451). Probably in forests at medium altitudes. Of this I have seen only a photograph of *Loher* 5451. Endemic.

**FREYCINETIA MULTIFLORA** Merr. in *Philip. Journ. Sci.* 2 (1907) Bot. 259, 3 (1908) Bot. 312; *Elm. Leaf.* *Philip. Bot.* 1 (1907) 212; Martelli in *Webbia* 3 (1910) 17, 313.

*Freycinetia luzonensis* Naves in Blanco *Fl. Filip.* ed. 3 (1877-83) t. 437, non Presl.

Luzon (Laguna, Bataan), Mindoro, Mindanao, *Merrill* 5647, *Elmer* 8039, 9009, 17974, *Clemens* 1028, *B. S.* 16857 *Serviñas*, 15117, 2092 *Ramos*, 11285 *McGregor*. In primary forests up to 900 m altitude. Endemic.

**FREYCINETIA NEGROSENSIS** Merr. in *Philip. Journ. Sci.* 3 (1908) Bot. 313; Martelli in *Webbia* 3 (1910) 28, 313.

Luzon (Laguna, Sorsogon), Leyte, Negros, Mindanao (Agusan), *Whitford* 1541, *Elmer* 16161, 13766, as *F. urdanetensis* Elm., *F. B.* 26216 *Franco*, *B. S.* 16637 *Ramos*. In forests at medium altitudes, ascending to 1,200 m. Endemic.

Local name: Pandán-magamoí (C. Bis.).

**FREYCINETIA OBLONGIFOLIA** Merr. in *Philip. Journ. Sci.* 3 (1908) Bot. 310; Martelli in *Webbia* 3 (1910) 16, 313.

Panay, Mindanao (Surigao), *Bolster* 249, 342, *B. S.* 32533 *McGregor*, 31060 *Ramos* & *Edaño*. In primary forests at low altitudes. Endemic.

**FREYCINETIA PALAWANENSIS** Merr. ex *Elm. Leaf.* *Philip. Bot.* 1 (1907) 216, *Philip. Journ. Sci.* 3 (1908) Bot. 313; Martelli in *Webbia* 3 (1910) 23, 313.

*Freycinetia elmeri* Martelli in *Webbia* 3 (1910) 22, 310, *Leaf.* *Philip. Bot.* 3 (1911) 1117.

Luzon (Tayabas, Sorsogon), Palawan, Sibuyan, Panay, Mindanao (Agusan, Lanao), *B. S.* 706 *Foxworthy*, 23707 *Ramos*, 32527, 32231 *McGregor*, 35753 *Martelino* & *Edaño*, *Elmer* 12072, 7310, 9386, 14030, *Clemens* 796. In primary forests, altitude 600 to 1,000 m. Endemic.

**FREYCINETIA PERIPIEZOCARPA** Martelli in *Webbia* 3 (1910) 314.

Luzon (Ifugao, Bontoc, Benguet), Negros, *F. B.* 18020 *Merritt*, 13638 *Curran* & *Foxworthy*, 10858 *Curran*, *Merrill Phil. Pl.* 727. On ridges in thickets and forests, altitude 1,200 to 1,600 m. Endemic.

**FREYCINETIA PHILIPPINENSIS** Hemsl. in *Kew Bull.* (1896) 165; *Warb.* in *Engl. Pflanzenreich* 3 (1900) 40; Merr. in *Philip. Journ. Sci.* 3 (1908) Bot. 313; Martelli in *Webbia* 3 (1910) 25, 314.

Luzon (Cagayan, Tayabas, Camarines), Samar, Biliran, Mindanao (Bukidnon), *Gregory* 117, *Cuming* 1898, *B. S.* 18737 *McGregor*, 26028 *Fénix*, 22088, 22167 *Ramos*. In primary forests at low and medium altitudes. Endemic.

**FREYCINETIA PLATYPHYLLA** Merr. in *Philip. Journ. Sci.* 13 (1918) Bot. 267.

Samar, *B. S.* 24349 *Ramos*. In forests along streams at low altitudes. Endemic.

**FREYCINETIA POLYSTACHYA** Martelli in *Webbia* 3 (1910) 14, 314.

Luzon (Ilocos Norte, Rizal, Tayabas), (*Loher 5454*), *B. S. 26642 Ramos & Edaño, 33299 Ramos, 25540 Yates*. In forests at medium altitudes. Endemic.

**FREYCINETIA RIGIDA** Elm. Leaf. Philip. Bot. 1 (1908) 362; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 313; Martelli in *Webbia* 3 (1910) 26, 314.

*Freycinetia hemsleyi* Elm. Leaf. Philip. Bot. 1 (1907) 214, non Warb.

Luzon (Tayabas), *Elmer 7847*. In primary forests, altitude about 800 m. Endemic.

**FREYCINETIA ROBINSONII** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 311; Martelli in *Webbia* 3 (1910) 17, 314.

Luzon (Ilocos Norte, Bataan, Pampanga), Leyte, *F. B. 752, 2466, 3037 Borden, 2194 Meyer, B. S. 2006 Foxworthy, 27256 Ramos, Whitford 1311, Merrill 3791*. In forests at low and medium altitudes. Endemic.

Var. **LATIFOLIA** Martelli in *Webbia* 3 (1910) 18, 314.

Luzon (Benguet, Laguna, Rizal), Negros, *Elmer 6196*. In forests at low and medium altitudes. Endemic.

Local names: Malabáling-uái (Tag.); malapandán (Tag.); maloran (Pamp.).

**FREYCINETIA ROBUSTA** Elm. Leaf. Philip. Bot. 8 (1919) 3097.

Luzon (Laguna), *Elmer 18026*. In primary forests at medium altitudes. Endemic.

**FREYCINETIA ROSTRATA** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 177, 3 (1908) Bot. 315; Martelli in *Webbia* 3 (1910) 34, 314, Leaf. Philip. Bot. 3 (1911) 1118.

Samar, Negros, Siargao, Mindanao (Lanao), *Merrill 5235, Clemens s. n., B. S. 24787 Edaño, F. B. 19097 Curran*. In forests at low and medium altitudes. Endemic.

Local names: Rasrás (Bag.); sagatap (P. Bis.).

**FREYCINETIA SCABRIPES** Warb. in Engl. Pflanzenreich 3 (1900) 41; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 313, 394; Martelli in *Webbia* 3 (1910) 27, 314.

*Freycinetia dilatata* Merr. ex Elm. Leaf. Philip. Bot. 1 (1907) 214, Philip. Journ. Sci. 3 (1908) Bot. 313; Martelli in *Webbia* 3 (1910) 310.

Luzon (Cagayan, Bataan, Rizal, Tayabas, Sorsogon), *F. B. 4529 Maule, B. S. 99 Foxworthy, Elmer 9008, Merrill 2301*. In forests at low and medium altitudes. Endemic.

Local name: Palindán (Tag.).

**FREYCINETIA SPHAEROCEPHALA** Gaudich. Bot. Voy. Bonite (1843) t. 52; Solms-Laub. in *Linnaea* 42 (1878) 96; Warb. in Engl. Pflanzenreich 3 (1900) 35; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 314; Martelli in *Webbia* 3 (1910) 33, 315.

*Freycinetia strobilacea* Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 280; F.-Vill. Novis. App. (1882) 285, non Blume.

*Freycinetia globosa* Merr. in Philip. Journ. Sci. 2 (1907) Bot. 260;  
Elm. Leaf. Philip. Bot. 1 (1907) 217.

Luzon (Ilocos Norte, Apayao, Laguna, Camarines, Albay, Sorsogon), Mindoro, *Cuming 839, Merrill 5791, Elmer 14920, Wenzel 511, B. S. 16593, 22016, 20510 Ramos*. In forests at low and medium altitudes, ascending to 1,000 m. Endemic.

Local name: Looi-lóoi (Bik.).

The figure of *Freycinetia strobilacea* Blume given by Vidal, Sinopsis Atlas (1883) 42, t. 95, f. B, was copied from Blume's original in Rumphia fide Vidal l. c. Blume's species does not occur in the Philippines.

\*FREYCINETIA SUBFLAGELLATA Elm. Leaf. Philip. Bot. 8 (1919) 3098.

Luzon (Laguna), *Elmer 17967*. In primary forests at medium altitudes. Endemic.

FREYCINETIA SUPERBA Martelli in Leaf. Philip. Bot. 3 (1911) 1115.

Subuyan, *Elmer 12257*. In forests, altitude 300 to 600 m. Endemic.

FREYCINETIA VIDALII Hemsl. in Kew Bull. (1896) 166; Warb. in Engl.

Pflanzenreich 3 (1900) 36; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 311; Martelli in Elm. Leaf. Philip. Bot. 3 (1910) 21, 315.

*Freycinetia confusa* Elm. Leaf. Philip. Bot. 1 (1907) 213.

Luzon (Cagayan, Apayao, Nueva Ecija, Rizal, Tayabas), *Vidal 3964, Elmer 9007, B. S. 16600, 13861 Ramos, 28434 Fénix, F. B. 19573 Curran, 22192 Alvarez*. In primary forests at low and medium altitudes. Endemic.

Local name: Takiakad (Ig.).

FREYCINETIA WARBURGII Elm. Leaf. Philip. Bot. 1 (1907) 218; Merr.

in Philip. Journ. Sci. 3 (1908) Bot. 315; Martelli in Webbia 3 (1910) 34, 315; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 193.

Luzon (Laguna, Tayabas, Sorsogon), *Elmer 8229, 15833, as F. sorsogonensis Elm., B. S. 14988, 16604, 20608, 10925 Ramos*. In forests at medium altitudes. Endemic.

FREYCINETIA WILLIAMSII Merr. in Philip. Journ. Sci. 3 (1908) Bot. 315, 394; Martelli in Webbia 3 (1910) 32, 315.

Batan Islands, Luzon (Ifugao, Bontoc, Benguet, Rizal, Pangasinan, Laguna, Tayabas), Panay, *Williams 1013, Elmer 5857, 18006, Merrill 8611, B. S. 3786, 29862 Fénix, 29737 Ramos & Edaño, 22233 Catalan, 19755 McGregor, 9380, 17120 Robinson*. In forests, extending into the mossy forest, altitude 500 to 1,600 m. Endemic.

Local names: Pandán (Ig.); vayasúbas (Iv.).

#### DOUBTFUL AND EXCLUDED SPECIES

FREYCINETIA GRAMINEA Blume; Naves Novis. App. (1882) 286; Usteri Beitr. Ken. Philip. Veg. (1905) 130.

This Javan species is not known from the Philippines, both of the above records being undoubtedly based on erroneously identified specimens.

FREYCINETIA INSIGNIS Blume; Vidal Cat. Pl. Prov. Manila (1880) 46; Naves Novis App. (1882) 286.

This Javan species certainly does not occur in the Philippines; from the local name cited by Vidal his specimens probably were *Pandanus sabotan* Blanco.



**TILLANDSIA PSEUDO-ANANAS** Blanco Fl. Filip. (1837) 853, ed. 2 (1845) 162, ed. 3, 1 (1877) 292.

This was reduced by Naves to *Freycinetia insignis* Blume, a species that does not extend to the Philippines. I now consider that Blanco's description applies to *Freycinetia*, but further identification of the species is impossible from the very imperfect description given by Blanco. It is possibly the same as *Pandanus copelandii* Merr.

## 2. PANDANUS Linnaeus

**PANDANUS ACLADUS** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 265.

Catanduanes, Mindanao (Bukidnon), *B. S. 30462 Ramos, 39172 Ramos & Edaño*. Along streams in forests, altitude about 150 m. Endemic. Local name: Ulañgó (Buk.).

**PANDANUS APICULATUS** Merr. in Philip. Journ. Sci. 17 (1920) 240.

Mindanao (Surigao), *B. S. 34572 Ramos & Pascasio*. On ridges, altitude about 650 m. Endemic.

**PANDANUS APOENSIS** Martelli in Leaf. Philip. Bot. 3 (1911) 1129, *Webbia* 4<sup>1</sup> (1913) 6, t. 13, f. 12-14.

Mindanao (Davao), *Elmer 11313*. In primary forests, altitude about 1,200 m. Endemic.

Local names: Baráia (Bag.); maráia (Bag.).

**PANDANUS BARAI** Martelli in Leaf. Philip. Bot. 3 (1911) 1126, *Webbia* 4<sup>1</sup> (1913) 7, t. 38, f. 10-13.

Mindanao (Davao), *Elmer 10924*. In damp forests, altitude about 1,050 m. Endemic.

Local name: Barai (Bag.).

**PANDANUS BILIRANENSIS** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 266.

Biliran, *B. S. 18895 McGregor*. In forests, altitude about 300 m. Endemic.

**PANDANUS BOTRYOIDES** Martelli in Philip. Journ. Sci. 3 (1908) Bot. 66, *Webbia* 4<sup>1</sup> (1913) 8, t. 4, f. 14-16; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 193.

Polillo, Mindanao (Surigao, Agusan, Lanao), *Merrill 5442, Weber 1212, Clemens 984, B. S. 34570 Ramos & Pascasio, 10473 Robinson*. In forests along tidal streams, and at Lake Lanao along the lake shore, altitude about 650 m. Endemic.

Specifically distinct from *P. radicans* Blanco?

**PANDANUS BREVISPATHUS** Martelli in Philip. Journ. Sci. 3 (1908) Bot. 69, *Webbia* 4<sup>1</sup> (1913) 8, t. 26, f. 3-5.

*Pandanus polycephalus* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 8, non Lour.

Mindanao (Davao), *Copeland 442*. In thickets near the seashore. Endemic.

**PANDANUS BREVISTIPES** Martelli in *Webbia* 4<sup>1</sup> (1913) 8, 4<sup>2</sup> (1914) 421, t. 38, f. 4-9.

Luzon (Batangas), *F. B. 7719 Curran & Merritt*. On ridges in forests, altitude about 800 m. Endemic.

Local name: Pandán (Tag.).

**PANDANUS CALCEIFORMIS** Martelli in *Leafl. Philip. Bot.* 3 (1911) 1127, *Webbia* 4<sup>1</sup> (1913) 9, *t. 35, f. 3-6*.

Mindanao (Bukidnon, Davao), *Elmer 11654, B. S. 38580, 39170 Ramos & Edaña*. On forested ridges, altitude about 1,350 m. Endemic.

Local name: Baráui (Bag.).

**PANDANUS CAMARINENSIS** Merr. in *Philip. Journ. Sci.* 14 (1919) 367.

Luzon (Camarines), *B. S. 33635 Ramos & Edaña*. In forests at low altitudes. Endemic.

**PANDANUS CAUDATUS** Merr. in *Govt. Lab. Publ. (Philip.)* 29 (1905) 6; Martelli in *Philip. Journ. Sci.* 3 (1908) Bot. 64, *Webbia* 4<sup>1</sup> (1913) 9, *t. 4, f. 1-3*.

Luzon (Benguet), *Elmer 6143*. In thickets or forests, altitude about 1,000 m. Endemic.

Local name: Pañgíhang (Ig.).

**PANDANUS CLEMENTIS** Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 178, *t. 1, 3* (1908) Bot. 68; Martelli in *Webbia* 4<sup>1</sup> (1913) 10, *t. 27, f. 6-10*.

Panay, Mindanao (Lanao), *Clemens 436, Merrill 6708*. In forests, altitude 100 to 700 m. Endemic.

**PANDANUS COPELANDII** Merr. in *Govt. Lab. Publ. (Philip.)* 17 (1904) 7, *Philip. Journ. Sci.* 3 (1908) Bot. 71; Martelli op. cit. 71, *Leafl. Philip. Bot.* 3 (1911) 1132, *Webbia* 4<sup>1</sup> (1913) 11, *t. 31, f. 5-7*.

*Pandanus muricatus* Elm. *Leafl. Philip. Bot.* 1 (1906) 76.

Luzon (Cagayan, Apayao, Benguet, Pangasinan, Nueva Vizcaya, Nueva Ecija, Zambales, Tayabas, Camarines, Sorsogon), Polillo, Catanduanes, Samar, Bucas Grande, Panay, Leyte, Mindanao (Bukidnon, Zamboanga, Surigao). A very characteristic species, represented by more than 30 collections. In forests at low and medium altitudes, ascending to 1,000 m. Endemic.

*Tillandsia pseudo-ananas* Blanco is possibly a synonym of this rather than a *Freycinetia*, see page 15.

Local names: Baléo (Bis.); baléu (P. Bis.); baliku (C. Bis.); balói (Mbo.); bariéu (Bag.); baríu (Bik.); barói (Mbo.); lagutlut (Tag.); pandán (Tag., Ibn.); pangdán (Ilk., Pang.); patága (Ibn.); sirí (Ibn.).

**PANDANUS CUMINGIANUS** Martelli in *Philip. Journ. Sci.* 3 (1908) Bot. 70, *Webbia* 4<sup>1</sup> (1913) 11, *t. 25, f. 13-15*.

Negros, (*Cuming s. n.* in herb. Mus. Brit.). I have seen only a photograph of the syncarps. The leaves are unknown. Endemic.

**PANDANUS DECIPIENS** Martelli in *Webbia* 4<sup>1</sup> (1913) 12, 4<sup>2</sup> (1914) 402, *t. 37, f. 7-9*.

Palawan, *Elmer 12593, Merrill 9246*. In thickets and forests at low altitudes, often back of the mangrove swamps. Endemic.

Local name: Olañgó (Tagb.).

**PANDANUS DINAGATENSIS** Merr. in Philip. Journ. Sci. 17 (1920) 240.

Dinagat, *B. S. 35183 Ramos & Pascasio*. In forests along streams at low altitudes. Endemic.

**PANDANUS DUBIUS** Spreng. Syst. 3 (1826) 897; Miq. Fl. Ind. Bat. 3 (1855) 159; Naves Novis. App. (1882) 285; Warb. in Engl. Pflanzenreich 3 (1900) 50; Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 8; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 67, Leaf. Philip. Bot. 3 (1911) 1122, *Webbia* 4<sup>1</sup> (1913) 12.

? *Pandanus latifolius* Perr. in Mém. Soc. Linn. Paris 3 (1824) 134; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 72; C. B. Rob. op. cit. 306; Warb. in Engl. Pflanzenreich 3 (1900) 88.

Mindanao (Davao), *Copeland 613*. In thickets or forests along the seashore; Java, Borneo, Celebes, Moluccas, New Guinea to the New Hebrides, Caroline, and Marianne Islands.

Local names: Bákong (P. Bis.); báuang (P. Bis.); taboán (Bik.).

**PANDANUS ESCULENTUS** Martelli in *Webbia* 4<sup>1</sup> (1913) 13, 4<sup>2</sup> (1914) 403, t. 25, f. 1-3.

Luzon (Cagayan, Apayao, Ilocos Norte, Bulacan), *F. B. 17813, 17817-Curran, 14009 Merritt & Darling, B. S. 28352 Fénix, 34089 Ramos & Edaño, 22208 Ramos*. In forests at low and medium altitudes, ascending to 1,000 m. Endemic.

Local name: Ligit (Ibn.).

**PANDANUS EXALTATUS** Blanco Fl. Filip. (1837) 778, ed. 2 (1845) 536, ed. 3, 3 (1879) 183; Miq. Fl. Ind. Bat. 3 (1856) 163; Warb. in Engl. Pflanzenreich 3 (1900) 84; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 64, *Webbia* 4<sup>1</sup> (1913) 13, t. 10, f. 1-3, 9-11; Merr. Sp. Blancoanae (1918) 54.

*Pandanus arayatensis* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 7, t. 3, Philip. Journ. Sci. 1 (1906) Suppl. 25; Martelli in *Webbia* 4<sup>1</sup> (1913) 6.

*Pandanus banahaensis* Elm. Leaf. Philip. Bot. 1 (1906) 79; Martelli in *Webbia* 4<sup>1</sup> (1913) 7 (*banahaoensis*).

*Pandanus vidalii* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 65, *Webbia* 4<sup>1</sup> (1913) 36, t. 8, f. 11-13.

*Pandanus fascicularis* Naves Novis. App. (1882) 284, non Lam.

Luzon (Apayao, Benguet, Nueva Vizcaya, Pampanga, Rizal, Bataan, Tayabas), Catanduanes, *Whitford 1325, Elmer 7574, 9074, Merrill 3832, Sp. Blancoanae 421, B. S. 30498 Ramos, 28256, 13546 Fénix, 11226 McGregor, 2701 Ahern's collector*. In primary forests at medium altitudes, ascending to 800 m. Endemic.

Local names: Alasás (Tag.); bambán (Ibn.); pandán (Tag., Pamp., Ibn.); pangdán (Ilk.).

Forma **AHERNIANUS** Martelli in Philip. Journ. Sci. 3 (1908) Bot. 64, *Webbia* 4<sup>1</sup> (1913) 13, t. 10, f. 4-8, 12-15.

Luzon (Cagayan, Rizal, Pampanga), *Merrill Dec. Philip. Forest Fl. 296, F. B. 17264, 17722 Curran*. Habitat of the species from which it is scarcely distinguishable. Endemic.

**PANDANUS GLAUCIPHYLLUS** C. B. Rob. in Bull. Torr. Bot. Club 35 (1908) 64, 74; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 68, Leaf. Philip. Bot. 3 (1911) 1124, Webbia 4<sup>1</sup> (1913) 15, t. 27, f. 14-16.

Negros, Romblon, Siargao, Mindanao (Zamboanga), *Williams 2423, Copeland, F. B. 17372 Curran, B. S. 34855 Ramos & Pascasio*. In forests at low altitudes. Endemic.

Local name: Pandán (P. Bis.).

**PANDANUS GRACILIS** Blanco Fl. Filip. (1837) 778, ed. 2 (1845) 536, ed. 3, 3 (1879) 182, t. 446; Warb. in Engl. Pflanzenreich 3 (1900) 84; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 89, Philip. Journ. Sci. 2 (1907) Bot. 436, Sp. Blancoanae (1918) 56; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 68, Webbia 4<sup>1</sup> (1913) 16, t. 25, f. 16-24, 25-26.

*Pandanus whitfordii* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 8, Philip. Journ. Sci. 1. (1906) Suppl. 25.

Luzon (Nueva Vizcaya, Zambales, Bataan, Rizal, Laguna, Tayabas, Camarines), Mindoro, Mindanao (Bukidnon, Davao), *Whitford 351, Merrill 7612, Sp. Blancoanae 890, 896, B. S. 23860, 22469, 39493 Ramos, 15783 Félix, 34844 Ramos & Pascasio, F. B. 20188 Aguilar, 2944 Borden, 6003 Curran*. In primary forests at medium altitudes, ascending to 1,000 m. Endemic.

Local names: Ayasás (Tag.); lagúloi (Buk.); pandán (Tag.).

**PANDANUS JULIFERUS** Martelli in Webbia 4<sup>1</sup> (1913) 18, 4<sup>2</sup> (1914) 428, t. 43, f. 10-12.

Camiguin de Misamis, *B. S. 14670, 14671 Ramos*. Probably in forests, altitude about 1,000 m. Endemic.

This seems to be very near *Pandanus polyglossus* Martelli.

**PANDANUS LATERALIS** Martelli in Philip. Journ. Sci. 3 (1908) Bot. 68, Leaf. Philip. Bot. 3 (1911) 1125, Webbia 4<sup>1</sup> (1913) 20, t. 27, f. 31-33.

Mindanao (Davao), *Copeland 336, Elmer 11029*. In forests at low or medium altitudes. Endemic.

Local names: Bakúling (Bag.); pandán (C. Bis., Sul.).

**PANDANUS LINNAEI** Gaudich. forma **PHILIPPINENSIS** Martelli in Webbia 4<sup>1</sup> (1913) 21, t. 6, f. 1-2, Philip. Journ. Sci. 3 (1908) Bot. 60 (as *P. linnaei* Gaudich.).

*Pandanus exaltatus* Merr. in Philip. Journ. Sci. 2 (1907) Bot. 436, non Blanco.

Semirara, Busuanga, *Merrill 4140, B. S. 41264 Ramos*. In thickets at low altitudes. The species in Celebes, Key, and Aru Islands.

**PANDANUS LOHERIANUS** Martelli in Webbia 4<sup>1</sup> (1913) 22, 4<sup>2</sup> (1914) 423, t. 27, f. 17-21.

Luzon (Rizal, Laguna), *B. S. 20549 Ramos, 13192 Curran*. In forests along streams at low or medium altitudes. Endemic.

**PANDANUS LUZONENSIS** Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 6, t. 1, 2, Philip. Journ. Sci. 1 (1906) Suppl. 25; Martelli op. cit. 3 (1908) Bot. 67, Webbia 4<sup>1</sup> (1913) 22, t. 15, f. 5-9.

*Pandanus calicarpus* Martelli in Webbia 1 (1905) 365, 4<sup>1</sup> (1913) 9.

Luzon (Pangasinan, Zambales, Bulacan, Rizal, Bataan, Laguna). Chiefly in secondary forests at low altitudes; represented by numerous collections, *Merrill Phil. Pl. 1931* and 759 are typical. Endemic.

Local names: Alasás (Tag.); dasá (Tag.); pandán (Tag., Ilk., Ibn.).

**PANDANUS MAPOLA** Martelli in *Leaf. Philip. Bot.* 3 (1911) 1124, *Webbia* 4<sup>1</sup> (1913) 22, t. 41, f. 14-17.

Sibuyan, *Elmer 12139*. In thickets or forests at low altitudes; the local name cited, *mapulá*, merely means red in reference to the color of the fruits. Endemic.

**PANDANUS MARTELLII** Elm. *Leaf. Philip. Bot.* 1 (1908) 272; Martelli in *Webbia* 4<sup>1</sup> (1913) 23, t. 11, f. 4-7.

Luzon (Tayabas), *Elmer 9082, 9083, 17646, B. S. 23025* *McGregor, 23329* *Ramos*. In forests, altitude about 650 m. Endemic.

**PANDANUS MERRILLII** Warb. in *Perk. Frag. Fl. Philip.* (1904) 50; Martelli in *Philip. Journ. Sci.* 3 (1908) Bot. 71, *Webbia* 4<sup>1</sup> (1913) 23, t. 32, f. 35-37.

Palawan, *Merrill 840, 7250, 9274, 9375, B. S. 232* *Bermejós*. In primary forests, sea level to 500 m altitude. Endemic.

Local name: Pandán (Tagb.).

**PANDANUS MINDANAENSIS** Martelli in *Elm. Leaf. Philip. Bot.* 3 (1911) 1121, *Webbia* 4<sup>1</sup> (1913) 24, t. 36, f. 4-7 (*mindanaensis*).

Mindanao (Davao), *Elmer 10323*. In primary forests; altitude about 1,200 m. Endemic.

**PANDANUS MULTIBRACTEATUS** Merr. in *Philip. Journ. Sci.* 17 (1920) 241.

Mindanao (Surigao), *B. S. 34571, 34819* *Ramos & Pascasio*. In forests along streams, altitude about 650 m. Endemic.

**PANDANUS OCCULTUS** Merr. in *Philip. Journ. Sci.* 13 (1918) Bot. 265.

Palawan, *Merrill 9361*. In primary swamp forests at low altitudes. Endemic.

**PANDANUS PALLIDUS** Merr. in *Govt. Lab. Publ. (Philip.)* 29 (1905) 5; Martelli in *Philip. Journ. Sci.* 3 (1908) Bot. 68, *Webbia* 4<sup>1</sup> (1913) 26, t. 27, f. 28-30.

Luzon (Benguet, Nueva Ecija), *Elmer 5840, Williams 917, B. S. 26270* *Ramos & Edaño, F. B. 5106, 5069* *Curran*. In forested stream depressions up to 1,500 m altitude. Endemic.

Local names: Pangchán (Ig.); tachiáng (Ig.).

**PANDANUS PALOENSIS** Elm. *Leaf. Philip. Bot.* 1 (1906) 75; Martelli in *Philip. Journ. Sci.* 3 (1908) Bot. 68, *Leaf. Philip. Bot.* 3 (1911) 1123, *Webbia* 4<sup>1</sup> (1913) 26, t. 27, f. 22-27.

Luzon (Cagayan, Apayao, Camarines, Sorsogon), Leyte, Mindanao (Davao), *Elmer 7343, 14858, 11224, Wenzel 1304, Weber 1568, B. S. 33556* *Ramos & Edaño, 28072* *Fénix, 13921* *Ramos, F. B. 19569* *Curran*. In forests at low altitudes. Endemic.

Local name: Baróai-latong (Bag.).

- PANDANUS PANAYENSIS** Merr. in Philip. Journ. Sci. 14 (1919) 366.  
Panay, *B. S. 30796 Ramos & Edaña, 35740 Martelino & Edaña*. In primary forests at low or medium altitudes. Endemic.
- PANDANUS PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 264.  
Luzon (Kalinga, Nueva Vizcaya), *B. S. 11289 McGregor, 37495 Ramos & Edaña*. On forested slopes at medium altitudes. Endemic.
- PANDANUS POLYGLOSSUS** Martelli in Leaflet. Philip. Bot. 3 (1911) 1130, *Webbia* 4<sup>1</sup> (1913) 28, *t. 39, f. 16-18*.  
Mindanao (Davao), *Elmer 11335*. In primary forests, altitude about 1,350 m. Endemic.
- PANDANUS RADICANS** Blanco Fl. Filip. (1837) 780, ed. 2 (1845) 537, ed. 3, 3 (1879) 184; *Miq. Fl. Ind. Bat.* 3 (1856) 166; *Warb. in Engl. Pflanzenreich* 3 (1900) 85; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 89, Philip. Journ. Sci. 2 (1907) Bot. 436, Sp. Blancoanae (1918) 54; *Elm. Leaflet. Philip. Bot.* 1 (1906) 74; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 66, *Webbia* 4<sup>1</sup> (1913) 29, *t. 6, f. 8-10*, *Pandanus olango* Blanco ex Espejo & Garcia *Suppl. Cat. Seem. Hort. Bot. Manila* (1876) 14, *nomen nudum*.  
Luzon (Sorsogon), *Leyte, Elmer 7200, 14892*. In forests at low altitudes. Endemic.  
Local names: Olañgó (S. L. Bis.); ouañgó (P. Bis.); oyañgó (Bik.); uañgó (P. Bis.); yuañgó (Mbo.).
- PANDANUS RAMOSII** Merr. in Philip. Journ. Sci. 17 (1920) 242.  
Bucas Grande, Dinagat, *B. S. 35136, 35198 Ramos & Pascasio*. In dry forests at low altitudes. Endemic.
- PANDANUS RECLINATUS** Martelli in *Webbia* 4<sup>1</sup> (1913) 29, 4<sup>2</sup> (1914) 432, *t. 27, f. 3, 4*.  
Palawan, *Elmer 12731*. In forests at low altitudes. Endemic.
- PANDANUS SABOTAN** Blanco Fl. Filip. (1837) 779, ed. 2 (1845) 537, ed. 3, 3 (1878) 184; *Miq. Fl. Ind. Bat.* 3 (1856) 166; *Warb. in Engl. Pflanzenreich* 3 (1900) 84; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 89, Sp. Blancoanae (1918) 56; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 72, *Webbia* 4<sup>1</sup> (1913) 30.  
Luzon (Laguna, Rizal), *Merrill Sp. Blancoanae 185, F. B. 10099 Curran, B. S. 6532, 11934 Robinson, 11239 McGregor*. A planted pandan of which the fruits and flowers are unknown. The Filipinos state that it never produces fruit. It is perhaps but a form of *P. tectorius* Solander, and Martelli has so identified some of the specimens cited above. Endemic?  
Local names: Parauan (Gad.); sabotán (Tag.); sicután (Tag.).
- PANDANUS SIBUYANENSIS** Martelli in Leaflet. Philip. Bot. 3 (1911) 1120, *Webbia* 4<sup>1</sup> (1913) 31, *t. 34, f. 4-6 (sibujanensis)*.  
Sibuyan, *Elmer 12146*. In forests, altitude about 350 m. Endemic.  
Local name: Pandan-bugás (P. Bis.).
- PANDANUS SIMPLEX** Merr. in Govt. Lab. Publ. (Philip.) 29 (1905) 6; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 67, *Webbia* 4<sup>1</sup> (1913) 31, *t. 14, f. 11-14*.  
*Pandanus utilissimus* *Elm. Leaflet. Philip. Bot.* 1 (1906) 80; Martelli

in Philip. Journ. Sci. 3 (1908) Bot. 67, *Webbia* 4<sup>1</sup> (1913) 36, t. 14, f. 3-5; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 193.

Luzon (Ifugao, Laguna, Tayabas, Sorsogon), Catanduanes, *Elmer* 7379, 16366, *Whitford* 782, *F. B.* 20166 *Aguilar*, 8507 *Curran*, *B. S.* 20033 *McGregor*, 6542 *Robinson*. In forests at low and medium altitudes; also planted. A species remarkable for its enormous syncarps. Endemic.

Local names: Bankoang (Tag.); ilohan (Tag.); kalagímai (Tag.); karagómoi (Bik.); karagúmoi (Bik., Bis., Tag.); pandán (Tag.); pandan-toóo (Tag.).

**PANDANUS SUBACAULIS** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 263.

Catanduanes, *B. S.* 30489 *Ramos*. In forests at low or medium altitudes. Endemic.

**PANDANUS TECTORIUS** Solander in Parkins. Journ. Voy. H. M. S.

Endeav. (1773) 46; Warb. in Engl. Pflanzenreich 3 (1900) 46; Perk. Frag. Fl. Philip. (1904) 50; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 25, 3 (1908) Bot. 394, Fl. Manila (1912) 66, Sp. Blancoanae (1918) 55; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 61, Leaf. Philip. Bot. 3 (1911) 118, *Webbia* 4<sup>1</sup> (1913) 33.

*Pandanus odoratissimus* Linn. f. Suppl. (1781) 424; Vidal Sinopsis Atlas (1883) 42, t. 95, f. A; F.-Vill. Novis. App. (1882) 284.

*Pandanus malatensis* Blanco Fl. Filip. (1837) 777, ed. 2 (1845) 535, ed. 3, 3 (1879) 181; Warb. in Engl. Pflanzenreich 3 (1900) 84; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 89; ? Martelli in Philip. Journ. Sci. 3 (1908) Bot. 70, *Webbia* 4<sup>1</sup> (1913) 22, t. 26, f. 22.

*Pandanus spiralis* Blanco Fl. Filip. (1837) 777, ed. 2 (1845) 535, ed. 3, 3 (1879) 181; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 89, non R. Br.

*Pandanus blancoi* Kunth Enum. 3 (1841) 583.

*Pandanus tectorius* Soland. var. *surigaensis* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 64, *Webbia* 4<sup>1</sup> (1913) 34, t. 8, f. 3-7 (*surin-gaensis*).

*Pandanus tectorius* Soland. var. *sinensis* Warb. in Engl. Pflanzenreich 3 (1900) 48; Martelli in Philip. Journ. Sci. 3 (1908) Bot. 62, *Webbia* 4<sup>1</sup> (1913) 34, t. 9, f. 2-10.

*Pandanus tectorius* Soland. var. *spiralis* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 62, *Webbia* 4<sup>1</sup> (1913) 34, t. 9, f. 1-7, t. 12, f. 8.

*Pandanus tectorius* Soland. var. *douglasii* Martelli forma *philippinensis* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 63, *Webbia* 4<sup>1</sup> (1913) 33, t. 8, f. 8-10.

*Pandanus vidalii* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 65, *Webbia* 4<sup>1</sup> (1913) 36, p. p., quoad syn. Vidal.

*Pandanus coronatus* Martelli in Philip. Journ. Sci. 3 (1908) Bot. 65 (incl. f. *minor*), *Webbia* 4<sup>1</sup> (1913) 11, t. 4, f. 8-13.

Along the seashore throughout the Philippines, abundant and forming characteristic thickets back of the beach. Indo-Malayan and Polynesian regions generally, extending to southern China and tropical Australia.

Local names: Bároi (Bik.); laha (Sul.); ohañgó (Iv.); padán (Iv.); pandán (Tag., P. Bis., C. Bis., Sub.); pandan-dágat (Tag.); pangdán (Ilk., Pang.); panglán (Ilk., Sbl.); panhakad (Bis.); uhañgó (Iv.).

**PANDANUS TENUIPEDUNCULATUS** Merr. in Philip. Journ. Sci. 17 (1920) 243.

Siargao, Mindanao (Surigao), *B. S. 34739, 34842 Ramos & Pascasio*. In open forests at low altitudes. Endemic.

**PANDANUS ZAMBOANGENSIS** Martelli in Webbia 4<sup>1</sup> (1913) 37, 4<sup>2</sup> (1914) 426, t. 42, f. 7-10.

Mindanao (Zamboanga, Bukidnon, Lanao), *Merrill 8051, 8065, F. B. 9494 Whitford & Hutchinson, B. S. 15696 Fénix, 37428, 37429 Ramos & Edaño*. In thickets and secondary forests at low altitudes. Endemic.

Local names: Balíu (Sub.); baríu (Sul.); pandán (Sul.).

#### DOUBTFUL AND EXCLUDED SPECIES

**PANDANUS INERMIS** Blanco Fl. Filip. ed. 2 (1845) 537, ed. 3, 3 (1879) 184, non Roxb.

This is unquestionably a *Pleomele* (*Dracaena*) and is referable to *Pleomele angustifolia* (Roxb.) N. E. Br.

**PANDANUS KAFU** Martelli in Webbia 4<sup>1</sup> (1913) 19, t. 19, f. 1-3.

"Is. Philippine" is an error, the type being from Guam, Marianne Islands.

**PANDANUS PORTEANUS** Lescuy. ex Hérincq Hort. Franc. 1 (1866) 16; Warb. in Engl. Pflanzenreich 3 (1900) 90; Martelli in Webbia 4<sup>1</sup> (1913) 28.

A *nomen nudum* based on a cultivated plant of Philippine origin.

*Pandanus bagea* Miq., *P. caricosus* Rumph., *P. ceramicus* Rumph., *P. drupaceus* Thouars., *P. elegans* Thouars., *P. furcatus* Roxb., *P. humilis* Rumph., *P. latifolius* Rumph., *P. littoralis* Jungh., *P. montanus* Miq., *P. moschatus* Rumph., *P. repens* Rumph., *P. spurius* Rumph., and *P. sylvestris* Rumph.

The above fourteen species, several of them of entirely doubtful status, were credited to the Philippines by Naves, Novis. App. (1882) 284, 285. With the exception of *Pandanus caricosus* Rumph. = *Scirpiodendron ghaeri* (Gaertn.) Merr. none of them are known to occur in the Philippines.

### 3. SARARANGA Hemsley

**SARARANGA PHILIPPINENSIS** Merr. in Govt. Lab. Publ. (Philip.) 29 (1905) 5; Elm. Leaf. Philip. Bot. 3 (1911) 1110.

Luzon (Tayabas, Camarines, Albay, Sorsogon), Sibuyan, Samar, Dinagat, Mindanao (Surigao, Bukidnon), *Merrill 5230, Whitford 749, Elmer 17206, B. S. 6401 Robinson, 35181, 34680 Ramos & Pascasio, 33710 Ramos & Edaño, F. B. 26530 Rolá*. Chiefly in secondary forests, sea level to an altitude of 750 m. Endemic.

A genus represented by one other known species in the Solomon Islands.

Local names: Bagáas (P. Bis.) balúi (Buk.); balur (Buk.); nagsalalusá (Bik.).

### POTAMOGETONACEAE

#### 1. POTAMOGETON Linnaeus

**POTAMOGETON ANGUSTIFOLIUS** Berchtold & Presl Rostlinar 2 (1821) 19; A. Benn. in Philip. Journ. Sci. 9 (1914) Bot. 340.



Luzon (Benguet), *Loher 1597*. In shallow water, altitude about 1,400 m. Europe, Asia, and North America.

**POTAMOGETON MAACKIANUS** A. Benn. in Journ. Bot. 42 (1904) 74, Philip. Journ. Sci. 9 (1914) Bot. 342.

Mindanao (Lanao), *Clemens 216*, In shallow water of Lake Lanao, altitude about 650 m. Northern Asia, Korea, China, Japan, and Formosa.

**POTAMOGETON MALAINUS** Miq. Ill. Fl. Archtp. Ind. (1871) 46 (*malaina*); Aschers. & Graebn. in Engl. Pflanzenreich 31 (1907) 83; A. Benn. in Philip. Journ. Sci. 9 (1914) Bot. 341; Merr. Fl. Manila (1912) 67.

*Potamogeton mucronatus* Presl Epim. (1851) 245; Walp. Ann. 3 (1852-53) 504, non Schrad.

*Potamogeton lucens* Naves Novis. App. (1882) 297; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 282, non Linn.

Luzon (Rizal, Laguna, Sorsogon), Mindanao (Lanao), *Merrill 5107*, *Williams 2041*, *Elmer 18113*, *B. S. 22797* *McGregor, 11892* *Robinson & Ramos*. In shallow water of lakes at low and medium altitudes. India to Korea and Japan southward to Borneo, Java, and Celebes. The Philippine form has been somewhat confused with *Potamogeton gaudichaudii* C. & S. which is a form of *P. lucens* Linn.

Local name: Damúng-kulút (Tag.).

**POTAMOGETON PERVERSUS** A. Benn. in Philip. Journ. Sci. 9 (1914) Bot. 343.

Luzon (Bontoc), *Vanoverbergh 249, 2684*. In shallow slow streams and in rice paddies, altitudes about 1,300 m. India to China, Manchuria, Korea, and Formosa.

Local name: fbas (Bon.).

**POTAMOGETON PHILIPPINENSIS** A. Benn. in Philip. Journ. Sci. 9 (1914) Bot. 342, hybr. *P. malainus* × *P. maackianus*.

*Potamogeton nipponicus* Ostenfeld in Philip. Journ. Sci. 9 (1914) Bot. 260, non Makino.

Mindanao (Lanao), *Clemens*. In shallow water of Lake Lanao, altitude about 650 m. Endemic.

**POTAMOGETON PUSILLUS** Linn. Sp. Pl. (1753) 127; A. Benn. in Philip. Journ. Sci. 9 (1914) Bot. 342.

Luzon (Benguet), *Elmer 5951*. In shallow water, altitude about 1,300 m. Widely distributed in Europe, Asia, Africa, and North America.

**POTAMOGETON TEPPERI** A. Benn. in Journ. Bot. 25 (1887) 178; Philip. Journ. Sci. 9 (1914) Bot. 340.

Luzon (Benguet), *Merrill Phil. Pl. 1722*, *Elmer 5952*, *Topping 45*, *B. S. 14110* *Robinson*. In shallow water, altitude about 1,300 m. Yunnan and Australia.

#### EXCLUDED SPECIES

**POTAMOGETON CRISPUS** Linn.; Naves Novis. App. (1882) 297.

**POTAMOGETON NATANS** Linn.; Naves l. c.

**POTAMOGETON JAVANICUS** Linn.; Naves l. c.

## 2. RUPPIA Linnaeus

**RUPPIA MARITIMA** Linn. Sp. Pl. (1753) 127; Naves Novis. App. (1882) 297; Aschers. & Graebn. in Engl. Pflanzenreich 31 (1907) 142; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 228, Fl. Manila (1912) 68.

Luzon (Manila Bay), Panay, *Merrill Phil. Pl. 799, Loher 1594, B. S. 20660 Serviñas*. In shallow brackish water. In salt or brackish water in most warm and tropical regions; the Philippine form is referable to the var. *rostrata* Agardh. (*R. maritima* Linn. subsp. *rostellata* Koch).

Local names: Buñgút-búñgút (P. Bis.); damong-pálai (Tag.).

## 3. CYMODOCEA Koenig

**CYMODOCEA ROTUNDATA** (Ehrb. & Hempr.) Aschers. & Schweinf. in Sitzber. Ges. Naturf. Freunde Berlin (1870) 84; Graebner in Engl. Pflanzenreich 31 (1907) 147; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 2.

*Phucagrostis rotundata* Ehrb. & Hempr. ex Aschers. in Boiss. Fl. Orient. 5 (1884) 21.

Palawan, Cavilli, Mindanao, *Merrill 7180a, Phil. Pl. 1264, B. S. 15559 Fénix*. On sand about coral reefs in shallow water. In shallow seas from the Red Sea to Australia.

**CYMODOCEA SERRULATA** (R. Br.) Aschers. & Magnus in Sitzber. Ges. Naturf. Freunde Berlin (1870) 84; Aschers. & Graebn. in Engl. Pflanzenreich 31 (1907) 147.

*Caulinia serrulata* R. Br. Prodr. (1810) 339.

Mindanao, fide *Ascherson & Graebner*, l. c. In shallow seas from the Red Sea and western Africa to Australia.

*Cymodocea aequorea* Koenig = *C. nodosa* (Ucria) Aschers.! was erroneously credited to the Philippines by Naves Novis. App. (1882) 297.

## 4. DIPLANTHERA Thouars

**DIPLANTHERA UNINERVIS** (Forst.) Aschers. in Engl. & Prantl Nat. Pflanzenfam. 2<sup>1</sup> (1897) 37; Graebn. in Engl. Pflanzenreich 31 (1907) 152; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 3.

*Zostera uninervis* Forsk. Fl. Aeg.-Arab. (1775) 159.

Luzon (Manila Bay), Palawan, Cavilli, *Merrill 7179, 9223, Phil. Pl. 1263, Shaw 1148*. In sand about reefs. In shallow seas from the Red Sea and western Africa to Australia and Polynesia.

The family Aponogetonaceae has no known representatives in the Philippines; *Aponogeton monostachyus* Linn. f. and *Ouvirandra fenestralis* Poir., credited to the Archipelago by Naves, Novis. App. (1882) 298, 299, must be excluded.

## NAJADACEAE

## 1. NAJAS Linnaeus

**NAJAS GRAMINEA** Delile Fl. Aegypt. (1812) 282, t. 50, f. 3; Naves Novis. App. (1882) 298; Rendle in Trans. Linn. Soc. Bot. 5 (1899) 424, 443, t. 32, f. 192-201, Engl. Pflanzenreich 7 (1901) 18, f. 5, Q V; Merr. Fl. Manila (1912) 68.

Northern Luzon to Mindanao. In shallow stagnant fresh water, at low and medium altitudes; often common. Northern Africa to Japan southward to New Caledonia and Australia.

Local names: Aragán (Ilk.); bangbáñgi (Bon.); lábui (Ig.).

**NAJAS PALUSTRIS** Blanco Fl. Filip. (1837) 660; Rendle in Trans. Linn. Soc. Bot. 5 (1899) 427, Engl. Pflanzenreich 7 (1901) 18; Merr. Sp. Blancoanae (1918) 57.

*Najas lobata* Blanco Fl. Filip. ed. 2 (1845) 459, ed. 3, 3 (1879) 65.

*Najas foveolata* A. Br. ex Magnus Beitr. (1870) 7; Rendle in Trans. Linn. Soc. Bot. 5 (1899) 416, t. 31, f. 139-144, Engl. Pflanzenreich 7 (1901) 15.

*Najas tenuifolia* Naves Novis. App. (1880) 297, non R. Br.

Luzon (Union, Rizal, Laguna, Tayabas), *Merrill 5109*, *Sp. Blancoanae 519*, *Elmer 14420*, *Whitford 837*, *B. S. 24079 Ramos*. In shallow stagnant fresh water at low altitudes. India to Japan southward to Timor.

Local names: Aragán-tamnái (Ilk.); rigmáu (Tag.).

#### DOUBTFUL AND EXCLUDED SPECIES

**NAJAS FALCICULATA** A. Br. in Journ. Bot. 2 (1864) 278, f. 4; Rendle in Trans. Linn. Soc. Bot. 5 (1899) 417, t. 32, f. 145-151, Engl. Pflanzenreich 7 (1901) 15.

Manila, *Mertens* fide A. Braun l. c. The type is an Indian specimen and I strongly suspect that the Philippine specimen referred here by A. Braun is *Najas palustris* Blanco.

**NAJAS INDICA** Cham.; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 425.

The record was based on a specimen from Laguna de Bay, collected by Meyen. The species is known only from India.

#### ALISMACEAE

##### 1. SAGITTARIA Linnaeus

**SAGITTARIA SAGITTAEFOLIA** Linn. Sp. Pl. (1753) 993; Naves Novis. App. (1882) 298; Micheli in DC. Monog. Phan. 3 (1881) 66; Buchenau in Engl. Pflanzenreich 16 (1903) 46; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 421, Sp. Blancoanae (1918) 58.

*Alisma sagittifolium* Llanos Frag. Pl. Filip. (1851) 69; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 51, non Willd.

Luzon (Pangasinan, Nueva Ecija, Tayabas, Camarines, Albay, Sorsogon), Catanduanes, Samar, Leyte, Mindanao (Lanao), *Merrill Phil. Pl. 982*, *Elmer 14339*, *Wenzel 1228*, *1521*, *Clemens 888*, *B. S. 30161 Ramos*, *10703 McGregor*. In fresh-water swamps, rice paddies, etc., at low and medium altitudes. Europe through Asia to Japan, southward to Java.

Local names: Gauai-gáuai (S. L. Bis.); tikóg (Bik.).

#### EXCLUDED GENERA

**LIMNOPHYTON OBSTUSIFOLIUM** Miq.; Naves Novis. App. (1882) 298.

**LOPHIOPHYTON GUYANENSIS** Micheli; Naves Novis. App. (1882) 298.

#### HYDROCHARITACEAE

##### 1. HALOPHILA Thouars

**HALOPHILA BECCARII** Aschers. in Nuov. Giorn. Bot. Ital. 3 (1871) 302; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 228, Fl. Manila (1912) 70.

Luzon (Rizal), *Merrill 8045*. In brackish fish ponds. Borneo.

**HALOPHILA OVALIS** (R. Br.) Hook. f. Fl. Tasm. 2 (1860) 45; Naves Novis. App. (1882) 298; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 2.

*Caulinia ovalis* R. Br. Prodr. (1810) 339.

Palawan, Bancoran, Biliran, Merrill 7155, *Phil. Pl. 1223*, B. S. 18755 McGregor. In sand on coral reefs. On sandy bottoms of shallow seas. India to Australia and Polynesia.

**HALOPHILA OVATA** Gaudich. Bot. Freycinet's Voy. (1826) 430, t. 40, f. 1; Ostenfeld in Philip. Journ. Sci. 4 (1909) Bot. 68; Merr. Fl. Manila (1912) 70.

Luzon (Manila Bay), Merrill 4112, *Phil. Pl. 1098*, B. S. 9899 Robinson. In shallow water on rather muddy bottom. Marianne Islands.

**HALOPHILA SPINULOSA** (R. Br.) Aschers. in Neumayer Anleit. Wissenschaft. Beob. (1875) 368, ed. 2 (1888) 396; Benth. Fl. Austral. 7 (1878) 183; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 2.

*Caulinia spinulosa* R. Br. Prodr. (1810) 339.

Luzon (Camarines), Mindanao, F. B. 12275 Curran. In shallow seas on reefs. In shallow seas, eastern and northern coasts of Australia; Java, and probably in other parts of Malaya.

## 2. HYDRILLA L. C. Richard

**HYDRILLA VERTICILLATA** (Roxb.) Royle Ill. Bot. Himal. (1839) t. 376; Presl Bemerk. (1842) 112; Casp. in Pringsh. Bot. Jahrb. 1 (1858) 494; Naves Novis. App. (1880) 214; Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 96; Merr. Fl. Manila (1912) 69, Sp. Blancoanae (1918) 58.

*Serpicula verticillata* Linn. f. Suppl. (1781) 416; Roxb. Pl. Coromandel 2 (1798) t. 164.

*Udora verticillata* Spreng. Syst. 1 (1825) 170; Llanos Frag. Pl. Filip. (1851) 101; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 78.

Northern Luzon to Mindanao, in most or all islands and provinces. In shallow fresh water at low and medium altitudes; often abundant. Central Europe to Asia southward to Australia.

Local names: Gínga (Ibn.); ináta (Tag.); lomotlomótan (Tag.); lúsai (Mag.).

## 3. VALLISNERIA Linnaeus

**VALLISNERIA GIGANTEA** Graebn. in Engl. Bot. Jahrb. 49 (1912) 68; Merr. Fl. Manila (1912) 69; Hallier f. Nov. Guinea 8 (1913) 915.

*Vallisneria spiralis* Blanco Fl. Filip. (1837) 781, ed. 2 (1845) 538, ed. 3, 3 (1879) 187; Naves Novis. App. (1880) 214; Vidal Phan. Cuming. Philip. (1885) 148, non Linn.

Luzon (Pangasinan, Bulacan, Nueva Ecija, Laguna, Rizal, Camarines). In lakes and slow streams at low altitudes. Enormously variable in size, apparently depending largely on the depth of the water in which it grows. New Guinea, New South Wales.

Local names: Baláiba (Ilk.); lanténg (Ibn.); mariu-báriu (Bik.); paláipa (Ilk.) sabotán-buáia (Tag.); sintas-sintásan (Tag., from Sp. cinta = ribbon).

## 4. BLYXA Thouars

**BLYXA OCTANDRA** (Roxb.) Planch. ex Thwaites Enum. Pl. Ceyl. (1859-64) 332; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 73.

*Vallisneria octandra* Roxb. Pl. Coromand. 2 (1798) 34, t. 165.

*Blyxa roxburghii* Rich. in Mém. Inst. France (1811) 77, t. 5; Naves Novis. App. (1880) 214.

Luzon (Bontoc), Palawan, *Merrill Phil. Pl. 1244, Vanoverbergh 664*. In shallow lakes, rice paddies, etc., from sea level to 1,250 m altitude; apparently very local. Tropical Asia to Malaya, Australia, and the Caroline Islands.

Local name: Pangpangdán (Bon.).

## 5. ENHALUS L. C. Richard

**ENHALUS ACOROIDES** (Linn. f.) L. C. Rich. ex Steud. Nomencl. ed. 2, 1 (1840) 554; Chatin Anat. Pl. Aquat. (1862) 15, t. 6; Merr. Interpret. Herb. Amb. (1917) 84, Sp. Blancoanae (1918) 59.

*Stratiotes acoroides* Linn. f. Suppl. (1781) 268.

*Enhalus koenigii* L. C. Rich. in Mém. Inst. France 2 (1811) 78; Naves Novis. App. (1880) 214.

*Vallisneria sphaerocarpa* Blanco Fl. Filip. (1837) 780, ed. 2 (1845) 538, ed. 3, 3 (1879) 186.

Northern Luzon to Palawan and Mindanao, *Merrill 8070, Sp. Blancoanae 383, B. S. 18723 McGregor, 18001, 15558 Fénix*. In shallow water of sheltered bays along the seashore; of general occurrence where favorable habitats are found. Ceylon through Malaya to tropical Australia.

Local names: Iaaí (Tag.); lamón (Tag., Bik.); mariu-báriu (Bik.); paláipat-baibái (Ilk.); bariiau-bariiau (Kuy.).

## 6. THALASSIA Banks

**THALASSIA HEMPRICHII** (Ehrenb.) Aschers. in Engl. & Prantl Nat. Pflanzenfam. 2<sup>1</sup> (1889) 254; Merr. Fl. Manila (1912) 71, Philip. Journ. Sci. 10 (1915) Bot. 2.

*Schizotheca hemprichii* Ehrenb. in App. Akad. Berl. 1 (1832) 429.

Luzon (Manila Bay), Alabat, Palawan, Cavilli. In tide pools, about coral reefs, etc., probably of general Philippine distribution. In shallow seas, sandy bottom, India to Polynesia.

## 7. BOOTTIA Wallich

**BOOTTIA RENIFOLIA** Merr. in Philip. Journ. Sci. 4 (1909) Bot. 247.

Luzon (Camarines), Mindanao (Cotabato), *F. B. 12274 Curran, B. S. 11593 Robinson*. In swamps and slow streams at low altitudes. Endemic.

Local names: Butid-na-ubal (Mag.); gabi-gábi (Bik.).

*Boottia cordata* Wall., reported from the Philippines by Naves, Novis. App. (1880) 213, was unquestionably admitted on the basis of an erroneous identification.

## 8. OTTELIA Persoon

**OTTELIA ALISMOIDES** (Linn.) Pers. Syn. 1 (1805) 400; Blanco Fl. Filip. (1837) 461, ed. 2 (1845) 321, ed. 3, 2 (1878) 230; Naves Novis. App. (1880) 213; Vidal Phan. Cuming. Philip. (1885) 148; Merr. Fl. Manila (1912) 70, Sp. Blancoanae (1918) 59.

*Stratiotes alismoides* Linn. Sp. Pl. (1753) 535.

- Damasonium lancifolium* Presl Rel. Haenk. 1 (1827) 89.  
*Ottelia ensiformis* Blanco Fl. Filip. (1837) 460, ed. 2 (1845) 320, ed. 3, 2 (1878) 229; Naves Novis. App. (1880) 214.  
*Ottelia philippinensis* Ostenfeld in Philip. Journ. Sci. 9 (1914) Bot. 259.

Northern Luzon to Mindanao, in most islands and provinces. In shallow fresh water of lakes, pools, and slow streams. India through Malaya to tropical Australia.

A species presenting great variation in its vegetative characters, which largely depends on the depth of the water in which it grows, whether stagnant or not, and whether the plants are crowded or scattered. Two additional synonyms are *Ottelia javanica* Miq. and *O. ovalifolia* L. C. Rich., credited to the Philippines by Naves, Novis. App. (1880) 214, as distinct species.

Local names: Damong-ilálim (Tag.); espáda (Sp.); kalabúa (Tag.); lantíng (Bik.); lantén-sápa (Tag.); maraduyúk (Ib.); maradúyug (It.); tarabáng (Ilk.).

#### EXCLUDED GENERA

- HYDROCHARIS MORSUS-RANAE Linn.; Naves Novis. App. (1880) 213.  
 NECHAMANDRA ROXBURHII Planch.; Naves Novis. App. (1880) 215 = *Lagarosiphon roxburghii* Planch.

#### TRIURIDACEAE

##### 1. SCIAPHILA Blume

- SCIAPHILA CLEMENSAE Hemsl. in Hook. Ic. IV 9 (1907) t. 2850, f. 7-14; Fedde Repert. 5 (1908) 265.

Mindanao (Lanao), *Clemens 775*. In damp primary forests at low altitudes. Borneo.

This species seems to be closely allied to *S. tenella* Blume. Dr. J. J. Smith states that *B. S. 6347 Robinson, F. B. 9350, 9449 Whitford & Hutchinson*, and *Clemens 775 p. p.* are very similar to Blume's species.

- SCIAPHILA MACULATA Miers in Trans. Linn. Soc. Bot. 21 (1852) 48, t. 6, f. 19-36; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 282.

Luzon (Bataan), Mindanao (Butuan, Zamboanga), *F. B. 5537 Curran, 9126 Whitford & Hutchinson, Weber 1462*. In damp primary forests at low and medium altitudes. Endemic.

In addition to these two species what may be *Sciaphila tenella* Blume occurs in our collections, as noted above, as well as fragmentary material representing two other distinct species.

#### GRAMINEAE

##### 1. ZEA Linnaeus

- ZEA MAYS Linn. Sp. Pl. (1753) 971; Blanco Fl. Filip. (1837) 686, ed. 2 (1845) 476, ed. 3, 3 (1879) 90, t. 279; F.-Vill. Novis. App. (1882) 314; Usteri Beitr. Ken. Philip. Veg. (1905) 133; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 320, Fl. Manila (1912) 74, Sp. Blancoanae (1918) 59.

Extensively cultivated in most parts of the Philippines, in some islands and provinces a staple article of food. Introduced from America.

Local names: Gahilang (If.); igi (Bon.); maís (Sp.); maít (It.); mañgi (Ibn.); tigi (Bon.).

Teosinte, *Euchlaena luxurians* Schrad., a native of Mexico, was introduced into the Philippines in the late years of the Spanish occupation and again in the early years of the American occupation and was cultivated experimentally for forage purposes. It has not persisted in cultivation.

## 2. POLYTOCA R. Brown

**POLYTOCA HETEROCLITA** (Roxb.) Koord. in Exksfl. Java 1 (1911) 99; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 288.

*Coix heteroclita* Roxb. Fl. Ind. ed. 2, 3 (1832) 572.

*Polytoxa bracteata* R. Br. in Benn. Pl. Jav. Rar. (1838) 20, t. 5.

Busuanga, Mindanao (Bukidnon), *Baker 3616, B. S. 39226, 38484, 41267 Ramos & Edaño*. In open grasslands at medium altitudes. India to southern China and Java.

## 3. CHIONACHNE R. Brown

**CHIONACHNE BIAURITA** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 263; Merr. op. cit. 320.

Luzon (Bontoc, Benguet), *Merrill 4282, Vanoverbergh 934*. On fresh talus slopes, untilled soil, etc., altitude about 1,200 m. Endemic.

### EXCLUDED SPECIES

**CHIONACHNE BARBATA** R. Br.; F.-Vill. Novis. App. (1882) 314.

## 4. COIX Linnaeus

**COIX LACHRYMA-JOBI** Linn. Sp. Pl. (1753) 972; Pilg. ex Perk. Frag. Fl. Philip. (1904) 137; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 320, 3 (1908) Bot. 394, 5 (1910) Bot. 325, Fl. Manila (1912) 75, Sp. Blancoanae (1918) 59; Usteri Beitr. Ken. Veg. Philip. (1905) 132 (*lachrymae-jovis*).

*Coix lachryma* Linn. Syst. ed. 10 (1759) 1261; Blanco Fl. Filip. (1837) 688, ed. 2 (1845) 478, ed. 3, 3 (1879) 92, t. 188; Miq. Fl. Ind. Bat. 3 (1857) 476; F.-Vill. Novis. App. (1882) 314; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 288.

*Coix agrestis* Lour. Fl. Cochinch. (1790) 551; F.-Vill. Novis. App. (1882) 314.

*Coix exaltata* Jacq. ex Spreng. Syst. 1 (1825) 228; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97.

Throughout the Philippines in the settled areas at low and medium altitudes, in most or all islands and provinces; common. A native of the Old World, now pantropic.

Local names: Abúkai (Iv.); adlái (Bis.); agágai (Iv.); agdá (Ig.); aglái (C. Bis.); alimúdias (P. Bis.); apági (Ig.); atákai (Ilk., Bon.); balantákan (Pamp.); barubaióko (Bik.); bintíkai (Bik.); bitógan (Bag.); dalái (Sub.); damáu (C. Bis.); glias (Sub.); kalabúgau (Buk.); kambot (Ting.); katáyan (Ig.); katigbí (C. Bis.); kibàoung (If.); koldásan (Bik.); kudlásan (Tag.); lamúdias (P. Bis.); liás (Sub.); paías (P. Bis., Bag.); paliás (P. Bis.); pintáka (C. Bis.); tidbí (S. L. Bis.); tigbí (Bik., Tag.); tigbíkai (Bik.); tiguas (Sul.); tikaian (Bon.).

Var. **MA-YUEN** (Roman.) Stapf in Hook. f. Fl. Brit. Ind. 7 (1897) 100; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 321.

*Coix ma-yuen* Roman. in Bull. Soc. Acclim. Paris III 8 (1881) 442.

Luzon (Rizal), Mindanao (Zamboanga), Jolo, *Merrill 5326*, *F. B. 3394* *Ahern's collector*. Occasionally cultivated for its edible grain or for use in making fermented drinks. Tropical Asia.

Local name: Ilás (Tag.).

#### 5. DIMERIA R. Brown

**DIMERIA CILIATA** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 262.

Palawan, *Merrill 9320*. In low open grasslands just above sea level. Endemic.

**DIMERIA ORNITHOPODA** Trin. Fund. Agrost. (1820) 167, *t. 14*, var.

**TENERA** (Trin.) Hack. in DC. Monog. Phan. 6 (1889) 81; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 321, Fl. Manila (1912) 75.

*Dimeria tenera* Trin. in Mém. Acad. Sci. St. Pétersb. VI 2 (1833) 335; F.-Vill. Novis. App. (1882) 315.

Luzon (Bontoc, Benguet, Pangasinan, Zambales, Bulacan, Rizal, Camarines), Mindoro, Mindanao (Davao). In open grasslands, on rice-paddy banks, etc., sea level to an altitude of 1,500 m, locally abundant. India to Japan and Malaya.

*Haplachne pilosissima* Presl and *Andropogon chloridiformis* Gaudich. are included in the *Novissima* Appendix by F.-Villar as distinct species. Both are synonyms of *Dimeria chloridiformis* K. Schum. & Lauterb. (*D. pilosissima* Trin.) a very characteristic species known only from the Marianne Islands.

#### 6. IMPERATA Cyrillo

**IMPERATA CYLINDRICA** (Linn.) Beauv. Agrost. (1912) expl. *pl. 5, t. 5, f. 1*, var. **KOENIGII** (Retz.) Benth. ex Pilger in Perk. Frag. Fl. Philip. (1904) 137; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 322, 3 (1908) Bot. 395, 5 (1910) Bot. 325, Fl. Manila (1912) 76, Sp. Blancoanae (1918) 60.

*Saccharum koenigii* Retz. Obs. 5 (1789) 16.

*Imperata koenigii* Beauv. Agrost. (1812) 165; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 100.

*Imperata arundinacea* Cyr. Pl. Rar. Ic. 2 (1792) 26, *t. 11*; Miq. Fl. Ind. Bat. 3 (1857) 514; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 289; F.-Vill. Novis. App. (1882) 316.

*Imperata arundinacea* Cyr. var. *koenigii* Benth.; Hack. in DC. Monog. Phan. 6 (1889) 94; Usteri Beitr. Ken. Phil. Veg. (1905) 132.

*Saccharum spicatum* Presl Rel. Haenk. 1 (1828) 346; Kunth Enum. 1 (1833) 476; Miq. Fl. Ind. Bat. 3 (1857) 513; F.-Vill. Novis. App. (1882) 317; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 52, *t. 1*.

Throughout the Philippines, on open slopes, often gregariously occupying enormous areas, forming characteristic *kogonales*, the name of these areas being taken from its almost universal local name *kogon*. It ascends to 2,300 m altitude. Tropical Asia and Africa to Australia and Polynesia.

Local names: Buchid (Iv.); bulum (If.); gáon (Ig.); gógon (Bik.); góon (Bon.); ilib (Pamp.); kógon (Ilk., Tag., Bik.); panáu (Ilk.); parrang (Sul.).



**IMPERATA EXALTATA** Brongn. Voy. Coq. Bot. (1829) 101, excl. syn. Roxb.; Hack. in DC. Monog. Phan. 6 (1889) 98; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 322; Pilg. in Perk. Frag. Fl. Philip. (1904) 137.

*Saccharum confertum* Presl Rel. Haenk. 1 (1828) 346; Kunth Enum. 1 (1833) 476; F.-Vill. Novis. App. (1882) 317.

*Imperata ramosa* Anders. in Oefvers. Vet. Akad. Forhandl. Stockh. (1855) 158, Rolfe in Journ. Bot. 23 (1885) 216; Vid. Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 289.

*Saccharum alopecurus* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 100; Walp. Ann. 3 (1853) 792; Miq. Fl. Ind. Bat. 3 (1857) 513; F.-Vill. Novis. App. (1882) 317.

*Saccharum negrosense* Steud. Syn. Pl. Glum. 1 (1854) 407.

Central Luzon to Palawan and Mindanao. In habitats similar to the preceding species, but much less common. Java to the Moluccas; a variety in tropical America as Hackel interprets it.

Subsp. **MERRILLII** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 264; Merr. op. cit. 322.

Luzon (Ifugao, Benguet), Negros, *Merrill 4813, Phil. Pl. 582, B. S. 2768 Mearns, B. S. 19627 McGregor*. On exposed ridges, altitude 1,500 to 2,250 m. Endemic.

Local names: Gógon (Bik.); kógon (Tag., Bis., Sul.); padang-lubuk (Sul.); paraugtau (Sub.).

#### 7. MISCANTHUS Andersson

**MISCANTHUS DEPAUPERATUS** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 170.

Negros, *Merrill Phil. Pl. 583*. In open places on the crater of Canlaon Volcano, altitude 1,800 to 2,000 m. Endemic.

**MISCANTHUS JAPONICUS** (Thunb.) Anders. in Oefv. Vet. Akad. Forhandl. Stockh. (1855) 166; Hack. in DC. Monog. Phan. 6 (1889) 107; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 322, 3 (1908) Bot. 395.

*Saccharum japonicum* Thunb. in Trans. Linn. Soc. 2 (1794) 328.

*Saccharum praegrande* Steud. Syn. Pl. Glum. 1 (1854) 408.

*Miscanthus luzoniensis* Anders. in Oefv. Vet. Akad. Forhandl. Stockh. (1855) 166; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 289.

*Saccharum densum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 100; Walp. Ann. 3 (1853) 792.

Babuyan Islands to Mindanao, in most islands and provinces. In thickets, on slopes, and along streams at low and medium altitudes, ascending to 1,200 m. Japan to the Moluccas and Polynesia.

Local names: Búyau (If.); loni (Bag.); tanlák (Tag.); tubás (Tag.); rúno (Pang., Ig., Ilk.); víau (Iv.).

**MISCANTHUS SINENSIS** Anders. in Oefv. Vet. Akad. Forhandl. Stockh. (1855) 166; Hack. in DC. Monog. Phan. 6 (1889) 105; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 323, 2 (1907) Bot. 260, 3 (1908) Bot. 395, 5 (1910) Bot. 325.

*Eulalia japonica* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 333; Miq. Fl. Ind. Bat. 3 (1857) 518; F.-Vill. Novis. App. (1882) 316, non *Miscanthus japonicus* Anders.

*Miscanthus japonicus* Pilg. in Perk. Frag. Fl. Philip. (1904) 137, non Anders.

Batan Islands, Luzon (Bontoc, Benguet, Lepanto, Pampanga, Tayabas, Bataan, Zambales), Mindoro, Negros. In open places, on slopes, and in ravines, altitude 800 to 2,700 m, often abundant. Japan to southern China and Celebes.

Local names: Bigáho (Bik.); bígau (Bik.); bídu (Ig.); bílau (Ig., If.); gáho (Bik.); gísa (Bik.); lólo (Bon.); padéd (Ig.); pao (Bon.); rúno (Ilk.); víau (Iv.).

### 8. SACCHARUM Linnaeus

**SACCHARUM ARUNDINACEUM** Retz. Obs. 6 (1791) 14; Hack. in DC.

Monog. Phan. 6 (1889) 117; Hook. f. Fl. Brit. Ind. 7 (1897) 119.

*Erianthus* sp. Pilger in Perk. Frag. Fl. Philip. (1904) 137.

Luzon (Bontoc, Nueva Vizcaya, Tayabas), Mindoro, Samar, Mindanao, Merrill 1794, 5448, Clemens 809, Williams 2625, B. S. 13279 Ramos, 14207 McGregor, 20906 Escritor. Along river banks at low and medium altitudes. India to southern China.

Local names: Bagi<sup>1</sup>-unás (Ilk.); bahí-onás (Isn.); gatbó (Tag.); lakbó (Tag.); tanig (Bon.); zaigbau (Sub.).

**SACCHARUM OFFICINARUM** Linn. Sp. Pl. (1753) 54; Blanco Fl. Filip.

(1837) 42; ed. 2 (1845) 29, ed. 3, 1 (1877) 55, t. 18; F.-Vill. Novis.

App. (1882) 317; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 323, Fl. Manila (1912) 78, Sp. Blancoanae (1918) 60.

*Saccharum violaceum* F.-Vill. Novis. App. (1882) 317, non Tussac.

Cultivated throughout the Philippines, in some islands and provinces very extensively, being one of the major crops of the Philippines. Not a native of the Archipelago. Sugar cane.

Local names: Agbó (Ibn.); caña dulce (Sp.); tubó (Tag., Bik.); tubu (Sul.); uná (Ibn.); unás (Ilk.); unát (It.).

**SACCHARUM SPONTANEUM** Linn. Mant. 2 (1771) 183 subsp. **INDICUM**

Hack. in DC. Monog. Phan. 6 (1889) 117; Pilger in Perk. Frag. Fl.

Philip. (1904) 137; Merr. in Philip. Journ. Sci. 1 (1906) Suppl.

323, 5 (1910) Bot. 325, Fl. Manila (1912) 77, Sp. Blancoanae (1918) 60.

*Saccharum spontaneum* Linn.; Miq. Fl. Ind. Bat. 3 (1857) 512; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 289.

*Saccharum spontaneum* Linn. subsp. *luzonicum* Hack. in DC. Monog. Phan. 6 (1889) 117.

*Anthistiria gigantea* Blanco Fl. Filip. (1837) 49, ed. 2 (1845) 33, ed. 3, 1 (1877) 62, non Cav.

*Saccharum insulare* Brongn. var. *amplum* et var. *depauperatum* Anders. in Oefv. Vet. Akad. Forhandl. Stockh. 12 (1855) 157.

Throughout the Philippines, in open areas at low and medium altitudes, ascending to 1,500 m, often gregarious and almost exclusively occupying large areas. India to southern China through Malaya to Polynesia.

Local names: Bogáng (C. Bis.); bugáng (C. Bis.); liddá (Ilk.); sálin (Bon.); síkal (Ibn.); taláhib (Tag.); tibáyo (Bag.); tiggáu (S. L. Bis., P. Bis.).

### 9. POLLINIA Trinius

**POLLINIA ARGENTEA** (Brongn.) Trin. in Mém. Acad. St. Pétersb. VI 4 (1836) 90; Hack. in DC. Monog. Phan. 6 (1889) 162; Pilger in Perk. Frag. Fl. Philip. (1904) 138; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 265; Merr. op. cit. 325, Fl. Manila (1912) 77.

*Eulalia argentea* Brongn. Voy. Coqu. Bot. (1829) 92.

Luzon (Cagayan, Isabela, Bontoc, Nueva Vizcaya, Pangasinan, Rizal), Semirara, Merrill 4152, 108, Elmer 6474, B. S. 17850 Otanes, 14216 McGregor, 7815, 8092, 7831 Ramos. In open grasslands at low and medium altitudes. India to Malaya and Australia.

Var. **LAGOPUS** Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 79; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 325.

*Pollinia speciosa* Pilger in Perk. Frag. Fl. Philip. (1904) 138, non Hack.

Luzon (Ilocos Norte, Lepanto, Bontoc, Benguet, Pampanga), Mindoro, Palawan, Merrill 4222, 3902, 4365, 4535, 472, B. S. 32753, 32779, 5849 Ramos. In open grasslands at low and medium altitudes, ascending to 1,600 m. Endemic.

**POLLINIA CONTORTA** (Brongn.) comb. nov.

*Pogonatherum contortum* Brongn. Bot. Voy. Coqu. Bot. (1829) 90, t. 17.

*Andropogon koretrostachys* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 273; Steud. Syn. Pl. Glum. 1 (1854) 380; Miq. Fl. Ind. Bat. 3 (1857) 484; F.-Vill. Novis. App. (1882) 316.

*Pollinia articulata* Trin. in Mém. Acad. St. Pétersb. VI 4 (1836) 90; F.-Vill. Novis. App. (1882) 315; Hack. in DC. Monog. Phan. 6 (1889) 153 (subsp. *fragilis* Hack. var. *setifolia* Hack.); Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 324; Pilger in Perk. Frag. Fl. Philip. (1904) 138.

*Pollinia setifolia* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 88; Miq. Fl. Ind. Bat. 3 (1857) 521; F.-Vill. Novis. App. (1882) 315; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290.

*Andropogon athenostachys* Steud. Syn. Pl. Glum. 1 (1854) 381; Miq. Fl. Ind. Bat. 3 (1857) 485.

*Eulalia contorta* O. Kuntze Rev. Gen. Pl. (1891) 775.

Luzon (Cagayan, Isabela, Abra, Lepanto, Nueva Ecija, Nueva Vizcaya), Mindanao (Bukidnon), Merrill 317, B. S. 20141 McGregor, 7035, 8121, 7809, 4737 Ramos, F. B. 5875 Curran, 22128 Alvarez, 16460 Bacani. In open grasslands chiefly at medium altitudes. Burma, southern China, Moluccas, Australia.

Local name: Sañgumati (Buk.).

**POLLINIA FULVA** (R. Br.) Benth. Fl. Austral. 7 (1878) 526.

*Saccharum fulvum* R. Br. Prodr. (1810) 203.

*Pollinia cumingii* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850)

98; Steud. Syn. Pl. Glum. 1 (1854) 373; Walp. Ann. 3 (1853) 803; Miq. Fl. Ind. Bat. 3 (1857) 522; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290; Hack. in DC. Monog. Phan. 6 (1889) 167; Pilger in Perk. Frag. Fl. Philip. (1904) 138; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 325.

*Andropogon aureo-fulvus* Steud. Syn. Pl. Glum. 1 (1854) 373.

*Pollinia aurea* F.-Vill. Novis. App. (1882) 315, non Benth.

*Eulalia fulva* O. Kuntze Rev. Gen. Pl. (1891) 775.

Luzon (Ilocos Norte, Amburayan, Lepanto, Benguet, Pangasinan, Nueva Vizcaya), Mindoro, *Cuming 1538, Merrill 260, 4293, B. S. 33254, 4827 Ramos*. In open grasslands, sandy river bars, etc., at low and medium altitudes, ascending to 1,200 m. Bengal, southern China, Timor, Java, Australia.

**POLLINIA GLABRATA** (Brongn.) Trin. in Mém. Acad. St. Pétersb. VI 4 (1836) 90; Hack. in DC. Monog. Phan. 6 (1889) 179.

*Eulalia glabrata* Brongn. Voy. Coqu. Bot. (1829) 93, t. 19.

*Andropogon glabratus* Steud. Nomencl. ed. 2, 1 (1840) 91.

*Nemastachys taitensis* Steud. Syn. Pl. Glum. 1 (1854) 357.

*Pollinia monantha* Nees, var. *leptathera* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167.

Luzon (Pangasinan, Rizal, Bataan, Laguna, Tayabas), Mindoro, Samar, Panay, Mindanao, Balut, *Merrill 5212, 8272, 7323, 5627, 5426, Phil. Pl. 151, B. S. 31411, 29010 Ramos & Edaña, 21993, 13784 Ramos*. In open ravines, thickets, and old clearings at low and medium altitudes. New Caledonia to the Marianne Islands and Polynesia.

Local names: Gulos (Sub.); kapong (Bon.); lusimat (Sub.).

Var. **ELMERI** (Hack.) comb. nov.

*Pollinia monantha* Nees var. *elmeri* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167.

Luzon (Bontoc, Benguet), *Elmer 6524, Merrill 7784, Vanoverbergh 3665*. In thickets in damp ravines, altitude 1,200 to 1,500 m. Endemic.

**POLLINIA IRRITANS** (R. Br.) Hack. in DC. Monog. Phan. 6 (1889) 155, Philip. Journ. Sci. 1 (1906) Suppl. 265; Merr. op. cit. 325.

*Saccharum irritans* R. Br. Prodr. (1810) 203.

*Erianthus irritans* Kunth Rev. Gram. 1 (1829) 160.

*Eulalia irritans* O. Kuntze Rev. Gen. Pl. (1891) 775.

Luzon (Bontoc, Benguet), *Merrill 4388, Vanoverbergh 3338*. In open grasslands, altitude about 1,000 m. Tropical Australia.

**POLLINIA MARITIMA** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 326.

Lumbucan, *Merrill 5277, Phil. Pl. 112*. On sandy seashores. Closely allied to *P. fulva* Benth. Endemic.

**POLLINIA NUDA** Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 307; Hack. in DC. Monog. Phan. 6 (1889) 178; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 265.

*Eulalia nuda* O. Kuntze Rev. Gen. Pl. (1891) 775.

Luzon (Benguet), *Merrill 4727, 4842*. In openings in the mossy forest, altitude 2,000 to 2,400 m. India to China and Japan.

**POLLINIA QUADRINERVIS** Hack. in DC. Monog. Phan. 6 (1889) 158, Govt. Lab. Publ. (Philip.) 35 (1906) 79; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 325, 5 (1910) Bot. 325.

*Eulalia quadrinervis* O. Kuntze Rev. Gen. Pl. (1891) 775.

Luzon (Bontoc, Benguet), Merrill 4354, 4560, 6519, Elmer 5783, B. S. 31980 Santos, F. B. 16183, 16208 Curran, Merritt, & Zschokke. On open slopes in the pine region, altitude 1,400 to 2,200 m. India to southern China.

Local names: Galakgákan (Ig.); tao (Ig.).

**POLLINIA TENUIS** Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 307; F.-Vill. Novis App. (1882) 315; Miq. Fl. Ind. Bat. 3 (1857) 521; Hack. in DC. Monog. Phan. 6 (1889) 181; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 326.

Luzon (Ilocos Sur, Bontoc, Benguet, Bataan, Rizal), Merrill 4310, 4382, Kneucker Gram. Exsic. 721, B. S. 5310 Ramos. On dry open slopes, on and about cliffs, etc., from sea level to 1,200 m altitude. Caroline Islands.

**POLLINIA VIMINEA** (Trin.) comb. nov.

*Andropogon vimineus* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 268.

*Pollinia imberbis* Nees in Steud. Syn. Pl. Glum. 1 (1854) 410, var. *willdenowiana* Hack. in DC. Monog. Phan. 6 (1889) 178, forma *monostachya* Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 265; Merr. op. cit. 326.

Luzon (Bontoc, Benguet, Rizal), Merrill 4707, Williams 1960, Vanoverbergh 809, 991, 3810. On open wet slopes and in the mossy forest, altitude 1,200 to 2,200 m. India to southern China and Japan.

#### 10. POLYTRIAS Hackel

**POLYTRIAS AMAUREA** (Büse) O. Kuntze Rev. Gen. Pl. (1891) 788; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 327.

*Andropogon amaurus* Büse in Miq. Pl. Jungh. (February, 1854) 320.

*Andropogon diversiflorus* Steud. in Zoll. Syst. Verzeich. (1854) 58, *nomen nudum*, Syn. Pl. Glum. 1 (July or August, 1854) 370.

*Pollinia praemorsa* Nees in Steud. Syn. Pl. Glum. 1 (1854) 409.

*Polytrias praemorsa* Hack. in DC. Monog. Phan. 6 (1889) 189, t. 1, f. 13; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 7; Pilger in Perk. Frag. Fl. Philip. (1904) 138.

*Polytrias diversiflora* Nash in Torreya 5 (1905) 110; Merr. in Philip. Journ. Sci. 11 (1916) Bot. 253.

Luzon (Rizal, Sorsogon), Jolo, Merrill 386, Phil. Pl. 106, Kneucker Gram. Exsic. 602. In open grasslands in and about towns at low altitudes, certainly introduced. Malay Peninsula, Borneo, Java, introduced in the West Indies.

#### 11. POGONATHERUM Beauvois

**POGONATHERUM PANICEUM** (Lam.) Hack. in Allg. Bot. Zeitschr. 12 (1906) 178; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 395, Fl. Manila (1912) 76, Sp. Blancoanae (1918) 60.

*Saccharum paniceum* Lam. Encycl. 1 (1785) 595, t. 40, f. 1.

*Pogonatherum saccharoideum* Beauv. Agrost. (1812) 9, t. 11, f. 7;

- F.-Vill. Novis. App. (1882) 316; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290; Hack. in DC. Monog. Phan. 6 (1889) 192 (var. *monandrum* Hack.); Pilger in Perk. Frag. Fl. Philip. (1904) 138; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 327. *Pogonatherum polystachyum* R. & S. Syst. 2 (1825) 497; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.
- Pogonopsis tenera* Presl Rel. Haenk. 1 (1830) 333, t. 46; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 52, t. 2.
- Pogonatherum crinitum* Kunth Enum. 1 (1833) 478; Miq. Fl. Ind. Bat. 3 (1857) 516; Usteri Beitr. Ken. Veg. Philip. (1905) 133.
- Cinna filiformis* Llanos Frag. Pl. Filip. (1851) 9; F.-Vill. & Naves in Blanco Fl. Filip. 3, 4<sup>1</sup> (1880) 3.
- Deyeuxia quadrifida* F.-Vill. Novis. App. (1882) 319, non Benth.
- Ischaemum crinitum* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 298; Presl Repert. 1 (1833) 296.

Throughout the Philippines, common on banks of ravines, along streams on cliffs and steep banks, etc., at low and medium altitudes, ascending to 2,000 m. India to China through Malaya to the New Hebrides.

Local names: Dumenéi (Bon.); kisáng (Buk.); lagitlit (C. Bis.); mala-kauáyan (S. L. Bis.); obán-obán (Mbo.); panaguáyan (C. Bis.); silsilig (Bon.).

## 12. APLUDA Linnaeus

- APLUDA MUTICA** Linn. Sp. Pl. (1753) 82; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 192, Hook. Journ. Bot. Kew Miscel. 2 (1850) 99; Miq. Fl. Ind. Bat. 3 (1857) 501; F.-Vill. Novis. App. (1882) 318; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 332, Fl. Manila (1912) 79.
- Calamina humilis* Presl Rel. Haenk. 1 (1828) 344.
- Apluda humilis* Kunth Enum. 1 (1833) 517; F.-Vill. Novis. App. (1882) 318.
- Apluda cumingii* Büse in De Vriese Pl. Ind. Bat. Or. (1856) 105; Miq. Fl. Ind. Bat. 3 (1857) 501; F.-Vill. Novis. App. (1882) 318.
- Apluda varia* Hack. var. *humilis* Hack. in DC. Monog. Phan. 6 (1889) 196.
- Apluda varia* Hack. var. *mutica* Hack. f. *intermedia* Hack. in DC. Monog. Phan. 6 (1889) 197.
- Apluda mutica* Linn. forma *intermedia* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 332.
- Apluda varia* Hack. var. *major* Hack. in DC. Monog. Phan. 6 (1889) 198.
- Apluda mutica* Linn. var. *major* Hack. in Allgem. Bot. Zeitschr. 12 (1906) 179.

In thickets and open grasslands throughout the Philippines at low and medium altitudes, ascending to 1,800 m. India to southern China, through Malaya to Australia, New Caledonia, and Polynesia.

Local names: Kauakauáyan (Tag.); kolokauáyan (Tag.); kurukauáyan (Bik); magkauáyan (C. Bis.).

- Var ARISTATA** (Linn.) Rendle ex Forbes & Hemsl. in Journ. Linn. Soc. Bot. 36 (1904) 279; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 332, Fl. Manila (1912) 80.

*Apluda aristata* Linn. Amoen. Acad. 4 (1759) 303; F.-Vill. Novis. App. (1882) 318; Usteri Beitr. Ken. Philip. Veg. (1905) 132.

Luzon (Rizal), *B. S. 2041 Ramos, Merrill 629, Silva 391*. Habitat and range of the species.

### 13. ISCHAEMUM Linnaeus

**ISCHAEMUM ANGUSTIFOLIUM** (Trin.) Hack. ex Oliv. in Hook. Ic. III 8 (1888) *t. 1773*, DC. Monog. Phan. 6 (1889) 241; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 331.

*Spodiopogon angustifolius* Trin. in Mém. Acad. St. Petersb. VI 2 (1833) 300; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290.

*Andropogon obvallatus* Steud. Syn. Pl. Glum. 1 (1854) 373.

*Ischaemum notopogon* Nees in Miq. Fl. Ind. Bat. 3 (1857) 500; F.-Vill. Novis. App. (1882) 315.

Luzon (Cagayan, Ilocos Norte, Bontoc, Nueva Vizcaya, Pangasinan), *Cuming 1002, Merrill 172, Phil. Pl. 171, B. S. 7748, 7919 Ramos, 14214 McGregor, F. B. 16527 Curran & Merritt*. In open grasslands at low and medium altitudes, ascending to 1,400 m. India to southern China and Formosa.

Local names: Kabóot (Ilk., Ibn.); poen (Bon.); pueng (Bon.); puenig (Ig.); sangumáti (Buk.).

**ISCHAEMUM ARISTATUM** Linn. Sp. Pl. (1753) 1049 var. **GIBBUM** (Trin.) Hack. in DC. Monog. Phan. 6 (1889) 204; Pilg. in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 330, Fl. Manila (1912) 80.

*Ischaemum gibbum* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 295; Miq. Fl. Ind. Bat. 3 (1857) 498; F.-Vill. Novis. App. (1882) 315.

*Andropogon gibbus* Steud. Syn. Pl. Glum. 1 (1854) 376.

Luzon (Isabela, Ilocos Norte, Nueva Ecija, Nueva Vizcaya, Zambales, Bulacan, Rizal, Camarines), Culion. In open grasslands at low and medium altitudes; often common. Well represented by *Merrill Phil. Pl. 179, 1977*, and *Kneucker Gram. Exsic. 605*. The variety endemic, the species India to China.

**ISCHAEMUM ARUNDINACEUM** F.-Muell. ex Benth. Fl. Austral. 7 (1878) 519 var. **RADICANS** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 266; Merr. op. cit. 331.

Luzon (Benguet, Bontoc), *Merrill 4264, Phil. Pl. 1000, Williams 1197, Vanoverbergh 861*. On open grassy slopes in the pine regions, altitude 1,200 to 1,600 m. The variety endemic, the species in tropical Australia.

**ISCHAEMUM CILIARE** Retz. Obs. 6 (1791) 36; F.-Vill. Novis. App. (1882) 315; Hack. in DC. Monog. Phan. 6 (1889) 255 (var. *malachophyllum* Hack.); Merr. in Philip. Journ. Sci. 3 (1908) Bot. 395.

Batan Islands (Batan), *B. S. 3169 Mearns*. In open grasslands. India to China and Formosa.

**ISCHAEMUM GLAUDESCENS** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 263.

Palawan, *Merrill 9453*. In shallow water, borders of Lake Manguao, at low altitudes. Endemic.

**ISCHAEMUM INTERMEDIUM** Brongn. in Duperr. Voy. Coqu. (1829) Bot. 73; Pilg. in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 331, Fl. Manila (1912) 80.

Luzon (Rizal, Laguna, Sorsogon), Polillo, Leyte, Mindanao (Surigao), Merrill 68, 5222, 5213, Phil. Pl. 102, 1453, Elmer 14326, 18313, 17408, 16936, B. S. 34749 Ramos & Pascasio, 12103, 12022 Ramos. In open wet grassy places at low altitudes. Caroline Islands.

**ISCHAEMUM MERRILLII** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 266; Merr. op. cit. 331.

Luzon (Lepanto, Benguet), Merrill 4622, B. S. 12917 *Fénix*. In open rather wet places, altitude about 1,500 m. Endemic.

Local names: Kugaṅṅán (Ig.); sinamon (Ig.).

**ISCHAEMUM MUTICUM** Linn. Sp. Pl. (1753) 1049; Miq. Fl. Ind. Bat. 3 (1857) 496; F.-Vill. Novis. App. (1882) 315; Hack. in DC. Monog. Phan. 6 (1889) 212; Pilg. in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 330, 3 (1908) Bot. 395. *Ischaemum glabratum* Presl Rel. Haenk. 1 (1828) 328; Kunth Enum. 1 (1833) 513; Miq. Fl. Ind. Bat. 3 (1857) 498; F.-Vill. Novis. App. (1882) 315.

*Andropogon relictus* Steud. Syn. Pl. Glum. 1 (1854) 377.

*Ischaemum repens* Roxb. Fl. Ind. 1 (1820) 325; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 100.

Along sandy seashores from northern Luzon to Palawan and Mindanao, in most or all islands. India through Malaya to tropical Australia, New Caledonia, and western Polynesia.

Local name: Karukauáyan (Bik.).

**ISCHAEMUM PUBESCENS** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 264.

Dumaran, B. S. 21639 *Escritor*. In open grasslands at low altitudes. Endemic.

**ISCHAEMUM RUGOSUM** Salisb. Ic. (1791) 1, t. 1 var. **DISTACHYUM** (Cav.) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 330, 2 (1907) Bot. 436, Fl. Manila (1912) 80, Sp. Blancoanae (1918) 61.

*Colladoa distachya* Cav. Ic. 5 (1799) 37, t. 460; Willd. Sp. Pl. 4<sup>3</sup> (1805) 496.

*Andropogon ramosus* Blanco Fl. Filip. (1837) 37, ed. 2 (1845) 25, ed. 3, 1 (1877) 48; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 91, non Forsk.

*Ischaemum colladoa* Spreng. Syst. 1 (1825) 298; Kunth Enum. 1 (1833) 513; Miq. Fl. Ind. Bat. 3 (1857) 498; F.-Vill. Novis. App. (1882) 315.

*Ischaemum rugosum* Salisb. var. *segetum* Hack. in DC. Monog. Phan. 6 (1889) 206; Pilg. in Perk. Frag. Fl. Philip. (1904) 139.

*Meoschium elegans* Nees & Arn. in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 199; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 100.

*Ischaemum rugosum* F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 105; Miq. Fl. Ind. Bat. 3 (1857) 496; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290; Rolfe in Journ. Bot. (1885) 216, vix Salisb.



Luzon (Ilocos Norte, Lepanto, Bontoc, Pangasinan, Rizal, Bataan), Pohnpei, *Cuming 565, Merrill 1550, Phil. Pl. 592, Sp. Blancoanae 165*. In open usually rather wet grasslands. India to China and Malaya.

Local names: Daa (Sub.); gulonglapas (Pang.); tinitrigo (Tag.).

**ISCHAEMUM TODAYENSE** Elm. Leaf. Philip. Bot. 7 (1915) 2678.

Mindanao (Davao), *Elmer 10521*. In ravines in secondary forests, altitude about 900 m. Endemic.

Local name: Halopos (Bag.).

#### EXCLUDED SPECIES

**ISCHAEMUM POLYSTACHYUM** Presl; F.-Vill. Novis. App. (1882) 315.

The type of this was from the Marianne Islands and F.-Villar does not really enter the species as Philippine. It is a synonym of *Ischaemum digitatum* Brongn.

**ISCHAEMUM TIMORENSE** Kunth; F.-Vill. Novis. App. (1882) 315.

**ISCHAEMUM MINUS** Presl Rel. Haenk. 1 (1828) 329; F.-Vill. Novis. App. (1882) 315; Kunth Enum. 1 (1833) 514; Miq. Fl. Ind. Bat. 3 (1857) 498.

"Hab. in insulis Philippinis." This is an American species erroneously localized by Presl. It is *Ischaemum urvilleanum* Kunth; see Hack. in DC. Monog. Phan. 6 (1889) 218. *Andropogon minor* Steud. Syn. Pl. Glum. 1 (1854) 377 is a synonym.

#### 13a. EREMOCHLOA Büse

**EREMOCHLOA CILIARIS** (Linn.) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 331.

*Nardus ciliaris* Linn. Sp. Pl. (1753) 53.

*Ischaemum leersioides* Munro in Proc. Amer. Acad. 4 (1864-65) 363.

*Eremochloa leersioides* Hack. in DC. Monog. Phan. 6 (1889) 264;

Pilger in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 6.

Luzon (Cagayan, Isabela), *Merrill 138, B. S. 7813, 7832, 8109 Ramos*. In open grasslands at low altitudes. Southern China to Tonkin and Pegu.

#### 13b. ROTTOELLIA Linnaeus f.

**ROTTBOELLIA EXALTATA** Linn. f. Suppl. (1781) 114; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 173, Hook. Journ. Bot. Kew Miscel. 2 (1850) 100; Miq. Fl. Ind. Bat. 3 (1857) 407; F.-Vill. Novis. App. (1882) 314; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290; Hack. in DC. Monog. Phan. 6 (1889) 293; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 328, Fl. Manila (1912) 78.

*Rottboellia setosa* Presl Rel. Haenk. 1 (1828) 329; Kunth Enum. 1 (1833) 466.

*Rottboellia denudata* Steud. Syn. Pl. Glum. 1 (1854) 362; Miq. Fl. Ind. Bat. 3 (1857) 408; F.-Vill. Novis. App. (1882) 314.

*Rottboellia coelorhachis* F.-Vill. Novis. App. (1882) 314, non Forst. *Manisuris exaltata* O. Kuntze Rev. Gen. Pl. (1891) 779.

Throughout the Philippines in open places, borders of thickets, etc.,

at low and medium altitudes; common. India to China, tropical Africa, through Malaysia to tropical Australia.

Local names: Agiñgai (Tag.); annárai (Iv.); bódo (Bon.); bukal (C. Bis.); gaho (Bik.); girun (Bag.); nagéi (Bon.); sagisi (Ilk.).

**ROTTBOELLIA GLANDULOSA** Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 250; Hack. in DC. Monog. Phan. 6 (1889) 302; Pilger in Perk. Frag. Fl. Philip. (1904) 138; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 328.

*Coelorhachis muricata* Brongn. Bot. Voy. Coqu. 1 (1829) 65, t. 14.

*Rottboellia muricata* Miq. Fl. Ind. Bat. 3 (1857) 407; F.-Vill. Novis. App. (1882) 314; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 290, non Retz.

*Manisuris glandulosa* O. Kuntze Rev. Gen. Pl. (1891) 780.

Culion, Palawan, Balabac, Siargao, Mindanao, *Merrill 505, Phil. Pl. 1375, B. S. 34988 Ramos & Pascasio, 491 Mangubat*. In thickets, old clearings, etc., at low altitudes. Burma to Java.

Local name: Murabon (Sul.).

**ROTTBOELLIA OPHIUROIDES** Benth. Fl. Austral. 7 (1878) 514; Hack. in DC. Monog. Phan. 6 (1889) 303; Pilger in Perk. Frag. Fl. Philip. (1904) 138; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 328, 5 (1910) Bot. 326.

*Ischaemum rottboellioides* R. Br. Prodr. (1910) 205.

*Manisurus rottboellioides* O. Kuntze Rev. Gen. Pl. (1891) 779.

*Andropogon rottboellioides* Steud. Syn. Pl. Glum. 1 (1854) 382.

Luzon (Cagayan, Bontoc, Benguet, Nueva Vizcaya, Tarlac, Pampanga, Pangasinan, Zambales, Rizal), Masbate, Panay, Bohol. In open grasslands at low and medium altitudes, ascending to 2,000 m, often common. New Guinea, tropical Australia.

Local names: Gilon (C. Bis.); katalon (Ig.); lagopak (S. L. Bis.); talaño (Tag., Sbl.); tanlo (Ig.).

Var. **INTERMEDIA** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 265, Merr. op. cit. 329.

Luzon (Benguet), *Merrill 4667, Elmer 6393*. On dry slopes in the pine region, altitude 1,000 to 1,600 m. Endemic.

**ROTTBOELLIA TRIFLORA** Hubbard in Philip. Journ. Sci. 9 (1914) Bot. 257.

Palawan, *Ledesma*. Borders of thickets at low altitudes. Endemic.

#### EXCLUDED SPECIES

**ROTTBOELLIA MYUROS** Linn.; Ceron Cat. Pl. Herb. Manila (1892) 181.

This record was probably based on an erroneously identified specimen of *Ophiurus monostachyus* Presl.

**ROTTBOELLIA MUTICA** Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99.

This is an evident misprint for *Rottboellia muricata* Retz., a species that does not occur in the Philippines.

## 14. MANISURIS Swartz

**MANISURIS GRANULARIS** Linn. f. Nov. Gram. Gen. (1779) 37, f. 4-7;  
Miq. Fl. Ind. Bat. 3 (1857) 409; F.-Vill. Novis. App. (1882) 314;  
Hack. in DC. Monog. Phan. 6 (1889) 314; Merr. in Philip. Journ.  
Sci. 1 (1906) Suppl. 329, Fl. Manila (1912) 79.

*Cenchrus granularis* Linn. Mant. 2 (1771) 575.

*Hackelochloa granularis* O. Kuntze Rev. Gen. Pl. (1891) 776.

*Ryttilix granularis* Skeels in U. S. Dept. Agric. Bur. Pl. Ind. Bull.  
282 (1913) 20.

Batan Islands to Mindanao, in most islands and provinces. In disturbed soil, open waste places, old clearings, etc., at low and medium altitudes. Pantropic.

Local name: Giñgetkaran (Bag.).

## 15. OPHIURUS Gaertner

**OPHIURUS EXALTATUS** (Linn.) O. Kuntze Rev. Gen. Pl. (1891) 780;  
Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 329.

*Aegilops exaltata* Linn. Mant. 2 (1771) 575.

*Ophiurus corymbosus* Gaertn. Fruct. 3 (1805) 4, t. 181, f. A; F.-Vill.  
Novis. App. (1882) 314; Pilger in Perk. Frag. Fl. Philip. (1904)  
138.

*Rottboellia tongcalingii* Elm. Leaf. Philip. Bot. 7 (1915) 2680.

Luzon (Isabela, Nueva Vizcaya, Negros, Mindanao (Bukidnon, Davao),  
Merrill 127 p. p., Williams 2617, Elmer 10317, 10521, 16486, B. S. 8076  
Ramos. In open rather damp places at low and medium altitudes. India  
to tropical Australia.

Local names: Girun (Bag.); talañgiu (Bon.)

**OPHIURUS MONOSTACHYUS** Presl Rel. Haenk. 1 (1830) 330; Kunth  
Enum. 1 (1833) 464; Miq. Fl. Ind. Bat. 3 (1857) 405; F.-Vill.  
Novis. App. (1882) 314; Vidal Phan. Cuming. Philip. (1885)  
158, Rev. Pl. Vasc. Filip. (1886) 290; Hack. in DC. Monog. Phan.  
6 (1889) 318; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 329,  
Fl. Manila (1912) 79.

*Ophiurus undatus* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850)  
100; Walp. Ann. 3 (1853) 791.

*Ophiurus undulatus* Miq. Fl. Ind. Bat. 3 (1857) 405.

Luzon (Cagayan, Ilocos Norte, Lepanto, Ifugao, Rizal), Mindanao (Bu-  
kidnon, Zamboanga, Lanao), Cuming 1339, Merrill Phil. Pl. 124, B. S. 32781  
Ramos, 19978 McGregor, 37450, 39203 Ramos & Edaña. In open grass-  
lands at low and medium altitudes. Southern China, Indo-China.

## 16. 'ARTHAXON Beauvois

**ARTHAXON HISPIDUS** (Thunb.) Merr. in Philip. Journ. Sci. 7 (1912)  
Bot. 229.

*Phalaris hispida* Thunb. Fl. Jap. (1784) 44.

*Arthraxon ciliaris* Beauv. Agrost. (1812) 111, t. 11, f. 6; F.-Vill.  
Novis. App. (1882) 315.

*Pleuroplitis langsdorffii* Trin. Fund. Agrost. (1820) 174, f. 16.

*Arthraxon ciliaris* Beauv. subsp. *langsdorffii* Hack. in DC. Monog.  
Phan. 6 (1889) 354, Philip. Journ. Sci. 1 (1906) Suppl. 265;  
Merr. op. cit. 333; Perk. Frag. Fl. Philip. (1904) 139.

*Arthraxon ciliaris* Beauv. subsp. *nudus* Hack. in DC. Monog. Phan. 6 (1889) 356, Philip. Journ. Sci. 1 (1906) Suppl. 266; Merr. op. cit. 333.

Luzon (Cagayan, Ifugao, Bontoc, Lepanto, Benguet, Nueva Vizcaya), Mindanao (Lanao), Merrill 102, 4427, 4628, 7676, Phil. Pl. 175, Vanoverbergh 3811, 1760, 204, Clemens 100, B. S. 19628 McGregor, 5534, 5926, 5970, 7021, 7912 Ramos. In damp places about streams, in old rice paddies, etc., at medium altitudes, ascending to 1,600 m. Japan, China, Formosa.

Local name: Timi-timí (Bon.).

**ARTHRAOXON MICROPHYLLUS** (Trin.) Hochst. in Flora 39 (1856) 188; Hack. in DC. Monog. Phan. 6 (1889) 351, Philip. Journ. Sci. 1 (1906) Suppl. 265; Merr. op. cit. 333, 5 (1910) Bot. 326.

*Andropogon microphyllus* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 275.

*Pleuroplitis microphylla* Regel in Bull. Acad. St. Pétersb. 5 (1866) 749.

Luzon (Ilocos Norte, Bontoc, Benguet), Merrill 4363, 4719, Phil. Pl. 193, Clemens 9233, Vanoverbergh 1732, F. B. 12487 Merritt & Darling. On open slopes in the pine region, altitude 1,200 to 2,000 m. Abyssinia, India, Ceylon.

**ARTHRAOXON QUARTINIANUS** (A. Rich.) Nash in N. Am. Flora 17 (1912, Sept. 18) 99; Merr. in Philip. Journ. Sci. 7 (1912, Sept. 30) Bot. 229, Fl. Manila (1912) 77.

*Alectoridia quartiniana* A. Rich. Tent. Fl. Abyss. 2 (1851) 448, t. 99.

*Arthraxon ciliaris* Beauv. subsp. *quartinianus* Hack. in DC. Monog. Phan. 6 (1889) 356, Philip. Journ. Sci. 1 (1906) Suppl. 266; Merr. op. cit. 333, 5 (1910) Bot. 326.

Luzon (Ifugao, Bontoc, Benguet, Rizal), Merrill 4704, 4677, 7370, 9656, 4272, 6514, Phil. Pl. 999, Williams 1189, B. S. 19709 McGregor. On open slopes, in old rice paddies, etc., chiefly at altitudes from 1,100 to 1,600 m, rarely from about sea level. Abyssinia, India, introduced in the West Indies.

#### 17. ANDROPOGON Linnaeus

**ANDROPOGON ACICULATUS** Retz. Obs. 5 (1789) 22; Hack. in DC. Monog. Phan. 6 (1889) 562; Pilger in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 338, Fl. Manila (1912) 83, Sp. Blancoanae (1918) 162.

*Chrysopogon aciculatus* Trin. Fund. Agrost. (1820) 188; Miq. Fl. Ind. Bat. 3 (1857) 490; F.-Vill. Novis. App. (1882) 316; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291.

*Rhaphis trivialis* Lour. Fl. Cochinch. (1790) 553; Blanco Fl. Filip. (1837) 45.

*Andropogon acicularis* Willd. Sp. Pl. 4<sup>2</sup> (1805) 906; Blanco Fl. Filip. ed. 2 (1845) 26, ed. 3, 1 (1877) 49.

*Andropogon subulatus* Presl Rel. Haenk. 1 (1828) 341; Kunth Enum. 1 (1833) 505.

*Chrysopogon subulatus* Miq. Fl. Ind. Bat. 3 (1857) 491; F.-Vill. Novis. App. (1882) 317.

*Rhaphis javanica* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.

Throughout the Philippines in open places at low and medium altitudes; a veritable pest on account of its spikelets adhering to fur, clothing, etc. India to China southward through Malaya to tropical Australia and Polynesia.

Local names: Amor-seco (Sp.); dalekédék (Bon.); dalukdúk (Bon.); lakut-lapas (Sul.); marisékos (Tag.); marískos (Tag.); pagippi (Ibn.); tinlói (Tag.).

**ANDROPOGON BAILEYI** F.-Muell. in Vict. Nat. 7 (1891) 16; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 297; Merr. op. cit. 337.

*Sorghum laxiflorum* Bailey Syn. Queensl. Fl. Suppl. 3 (1890) 84, Queensl. Fl. 6 (1902) 1869; Rept. Exped. Bellend. Ker Range 25, non *Andropogon laxiflorus* Steud.

Luzon (Bontoc, Lepanto, Benguet, Rizal), *Merrill 4399, Vanoverbergh 2131, 3839, B. S. 24082 Ramos*. On open grassy slopes at medium altitudes, ascending to 1,200 m. Tropical Australia.

**ANDROPOGON BREVIFOLIUS** Sw. Prodr. (1788) 26; Hack. in DC. Monog. Phan. 6 (1889) 363; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291; Pilger in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 335.

Luzon (Cagayan, Ifugao, Bontoc, Benguet, Nueva Vizcaya, Bulacan, Zambales, Bataan, Laguna), Mindanao (Lanao, Bukidnon, Davao). In open grasslands at low and medium altitudes. Pantropic.

Local name: Bung-bung (Bag.).

**ANDROPOGON CINCTUS** Steud. Syn. Pl. Glum. 1 (1854) 398.

*Chrysopogon micranthus* Benth. var. *spicigerus* Benth. Fl. Austral. 7 (1878) 538.

*Andropogon micranthus* Kunth var. *spicigerus* Hack. in DC. Monog. Phan. 6 (1889) 489; Merr. in Philip. Journ. Sci. 1 (1906) 336, 3 (1908) Bot. 395.

Batan and Babuyan Islands, Luzon (Bontoc, Benguet), *Merrill 4836, Elmer 5918, F. B. 15612, 4854 Curran, B. S. 5367 Ramos, 3726, 3918, 4040 Fénix*. In open grasslands up to 1,800 m altitude. China, Australia, New Caledonia.

I believe this to be specifically distinct from *Andropogon micranthus* Kunth.

**ANDROPOGON CITRATUS** DC. Cat. Hort. Monsp. (1813) 78; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 167, Fl. Manila (1912) 82, Sp. Blancoanae (1918) 62.

*Andropogon schoenanthus* Blanco Fl. Filip. (1837) 39, ed. 2, (1845) 27, ed. 3, 1 (1877) 50; F.-Vill. Novis. App. (1882) 316; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 339, 2 (1907) Bot. 436, non Linn. *Cymbopogon citratus* Stapf in Kew Bull. (1906) 257.

Planted here and there about houses in most or all parts of the Philippines for its fragrant leaves, but nowhere spontaneous; I have seen only one flowering specimen, Jolo, *Link 215*. A native of tropical Asia, now widely distributed in cultivation.

Local names: Balióko (Bis.); baráni (Ilk.); paja de méca (Sp.); tang-lád (Tag., Bik., Bis.); sálai (Tag.); sái (Mbo., Mand., Sul.); sálaid (Tag.).

**ANDROPOGON CONTORTUS** Linn. Sp. Pl. (1753) 1045; Blanco Fl. Filip. ed. 1 (1837) 38, ed. 2 (1845) 26, ed. 3, 1 (1877) 49; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 338, Fl. Manila (1912) 83, Sp. Blancoanae (1918) 61.

*Heteropogon contortus* Beauv. ex R. & S. Syst. 2 (1817) 836; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99; F.-Vill. Novis. App. (1882) 315; Miq. Fl. Ind. Bat. 3 (1857) 493; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291.

*Heteropogon polystachyus* F.-Vill. Novis. App. (1882) 315, non Schultes.

*Heteropogon roxburghii* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99, haud Arn.

Luzon (Ilocos Norte, Union, Lepanto, Nueva Ecija, Nueva Vizcaya, Pangasinan, Pampanga, Rizal, Zambales), Mindoro, Mindanao (Bukidnon, Misamis). In open grasslands at low and medium altitudes, often very abundant. Certainly an introduced plant in the Philippines. Pantropic.

Local name: Sibat-sibátan (Tag.).

The Philippine form is mostly referable to the var. *hispidissimus* Hack. in DC. Monog. Phan. 6 (1889) 587.

**ANDROPOGON FASTIGIATUS** Sw. Prodr. (1788) 26; Hack. in DC. Monog. Phan. 6 (1889) 393, Philip. Journ. Sci. 1 (1906) Suppl. 267; Merr. op. cit. 335.

Luzon (Lepanto, Bontoc, Pangasinan), *Merrill 4461, B. S. 30055 Ramos*. On dry open grassy slopes at low and medium altitudes. Pantropic.

**ANDROPOGON FESTUCOIDES** Presl Rel. Haenk. 1 (1828) 340; Kunth Enum. 1 (1833) 500; Miq. Fl. Ind. Bat. 3 (1857) 489; F.-Vill. Novis. App. (1882) 316; Merr. Sp. Blancoanae (1918) 61.

*Andropogon anias* Llanos Frag. Pl. Filip. (1851) 29; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 20; F.-Vill. Novis. App. (1882) 316.

*Andropogon muricatus* Retz. var. *aristatus* Büse in De Vriese Pl. Ind. Bat. Orient. (1856) 104.

*Andropogon nigritanus* Benth. in Hook. Niger Fl. (1849) 573.

*Andropogon squarrosus* Linn. f. var. *nigritanus* Hack. in DC. Monog. Phan. 6 (1889) 544.

*Vetiveria zizanioides* Stapf var. *nigritana* Camus in Bull. Mus. Hist. Nat. Paris 25 (1919) 674.

Luzon (Pampanga, Nueva Ecija), *Merrill 4231, 4240, Phil. Pl. 389, B. S. 22238 Santos*. In open level lands, rice-paddy banks, etc., at low altitudes. Tropical Africa, Java.

Local name: Aniás (Pamp.).

The roots are entirely odorless in striking contrast to those of *Andropogon zizanioides* Urban to which it has been erroneously reduced.

**ANDROPOGON FILIPENDULUS** Hochst. in Flora 29 (1846) 115, var. **LACHNATHERUS** (Benth.) Hack. in DC. Monog. Phan. 6 (1889) 635, Philip. Journ. Sci. 1 (1906) Suppl. 267; Merr. op. cit. 339. *Andropogon lachnatherus* Benth. Fl. Austral. 7 (1878) 534.

Luzon (Bontoc, Lepanto, Benguet), *Merrill 7799, 4398, Elmer 6392*. On open grassy slopes, altitude 1,100 to 1,600 m.

Forma **BISPICULATA** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 269; Merr. op. cit. 339.

Luzon (Benguet), *Merrill 4298*. On open slopes, altitude about 1,350 m. The var. *lachnatherus* Hack. in tropical Australia, other varieties in tropical Africa and Ceylon.

Local names: Páuai (Ig.); taáu (Bon.).

**ANDROPOGON FRAGILIS** R. Br. Prodr. (1810) 202, var. **LUZONIENSIS** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 267; Merr. op. cit. 335.

Luzon (Bontoc, Benguet), *Merrill 4468, 4386*. In dry open grasslands at medium altitudes.

Var. **MALAYANUS** Merr. var. nov. A typo differt spiculis pedicellisque omnino glabris.

*Andropogon fragilis* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 335, Fl. Manila (1912) 82, haud R. Br.

Luzon (Bontoc, Ifugao, Pangasinan, Rizal), Mindanao (Lanao), *Merrill 8012, Phil. Pl. 156, Loher 1864, B. S. 19977 McGregor*. In dry open grasslands at low and medium altitudes. New Guinea, *King 1002*. The species in southern China, New Guinea, and in tropical Australia, a variety also in China.

**ANDROPOGON GRYLLUS** Linn. Amoen. Acad. 4 (1759) 332; Hack. in DC. Monog. Phan. 6 (1889) 550, var. **PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 14 (1919) 368.

*Chrysopogon gryllus* Trin.; F.-Vill. Novis. App. (1882) 316 (prob.).

Panay, *B. S. 30964 Ramos & Edaña*. On bowlders and ledges along streams at low altitudes. The variety endemic, the species, in various forms, southern Europe to Australia.

**ANDROPOGON HALEPENSIS** (Linn.) Brot. Fl. Lusit. 1 (1804) 89, var. **PROPINQUUS** (Kunth) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 336, Fl. Manila (1912) 84.

*Andropogon propinquus* Kunth Enum. 1 (1833) 502.

*Andropogon affinis* Presl Rel. Haenk 1 (1828) 343, non R. Br.

*Sorghum halepense* Pers. var. *muticum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.

*Sorghum halepense* Miq. Fl. Ind. Bat. 3 (1857) 503; F.-Vill. Novis. App. (1882) 317; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 184, haud Pers.

*Andropogon sorghum* Pers. subsp. *halepensis* Hack. var. *propinquus* Hack. in DC. Monog. Phan. 6 (1889) 503.

Batan Islands and northern Luzon to Mindanao, in most or all islands and provinces, often common. The species pantropic, the variety Ceylon to New Guinea.

Local names: Aroró (Bik.); baku (If.) batad-batádan (Tag.); dala-pak (Sub.); gingai (Sul.); giñgia (Bag.); riaría (Sul.); sikal (Ibn.); uginaí (Buk.).

- ANDROPOGON INTERMEDIUS** R. Br. Prodr. (1810) 202; Hack. in DC. Monog. Phan. 6 (1889) 485; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 335 var. **HAENKEI** (Presl) Hack. in DC. Monog. Phan. 6 (1889) 486; Pilger in Perk. Frag. Fl. Philip. (1904) 139; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 335, Fl. Manila (1912) 83.  
*Andropogon haenkei* Presl Rel. Haenk. 1 (1828) 340; Kunth Enum. 1 (1833) 501; Miq. Fl. Ind. Bat. 3 (1857) 489; F.-Vill. Novis. App. (1882) 316.  
*Rhaphis stricta* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99; Walp. Ann. 3 (1853) 803.  
*Andropogon leptanthus* Steud. Syn. Pl. Glum. 1 (1854) 391; Miq. Fl. Ind. Bat. 3 (1857) 389; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291.

Luzon (Cagayan, Ilocos Norte, Union, Nueva Vizcaya, Nueva Ecija, Pangasinan, Rizal, Batangas), Negros, Mindanao, *Cuming 1400, Merrill 6734, 313, 5456, Phil. Pl. 134, 1842, B. S. 30072 Fénix, 8246, 7830, 7658, 7918, 7916, 1426 Ramos*. In open grasslands at low and medium altitudes. The species in China and Australia, the variety in China and Ceylon, other varieties in Asia and Africa.

Local names: Sálai (Pang.); sálai-párang (Tag.).

- ANDROPOGON MICRANTHUS** Kunth Rev. Gram 1 (1829) 165; Enum. 1 (1833) 504; Hack. in DC. Monog. Phan. 6 (1889) 488 (var. *genuinus*); Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 336.  
*Andropogon alternans* Presl Rel. Haenk. 1 (1828) 342.  
*Chrysopogon violascens* Trin. in Mém. Acad. St. Pétersb. VI 2 (1833) 319.  
*Rhaphis villosulus* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102.  
*Rhaphis microstachys* Nees l. c., var.  
*Chrysopogon villosulus* Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291.  
*Andropogon parvispica* Steud. Syn. Pl. Glum. 1 (1854) 397.  
*Chrysopogon parviflorus* Benth. Fl. Austral. 7 (1878) 537; F.-Vill. Novis. App. (1882) 316.

Luzon (Ilocos Norte, Bontoc, Benguet, Nueva Vizcaya, Nueva Ecija, Zambales), *Cuming 980, 1397, Merrill 118, 4434, 4703, Phil. Pl. 176, Elmer 6593, Williams 1959, B. S. 32948 Ramos, 32010 Santos, 26038 Fénix, 14198 McGregor, 8241 Ramos*. In open grasslands chiefly at medium altitudes, ascending to 2,300 m. Abyssinia to China through Malaya to tropical Australia.

Local names: Sañgõngõan (Bon.); sañguan (Bon.); sisamon (Ig.).

- ANDROPOGON NARDUS** Linn. Sp. Pl. (1753) 1046 var. **TORTILIS** (Presl) comb. nov.  
*Anthistiria tortilis* Presl Rel. Haenk. 1 (1828) 347; Kunth Enum. 1 (1833) 483; F.-Vill. Novis. App. (1882) 317.  
*Andropogon hamatulus* Nees in Hook. & Arn. Bot. Beechy's Voy. (1841) 244.  
*Andropogon martyni* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.



- Andropogon nardus* Linn. var. *hamatulus* Hack. in DC. Monog. Phan. 6 (1889) 606; Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 339, 3 (1908) Bot. 396.  
*Andropogon nardus* Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291, non Linn.

Batan Islands, Luzon (Cagayan, Isabela, Ilocos Norte, Abra, Bontoc, Pangasinan, Zambales, Nueva Ecija), Cagayan Sulu, *Merrill 5307, Cuming 1000, B. S. 7893, 7793, 8047, 32888 Ramos, 10169 McGregor, F. B. 5858, 17037 Curran, 16461 Bacani*. In open grasslands at low and medium altitudes. The variety in southern China, the species in India, Africa, and Malaya.

Local name: Balaniu (Bon.).

**ANDROPOGON NITIDUS** (Vahl) Kunth Rev. Gram. 1 (1829) 166; Merr. Fl. Manila (1912) 84.

*Holcus nitidus* Vahl Symb. 2 (1791) 102.

*Sorghum nitidum* Pers. Syn. 1 (1805) 101.

*Andropogon fuscus* Presl Rel. Haenk. 1 (1828) 342; Kunth Enum. 1 (1833) 503.

*Sorghum fuscum* Miq. Fl. Ind. Bat. 3 (1857) 503; F.-Vill. Novis. App. (1882) 317; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291.

*Sorghum tropicum* Nees var. *muticum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.

*Andropogon pedicellatus* Steud. Syn. Pl. Glum. 1 (1854) 394; Miq. Fl. Ind. Bat. 3 (1857) 488; F.-Vill. Novis. App. (1882) 316.

*Andropogon serratus* Thunb. var. *nitidus* Hack. in DC. Monog. Phan. 6 (1889) 521; Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 337, 3 (1908) Bot. 396.

Batan Islands, northern Luzon (Cagayan) to Mindanao, in most islands and provinces. In open grasslands at low and medium altitudes.

Forma **HIRSUTA** Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 337.

Luzon (Isabela), *Merrill 137*. In open grasslands at low altitudes. The form endemic, the species India to southern China and Formosa southward to Java.

**ANDROPOGON PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 14 (1919) 367.

Luzon (Ilocos Norte), *B. S. 32946, 32755 Ramos*. On dry open rocky slopes at low altitudes. Endemic.

**ANDROPOGON SANGUINEUS** (Retz.) Merr. in Philip. Journ. Sci. 12 (1917) Bot. 101; op. cit. 14 (1919) 369.

*Rottboellia sanguinea* Retz. Obs. 3 (1783) 25.

*Thelepogon sanguineus* Spreng. Syst. 1 (1825) 299.

*Andropogon pseudograya* Steud. Syn. Pl. Glum. 1 (1854) 465.

Luzon (Ilocos Norte), Culion, *B. S. 32777, 41310, 41329 Ramos*. On open slopes at low altitudes. Southern China, India, Ceylon, and Madagascar.

**ANDROPOGON SERICEUS** R. Br. Prodr. (1810) 201; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99; Hack. in DC. Monog. Phan. 6 (1889) 575; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 291; Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 338, Fl. Manila (1912) 82.

*Andropogon tenuiculus* Steud. Syn. Pl. Glum. 1 (1854) 371.

*Heteropogon tenuiculus* Miq. Fl. Ind. Bat. 3 (1857) 494; F.-Vill. Novis. App. (1882) 315.

Luzon (Benguet, Nueva Ecija, Pangasinan, Rizal), *Cuming 1398, Merrill 266, Phil. Pl. 163, B. S. 4824 Ramos*. In open grasslands at low altitudes. New Guinea, New Caledonia, Australia.

**ANDROPOGON SERRATUS** Thunb. Fl. Jap. (1784) 41; Hack. in DC. Monog. Phan. 6 (1889) 520; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 337, Fl. Manila (1912) 84.

*Sorghum fulvum* Beauv. Agrost. (1812) 164; F.-Vill. Novis. App. (1882) 317.

Luzon (Bontoc, Benguet, Rizal), Mindanao (Lanao, Davao, Bukidnon), *Merrill 4297, Phil. Pl. 593, Elmer 5958, Clemens 597, Piper 471, B. S. 5764 Ramos*. In open grasslands at low and medium altitudes. Japan and China through Malaya to Australia.

Local names: Girun (Bag.); taáu (Bon.); tígau (Mag.).

**ANDROPOGON SORGHUM** (Linn.) Brot. Fl. Lusit. 1 (1804) 88; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 336, Fl. Manila (1912) 84, Sp. Blancoanae (1918) 63 (var. *vulgaris* Hack.); Pilger in Perk. Frag. Fl. Philip. (1904) 140 (var. *sativus* Hack.); Usteri Beitr. Ken. Philip. Veg. (1905) 132 (var. *niger* Kunth).

*Holcus sorghum* Linn. Sp. Pl. (1753) 1047.

*Holcus saccharatus* Linn. Sp. Pl. (1753) 1047; Blanco Fl. Filip. (1837) 47, ed. 2 (1845) 32, ed. 3, 1 (1877) 58, t. 436.

*Sorghum saccharatum* Pers. Syn. 1 (1804) 101; F.-Vill. Novis. App. (1882) 317; Vidal Rev. Pl. Vasc. Filip. (1886) 291.

*Sorghum vulgare* Pers. Syn. 1 (1804) 101; Miq. Fl. Ind. Bat. 3 (1857) 502.

*Andropogon sorghum* Brot. subsp. *sativus* Hack. var. *saccharatus* Hack. in DC. Monog. Phan. 6 (1889) 505.

Several forms or varieties of sorghum are cultivated in the Philippines, but none are established. A native of Asia or Africa, now cultivated in all warm countries. Sorghum.

Local names: Bakau (Ibn.); bátad (Tag., Bik., Bis.); bátag (Tag.); bukákau (Ilk.); gau (If.); layagan (Sul.).

**ANDROPOGON TRITICEUS** R. Br. Prodr. (1810) 201; Hack. in DC. Monog. Phan. 6 (1889) 588; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 338.

*Andropogon ischyranthus* Steud. Syn. Pl. Glum. 1 (1854) 367.

*Heteropogon ischyranthus* Miq. Fl. Ind. Bat. 3 (1857) 493; F.-Vill. Novis. App. (1882) 315.

*Heteropogon insignis* Thwaites Enum. Pl. Zeyl. (1859-64) 437; F.-Vill. Novis. App. (1882) 315.

Luzon (Abra, Ilocos Norte, Pangasinan), Busuanga, *Cuming 1003*, *B. S. 7216, 4900, 41269 Ramos, F. B. 12477 Merritt & Darling*. In open grasslands at low or medium altitudes. Ceylon and Bruma to tropical Australia.

**ANDROPOGON ZIZANIOIDES** (Linn.) Urban Symb. Antil. 4 (1903) 79; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 228, Fl. Manila (1912) 83, Sp. Blancoanae (1918) 62.

*Phalaris zizanioides* Linn. Mant. 2 (1771) 183.

*Andropogon squarrosus* Hack. in DC. Monog. Phan. 6 (1889) 542; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 337, non Linn. f. (cf. Stapf in Kew Bull. (1906) 348.

*Andropogon muricatus* Retz. Obs. 3 (1783) 43, 5 (1789) 20; F.-Vill. Novis. App. (1882) 316.

*Andropogon nardus* Blanco Fl. Filip. (1837) 39, ed. 2 (1845) 27, ed. 3, 1 (1877) 51, non Linn.

*Vetiveria zizanioides* Stapf in Kew Bull. (1906) 346; Camus in Bull. Mus. Hist. Nat. Paris 25 (1919) 673.

Batan Islands, Luzon (Amburayan, Rizal, Cavite), *Merrill Sp. Blancoanae 355, Phil. Pl. 118, Loher 7213*. Planted about rice-paddy banks, often abundant; certainly an introduced plant in the Philippines. A native of tropical Asia, now pantropic. Vetiver.

Local names: Amóra (C. Bis.); amóras (Ilk.); anías de móras (Pamp.); giron (P. Bis.); ílib (Pamp.); móra (Bik., Bis.); móras (Tag., Bis., Bik.); móro (Tag.); narawastu (Sul.); raíz de móras (Sp.); rimódas (P. Bis.); rimóra (Sbl.); rimóras (Bik.); tres-móras (Bis.).

#### EXCLUDED SPECIES

**ANDROPOGON ERIOSTACHYS** Presl Rel. Haenk. 1 (1830) 339; Kunth Enum. 1 (1833) 496; Miq. Fl. Ind. Bat. 3 (1857) 487; F.-Vill. Novis. App. (1882) 316.

"Hab. in insulis Philippinis" Presl. This is the tropical American *Andropogon ternatus* Nees var. *eriosachys* (Presl) Hack. in DC. Monog. Phan. 6 (1889) 425. The type was one of the numerous Malaspina Expedition plants collected by Presl but erroneously localized as Philippine.

**HETEROPOGON TENELLUS** Schultes; F.-Vill. Novis. App. (1882) 315.

#### 18. ASTHENOCHLOA Büse

**ASTHENOCHLOA TENERA** Büse in Miq. Pl. Jungh. (February, 1854) 367.

*Andropogon leptos* Steud. Syn. Pl. Glum. 1 (1854) 397; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 268, 337, 4 (1909) Bot. 250.

*Garnotiella philippinensis* Stapf in Hook. Ic. IV 5 (1896) t. 2494; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 374.

*Garnotiella leptos* Stapf in Kew Bull. (1910) 302.

Luzon (Benguet), Panay, *Merrill 4322, Phil. Pl. 154, B. S. 5318 Ramos*. On steep open slopes up to an altitude of 1,400 m. Originally described from "Andor," a locality I have not been able to locate; perhaps "Ind. or." intended. Java. A monotypic genus.

The alliance of the genus is with *Andropogon*, not with *Garnotia*.

## 19. THEMEDA Forskål

**THEMEDA GIGANTEA** (Cav.) Hack. in DC. Monog. Phan. 6 (1889) 670 (var. *genuina* Hack.); Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 340, 3 (1908) Bot. 396, 5 (1910) Bot. 326.

*Anthistiria gigantea* Cav. Ic. 5 (1799) 36, t. 458; Willd. Sp. Pl. 4<sup>2</sup> (1805) 902; F.-Vill. Novis. App. (1882) 317; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292.

*Androscopia gigantea* Brongn. Bot. in Duperr. Voy. (1829) 78; Miq. Fl. Ind. Bat. 3 (1857) 506; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.

*Perobachne secunda* Presl Rel. Haenk. 1 (1828) 348, t. 48; Kunth Enum. 1 (1833) 485; Miq. Fl. Ind. Bat. 3 (1857) 507; F.-Vill. Novis. App. (1882) 317.

Batan Islands to Mindanao, in most or all islands and provinces. In open grasslands on dry steep slopes at low and medium altitudes. India to China, Malaya, New Caledonia, and Australia.

Local names: Girun (Bag.); maṅgambit (Sub.); sai-gaja (Sul.); salai-salai (Tag.); tanhád (Iv.); tanik (Bon.); taurar (Ilk.); teldak (Pang.); tulaṅgo (Tag.); talauyo (Tag.).

Var. **VULPINA** (Anders.) Hack. in DC. Monog. Phan. 6 (1889) 670; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 340.

*Anthistiria vulpina* Anders. in Nov. Act. Upsal. III 2 (1856) 423.

*Anthistiria arundinacea* Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292, hayd Roxb.

Luzon (Cagayan), *Cuming 1272* and numerous other specimens. India. Scarcely distinguishable from the species.

Subsp. **INTERMEDIA** Hack. var. **DUBIA** Hack. in DC. Monog. Phan. 6 (1889) 675; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 341.

Mindanao (Misamis), *Cuming 1609*.

The species is variable in its spikelet characters, a number of forms being represented in the Philippines.

**THEMEDA TRIANDRA** Forsk. Fl. Aegypt.-Arab. (1775) 178; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 340, Fl. Manila (1912) 81.

*Themeda forskalüi* Hack. in DC. Monog. Phan. 6 (1889) 659; Pilger in Perk. Frag. Fl. Philip. (1904) 140.

*Anthistiria ciliata* Cav. Ic. 5 (1799) 36, t. 459; F.-Vill. Novis. App. (1882) 317; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99 (var. *subglabra* Nees), non Linn. f.

*Anthistiria depauperata* Anders. in Nov. Act. Upsala III 2 (1856) 343; F.-Vill. Novis. App. (1882) 317.

*Anthistiria barbata* Presl Repert. 1 (1833) 305, non Desf.

*Apluda barbata* Llanos in Mém. Acad. Cienc. Madr. 4 (1858) 497; Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99 (misprint for *Anthistiria barbata*).

Batan Islands, Luzon (Cagayan, Isabela, Nueva Vizcaya, Ilocos Norte, Abra, Bontoc, Benguet, Pangasinan, Nueva Ecija, Rizal, Albay), Mindoro, Busuanga, Semirara, Mindanao. In open grasslands at low and medium

altitudes, ascending to 2,300 m. Frequently abundant and gregarious over large areas. Tropical Asia and Africa through Malaya to Australia.

Local names: Punáu (Bon.); samsamóng (Ilk.); táau (Ig.); usímau (Ilk.).

#### EXCLUDED SPECIES

ANTHISTIRIA JUNGHUHNIANA Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 99.

This is credited to the Philippines by Nees, on the basis of *Cuming 2431*, which was from Sumatra, not from the Philippines. It is a synonym of *Themeda frondosa* (R. Br.) Merr. (*T. arguens* Hack., not *Stipa arguens* Linn.), which does not occur in the Philippines.

#### 20. PEROTIS Aiton

PEROTIS INDICA (Linn.) O. Kuntze Rev. Gen. Pl. (1891) 787; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 341.

*Anthoxanthum indicum* Linn. Sp. Pl. (1753) 28.

*Perotis latifolia* Ait. Hort. Kew. 1 (1789) 85; F.-Vill. Novis. App. (1882) 313.

*Perotis glabrata* Steud. Syn. Pl. Glum. 1 (1854) 186; Miq. Fl. Ind. Bat. 3 (1857) 479; F.-Vill. Novis. App. (1882) 313; Vid. Phan. Cuming. Philip. (1885) 158, Rev. Pl. Vasc. Filip. (1886) 289.

*Perotis hordeiformis* Nees in Steud. Nomencl. ed. 2, 2 (1841) 306, Hook. Journ. Bot. Kew Miscel. 2 (1850) 102.

Luzon (Cagayan, Nueva Ecija), Mindanao (Agusan), *Cuming 1399*, *Elmer 13873*, *B. S. 7911 Ramos*. In open grasslands at low and medium altitudes. Tropical Asia and Africa.

Local name: Bañgat (Mbo).

PEROTIS RARA R. Br. Prodr. (1810) 172; Miq. Fl. Ind. Bat. 3 (1857) 479; F.-Vill. Novis. App. (1882) 314; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 341.

*Xystidium barbatum* Presl Rel. Haenk. 1 (1828) 228; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 55.

*Xystidium maritimum* Trin. Fund. Agrost. (1820) 102, t. 2.

Luzon (Ilocos Norte, Lepanto, Amburayan, Pangasinan, Zambales), Mindoro, *Merrill 4447*, *Phil. Pl. 152*, *F. B. 9979 Merritt*, *5859 Curran*. On dry open slopes at low and medium altitudes. Australia.

#### 21. ZOISIA Willdenow

(*Zoysia* auct.)

ZOISIA MATRELLA (Linn.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 230, Fl. Manila (1912) 85.

*Agrostis matrella* Linn. Mant. 2 (1771) 185.

*Zoysia pungens* Willd. in Ges. Naturf. Fr. Neue Schrift 3 (1801) 441; F.-Vill. Novis. App. (1882) 313; Pilger in Perk. Frag. Fl. Philip. (1904) 140; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 342.

*Osterdamia matrella* O. Kuntze Rev. Gen. Pl. (1891) 781.

Northern Luzon to Palawan, in most islands, occurring in open places chiefly along or near tidal streams. Tropical Asia and Africa through Malaya to Australia and western Polynesia.

Local name: Barit-baritan (Tag.).

## 22. ARUNDINELLA Raddi

**ARUNDINELLA AGROSTOIDES** Trin. Sp. Gram. Ic. (1836) 23, t. 265; F.-Vill. Novis. App. (1882) 318; Merr. Fl. Manila (1912) 85.

Luzon (Ilocos Norte, Pangasinan, Rizal), *Merrill 7399, Phil. Pl. 594, Lohr 7217, F. B. 12482 Merritt & Darling*. In open grasslands and on ledges along small streams at low altitudes. India to Burma.

Var. **CILIATA** (Roxb.) Hook. f. Fl. Brit. Ind. 7 (1897) 71; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 268; Merr. op. cit. 243.

*Holcus ciliatus* Roxb. Fl. Ind. 1 (1820) 321.

*Arundinella ciliata* Nees in Wall. Cat. (1829) No. 1668.

Luzon (Ilocos Sur, Bontoc, Benguet), *Merrill 4328, Williams 1961, F. B. 15940 Bacani, 15671 Merritt & Darling*. On open slopes, about cliffs, etc., altitude 800 to 1,600 m. Range of the species.

**ARUNDINELLA MILIACEA** Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; Vidal Phan. Cuming. Philip. (1885) 158.

*Arundinella nepalensis* F.-Vill. Novis. App. (1882) 318; Vidal Rev. Pl. Vasc. Filip. (1886) 289; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 343, non Trin.

*Arundinella hispida* Hack. subsp. *humilior* Hack. in Bull. Herb. Boiss. II 4 (1904) 527, Allgem. Bot. Zeitschr. 12 (1906) 179.

*Arundinella filiformis* Jan. ex Mez in Fedde Repert. 17 (1921) 85.

*Arundinella caespitosa* Jan. l. c.

Luzon (Apayao, Bulacan, Rizal, Laguna), Panay, *Merrill 2262, Phil. Pl. 161, Cuming 667, B. S. 30966 Ramos & Edaña, 6700 Robinson, 35453 Martelino & Edaña, 19286 Reillo, 28251 Fénix, 2101 Ramos, 30 Foxworthy, F. B. 7173 Curran, Kneucker Gram. Exsic. 606*. On ledges and banks along swift-running streams at low altitudes. Formosa.

The more-recent collections have been distributed as *A. hispida* (HBK.) O. Kuntze, following Hackel's identification.

**ARUNDINELLA PUBESCENS** Merr. & Hack. in Philip. Journ. Sci. 2 (1907) Bot. 419.

Palawan, *B. S. 856 Foxworthy*. On river banks at low altitudes. Endemic.

**ARUNDINELLA SETOSA** Trin. Diss. 2 (1824) 63, Gram. Pan. (1826) 245; F.-Vill. Novis. App. (1882) 318; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 342, 5 (1910) Bot. 326.

*Arundinella stricta* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; Walp. Ann. 3 (1853) 804; Miq. Fl. Ind. Bat. 3 (1857) 520.

*Danthonia luzonensis* Steud. Syn. Pl. Glum. 1 (1854) 245; Miq. Fl. Ind. Bat. 3 (1857) 427; F.-Vill. Novis. App. (1882) 319; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292.

*Arundinella setosa* Trin. var. *stricta* Pilger in Perk. Frag. Fl. Philip. (1904) 140.

Luzon (Cagayan, Isabela, Bontoc, Benguet, Nueva Vizcaya, Zambales, Rizal), Mindoro, Mindanao (Bukidnon). In open grasslands, on cliffs, etc., at low and medium altitudes, ascending to 2,000 m. India to China through Malaya to New Guinea.

Local name: Salai-salai (Sbl.).

## 23. THYSANOLAENA Nees

**THYSANOLAENA MAXIMA** (Roxb.) O. Kuntze Rev. Gen. Pl. (1891) 794; Pilger in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 343.

*Agrostis maxima* Roxb. Fl. Ind. 1 (1820) 319.

*Thysanolaena agrostis* Nees in Edinb. New Philos. Journ. 18 (1835) 180.

*Thysanolaena acarifera* Arn. & Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 181; Vidal Rev. Pl. Vasc. Filip. (1886) 289.

Luzon (Ilocos Norte, Apayao, Bontoc, Benguet, Nueva Vizcaya, Nueva Ecija, Bulacan, Zambales, Bataan, Laguna, Tayabas, Sorsogon), Mindoro, Palawan, Mindanao. On banks of ravines, slopes, about cliffs, etc., at low and medium altitudes, ascending to 1,600 m. India through Malaya to New Guinea.

Local names: Bugúbui (Pamp.); buybúi (Ilk.); eagadu (Bon.); gatbó (Bik.); lása (Tag.); tagádeu (Bon.); tagisa (Sub.); tambú (Tag.); talankaran (Ig.).

## 24. DIGITARIA Scopoli

**DIGITARIA CHINENSIS** Nees in Hook. & Arn. Bot. Beechey Voy. (1841) 231.

*Paspalum filiculme* Nees ex Thwaites Enum. Pl. Zeyl. (1859-64) 358.

*Digitaria violascens* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 347, 3 (1908) Bot. 396, Fl. Manila (1912) 88, non Link.

Batan Islands and northern Luzon to Palawan and Mindanao, in most islands and provinces, Merrill 4148, 9388, 7107, 7677, 4788, Phil. Pl. 174, B. S. 21715, 14524, 13939, 8250 Ramos. In open grasslands at low and medium altitudes. India to China and Malaya.

Local names: Timi (Bon.); tumi (Bon.); ualisíbis (Iv.).

**DIGITARIA CORYMBOSA** (Roxb.) comb. nov.

*Panicum corymbosum* Roxb. Hort. Beng. (1814) 7, *nomen nudum*, Fl. Ind. 1 (1820) 292.

*Panicum microbachne* Presl Rel. Haenk. 1 (1828) 298; Kunth Enum. 1 (1833) 81.

*Digitaria consanguinea* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 347, 3 (1908) Bot. 396, Fl. Manila (1912) 88, Sp. Blancoanae (1918) 64, non Gaudich.

*Panicum sanguinale* Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 157, non Linn.

*Digitaria lanosa* Llanos Fragm. Pl. Filip. (1851) 28; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 19.

*Panicum gaudichaudii* F.-Vill. Novis. App. (1882) 311, non Kunth.

*Panicum pruriens* Trin. var. *glabrum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97.

Throughout the Philippines at low and medium altitudes in open waste places, old clearings, etc., usually common, Merrill 4230, 5347, 7368, 9276, Sp. Blancoanae 787, Phil. Pl. 126, Elmer 18216, 16818, 16417, 9570, B. S. 12036, 13334, 32736, 14746 Ramos. India to southern China and Formosa through Malaya to Samoa.

Local names: Babanai (Sub.); balíli (C. Bis.); balisíbis (Iv.); balud-

gañgan (Tag.); barírid (Bag.); gasa (Kuy.); halos (Tag.); maya-máya (S. L. Bis.); maraséda (Ilk.); sagísi (Ilk.).

This species has been confused with *Digitaria sanguinalis* Scop. and by me with *D. consanguinea* Gaudich. It is distinguished by its almost obsolete first glume and short second glume, the latter rarely more than one-fourth as long as the spikelet.

**DIGITARIA HETERANTHA** (Nees & Mey.) var. **PACHYRHACHIS** (Hack.) comb. nov.

*Panicum heteranthum* Nees & Mey. var. *pachyrhachis* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167.

Palmas, Lumbucan, Merrill 5355, 5276. Along sandy seashores. The variety endemic, the species in the Malay Peninsula, Java, China, and Formosa.

**DIGITARIA LONGIFLORA** (Gmel.) Pers. Syn. 1 (1805) 85; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 347, 5 (1910) Bot. 326, Fl. Manila (1912) 88, Sp. Blancoanae (1918) 64.

*Panicum longiflorum* Gmel. Syst. (1788) 158.

*Panicum parvulum* Trin. in Mém. Acad. St. Pétersb. VI 3 (1835) 205; Mez in Perk. Frag. Fl. Philip. (1904) 142.

*Paspalum brevifolium* Flügge Monogr. (1810) 150; F.-Vill. Novis. App. (1882) 310.

*Paspalum fuscescens* Presl Rel. Haenk. 1 (1828) 213, ex descr.

*Syntherisma fuscescens* Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 49, t. 10.

*Paspalum fasciculatum* Llanos Frag. Pl. Filip. (1851) 23; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 16, non Willd.

Northern Luzon to Mindanao, in most islands and provinces, Elmer 16733, Merrill 249, 331, 1129, 6518, Phil. Pl. 167, Sp. Blancoanae 1022, B. S. 32751, 33448 Ramos, 32009 Fénix, 10911 McGregor. In open grasslands, sea level to an altitude of 1,600 m. Warmer parts of the Old World.

Local name: Sasámon (Ig.).

**DIGITARIA PEDICELLARIS** (Trin.) Prain Bengal Pl. (1903) 1182; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 348, Fl. Manila (1912) 98.

*Paspalum pedicellare* Trin. ex Steud. Nomencl. ed. 2, 2 (1840) 272.

*Panicum pedicellare* Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 268.

*Panicum puberulum* Mez in Perk. Frag. Fl. Philip. (1904) 143, non (?) Kunth.

Luzon (Nueva Vizcaya, Nueva Ecija, Pampanga, Rizal, Bataan), Culion, Merrill 4225, 3164, 105, Phil. Pl. 577, B. S. 26273 Ramos & Edaña, Williams 93. In open grasslands at low and medium altitudes, ascending to 850 m. India to Burma.

**DIGITARIA SANGUINALIS** (Linn.) Scop. Fl. Carn. ed. 2, 1 (1772) 52; Vidal Rev. Pl. Vasc. Filip. (1886) 286; Mez in Perk. Frag. Fl. Philip. (1904) 143; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 346, Fl. Manila (1912) 88 (var. *australis* Thw.).

*Panicum sanguinale* Linn. Sp. Pl. (1753) 57.

*Digitaria inaequalis* Spreng. Syst. 1 (1825) 271.

*Digitaria bififormis* Willd. Enum. (1809) 92.



*Digitaria radicata* Miq. Fl. Ind. Bat. 3 (1857) 437.

*Panicum radicosum* Presl Rel. Haenk. 1 (1828) 297; F.-Vill. Novis. App. (1882) 311.

*Paspalum inaequale* Link Enum. Hort. Berol. 1 (1821) 103; Kunth Enum. 1 (1833) 48; F.-Vill. Novis. App. (1882) 310.

*Syntherisma sanguinalis* Dulac Fl. Hautes Pyr. (1867) 77.

Widely scattered in the Philippines in open waste places, *B. S.* 27396, 7258, 7092 *Ramos*, 3631 *Fénix*, 18737 *Otanes*, *Merrill* 7258, *Phil. Pl.* 114, *Williams* 1172. All warm countries.

Local names: Dibutbut (Iv.); pagpagai (Bon.); saka-sáka (Ilk.).

Var. **FIMBRIATA** (Link.) Stapf in Prain Fl. Trop. Afr. 9 (1919) 440.

*Digitaria fimbriata* Link. Hort. Berol. 1 (1821) 226.

*Digitaria ciliaris* Merr. in Philip. Journ. Sci. 5 (1910) Bot. 168, Fl. Manila (1912) 87, non ? Pers.

*Panicum ciliare* Retz. Obs. 4 (1786) 16?

*Paspalum sanguinale* Lam. var. *ciliare* Hook. f. Fl. Brit. Ind. 7 (1897) 15.

Northern Luzon to Mindanao, *Merrill* 40, 330, *Phil. Pl.* 147, *B. S.* 7661 *Ramos*, 2249 *Mearns*. In open waste places. Pantropic.

Var. **AUSTRALIS** (Spreng.).

? *Panicum australe* Spreng. Syst. 1 (1825) 309.

*Panicum sanguinale* Linn. var. *australe* Thwaites Enum. Pl. Zeyl. (1864) 358.

? *Panicum striatum* R. Br. Prodr. (1810) 192, non Lam.

Throughout the Philippines at low and medium altitudes, in thickets, waste places, etc., *Merrill* 529, 89, 5359, 7259, 9787, *Phil. Pl.* 578, *Elmer* 5855, 15147. India through Malaya to Australia.

This identification follows Hackel, but I am by no means certain that our form is the same as the one originally described by R. Brown.

#### DOUBTFUL AND EXCLUDED SPECIES

PANICUM ELYTHROBLEPHARUM Steud.; F.-Vill. Novis. App. (1882) 311.

PANICUM STIPATUM Presl Rel. Haenk. 1 (1828) 297; F.-Vill. Novis. App. (1882) 311.

"Hab. in Mexico, Luzon?" Presl. This is the American *Digitaria setosa* Desv. fide Scribner in Rept. Mo. Bot. Gard. 10 (1899) 49.

PASPALUM FILIFORME Sw.; Presl Rel. Haenk. 1 (1828) 297; F.-Vill. Novis. App. (1882) 310.

"Hab. in Luzonia ? Mexico" Presl. This is the American *Digitaria filiforme* Delile fide Scribner in Rept. Mo. Bot. Gard. 10 (1899) 49.

PASPALUM MOLLE Presl Rel. Haenk. 1 (1828) 213 = *Paspalum mollicomum* Kunth Enum. 1 (1833) 310; Miq. Fl. Ind. Bat. 3 (1857) 433; F.-Vill. Novis. App. (1882) 310 = *Syntherisma molle* Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 50.

"Hab. in Luzonia" Presl. This was considered by Scribner to be a valid species, but Presl's description does not apply to any Philippine form known to me and I suspect that the type was an American, not a Philippine plant.

**PASPALUM FUSCUM** Presl Rel. Haenk. 1 (1828) 214; Kunth Enum. 1 (1833) 46; F.-Vill. Novis. App. (1882) 310 = *Syntherisma fusca* Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 49, t. 11.

"Hab. in Luzonia ? in Peruviae montanis huanoccensibus ? Mexico?" Presl. From the figure given by Scribner, drawn from a cotype of Presl's species, this does not appear to represent any known Philippine species. The type was probably from America.

## 25. **PASPALUM** Linnaeus

**PASPALUM CONJUGATUM** Berg. in Act. Helvet. 7 (1772) 129, t. 8; Mez in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 28, Philip. Journ. Sci. 1 (1906) Suppl. 345, Fl. Manila (1912) 87.

Throughout the Philippines in the settled areas, about towns, along trails, streams, etc., often very abundant. A native of tropical America, now pantropic.

Local names: Bantótan (Mbo.); kauatkáuat (C. Bis.); laau-láau (Tag.).

**PASPALUM LONGIFOLIUM** Roxb. Hort. Beng. (1814) 7, *nomen nudum*, Fl. Ind. 1 (1820) 283; Mez in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 345, Fl. Manila (1912) 86.

*Paspalum flexuosum* Klein in Presl Rel. Haenk. 1 (1828) 216; Kunth Enum. 1 (1833) 54; Miq. Fl. Ind. Bat. 3 (1857) 433; F.-Vill. Novis. App. (1882) 310.

Luzon (Cagayan, Benguet, Bontoc, Nueva Vizcaya, Bulacan, Rizal, Laguna, Albay), Polillo, Palawan, Bohol, Mindanao, *Weber 1063, Merrill 9303, Phil. Pl. 1956, B. S. 26002, 26675 Fénix, 21684, 14512, 29504, 10979 Ramos*. In open, usually rather wet lands at low and medium altitudes. India to Malaya.

Local name: Taltal-likód (Ilk.).

Var. **TRICHOOLEUM** Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167.

Mindoro, Mindanao (Surigao), *B. S. 941 Mangubat, Merrill 5455*. In open level grasslands at low altitudes. Endemic.

**PASPALUM SCROBICULATUM** Linn. Mant. 1 (1767) 29; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; F.-Vill. Novis. App. (1882) 310; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 286; Mez in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 344, Fl. Manila (1912) 86, Sp. Blancoanae (1918) 63.

*Paspalum cartilagineum* Presl Rel. Haenk. 1 (1828) 216; Miq. Fl. Ind. Bat. 3 (1857) 432; F.-Vill. Novis. App. (1882) 310; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 49.

*Paspalum kora* Willd. Sp. Pl. 1 (1797) 332; Presl Rel. Haenk. 1 (1828) 216.

*Paspalum villosum* Blanco Fl. Filip. (1837) 40, ed. 2 (1845) 28, ed. 3, 1 (1877) 53, non Thunb.

*Paspalum sumatrense* Roth Nov. Pl. Sp. (1821) 35; Llanos Frag. Pl. Filip. (1851) 22; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 15; F.-Vill. Novis. App. (1882) 310.

*Paspalum thunbergii* Kunth ex Steud. Syn. Pl. Glum. 1 (1854) 28; Mez in Perk. Frag. Fl. Philip. (1904) 141.

Throughout the Philippines, in open grasslands at low and medium altitudes, ascending to 1,500 m; common and somewhat variable. Pan-tropic.

Local names: Añgansúg (Ig.); bias-biásan (S. L. Bis.); bubulis (Sub.); paragis (Tag.); sabuñg-sabuñgan (Tag.).

Var. **PHILIPPINENSE** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 345.

Luzon (Nueva Vizcaya, Rizal), *Merrill 140a, B. S. 1449 Ramos*. In open, rather wet grasslands at medium altitudes. Endemic.

Var. **BISPICATUM** Hack. ex Merr. Fl. Manila (1912) 86.

Luzon (Ilocos Norte, Ilocos Sur, Benguet, Rizal, Bataan), Panay, *Merrill Phil. Pl. 576, B. S. 10083, 32275 McGregor, 27378 Ramos*. In open grasslands at low and medium altitudes. Endemic.

Var. **AURICULATUM** (Presl) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 345, Fl. Manila (1912) 86.

*Paspalum auriculatum* Presl Rel. Haenk. 1 (1828) 217; Kunth Enum. 1 (1833) 54; Miq. Fl. Ind. Bat. 3 (1857) 432; F.-Vill. Novis. App. (1882) 310.

Luzon (Rizal), Palawan, Samar, Leyte, Mindanao, *Merrill 5361, 7292, 820, Phil. Pl. 158, B. S. 843 Foxworthy, 24435 Ramos*. In open rather wet grasslands at low altitudes. Tropical Asia and Africa.

**PASPALUM VAGINATUM** Sw. Prodr. Veg. Ind. Occ. (1788) 21; Stapf in Prain Fl. Trop. Afr. 9 (1919) 570.

*Paspalum distichum* F.-Vill. Novis. App. (1882) 310; Usteri Beitr. Ken. Veg. Philip. (1905) 133; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 346, Fl. Manila (1912) 87, non Linn.

Luzon (Amburayan, Union, Pampanga, Rizal, Laguna), Panay, Samar, *Elmer 18140, Merrill 4253, 5229, 7116*. In open wet lands, usually in places subject to the influence of salt or brackish water. Pantropic.

Local names: Pagetpet (Ilk.); panluilui (Pamp.).

#### EXCLUDED SPECIES

**PASPALUM ELEGANS** Flügge; F.-Vill. Novis. App. (1882) 310.

**PASPALUM CHRYSOTRICHUM** Presl Rel. Haenk. 1 (1828) 211; Kunth Enum. 1 (1833) 64; Miq. Fl. Ind. Bat. 3 (1857) 431; F.-Vill. Novis. App. (1882) 310.

"Hab. in Luzonia." The localization is unquestionably erroneous. Presl's species is probably the same as *Paspalum aureum* HBK. of tropical America.

**PASPALUM BORYANUM** Presl Rel. Haenk. 1 (1828) 209; Kunth Enum. 1 (1833) 52; Miq. Fl. Ind. Bat. 3 (1857) 432; F.-Vill. Novis. App. (1882) 310.

"Hab. ad Sorzogon" Presl. This may prove to be a *Digitaria*, or again it may be an American species of *Paspalum*.

**PASPALUM FILIFORME** Sw.; F.-Vill. Novis. App. (1882) 310.

## 26. ERIOCHLOA Kunth

**ERIOCHLOA RAMOSA** (Retz.) O. Kuntze Rev. Gen. Pl. (1891) 775; Hack. in Bull. Acad. Int. Bot. 16 (1906) 19; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 348, Fl. Manila (1912) 85, Sp. Blancoanae (1918) 64.

*Milium ramosum* Retz. Obs. 6 (1791) 22.

*Paspalus annulatus* Flügge Monogr. (1810) 133; Trin. Gram. Pan. (1826) 117, Sp. Gram. 2 (1829) t. 133.

*Eriochloa annulata* Kunth Enum. 1 (1833) 73; F.-Vill. Novis. App. (1882) 311; Perk. Frag. Fl. Philip. (1904) 141.

*Piptantherum annulatum* Presl Rel. Haenk. 1 (1828) 221.

*Helopus laevis* Trin. in Spreng. Neue Entdeck. 2 (1821) 49; Miq. Fl. Ind. Bat. 3 (1857) 434.

*Eriochloa punctata* F.-Vill. Novis. App. (1882) 312, non Ham.

*Milium zonatum* Llanos Frag. Pl. Filip. (1851) 24; F.-Vill. and Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 16.

Throughout the Philippines at low and medium altitudes, in open usually damp grasslands at low and medium altitudes. Pantropic.

Var. **INVOLUCRATA** Hack. ex Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 349.

Mindoro, Bohol, *Merrill 3333*, *B. S. 1247* *McGregor*. Habitat of the species and scarcely distinguishable from it. Endemic.

## 27. ISACHNE R. Brown

**ISACHNE BENECKEI** Hack. in Oesterr. Bot. Zeitschr. 51 (1901) 459, Govt. Lab. Publ. (Philip.) 35 (1906) 79; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 350, 5 (1910) Bot. 327.

Luzon (Ifugao, Bontoc, Lepanto, Benguet, Bataan, Pampanga), *Merrill 4680, 5019, 3201, 4544, 4619, 4523, 4522, Phil. Pl. 1467, B. S. 19690, 1979, McGregor, 37736 Ramos & Edaña, Williams 1193*. In open wet places, borders of cold pools and sphagnum swamps, and on narrow forested ridges, altitude 800 to 2,400 m. Java.

**ISACHNE CONFERTA** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 261.

Luzon (Laguna), *B. S. 14914 Ramos*. On boulders and ledges along streams at low or medium altitudes. Endemic.

**ISACHNE DEBILIS** Rendle ex Forbes & Hemsl. in Journ. Linn. Soc. Bot. 36 (1904) 322; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 268; Merr. l. c. 350.

*Isachne monticola* Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 79, Philip. Journ. Sci. 1 (1906) Suppl. 268, non Büse.

Luzon (Abra, Ifugao, Bontoc, Benguet, Nueva Vizcaya, Nueva Ecija, Bataan, Laguna), Mindanao (Davao), *Merrill 5315, 9680, 7675, Phil. Pl. 599, Elmer 5821, 18367*. Along streams in damp ravines and on damp forested ridges, altitude 1,000 to 2,000 m. Formosa.

This seems to be close to *I. myosotis* Nees.

**ISACHNE DEPAUPERATA** (Hack.) comb. nov.

*Isachne beneckeii* Hack. forma *depauperata* Hack. ex Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 350.

Luzon (Lepanto, Benguet), Negros, *Merrill 4545, 4489, 6978, 6504, B. S. 4249 Mearns*. In the mossy forest and in damp thickets, altitude 1,700 to 2,200 m. Endemic.

**ISACHNE GLOBOSA** (Thunb.) O. Kuntze Rev. Gen. Pl. (1891) 778.

*Milium globosum* Thunb. Fl. Jap. (1784) 49.

*Isachne australis* R. Br. Prodr. (1812) 196; F.-Vill. Novis. App. (1882) 321.

Mindanao (Lanao), *Clemens 870, 1114*. In swamps about Lake Lanao, altitude about 650 m. India to Japan south to Australia.

**ISACHNE INCRASSATA** (Hack.) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 168.

*Isachne debilis* Rendle var. *incrassata* Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 268; Merr. op. cit. 350.

Negros, Mindanao (Davao), *Merrill 6977, De Vore & Hoover 358*. In crevices of ledges along mountain streams, altitude 1,200 to 1,500 m. Endemic.

**ISACHNE MAGNA** (Merr.) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 327.

*Isachne beneckeii* Hack. var. *magna* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 350.

*Isachne apoensis* Elm. Leaf. Philip. Bot. 7 (1915) 2676.

Luzon (Ifugao, Bontoc, Benguet), Mindanao (Davao), *Merrill 4541, 7672, 7678, 6569, Elmer 11578, B. S. 31686 Santos, 8870, 19731 McGregor, 4483, 4248 Mearns*. In the mossy forest, altitude 1,800 to 2,400 m. Endemic.

Local names: Buyo (Bag.); popoktót (Bon.).

**ISACHNE MICRANTHA** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 168.

Luzon (Cagayan, Tayabas), *F. B. 16837, 16841 Curran, B. S. 28708 Ramos & Edaña*. On siopes, altitude 300 m and above. Endemic.

Closely allied to *I. myosotis* Nees.

**ISACHNE MILIACEA** Roth Nov. Pl. Sp. (1821) 58; Merr. Fl. Manila (1912) 89.

*Panicum minutulum* Gaudich. in Freyc. Voy. (1826) Bot. 410.

*Isachne minutula* Kunth Rev. Gram. 2 (1829) t. 117, Enum. 1 (1833) 137; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 172; F.-Vill. Novis. App. (1882) 321; Mez in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 349.

*Isachne pulchella* Mez in Perk. Frag. Fl. Philip. (1904) 141 p. p. non Roth.

*Panicum macilentum* Presl Rel. Haenk. 1 (1828) 310; Kunth Enum. 1 (1833) 116; F.-Vill. Novis. App. (1882) 312.

Throughout the Philippines, in low open wet places, old rice paddies, etc., often abundant; *Kneucker Gram. Exsic. 609* from Manila well represents the species. India to Malaya and Polynesia.

Local names: Lagitlít (C. Bis.); matáng-lamók (Pang.); tagik-tagik (C. Bis.).

**ISACHNE MYOSOTIS** Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 98; Walp. Ann. 3 (1853) 720; Miq. Fl. Ind. Bat. 3 (1857) 462; F.-Vill. Novis. App. (1882) 321; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 286; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 349, 2 (1907) Bot. 261, 5 (1910) Bot. 327.

*Panicum myosotis* Steud. Syn. Pl. Glum. 1 (1854) 96.

*Isachne pauciflora* Hack. var. *hirsuta* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167.

Luzon (Abra, Benguet, Rizal, Pampanga), Negros, Mindoro, Mindanao (Zamboanga), *B. S. 1765, 18768, 27029 Ramos, 29677 Ramos & Edaña, 1921 Foxworthy, F. B. 4405 Merritt, Merrill 6167, Copeland 162*. In open places at medium and higher altitudes, ascending to 2,400 m. Reported also from Australia.

**ISACHNE PANGERANGENSIS** Z. & M. Syst. Verz. Zoll. Pflanz. (1845) 102, var. **HALCONENSIS** Hack. in Philip. Journ. Sci. 3 (1908) Bot. 167, Merr. op. cit. 5 (1910) Bot. 327.

Luzon (Benguet), Mindoro, *Merrill 6221, 6203, F. B. 16182 Curran, Merritt, & Zschokke*. In open heaths, altitude 2,400 to 2,600 m. The variety endemic, the species in Java.

**ISACHNE PAUCIFLORA** Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 80; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 350, 5 (1910) Bot. 327.

Luzon (Benguet, Nueva Vizcaya), *Elmer 6486, Merrill 4292, 9770, 7673, 7674, Phil. Pl. 195, B. S. 31753 Santos, 14211 McGregor*. In wet places, along streams, in rice paddies, etc., altitude 1,400 to 2,300 m. Endemic.

**ISACHNE STRICTA** Elm. Leaf. Philip. Bot. 2 (1908) 463.

Leyte, Negros, Mindanao (Lanao), *Elmer 10425, Wenzel 781, Clemens 1135a*. In crevices of ledges, on seepage slopes, etc., altitude 600 to 1,200 m. Endemic.

**ISACHNE VULCANICA** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 169.

Negros, *Merrill 6975, Phil. Pl. 585*. On bare slopes of the old crater of Canlaon Volcano, altitude 1,800 to 2,100 m. Endemic.

#### EXCLUDED SPECIES

**ISACHNE JAVANA** Nees.

This species was credited to the Philippines by Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97, on the basis of *Cuming 2288*; this specimen was from Malacca, not from the Philippines. The species has not been found in the Archipelago.

**ISACHNE PULCHELLA** Roth.

This species has been credited to the Philippines by F.-Villar, Novis. App. (1882) 321, and by Mez ex Perk. Frag. Fl. Philip. (1904) 141, but one of the specimens cited by the latter is *Isachne miliacea* Roth, and another is *I. debilis* Rendle. Roth's species is *Sphaerocaryum pulchellum* (Roth) Merr. (*S. elegans* Nees) which has not been found in the Philippines.

## 28. PANICUM Linnaeus

**PANICUM AMBIGUUM** Trin. in Mém. Acad. St. Pétersb. VI 3<sup>2</sup> (1835) 243; Steud. Syn. Pl. Glum. 1 (1854) 61; Miq. Fl. Ind. Bat. 3 (1857) 447; F.-Vill. Novis. App. (1882) 311; Mez in Perk. Frag. Fl. Philip. (1904) 141; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 355.

*Urochloa paspaloides* Presl Rel. Haenk. 1 (1830) 318; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 54, t. 14, non Beauv.

Northern Luzon (Cagayan) to Mindanao and Palawan, *Merrill 9590, Phil. Pl. 580, 3332, 5369, B. S. 14511, 27128 Ramos, 31536 Ramos & Edaña*. Widely scattered in open more or less waste places, old clearings, etc., at low and medium altitudes. Burma to the Mascarene Islands, Malaya and Polynesia.

**PANICUM AMPLEXICAULE** Rudge Pl. Guian. (1805) 21, t. 27; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 356, Fl. Manila (1912) 92, Sp. Blancoanae (1918) 66.

*Panicum myuros* Kunth Enum. 1 (1833) 86; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27; Usteri Beitr. Ken. Philip. Veg. (1905) 133, non Lam.

*Panicum polygonatum* Llanos Frag. Pl. Filip. (1851) 41; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 30; non Kunth.

*Panicum acutiglumum* Steud. Syn. Pl. Glum. 1 (1854) 66.

*Hymenachne serrulata* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 98, *nomen nudum*.

Central Luzon to Palawan and Mindanao, *Merrill 9468, Phil. Pl. 157, Sp. Blancoanae 967, Elmer 14561, F. B. 8881 Curran*. In open swamps and along swampy margins of lakes and streams at low altitudes. Pantropic.

Local name: Lagtóm (Bik.).

**PANICUM AURITUM** Presl Rel. Haenk. 1 (1830) 305 (incl. var. *procerus* Presl); Kunth Enum. 1 (1833) 113; Steud. Syn. Pl. Glum. 1 (1854) 70; Miq. Fl. Ind. Bat. 3 (1857) 456; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 172, Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; F.-Vill. Novis. App. (1882) 312; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 46, t. 15; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 356, Fl. Manila (1912) 92.

Northern Luzon (Cagayan) to Palawan and Mindanao, in most or all islands and provinces. Common in open, rather wet places at low and medium altitudes. India to southern China and Malaya.

Local name: Mongoto (Sub.).

**PANICUM BREVIFOLIUM** Linn. Sp. Pl. (1753) 59.

*Panicum ovalifolium* Poir. in Lam. Encycl. Suppl. 4 (1816) 279; Hook. f. Fl. Brit. Ind. 7 (1897) 44.

Balabac, *Merrill 5386, Phil. Pl. 110, B. S. 442 Mangubat*. In thickets, along trails in shaded places, etc., at low altitudes. Tropical Africa and Asia to China and Malaya.

**PANICUM CARINATUM** Presl Rel. Haenk. 1 (1830) 309; Kunth Enum. 1 (1833) 112; Miq. Fl. Ind. Bat. 3 (1857) 452; F.-Vill. Novis. App. (1882) 312; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 46, t. 17; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 362.

Luzon (Ilocos Norte, Pangasinan, Rizal, Laguna, Batangas, Bataan, Camarines), Mindoro, Palawan, Culion, Balabac, Panay, Mindanao, Basilan, *Presl!* in Herb. Bernhardt, B. S. 30023 *Fénix*, 29483 *Ramos & Edaño*, 16887 *Serviñas*, *Merrill* 477, 10596, 9241, *Phil. Pl.* 178. In old clearings, thickets, etc., at low and medium altitudes. Borneo and probably other parts of Malaya.

Perhaps better considered as a variety of *P. patens* Linn.

Local names: Baile (Sul.); gamog-gamog (Sub.); hirabon (Sul.); ka-uang-káuang (Sul.); malakauáyan (Tag., P. Bis.); tuad-tuáran (Tag.).

**PANICUM CAUDIGLUME** Hack. in Oesterr. Bot. Zeitschr. 51 (1901) 428, Govt. Lab. Publ. (Philip.) 35 (1906) 80; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27, 360, Fl. Manila (1912) 92.

Luzon (Ilocos Sur, Bataan), Culion, Palawan, *Merrill* 832, 3307, 7436, 11607, *Kneucker Gram. Exsic.* 731, B. S. 29240, 24083, 41285 *Ramos*. In open waste places at low altitudes, apparently introduced. Java.

Local name: Kumut-palakâ (Tag.).

**PANICUM COCCOSPERMUM** Steud. Syn. Pl. Glum. 1 (1854) 62.

*Panicum villosum* Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 269; Merr. op. cit. 355, 5 (1910) Bot. 327, non Lam.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Rizal), Culion, Mindanao (Lanao), *Merrill* 7692, 4281, 4396, 4459, 4360, 11606, *Phil. Pl.* 591, B. S. 5918, 8214, 41339 *Ramos*, 4492 *Mearns*. On open grassy slopes and banks chiefly at medium altitudes, ascending to 1,500 m. The identification of our material with Steudel's species was made by Mr. C. A. Backer of Buitenzorg, Java. India to Java.

Local name: Tumi (Bon.).

**PANICUM COLONUM** Linn. Syst. ed. 10 (1759) 870; Steud. Syn. Pl. Glum. 1 (1854) 46; F.-Vill. Novis. App. (1882) 311; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 286; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 354; Fl. Manila (1912) 91, Sp. Blancoanae (1918) 65.

*Panicum colonum* Linn. var. *pseudocolonum* Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 172, Hook. Journ. Bot. Kew Miscel. 2 (1850) 97.

*Panicum cumingianum* Steud. Syn. Pl. Glum. 1 (1854) 58; Miq. Fl. Ind. Bat. 3 (1857) 447; F.-Vill. Novis. App. (1882) 311.

*Echinochloa colona* Link Hort. Berol. 2 (1833) 209.

*Oplismenus colonus* HBK. Nov. Gen. Sp. Pl. 1 (1815) 108; Presl Rel. Haenk. 1 (1830) 321.

*Orthopogon dichotomus* Llanos Frag. Pl. Filip. (1851) 38; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 28.

Throughout the Philippines at low and medium altitudes. In open, rather wet places. Pantropic.

Local names: Búlang (Tag.); dakayáng (Ilk.); dukayáng (Ilk.); tiri-búhan (Tag.); tumi (Bon.).



**PANICUM CORDATUM** Büse in Miq. Pl. Jungh. (1854) 376; Merr. in Philip. Journ. Sci. 4 (1909) Bot. 249.

*Panicum luxurians* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 359, non Willd.

*Panicum montanum* Naves Novis. App. (1882) 312; Ceron Cat. Pl. Herb. Manila (1892) 180; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27, non Roxb.

Luzon (Bontoc, Union, Bataan, Bulacan), Culion, Palawan, *Merrill 9348, 9318, 554, Phil. Pl. 146, Elmer 5595, 6735, Williams 134*. In thickets, old clearings, etc., at low and medium altitudes. Java, Borneo.

**PANICUM CRASSIAPICULATUM** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 356.

*Panicum latifolium* Hook. f. Fl. Brit. Ind. 7 (1897) 39, excl. syn. et var. *majus* Hook. f., non Linn.

Palawan, Balabac, Mindanao (Agusan), *Merrill 5387, 7290, 9240, 9286, Phil. Pl. 111*. In thickets and along trails in forests at low altitudes. Malay Peninsula, Java.

Closely allied to the American *P. oryzoides* Sw.

**PANICUM CRUS-GALLI** Linn. Sp. Pl. (1753) 56; F.-Vill. Novis. App. (1882) 311; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 354, 5 (1910) Bot. 327, Fl. Manila (1912) 91, Sp. Blancoanae (1918) 65.

*Oplismenus limosus* Presl Rel. Haenk. 1 (1830) 321; Kunth Enum. 1 (1833) 144.

*Panicum limosum* F.-Vill. Novis. App. (1882) 311.

*Panicum hispidulum* Lam. Ill. 1 (1791) 171; F.-Vill. Novis. App. (1882) 311.

*Echinochloa crus-galli* Beauv. Agrost. (1812) 53.

*Orthopogon hispidus* Spreng. Syst. 1 (1825) 307; Llanos Frag. Pl. Filip. (1851) 37; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 27.

*Orthopogon subverticillatus* Llanos op. cit. 38; F.-Vill. & Naves op. cit. 28.

Throughout the Philippines at low and medium altitudes, in open wet places, rice paddies, etc. All warm countries.

Local names: Baobao (If.); daua-dáua (Tag.); daua-dauáhan (Tag.); dauána (Mbo.); lagtom (Bik.); sabsablúg (Bon.); sabsábug (Bon.).

Var. **MUTICUM** Doell.; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 268; Merr. op. cit. 354.

Luzon (Bontoc, Benguet, Rizal), Balabac, Palmas, *Merrill 5363, 4807, B. S. 460 Mangubat, 5975 Ramos*. Habitat of the species. Pantropic.

**PANICUM DISTACHYUM** Linn. Mant. 1 (1767) 138; F.-Vill. Novis App. (1882) 311; Merr. Fl. Manila (1912) 91, Sp. Blancoanae (1918) 66.

*Panicum remotum* Retz. Obs. 4 (1786) 71; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 354.

*Panicum petiveri* Trin. Ic. Gram. t. 176, f. C.

*Panicum ramosum* Mez in Perk. Frag. Fl. Philip. (1904) 143, non (?) Linn.

? *Panicum umbrosum* F.-Vill. Novis. App. (1882) 311, non Retz.

*Panicum miliiforme* Presl Rel. Haenk. 1 (1830) 300; Kunth Enum. 1 (1833) 96; Miq. Fl. Ind. Bat. 3 (1857) 488; F.-Vill. Novis. App. (1882) 312; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 47, t. 20.

Northern Luzon to Palawan and Mindanao, in most or all islands and provinces. In open waste places in and about towns at low and medium altitudes; common. India to China through Malaya to tropical Australia.

**PANICUM FLAVIDUM** Retz. Obs. 4 (1786) 15; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; F.-Vill. Novis. App. (1882) 311; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 286; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27, 353, Fl. Manila (1912) 90.

*Panicum floridum* Usteri Beitr. Ken. Philip. Veg. (1905) 133, sphalm.

Northern Luzon to Palawan and Mindanao. A common weed in open waste places in and about towns at low altitudes. Tropical Asia, Africa, and Malaya.

Local names: Giling (C. Bis.); sabuñg-sabuñgan (Tag.); baili itau (Sul.).

**PANICUM HUMILE** Nees ex Steud. Syn. Pl. Glum. 1 (1854) 84; Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 80; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 358.

Luzon (Bontoc, Lepanto, Tarlac, Pangasinan, Zambales, Rizal), Culion, Merrill 3623, 4466, 11608, B. S. 21998 Ramos, F. B. 5872 Curran. In open waste places, grasslands, etc., at low and medium altitudes. India to southern China and Malaya.

**PANICUM INDICUM** Linn. Mant. 1 (1767) 184; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; F.-Vill. Novis. App. (1882) 311; Vid. Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27, 357, Fl. Manila (1912) 92.

*Hymenachne indica* Büse ex Miq. Fl. Ind. Bat. 3 (1857) 458.

*Sacciolepis indica* Chase in Proc. Biol. Soc. Wash. 21 (1908) 8.

Northern Luzon to Palawan and Mindanao. Common in open wet grasslands at low and medium altitudes. India through Malaya to tropical Australia.

Local names: Buntót-pusá (Tag.); sabsablúg (Bon.); salai-máya (Tag.); sangumai (Tag.); sikuán (Ig.).

Var. **ANGUSTUM** (Trin.) Hook. f. Fl. Brit. Ind. 7 (1897) 42; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 357.

*Panicum angustum* Trin. Ic. Gram. 3 (1836) t. 334; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287.

Occasional, in the same habitat as the species. India.

**PANICUM LUZONENSE** Presl Rel. Haenk. 1 (1828) 308; Kunth Enum. 1 (1833) 121; Miq. Fl. Ind. Bat. 3 (1857) 457; F.-Vill. Novis. App. (1882) 312; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 358.

Luzon (Amburayan, Nueva Ecija, Bataan, Rizal, Cavite, Laguna), Palawan, Merrill 316, 3107, 4183, Phil. Pl. 1238, B. S. 4600, 21997 Ramos,

23060 *McGregor*. In open waste places, old clearings, etc., at low altitudes. Malay Peninsula.

Local name: Niknikan (Tag.).

**PANICUM MALABARICUM** (Linn.) Merr. in Philip. Journ. Sci. 4 (1909) Bot. 248.

*Poa malabarica* Linn. Sp. Pl. (1753) 69.

*Panicum arnottianum* Nees in Steud. Syn. Pl. Glum. 1 (1854) 59.

Mindoro, Palawan, Mindanao, Palmas, *F. B. 5349 Merritt, Merrill 5367, 9378, 9581, B. S. 36687 Ramos & Edaño*. In old clearings at low altitudes. India to Malaya.

Local name: Salid (Sub.).

**PANICUM MAXIMUM** Jacq. Ic. Pl. Rar. 1 (1781-86) *t. 13*; Merr. Fl. Manila (1912) 93.

Cultivated for forage purposes, occasional as an escape or persisting from former cultivation. Cultivated in all tropical countries. Guinea grass.

**PANICUM MILIACEUM** Linn. Sp. Pl. (1753) 58; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 358.

Very rarely cultivated in the Philippines, and nowhere spontaneous. Cultivated in most warm countries. Millet.

Local name: Kabug (C. Bis.).

**PANICUM MINDANAENSE** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 360.

Luzon (Ilocos Sur, Rizal, Batangas, Zambales), Mindanao (Lanao), *Clemens 99, B. S. 27379, 5103, 29242 Ramos, Merrill Phil. Pl. 168, as P. caudiglume Hack*. In open places at low and medium altitudes. Endemic.

**PANICUM MYOSUROIDES** R. Br. Prodr. (1810) 189; Kunth Enum. 1 (1833) 77; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 357.

*Panicum angustissimum* Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 286, non ? Hochst.

*Panicum contractum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97, non ? Trin.

Luzon (Abra, Nueva Vizcaya), Panay, Mindanao (Misamis), *Cuming 1668, B. S. 31283 Ramos & Edaño, 14221 McGregor, F. B. 16459 Bacani*. In open wet lands at low and medium altitudes. Tropical Africa and Asia through Malaya to Australia.

**PANICUM NODOSUM** Kunth Enum. 1 (1833) 97; Miq. Fl. Ind. Bat. 3 (1857) 448; F.-Vill. Novis. App. (1882) 312; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 357, Fl. Manila (1912) 92, Sp. Blancoanae (1918) 66.

*Panicum multinode* Presl Rel. Haenk. 1 (1828) 303, non Lam.

*Panicum violaceum* Llanos Frag. Pl. Filip. (1851) 42; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 31.

*Panicum ouonbiense* Mez in Perk. Frag. Fl. Philip. (1904) 142, non Balansa.

Northern Luzon to Palawan and Mindanao, in most islands and provinces, *Merrill 4228, 527, 7056, 127, 4182, 255, 5385, 5247, Phil. Pl. 113, Sp. Blancoanae 944*. In thickets, old clearings, etc., at low and medium altitudes; common. India to China and Malaya.

Local names: Baníg-usá (Tag.); kauakauayánan (Tag.); kúmut-usá (Tag.).

**PANICUM PALUDOSUM** Roxb. Fl. Ind. 1 (1820) 310; Usteri Beitr. Ken. Philip. Veg. (1905) 133; Merr. in Philip. Journ. Sci. 4 (1909) Bot. 249, Fl. Manila (1912) 93.

*Panicum proliferum* Mez in Perk. Frag. Fl. Philip. (1904) 143; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 359, non Lam.

Luzon (Cagayan, Rizal, Laguna), Mindanao (Lanao), *Merrill 97, Phil. Pl. 159, B. S. 23144 McGregor, 7429 Ramos*. In shallow water along margins of streams and lakes at low and medium altitudes. India to southern China and Malaya.

**PANICUM PATENS** Linn. Sp. Pl. (1753) 86; Mez in Perk. Frag. Fl. Philip. (1904) 142; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 361, 3 (1908) Bot. 396.

*Panicum radicans* Retz. Obs. 4 (1786) 18; Steud. Syn. Pl. Glum. 1 (1854) 87; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; Miq. Fl. Ind. Bat. 3 (1857) 453; F.-Vill. Novis. App. (1882) 312; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287; Mez in Perk. Frag. Fl. Philip. (1904) 143.

Northern Luzon to Palawan and Mindanao, in most or all islands and provinces. Common in thickets, some secondary forests, old clearings, etc., at low and medium altitudes. India to Malaya.

Local names: Ililít (Ig.); malaniknik (Tag.); púgad-lagúyo (Tag.).

**PANICUM PILIPES** Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; Büse in Miq. Pl. Jungh. (1854) 376; Miq. Fl. Ind. Bat. 3 (1857) 453; Mez in Perk. Frag. Fl. Philip. (1904) 143; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 27, 361, 3 (1908) Bot. 396, Fl. Manila (1912) 94.

*Panicum hermaphroditum* Steud. Syn. Pl. Glum. 1 (1854) 67; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287.

*Panicum trigonum* Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 172; F.-Vill. Novis. App. (1882) 312, non Retz.

Northern Luzon to Palawan and Mindanao, in most or all islands and provinces. In thickets, along streams, in old clearings, etc., at low and medium altitudes. India to the Mascarene Islands, Malaya, tropical Australia, and Polynesia.

Local names: Baitbút (Tagb.); baníg-usá (Tag.); baririt-pualas (Bag.); marikauáyan (Ig.).

**PANICUM PSILOPODIUM** Trin. Gram. Pan. (1826) 217; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 168, Fl. Manila (1912) 93, Sp. Blancoanae (1918) 66.

*Panicum crispum* Llanos Frag. Pl. Filip. (1851) 42; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 30.

Luzon (Benguet, Rizal), *Merrill 7079, Phil. Pl. 597, 1764, Elmer 5972, 6589*. In open wet places at low and medium altitudes, ascending to 1,400 m; local. India to Burma.

**PANICUM PUNCTATUM** Burm. f. *Fl. Ind.* (1768) 26; Hook. f. *Fl. Brit. Ind.* 7 (1897) 29; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 353, *Fl. Manila* (1912) 90.

*Panicum fluitans* Retz. *Obs.* 3 (1783) 8; Miq. *Fl. Ind. Bat.* 3 (1857) 455; Rolfe in *Journ. Bot.* 23 (1885) 216; Vidal Phan. *Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 287.

*Paspalum pluriracemosum* Steud. *Syn. Pl. Glum.* 1 (1854) 27; Miq. *Fl. Ind. Bat.* 3 (1857) 431; F.-Vill. *Novis. App.* (1882) 310.

*Panicum brizoides* Nees in Hook. *Journ. Bot.* 2 (1850) 97, Miq. *Fl. Ind. Bat.* 3 (1857) 445, non Linn.

Luzon (Rizal, Laguna), Leyte, Mindanao (Misamis, Davao, Zamboanga, Agusan), *Merrill 7406, 8111, Phil. Pl. 131, Cuming 532, Wenzel 1780, Elmer 12019, B. S. 37364 Ramos & Edaña*. In shallow water and in open muddy places at low altitudes. Northern Africa to Mauritius, India, and Malaya.

Local names: Baririan (Bag.); lalabok (Sub.).

**PANICUM REPENS** Linn. *Sp. Pl. ed. 2* (1762) 87; Hook. f. *Fl. Brit. Ind.* 7 (1897) 49; Ceron *Cat. Pl. Herb. Manila* (1892) 180; Mez in *Perk. Frag. Fl. Philip.* (1904) 143; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 359, 3 (1908) *Bot.* 396, *Fl. Manila* (1912) 93, *Sp. Blancoanae* (1918) 67.

*Panicum ischaemoides* Retz. *Obs.* 4 (1786) 17; Nees in *Nov. Act. Acad. Nat. Cur.* 19 (1843) Suppl. 1: 175; Miq. *Fl. Ind. Bat.* 3 (1857) 450; F.-Vill. *Novis. App.* (1882) 312.

*Panicum convolutum* Beauv. ex Spreng. *Syst.* 1 (1825) 319; Presl *Rel. Haenk.* 1 (1828) 304; F.-Vill. *Novis. App.* (1882) 312; Steud. *Syn.* 1 (1854) 73.

*Panicum tuberosum* Llanos *Frag. Pl. Filip.* (1851) 40; F.-Vill. & Naves in *Blanco Fl. Filip. ed. 3, 4<sup>1</sup>* (1880) 29.

*Panicum miliare* Mez in *Perk. Frag. Fl. Philip.* (1904) 142, non Lam.

Throughout the Philippines in open low lands, especially near the sea, but also inland locally and ascending to 1,500 m; common. Pantropic.

Local names: Kayana (Mbo.); luya-luyahan (Tag.).

**PANICUM REPTANS** Linn. *Syst. ed. 10* (1759) 871; Hitchc. in *Contr. U. S. Nat. Herb.* 12 (1908) 119; Merr. in *Philip. Journ. Sci.* 4 (1909) *Bot.* 249.

*Panicum prostratum* Lam. *Ill.* 1 (1791) 171; Miq. *Fl. Ind. Bat.* 3 (1857) 446; F.-Vill. *Novis. App.* (1882) 311; Mez in *Perk. Frag. Fl. Philip.* (1904) 143; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 355.

*Panicum calaccanzense* Steud. *Syn. Pl. Glum.* 1 (1854) 65; Vidal Phan. *Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 287.

*Panicum barbatum* Lam. *Tabl. Encycl.* 1 (1791) 171; Presl *Rel. Haenk.* 1 (1830) 299.

*Panicum procumbens* Nees *Agrost. Bras.* (1823) 109, Hook. *Journ. Bot. Kew Miscel.* 2 (1850) 97.

*Panicum luxurians* Willd. ex Nees *Agrost. Bras.* (1829) 233, non *P. luxurians* Willd. ex Spreng. *Syst.* 1 (1825) 305.

Throughout the Philippines in open waste places, old clearings, thickets, etc., at low and medium altitudes. Pantropic.

Local names: Babáka-nalabága (Ilk.); marakauáyan (Ilk.).

**PANICUM SARMENTOSUM** Roxb. *Fl. Ind.* 1 (1820) 311; F.-Vill. *Novis. App.* (1882) 312; Vidal *Phan. Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 287; Mez in *Perk. Frag. Fl. Philip.* (1904) 143; Merr. in *Philip. Journ. Sci.* 1 (1906) *Suppl.* 27, 360, 2 (1907) *Bot.* 261.

*Panicum incomptum* Trin. *Gram. Pan.* (1826) 200, *Ic. Gram.* (1828-36) *t.* 223; Kunth *Enum.* 2 (1833) 112; Miq. *Fl. Ind. Bat.* 3 (1857) 451; Nees in *Mart. Fl. Bras.* 2: 207.

*Panicum extensum* Steud. *Syn. Pl. Glum.* 1 (1854) 72.

*Panicum vacillans* Steud. *op. cit.* 75.

*Panicum concinnum* Nees in *Hook. Journ. Bot. Kew Miscel.* 2 (1850) 97; *Walp. Ann.* 3 (1853) 719.

Luzon (Bataan, Cavite, Zambales, Tayabas), Mindoro, Culion, Palawan, Balabac, Panay, Negros. In thickets and secondary forests at low and medium altitudes, often common. India to southern China and Malaya.

Local names: Kanubsúban (Tag.); kauakauáyan (Tag.); kauáyan-sa-uák (P. Bis.); kaykauáyan (P. Bis.); kuayan-kuáyan (Sul.).

**PANICUM STAGNINUM** Retz. *Obs.* 4 (1786) 17; F.-Vill. *Novis. App.* (1882) 311; Usteri *Beitr. Ken. Philip. Veg.* (1905) 133; Merr. in *Philip. Journ. Sci.* 1 (1906) *Suppl.* 354, 3 (1908) *Bot.* 396, *Fl. Manila* (1912) 91, *Sp. Blancoanae* (1918) 64.

*Echinochloa stagnina* Beauv. *Agrost.* (1812) 57; Miq. *Fl. Ind. Bat.* 3 (1857) 464.

*Aegilops fluviatilis* Blanco *Fl. Filip.* (1837) 47, *ed.* 2 (1845) 32, *ed.* 3, 1 (1879) 59.

*Orthopogon loliaceus* Llanos *Frag. Pl. Filip.* (1851) 36; F.-Vill. & Naves in *Blanco Fl. Filip.* *ed.* 3, 4<sup>1</sup> (1880) 26, non Spreng.

*Panicum crus-galli* Linn. *var. stagninum* O. Kuntze *Rev. Gen. Pl.* (1891) 783.

Babuyan Islands and northern Luzon to Mindanao, in most islands and provinces. In open wet places, swamps, borders of lakes and streams, at low and medium altitudes. India to Africa and Malaya.

Local names: Balili (Tag.); banágo (Sub.); lagtóm-na-pulá (Bik.); timsím (Tag.); urarói (Bik.).

**PANICUM TRICHODES** Sw. *Prodr. Veg. Ind. Occ.* (1788) 24; Hitchc. & Chase in *Contr. U. S. Nat. Herb.* 15 (1910) 129, *f.* 125.

*Panicum capillaceum* Lam. *Tabl. Encycl.* 1 (1791) 173.

Luzon (Ilocos Norte, Pangasinan), Culion, *Merrill 453, B. S. 7618 Ramos, F. B. 15530 Merritt & Darling, Gates 5675.* In thickets at low and medium altitudes. Similar in appearance to *Panicum brevifolium* Linn., but distinguished by its short first glume. I am indebted to Prof. A. S. Hitchcock for indicating to me the error in the original determinations. Widely distributed in tropical America, probably an introduced species in the Philippines.

**PANICUM TRYPHERON** Schultes Mant. 2 (1882) 244; Hook. f. Fl. Brit. Ind. 7 (1897) 47; Mez in Perk. Frag. Fl. Philip. (1904) 143; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 358.

Luzon (Cagayan, Lepanto), Semirara, Mindoro, Palawan, Mindanao (Davao), Merrill 678, 4136, 4478, Phil. Pl. 1281, Copeland 396, F. B. 16585 Curran. In open grasslands at low and medium altitudes. Tropical Africa through India to China and Malaya.

**PANICUM TUBERCULATUM** Presl Rel. Haenk. 1 (1830) 307; Kunth Enum. 1 (1833) 120; Miq. Fl. Ind. Bat. 3 (1857) 454; F.-Vill. Novis. App. (1882) 312.

*Panicum caesium* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 358.

*Panicum acroanthum* Mez in Perk. Frag. Fl. Philip. (1904) 141, non Steud.

Luzon (Isabela, Nueva Ecija, Pampanga, Rizal, Laguna), Panay, Mindanao (Misamis), Cuming 1667, Merrill 123, 6707, 4229, 1469, Phil. Pl. 2057, B. S. 23081 McGregor, 8122 Ramos. In open waste places, old clearings, etc., at low and medium altitudes. India to Borneo and New Guinea.

**PANICUM UNCINATUM** Raddi Agrost. Bras. (1823) 41; Trin. Gram. Pan. (1826) 174, Ic. t. 216; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 362.

Mindanao (Davao), Clemens 266. In thickets or open lands, altitude about 650 m. Pantropic.

**PANICUM WARBURGII** Mez in Perk. Frag. Fl. Philip. (1904) 143; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 362, Fl. Manila (1912) 93.

*Panicum patens* Linn. var. *parvulum* Warb. l. c. in syn.

Luzon (Ilocos Norte, Ifugao, Lepanto, Nueva Vizcaya, Rizal, Zambales, Bataan, Laguna, Tayabas), Mindanao (Lanao), Merrill 303, Kneucker Gram. Exsic. 734, B. S. 28834 Ramos & Edaño, 27018, 27394 Ramos, 20007 McGregor. In thickets and forests, sea level to 1,200 m altitude; probably but a greatly reduced form of *P. carinatum* Presl, the latter being intermediate between the present species and *P. patens* Linn. Endemic.

#### EXCLUDED SPECIES

**PANICUM BRIZAEFORME** Presl Rel. Haenk. 1 (1830) 302; Kunth Enum. 1 (1833) 78; Miq. Fl. Ind. Bat. 3 (1857) 445; F.-Vill. Novis. App. (1882) 311; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 46, t. 16.

*Panicum paspaloides* Pers. Syn. 1 (1805) 81; Kunth Enum. 1 (1833) 77; F.-Vill. Novis. App. (1882) 311.

Hitchcock & Chase, in Contr. U. S. Nat. Herb. 15 (1910) 30, state that the Haenke specimen of *P. brizaeforme* in the Prague herbarium is labeled "Acapulco, Mexico," and is *Panicum geminatum* Forsk.

**PANICUM ELATIUS** Kunth; F.-Vill. Novis. App. (1882) 312.

**PANICUM PALUDICOLA** Nees Agrost. Bras. (1823) 179; Steud. Syn. Pl. Glum. 1 (1854) 65; Miq. Fl. Ind. Bat. 3 (1857) 455; F.-Vill. Novis. App. (1882) 312.

"Brazil . . . ins. Manil, Java" Steudel. This is a Brazilian species, *Panicum palustre* Trin.; see Chase in Proc. Biol. Soc. Wash. 21 (1908) 5, sub *Hymenachne palustris* (Trin.) Chase.

PANICUM MERTENSII Roth; F.-Vill. Novis. App. (1882) 312.

PANICUM LEUCOPHAEUM HBK.; Presl Rel. Haenk. 1 (1830) 299; F.-Vill. Novis. App. (1882) 311.

"Hab. in Mexico, in Luzonia" Presl. An American species to which some Australian forms have been referred. The Luzon record was based on an erroneously localized Malaspina Expedition collection.

PANICUM HELOPUS Trin.; F.-Vill. Novis. App. (1882) 311.

### 29. ICHNANTHUS Beauvois

ICHNANTHUS VICINUS (F. M. Bail.) comb. nov.

*Panicum vicinum* F. M. Bail. Syn. Queensl. Fl. Suppl. 3 (1890) 82.

*Ichnanthus pallens* Munro in Benth. Fl. Hongk. (1861) 414; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 261, 363; Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 80, non *Panicum pallens* Sw.

*Panicum paludicolum* Miq. Fl. Ind. Bat. 3 (1857) 454; F.-Vill. Novis. App. (1882) 312, non Nees.

*Panicum nitens* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 8.

Luzon (Bontoc, Kalinga, Bataan, Laguna, Sorsogon), Catanduanes, Mindoro, Biliran, Mindanao, Merrill 3756, 3221, 5498, 5538, Phil. Pl. 109, Kneucker Gram. Exsic. 740, B. S. 30226, 23608 Ramos, 18502 McGregor, 37475, 38608 Ramos & Edaña. On forested slopes and ridges up to 1,400 m altitude. India to southern China and Formosa through Malaya to tropical Australia.

Local name: Dóot (Ilk.).

### 30. ALLOTEROPSIS Presl

ALLOTEROPSIS SEMIALATA (R. Br.) Hitchc. in Contr. U. S. Nat. Herb. 12 (1909) 210; Chase in Proc. Biol. Soc. Wash. 24 (1911) 159.

*Panicum semialatum* R. Br. Prodr. (1810) 192; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 287.

*Alloteropsis distachya* Presl Rel. Haenk. 1 (1830) 344, t. 47; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 37, t. 23.

*Holosetum philippicum* Steud. in Flora 33 (1850) 228, nomen, Syn. Pl. Glum. 1 (1854) 118; Miq. Fl. Ind. Bat. 3 (1857) 444.

*Arundinella nervosa* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; Steud. Syn. Pl. Glum. 1 (1854) 115; Miq. Fl. Ind. Bat. 3 (1857) 519; F.-Vill. Novis. App. (1882) 318.

*Coridochloa semialata* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97.

*Panicum philippicum* F.-Vill. Novis. App. (1882) 312.

*Urochloa semialata* Kunth Rev. Gram. 1 (1829) 31; Pax in Perk. Frag. Fl. Philip. (1904) 144.

*Axonopus semialatus* Hook. f. Fl. Brit. Ind. 7 (1897) 64; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 367.

Luzon (Cagayan, Ilocos Norte, Bontoc, Lepanto, Benguet, Pangasinan, Nueva Vizcaya, Nueva Ecija, Zambales, Laguna). On open grassy slopes



at low and medium altitudes, ascending to 1,800 m. India to South Africa, China, and tropical Australia.

Local name: Timi (Bon.).

### 31. OPLISMENUS Beauvois

**OPLISMENUS BURMANNII** (Retz.) Beauv. *Agrost.* (1812) 54; F.-Vill. *Novis. App.* (1882) 312; Pilger in *Perk. Frag. Fl. Philip.* (1904) 144; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 364, *Fl. Manila* (1912) 94.

*Panicum burmannii* Retz. *Obs.* 3 (1783) 10.

*Panicum hirtellum* Burm. f. *Fl. Ind.* (1768) 24, t. 12, f. 1, non Linn.

*Orthopogon burmannii* R. Br. *Prodr.* (1810) 194; Miq. *Fl. Ind. Bat.* 3 (1857) 442.

Luzon (Pangasinan, Rizal, Bataan), Mindanao (Zamboanga), *Merrill 3290, Phil. Pl. 196, Elmer 6645, Williams 135, B. S. 24084 Ramos.* In thickets at low altitudes. Pantropic.

**OPLISMENUS COMPOSITUS** (Linn.) Beauv. *Agrost.* (1812) 54; F.-Vill. *Novis. App.* (1882) 312; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 364, 3 (1908) *Bot.* 397, *Fl. Manila* (1912) 94, *Sp. Blancoanae* (1918) 67.

*Panicum compositum* Linn. *Sp. Pl.* (1753) 57.

*Panicum loliaceum* Lam. *Tabl. Encycl.* 1 (1790) 170, *Encycl.* 4 (1798) 743.

*Oplismenus loliaceus* Beauv. *Agrost.* (1812) 168; Kunth *Enum.* 1 (1833) 140; F.-Vill. *Novis. App.* (1882) 312.

*Orthopogon sylvaticus* Miq. *Fl. Ind. Bat.* 3 (1857) 443.

*Oplismenus sylvaticus* R. & S. *Syst.* 2 (1817) 481; F.-Vill. *Novis. App.* (1882) 312.

*Orthopogon compositus* R. Br. *Prodr.* (1810) 194; Miq. *Fl. Ind. Bat.* 3 (1857) 443.

*Oplismenus indicus* R. & S. *Syst.* 2 (1817) 484; Nees in *Hook. Journ. Bot. Kew Miscel.* 2 (1850) 97; Vidal Phan. *Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 288.

*Orthopogon setarius* Llanos *Frag. Pl. Filip.* (1851) 35, non Spreng.

*Orthopogon hirtellus* R. Br.; Llanos *op. cit.* 37.

*Panicum lanceolatum* Retz.; F.-Vill. *Novis. App.* (1882) 311.

*Panicum sylvaticum* Lam. *Encycl.* 4 (1798) 733; Steud. *Syn. Pl. Glum.* 1 (1854) 45.

Throughout the Philippines in all or most islands and provinces, in thickets, old clearings, etc., at low and medium altitudes; often common. Pantropic.

Local names: Balibátong (Sub.); balisibis (Iv.); baníg-usá (Tag.); kauakauáyan (Tag.); litlítun (Bon.); malakauáyan (Pang.); marikauáyan (Ig.); yamog-yamóg (P. Bis.); bailituganalú (Sul.).

Vor. **LASIORHACHIS** Hack. in *Govt. Lab. Publ. (Philip.)* 35 (1906) 81; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 364.

*Oplismenus burmannii* Mez in *Perk. Frag. Fl. Philip.* (1904) 144, non Beauv.

Palawan, *Merrill 826.* In open dry places at low altitudes. Endemic.

**OPLISMENUS UNDULATIFOLIUS** (Ard.) Beauv. *Agrost.* (1812) 54; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 364.

*Panicum undulatifolium* Ard. *Anim. Bot. Sp. Alt.* (1764) 14, t. 4.

Luzon (Ilocos Norte, Benguet, Bontoc, Ifugao, Union, Bataan, Laguna), Mindoro, Mindanao, *B. S.* 19708 *McGregor*, 27397 *Ramos*, 36693, 37488, 37108 *Ramos & Edaña*, *F. B.* 2547 *Borden*, *Williams* 1179, 1962, 144, *Elmer* 6987. In thickets and forests at low and medium altitudes. Europe to tropical Asia and Malaya.

Local names: Lulúpong (Sub.); malanikník (Tag.).

**Var. IMBECILLIS** (R. Br.) Hack. in *Govt. Lab. Publ. (Philip.)* 35 (1906) 81; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 364.

*Panicum imbecille* Trin.  *Ic. Gram.* (1828-36) 16, t. 191.

*Orthopogon imbecillis* R. Br. *Prodr.* (1810) 194.

*Oplismenus minus* Merr. in *Govt. Lab. Publ. (Philip.)* 17 (1904) 9.

Luzon (Cagayan, Benguet, Bontoc, Rizal, Laguna, Tayabas, Bulacan, Pangasinan, Bataan, Sorsogon), Catanduanes, Leyte, Negros, Mindanao, *Merrill* 3203, 4511, 5485, 8276, 6976, *Kneucker Gram. Exsic.* 739, *Elmer* 17105, *B. S.* 29923 *Fénix*, 12281 *Foxworthy*, 30286, 19381 *Ramos*, 31692 *Santos*. Along streams in shaded places and on ridges in the mossy forest, at low and medium altitudes, ascending to 2,400 m. Australia.

### 32. SETARIA Beauvois

**SETARIA GENICULATA** (Lam.) Beauv. *Agrost.* (1812) 51, 178.

*Panicum geniculatum* Lam. *Encycl.* 4 (1798) 727 (err. typ. 737).

*Panicum flavum* Nees in *Mart. Fl. Bras.* 2 (1829) 180.

*Setaria flava* Kunth *Rev. Gram.* 1 (1829) 46; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 365, 5 (1910) *Bot.* 327, *Fl. Manila* (1912) 95, *Sp. Blancoanae* (1918) 68.

*Panicum penicillatum* Nees in *Nov. Act. Acad. Nat. Cur.* 19 (1843) Suppl. 1: 173, *Hook. Journ. Bot. Kew Miscel.* 2 (1850) 97, non Willd.

*Panicum chrysanthum* Steud. *Nomen. ed.* 2, 2 (1841) 254, *Syn. Pl. Glum.* 1 (1854) 50.

*Panicum rubiginosum* Steud. *Syn. Pl. Glum.* 1 (1854) 50.

*Setaria aurea* Hochst. ex A. Br. in *Flora* 24 (1841) 276.

*Setaria pilifera* Llanos *Frag. Pl. Filip.* (1851) 34; F.-Vill. & Naves in *Blanco Fl. Filip. ed.* 3, 4<sup>1</sup> (1880) 25, non Desv.

*Setaria glauca* F.-Vill. *Novis. App.* (1882) 312; *Vidal Phan. Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 288, non Beauv.

*Chaetochloa glauca* Scribn. var. *aurea* W. F. Wight in *Contr. U. S. Nat. Herb.* 9 (1905) 223.

*Setaria glauca* Beauv. var. *aurea* K. Schum. *Fl. Deutsch. Schutzgeb. Südsee* (1901) 180.

*Setaria rubiginosa* Miq. *Fl. Ind. Bat.* 3 (1857) 467; F.-Vill. *Novis. App.* (1882) 313.

*Chaetochloa geniculata* Millsp. & Chase in *Field Mus. Bot.* 3 (1903) 37; Hitchc. in *Contr. U. S. Nat. Herb.* 22 (1920) 168, f. 41.

Throughout the Philippines in open grasslands at low and medium altitudes, ascending to 1,800 m. Pantropic.

Local names: Buntót-púsa (Tag.); lagilikáran (Bag.); putiñgán (Ig.); sabsablúg (Bon.); samsamáng (Bon.); tirtirigo (Ilk.); daua-ambau (Sul.).

**SETARIA ITALICA** (Linn.) Beauv. *Agrost.* (1812) 51; *Miq. Fl. Ind. Bat.* 3 (1857) 467; *F.-Vill. Novis. App.* (1882) 312; *Vidal. Phan. Cuming. Philip.* (1885) 157; *Merr. in Philip. Journ. Sci.* 1 (1906) Suppl. 365, *Sp. Blancoanae* (1918) 68; *Hubbard in Am. Journ. Bot.* 2 (1915) 192 (subsp. *stramineo-fructa* Hubb. var. *brunneo-seta* Hubb.).

*Panicum italicum* Linn. *Sp. Pl.* (1753) 56; *Nees in Hook. Journ. Bot. Kew Miscel.* 2 (1850) 97.

*Panicum miliaceum* Blanco *Fl. Filip.* (1837) 39; ed. 2 (1845) 28; ed. 3, 1 (1877) 52, non Linn.

*Panicum comosum* Steud. *Syn. Pl. Glum.* 1 (1854) 53, ex descr.

*Setaria comosa* *Miq. Fl. Ind. Bat.* 3 (1857) 468; *F.-Vill. Novis. App.* (1882) 313.

*Chaetochloa italica* *Scribn. in U. S. Dept. Agr. Div. Agrost. Bull.* 4 (1897) 39.

Cultivated here and there throughout the Philippines, occasional as an escape in old clearings. Cultivated in all warm countries. Italian millet.

Local names: Bikákau (Ilk.); boróna (Pamp.); bukákau (Ilk.); dáua (C. Bis., P. Bis., Tag.); rautnokara (Iv.); sábug (Ig.) sammang (Bon.); turai (Sul.).

**SETARIA LAXA** *Merr. in Philip. Journ. Sci.* 1 Suppl. (1906) 366, *Fl. Manila* (1912) 96.

*Chamaeraphis gracilis* *Hack. in Engl. Bot. Jahrb.* 6 (1885) 236, non *Setaria gracilis* HBK.

*Panicum chamaeraphoides* *Hack. ex Koord. Exkursionsfl. Java* 1 (1911) 135.

Luzon (Rizal, Laguna), *Merrill 7440, Phil. Pl.* 595, *Hallier*. In thickets and fallow lands at low altitudes. Java.

**SETARIA PALMIFOLIA** (Koenig) *Stapf in Journ. Linn. Soc. Bot.* 42 (1914) 186.

*Panicum palmaefolium* *Koenig in Naturf.* 23 (1788) 208; *Miq. Fl. Ind. Bat.* 3 (1857) 449; *Merr. in Philip. Journ. Sci.* 1 (1906) Suppl. 361, 2 (1907) Bot. 261, 5 (1910) Bot. 327.

*Panicum plicatum* *F.-Vill. Novis. App.* (1882) 311; *Mez in Perk. Frag. Fl. Philip.* (1904) 143, non ? *Lam.*

*Panicum amplissimum* *Steud. Syn. Pl. Glum.* 1 (1854) 54; *Vidal Phan. Cuming. Philip.* (1885) 156, *Rev. Pl. Vasc. Filip.* (1886) 287.

*Panicum nepalense* *Spreng. Syst.* 1 (1825) 321; *Rolfe in Journ. Bot.* 23 (1885) 216.

*Panicum neurodes* *Schultes Syst. Mant.* 2 (1824) 321; *Vidal Phan. Cuming. Philip.* (1885) 157, *Rev. Pl. Vasc. Filip.* (1886) 287; *Usteri Beitr. Ken. Philip. Veg.* (1905) 133.

*Panicum lene* *Steud. Syn. Pl. Glum.* 1 (1854) 54.

*Setaria lenis* *Miq. Fl. Ind. Bat.* 3 (1857) 468; *F.-Vill. Novis. App.* (1882) 313.

*Chamaeraphis setosa* *O. Kuntze var. lenis* *O. Kuntze Rev. Gen. Pl.* (1891) 769.

*Panicum kleinianum* *Nees in Hook. Journ. Bot. Kew Miscel.* 2 (1850) 97.

*Chaetochloa palmifolia* Hitchc. & Chase in Contr. U. S. Nat. Herb. 22 (1920) 161, f. 38.

Northern Luzon to Palawan and Mindanao, in most or all islands and provinces. Common in thickets, old clearings, abacá plantations, etc., at low and medium altitudes, ascending to 200 m. India to China and Malaya, introduced in tropical America.

Local names: Agusáis (Bik.); asáhas (C. Bis.); baṅgas (Ig.); dumbug (Sul.); hagusáhis (Bik.); lalasa (Ig.); liahon (If.); lias (Bon.); yas (Ig.).

**SETARIA VERTICILLATA** (Linn.) Beauv. Agrost. (1812) 51; F.-Vill. Novis. App. (1882) 312; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 397.

*Panicum verticillatum* Linn. Sp. Pl. ed. 2 (1762) 82.

Batan Islands, Luzon (Rizal), *B. S. 4041 Fénix, Merrill Phil. Pl. 1406*. In open waste places. Temperate and tropical regions generally.

**SETARIA VIRIDIS** (Linn.) Beauv. Agrost. (1812) 51; F.-Vill. Novis. App. (1882) 312; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 366, Fl. Manila (1912) 95.

Luzon (Cagayan, Bontoc, Rizal). A casual introduction, occurring rarely in open waste places. A temperate and subtropical weed.

Local names: Dapdapígan (Bon.); upoan (Bon.).

#### EXCLUDED SPECIES

**SETARIA GLOBULARIS** Presl Rel. Haenk. 1 (1830) 314; Kunth Enum. 1 (1833) 151; Miq. Fl. Ind. Bat. 3 (1857) 314; F.-Vill. Novis. App. (1882) 312; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 52.

*Panicum globulare* Steud. Syn. Pl. Glum. 1 (1854) 51.

"Hab. in insulis Philippinis." The species is certainly not Philippine, but the specimens on which it was based were probably of Mexican origin. A sheet of Presl's type material in the herbarium of the Missouri Botanical Garden consists of *Setaria caudata* Lam. and *S. composita* Kunth.

**SETARIA MACROSTACHYA** HBK.; F.-Vill. Novis. App. (1882) 312.

#### 33. CENCHRUS Linnaeus

**CENCHRUS VIRIDIS** Spreng. Syst. Veg. 1 (1825) 301; Chase in Contr. U. S. Nat. Herb. 22 (1920) 57, f. 11.

*Cenchrus inflexus* R. Br. Prodr. (1810) 50, non Poir.

*Cenchrus echinatus* Presl Rel. Haenk. 1 (1830) 317; Miq. Fl. Ind. Bat. 3 (1857) 472; F.-Vill. Novis. App. (1882) 313; Perk. Frag. Fl. Philip. (1904) 145; Merr. in Philip. Journ. Sci. 1 (1906) 367, Fl. Manila (1912) 95, Sp. Blancoanae (1918) 68, non Linn.

*Cenchrus hexastlorus* Blanco Fl. Filip. (1837) 36, ed. 2 (1845) 24, ed. 3, 1 (1877) 46.

A widely distributed weed in the settled areas of the Philippines, occurring generally in open waste places in and about towns. A native of tropical America, now also found in Guam, Siam, Indo-China, New Guinea, and northern Australia. Dr. A. B. Rendle has critically compared our material with the type of *Cenchrus inflexus* R. Br.

The Philippine form has been confused with *C. echinatus* Linn.

Local names: Agiñgai (Tag.); sagisí (Ilk.).

#### 34. PENNISETUM Persoon

**PENNISETUM ALOPECUROIDEUM** (Linn.) Spreng. Syst. 1 (1825) 303.

*Panicum alopecuroideum* Linn. Sp. Pl. (1753) 55.

*Alopecurus hordeiformis* Lour. Fl. Cochinch. (1790) 48, non ? Linn.

*Pennisetum compressum* R. Br. Prodr. (1810) 195; Merr. in Philip.

Journ. Sci. 1 (1906) Suppl. 368.

*Gymnothrix nigricans* Presl Rel. Haenk. 1 (1830) 315.

*Pennisetum nigricans* Trin. ex Steud. Nomencl. ed. 2, 2 (1841) 297;

Miq. Fl. Ind. Bat. 3 (1857) 470; F.-Vill. Novis. App. (1882) 312.

*Pennisetum cenchroides* F.-Vill. Novis. App. (1882) 313, non Spreng.

Luzon (Ilocos Norte, Bontoc, Benguet), *Merrill 7704, 4435, Williams 1201, Elmer 5756, B. S. 31898 Santos, 5932, 5365, 27422 Ramos, 12708 Fénix, 8763 McGregor*. On open slopes at medium altitudes, chiefly in the pine region, ascending to 2,000 m. India to Indo-China, China, Japan, and Australia.

Local name: Kaibuan (Ig.).

**PENNISETUM MACROSTACHYUM** Trin. in Mém. Acad. St. Pétersb. VI

3<sup>2</sup> (1835) 177; Ceron Cat. Pl. Herb. Manila (1892) 121; Merr. in

Philip. Journ. Sci. 1 (1906) Suppl. 368.

*Sericura elegans* Hassk. in Flora 25 (1842) Beibl. 2: 2.

Luzon (Laguna, Batangas, Rizal, Tayabas, Sorsogon), Mindoro, Masbate, Panay, Cebu, Negros, Mindanao, Basilan, *Merrill 3381, Williams 2622, Elmer 9674, 81324, 15327, B. S. 31306 Ramos & Edaño, 24939 Fénix, 14749, 11079, 5217 Ramos, 15494 Reillo*. In old clearings at low and medium altitudes. Malay Peninsula and Archipelago to Polynesia.

Local names: Daráui (C. Bis.); gulálai (Sub.); handaláui (C. Bis.); lagóli (Bag.).

#### 35. CHAMAERAPHIS R. Brown

**CHAMAERAPHIS MURICATA** (Linn. f.) comb. nov.

*Andropogon muricatus* Linn. f. Suppl. (1781) 433; Stapf in Kew Bull. (1906) 348 in nota.

*Panicum asperum* Koen. in Naturf. 23 (1788) 209.

*Panicum spinescens* R. Br. Prodr. (1810) 193.

*Chamaeraphis spinescens* Poir. in Lam. Encycl. Suppl. 2 (1811) 189;

F.-Vill. Novis. App. (1882) 313; Hook. f. Fl. Brit. Ind. 7 (1897) 62.

*Chamaeraphis aspera* Nees in Wall Cat. (1849) No. 8679; Mez in Perk. Frag. Fl. Philip. (1904) 145; Merr. in Philip. Journ. Sci. 1 (1906) 368, Fl. Manila (1912) 96.

Central Luzon to Palawan and Mindanao, *Merrill 375, 4194, 7060, 9467, B. S. 29500 Ramos & Edaño*. In shallow stagnant water at low altitudes. India to China through Malaya to tropical Australia.

#### 36. THUAREA Persoon

**THUAREA INVOLUTA** (Forst.) R. & S. Syst. 2 (1817) 782; Merr. in

Philip. Journ. Sci. 1 (1906) Suppl. 369, Fl. Manila (1912) 97.

*Ischaemum involutum* Forst. Prodr. (1786) 73.

*Thuarea sarmentosa* Pers. Syn. 1 (1805) 110; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97 (*Thouarea*); F.-Vill. Novis. App. (1882) 313; Usteri Beitr. Ken. Phil. Veg. (1905) 133; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 28.

Luzon (Cagayan, Bataan, Rizal), Mindoro, Palawan, Samar, Mindanao. On sandy beaches and in thickets back of the beach, often common. Ceylon to Madagascar through Malaya to Australia and Polynesia.

### 37. SPINIFEX Linnaeus

**SPINIFEX LITTOREUS** (Burm. f.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 229, Fl. Manila (1912) 97, Sp. Blancoanae (1918) 69.

*Stipa littorea* Burm. f. Fl. Ind. (1768) 29.

*Stipa spinifex* Linn. Mant. 1 (1767) 84; Blanco Fl. Filip. (1837) 41; ed. 2 (1845) 29, ed. 3, 1 (1877) 54.

*Spinifex squarrosus* Linn. Mant. 2 (1771) 163; Blanco Fl. Filip. (1837) 46; ed. 2 (1845) 31; ed. 3, 1 (1877) 57; F.-Vill. Novis. App. (1882) 313; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 288; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 369.

On sandy seashores from the Batan Islands to Palawan and Mindanao. India to China and Malaya.

Local names: Baki-báki (Bis.); tartarái (Ilk.); tayung-táyung (C. Bis.).

### 38. LEPTASPIS R. Brown

**LEPTASPIS CUMINGII** Steud. Syn. Pl. Glum. 1 (1854) 416; Miq. Fl. Ind. Bat. 3 (1857) 375; F.-Vill. Novis. App. (1882) 318; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 288; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 370.

*Leptaspis cochleata* Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 81, non Thwaites.

Mindanao (Misamis, Davao), Bongao, *Copeland 703*, *Cuming 1627*, *B. S. 36319 Yates*. In forests at low or medium altitudes. Endemic.

**LEPTASPIS URCEOLATA** (Roxb.) R. Br. in Benn. Pl. Jav. Rar. (1838) 23, t. 6; Miq. Fl. Ind. Bat. 3 (1854) 374; F.-Vill. Novis. App. (1882) 318; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 288; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 370; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 194.

*Pharus urceolatus* Roxb. Fl. Ind. ed. 2, 3 (1832) 611.

*Leptaspis manillensis* Steud. Syn. Pl. Glum. 1 (1854) 8; Miq. Fl. Ind. Bat. 3 (1857) 374; F.-Vill. Novis. App. (1882) 318.

Luzon (Camarines, Sorsogon), Polillo, Palawan, Samar, Leyte, Negros, Mindanao. In thickets and forests at low and medium altitudes; represented by numerous collections. Ceylon, Malay Peninsula, Sumatra, Java, through the Moluccas to New Guinea.

Local names: Alaplap (Mbo.); baliotus (Bag.); budhak-budhak (Sul.); handalokot (Mbo.); madioug (S. L. Bis.); rokot-dókot (S. L. Bis.); sa-lindaget (Mbo.); taliñgagito (Sub.).

39. *ORYZA* Linnaeus

*ORYZA MEYERIANA* (Zoll. & Morr.) Benth. ex Pilger in Perk. Frag. Fl. Philip. (1904) 145; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 370.

*Padia meyeriana* Zoll. & Morr. Verz. Ind. Arch. (1854) 103; Steud. Syn. Pl. Glum. 1 (1854) 3; Miq. Fl. Ind. Bat. 3 (1857) 373.

*Oryza granulata* Nees & Arn. in Wall. Cat. (1830) No. 2354, *nomen nudum*; Hook. f. Fl. Brit. Ind. 7 (1897) 93; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 7.

Luzon (Isabela, Ifugao, Nueva Vizcaya, Rizal, Tayabas), Palawan, Panay, Mindanao (Zamboanga), Merrill 116, 6697, 8060, 7244, B. S. 19967 McGregor, 20677 Escritor, 343 Bermejos, 8036 Ramos. In forests, bamboo thickets, etc., at low and medium altitudes. India to Java, Borneo, and Celebes.

*ORYZA MINUTA* Presl Rel. Haenk. 1 (1830) 208; Kunth Enum. 1 (1833) 7; Miq. Fl. Ind. Bat. 3 (1857) 371; F.-Vill. Novis. App. (1882) 319.

*Oryza manillensis* Merr. in Philip. Journ. Sci. 3 (1908) Bot. 219, Fl. Manila (1912) 98.

*Oryza latifolia* F.-Vill. Novis. App. (1882) 319, non Desv.

Luzon (Rizal, Laguna, Tayabas, Sorsogon), Mindanao (Zamboanga), Presl in Herb. Bernhardi, Merrill 8112, 7402, Phil. Pl. 128, Elmer 17407, B. S. 29492 Ramos & Edaño, 2194, 12102, 12044, 13269 Ramos, 36714 Ramos & Edaño. In open wet places at low and medium altitudes. Borneo, Malay Peninsula.

This is I believe the Malay Peninsula and Bornean form currently referred to *Oryza latifolia* Desv., but I believe the type of Desvaux's species was an American plant. Of the specimens cited, Elmer 17407, B. S. 36714 Ramos & Edaño, and Merrill 8112, being more robust than the others, closely match the Malay Peninsula form.

Local names: Palai-máya (Sul.); palai-pálai (Sub.); baili-gaja (Sul.).

*ORYZA SATIVA* Linn. Sp. Pl. (1753) 333; F.-Vill. Novis. App. (1882) 318; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 370, Fl. Manila (1912) 97, Sp. Blancoanae (1918) 69, 70.

*Oryza aristata* Blanco Fl. Filip. (1837) 274; ed. 2 (1845) 190; ed. 3, 1 (1877) 339.

*Oryza sativa* Linn. vars. *binamban*, *glutinosa*, *lamuyo*, *pilosa*, *praecox*, *quinanda*, *rubra*, et *violacea* Blanco l. c.

*Oryza glutinosa* Lour. Fl. Cochinch. (1790) 215; F.-Vill. Novis. App. (1882) 319.

*Oryza montana* Lour. l. c. 215; F.-Vill. l. c.

*Oryza praecox* Lour. l. c. 215; F.-Vill. l. c.

Extensively cultivated throughout the Philippines but not a native of the Archipelago, although of prehistoric introduction. The rice plant is enormously variable and probably several hundred distinct cultural forms occur in the Archipelago. No attempt has been made to compile the very numerous local names currently applied to special varieties. Rice.

Local names: Ammái (Ibn. It.); págai (Il.); págei (Bon.); pálai (Tag.); párai (Bik.); pai (Sul.).

#### 40. LEERSIA Swartz

**LEERSIA HEXANDRA** Sw. Prodr. (1788) 21; Llanos Frag. Pl. Filip. (1851) 26; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 18; F.-Vill. Novis. App. (1882) 318; Vidal Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 288; Pilger in Perk. Frag. Fl. Philip. (1904) 145; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 371, Fl. Manila (1912) 98.

*Leersia luzonensis* Presl Rel. Haenk. 1 (1830) 207; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 97; Miq. Fl. Ind. Bat. 3 (1857) 367; F.-Vill. Novis. App. (1882) 318.

*Leersia glaberrima* Trin. in Mém. Acad. St. Pétersb. VI 5 (1839) 173; Miq. Fl. Ind. Bat. 3 (1857) 368; F.-Vill. Novis. App. (1882) 318.

*Homalocenchrus hexandrus* O. Kuntze Rev. Gen. Pl. (1891) 777.

Northern Luzon to Mindanao. In open wet places at low and medium altitudes, ascending to 1,500 m. In the vicinity of Manila this is very extensively cultivated in paddies for green forage.

Local names: Bárít (Tag.); buñgálon (Bis.); zacáte (Sp.).

#### 41. MICROLAENA R. Brown

**MICROLAENA STIPOIDES** (Labill.) R. Br. Prodr. (1910) 210; Benth. Fl. Austral. 7 (1878) 552; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 269; Merr. op. cit. 371, 5 (1910) Bot. 328.

*Ehrhartia stipoides* Labill. Pl. Nov. Holl. 1 (1804) 91, t. 118.

Luzon (Abra, Bontoc, Lepanto, Benguet, Zambales), *Merrill 4543, 4696, 4831, 6570, Phil. Pl. 1343, B. S. 31957 Santos, 5128, 7064 Ramos*. On open slopes and ridges, along mountain trails, etc., altitude 1,800 to 2,300 m. Australia, New Zealand, Hawaii.

#### 42. PHALARIS Linnaeus

**PHALARIS MINOR** Retz. Obs. 3 (1783) 8; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 421.

Luzon (Benguet), *B. S. 2785 Mearns*. Altitude about 1,500 m; probably a mere casual here. Europe, India, South Africa, Australia.

#### 43. ANTHOXANTHUM Linnaeus

**ANTHOXANTHUM LUZONIENSE** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 178, 372, 5 Bot. (1910) Bot. 328.

Luzon (Benguet), *Merrill 4713, 6614, Phil. Pl. 184, B. S. 8890 McGregor, F. B. 16188 Curran, Merritt, & Zschokke*. In open grasslands, altitude 2,000 to 2,700 m. Endemic.

#### 44. ARISTIDA Linnaeus

**ARISTIDA CULIONENSIS** Pilg. ex Perk. Frag. Fl. Philip. (1904) 145; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 372.

Culion, *Merrill 471, 515, B. S. 41334 Ramos*. In open grasslands at low altitudes. Endemic.



**ARISTIDA CUMINGIANA** Trin. & Rupr. in Mém. Acad. St. Pétersb. VI 7 (1849) 141; Steud. Syn. Pl. Glum. 1 (1854) 140; Miq. Fl. Ind. Bat. 3 (1857) 381; Vid. Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 372, 5 (1910) Bot. 328, Fl. Manila (1912) 99.

*Aristida capillacea* Cav. Ic. 5 (1799) 43, t. 468, f. 1, non Lam.

*Chaetaria trichodes* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 101.

*Aristida trichodes* Walp. Ann. 3 (1853) 753.

Luzon (Ilocos Norte, Lepanto, Ifugao, Bontoc, Benguet, Pangasinan, Rizal), Mindanao (Bukidnon). In open dry grasslands at low and medium altitudes, ascending to 1,500 m. India to tropical Africa and southern China.

**ARISTIDA TENUSETULOSA** (Pilg.) Mez in Fedde Repert. 17 (1921) 147.

*Aristida stipoides* R. Br. var. *tenuisetulosa* Pilg. ex Perk. Frag. Fl. Philip. (1904) 146; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 372.

Luzon (Amburayan, Ilocos Norte, Ilocos Sur, Zambales, Pampanga, Bataan), Merrill 329, F. B. 5855, 6361 Curran, 12476, 15657 Merritt & Darling, B. S. 2334 Mearns. In dry open sandy soil at low and medium altitudes. Endemic, but closely allied to the Australian *A. stipoides* R. Br.

#### EXCLUDED SPECIES

**ARISTIDA LAXA** Cav. Ic. 5 (1799) 44, t. 470, f. 1; Kunth Enum. 1 (1833) 192; Miq. Fl. Ind. Bat. 3 (1857) 381; F.-Vill. Novis. App. (1882) 319.

"Habitat prope Montevideo, et in insulis Philippicis." This is probably a Mexican species, certainly not Philippine, the latter record being based on a wrongly localized specimen of Née's collection.

**ARISTIDA LUZONIENSIS** Cav. Ic. 5 (1799) 45, t. 470, f. 2; Spreng. Syst. 1 (1825) 266; Kunth Enum. 1 (1833) 192; Miq. Fl. Ind. Bat. 3 (1857) 381; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99; Novis. App. (1882) 319.

*Chaetaria luzoniensis* Beauv. Agrost. (1812) 30.

"Habitat in insula Luzon altera ex Philippicis." Certainly not a Philippine species, but American or Australian.

**ARISTIDA MURINA** Cav. Ic. 5 (1799) 44, t. 469, f. 1; Kunth Enum. 1 (1833) 192; F.-Vill. Novis. App. (1882) 319.

"Habitat in Mindanao insula prope Samboangan [= Zamboanga]." Undoubtedly a wrongly localized species, and Australian or American rather than Philippine.

**ARISTIDA RIGIDA** Cav. Ic. 5 (1799) 44, t. 469, f. 2; Kunth Enum. 1 (1833) 192; Miq. Fl. Ind. Bat. 3 (1857) 381; F.-Vill. Novis. App. (1882) 319.

"Habitat in insulis Philippicis." Unquestionably an erroneously localized species, and Australian or American rather than Philippine.

**ARISTIDA SORZOGONENSIS** Presl Rel. Haenk. 1 (1830) 224; Kunth Enum. 1 (1833) 192; Miq. Fl. Ind. Bat. 3 (1857) 381; F.-Vill. Novis. App. (1882) 319.

"Hab. in Luzonia ad Sorzogon." This record is probably based on an erroneously labeled specimen, the species in all probability being American.

44a. **MUEHLENBERGIA** Schreber

**MUEHLENBERGIA ARISANENSIS** Hayata Ic. Pl. Formosa 7 (1918) 87, f. 54.

Luzon (Lepanto, Bontoc, Benguet), Merrill 4716, Clemens 9203, Vano-verbergh 1158, B. S. 40213, 40296, 40360 Ramos & Edaño. Along small streams, in old clearings, and in the mossy forest, altitude 1,300 to 2,400 m. Formosa. Closely allied to *M. japonica* Steud.

45. **SPOROBOLUS** R. Brown

**SPOROBOLUS DIANDRUS** (Retz.) Beauv. Agrost. (1812) 26; Miq. Fl. Ind. Bat. 3 (1857) 375; F.-Vill. Novis. App. (1882) 321; Pilger in Perk. Frag. Fl. Philip. (1904) 146; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 373.

*Agrostis diandra* Retz. Obs. 5 (1786) 19.

*Vilfa diandra* Steud. Syn. Pl. Glum. 1 (1854) 155.

Luzon (Ilocos Norte, Pampanga, Rizal, Tayabas, Albay, Sorsogon), Mindoro, Palawan, Panay, Mindanao. In lawns and waste places about towns, perhaps introduced. Tropical Asia through Malaya to Australia.

**SPOROBOLUS INDICUS** (Linn.) R. Br. Prodr. (1810) 170; F.-Vill. Novis. App. (1882) 321; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 373, Fl. Manila (1912) 98, Sp. Blancoanae (1918) 71.

*Agrostis indica* Linn. Sp. Pl. (1753) 63.

*Sporobolus elongatus* R. Br. Prodr. (1810) 170; Usteri Beitr. Ken. Philip. Veg. (1905) 133.

*Spermachiton involutum* Llanos Fragm. Pl. Filip. (1851) 25; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 17.

Luzon (Cagayan, Isabela, Bontoc, Benguet), Mindanao (Lanao). Common at medium altitudes in open grasslands, ascending to 2,000 m. Pan-tropic.

Local names: Bakit (P. Bis.); bangkit (P. Bis.); lusai (Sub.); sañg-sañgitan (Bon.).

**SPOROBOLUS PILIFERUS** (Trin.) Kunth Enum. 1 (1833) 611; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 373.

*Vilfa pilifera* Trin. Diss. (1828) 157, Sp. Gram. Ic. t. 58.

*Sporobolus ciliatus* Presl Rel. Haenk. 1 (1830) 242; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 53, t. 30; Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 269.

Luzon (Bontoc, Benguet), Merrill 4362, 4718, Phil. Pl. 194, Williams 1957, B. S. 5361, 5905 Ramos. On banks, in open grasslands, etc., at medium altitudes, ascending to 1,800 m. India to the Malay Peninsula.

**SPOROBOLUS VIRGINICUS** (Linn.) Kunth Rev. Gram. 1 (1829) 67; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 171, Fl. Manila (1912) 99.  
*Agrostis virginica* Linn. Sp. Pl. (1753) 63.  
*Sporobolus humilis* Presl Rel. Haenk. 1 (1830) 241; Miq. Fl. Ind. Bat. 3 (1857) 376; F.-Vill. Novis. App. (1882) 321; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 53, t. 30; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 374.

*Vilfa humilis* Steud. Syn. Pl. Glum. 1 (1854) 153.

Luzon (Cagayan, Rizal), *Merrill Phil. Pl. 574, B. S. 7881 Ramos*. Along tidal streams within the influence of salt or brackish water. All or most warm countries.

#### EXCLUDED SPECIES

**SPOROBOLUS SCOPARIUS** Presl Rel. Haenk. 1 (1830) 243; Kunth Enum. 1 (1833) 216; Miq. Fl. Ind. Bat. 3 (1857) 376; F.-Vill. Novis. App. (1882) 321; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 374.

*Vilfa scoparia* Steud. Syn. Pl. Glum. 1 (1854) 156.

"Hab. ad portum Sorzogon" Presl. Certainly not a Philippine species, but probably based on American material.

#### 46. GARNOTIA Brongniart

**GARNOTIA STRICTA** Brongn. in Bot. Duperr. Voy. (1829) 132, t. 21; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 374.

Northern Luzon to Mindanao. On talus slopes, along streams, etc., at low and medium altitudes; represented by numerous collections. India to Polynesia and Hawaii.

Var. **LONGISETA** (Merr.) Hack. in Allgem. Bot. Zeitschr. 12 (1909) 141.

*Garnotia longiseta* Merr. ex Hack. l. c. in syn.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Bulacan, Bataan, Laguna). Chiefly in the mossy forest, altitude up to 2,300 m, but occurring also at low or medium altitudes. Endemic.

Local names: Balahibong-usá (Tag.); bariri (Bag.); pauai (Ig.).

#### 47. AGROSTIS Linnaeus

**AGROSTIS ALBA** Linn. Sp. Pl. (1753) 63; Hook. f. Fl. Brit. Ind. 7 (1897) 254.

Luzon (Benguet), *B. S. 40496 Ramos & Edaño*. Along trails in open forest, altitude about 1,500 m; probably introduced. A native of temperate Europe and Asia, now widely distributed in temperate and subtemperate countries.

**AGROSTIS ELMERI** Merr. in Govt. Lab. Publ. (Philip.) 29 (1905) 7, Philip. Journ. Sci. 1 (1906) Suppl. 375, 5 (1910) Bot. 328.

Luzon (Bontoc, Lepanto, Benguet), Negros. In the mossy forest and in open places, altitude 1,600 to 2,800 m; represented by numerous collections. Southern China. To be compared with *A. micrantha* Steud.

Local name: Sasamon (Ig.).

## 48. ANISELYTRON Merrill

ANISELYTRON AGROSTOIDES Merr. in Philip. Journ. Sci. 5 (1910) Bot. 329.

Luzon (Benguet), *Merrill 6483*. In the mossy forest on Mt. Pulog, altitude about 2,400 m. A monotypic endemic genus known only from the original collection.

## 49. CALAMAGROSTIS Roth

CALAMAGROSTIS ARUNDINACEA (Linn.) Roth var. NIPPONICA (Franch. & Sav.) Hack. in Bull. Herb. Boiss. 7 (1899) 652, Philip. Journ. Sci. 1 (1906) Suppl. 269; Merr. op. cit. 375.

*Calamagrostis nipponica* Franch. & Sav. Enum. Pl. Jap. 3 (1879) 599.

Luzon (Lepanto, Benguet), Mindanao (Davao), *Merrill 4564, 4697, 4701, 7766, B. S. 31740 Santos, 4487 Mearns*. On open grassy slopes, altitude 1,800 to 2,400 m. Europe to India, China and Japan.

Local names: Baríri (Bag.); sangsangitau (Ig.); sasamon (Ig.).

CALAMAGROSTIS FILIFOLIA Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 179, 375, 5 (1910) Bot. 330.

Luzon (Benguet), *Merrill 4839, 6610, 6611, 4537, 4715, B. S. 31979 Santos, 8891 McGregor*. On open slopes, altitude 1,800 to 2,200 m. Endemic.

Local name: Añgangsúg (Ig.).

## 50. ERIACHNE R. Brown

ERIACHNE PALLESCENS R. Br. Prodr. (1810) 184; Benth. Fl. Austral. 7 (1878) 630; F.-Vill. Novis. App. (1882) 321; Pilger in Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 376.

Culion, Palawan, *Merrill 520, 9582*. In open grassy places up to 550 m altitude. India to southern China through Malaya to Australia.

ERIACHNE TRISETA Nees ex Steud. Syn. Pl. Glum. 1 (1854) 237; Pilger in Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 376.

Culion, *Merrill*. In open grasslands at low altitudes. India, Ceylon.

## EXCLUDED SPECIES

ERIACHNE GRACILIS Brongn; F.-Vill. Novis. App. (1882) 321.

## 51. COELACHNE R. Brown

COELACHNE HACKELII Merr. in Govt. Lab. Publ. (Philip.) 29 (1905) 8, Philip. Journ. Sci. 1 (1906) Suppl. 376.

Luzon (Benguet), *Elmer 5762, Merrill 4338, Phil. Pl. 198, Williams 1196*. Forming dense mats along small cool streams, altitude about 1,500 m. Endemic.

*Coelachne pulchella* R. Br. and *C. brachiata* Munro were both credited to the Philippines by F.-Villar, Novis. App. (1882) 321, but neither has been found in the Archipelago.

52. **DESCHAMPSIA** Beauvois

**DESCHAMPSIA FLEXUOSA** (Linn.) Trin. in Bull. Acad. St. Pétersb. 1 (1836) 66; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 330.

*Aira flexuosa* Linn. Sp. Pl. (1753) 65.

Luzon (Benguet), *Merrill 6354, Phil. Pl. 189, B. S. 8904 McGregor, F. B. 16155 Curran, Merritt, & Zschokke*. In open grasslands at the summit of Mt. Pulog, altitude about 2,600 m. Endemic. North Temperate Zone generally.

53. **AVENA** Linnaeus

**AVENA FATUA** Linn. Sp. Pl. (1753) 80; F.-Vill. Novis. App. (1882) 318; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 287.

Luzon (Benguet), *B. S. 2812 Mearns*. Probably merely a casual here, altitude about 1,500 m. A widely distributed weed in temperate regions, of European origin.

**AVENA SATIVA** Linn. Sp. Pl. (1753) 79; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 376.

Occasional in the Mountain Province at and above 1,500 m altitude, here a casual that will probably not persist. Oats.

## EXCLUDED SPECIES

**AVENA STERILIS** Linn.; F.-Vill. Novis. App. (1882) 319.

54. **MICROCHLOA** R. Brown

**MICROCHLOA INDICA** (Linn. f.) O. Kuntze Rev. Gen. Pl. 3 (1893) 356; Hack. in Fedde Repert. 7 (1909) 373; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 74.

*Nardus indica* Linn. f. Suppl. (1781) 105.

*Rottboellia setacea* Roxb. Pl. Coromandel 2 (1798) 18, t. 132.

*Microchloa setacea* R. Br. Prodr. (1810) 208; F.-Vill. Novis. App. (1882) 319.

Luzon (Ilocos Norte, Bontoc, Lepanto, Rizal), *B. S. 32889 Ramos, Loher 7179, Vanoverbergh 764*. In open dry grasslands at low and medium altitudes. Pantropic.

55. **CYNODON** Persoon

**CYNODON ARCUATUS** Presl Rel. Haenk. 1 (1830) 290; F.-Vill. Novis. App. (1882) 320; Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 41, t. 40; Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 9, Philip. Journ. Sci. 1 (1906) Suppl. 28, 377, Fl. Manila (1912) 103.

Luzon (Ilocos Norte, Bontoc, Tarlac, Bataan, Rizal, Laguna), *Merrill 3619, Phil. Pl. 135, Williams 88, B. S. 1392, 32738 Ramos, 23130 Ramos*. In open grasslands at low and medium altitudes. Endemic.

**CYNODON DACTYLON** (Linn.) Pers. Syn. 1 (1804) 85; Miq. Fl. Ind. Bat. 3 (1857) 382; F.-Vill. Novis. App. (1882) 319; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292; Pilg. ex Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 28, 377, Fl. Manila (1912) 103, Sp. Blancoanae (1918) 71.

*Panicum dactylon* Linn. Sp. Pl. (1753) 58.

*Cynodon linearis* Willd. Enum. Hort. Berol. (1809) 90; Presl Rel. Haenk. 1 (1830) 290; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 98.

*Panicum glumaepatulum* Steud. Syn. Pl. Glum. 1 (1854) 41; F.-Vill. Novis. App. (1882) 312 (*glumaepetalum*).

*Digitaria glumaepatula* Miq. Fl. Ind. Bat. 3 (1857) 439.

*Cynodon rufescens* Llanos Frag. Pl. Filip. (1851) 31; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 21, non ? Lagasca.

*Capriola dactylon* O. Kuntze Rev. Gen. Pl. (1891) 764.

Throughout the Philippines, in open grasslands, fallow rice paddies, waste places, at low and medium altitudes; common. Pantropic.

Local names: Balbálut (Bon.); galud-gálud (Ilk.); gráma (Sp.); kola-tai (Tag.); palot-gálot (Ilk.).

#### 56. CHLORIS Swartz

**CHLORIS BARBATA** (Linn.) Sw. Fl. Ind. Occ. 1 (1797) 200; Miq. Fl. Ind. Bat. 3 (1857) 387; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; F.-Vill. Novis. App. (1882) 320; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 292; Hook. f. Fl. Brit. Ind. 7 (1897) 292; Pilger in Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 377, Fl. Manila (1912) 103, Sp. Blancoanae (1918) 72.

*Andropogon barbatum* Linn. Mant. 2 (1771) 302.

*Chloris longifolia* Steud. Syn. Pl. Glum. 1 (1854) 205; Miq. Fl. Ind. Bat. 3 (1857) 388; F.-Vill. Novis. App. (1882) 320.

*Chloris inflata* Llanos Frag. Pl. Filip. (1851) 31; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 22, non Link.

A common weed in and about towns in many parts of Luzon, Mindoro, Negros, and Palawan, and probably in other islands. A pantropic weed of American origin.

Local names: Banúko (Ilk.); korokorósan (Tag.).

**CHLORIS INCOMPLETA** Roth Nov. Sp. Pl. (1821) 60; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 288.

Luzon (Zambales), Palawan, Mindanao (Zamboanga), *Merrill 9275, 9616, 8279, Phil. Pl. 1308, Gates 8145*. In dry open sandy soil at low altitudes, sometimes along the seashore. India to Formosa and Malaya.

**CHLORIS MEARNsii** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 220.

Luzon (Ilocos Norte), *B. S. 7606, 27201 Ramos, 2294 Mearns*. In dry open places at low altitudes; perhaps but a depauperate form of *C. incompleta* Roth. Endemic.

**CHLORIS TENER** (Presl) Scribn. in Rept. Mo. Bot. Gard. 10 (1899) 41, t. 40.

*Cynodon tener* Presl Rel. Haenk. 1 (1830) 291; Kunth Enum. 1 (1833) 260; Miq. Fl. Ind. Bat. 3 (1857) 383; F.-Vill. Novis. App. (1882) 320.

Luzon (Sorsogon), Negros, (*Presl*), *B. S. 9951 Robinson*, as *Cynodon*. In open places at low altitudes. Hainan, Indo-China.

## DOUBTFUL AND EXCLUDED SPECIES

**CHLORIS CRINITA** Lagasca Varied. *Cienc.* 4 (1805) 143; Kunth Enum. 1 (1833) 268; *Miq. Fl. Ind. Bat.* 3 (1857) 389; *F.-Vill. Novis. App.* (1882) 320.

"Insulae Philippinae" Kunth. This was probably based on a Malaspina expedition collection erroneously localized. Judging from the description it is not a *Chloris*.

**CHLORIS TRUNCATA** R. Br. *Prodr.* (1910) 186; Kunth Enum. 1 (1833) 266; *Miq. Fl. Ind. Bat.* 3 (1857) 387; *F.-Vill. Novis. App.* (1882) 320.

*Chloris dolichostachya* Lagasca *Gen. Sp. Nov.* (1816) 5.

Lagasca's species was credited to the Philippines by him; Link has reduced it to *Chloris truncata* R. Br., an Australian species. Nothing conforming to it is known from the Philippines.

**CHLORIS INFLATA** Link *Hort. Berol.* 1 (1827) 105.

"Calif.; Ins. Philipp." Link. The species was probably based on a Haenke collection, probably erroneously localized, at least as to the Philippine reference.

**CHLORIS RADIATA** Sw.; *F.-Vill. Novis. App.* (1882) 320.

**CHLORIS RUFESCENS** Lagasca Varied. *Cienc.* 4 (1805) 143; Kunth Enum. 3 (1833) 268; *Miq. Fl. Ind. Bat.* 3 (1857) 388; *F.-Vill. Novis. App.* (1882) 320.

"Insulae Philippinae" Kunth. Probably not a Philippine species but an erroneously localized Malaspina Expedition collection.

**CHLORIS RHACHITRICHA** Steud. *Syn. Pl. Glum.* 1 (1854) 205; *Miq. Fl. Ind. Bat.* 3 (1857) 388; *F.-Vill. Novis. App.* (1882) 320.

"Cuming no. 111. Ins. Philip." This number of Cuming's Philippine collection is a fern, and none of his Philippine grasses conform to Steudel's description. The reference may be to Cuming's previous South American collection.

57. **TRIPOGON** Roth

**TRIPOGON CHINENSIS** (Franch.) Hack. in *Bull. Herb. Boiss.* II 3 (1903) 503; Merr. in *Philip. Journ. Sci.* 14 (1919) 369.

*Nardurus filiformis* Steud. var. *chinensis* Franch. in *Nuov. Arch. Mus. Paris* II 7 (1894) 149.

Luzon (Ilocos Norte), *B. S.* 33237 Ramos. On dry open rocky slopes at low altitudes. Korea, China, Formosa.

58. **ELEUSINE** Gaertner

**ELEUSINE INDICA** (Linn.) Gaertn. *Fruct.* 1 (1788) 8; Presl *Rel. Haenk.* 1 (1830) 286; Llanos *Frag. Pl. Filip.* (1851) 45; *Miq. Fl. Ind. Bat.* 3 (1857) 386; *F.-Vill. Novis. App.* (1882) 320; Vidal *Phan. Cuming. Philip.* (1885) 159; Merr. in *Philip. Journ. Sci.* 1 (1906) Suppl. 378, *Fl. Manila* (1912) 104, *Sp. Blancoanae* (1918) 72.

*Cynosurus indicus* Linn. *Sp. Pl.* (1753) 72.

*Eleusine barbata* Vidal *Rev. Pl. Vasc. Filip.* (1886) 292.

*Eleusine polydactyla* Steud. Syn. Pl. Glum. 1 (1854) 211; Miq. Fl. Ind. Bat. 3 (1857) 386; F.-Vill. Novis. App. (1882) 320, ex descr.

An abundant weed in the settled areas throughout the Philippines. All warm countries.

Local names: Apidan (If.); bakis-bakísan (Tag.); barañgan (Bik.); bikad-bikad (Sul.); bila-bíla (P. Bis.); dinapaiuk (If.); gagabútan (Tag.); kabit-kabit (Tag.); palagtíki (Bis.); parañgís (Ilk.); parañgis-sabúñgan (Pamp.); sabun̄g-sabúñgan (Tag., Pamp.); sambáli (Tag.).

#### EXCLUDED SPECIES

ELEUSINE COROCANA (Linn.) Gaertn.; F.-Vill. Novis. App. (1882) 320.

ELEUSINE VERTICILLATA Roxb.; F.-Vill. Novis. App. (1882) 320.

#### 59. DACTYLOCTENIUM Willdenow

DACTYLOCTENIUM AEGYPTIUM (Linn.) Richt. Pl. Europ. 1 (1889) 68; Merr. Fl. Manila (1912) 104, Sp. Blancoanae (1918) 72.

*Cynosurus aegyptius* Linn. Sp. Pl. (1753) 72.

*Dactyloctenium aegyptiacum* Willd. Enum. Hort. Berol. (1809) 1029; Pilg. ex Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 379.

*Eleusine aegyptiaca* Desf. Fl. Atl. 1 (1798-1800) 85; F.-Vill. Novis. App. (1882) 320; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293.

*Eleusine mucronata* Llanos Frag. Pl. Filip. (1851) 46, non Spreng.

*Dactyloctenium mucronatum* Willd. var. *aegyptiacum* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102.

Throughout the Philippines. A common weed in the settled areas at low and medium altitudes. Pantropic.

Local names: Alam (Tag.); damúng-bálang (Tag.).

#### 60. LEPTOCHLOA Beauvois

LEPTOCHLOA CHINENSIS (Linn.) Nees Syll. Ratisb. 1 (1824) 4; Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; Steud. Syn. Pl. Glum. 1 (1854) 209; Miq. Fl. Ind. Bat. 3 (1857) 389; F.-Vill. Novis. App. (1882) 320; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293; Pilger in Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 379, Fl. Manila (1912) 105.

*Poa chinensis* Linn. Sp. Pl. (1753) 69.

*Leptochloa tetraquetra* Presl Rel. Haenk. 1 (1830) 288; Miq. Fl. Ind. Bat. 3 (1857) 389; F.-Vill. Novis. App. (1882) 320.

Luzon (Cagayan to Camarines, in most provinces), Panay. In open usually wet places along or near streams. India to Japan southward through Malaya to Australia.

Local name: Kurukauáyan (Bik.).

LEPTOCHLOA FILIFORMIS (Pers.) R. & S. Syst. 2 (1817) 580; Presl Rel. Haenk. 1 (1830) 288; Kunth Enum. 1 (1833) 270; Miq. Fl. Ind. Bat. 3 (1857) 389; F.-Vill. Novis. App. (1882) 320; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 380.

*Eleusine filiformis* Pers. Syn. (1805) 87.



Luzon (Abra, Union), Palawan. In open low lands, along streams, in disturbed soil, etc., at low altitudes. Pantropic.

*Festucal* 61. PHRAGMITES Trinius

PHRAGMITES KARKA (Retz.) Trin. ex Steud. Nomencl. ed. 2, 2 (1840) 324; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 381.

*Arundo karka* Retz. Obs. 4 (1786) 21.

*Phragmites roxburghii* Steud. l. c.; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 173, Hook. Journ. Bot. Kew Miscel. 2 (1850) 101; Miq. Fl. Ind. Bat. 3 (1857) 412; F.-Vill. Novis. App. (1882) 321.

*Trichoon roxburghii* W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 383, 391.

Luzon (Ilocos Norte, Bontoc, Bataan, Laguna, Camarines), Negros, Mindanao, Merrill 3178, Phil. Pl. 581, Elmer 6851, Williams 221, Clemens 728, B. S. 2213 Mearns, 15910 Fénix. In thickets and along streams at low and medium altitudes. India to Malaya.

Local names: Kanúbong (Bon.); lachitlit (Bag.); lupí (Bik.); sabúnog (P. Bis.); tabúnak (P. Bis.); tabúnog (Bis.); talúbung (Bon.); tantanóbong (Ilk.); tanúbung (Bon.).

PHRAGMITES VULGARIS (Lam.) Trin. Fund. Agrost. (1820) 134; Pilger in Perk. Frag. Fl. Philip. (1904) 147; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 381, Fl. Manila (1912) 100, Sp. Blancoanae (1918) 72.

*Arundo vulgaris* Lam. Fl. Franc. 3 (1778) 615.

*Arundo phragmites* Linn. Sp. Pl. (1753) 81.

*Arundo tecta* Blanco Fl. Filip. (1837) 48; ed. 2 (1845) 33; ed. 3, 1 (1877) 60, non Walt.

*Arundo donax* Llanos in Mem. Acad. Cienc. Madr. 4 (1858) 507; F.-Vill. & Llanos in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 105, non Linn.

*Phragmites communis* Trin. Fund. Agrost. (1820) 134; Usteri Beitr. Ken. Veg. Philip. (1905) 133.

*Arundo madagascariensis* F.-Vill. Novis. App. (1882) 321, Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293, non Kunth.

*Neyraudia madagascariensis* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 381, non Hook. f.

Northern Luzon to Palawan and Mindanao, often forming dense thickets along the margins of lakes and slow streams. All warm countries.

Local names: Bagang (Bis.); bugang (C. Bis.); lupí (Bik.); tabúnak (Bis., P. Bis.); tagísi (Ibn.); tambó (Tag.); uba-uba (Sul.); tangbó (C. Bis.); tanóbong (Pang., Ilk.); tantanúbong (Ibn.); tanúbong (Ilk.).

62. DIPLACHNE Beauvois

DIPLACHNE POLYSTACHYA (Forsk.) Backer in Bull. Jard. Bot. Buitenz. III 2 (1920) 325.

*Bromus polystachyus* Forsk. Fl. Aegypt.-Arab. (1775) 23.

*Diplachne fusca* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 381, Fl. Manila (1912) 99, non Beauv.

Luzon (Laguna, Rizal), Mindoro, Mindanao (Cotabato), *Merrill 5104*, *Phil. Pl. 183*, *Kneucker Gram. Exsic. 554a*, *Elmer 18131*, *Williams 2027*. In swampy often brackish places at low altitudes. Tropical Asia and Africa to Australia.

## 63. ERAGROSTIS Beauvois

**ERAGROSTIS AMABILIS** (Linn.) W. & A. in Hook. & Arn. Bot. Beechy Voy. (1841) 251; Merr. Interpret. Herb. Amb. (1917) 95.

*Poa amabilis* Linn. Sp. Pl. (1753) 68.

*Poa tenella* Linn. Sp. Pl. (1753) 69.

*Poa plumosa* Link. Hort. Berol. 1 (1827) 192; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102 (f. *laxa*); Miq. Fl. Ind. Bat. 3 (1857) 394; F.-Vill. Novis. App. (1882) 322; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293; Usteri Beitr. Ken. Philip. Veg. (1905) 132 (f. *breviciliata* Hack.).

*Eragrostis tenella* R. & S. Syst. 2 (1817) 576; Presl Rel. Haenk. 1 (1830) 274; F.-Vill. Novis. App. (1882) 322; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 383, 3 (1908) Bot. 397, Fl. Manila (1912) 101.

In and about towns throughout the Philippines, a very common weed in open waste places. Old World Tropics generally.

Local names: Bagibuk (Tag.); balisibis (Iv.); kaliraúrau (Tag.); págai-billít (Ilk.); pulpulút (Bon.); sigsigid (Bon.).

**ERAGROSTIS CILIANENSIS** (All.) Vig.-Lut. in Malpighia 18 (1904) 386; Hubbard in Philip. Journ. Sci. 3 (1913) Bot. 159.

*Briza eragrostis* Linn. Sp. Pl. (1753) 70.

*Poa cilianensis* All. Fl. Pedem. 2 (1785) 246, t. 91, f. 2.

*Eragrostis major* Host. Gram. Austr. 4 (1809) 14, t. 24.

*Eragrostis megastachya* Link Hort. Berol. 1 (1827) 187; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293.

Cebu, Negros, *B. S. 11122 Ramos*, *Eskridge*. In open waste places at low altitudes. All warm countries.

**ERAGROSTIS DISTANS** Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 81; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 384, 5 (1910) Bot. 330, Fl. Manila (1912) 102, Sp. Blancoanae (1918) 74.

*Uniola paniculata* Llanos Frag. Pl. Filip. (1851) 32; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 23, non Linn.

*Eragrostis pilosa* F.-Vill. Novis. App. (1882) 322, non Beauv.

Luzon (Ilocos Norte, Lepanto, Benguet, Pangasinan, Rizal), Palawan, *Elmer 6608*, *Kneucker Gram. Exsic. 761*, *Merrill 4472*, *B. S. 4821*, *5314 Ramos*. In dry open grasslands at low and medium altitudes. Endemic.

**ERAGROSTIS ELONGATA** (Willd.) Jacq. Eclog. Gram. (1818) 3, t. 3; Presl Rel. Haenk. 1 (1830) 275; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 384.

*Poa elongata* Willd. Enum. Hort. Berol. 1 (1809) 108.

*Eragrostis elegantula* Pilger in Perk. Frag. Fl. Philip. (1904) 148; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 384, Fl. Manila (1912) 102, non Steud.

*Eragrostis nigra* Usteri Beitr. Ken. Philip. Veg. (1905) 132, non Nees.  
*Eragrostis luzoniensis* Steud. Syn. Pl. Glum. 1 (1854) 266; Miq. Fl. Ind. Bat. 3 (1857) 393; F.-Vill. Novis. App. (1882) 322.

Luzon (Isabela, Ilocos Norte, Ifugao, Bontoc, Benguet, Nueva Vizcaya, Nueva Ecija, Pangasinan, Rizal), Culion, Palawan, Mindanao (Bukidnon). Common in open grasslands at low and medium altitudes. Pantropic.

Hackel has identified this as *Eragrostis atrovirens* Trin. Typical specimens are Merrill 4155, 9321 and Phil. Pl. 1460, 130. Cuming 1416, cotype of *E. luzoniensis* Steud., appears to me to be merely a form with pale spikelets.

**ERAGROSTIS INTERRUPTA** (R. Br.) Beauv. Agrost. (1812) 71 (non Doell).

*Poa interrupta* R. Br. Prodr. (1810) 180.

*Eragrostis brownei* Nees ex Steud. Nomencl. ed. 2, 1 (1841) 562; Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; F.-Vill. Novis. App. (1882) 322; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293.

*Eragrostis cumingii* Steud. Syn. Pl. Glum. 1 (1854) 266; Miq. Fl. Ind. Bat. 3 (1857) 394; F.-Vill. Novis. App. (1882) 322.

*Eragrostis zeylanica* Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 204; Hook. Journ. Bot. Kew Miscel. 2 (1850) 102 (var. *glomerata* et *minor*); Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293; Pilger in Perk. Frag. Fl. Philip. (1904) 148.

Luzon (Abra, Bontoc, Benguet, Union, Nueva Vizcaya, Bataan, Laguna, Zambales), Culion, Cuming 1104, 672, Merrill 686, 4331, Elmer 5707, Williams 1181, 92. In open grasslands at low and medium altitudes. Pantropic.

**ERAGROSTIS JAPONICA** (Thunb.) Trin. in Mém. Acad. St. Pétersb. VI 1 (1830) 450; Hack. in Bull. Herb. Boiss. 7 (1899) 705; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 384, Sp. Blancoanae (1918) 73.

*Poa japonica* Thunb. Fl. Jap. (1784) 31; Llanos Frag. Pl. Filip. (1851) 47; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 34.

*Poa interrupta* Lam. Tabl. Encycl. 1 (1791) 185.

*Eragrostis aurea* Steud. Syn. Pl. Glum. 1 (1854) 267; Miq. Fl. Ind. Bat. 3 (1857) 394; F.-Vill. Novis. App. (1882) 322.

*Panicum leptanthum* Steud. op. cit. 79.

*Vilfa verticillata* Steud. op. cit. 158.

*Sporobolus verticillatus* Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 101; Miq. Fl. Ind. Bat. 3 (1857) 375; F.-Vill. Novis. App. (1882) 321.

*Eragrostis tenuissima* Schrad. ex Nees in Fl. Afr. Austral. (1841) 409; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293.

*Eragrostis interrupta* (non Beauv.!) var. *tenuissima* Stapf in Hook. f. Fl. Brit. Ind. 7 (1897) 316.

*Poa amboinensis* F.-Vill. Novis. App. (1882) 322, ex syn. Llanos, non Linn.

*Eragrostis hapalantha* Trin.; Presl Repert. 1 (1833) 252.  
*Eragrostis minutiflora* Presl Rel. Haenk. 1 (1830) 274 (excl. syn. Retz. ?).

*Eragrostis interrupta* Doell in Mart. Fl. Bras. 3: 157; Usteri Beitr. Ken. Philip. Veg. (1905) 132; Pilger in Perk. Frag. Fl. Philip. (1904) 148; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 383, Fl. Manila (1912) 101, non Beauv.

*Eragrostis interrupta* (non Beauv.!) var. *koenigi* Stapf in Hook. f. Fl. Brit. Ind. 7 (1897) 316.

Northern Luzon (Cagayan) to Palawan and Mindanao. In open wet grasslands, along streams, etc., at low and medium altitudes. Tropical Asia and Africa to Japan and Malaya.

Thunberg's specific name is accepted for this species as a collective one. Merrill 7322, *Phil. Pl. 165*, *Sp. Blancoanae 709* represent the species as I here interpret it; numerous specimens have been distributed as *E. interrupta* Doell.

**ERAGROSTIS LASIOCLADA** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 382.

Culion, Merrill 461. In fallow rice paddies at low altitudes. Endemic.

**ERAGROSTIS MANGALORICA** Hochst. ex Steud. Syn. Pl. Glum. 1 (1854) 265; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 299, Fl. Manila (1912) 101.

Luzon (Cagayan, Rizal), Merrill 371, *B. S. 7452, 14569 Ramos*. In open waste places at low altitudes. India.

**ERAGROSTIS PILOSA** (Linn.) Beauv. Agrost. (1812) 71; Merr. Fl. Manila (1912) 102.

*Poa pilosa* Linn. Sp. Pl. (1753) 68.

Luzon (Benguet, Rizal), Merrill 9657, *Phil. Pl. 573*. A weed in open waste places, of recent introduction, but now locally abundant. All warm countries.

**ERAGROSTIS REFLEXA** Hack. in Philip. Journ. Sci. 3 (1908) Bot. 168.

Luzon (Rizal), *B. S. 2067 Ramos*. In fallow lands at low or medium altitudes. Endemic.

**ERAGROSTIS SPARTINOIDES** Steud. Syn. Pl. Glum. 1 (1854) 265; Pilger in Perk. Frag. Fl. Philip. (1904) 148; Merr. Fl. Manila (1912) 102, *Sp. Blancoanae* (1918) 74.

*Uniola spicata* Llanos Frag. Pl. Filip. (1851) 33; F.-Vill. & Naves in Blanco Fl. Philip. ed. 3, 4<sup>1</sup> (1880) 23, non Linn.

Luzon (Cagayan, Ilocos Norte, Ifugao, Bontoc, Nueva Vizcaya, Rizal, Laguna), Mindoro, *Cuming 668, Merrill 7055, Phil. Pl. 107, Sp. Blancoanae 170, 422*, etc. In open grasslands at low altitudes. Endemic.

**ERAGROSTIS UNIOLOIDES** (Retz.) Nees Steud. Syn. Pl. Glum. 1 (1854) 264; F.-Vill. Novis. App. (1882) 322; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 384, Fl. Manila (1912) 102.

*Eragrostis amabilis* Auct., non (Linn.) W. & A.

*Eragrostis rubens* F.-Vill. Novis. App. (1882) 322, non Hochst.?

*Poa annua* Llanos Frag. Pl. Filip. (1851) 47; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 34, non Lam.

*Eragrostis polymorpha* R. Br. Prodr. (1810) 180; F.-Vill. Novis. App. (1882) 322.

Luzon (Zambales, Rizal, Sorsogon), *Elmer 14531, Merrill Phil. Pl. 160, F. B. 5886 Curran, B. S. 19218 Reillo*. In open wet places at low altitudes. Old World Tropics, introduced into the New World.

**ERAGROSTIS VISCOSA** (Retz.) Trin. in Mém. Acad. St. Pétersb. VI 1 (1831) 397; F.-Vill. Novis. App. (1882) 322; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 383, Fl. Manila (1912) 101, Sp. Blancoanae (1918) 73.

*Poa viscosa* Retz. Obs. 2 (1781) 20.

*Eragrostis tenella* R. & S. var. *viscosa* Stapf in Hook. f. Fl. Brit. Ind. 7 (1897) 315; Pilger in Perk. Frag. Fl. Philip. (1904) 148.

*Cyperus paniculatus* Blanco Fl. Filip. (1837) 32, ed. 2 (1845) 22, ed. 3, 1 (1877) 42, non aliorum.

Luzon (Zambales, Rizal), *Merrill Sp. Blancoanae 229, Phil. Pl. 148*. In open waste places in and near towns. India to Malaya.

Local name: Kaliraúrau (Tag.).

#### EXCLUDED SPECIES

ERAGROSTIS CILIATA Nees; F.-Vill. Novis. App. (1882) 322.

#### 64. CENTOTHECA Desvaux

**CENTOTHECA LATIFOLIA** (Osbeck) Trin. Fund. Agrost. (1820) 141; Merr. Fl. Manila (1912) 100, Sp. Blancoanae (1918) 74.

*Holcus latifolius* Osbeck Dagbok Ostind. Resa (1757) 247; Linn. Syst. ed. 10 (1759) 1305.

*Cenchrus lappaceus* Linn. Sp. Pl. ed. 2 (1763) 1488.

*Centotheca lappacea* Desv. in Nuov. Bull. Soc. Philom. 2 (1810) 189; Presl Rel. Haenk. 1 (1830) 258; Miq. Fl. Ind. Bat. 3 (1857) 398; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 98; F.-Vill. Novis. App. (1882) 322; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 293; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 29, 3 (1908) Bot. 397; Perk. ex Frag. Fl. Philip. (1904) 148.

*Melica philippinensis* Llanos Frag. Pl. Filip. (1851) 44; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 32.

*Centotheca malabarica* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 385, non *Poa malabarica* Linn.

Throughout the Philippines in thickets, forests, and clearings at low and medium altitudes; common. Usually the only grass in some types of forest. Tropical Asia and Africa through Malaya to Polynesia.

Local names: Baili-patung (Sul.); balikbátang (Sub.); kauakauayánan (Tag.); lansa-lansa (Sul.); maríga (Sul.); sikúan (Ig.).

#### 65. LOPHATHERUM Brongniart

**LOPHATHERUM GRACILE** Brongn. in Bot. Duperr. Voy. (1829) 50, t. 8; F.-Vill. Novis. App. (1882) 323; Pilger in Perk. Frag. Fl. Philip. (1904) 148; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 386, 2 (1907) Bot. 261; C. B. Rob. op. cit. 6 (1911) Bot. 194.

Luzon (Nueva Ecija, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Mindoro, Palawan, Leyte, Mindanao, Basilan, Jolo. In forests, along trails, and in old clearings, chiefly at medium altitudes. India to Japan, southward through Malaya to New Guinea.

The Philippine form is referable to var. *pilosum* Camus in Bull. Mus. Hist. Nat. Paris 25 (1919) 495.

#### 66. POA Linnaeus

**POA ANNUA** Linn. Sp. Pl. (1753) 68; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 181, 386.

Luzon (Benguet), *Merrill 4288, B. S. 32041 Santos*. Naturalized in open waste places, altitude 1,500 to 2,400 m. Temperate and subtemperate regions generally.

The form reported from the Philippines as *Poa annua* by Llanos, Frag. Pl. Filip. (1851) 47, and by F.-Vill., Novis. App. (1882) 322, was probably *Eragrostis uniolooides* Nees; there is no description.

**POA LUZONIENSIS** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 180, 386.

Luzon (Benguet), *Merrill 4712, B. S. 31911 Santos*. Borders of cold marshes and streams, altitude about 2,400 m. Reported by Ridley from New Guinea, but the specimens should be compared.

#### 67. FESTUCA Linnaeus

**FESTUCA MEGALURA** Nutt. in Journ. Acad. Sci. Phila. II 1 (1847) 188; Piper in Contr. U. S. Nat. Herb. 10 (1906) 17, t. 5.

*Festuca myuros* Merr. in Philip. Journ. Sci. 14 (1919) 369, non Linn.

Luzon (Benguet), *B. S. 31913 Santos, Hitchcock*. In open grassy places, altitude 1,400 to 2,300 m. A native of the west coast of North and South America, introduced in Portugal, and a recent introduction in Benguet. It is very similar to *Festuca myuros* Linn. and by some authors is treated as a variety of that species. The identification is by Professor Hitchcock.

#### 68. MONOSTACHYA Merrill

**MONOSTACHYA CENTROLEPIDOIDES** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 331.

Luzon (Benguet), *F. B. 16088 Curran, Merritt, & Zschokke*. In open grasslands near the summit of Mt. Pulog, altitude about 2,800 m. A monotypic endemic genus.

#### 69. RAMOSIA Merrill

**RAMOSIA PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 11 (1916) Bot. 2.

Luzon (Sorsogon), *B. S. 23607 Ramos*. In swampy places, border of Lake Polog, at medium altitudes. A monotypic endemic genus.

#### 70. BROMUS Linnaeus

**BROMUS PAUCIFLORUS** (Thunb.) Hack. in Bull. Herb. Boiss. 7 (1899) 713; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 386.

*Festuca pauciflora* Thunb. Fl. Jap. (1784) 52.

Luzon (Bontoc, Benguet), *Merrill 4714, Clemens 9204, 9091, Vanoverbergh 3988*. In wet open grassy places, altitude 1,500 to 2,400 m. Japan, China.

*Bromus commutatus* Schrad. is represented by *B. S. 31966 Santos* and *Merrill 6627*, cultivated at Pauai, Benguet; introduced as *B. inermis* Leys.

## DOUBTFUL SPECIES

**BROMUS PALLENS** Cav. Ic. 6 (1801) 66, t. 591, f. 1; Kunth. Enum. 1 (1833) 418; Miq. Fl. Ind. Bat. 3 (1857) 398; F.-Vill. Novis. App. (1882) 323.

"Habitat in Manilae vicinis, ibique *Acanthus ilicifolius* Née legit." The figure and description appertain to *Bromus*, but no representative of the genus is known to occur at low altitudes in the Philippines. The description was probably based on an erroneously localized plant.

**BROMUS LUZONENSIS** Presl Rel. Haenk. 1 (1828) 262.

*Triticum luzonense* Kunth Enum. 1 (1833) 446; Miq. Fl. Ind. Bat. 3 (1857) 402; F.-Vill. Novis. App. (1882) 323.

"Hab. in Luzonia" Presl. The type was certainly an erroneously localized specimen, probably from tropical America.

## 71. BRACHYPODIUM Beauvois

**BRACHYPODIUM SYLVATICUM** Beauv. Agrost. (1812) 146, subsp. **LUZONIENSE** Hack. in Philip. Journ. Sci. 1 (1906) Suppl. 269; Merr. op. cit. 387, 5 (1910) Bot. 332.

Luzon (Benguet), *Merrill 4710, 4536, 4830, F. B. 16187 Curran, Merritt, & Zschokke*. On open slopes and in the mossy forest, altitude 1,600 to 2,500 m.

Var. **ASPERUM** Hack. l. c.; Merr. l. c.

Luzon (Benguet), *Merrill 4698*. On steep slopes in damp shaded ravines, altitude about 1,700 m. The two Philippine forms endemic, the species Europe and northern Africa to India and Ceylon.

## 72. MONERMA Beauvois

**MONERMA REPENS** (Forst.) Beauv. Agrost. (1812) 117; Hack. in Govt. Lab. Publ. (Philip.) 35 (1906) 81; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 387.

*Rottboellia repens* Forst. Prodr. (1786) 9.

*Lepturus repens* R. Br. Prodr. (1910) 207.

Mindoro, Culion, Bancoran, Cajoacan, Palmas, Mindanao, *Merrill 606, 3331, 5215, 5354, 11644, Phil. Pl. 153*. In sandy soil back of the beach, about sea cliffs, etc. Ceylon through Malaya to tropical Australia and Polynesia.

## 73. TRITICUM Linnaeus

**TRITICUM VULGARE** Vill. Hist. Pl. Dauph. 2 (1779) 153; Nees in Hook. Journ. Bot. Kew Miscel. 2 (1850) 102; F.-Vill. Novis. App. (1882) 323; Vidal Phan. Cuming. Philip. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 294; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 388.

Formerly cultivated in certain provinces in Luzon, now planted to a limited extent in northern Luzon. Wheat.

## 74. ARUNDINARIA Michaux

**ARUNDINARIA NIITAKAYAMENSIS** Hayata in Bot. Mag. Tokyo 21 (1907) 49, Journ. Coll. Sci. Tokyo 25<sup>19</sup> (1908) 240; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 267; Merr. op. cit. 332.

*Sasa niitakayamensis* Camus var. *microcarpa* Camus Bamb. (1913) 24.

*Bambusa* aff. *B. pygmaea* Miq.; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 261.

Luzon (Benguet), Mindoro, *Elmer 14279, Merrill 4733, 6489, 6222, Phil. Pl. 177, B. S. 8379, 8893* McGregor, *5846 Ramos, F. B. 10823 Curran*. In mossy thickets, sphagnum swamps, and open grasslands, altitude 2,200 to 2,700 m. Formosa.

Local name: Útod (Ig.).

## 75. BAMBUSA Schreber

**BAMBUSA CORNUTA** Munro in Trans. Linn. Soc. 26 (1868) 113; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 269; 8 (1913) Bot. 204.

Luzon (Benguet, Nueva Vizcaya), *Merrill 124, 7711*. In ravines along small streams, altitude 1,000 to 1,600 m. Java.

Local name: Lopa (Isn.).

**BAMBUSA MERRILLII** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 269; Camus Bamb. (1913) 128.

Luzon (Nueva Vizcaya), *Merrill 229*. In forests, altitude about 600 m. Endemic.

**BAMBUSA MULTIPLEX** (Lour.) Raeusch. Nomencl. ed. 3 (1797) 108; Schultes f. Syst. 7 (1830) 1350; Steud. Syn. Pl. Glum. 1 (1854) 330; Munro in Trans. Linn. Soc. 26 (1868) 119.

*Arundo multiplex* Lour. Fl. Cochinch. (1790) 58, ed. Willd. (1793) 119.

*Ludolphia glaucescens* Willd. in Ges. Naturf. Fr. Berl. Mag. 2 (1808) 320.

*Bambusa nana* Roxb. Hort. Beng. (1814) 25, *nomen nudum*, Fl. Ind. ed. 2, 2 (1832) 199; F.-Vill. Novis. App. (1882) 323; Gamble in Ann. Bot. Gard. Calc. 7 (1896) 40, t. 33, Philip. Journ. Sci. 5 (1910) Bot. 268; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 389; Camus Bamb. (1913) 121.

*Arundinaria glaucescens* Beauv. Agrost. (1812) 144, 152.

*Bambusa glaucescens* Sieb. ex Munro in Trans. Linn. Soc. 26 (1868) 89, in syn.; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 230, Fl. Manila (1912) 105.

Planted here and there for ornamental purposes, sometimes for hedges. Probably a native of China, now widely distributed in cultivation.

Local names: Caña de china (Sp.); kauáyan-china (Bik., Tag.); kauáyan-sína (Bik., Tag.).

**BAMBUSA SPINOSA** Roxb. Hort. Beng. (1814) 25 [non Fl. Ind. ed. 2, 2 (1832) 305]; Merr. Interp. Herb. Amb. (1917) 97, Sp. Blancoanae (1918) 75.

*Bambusa spinosa* Blume ex Nees in Flora 8 (1825) 580.

*Bambusa blumeana* Schultes f. Syst. 7<sup>2</sup> (1830) 1343; F.-Vill. Novis.



App. (1882) 323; Gamble in Ann. Bot. Gard. Calc. 7 (1896) 50, t. 47; Philip. Journ. Sci. 5 (1910) Bot. 270, 8 (1913) Bot. 204; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 29, 388, Fl. Manila (1912) 106, Am. Journ. Bot. 3 (1916) 60; Camus Bamb. (1913) 130.

*Bambus pungens* Blanco Fl. Filip. (1837) 270; Miq. Fl. Ind. Bat. 3 (1857) 421; Munro in Trans. Linn. Soc. 26 (1868) 119.

*Bambus arundo* Blanco Fl. Filip. ed. 2 (1845) 188; ed. 3, 1 (1877) 335, t. 100, non Nees, nec Wight.

*Bambusa arundinacea* F.-Vill. Novis. App. (1882) 323, non Retz.

*Bambusa teba* Miq. Fl. Ind. Bat. 3 (1857) 418; Munro in Trans. Linn. Soc. 26 (1868) 122.

Northern Luzon to Palawan and Mindanao. A universally planted bamboo at low and medium altitudes throughout the settled areas; the only spiny bamboo in the Philippines. Southern China to the Malay Peninsula and Archipelago to the Moluccas.

The most common and conspicuous bamboo in the settled areas, but in the Philippines apparently always planted. This indicates its probable prehistoric introduction by the early Malay invaders. The species very rarely flowers and then usually only when clumps have been severely injured by fire or by too extensive cutting.

Local names: Aonóo (Bik.); batákan (Bis.); baugín (Pamp.); dugían (Bik.); caña espina (Sp.); kaaóno (Bis.); kauáyan (P. Bis., Bon., C. Bis., Bik., Ilk., Pamp., Sub., Sul., Tag.); kauáyan-gid (P. Bis.); kauáyan-ñg-bayóg (Ilk.); kauáyan-potog (Sbl.); kauáyan-siitan (Ilk.); kauáyan-tinik (Tag.); kauáyan-totóo (Tag., Bik.); kabugáuan (Bik.); lamnuan (Is.); marurúgi (Bik.); pasíngan (Ibn., Is.); paua (Bis.); rugían (Bik.).

**BAMBUSA VULGARIS** Schrad. ex Wendl. Collect. Pl. 2 (1808) 26, t. 47; Gamble in Ann. Bot. Gard. Calcutta 7 (1896) 43, t. 40, Philip. Journ. Sci. 5 (1910) Bot. 268, 8 (1913) Bot. 204; Merr. Fl. Manila (1912) 105, Am. Journ. Bot. 3 (1916) 61, Sp. Blancoanae (1918) 75; Camus Bamb. (1913) 123.

*Bambusa monogyna* Blanco Fl. Filip. (1837) 286, ed. 2 (1845) 187, ed. 3, 1 (1877) 333; Miq. Fl. Ind. Bat. 3 (1857) 420; Munro in Trans. Linn. Soc. 26 (1868) 119; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 29, 389; Camus Bamb. (1913) 132.

*Bambusa mitis* Blanco Fl. Filip. (1837) 271, ed. 2 (1845) 188, ed. 3, 1 (1877) 336, non Poir.

*Bambusa blancoi* Steud. Syn. Pl. Glum. 1 (1854) 331; Miq. Fl. Ind. Bat. 3 (1857) 431; Munro in Trans. Linn. Soc. 26 (1868) 120; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 389; Camus Bamb. (1913) 134.

*Dendrocalamus sericeus* F.-Vill. Novis. App. (1882) 324, non Munro.

*Dendrocalamus strictus* F.-Vill. Novis. App. (1882) 324, non Nees.

Northern Luzon to Palawan and Mindanao, in most islands and provinces, in the settled areas at low and medium altitudes. Probably an introduced plant in the Philippines. Pantropic in cultivation.

Local names: Bolínau (P. Bis.); burírau (P. Bis.); bútong (Bik.); kabalóan (Bik.); kauáyan (Ibn.); kauáyan-china (Tag.); kauáyan-killng (Ilk., Tag.); kauáyan-kiting (Sbl.); killng (Ilk., Tag.); lúnas (P. Bis.);

marobál (Bik.); patong (Tagb.); patung (Sul.); sinámbang (C. Bis.); taiuának (Tag.); taríng (Tagb.); teuának (Tag.); tíling (P. Bis.).

Var. **STRIATA** (Lodd.) Gamble in Ann. Bot. Gard. Calc. 7 (1896) 44, Philip. Journ. Sci. 5 (1910) Bot. 269; Merr. Fl. Manila (1912) 105.

*Bambusa striata* Lodd. ex Penny Cyclop. 3 (1835) 357.

Occasionally cultivated for ornamental purposes; probably originating in China.

#### EXCLUDED SPECIES

**BAMBUSA TULDOIDES** Munro; F.-Vill. Novis. App. (1882) 323.

#### 76. GUADUA Kunth

**GUADUA PHILIPPINENSIS** Gamble in Philip. Journ. Sci. 8 (1913) Bot. 203.

Mindanao (Davao), *Piper* 475. Probably from thickets or secondary forests; collected at Mati. Endemic. The genus is otherwise American.

#### 77. GIGANTOCHLOA Kurz

**GIGANTOCHLOA LEVIS** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 61, Sp. Blancoanae (1918) 76.

*Bambusa levis* Blanco Fl. Filip. (1837) 272, ed. 2 (1845) 189, ed. 3, 1 (1877) 337; Miq. Fl. Ind. Bat. 3 (1857) 421; Munro in Trans. Linn. Soc. 26 (1868) 121; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 93, Philip. Journ. Sci. 1 (1906) Suppl. 388; Camus Bamb. (1913) 134.

*Gigantochloa scribneriana* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 390; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 270, 8 (1913) Bot. 204; Camus Bamb. (1913) 143.

*Dendrocalamus flagellifer* F.-Vill. Novis. App. (1882) 324, non Munro.

*Gigantochloa robusta* Gamble in Philip. Journ. Sci. 8 (1913) Bot. 204, non ? Kurz.

*Gigantochloa atter* C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 194, non Kurz.

*Dendrocalamus curranii* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 271; C. B. Rob. op. cit. 6 (1911) Bot. 194; Camus Bamb. (1913) 158.

*Dendrocalamus latiflorus* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 291, non Munro.

Luzon (Bulacan, Bataan, Rizal, Laguna, Tayabas), Culion, Polillo, Leyte, Camiguin de Misamis, *Loher* 7208, *Scribner* 14, *Merrill Phil. Pl.* 536, 590, *Sp. Blancoanae* 310, *B. S.* 10414, 10417 *McGregor*, 6313, 11338 *Robinson*, 14696 *Ramos*, *F. B.* 22771 *De Mesa & Rosario*, 10177 *Curran*, 25405 *Labitig*, 25418 *Duldulao*. Usually if not always planted, and probably an introduced species in the Philippines. To be compared critically with the Malayan species.

Local names: Bóko (P. Bis.); bólo (P. Bis.); bonsína (Tag.); bóton (P. Bis.); búhong-china (Tag.); búlung-sína (Tag.); butón (C. Bis.); kabolian (Bik.); kauáyan-china (Tag.); kauáyan-putí (Tag.); kauáyan-sína (Tag.); kayali (C. Bis.); patong (Bik., Bis., Sul.).

## 78. DENDROCALAMUS Nees

**DENDROCALAMUS MERRILLIANUS** (Elm.) Elm. Leaf. Philip. Bot. 7 (1915) 2675.

*Gigantochloa merrilliana* Elm. Leaf. Philip. Bot. 1 (Jan., 1908) 273; Camus Bamb. (1913) 139.

*Dendrocalamus parviflorus* Hack. in Philip. Journ. Sci. 3 (July, 1908) 168; Gamble op. cit. 5 (1910) Bot. 272; Camus Bamb. (1913) 159.

Luzon (Ilocos Sur, Abra, Nueva Ecija, Rizal, Zambales, Pangasinan, Bulacan), Leyte, Cebu, Bohol, Mindanao (Lanao), *Elmer 7283, Clemens, Barrow 30, F. B. 27332 Lopez & Reyes, 27319, 27329 Reyes, 27219 Duran, 27177 Maneja & Bawan, B. S. 22466 Ramos, 27706 Fénix, 17949 Otanes*, mostly sterile specimens. In and about towns, chiefly planted. Endemic.

Local names: Bayóg (Ilk., Ibn., Tag., Sbl.); bayúgin (Tag.); botóng (C. Bik., Bis.); bukáui (Tag.); butóng (P. Bis.); kauáyan (Tag., C. Bis., Ilk.); kauáyan-bayóg (Pang.).

## EXCLUDED SPECIES

**DENDROCALAMUS GIGANTEUS** Munro; F.-Vill. Novis. App. (1882) 324.

**DENDROCALAMUS LATIFLORUS** Munro; F.-Vill. l. c.; Vidal Sinopsis Atlas (1883) 42, t. 96, f. B.

Vidal's figure was copied from Munro's plate, *vide* Vidal l. c.; see *Gigantochloa levis* Merr.

## 79. CEPHALOSTACHYUM Munro

**CEPHALOSTACHYUM MINDORENSE** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 272.

Luzon (Camarines), Mindoro, *F. B. 11421, 8619, 6213 Merritt, 10667 Curran, 27424 Ablaza & Ramos*. In thickets and forests at low altitudes, locally abundant. Endemic.

This is presumably the form reported from the Philippines by F.-Villar, Novis. App. (1882) 324, as *C. capitatum* Munro, a species that does not occur in the Archipelago. To be compared here is *Vidal 4021*, reported by Ceron, Cat. Pl. Herb. Manila (1892) 185, as *Oxytenanthera* sp.

Local names: Bagtók (Bik.); baktó (Tag.); bíkal (Bik.).

## 80. SCHIZOSTACHYUM Nees

**SCHIZOSTACHYUM CURRANII** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 277; Camus Bamb. (1913) 177.

Luzon (Ifugao, Benguet), *F. B. 10849 Curran, 18014 Merritt, B. S. 19778 McGregor, Merrill Phil. Pl. 1217*. In borders of the mossy forest, altitude about 2,000 m. Endemic.

**SCHIZOSTACHYUM DIELSIANUM** (Pilger) Merr. in Philip. Journ. Sci. 1 Suppl. (1906) 391; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 274, 8 (1913) Bot. 205; Camus Bamb. (1913) 174, t. 96, f. B.

*Dinochloa dielsiana* Pilger in Perk. Frag. Fl. Philip. (1904) 148.

Palawan, *Merrill 711*. In thickets and forests at low altitudes. Endemic.

By no means certainly distinct from *S. diffusum* Merr. Numerous specimens distributed as *S. dielsianum* Merr. appear to be referable to *S. diffusum*, but many intergrades occur.

**SCHIZOSTACHYUM DIFFUSUM** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 62, Sp. Blancoanae (1918) 78.

*Bambus diffusa* Blanco Fl. Filip. (1837) 269; ed. 2 (1845) 187, ed. 3, 1 (1877) 334; Miq. Fl. Ind. Bat. 3 (1857) 420; Munro in Trans. Linn. Soc. 26 (1868) 118.

*Schizostachyum acutiflorum* Munro in Trans. Linn. Soc. 26 (1868) 137; F.-Vill. Novis. App. (1882) 324; Vidal Phan. Cuming. Philp. (1885) 159, Rev. Pl. Vasc. Filip. (1886) 294; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 391, 3 (1908) Bot. 397; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 273, 8 (1913) Bot. 205; Camus Bamb. (1913) 174, t. 95, f. A.

*Dinochloa diffusa* Merr. in Govt. Lab. Publ. (Philip.) 29 (1905) 7.

? *Schizostachyum blumei* F.-Vill. Novis. App. (1882) 324, non Nees. *Ischurochloa floribunda* F.-Vill. in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 14, non Büse.

*Dinochloa major* Pilger in Perk. Frag. Fl. Philip. (1904) 149; Camus Bamb. (1913) 170.

Babuyan Islands, Luzon (Cagayan, Isabela, Apayao, Ilocos Norte, Ilocos Sur, Benguet, Nueva Vizcaya, Pangasinan, Zambales, Bulacan, Nueva Ecija, Pampanga, Rizal, Bataan, Laguna, Tayabas, Camarines), Mindoro, Palawan, Leyte. Common in secondary and primary forests at low and medium altitudes, ascending to 1,700 m. Variable. Endemic.

Local names: Baliáro (Ilk.); balíkau (Ilk.); bíkil (Ilk.); bongbong (Bis.); loob (Bis.); indi, inri, hindi (Bik.); butor (Isn.); bábui (Bik.); lilit (Pamp.); bíkal (Ilk., Ibn., Pamp., Pang., Tag.); bíkal-bábi (Pamp.); bíkal-bábui (Sbl.); gimak (Tag.); mangnau (Ilk.); tagísí (Tag.); usíu (Tag.).

**SCHIZOSTACHYUM FENIXII** Gamble in Philip. Journ. Sci. 6 (1911) Bot. 289, 8 (1913) Bot. 205.

Luzon (Cagayan, Abra, Ilocos Sur, Benguet), Panay, *F. B. 17815 Curran, 23567 Vergara, 25482, 25086 Paraiso, Félix, McVey*. In thickets at low and medium altitudes. Endemic.

Local names: Bólo (Ilk.); páua (P. Bis.); púser (Ilk.).

**SCHIZOSTACHYUM LIMA** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 62, Sp. Blancoanae (1918) 77.

*Bambus lima* Blanco Fl. Filip. (1837) 271; ed. 2 (1845) 189; ed. 3, 1 (1877) 336; Miq. Fl. Ind. Bat. 3 (1857) 421; Munro in Trans. Linn. Soc. 26 (1868) 121; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 388; Camus Bamb. (1913) 134.

*Bambusa longinodis* F.-Vill. Novis. App. (1882) 323, non ? Miq.

*Schizostachyum hallieri* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 274, 8 (1913) Bot. 205; Camus Bamb. (1913) 175, t. 97, f. B.

*Schizostachyum brachycladum* Gamble in Philip. Journ. Sci. 8 (1913) Bot. 206, non Kurz.

*Schizostachyum longispiculatum* Gamble in Philip. Journ. Sci. 8 (1913) Bot. 206, non Kurz.

Luzon (Nueva Vizcaya, Bataan, Laguna, Sorsogon), Mindoro, Palawan, Leyte, Mindanao, Basilan, *Hallier, Merrill 581, 9226, Sp. Blancoanae 41, Phil. Pl. 1472, as S. longispiculatum Kurz, Elmer 7145, 10338, 12958, 12599, 16621, Wenzel 1357, Weber 1111, Wester 145, B. S. 20120 McGregor,*

*F. B. 11374 Merritt.* In thickets and secondary forests at low and medium altitudes, sometimes gregarious; a species having unusually long internodes, these being up to 120 cm in length. Endemic.

Local names: Anos (Tag.); bagákai (C. Bis., P. Bis., Bik.); bitu (Pamp.); bolo (Ilk.); buho (P. Bis.); lakap (Buk.); nap-nap (C. Bis.); sumbing (Tagb.).

**SCHIZOSTACHYUM LUMAMPAO** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 65, Sp. Blancoanae (1918) 77.

*Bambus lumampao* Blanco Fl. Filip. (1837) 272, ed. 2 (1845) 189; ed. 3, 1 (1877) 338; Miq. Fl. Ind. Bat. 3 (1857) 421; Munro in Trans. Linn. Soc. 26 (1868) 118; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 389; Camus Bamb. (1913) 132.

*Dendrocalamus membranaceus* F.-Vill. Novis. App. (1882) 324, non Munro.

*Schizostachyum mucronatum* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 169; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 276; Camus Bamb. (1913) 175.

*Schizostachyum hirtiflorum* Hack. in Philip. Journ. Sci. 2 (1907) Bot. 420; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 275; Camus Bamb. (1913) 176.

Luzon (Cagayan, Isabela, Ilocos Norte, Ilocos Sur, Benguet, Pangasinan, Pampanga, Rizal, Bataan, Tayabas, Camarines), Panay, *Merrill Sp. Blancoanae 891, Elmer 6173, B. S. 7825 Ramos, 2310 Mearns, 29875 Fénix, F. B. 21926 Alejandro, 26058 Barros, 25829 Paraíso, 22808 Diaz & Alambra, 24113 Velasco, 23560 Vergara, 20945 De Leon, 20870 Bernardo, 10414 Curran, 3615 Maule.* In secondary forests, but more frequently gregarious and occupying extensive areas at low and medium altitudes where forests have been destroyed. Endemic.

Local names: Bakákan (Tagb.); bóho (Tag., Bik.); bokáui (Tag.); bólo (Tag., Ilk., Pang., Bik., P. Bis., Ibn.); búlo (Ibn.); caña bóho (Sp.); dasó (Bik.); lumampáu (Tag.); napnáp (Ilk.); oras (Bik.); valú (Ibn.); vúlú (It.).

**SCHIZOSTACHYUM LUZONICUM** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 277; Camus Bamb. (1913) 177.

Luzon (Zambales), *F. B. 8411 Curran & Merritt, 5926 Curran.* In forests and in ravines, altitude about 800 m. Endemic.

**SCHIZOSTACHYUM PALAWANENSE** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 274, 8 (1913) Bot. 205; Camus Bamb. (1913) 175.

Palawan, *B. S. 277 Bermejós, Elmer 12618.* In forests at low altitudes. Endemic.

Local name: Bugto (Tagb.).

**SCHIZOSTACHYUM TEXTORIUM** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 64, Sp. Blancoanae (1918) 76.

*Bambus textoria* Blanco Fl. Filip. (1837) 270; ed. 2 (1845) 188; ed. 3, 1 (1877) 335; Miq. Fl. Ind. Bat. 3 (1857) 421; Munro in Trans. Linn. Soc. 26 (1868) 122; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 389; Camus Bamb. (1913) 135.

*Gigantochloa atter* F.-Vill. Novis. App. (1882) 323, non Kurz.

*Schizostachyum merrillii* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 278; Camus Bamb. (1913) 174.

Luzon (Batangas, Rizal), *Merrill 1744, Sp. Blancoanae 714*. In secondary forests at low altitudes. Endemic.

Local name: Kalbáng (Tag.).

**SCHIZOSTACHYUM TOPPINGII** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 276; Merr. Fl. Manila (1912) 106; Camus Bamb. (1913) 178.

Luzon (Nueva Vizcaya, Rizal), Mindoro, *B. S. 5222 Topping, F. B. 9500 Merritt, B. S. 39366, 39713 Ramos*. In thickets and secondary forests at low and medium altitudes. Endemic.

### 81. DINOCHLOA Büse

**DINOCHLOA ELMERI** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 280; Camus Bamb. (1913) 170.

Luzon (Benguet), *Elmer 6542*. In the mossy forests on Mt. Santo Tomas, altitude about 2,200 m. Endemic.

**DINOCHLOA LUÇONIAE** (Munro) comb. nov.

*Bambusa luçoniae* Munro in Trans. Linn. Soc. 26 (1868) 115; F.-Vill. Novis. App. (1882) 323 (*luçoniae*); Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 389; Camus Bamb. (1913) 134.

*Dinochloa aguilarii* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 280; Camus Bamb. (1913) 170.

*Dinochloa ciliata* Kurz in Journ. As. Soc. Beng. 42<sup>2</sup> (1873) 253, in nota; Camus Bamb. (1913) 170, t. 95, f. D; Merr. in Philip. Journ. Sci. 11 (1916) Bot. 51.

*Dinochloa scandens* O. Kuntze var. *angustifolia* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 392; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 279, 8 (1913) Bot. 206; Camus Bamb. (1913) 169.

*Dinochloa tjankorreh* Büse var. *angustifolia* Hack. ex Merr. l. c. in syn.

Luzon (Cagayan, Ifugao, Ilocos Norte, Nueva Ecija, Bulacan, Zambales, Cavite, Bataan, Laguna, Tayabas), Mindoro, Leyte, Samar, Mindanao, Basilan. In forests at low and medium altitudes. Borneo.

I have examined the type of *Bambusa luçoniae* Munro, which was from Mt. Banahao, and which is preserved in the United States National Herbarium. I fail to see how *D. aguilarii* Gamble can be distinguished from *D. ciliata* Kurz, or either from *D. luçoniae* Merr.

Local names: Bika (Ibn.); bikal (Ibn.); buloau (Sub.); bolokáui (C. Bis.); malilit (Sbl.); osíu (Tag.); timak (Tag.); usíu (Tag.).

**DINOCHLOA PUBIRAMEA** Gamble in Philip. Journ. Sci. 5 (1910) Bot. 279; Camus Bamb. (1913) 171.

*Dinochloa scandens* O. Kuntze var. *pubiramea* Merr. ex Gamble l. c. in syn.

Leyte, Samar, Negros, Mindanao (Surigao), Basilan, *Bolster 319, Wenzel 1310, F. B. 5589 Everett, 26268 Mallonga, B. S. 17639 Ramos*. In forests at low and medium altitudes. Borneo.

Local name: Bukau (Yak.).

**DINOCHLOA SCANDENS** (Blume) O. Kuntze Rev. Gen. Pl. (1891) 773; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 392; Gamble in Philip. Journ. Sci. 5 (1910) Bot. 278, 8 (1913) Bot. 206; Camus Bamb. (1913) 169.

- Bambusa scandens* Blume ex Nees in Flora 7 (1824) 291.  
*Nastus tjankorreh* Schultes Syst. Veg. 7<sup>a</sup> (1830) 1358.  
*Dinochloa tjankorreh* Büse in Miq. Pl. Jungh. (1854) 388; Miq. Fl. Ind. Bat. 3 (1857) 415; Munro in Trans. Linn. Soc. 26 (1868) 153; F.-Vill. Novis. App. (1882) 324; Vidal Sinopsis Atlas (1883) 42, t. 96, f. C, Phan. Cuming. Philip. (1885) 157, Rev. Pl. Vasc. Filip. (1886) 294; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 29.  
*Dinochloa macrocarpa* Elm. Leaf. Philip. Bot. 7 (1915) 2675.

Luzon (Bulacan, Laguna, Camarines, Sorsogon), Polillo, Mindoro, Palawan, Balabac, Samar, Panay, Sibuyan, Biliran, Leyte, Mindanao, Basilan. Common in primary forests at low and medium altitudes. Malay Peninsula and Archipelago.

Local names: Baká (Tagb.); balikau (Tagb.); biá (Tagb.); biká (Bon.); balilit (Bag.); bayokáui (P. Bis.); bukáu (Yak.); bukáui (Tag.); bulukáui (P. Bis.); burukáui (S. L. Bis.); timak (Mang.); usfu (Bik., Tag.).

EXCLUDED GENERA AND SPECIES

- LAPPAGO RACEMOSA Houck.; F.-Vill. Novis. App. (1882) 313.  
 BEESHA RHEEDII Kunth; Vidal Cat. Pl. Proy. Manila (1880) 48; F.-Vill. Novis. App. (1882) 324.  
 PHYLLOSTACHYS BAMBUSOIDES Sieb.; F.-Vill. Novis. App. (1882) 323.  
 PHYLLOSTACHYS NIGRA Munro; F.-Vill. l. c.  
 PAPPOPHORUM PHLEOIDES (Cav.) R. & S.  
 "Arab. vel ins. Philipp.?" Steud. Syn. Pl. Glum. 1 (1854) 199. This is an American species erroneously credited to the Philippines by Steudel.  
 STENOTAPHRUM COMPLANATUM Schrank.; F.-Vill. Novis. App. (1882) 313.  
 TEINOSTACHYUM sp.; Gamble in Philip. Journ. Sci. 8 (1913) Bot. 205.  
 This reference was based on a sterile specimen of what will probably prove to be a species of *Schizostachyum*.  
 Several species of the Chlorideae, chiefly of the genus *Bouteloua*, have been erroneously credited to the Philippines on the basis of American specimens collected by members of the Malaspina Expedition and erroneously localized as Philippine. They are:  
 BOUTELOUA CURTIPENDULA (Mich.) Torr.; *Eutriana curtispindula* Trin.; Kunth Enum. 1 (1833) 280; Miq. Fl. Ind. Bat. 3 (1857) 383; F.-Vill. Novis. App. (1882) 320=*Bouteloua racemosa* Lagasca.  
 BOUTELOUA BARBATA Lagasca; *Eutriana barbata* Kunth Rev. Gram. 1 (1829) 96; Enum. 1 (1833) 282; Miq. Fl. Ind. Bat. 3 (1857) 284; F.-Vill. Novis. App. (1882) 321.  
 BOUTELOUA TENUIS Griseb.; *Chondrosium tenue* Beauv. Agrost. (1812) 41; Kunth Enum. 1 (1833) 76; F.-Vill. Novis. App. (1882) 320.  
 BOUTELOUA SIMPLEX Lagasca; *Chondrosium simplex* Kunth Enum. 1 276; F.-Vill. Novis. App. (1882) 320.

**POLYSCHISTIS PAUPERCULA** Presl Rel. Haenk. 1 (1830) 294, t, 41, f. 2; Kunth Enum. 1 (1833) 282; Miq. Fl. Ind. Bat. 3 (1859) 384; F.-Vill. Novis. App. (1882) 321.

"Hab. in insula Luzonia" Presl. The specimens were erroneously localized; a species of tropical America = *Pentarrhaphis* sp.

**ATHEROPOGON PROCUMBENS** Jacq.; R. & S. Syst. 2 (1825) 292.

"Ins. Philipp. Mexico" Roemer and Schultes. This is one of the American species of *Bouteloua*.

## CYPERACEAE

### 1. LIPOCARPHA R. Brown \*

**LIPOCARPHA ARGENTEA** R. Br. in Tuckey's Congo Append. (1818) 459; Miq. Fl. Ind. Bat. 3 (1856) 331; F.-Vill. Novis. App. (1882) 308; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 285; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 109.  
*Lipocarpa laevigata* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.

*Kyllinga albescens* Steud. Syn. Pl. Glum. 2 (1855) 68; Miq. Fl. Ind. Bat. 3 (1856) 294; Naves Novis. App. (1882) 300.

Luzon (Cagayan, Lepanto, Bontoc, Benguet, Nueva Vizcaya, Nueva Ecija), Mindanao (Bukidnon), *B. S. 26007, 26151 Fénix, 14252 McGregor, 7864 Ramos, Merrill 215, Phil. Pl. 570, Elmer 6484, Williams 1224*. In open wet places chiefly at medium altitudes, ascending to 1,800 m. Warmer parts of the Old World.

Local name: Balábak (Buk.).

**LIPOCARPHA MICROCEPHALA** (R. Br.) Kunth Enum. 2 (1837) 268; Miq. Fl. Ind. Bat. 3 (1856) 331; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 668, Philip. Journ. Sci. 2 (1907) Bot. 110; F.-Vill. Novis. App. (1882) 308; Merr. Fl. Manila (1912) 119.

*Hypaelyptum microcephalum* R. Br. Prodr. (1810) 220.

*Ascolepis kyllingoides* Steud. in Zoll. Verz. Ind. Archip. (1854) 61.

*Kyllinga squarrosa* Steud. Syn. Pl. Glum. 2 (1855) 68.

Luzon (Apayao, Ifugao, Bulacan, Rizal), *Merrill 3625, Phil. Pl. 547, B. S. 21712, 12177 Ramos, 28174 Fénix*. In open wet grasslands at low and medium altitudes. Japan to the Malay Peninsula and tropical Australia.

### 2. HYPOLYTRUM L. C. Richard

**HYPOLYTRUM COMPACTUM** Nees in Linnaea 9 (1834) 288, Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 73; Steud. Syn. Pl. Glum. 2 (1855) 132; Miq. Fl. Ind. Bat. 3 (1856) 333; Boeck. in Linnaea 37 (1871) 127; F.-Vill. Novis. App. (1882) 309; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 29; C. B. Clarke op. cit. 2 (1907) Bot. 109.

Luzon (Benguet, Pangasinan, Zambales, Nueva Vizcaya, Bulacan, Bataan), Palawan, *B. S. 29983 Fénix, 29537, 29428 Ramos & Edaña, Elmer 8889, 13041, Merrill 2496, 7597, 5184, Phil. Pl. 1434*. In forests at low and medium altitudes, often common. Indo-China, Andaman Islands, Borneo.

Local name: Túhog-dalág (Tag.).



**HYPOLYTRUM LATIFOLIUM** L. C. Rich. in Pers. Syn. 1 (1805) 70; Hook. f. in Curtis's Bot. Mag. III 33 (1877) t. 6282; F.-Vill. Novis. App. (1882) 309; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 108; Merr. op. cit. 264.

*Scirpus anomalus* Retz. Obs. 5 (1789) 15, non *Hypolytrum anomalum* Steud.

*Albikia schoenoides* Presl Rel. Haenk. 1 (1828) 185, t. 34.

*Hypolytrum schoenoides* Nees in Linnaea 9 (1834) 288.

*Hypolytrum trinervium* Kunth Enum. 2 (1837) 272; Miq. Fl. Ind. Bat. 3 (1856) 332; F.-Vill. Novis. App. (1882) 308.

Luzon (Tayabas, Pangasinan, Camarines), Palawan, Biliran, Panay, Mindanao, Basilan, Merrill 9449, Phil. Pl. 537, F. B. 20186 Aguilar, B. S. 13115 Foxworthy & Ramos, 13561 McGregor, 34341 Ramos & Pascasio, 17787 Otanes. In forests at low and medium altitudes. India to Formosa through Malaya to Polynesia.

Local names: Baliis (Tag.); bubugo (Sub.); marakibkib (Neg.); parai-biau (Sul.); root (Neg.).

**HYPOLYTRUM SCIRPOIDES** (Presl) comb. nov.

*Albikia scirpoides* Presl Rel. Haenk. 1 (1828) 185, t. 35, excl. syn.

*Hypolytrum philippense* C. B. Clarke in Philip. Journ. Sci. 2 (1908) Bot. 109.

*Hypolytrum viridinix* C. B. Clarke l. c.

Throughout the Philippines, Elmer 6223, 15916, 18198, Merrill 7291, 10430, 744, 5126, 8186, B. S. 29589, 28654, 28462 Ramos & Edaño, 34394 Ramos & Pascasio, 28164 Fénix, 23601, 13929, 20424, 15314, 1853, 7339, 33162 Ramos, 14238, 32473 McGregor. In forests at low and medium altitudes; often common. Borneo.

Local name: Alisáhis (Buk.).

The Philippine form Presl figured and described is unmistakably the same as *H. philippense* C. B. Clarke; Presl erred in referring to it *H. nemorum* Beauv. and *Schoenus nemorum* Vahl.

### 3. CYPERUS Linnaeus

**CYPERUS COMPRESSUS** Linn. Sp. Pl. (1753) 46; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 56, Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Naves Novis. App. (1882) 302; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 282; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 84; Merr. op. cit. 3 (1908) Bot. 398, Fl. Manila (1912) 111, Sp. Blancoanae (1918) 79.

*Cyperus humilis* Llanos Frag. Pl. Filip. (1851) 13; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 7, non Kunth.

*Cyperus compressus* Linn. var. *brachiatus* Nees in Linnaea 35 (1868) 518.

*Cyperus meyenii* Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 57.

Throughout the Philippines in open grasslands, waste places, etc., at low and medium altitudes; common. Pantropic.

Local names: Ananá (Ibn.); gísai-kalabáu (Tag.); kaptos (Iv.); túhog-dalág (Tag.); sangsañga (Bon.).

**CYPERUS DIFFORMIS** Linn. Amoen. Acad. 4 (1759) 302; Presl Rel. Haenk. 1 (1828) 69; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 70, Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; Miq. Fl. Ind. Bat. 3 (1856) 269; Naves Novis. App. (1882) 302; Vidal Phan. Cuming. Philip. (1855) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 82; Merr. Fl. Manila (1912) 110, Sp. Blancoanae (1918) 78.

*Cyperus subrotundus* Naves Frag. Pl. Filip. (1851) 14; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 8.

*Cyperus goeringii* Steud. Syn. Pl. Glum. 2 (1855) 24; Naves Novis. App. (1882) 303.

Throughout the Philippines in open wet places, ascending to 2,000 m; a characteristic rice-paddy weed. Old World Tropics generally, introduced in Mexico.

Local names: Baki-báki (Bis.); ballayang (Ilk.); bankoan (Bis.); gilamhon (Bis.); pukuugan (Bon.).

**CYPERUS DIFFUSUS** Vahl Enum. 2 (1806) 321; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 58, Hook. Journ. Bot. Kew Miscel. 6 (1854) 28 (var. *longifolius* Nees); Miq. Fl. Ind. Bat. 3 (1856) 264; Naves Novis. App. (1882) 302; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 83; Merr. op. cit. 262, Fl. Manila (1912) 110.

*Cyperus scirpoideus* Presl Rel. Haenk. 1 (1828) 178, non Vahl.

*Cyperus sorzogenensis* Presl op. cit. 351.

*Cyperus longifolius* Dene. in Nuov. Ann. Mus. Paris 3 (1834) 359; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.

Throughout the Philippines, in thickets, secondary and primary forests, and in old clearings at low and medium altitudes; common. Pantropic.

Local names: Barsañgá-bákir (Ilk.); gumi-gúmi (Tag.); haras (Tag.); nipinpin-di-gúbat (Sbl.); túhog-dalág (Tag.).

Var. **PUBESQUAMA** (Steud.) Kükenth. in herb. comb. nov.

*Cyperus pubesquama* Steud. in Zoll. Verz. Ind. Archipel. (1854) 62; Miq. Fl. Ind. Bat. 3 (1856) 266; Naves Novis. App. (1882) 302; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 83.

*Cyperus lagorensis* Steud. Syn. Pl. Glum. 2 (1855) 36; Miq. Fl. Ind. Bat. 3 (1856) 275.

*Cyperus bancanus* Naves Novis. App. (1882) 302; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 30; C. B. Clarke op. cit. 2 (1907) Bot. 83, non Miq.

*Cyperus calacaryensis* Steud. Syn. Pl. Glum. 2 (1855) 34; Miq. Fl. Ind. Bat. 3 (1856) 275; Naves Novis. App. (1882) 304.

Luzon (Cagayan, Isabela, Bulacan, Rizal, Bataan, Laguna), Mindoro, Leyte, Mindanao, *F. B. 2531 Meyer, B. S. 13951, 8015 Ramos, Merrill 5054, 5692, Phil. Pl. 523*. Habitat of the species from which it is scarcely distinguishable. India to Malaya.

Var. **CELEBICA** Miq. Fl. Ind. Bat. 3 (1856) 283.

Throughout the Philippines, *Elmer 18286, 6674, 8306, Williams 85, B. S. 28839 Ramos & Edaña, 16166 Reillo, F. B. 20172 Aguilar*. Habitat of the species. Malaya.

**CYPERUS DIGITATUS** Roxb. Hort. Beng. (1814) 81, *nomen nudum*, Fl. Ind. 1 (1820) 209; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86.

*Cyperus auricomus* Naves Novis. App. (1882) 305; Ceron Cat. Pl. Herb. Manila (1892) 177, non Sieber.

Babuyan Islands, Luzon (Cagayan, Isabela, Nueva Vizcaya, Rizal, Pangasinana, Laguna), Leyte, Mindanao, *B. S. 1450, 8075, 8151, 13516 Ramos, Weber 1088, Merrill 2317*. In open wet places at low and medium altitudes; widely scattered. Pantropic.

**CYPERUS DISTANS** Linn. f. Suppl. (1781) 103; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Naves Novis. App. (1882) 303; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 84; Merr. op. cit. 3 (1908) Bot. 398, 5 (1910) Bot. 333, Fl. Manila (1912) 111.

*Cyperus kurrü* Steud. Syn. Pl. Glum. 2 (1855) 38; Miq. Fl. Ind. Bat. 3 (1856) 279; Naves Novis. App. (1882) 305.

Throughout the Philippines. Common in open rather wet places at low and medium altitudes. Pantropic.

Local names: Amúsan (Tag.); bakabakáhan (Tag.); barisañgá (Ilk.); burabongdai (S. L. Bis.); gagauan (Bon.); hañgañga (If.); langalang (Bik.); muthang-kalabáu (Tag.); pulukgalo (Buk.); talúbak (Buk.).

**CYPERUS ELATUS** Linn. Amoen. Acad. 4 (1759) 301; Naves Novis. App. (1882) 304; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86.

*Cyperus bispicatus* Steud. in Zoll. Verzeich. Ind. Archipel. (1854) 62; Naves Novis. App. (1882) 303.

Luzon (Laguna), Biliran, Leyte, *Wenzel 1279, B. S. 14955 Ramos, 23140, 18897 McGregor*, distributed as *C. radiatus* Vahl, and not certainly distinct from Vahl's species. In swamps and open wet places at low altitudes. India to Malaya.

Local name: Kobong-kóbong (Bis.).

**CYPERUS ELEUSINOIDES** Kunth Enum. 2 (1837) 39; Naves Novis. App. (1882) 303; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 84.

Luzon (Cagayan, Bontoc, Benguet, Nueva Vizcaya), Mindanao (Bukidnon), *Merrill 226, B. S. 24950 Félix, 22723 Castillo, 8747, 14264 McGregor*. In open wet places at low and medium altitudes, not common. Tropical Asia and Africa through Malaya to tropical Australia.

Local names: Gauang (Bon.); salingáñga (Bon.).

**CYPERUS FLABELLIFORMIS** Rottb. Descr. Nov. Pl. (1773) 42; Merr. Fl. Manila (1912) 110.

Cultivated for ornamental purposes, occasional in waste places in Manila but scarcely established. A native of Africa and southwestern Asia.

**CYPERUS HASPAN** Linn. Sp. Pl. (1753) 45; Miq. Fl. Ind. Bat. 3 (1856) 267; Naves Novis. App. (1882) 302; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 82; Merr. op. cit. 3 (1908) Bot. 398, Fl. Manila (1912) 110, Sp. Blancoanae (1918) 79.

*Cyperus caespitosus* Llanos Frag. Pl. Filip. (1851) 14 (*caespitosus*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 8; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86, non Poir.

*Cyperus dehiscens* Naves Novis. App. (1882) 303, non Kunth.

*Cyperus flavidus* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 82, non Retz.

In open wet places throughout the Philippines; a common and characteristic rice-paddy weed. Pantropic.

I fail to see how Philippine specimens referred to *C. flavidus* Retz. can be distinguished from *C. haspan* Linn.

Local names: Balabalangútan (Tag.); barsaṅgá (Ilk.); buṅgot-buṅgot (P. Bis.); manik-manikan (Tag.); misai-kalabau (Tag.); zaingal (Sub.).

**CYPERUS IRIA** Linn. Sp. Pl. (1753) 45; Presl Rel. Haenk. 1 (1828) 174; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 70, Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; Naves Novis. App. (1882) 303; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 83 (incl. var. *paniciformis* C. B. Clarke); Merr. Fl. Manila (1912) 111, Sp. Blancoanae (1918) 79.

*Cyperus nuttallii* Llanos Frag. Pl. Filip. (1851) 14; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 9, non Torr.

*Chlorocyperus iria* Rikli in Jahrb. Wissensch. Bot. 27 (1895) 564; Palla in Allgem. Bot. Zeitschr. 17 (1911) Beil. 6; Kneucker Cyp. Exsic. No. 237.

In open wet places throughout the Philippines; a common and characteristic rice-paddy weed. Old World Tropics generally.

Local names: Alinang (Bik); okokiang (Bon.); paiung-paiung (Bik.); sud-sud (Bik.); taga-tagá (Bik.).

**CYPERUS LEUCOCEPHALUS** Retz. Obs. 5 (1789) 11; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 82.

*Sorostachys kyllingioides* Steud. in Flora 33 (1850) 229, *nomen nudum*, Syn. Pl. Glum. 2 (1855) 71; Miq. Fl. Ind. Bat. 3 (1856) 296.

*Cyperus sorostachys* Boeck. in Linnaea 35 (1868) 588; Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 48.

*Cyperus pulchellus* R. Br. Prodr. (1810) 213; Naves Novis. App. (1882) 301.

Mindanao (Misamis), *Cuming 1617*. This does not seem to have been found in the Philippines since Cuming collected it, between 1836 and 1840. Pantropic.

**CYPERUS MALACCENSIS** Lam. Tabl. Encycl. 1 (1791) 146; Usteri Beitr. Ken. Philip. Veg. (1905) 131; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 30, Fl. Manila (1912) 111; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 84.

*Chlorocyperus malaccensis* Palla in Allgem. Bot. Zeitschr. 17 (1911) Beil. 6, Kneucker Cyp. Exsic. No. 238.

Central Luzon to Palawan and Mindanao, on the muddy margins of tidal streams within the influence of salt or brackish water. Tropical Asia through Malaya to Australia and Polynesia.

Local names: Baga-as (P. Bis.); balangót (Tag., Bik., Bis., Pamp.); balongát (Pamp.); barangót (Bik.); talaíd (Bag.); tíkog (Mbo.).

- CYPERUS PILOSUS** Vahl Enum. 2 (1806) 354; Naves Novis. App. (1882) 303; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 84; Merr. Fl. Manila (1912) 111.
- Cyperus marginellus* Nees in Wight Contr. (1834) 83, Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.
- Cyperus pauciflorus* Steud. Syn. Pl. Glum. 2 (1855) 34; Miq. Fl. Ind. Bat. 3 (1856) 275; Naves Novis. App. (1882) 304.
- Cyperus obliquus* Nees in Wight Contr. (1834) 86; Naves Novis. App. (1882) 305.
- Duvaljouvea pilosa* Palla in Koch Syn. ed. 3 (1905) 2555; Kneucker Cyp. Exsic. No. 245.

In open wet places throughout the Philippines; common. Tropical Asia and Africa through Malaya to Australia.

Local name: Paragi (Sub.).

- CYPERUS RADIATUS** Vahl Enum. 2 (1806) 369; Naves Novis. App. (1882) 305; Vidal Phan. Cuming. Philip. (1885) 155 (var. *elongata* Boeck.), Rev. Pl. Vasc. Filip. (1886) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 85; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 398, Fl. Manila (1912) 112, Sp. Blancoanae (1918) 78.
- Cyperus racemosus* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Naves Novis. App. (1882) 303, ? non Retz.
- Cyperus macrosciadion* Steud. Syn. Pl. Glum. 2 (1855) 37; Miq. Fl. Ind. Bat. 3 (1856) 277; Naves Novis. App. (1882) 305.
- Cyperus anabaptistus* Steud. Syn. Pl. Glum. 2 (1855) 37; Miq. Fl. Ind. Bat. 3 (1856) 277; Naves Novis. App. (1882) 305; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86, ex descr.
- Cyperus cumingii* Steud. l. c. in syn.
- Cyperus imbricatus* Llanos Frag. Pl. Filip. (1851) 17; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 11, non Retz.
- Cyperus spicatus* Presl Rel. Haenk. 1 (1828) 173; Steud. Syn. Pl. Glum. 2 (1855) 52; Miq. Fl. Ind. Bat. 3 (1856) 287; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 87, ex descr.
- Dichostylis radiatus* Palla in Allgem. Bot. Zeitschr. 17 (1911) Beil. 8, Kneucker Cyp. Exsic. No. 247.

Throughout the Philippines in open wet places at low and medium altitudes. Pantropic.

Local names: Alinang (P. Bis.); balabalanġutan (Tag.); balayang (Ilk.); dagko (Bis.); obod-obod (Bis.); upopi (Ibn.).

- CYPERUS ROTUNDUS** Linn. Sp. Pl. (1753) 45; Presl Rel. Haenk. 1 (1828) 175; Blanco Fl. Filip. (1837) 31, ed. 2 (1845) 21, ed. 3, 1 (1877) 40; Miq. Fl. Ind. Bat. 3 (1856) 274; Naves Novis. App. (1882) 304; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 282; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 85; Merr. Fl. Manila (1912) 112, Sp. Blancoanae (1918) 79.
- Cyperus hexastachyus* Rottb. Descr. Ic. (1773) 28, t. 14 f. 2; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 60, var. *castaneus* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27.
- Cyperus curvatus* Llanos Frag. Pl. Filip. (1851) 15; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 9, non Vahl.

Throughout the Philippines in open areas at low and medium altitudes. Common in lawns, along roads, and in waste places. Pantropic.

Local names: Barsañgá (Ilk.); boto-botónes (Bik.); galonálpas (Pamp.); kusung (Pamp.); malaapúlid (Pamp.); motá (Pamp.); muthá (Tag.); omadiung (Pamp.); onoran (Pamp.); sur-sur (Pamp.); tarugug (Bik.).

**CYPERUS STOLONIFERUS** Retz. Obs. 4 (1786) 10; Presl Rel. Haenk. 1 (1828) 169; Boeck, in *Linnaea* 35 (1868) 489; Naves Novis. App. (1882) 302; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 85.

Luzon (Rizal), Panay, *McGregor 41, Copeland*. In open places at low altitudes; rare and local. Tropical Asia to Mauritius, Formosa, and through Malaya to tropical Australia.

**CYPERUS UNCINATUS** Poir. in *Lam. Encycl.* 7 (1806) 247; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 82.

*Cyperus cuspidatus* HBK. *Nov. Gen. Sp. Pl.* 1 (1815) 204; Naves Novis. App. (1882) 301; Vidal Phan. *Cuming. Philip.* (1885) 155, *Rev. Pl. Vasc. Filip.* (1886) 282.

*Cyperus solutus* Steud. *Syn. Pl. Glum.* 2 (1855) 14; *Miq. Fl. Ind. Bat.* 3 (1856) 263; Naves Novis. App. (1882) 302.

*Cyperus pusillus* Nees in *Hook. Journ. Bot. Kew Miscel.* 6 (1854) 27, non ? Vahl.

Luzon (Bontoc, Benguet, Bulacan, Rizal, Laguna), Mindanao (Lanao), *Merrill Phil. Pl. 1488, Williams 1975bis, 1969bis, B. S. 19213 Ramos*. In open lands, old clearings, etc., at low and medium altitudes. Pantropic.

Local name: Salasa (Tag.).

**CYPERUS ZOLLINGERI** Steud. in *Zoll. Verz. Ind. Archipel.* (1854) 62; *Syn. Pl. Glum.* 2 (1855) 17; *Miq. Fl. Ind. Bat.* 3 (1856) 264; Naves Novis. App. (1882) 302; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 85; *Merr. Fl. Manila* (1912) 112.

*Cyperus tenuiculis* Boeck. in *Linnaea* 36 (1869) 286; Scheff. in *Nat. Tijdschr. Nederl. Ind.* 34 (1874) 50; Naves Novis. App. (1882) 306.

Luzon (Cagayan, Ilocos Norte, Benguet, Rizal, Sorsogon), Palawan, Panay, Mindanao, *Elmer 16488, 6473, Merrill 7667, 9310, Phil. Pl. 530, B. S. 32583 McGregor, 29513 Ramos & Edaña, 1106, 4636, 7672, 7820 Ramos*. In open grasslands at low and medium altitudes, ascending to 1,600 m. Tropical Asia and Africa through Malaya to tropical Australia.

Local names: Dáat-láua (Tag.); pakama (Bag.).

#### DOUBTFUL AND EXCLUDED SPECIES

**CYPERUS BULBOSUS** Vahl; Naves Novis. App. (1882) 304.

**CYPERUS CASTANEUS** Willd.; Naves Novis. App. (1882) 301.

**CYPERUS CEPHALOTES** Vahl; Naves Novis. App. (1882) 301.

**CYPERUS CORYMBOSUS** Rottb.; Naves Novis. App. (1882) 303.

**CYPERUS ESCULENTUS** Linn.; Naves Novis. App. (1882) 304.

**CYPERUS EUMORPHUS** Steud.; Naves Novis. App. (1882) 303.

**CYPERUS LAEVIGATUS** Linn.; Naves Novis. App. (1882) 301.

**CYPERUS LONGUS** Linn.; Naves Novis. App. (1882) 304.

CYPERUS ORNATUS R. Br.; Naves Novis. App. (1882) 303.

CYPERUS PANGOREI Rottb.; Naves Novis. App. (1882) 304.

CYPERUS RADIANS Nees; Naves Novis. App. (1882) 305.

CYPERUS SEXFLORUS R. Br.; Naves Novis. App. (1882) 304.

CYPERUS TEGETIFORMIS Roxb.; Naves Novis. App. (1882) 303.

CYPERUS CLAVATUS Lam.; Usteri Beitr. Ken. Philip. Veg. (1905) 131.

*A lapsus calami*; no such name occurs in botanical literature.

CYPERUS CRUENTUS Rottb.; Boeck. in Linnaea 36 (1869) 338; Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 51; Naves Novis. App. (1882) 305.

The Philippine record was based on *Cuming 2372*, which was from Malacca, not from the Philippines.

CYPERUS HAEMATODES Endl.; Steud. Syn. Pl. Glum. 2 (1855) 44; Miq. Fl. Ind. Bat. 3 (1856) 282; Naves Novis. App. (1882) 305.

The type was from Norfolk Island; the Philippine record is due to Steudel's error in transcribing the type locality as "Ins. Norf. Philipp."

CYPERUS LAMPROCARPUS Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Boeck. in Linnaea 35 (1868) 490; Naves Novis. App. (1882) 306.

The type is *Cuming 2437*, which was from Sumatra, not from the Philippines. It is supposed to be a synonym of *Cyperus stoloniferus* Retz.

CYPERUS TUBEROSUS Rottb.; Miq. Fl. Ind. Bat. 3 (1856) 265.

"Luzon ?" *fide* Miquel l. c. The record must be an erroneous one as the species is not known from the Philippines.

CYPERUS MINUTIFLORUS Presl Rel. Haenk. 1 (1830) 351; Steud. Syn. Pl. Glum. 2 (1855) 52; Miq. Fl. Ind. Bat. 3 (1856) 287; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 87.

*Cyperus micranthus* Presl Rel. Haenk. 1 (1828) 178, non Nees.

*Cyperus breviflorus* Dietr. Sp. Pl. 2 (1833) 316.

*Cyperus multiflorus* Kunth Enum. 2 (1837) 562 err. typ.

"Hab. in insula Luzon."

CYPERUS PHILIPPENSIS Presl Rel. Haenk. 1 (1828) 174; Steud. Syn. Pl. Glum. 2 (1855) 52; Miq. Fl. Ind. Bat. 3 (1856) 287; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 87.

"Hab. in insula Luzon." It is desirable that the types of the last two be examined as from the description I cannot place either of these satisfactorily. Both are probably referable to some of the admitted species listed above.

CYPERUS EXALTATUS Retz.; Naves Novis. App. (1882) 304; Ceron Cat. Pl. Herb. Manila (1892) 178; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86.

Vidal's specimen on which Ceron's record is based is *C. elatus* Linn. *fide* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 86. I suspect that Llanos's plant cited by Clarke as *C. exaltatus* Retz. is either *C. radiatus* Vahl or *C. elatus* Linn.

## 4. PYCREUS Beauvois

**PYCREUS ERAGROSTIS** (Vahl) Merr. Fl. Manila (1912) 108.

*Cyperus eragrostis* Vahl Enum. 2 (1806) 322; Naves Novis. App. (1882) 300; Suringar Geslacht. Cyp. (1898) 65.

*Pycereus sanguinolentus* Nees in Linnaea 9 (1834) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 79.

*Cyperus sanguinolentus* Vahl Enum. 2 (1806) 351.

*Cyperus atratus* Steud. in Zoll. Verz. Ind. Archip. (1854) 62; Naves Novis. App. (1882) 301.

Luzon (Ilocos Norte, Bontoc, Benguet, Pangasinan, Rizal, Laguna, Sorsogon), Mindanao, *Elmer 14336, 14323, Merrill 7354, 9792, Phil. Pl. 514, Williams 1972, B. S. 27620, 4893, 12039 Ramos*. In open wet places at low and medium altitudes, ascending to 1,600 m. Widely distributed in the warmer parts of the Old World.

**PYCREUS GLOBOSUS** (All.) Reichb. Fl. Germ. Exkurs. (1830-32) 140<sup>19</sup>;

C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 81 (incl. var. *nilagiricus* C. B. Clarke).

*Cyperus globosus* All. Fl. Pedem. Auctuar. (1789) 49; Naves Novis. App. (1882) 301; Suringar Geslacht. Cyp. (1898) 58.

*Cyperus vulgaris* Kunth Enum. 2 (1837) 4; Miq. Fl. Ind. Bat. 3 (1856) 256.

*Cyperus lanceolatus* Presl Rel. Haenk. 1 (1828) 167, non ? Poir.

Luzon (Bontoc, Lepanto, Benguet, Nueva Vizcaya), Leyte, Mindanao (Lanao), *Merrill 237, 4630, Phil. Pl. 556, Elmer 6483, Williams 1242, B. S. 31810 Santos, 14261, 14257 McGregor, 5972, 8238 Ramos*. In open usually wet places at medium altitudes, ascending to 2,000 m. Warmer parts of the Old World.

Local name: Tantanud (Bon.).

**PYCREUS NITENS** (Retz.) Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 53; Merr. Fl. Manila (1912) 108.

*Cyperus nitens* Retz. Obs. 5 (1789) 13; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283; Suringar Geslacht. Cyp. (1898) 55.

*Cyperus pumilus* Linn. Amoen. Acad. 4 (1759) 302; Naves Novis. App. (1882) 300, non *Pycereus pumilus* Nees.

*Pycereus pulvinatus* Nees in Linnaea 9 (1834) 283; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 79.

*Cyperus gymnoleptus* Steud. Syn. Pl. Glum. 2 (1855) 3; Miq. Fl. Ind. Bat. 3 (1856) 255.

Northern Luzon to Mindanao, in most or all islands and provinces. In open usually damp places at low and medium altitudes. Common in the warmer parts of the Old World; Florida (probably introduced).

**PYCREUS ODORATUS** (Linn.) Urban Symb. Antil. 2 (1900) 164; Merr. Fl. Manila (1912) 108, Interpret. Herb. Amb. (1917) 104, Sp. Blancoanae (1918) 80.

*Cyperus odoratus* Linn. Sp. Pl. (1753) 46, excl. syn. Sloane.

*Pycereus polystachyus* Beauv. Pl. Oware et Benin 2 (1807) 48, t. 86, f. 2; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 80; Merr. op. cit. 3 (1908) Bot. 397.



*Cyperus polystachyus* R. Br. Prodr. (1810) 214; Miq. Fl. Ind. Bat. 3 (1856) 258; Naves Novis. App. (1882) 301.

*Cyperus strigosus* Llanos Frag. Pl. Filip. (1851) 16; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 10, non Linn.

Throughout the Philippines. Common in open usually damp grasslands, fallow rice paddies, etc., at low altitudes. Pantropic.

Local names: Alúsang-pasígan (Tag.); haná (Iv.).

Var. **PANICULATUS** (Rottb.) Merr. Fl. Manila (1912) 109.

*Cyperus paniculatus* Rottb. Descr. Ic. (1773) 40.

*Pycrus polystachyus* Beauv. var. *laziflorus* Benth. Fl. Austral. 7 (1878) 261; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 80.

Luzon (Isabela, Pampanga, Rizal), Negros. Occasional; habitat of the species.

Var. **HOLOSERICEUS** (Link) Merr. in Journ. Str. Branch Roy. As. Soc. 76 (1917) 79.

*Cyperus holosericeus* Link Hort. Berol. 1 (1827) 317.

Luzon (Zambales, Laguna), Palmas, Merrill 5343, Bolster 11, Baker 983, B. S. 22986 McGregor. In open wet places; rare and local. Borneo, its other range uncertain.

**PYCREUS SULCINUX** C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 593; Philip. Journ. Sci. 2 (1907) Bot. 80.

*Cyperus sulcinux* C. B. Clarke in Journ. Linn. Soc. Bot. 21 (1884) 593; Suringar Geslacht. Cyp. (1898) 63.

Luzon (Benguet, Bulacan), Palawan, Mindanao (Lanao), Merrill 4289, 9278, Phil. Pl. 548, Williams 1969, Elmer 6579, B. S. 21742 Ramos. In open places, in dry or damp soil, sea level to 1,200 m altitude; local. Warmer parts of the Old World.

**PYCREUS UNIOLOIDES** (R. Br.) comb. nov.

*Cyperus unioloides* R. Br. Prodr. (1810) 216.

*Cyperus angulatus* Nees in Wight Contrib. (1834) 73.

*Pycrus angulatus* Nees in Linnaea 9 (1834) 283.

Luzon (Bontoc, Benguet, Nueva Vizcaya), Mindanao (Lanao), Williams 1971, B. S. 14228 McGregor, 8262 Ramos. In boggy places at medium altitudes. Pantropic.

#### DOUBTFUL AND EXCLUDED SPECIES

**CYPERUS ALBUS** Presl Rel. Haenk. 1 (1828) 175; Miq. Fl. Ind. Bat. 3 (1856) 287; Steud. Syn. Pl. Glum. 2 (1855) 52; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 81.

"Hab. in insula Luzon" Presl. This is a *Pycrus* judging from Presl's description of the styles as 2-fid. It is necessary to examine the type to determine its status.

**CYPERUS LUZONENSIS** Presl Rel. Haenk. 1 (1828) 174; Steud. Syn. Pl. Glum. 2 (1855) 52; Miq. Fl. Ind. Bat. 3 (1856) 287; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 81.

"Hab. in insula Luzon" Presl. The type should be examined as the status of the species is hardly determinable from the description alone.

**CYPERUS FLAVESCENS** Linn.; Naves Novis. App. (1882) 301.

**CYPERUS FLAVICOMUS** Michx.; Naves l. c.

## 5. MARISCUS Gaertner

**MARISCUS CYPERINUS** (Retz.) Vahl Enum. 2 (1806) 377; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 87; Merr. op. cit. 3 (1908) Bot. 398, 5 (1910) Bot. 333, Fl. Manila (1912) 113.

*Kyllinga cyperinus* Retz. Obs. 6 (1791) 21.

*Mariscus sundaicus* Miq. Fl. Ind. Bat. 3 (1856) 289.

*Cyperus sundaicus* Naves Novis. App. (1882) 306.

*Mariscus umbellatus* Moritzi Verz. Zoll. Pflanz. (1845) 98, vix Vahl.

*Cyperus umbellatus* Naves Novis. App. (1882) 305, vix Benth.

*Cyperus manilensis* Boeck. in Engl. Bot. Jahrb. 5 (1884) 501.

*Mariscus philippensis* Steud. Syn. Pl. Glum. 2 (1855) 66; Miq. Fl. Ind. Bat. 3 (1856) 290; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 88.

*Cyperus stuedelianus* Naves Novis. App. (1882) 306; Boeck. in Engl. Bot. Jahrb. 5 (1884) 91.

*Mariscus umbellatus* Presl Rel. Haenk. 1 (1828) 191, non Vahl.

*Cyperus cylindrostachys* Boeck. in Linnaea 36 (1869) 383, p. p.; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283.

Throughout the Philippines at low and medium altitudes, in open waste places, old clearings, etc. India to Malaya and Polynesia.

Local names: Alúsang (Tag.); alúsang-párang (Tag.); bubuyangkat (Sub.); busikad-dako (C. Bis.); haná (Iv.); saka-án (Ig.); silal (Buk.); ubud-ubud (Tag.).

**MARISCUS DILUTUS** (Vahl) Nees in Wight Contrib. (1834) 90; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 231, Fl. Manila (1912) 113, Sp. Blancoanae (1918) 80, 81.

*Cyperus dilutus* Vahl Enum. 2 (1806) 357; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 65; Miq. Fl. Ind. Bat. 3 (1856) 285; Naves Novis. App. (1882) 305; Vidal Phan. Cuming. Philip. (1885) 155; Vidal Rev. Pl. Vasc. Filip. (1886) 283.

*Mariscus microcephalus* Presl Rel. Haenk. 1 (1828) 182; Steud. Syn. Pl. Glum. 2 (1855) 66; Miq. Fl. Ind. Bat. 3 (1856) 290; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 88.

*Cyperus haenkeanus* Kunth Enum. 2 (1837) 93.

*Cyperus quadriflorus* Naves Frag. Pl. Filip. (1851) 17 (*cuadriflorus*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 3<sup>1</sup> (1880) 12.

*Cyperus luzoniensis* Llanos l. c.; F.-Vill. & Naves op. cit. 11.

*Cyperus septatus* Steud. Syn. Pl. Glum. 2 (1855) 46; Naves Novis. App. (1882) 305.

*Cyperus microcephalus* Naves Novis. App. (1882) 304, non R. Br.

*Sphaeromariscus microcephalus* Camus in Not. Syst. 1 (1910) 239.

*Duvaljouvea diluta* Palla in Allgem. Bot. Zeitschr. 17 (1911) Beil. 8; Kneucker Cyp. Exsic. No. 246.

Throughout the Philippines, in all or most islands and provinces. Common in open wet places at low and medium altitudes. Tropical Asia to Malaya and the Mascarene Islands.

Local names: Baki-báking-pulá (S. L. Bis.); durugi (Sub.); giron (Bag.) kadang-kadang (Bik.); tikai (Tag.).

**MARISCUS MERRILLII** C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 87.

Luzon (Cavite), *Merrill 4170*. On wet banks in ravines, altitude about 300 m. Endemic.

**MARISCUS NIVEUS** (Murr.) Merr. in Philip. Journ. Sci. 14 (1919) 369.

*Schoenus niveus* Murr. in Linn. Syst. Veg. ed. 13 (1774) 81.

*Scirpus glomeratus* Linn. Sp. Pl. (1753) 52, excl. syn. Gronov., non *Mariscus glomeratus* Barton.

*Schoenus coloratus* Linn. var.  $\beta$  Linn. Sp. Pl. ed. 2 (1762) 64.

*Cyperus kyllingiaeoides* Vahl Enum. 2 (1806) 312.

*Mariscus dregeanus* Kunth Enum. 2 (1837) 120; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 620.

*Cyperus irroratus* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.

Luzon (Ilocos Norte), *32826 Ramos*. On dry open rocky slopes at low altitudes. India to tropical Africa, the Malay Peninsula, Singapore, and Borneo.

**MARISCUS PENNATUS** (Lam.) comb. nov.

*Cyperus pennatus* Lam. Tabl. Encycl. 1 (1791) 144; Miq. Fl. Ind.

Bat. 3 (1856) 281; Naves Novis. App. (1882) 304; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283.

*Cyperus stuppeus* Forst. f. Prodr. (1786) 89, *nomen nudum*.

*Mariscus stuppeus* Merr. in Philip. Journ. Sci. 3 (1908) Bot. 398, Fl. Manila (1912) 113, Sp. Blancoanae (1918) 80.

*Cyperus canescens* Vahl Enum. 2 (1806) 355; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 27; Boeck. in Linnaea 36 (1869) 340;

Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 51.

*Mariscus albescens* Gaudich. Bot. Freyc. Voy. (1826) 415; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 88.

*Cyperus holciflorus* Presl Rel. Haenk. 1 (1828) 173; Steud. Syn. Pl. Glum. 2 (1855) 43; Miq. Fl. Ind. Bat. 3 (1856) 282; Naves Novis. App. (1882) 305.

*Cyperus bracteolatus* Steud. Syn. Pl. Glum. 2 (1855) 49; Miq. Fl. Ind. Bat. 3 (1856) 286; Naves Novis. App. (1882) 305.

*Cyperus bracteatus* Vidal Phan. Cuming. Philip. (1885) 155.

*Cyperus ovatus* Naves Frag. Pl. Filip. (1851) 15; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 3 (1880) 10.

*Cyperus nitidulus* Boeck. in Linnaea 36 (1869) 363; Naves Novis. App. (1882) 305; Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 51; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 283.

*Cyperus anomalus* Steud. Syn. Pl. Glum. 2 (1855) 37; Miq. Fl. Ind. Bat. 3 (1856) 277; Naves Novis. App. (1882) 305.

*Cyperus stigmatosus* Steud. in Zoll. Verz. Ind. Archip. (1854) 96, Syn. Pl. Glum. 2 (1855) 38; Naves Novis. App. (1882) 305.

Along shores of tidal streams, inner borders of mangrove swamps, etc., within the influence of salt or brackish water throughout the Philippines. Tropical Africa to southeastern Asia, Malaya, and Polynesia.

Local names: Kai-kai (Mbo.); obod-óbod (Ibn.); tuhog-dalág (Tag.).

**MARISCUS SIEBERIANUS** Nees in *Linnaea* 9 (1834) 286; C. B. Clarke in *Philipp. Journ. Sci.* 2 (1907) Bot. 88.

Northern Luzon to Palawan and Mindanao, in most or all islands and provinces. In old clearings, open grasslands, etc., at low and medium altitudes. Pantropic; considered by Kükenthal to be a variety of *M. umbellatus* Vahl.

Local names: Kupiúpi (Sub.); okokiang (Bon.); mañgilang (Sub.).

**MARISCUS TENUIFOLIUS** Nees in *Mart. Fl. Brazil* 2<sup>1</sup> (1843) 46; C. B. Clarke in *Philipp. Journ. Sci.* 2 (1907) Bot. 87.

*Mariscus flabelliformis* C. B. Clarke in *Philipp. Journ. Sci.* 2 (1907) Bot. 89; *Merr. Fl. Manila* (1912) 113, non ? HBK.

Northern Luzon to Palawan and Mindanao. Scattered in thickets and secondary forests at low and medium altitudes. India to the Malay Peninsula.

Local name: Bakis-bakisan (Tag.).

#### 6. JUNCCELLUS C. B. Clarke

**JUNCCELLUS PYGMAEUS** (Rottb.) C. B. Clarke in *Hook. f. Fl. Brit. Ind.* 6 (1893) 596, *Philipp. Journ. Sci.* 2 (1907) Bot. 81; *Merr. Fl. Manila* (1912) 109.

*Cyperus pygmaeus* Rottb. *Descr. Ic.* (1773) 20, t. 14, f. 4, 5; *Miq. Fl. Ind. Bat.* 3 (1856) 261; *Naves Novis. App.* (1882) 301.

*Dichelostylis pygmaea* Nees in *Linnaea* 9 (1834) 289; *Kneucker Cyp. Exsic. No.* 248.

Luzon (Cagayan, Rizal, Laguna), Mindanao (Lanao), *Merrill Phil. Pl.* 509, *B. S.* 22984, 2684 *Ramos*, 22714 *Castillo*. In open wet places, river banks, etc., at low and medium altitudes. Africa, India to Korea southward to Australia.

#### 7. TORULINIUM Desvaux

**TORULINIUM FERAX** (L. C. Rich.) Ham. *Prodr. Pl. Ind. Occ.* (1825) 15 (*ferox*); *Merr. Fl. Manila* (1912) 114.

*Cyperus ferax* L. C. Rich. in *Act. Soc. Hist. Nat. Paris* 1 (1792) 106; *Naves Novis. App.* (1882) 305; *Vidal Phan. Cuming. Philip.* (1885) 155, *Rev. Pl. Vasc. Filip.* (1886) 283.

*Torulinium confertum* Desv. ex Ham. *Prodr. Pl. Ind. Occ.* (1825) 15; *Usteri Beitr. Ken. Philip. Veg.* (1905) 131; C. B. Clarke in *Philipp. Journ. Sci.* 2 (1907) Bot. 89.

*Diclidium elatum* Nees in *Hook. Journ. Bot. Kew Miscel.* 6 (1854) 27. *Cyperus calopterus* *Miq. Fl. Ind. Bat.* 3 (1856) 282; *Naves Novis. App.* (1882) 305.

*Cyperus holophyllus* *Miq. op. cit.* 283; *Naves l. c.*

*Mariscus ferax* C. B. Clarke in *Hook. f. Fl. Brit. Ind.* 6 (1893) 624.

*Cyperus haenkei* *Presl Rel. Haenk.* 1 (1828) 172.

Throughout the Philippines. In open wet places at low and medium altitudes. Pantropic.

Local names: Bilfran (S. L. Bis.); pulakgalau (Sub.).

#### 8. KYLLINGA Rottboell

**KYLLINGA BREVIFOLIA** Rottb. *Descr. Ic.* (1773) 13, t. 4, f. 3; *Naves Novis. App.* (1882) 300; Nees in *Hook. Journ. Bot. Kew Miscel.* 6 (1854) 28; C. B. Clarke in *Philipp. Journ. Sci.* 2 (1907) Bot. 78; *Merr. Fl. Manila* (1912) 107.

*Kyllinga rigidula* *Steud. Syn. Pl. Glum.* 2 (1855) 71; *Miq. Fl. Ind. Bat.* 3 (1856) 294; *Naves Novis. App.* (1882) 300, quoad pl. *Philipp.*

*Kyllinga caespitosa* Nees var. *robusta* Boeck. in *Linnaea* 35 (1868) 413; Scheff. in *Nat. Tijdschr. Nederl. Ind.* 34 (1874) 45; Vidal Phan. Cuming. Philip. (1885) 155, *Rev. Pl. Vasc. Filip.* (1886) 283. *Kyllinga longiculmis* Miq. *Fl. Ind. Bat.* 3 (1856) 292; Naves Novis. App. (1882) 300.

*Kyllinga fuscata* Miq. l. c. 294; Naves l. c.

*Kyllinga squarrosa* Steud. *Syn. Pl. Glum.* 2 (1855) 68; Naves l. c.

*Kyllinga sororia* Kunth *Enum.* 2 (1837) 131; Naves l. c.

Throughout the Philippines in open grasslands, waste places, etc., at low and medium altitudes; common. Pantropic.

Local names: Bibi-inok (Bon.); kaskadot (Ig.); pugo-púgo (C. Bis.).

**KYLLINGA CYLINDRICA** Nees in *Wight Contrib.* (1834) 91; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 79.

Luzon (Benguet, Laguna), Mindanao (Bukidnon, Lanao); *Elmer* 6500, *Merrill Phil. Pl.* 571, *Williams* 1225, *B. S.* 26039 *Fénix*, 14033 *Robinson*, 10980 *Ramos*. In open grasslands at medium altitudes, ascending to 1,600 m. Warmer parts of Africa and Asia, through Malaya to Australia. Considered by Kükenthal to be a variety of *K. odorata* Vahl.

**KYLLINGA INTERMEDIA** R. Br. *Prodr.* (1810) 219; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 78; *Merr. op. cit.* 262, 5 (1910) Bot. 333.

*Kyllinga oligostachya* Boeck. in *Linnaea* 35 (1868) 407.

Luzon (Ifugao, Bontoc, Lepanto, Benguet, Nueva Vizcaya, Laguna), Mindoro, Negros, Mindanao, *B. S.* 14249 *McGregor*, 14125 *Robinson*, *Elmer* 6494, 10021, 9675, *Merrill* 6539, 4618, 4624, 4371, 4421, 4695, *Phil. Pl.* 539; *Williams* 1228. In open wet places, on slopes, about cliffs, etc., at medium altitudes, ascending to 2,200 m. Formosa, Australia, Samoa. Considered by Kükenthal to be a variety of *K. brevifolia* Rottb.

Local names: Busikad (C. Bis.); tabtabúlog (Buk.).

**KYLLINGA MELANOSPERMA** Nees in *Wight Contrib.* (1834) 91; C. B. Clarke in *Hook. f. Fl. Brit. Ind.* 6 (1893) 588.

*Kyllinga pungens* C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 78, non Link.

*Kyllinga bifolia* Miq. *Fl. Ind. Bat.* 3 (1856) 293; Naves Novis. App. (1882) 300.

Luzon (Ilocos Norte, Ifugao, Kalinga, Benguet, Nueva Vizcaya), Mindanao (Lanao), *B. S.* 27159 *Ramos*, 14236, 19995 *McGregor*, *Merrill* 216, 4649, *Phil. Pl.* 1761, 572, *Williams* 1235, *Elmer* 6292, 6495. In open wet places at medium altitudes, ascending to 2,000 m. India to Madagascar and Malaya.

**KYLLINGA MONOCEPHALA** Rottb. *Descr. Ic.* (1773) 13, t. 4, f. 4; Miq. *Fl. Ind. Bat.* 3 (1856) 291; Naves Novis. App. (1882) 199; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 77; *Merr. op. cit.* 3 (1908) Bot. 397, *Fl. Manila* (1912) 108, *Sp. Blancoanae* (1918) 81. *Kyllinga triceps* Blanco *Fl. Filip.* (1837) 34, ed. 2 (1845) 23, ed. 3, 1 (1877) 44; Steud. *Syn. Pl. Glum.* 2 (1855) 72; Naves Novis. App. (1882) 300 (*Linn. f.*, p. p.).

*Kyllinga mindorensis* Steud. Syn. Pl. Glum. 2 (1855) 67; Miq. Fl. Ind. Bat. 3 (1856) 292; Naves Novis. App. (1882) 300.

*Kyllinga monocephala* Rottb. var. *mindorensis* Boeck. in Linnaea 35 (1868) 424; Vidal Phan. Cuming. Philip. (1885) 155, Rev. Pl. Vasc. Filip. (1886) 284.

*Kyllinga gracilis* Kunth Enum. 2 (1837) 134; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28; Naves Novis. App. (1882) 300.

Throughout the Philippines. Common in waste places, open grasslands, etc., at low and medium altitudes. Pantropic.

Local names: Anúang (Tag.); barubotónes (Bis.); bolobotónes (Bis.); borobotónes (Bis.); botoncillo (Sp.); bosobotónes (Bis.); borsa-ñgá-dadakkel (Ilk.); baki-báki (S. L. Bis.); bosíkad (C. Bis.); boskad (Bis.); busíkad (P. Bis.); katutu (Mag.); kurukamóting-orig (Bik.); malabotónes (Bis.); muthá (Tag.); mustra (Tag.); puñgós (S. L. Bis.); sangsangítan (Bon.); sud-sud (Bis.); uli-uli (Bag.).

#### EXCLUDED SPECIES

KYLLINGA PUMILA Steud.; Naves Novis. App. (1882) 300.

### 9. FUIRENA Rottboell

**FUIRENA CILIARIS** (Linn.) Roxb. Hort. Beng. (1814) 81, Fl. Ind. 1 (1820) 184; Merr. Fl. Manila (1912) 119, Sp. Blancoanae (1918) 81.

*Scirpus ciliaris* Linn. Mant. 2 (1771) 182.

*Fuirena glomerata* Lam. Tabl. Encycl. 1 (1791) 150; F.-Vill. Novis. App. (1882) 309; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 101.

*Fuirena striata* Llanos Frag. Pl. Filip. (1851) 21; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 14.

Throughout the Philippines, in rice paddies, open wet lands, etc., at low and medium altitudes, often abundant. Old World Tropics generally.

Local name: Pugápuk (Tag.).

**FUIRENA UMBELLATA** Rottb. Descr. Ic. (1773) 70, t. 19, f. 3; F.-Vill. Novis. App. (1882) 308; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 101.

*Fuirena paniculata* Lam. Tabl. Encycl. 1 (1791) 150, t. 39.

*Fuirena pentagona* Nees in Wight Contrib. (1834) 93, Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.

Throughout the Philippines in open wet lands at low and medium altitudes. Pantropic.

### 10. SCIRPUS Linnaeus

**SCIRPUS ARTICULATUS** Linn. Sp. Pl. (1753) 47; Rolfe in Journ. Bot. 23 (1885) 216; Ceron Cat. Pl. Herb. Manila (1892) 178; Clarke in Philip. Journ. Sci. 2 (1907) Bot. 99; Merr. Fl. Manila (1912) 118, Sp. Blancoanae (1918) 81.

*Carex glomerata* Blanco Fl. Filip. ed. 2 (1845) 24, ed. 3, 1 (1877) 45; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 90, non Thunb.

*Scirpus incurvatus* Roxb. Fl. Ind. 1 (1820) 216; Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 105.

Luzon (Cagayan, Ilocos Norte, Pangasinan, Nueva Ecija, Rizal, Laguna), Merrill *Sp. Blancoanae* 268, *Phil. Pl.* 513, *B. S.* 2295, 2298 Mearns, 4949, 7447 Ramos. In open wet places in settled areas at low altitudes. Old World Tropics generally.

Local name: Apúrau (Pang.).

**SCIRPUS ERECTUS** Poir. in Lam. *Encycl.* 6 (1804) 761; Usteri *Beitr. Ken. Philip. Veg.* (1905) 132; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 99; Merr. *Fl. Manila* (1912) 118.

*Scirpus juncoides* Roxb. *Fl. Ind.* 1 (1820) 216; Ceron *Cat. Pl. Herb. Manila* (1892) 178.

*Scirpus luzonensis* Presl *Rel. Haenk.* 1 (1828) 193; Nees in *Nov. Act. Acad. Nat. Cur.* 19 (1843) *Suppl.* 1: 93; Steud. *Syn. Pl. Glum.* 2 (1855) 84; Miq. *Fl. Ind. Bat.* 3 (1856) 304.

Luzon (Ifugao, Bontoc, Benguet, Nueva Vizcaya, Rizal, Bulacan, Sorsogon), Polillo, Leyte, Biliran, Mindanao. In open wet places, rice paddies, etc., at low and medium altitudes. Warmer parts of both hemispheres.

Local names: Bitubituínan (Tag.); gúmi (Tag.); paratupit (Ilk.).

**SCIRPUS GROSSUS** Linn. f. *Suppl.* (1781) 104; Presl *Rel. Haenk.* 1 (1828) 195; Miq. *Fl. Ind. Bat.* 3 (1856) 307; F.-Vill. *Novis. App.* (1882) 308; Merr. *Fl. Manila* (1912) 117, *Sp. Blancoanae* (1918) 82.

*Cyperus difformis* Blanco *Fl. Filip.* (1837) 32, ed. 2 (1845) 22, ed. 3, 1 (1877) 41; Merr. in *Govt. Lab. Publ. (Philip.)* 27 (1905) 90, non Linn.

*Scirpus kysoor* Roxb. *Hort. Beng.* (1814) 6; Llanos *Frag. Pl. Filip.* (1851) 20 (*kisoor*); F.-Vill. & Naves in *Blanco Fl. Filip.* ed. 3, 4<sup>1</sup> (1880) 14 (*kisoor*).

*Scirpus grossus* Linn. f. var. *kysoor* (Roxb.) C. B. Clarke in *Hook. f. Fl. Brit. Ind.* 6 (1893) 660, *Philip. Journ. Sci.* 2 (1907) Bot. 100.

*Schoenoplectus grossus* Palla in *Allgem. Bot. Zeitschr.* 17 (1911) *Beil.* 3.

Central Luzon to Mindanao, in most islands and provinces, Merrill *Sp. Blancoanae* 564, 692, *Phil. Pl.* 515, *Kneucker Cyp. Exsic.* 220. In fresh-water swamps at low altitudes. India to Indo-China and Malaya.

Local names: Agas (Bik.); бага-ás (P. Bis.); baki-báki (P. Bis.); balakbák (Pang.); balañgót (P. Bis.); bangkúang (Bik.); ragiudíu (Bik.); tikúg (Mbo.); tíkiu (Tag.); títiu (Tag.).

**SCIRPUS LACUSTRIS** Linn. *Sp. Pl.* (1753) 48; Merr. in *Philip. Journ. Sci.* 5 (1910) Bot. 172.

Luzon (Cagayan, Zambales, Benguet), *F. B.* 17290 Curran, Merrill *Phil. Pl.* 1792. In fresh-water swamps, sea level to 1,300 m altitude. In most warm countries except Malaya and South America.

Local name: Tiker (Ilk.).

**SCIRPUS MERRILLII** (Palla) Kükenth. in *herb. comb. nov.*

*Schoenoplectus merrillii* Palla in *Allgem. Bot. Zeitschr.* 17 (1911) *Beil.* 3.

*Cyperus tenellus* C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 81, non Linn. f.

*Scirpus inundatus* C. B. Clarke *op. cit.* 99, non Poir.

Luzon (Bontoc, Benguet), Negros, Mindanao (Davao), *Merrill 4740, 6639, 7680, Phil. Pl. 511, Kneucker Cyp. Exsic. 223, Elmer 11379a, B. S. 31748 Santos, 3331 McGregor*. In open wet places on the higher mountains, altitude 1,600 to 2,700 m. Endemic.

Local name: Salaisoi (Bag.).

**SCIRPUS MUCRONATUS** Linn. Sp. Pl. (1753) 50; F.-Vill. Novis. App. (1882) 308; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 100; Merr. Fl. Manila (1912) 118.

*Scirpus acutus* Presl Rel. Haenk. 1 (1828) 192, non Muhl.

*Scirpus prestlii* Dietr. Sp. Pl. 2 (1833) 175 (*prestlii*); Steud. Syn. Pl. Glum. 2 (1855) 84; Miq. Fl. Ind. Bat. 3 (1856) 305; F.-Vill. Novis. App. (1882) 308 (*preslei*).

Northern Luzon to Mindanao, in most islands and provinces. In open wet places at low and medium altitudes, ascending to 1,500 m. Warmer parts of the Old World.

Local names: Kanubsúban (Tag.); libíran (Tag.); parapipit (Ilk.); pulutapit (Bon.); pupuegan (Bon.).

**SCIRPUS PULOGENSIS** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 333.

Luzon (Benguet), *Merrill 7789, 6616, 6550, B. S. 31750 Santos, F. B. 16134 Curran, Merritt, & Zschokke*. In very damp ravines and on open grassy slopes on the highest mountains, altitude 2,400 to 2,700 m. Endemic.

**SCIRPUS SUPINUS** Linn. Sp. Pl. (1753) 49; F.-Vill. Novis. App. (1882) 308; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 99 (incl. var. *uninodis* C. B. Clarke); Merr. Fl. Manila (1912) 118.

Luzon (Ilocos Norte, Rizal), *Merrill 3654, Phil. Pl. 504, B. S. 7654, 21970 Ramos*. In open wet places, rice paddies, etc., at low altitudes. Europe to southern Africa and Australia.

**SCIRPUS TERNATANUS** Reinw. ex Miq. Fl. Ind. Bat. 3 (1856) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 100 (*ternatensis*).

*Scirpus chinensis* Munro in Seem Bot. Voy. Herald (1857) 423.

Luzon (Ifugao, Kalinga, Benguet, Nueva Vizcaya, Rizal, Tayabas), Mindanao (Davao, Bukidnon, Zamboanga), *B. S. 31934 Santos, 3173, 26750 Ramos, 29113, 37489, 39192 Ramos & Edaña, 19737 McGregor, Merrill 2315, Phil. Pl. 559, Williams 1249, Elmer 6287, 5790*. In open wet places and also in thickets chiefly at medium altitudes, ascending to 2,200 m. India to China and the Riu Kiu Islands, Celebes, and the Moluccas.

Local names: Daátan (Tag.); sagari (Bag.); sañgañga (Klg.); siilak (Ig.).

**SCIRPUS TRIQUETER** Linn. Mant. 1 (1767) 29; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 100 (var. *segregata* C. B. Clarke).

Luzon, (*Loher 802*), fide C. B. Clarke. I have seen no specimens of this species. Europe to Japan, also in South Africa and New Guinea.

#### EXCLUDED SPECIES

**SCIRPUS FLUCTANS** Linn.; F.-Vill. Novis. App. (1882) 308.

**SCIRPUS MARITIMUS** Linn.; F.-Vill. l. c.

**SCIRPUS MAXIMUS** Linn.; F.-Vill. l. c.



## 11. ELEOCHARIS R. Brown

*(Heleocharis auct.)*

**ELEOCHARIS ACICULARIS** (Linn.) R. & S. Syst. 2 (1817) 154; Merr. in Philip. Journ. Sci. 9 (1914) Bot. 264.

*Scirpus acicularis* Linn. Sp. Pl. (1753) 48.

Luzon (Bontoc, Benguet), *Merrill 7665, Vanoverbergh 293*. About rice paddies, altitude 1,200 to 1,500 m. North Temperate Zone generally, extending southward to southern China.

**ELEOCHARIS AFFLATA** Steud. in Zoll. Verz. Ind. Archip. (1854) 62; Syn. Pl. Glum. 2 (1855) 76; Naves Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 90; Merr. op. cit. 3 (1908) Bot. 398.

*Eleocharis microcarpa* C. B. Clarke in Philip. Journ. Sci. 2 (1908) Bot. 91, non Torr.

? *Eleocharis pellucida* Presl Rel. Haenk. 1 (1828) 196; Steud. Syn. Pl. Glum. 2 (1855) 80; Miq. Fl. Ind. Bat. 3 (1856) 301; Naves Novis. App. (1882) 307 (*Heleocharis*).

*Eleocharis subprolifera* Steud. in Zoll. Verz. Ind. Archip. (1854) 62; Naves Novis. App. (1882) 307 (*Heleocharis*).

Babuyan Islands, Luzon (Bontoc, Lepanto, Benguet), *Elmer 6299, 5751, Williams 1230, 1243, 1247, Merrill 4621, 7703, Phil. Pl. 555*. In shallow water, swampy places, rice paddies, etc., altitude 1,000 to 1,600 m. Japan to China and India, southward to Borneo.

**ELEOCHARIS ATROPURPUREA** (Retz.) Presl Rel. Haenk. 1 (1828) 196; Kunth Enum. 2 (1837) 151; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 90.

*Scirpus atropurpureus* Retz. Obs. 5 (1789) 14.

Admitted on the authority of C. B. Clarke. I have seen no Philippine material representing the species. Warmer parts of the world.

**ELEOCHARIS CARIBAEA** (Rottb.) Blake in Rhodora 20 (1918) 24; Merr. Sp. Blancoanae (1918) 83.

*Scirpus caribaeus* Rottb. Descr. Pl. Rar. Progr. (1772) 24, Descr. Ic. Nov. Pl. (1772) 46, t. 24.

*Eleocharis capitata* Miq. Fl. Ind. Bat. 3 (1856) 299; Naves Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 90; Merr. Fl. Manila (1912) 114, non R. Br.

*Eleocharis retroflexus* Llanos Frag. Pl. Filip. (1851) 19; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 13, non Poir.

Luzon (Cagayan, Ilocos Norte, Bataan, Rizal, Laguna), Cebu. Common in open wet lands at low altitudes. Pantropic.

Blake has shown that the type of *Scirpus capitatus* Linn. is identical with the plant commonly known as *Eleocharis tenuis* (Schultes) Willd., which should henceforth bear the name *Eleocharis capitata* (Linn.) R. Br.

**ELEOCHARIS DULCIS** (Burm. f.) Trin. ex Henschel Vita Rumph. (1833) 186; Merr. Interpret. Herb. Amb. (1917) 104, Sp. Blancoanae (1918) 82.

*Andropogon dulcis* Burm. f. Fl. Ind. (1768) 219.

*Hippuris indica* Lour. Fl. Cochinch. (1790) 16.

*Eleocharis plantaginea* R. Br. Prodr. (1810) 224; Naves Novis. App. (1882) 306.

*Carex tuberosa* Blanco Fl. Filip. (1837) 35, ed. 2 (1845) 24, ed. 3, 1 (1877) 45, t. 15, non Degl.

*Scirpus plantaginoides* Rottb. Descr. Nov. Pl. (1773) 45.

*Scirpus plantagineus* Retz. Obs. 5 (1789) 14.

*Eleocharis plantaginoidea* W. F. Wight in Contrib. U. S. Nat. Herb. 9 (1905) 268.

*Eleocharis tuberosa* Naves Novis. App. (1882) 306, non ? Schultes.

*Eleocharis tumida* R. & S. Syst. Mant. 2 (1824) 86; Naves Novis. App. (1882) 306.

Luzon (Cagayan, Bulacan, Laguna, Camarines), Negros, *B. S. 7448 Ramos, 12332 McGregor, Merrill Sp. Blancoanae 395, Phil. Pl. 521*. In open wet lands, shallow swamps, etc., at low altitudes. India to Malaya.

Local names: Apúlid (Tag., Bik.); cabezas de negrito (Sp.); kalañgub (C. Bis); potok (Tag.).

**ELEOCHARIS EQUISETINA** Presl Rel. Haenk. 1 (1828) 195; Steud. Syn. Pl. Glum. 2 (1855) 82; Miq. Fl. Ind. Bat. 3 (1856) 302; Naves Novis. App. (1882) 306; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 89; Merr. Fl. Manila (1912) 114.

*Heleocharis plantaginea* Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284, non R. Br.

Luzon (Rizal, Sorsogon), Mindanao (Lanao), *Elmer 14341, Kneucker Cyp. Exsic. 224, Merrill Phil. Pl. 531*. In open wet lands at low altitudes. Ceylon to Madagascar, Malaya, and New Caledonia.

**ELEOCHARIS FISTULOSA** (Poir.) Schultes f. in Roem. & Schultes Syst. Mant. 2 (1824) 89; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 626; Naves Novis. App. (1882) 306; Camus in Lecomte Fl. Gén. Indo-Chine 7 (1912) 84, f. 13, 3, 4.

*Scirpus fistulosus* Poir. in Lam. Encycl. 6 (1804) 749.

*Eleocharis planiculmis* Steud. Syn. Pl. Glum. 2 (1855) 80; Naves Novis. App. (1882) 306.

Luzon (Rizal), Mindanao (Davao, Lanao), *Merrill 9790, Copeland 441*. In open wet places at low altitudes. Pantropic.

**ELEOCHARIS OCHREATA** Nees in Linnaea 9 (1834) 294; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 90.

Luzon, (*Loher 742*). Admitted on the authority of C. B. Clarke; I have seen no specimens. Pantropic.

**ELEOCHARIS RETROFLEXA** (Poir.) Urban Symb. Antil. 2 (1900) 165 (*Heleocharis*).

*Scirpus retroflexus* Poir. in Lam. Encycl. 4 (1804) 753.

*Eleocharis chaetaria* R. & S. Syst. 2 (1817) 154; Naves Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 90.

Luzon (Laguna, Sorsogon), Polillo, Negros, Mindanao, *Elmer 14558, Clemens 845, F. B. 19276 Curran, B. S. 9029 Robinson, 10049 Ramos*. Along streams and in rice paddies at low and medium altitudes. Pantropic.

**ELEOCHARIS SPIRALIS** (Rottb.) Steud. Syn. Pl. Glum. 2 (1855) 81; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 627; Merr. in Philip. Journ. Sci. 14 (1919) 370.

*Scirpus spiralis* Rottb. Descr. Ic. (1772) 45, t. 15, f. 1.

Luzon (Rizal), *Merrill 9788*. In open wet lands at low altitudes. India to Ceylon, Burma, and Indo-China.

**ELEOCHARIS TETRAQUETRA** Nees in Wight Contrib. (1834) 113; Naves Novis. App. (1882) 307.

Luzon (Bontoc, Benguet), Mindanao (Lanao), *Merrill Phil. Pl. 557, 1762, Clemens 1105, Vanoverbergh 461*. In swamps, altitude 650 to 1,800 m. India to China and tropical Australia.

**ELEOCHARIS VARIEGATA** Presl Oken Isis 21 (1828) 269, var. **LAXIFLORA** (Thw.) C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 626, Philip. Journ. Sci. 2 (1907) Bot. 90; Merr. Fl. Manila (1912) 114.

Luzon (Bulacan, Rizal, Camarines), Biliran, Mindanao, *Merrill Phil. Pl. 520, 1461, B. S. 33928 Ramos & Edaño, 18515 McGregor, 26129 Félix, 1112 Ramos*. In open wet places at low altitudes. India to Madagascar, China, Malaya, and Polynesia.

## 12. FIMBRISTYLIS Vahl

**FIMBRISTYLIS ACUMINATA** Vahl Enum. 2 (1806) 285; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29; Naves Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 91; Merr. Fl. Manila (1912) 115.

Luzon (Bulacan, Rizal, Zambales, Albay, Sorsogon), *Merrill 9798, 7355, Phil. Pl. 546, Kneucker Cyp. Exsic. 234, Elmer 14322*. In open wet places, old rice paddies, etc., at low and medium altitudes. Tropical Asia, Malaya, and tropical Australia.

Local names: Puyóng-usá (Tag.); surusibúyas (Bik.).

**FIMBRISTYLIS AESTIVALIS** (Retz.) Vahl Enum. 2 (1806) 288; F.-Vill. Novis. App. (1882) 308; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 94.

*Scirpus aestivalis* Retz. Obs. 4 (1786) 12.

*Fimbristylis dichotoma* Presl Rel. Haenk. 1 (1828) 191, non Vahl.

Luzon (Cagayan, Isabela, Bontoc, Benguet, Pangasinan, Pampanga, Rizal), Mindanao (Lanao), *Merrill 1465, 4292, Phil. Pl. 554, Elmer 6070, B. S. 17847 Otañes, 7473, 8066, 3358, 5971 Ramos*. In open damp places, rice paddies, etc., at low and medium altitudes.

Var. **MACROSTACHYA** Benth. Fl. Austral. 7 (1878) 310; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 94.

Leyte, (*Jagor 1008*). The species India to Amurland southward to Australia, the variety in Australia.

Local names: Boboók (Bon.) lamlamsit (Bon.); sirau-sirau (Ilk.).

**FIMBRISTYLIS ANNUA** (All.) R. & S. Syst. 2 (1817) 95.

*Scirpus annuus* All. Fl. Pedem. 2 (1785) 277.

*Scirpus diphyllus* Retz. Obs. 5 (1789) 15.

*Fimbristylis diphylla* Vahl Enum. 2 (1806) 289; F.-Vill. Novis. App. (1882) 307, Vidal Rev. Pl. Vasc. Filip. (1886) 284; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 30, 3 (1908) Bot. 398, Fl. Manila (1912) 116; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 93.

*Fimbristylis tomentosa* Vahl Enum. 2 (1806) 290; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 81.

*Fimbristylis brizoides* Sm. var., Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 28.

*Fimbristylis philippica* Steud. Syn. Pl. Glum. 2 (1855) 116; Miq. Fl. Ind. Bat. 3 (1856) 324; F.-Vill. Novis. App. (1882) 308.

*Fimbristylis communis* Kunth Enum. 2 (1837) 234; Miq. Fl. Ind. Bat. 3 (1856) 323.

*Fimbristylis affinis* Presl Rel. Haenk. 1 (1828) 191; Kunth Enum. 2 (1837) 234; F.-Vill. Novis. App. (1882) 308.

? *Scirpus falcatus* Llanos Frag. Pl. Filip. (1851) 20; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 13; Merr. Sp. Blancoanae (1918) 83.

*Fimbristylis dichotoma* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 93, non Vahl.

Throughout the Philippines in open waste places at low and medium altitudes, abundant and variable; in the Philippines various forms or varieties occur that have been characterized as species, such as *F. podocarpa* Nees, *F. tomentosa* Vahl, *F. diphylla* Vahl, *F. calocarpa* Steud., and *F. royeniana* Nees. Pantropic.

Local names: Baliótas (Bag.); bubáging (Sub.); gilal (Sub.); tabtábin (Sbl.); talágig (Bag.); tayok-táyok (Sbl.).

**FIMBRISTYLIS CAPITULIFERA** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 265.

Batan and Babuyan Islands, *B. S.* 4042, 3575, 3926 *Fénix*, 3172, 3171, 3173 *Mearns*, 10203 *McGregor*. In open places, usually near the sea. Endemic.

**FIMBRISTYLIS COMPLANATA** (Retz.) Link. Hort. Berol. 1 (1827) 292; Usteri Beitr. Ken. Philip. Veg. (1905) 131 (var. *kraussiana* Hochst.); C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 96.

*Scirpus complanatus* Retz. Obs. 5 (1789) 14.

*Trichelostylis complanata* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29.

*Fimbristylis amblyphylla* Steud. Syn. Pl. Glum. 2 (1855) 117; Miq. Fl. Ind. Bat. 3 (1856) 324; F.-Vill. Novis. App. (1882) 308.

*Fimbristylis autumnalis* Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284, non R. & S.

*Isolepis willdenowii* R. & S. Syst. 2 (1817) 320; Presl Rel. Haenk. 1 (1828) 189.

Luzon (Ilocos Norte, Bontoc, Pampanga, Rizal, Laguna, Camarines, Sorsogon), Mindoro, Palawan, Negros, Panay, Mindanao, *Merrill Phil. Pl.* 1425, *Elmer* 18096, 14324, *B. S.* 31445, 30941, 33500 *Ramos & Edaño*, 27619, 32956 *Ramos*. In open wet places at low and medium altitudes. All warm countries.

Local name: Baki-báki (P. Bis.).

**FIMBRISTYLIS CORNICULATA** Merr. in Philip. Journ. Sci. 7 (1912) Bot. 231, Fl. Manila (1912) 116.

Luzon (Rizal), *Merrill* 7359. In open sterile grasslands at low altitudes. Endemic.

**FIMBRISTYLIS DIPSACEA** (Rottb.) Benth. ex C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 635, Philip. Journ. Sci. 2 (1907) Bot. 93; Merr. Fl. Manila (1912) 116.

*Scirpus dipsaceus* Rottb. Descr. Ic. (1773) 56, t. 12, f. 1.

*Echinolytrum dipsaceum* Desv. Journ. Bot. 1 (1808) 21, t. 1.

Luzon (Rizal, Laguna), Mindanao (Lanao), B. S. 3321 Ramos, 22985 McGregor, Merrill 5105. On muddy lake and stream margins. Tropical Africa and Asia north to the Amur region.

**FIMBRISTYLIS FERRUGINEA** (Linn.) Vahl Enum. 2 (1806) 291; F.-Vill. Novis. App. (1882) 307; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 94; Merr. op. cit. 1 (1906) Suppl. 30, Fl. Manila (1912) 94.

*Scirpus ferrugineus* Linn. Sp. Pl. (1753) 50.

Widely distributed in the Philippines in open wet lands, especially those subject to the influence of brackish water, *Kneucker Cyp. Exsic. 196a*, Merrill 546, 4252, Phil. Pl. 549. Pantropic.

**FIMBRISTYLIS FUSCA** (Nees) Benth. ex C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 649, Philip. Journ. Sci. 2 (1907) Bot. 98.

*Abildgaardia fusca* Nees in Wight Contrib. (1834) 95.

*Gussonea pauciflora* Brongn. in Bot. Duperr. Voy. 2 (1829) 171, t. 34, B, non *Fimbristylis pauciflora* R. Br.

*Abildgaardia pauciflora* Kunth Enum. 2 (1837) 298.

*Cladium cyperoides* Merr. in Philip. Journ. Sci. 7 (1912) Bot. 74.

Luzon (Cagayan, Bontoc, Ilocos Norte, Rizal), Palawan, Merrill 2785, 9389, Vanoverbergh 273, B. S. 32809, 32742, 7859, 7836 Ramos. In open, rather dry grasslands at low and medium altitudes, ascending to 1,300 m. India to Malaya.

**FIMBRISTYLIS GLOBULOSA** (Retz.) Kunth Enum. 2 (1837) 231; F.-Vill.

Novis. App. (1882) 308; Usteri Beitr. Ken. Philip. Veg. (1905) 132; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 96.

*Scirpus globulosus* Retz. Obs. 6 (1791) 19.

*Fimbristylis torresiana* Gaudich. Bot. Freyc. Voy. (1826) 413; F.-Vill. Novis. App. (1882) 308.

*Fimbristylis utilis* Elm. Leaf. Philip. Bot. 3 (1910) 855.

Luzon (Ilocos Norte, Lepanto, Bontoc, Tayabas, Sorsogon), Polillo, Panay, Leyte, Samar, Negros, Bohol, Mindanao, Elmer 12571, 15584, Wenzel 1532, Merrill Phil. Pl. 1446, B. S. 34777 Ramos & Pascasio, 30672 Ramos & Edaño. In open wet places at low altitudes. India to Malaya and Polynesia.

Local names: Anahiúan (Mbo., Sub., C. Bis.); badang-badang (Ilk.); pilokong-kabo (Mbo.); sud-sud (Buk.); tayok-táyok (P. Bis.); títog (C. Bis., P. Bis.).

**FIMBRISTYLIS JUNCIFORMIS** (Retz.) Kunth Enum. 2 (1837) 239; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 97.

*Scirpus junciformis* Retz. Obs. 6 (1791) 19.

*Fimbristylis brevifolia* Presl Rel. Haenk. 1 (1828) 193, non R. Br.

*Fimbristylis brachyphylla* Presl op. cit. 351, non Schultes.

*Fimbristylis haenkei* Dietr. Sp. Pl. 2 (1833) 161.

*Fimbristylis falcata* Kunth Enum. 2 (1837) 239; F.-Vill. Novis. App. (1882) 308.

Admitted on the authority of C. B. Clarke who apparently examined Presl's specimen, which was not from Monte Rey, California, but possibly from the Philippines, and also a specimen collected by Callery. India to Indo-China.

**FIMBRISTYLIS LEPTOCLADA** Benth. Fl. Hongk. (1861) 647; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 647.

Luzon (Bulacan), Cullion, Palawan, *Merrill 9285, Phil. Pl. 1426, B. S. 41314 Ramos*. In dry open sandy soil at low altitudes. Ceylon, Malay Peninsula, Borneo, southern China.

**FIMBRISTYLIS MARIANA** Gaudich. in Bot. Freyc. Voy. (1826) 413, var. **FOENEA** Kükenth. in Fedde Repert. 16 (1920) 432.

Luzon (Cagayan, Isabela, Ilocos Norte), *B. S. 7894, 8074, 27625 Ramos, F. B. 16756 Curran*. In open wet places. Marianne and Caroline Islands, the variety endemic.

The specimens look very much like *F. schoenoides* Vahl, and three of those cited were originally referred by Kükenthal to *F. mariana* Gaudich. var. *maxima* (K. Schum.) Kükenth.

**FIMBRISTYLIS MILIACEA** (Linn.) Vahl Enum. 2 (1806) 287; F.-Vill. Novis. App. (1882) 308; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 96; Merr. op. cit. 1 (1906) Suppl. 30, 3 (1908) Bot. 398, Fl. Manila (1912) 117, Sp. Blancoanae (1918) 83.

*Scirpus miliaceus* Linn. Syst. ed. 10 (1759) 868.

*Scirpus niloticus* Blanco Fl. Filip. (1837) 33, ed. 2 (1845) 23, ed. 3, 1 (1877) 43, non Gmel.

*Trichelostylis miliacea* Nees & Arn. in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 84, Hook. Journ. Bot. Kew Miscel. 6 (1854) 29.

*Isolepis miliacea* Presl Rel. Haenk. 1 (1828) 189.

Throughout the Philippines in open wet places; a characteristic rice-paddy weed. Pantropic.

Local names: Agor (Tag.); gúmi (Pang.); sirau-sirau (Ilk.); sirisi-búyas (Bik.); taulat (Tag.); ubod-úbod (Tag.).

**FIMBRISTYLIS MONOSTACHYA** (Linn.) Hassk. Pl. Jav. Rar. (1848) 61; F.-Vill. Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 97; Merr. Fl. Manila (1912) 117.

*Cyperus monostachyus* Linn. Mant. 2 (1771) 180.

*Abildgaardia monostachya* Vahl Enum. 2 (1806) 296.

*Abildgaardia compressa* Presl Rel. Haenk. 1 (1828) 179; Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 74; Miq. Fl. Ind. Bat. 3 (1856) 297; Steud. Syn. Pl. Glum. 2 (1855) 72.

*Fimbristylis compressa* F.-Vill. Novis. App. (1882) 307.

Throughout the Philippines in open grasslands at low and medium altitudes. Pantropic.

**FIMBRISTYLIS PALUDOSA** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 265.

Luzon (Bontoc, Benguet), *Williams 1239, Merrill Phil. Pl. 551, Elmer 6497*. In cold open swamps, altitude 1,300 to 1,600 m. Endemic, unless referable to *F. salbundia* Kunth.

**FIMBRISTYLIS PINETORUM** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 266.

Luzon (Benguet), *Merrill 7664, Phil. Pl. 558*. On open grassy slopes in thin pine forests, altitude about 1,500 m. Endemic.

**FIMBRISTYLIS PODOCARPA** Nees in Wight Contrib. (1834) 98, Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 77; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 94.

Luzon, (*Loher 766*). Admitted on the authority of C. B. Clarke; I have seen no specimens. India to Malaya and the Marianne Islands.

**FIMBRISTYLIS POLYTRICHOIDES** (Retz.) Vahl Enum. 2 (1806) 248 (*polytrichoides*); F.-Vill. Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 92; Merr. Fl. Manila (1912) 115. *Scirpus polytrichoides* Retz. Obs. 4 (1786) 11.

Luzon (Pampanga, Rizal), *Kneucker Cyp. Exsicc. 233, Merrill 9803, 4249, Phil. Pl. 522*. In open wet places, especially near the sea or brackish streams. Tropical Africa and Asia to Japan, through Malaya to Australia.

**FIMBRISTYLIS QUINQUANGULARIS** Kunth Enum. 2 (1837) 229; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 96.

Luzon (Cagayan, Ilocos Norte, Ilocos Sur, Bulacan, Sorsogon), Negros, Panay, Mindanao, *Merrill Phil. Pl. 1423, B. S. 14558, 7625, 7673, 7684 Ramos, 15656 Merritt & Darling*. In open wet lands, cultivated areas, etc., at low and medium altitudes. India to the Riu Kiu and Marianne Islands.

**FIMBRISTYLIS RIGIDULA** Nees in Wight Contrib. (1834) 99; Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 95.

Luzon (Cagayan, Nueva Vizcaya), Panay, Negros, *B. S. 14226, 32233 McGregor, 7856, 32311 Ramos*. In open grasslands at low and medium altitudes. India to China.

**FIMBRISTYLIS SCHOENOIDES** (Retz.) Vahl Enum. 2 (1806) 286; Naves Novis. App. (1882) 307; Ceron Cat. Pl. Herb. Manila (1892) 178; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 92; Merr. Fl. Manila (1912) 116.

*Fimbristylis bispicata* Nees in Linnaea 9 (1834) 290, var. *monostachya* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29, F.-Vill. Novis. App. (1882) 307.

*Abildgaardia nervosa* Presl Rel. Haenk. 1 (1828) 180; Steud. Syn. Pl. Glum. 2 (1855) 73.

*Fimbristylis nutans* Naves Novis. App. (1882) 307; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284, non Vahl.

Luzon (Ilocos Norte, Nueva Ecija, Bulacan, Rizal, Albay), Palawan, Merrill 9322, 9796, 7110, Phil. Pl. 1447, 507, B. S. 32690, 32954 Ramos. In open grasslands, fallow rice paddies, etc., at low altitudes. India through Malaya to Australia.

Local name: Gumi-gúmi (Tag.).

**FIMBRISTYLIS SETACEA** Benth. in Hook. Lond. Journ. Bot. 2 (1843) 239; C. B. Clarke in Philip. Journ. Sci. 2 (1907) 91.

*Fimbristylis acuminata* Vahl var. *minor* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29; Miq. Fl. Ind. Bat. 3 (1856) 314; Boeck. in Linnaea 37 (1871) 4; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284.

*Fimbristylis bursifolia* Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284, sphalm.

*Abildgaardia brevifolia* Steud. Syn. Pl. Glum. 2 (1855) 72; Miq. Fl. Ind. Bat. 3 (1856) 297.

Luzon (Bulacan, Zambales, Rizal, Laguna, Sorsogon), B. S. 21740 Ramos, F. B. 3390 Ahern's collector, 8156 Curran & Merritt, 5873, 12388 Curran. In open wet lands at low altitudes. Burma to Tropical Australia.

**FIMBRISTYLIS SPATHACEA** Roth. Nov. Sp. Pl. (1821) 24; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 95; Merr. op. cit. 3 (1908) Bot. 398.

*Fimbristylis glomerata* Nees in Linnaea 9 (1834) 290; Boeck. in Linnaea 37 (1871) 47.

*Scirpus glomeratus* Retz. Obs. 4 (1786) 11, non Linn.

*Fimbristylus rigida* Kunth Enum. 2 (1837) 246; F.-Vill. Novis. App. (1882) 308.

*Isotepis haenkei* Presl Rel. Haenk. 1 (1828) 187.

Luzon (Cagayan, Ilocos Norte, Union, Zambales, Batangas, Laguna, Tayabas), Panay, Negros, B. S. 32274 McGregor, 33444, 32737, 32795, 29245, 7469 Ramos, 29123 Ramos & Edaño. In open wet or dry places, usually near the sea. Pantropic.

**FIMBRISTYLIS SQUARROSA** Vahl Enum. 2 (1806) 289; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 635.

Palawan, Mindanao (Bukidnon), Merrill 9566, Phil. Pl. 2093, B. S. 26093 Fénix. Shores of lakes and in wet soil at low altitudes. Pantropic.

**FIMBRISTYLIS SUBBISPICATA** Nees in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 75; F.-Vill. Novis. App. (1882) 307; Miq. Fl. Ind. Bat. 3 (1856) 315 (var. *caesia* Miq.); C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 92.

Luzon, (Loher 747). Admitted on the authority of C. B. Clarke and, as he suggests, perhaps best referable to *F. schoenoides* Vahl. India to China and Japan.

**FIMBRISTYLIS TENERA** R. & S. Syst. Mant. 2 (1824) 57; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 95.

Luzon, (Loher 740). Admitted on the authority of C. B. Clarke. Tropical Asia, Africa, and Malaya.



**FIMBRISTYLIS TETRAGONA** R. Br. Prodr. (1810) 226; F.-Vill. Novis. App. (1882) 307; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 91; Merr. Fl. Manila (1912) 115.

*Scirpus tetragonus* Poir. in Lam. Encycl. Suppl. 5 (1804) 98.

Luzon (Pangasinan, Rizal), *Merrill 7360, 9793, Loher 749, B. S. 4892 Ramos*. In open rather wet places at low altitudes. India through Malaya to Australia.

**FIMBRISTYLIS THOMSONII** Boeck. in Linnaea 37 (1871) 37; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 646.

Palawan, *Merrill 9350*. On dry open slopes bordering thickets at low altitudes. India to Indo-China.

**FIMBRISTYLIS THOUARSII** (Kunth) comb. nov.

*Arthrostylis thouarsii* Kunth Enum. 2 (1837) 284.

*Arthrostylis chinensis* Benth. Fl. Hongk. (1861) 397.

*Actinoschoenus filiformis* Benth. in Hook. Ic. III 4 (1881) 33, t. 1346.

*Fimbristylis actinoschoenus* C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 650, Philip. Journ. Sci. 2 (1907) Bot. 98.

*Actinoschoenus thouarsii* Benth. in Hook. Ic. III 4 (1881) 33.

Culion, Busuanga, *Merrill 553, B. S. 41184 Ramos*, back of the mangrove swamp. Ceylon to Madagascar, Malay Peninsula, southern China, and the Riu Kiu Islands.

#### DOUBTFUL AND EXCLUDED SPECIES

**FIMBRISTYLIS OBTUSIFOLIA** Kunth; F.-Vill. Novis. App. (1882) 308.

**FIMBRISTYLIS PAUCIFLORA** R. Br.; F.-Vill. Novis. App. (1882) 307.

**FIMBRISTYLIS PILOSA** Vahl; Presl Rel. Haenk. 1 (1828) 191; Steud. Syn. Pl. Glum. 2 (1855) 117.

"Hab. in insula Luzon ad portum Sorsogon." Vahl's species is from Africa; the Luzon specimens referred here by Presl possibly represent a form of *F. annua* R. & S.

**FIMBRISTYLIS PRESLI** Kunth Enum. 2 (1837) 228; Steud. Syn. Pl. Glum. 2 (1855) 108; F.-Vill. Novis. App. (1882) 308.

*Abildgaardia pubescens* Presl Rel. Haenk. 1 (1828) 180.

"Hab. in Mexico et in Luzon" Presl. Probably not Philippine.

**FIMBRISTYLIS CYMOSA** R. Br. Prodr. (1810) 228; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 97.

"'Toubonia' (1433 Cuming) in hb. Kew." This was from Cuming's earlier collections, probably from Polynesia. The printed label bears the date 1831, so that it cannot possibly be from Cuming's Philippine collections.

#### 13. BULBOSTYLIS Kunth

**BULBOSTYLIS BARBATA** (Rottb.) Kunth Enum. 2 (1837) 208; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 98; Merr. op. cit. 3 (1908) Bot. 398.

*Scirpus barbatus* Rottb. Descr. Ic. (1773) 52, t. 17, f. 4; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 284.

*Isolepis barbata* R. Br. Prodr. (1810) 212; Presl Rel. Haenk. 1 (1828) 187.

*Oncostylis barbata* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29.  
*Fimbristylis barbata* Benth. Fl. Austral. 7 (1878) 32; F.-Vill. Novis.  
 App. (1882) 308; Merr. Fl. Manila (1912) 116.

*Isolepis cumingii* Steud. Syn. Pl. Glum. 2 (1855) 101; Miq. Fl. Ind.  
 Bat. 3 (1856) 310.

*Fimbristylis cumingii* F.-Vill. Novis. App. (1882) 308.

Batan Islands, Luzon (Cagayan to Sorsogon, in most or all provinces),  
 Negros. In open dry sandy places at low and medium altitudes, locally  
 abundant, ascending to 1,500 m. All or most warm countries.

Local names: Humot (Iv.); kulilis (Tag.); tirtiris (Ilk.).

**BULBOSTYLIS CAPILLARIS** (Linn.) Kunth Enum. 2 (1837) 211; Usteri  
 Beitr. Ken. Philip. Veg. (1905) 131; C. B. Clarke in Philip. Journ.  
 Sci. 2 (1907) Bot. 98 (var. *trifida* C. B. Clarke); Merr. op. cit. 5  
 (1910) Bot. 334.

*Scirpus capillaris* Linn. Sp. Pl. (1753) 49.

*Isolepis capillaris* R. & S. Syst. 2 (1817) 118; Miq. Fl. Ind. Bat. 3  
 (1856) 311.

Luzon (Cagayan, Lepanto, Bontoc, Benguet). In open places, chiefly  
 at medium altitudes, ascending to 2,000 m. Pantropic.

#### 14. SCHOENUS Linnaeus

**SCHOENUS AXILLARIS** (R. Br.) Poir. in Lam. Encycl. Suppl. 2 (1811)  
 251; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 334.

*Chaetospora axillaris* R. Br. Prodr. (1810) 233.

Luzon (Benguet), *F. B. 16141 Curran, Merritt, & Zschokke*. On Mt.  
 Pulog, probably from the summit grasslands, altitude about 2,800 m.  
 Australia, New Zealand.

**SCHOENUS FALCATUS** R. Br. Prodr. (1810) 232; Merr. in Philip. Journ.  
 Sci. 9 (1914) Bot. 268.

*Cladium filiforme* Merr. in Philip. Journ. Sci. 5 (1910) Bot. 172.

Luzon (Ilocos Norte, Zambales), Palawan, *B. S. 5036, 32717 Ramos & Pas-  
 casio, 508, 717 Foxworthy*. In meadows and along streams at low altitudes  
 ascending to 600 m. Formosa, Borneo, northeastern Australia.

**SCHOENUS MELANOSTACHYS** R. Br. Prodr. (1810) 231; Merr. in Philip.  
 Journ. Sci. 2 (1907) Bot. 263.

Mindoro, *Merrill 6173*. In an open heath on Mt. Halcon, altitude about  
 2,400 m. Borneo, Queensland, New South Wales.

**SCHOENUS PHILIPPINENSIS** (Palla) Kükenth. in herb. comb. nov.

*Helothrix philippinensis* Palla in Allgem. Bot. Zeitschr. 17 (1911)  
 Beil. 1.

*Schoenus apogon* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot.  
 102; Merr. op. cit. 5 (1910) 334, non R. & S.

Luzon (Benguet, Tayabas, Laguna), Negros, Mindanao (Davao), *Kneuc-  
 ker Cyp. Exsic. 211, Merrill 6508, 6973, Phil. Pl. 540, Elmer 11370*. On the  
 highest mountains, in the mossy forest and in open grassy places, altitude  
 1,800 to 2,700 m. Endemic.

Local name: Kalesi (Bag.).

15. CLADIUM P. Browne

**CLADIUM CRINITUM** (Stapf) comb. nov.

*Vincentia crinita* Stapf in Philip. Journ. Sci. 19 (1921) 65.

Luzon (Albay), *B. S. 2935 Mearns*. On slopes at medium altitudes on Mt. Mayon. Endemic.

**CLADIUM DISTICHUM** C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 102.

Luzon (Tayabas, east coast), *Merrill 1123*. Probably along streams at low altitudes. Endemic.

Local name: Barokibok (Tag.).

**CLADIUM FALCATUM** (Nees) C. B. Clarke in Kew Bull. Add. Series 8 (1908) 46.

*Baumea falcata* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29.

*Vincentia falcata* Stapf in Journ. Linn. Soc. Bot. 42 (1914) 179.

Luzon (Albay), *Cuming 932*. I have seen merely a fragment of the type, and Kloss's New Guinea specimen. New Guinea, a variety in Sumatra.

**CLADIUM JUNCOIDES** Elm. Leaf. Philip. Bot. 3 (1910) 854.

Luzon (Isabela, Ilocos Norte, Tayabas), Palawan, Sibuyan, Panay, Dinagat, Mindanao (Surigao), *Elmer 12150, 13145, B. S. 34593, 35209, 35446, 34605 Ramos & Pascasio, 32846 Ramos, 25428 Yates, 21172 Escritor, 13209 Foxworthy & Ramos, Merrill Phil. Pl. 1258*. In thickets and forests at low and medium altitudes, along streams, etc. Endemic.

Local name: Magodtañgiád (P. Bis.).

**CLADIUM LATIFOLIUM** Merr. in Philip. Journ. Sci. 2 (1907) Bot. 262, 3 (1908) Bot. 399.

*Vincentia malesica* Stapf. in Journ. Linn. Soc. Bot. 42 (1914) 178.

Batan Islands, Luzon (Laguna, Tayabas, Sorsogon, Albay), Mindoro, Negros, Mindanao (Davao), *Elmer 17638, Williams 2614, B. S. 23499 Ramos, 6497 Robinson, 3322 Fénix, 2386 Foxworthy*. On ridges in the mossy forest, and in open places, altitude 1,500 to 2,400 m. Sumatra, Borneo.

Local name: Samalang (Bag.).

**CLADIUM PHILIPPINENSE** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 171.

Luzon (Zambales, Nueva Ecija, Tayabas, Camarines), Mindoro, Palawan, Sibuyan, Panay, Bucas Grande, Mindanao (Surigao), *F. B. 6724 Merritt, B. S. 34619, 35097 Ramos & Pascasio, 35429 Martelino & Edaño, 33476, 26508 Ramos & Edaño, 20678 Escritor, 13161 Foxworthy & Ramos, Elmer 12332, 12401, Weber 1053, Merrill 758*. On ledges and boulders along streams at low and medium altitudes. Endemic.

Local name: Kumpai (Bag.).

**CLADIUM RIPARIUM** (Nees) Benth. Fl. Austral. 7 (1878) 405; C. B. Clarke Ill. Cyp. (1909) t. 35, f. 5-8; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 288.

*Chapelliera riparia* Nees in Lehm. Pl. Preiss. 2 (1846-48) 76.

*Baumea riparia* Boeck. in Linnaea 38 (1874) 246.

Mindanao (Lanao), *Clemens 916*. In swamps, altitude about 650 m. Australia, with a variety in British India.

## EXCLUDED SPECIES

**CLADIUM MARISCOIDES** F.-Vill. Novis. App. (1882) 309.

This was based on *Baumea mariscoides* Gaudich. non Torr. and is the Marianne Islands *Cladium gaudichaudii* W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 230. It is allied to the Philippine *Cladium juncooides* Elm.

**CLADIUM GLOMERATUM** F.-Vill. Novis. App. (1882) 309, non R. Br.

This was based on *Baumea glomerata* Gaudich. It is a Moluccan species.

**CLADIUM MARISCUS** R. Br.; F.-Vill. Novis. App. (1882) 309.

## 16. REMIREA Aublet

**REMIREA MARITIMA** Aubl. Pl. Guin. (1775) 45, *t.* 16; Naves Novis. App. (1882) 309; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 285; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 103; C. B. Rob. op. cit. 6 (1911) Bot. 195.

*Mariscus pungens* Steud. Syn. Pl. Glum. 2 (1855) 60; Miq. Fl. Ind. Bat. 3 (1856) 288.

*Mariscus capitatus* Steud. in Zoll. Verz. Ind. Archip. (1854) 63.

*Cyperus capitatus* Naves Novis. App. (1882) 306, non Retz.

*Remirea wightiana* Nees in Hook. Journ. Bot. Kew Miscel. 6 (1854) 29.

Luzon (Cagayan, Camarines), Polillo, Mindoro, Panay, Mindanao, *B. S.* 32220 *McGregor*, 6305, 9133 *Robinson*, *F. B.* 16680 *Bacani*, 5534 *Merritt*, *Merrill* 881, 11542, *Copeland* 857. On sandy seashores. Pantropic.

## 17. RYNCHOSPORA Vahl

**RYNCHOSPORA CORYMBOSA** (Linn.) Britton in Trans. N. Y. Acad. Sci. 11 (1892) 84; W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 366. *Scirpus corymbosus* Linn. Cent. Pl. 2 (1756) 7.

*Rynchospora aurea* Vahl Enum. 2 (1806) 229; Presl Rel. Haenk. 1 (1828) 200; Miq. Fl. Ind. Bat. 3 (1856) 336; F.-Vill. Novis. App. (1882) 309; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 285; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 102.

Luzon (Laguna, Tayabas, Camarines, Sorsogon), Mindoro, Palawan, Leyte, Biliran, Samar, Basilan. In open swampy places at low altitudes. Pantropic.

Local names: Agas (Bik., Bis.); bariu-báriu (Bik.); ragiudú (Bik.); rakido (Bik.); piso-piso (Bik.).

**RYNCHOSPORA GLAUCA** Vahl Enum. 2 (1806) 233, var. **CHINENSIS** (Boeck.) C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 672, Philip. Journ. Sci. 2 (1907) Bot. 102; F.-Vill. Novis. App. (1882) 309 (as *R. glauca* Vahl).

Luzon (Bontoc, Lepanto, Benguet), Mindanao (Lanao), *Clemens* 1203, *Merrill* 4623, *Phil. Pl.* 569, *Williams* 1245, *Elmer* 5757, *B. S.* 2493, 2781 *Mearns*. On open seepage slopes, along small streams, etc., at medium altitudes, ascending to 1,800 m. Pantropic.

**RYNCHOSPORA RUBRA** (Lour.) Makino in Bot. Mag. Tokyo 17 (1903) 180; Merr. Fl. Manila (1912) 119.

*Schoenus ruber* Lour. Fl. Cochinch. (1790) 41.

*Rynchospora haenkei* Presl Rel. Haenk. 1 (1828) 199; Miq. Fl. Ind. Bat. 3 (1856) 336.

*Rhynchospora wallichiana* Kunth Enum. 2 (1837) 289; F.-Vill. Novis. App. (1882) 309.

*Rhynchospora wallichiana* C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 668; Philip. Journ. Sci. 2 (1907) Bot. 101.

Northern Luzon to Palawan and Mindanao, in most islands and provinces. In open grasslands at low and medium altitudes. Tropical Africa and Asia to Japan, southward through Malaya to Australia.

**RYNCHOSPORA WIGHTIANA** C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1893) 669; Philip. Journ. Sci. 2 (1907) Bot. 101.

*Rhynchospora wightiana* Steud. Syn. Pl. Glum. 2 (1855) 148.

Luzon (Pangasinan, Bulacan, Rizal), *Merrill Phil. Pl. 2099, Loher 793, B. S. 4822, 21743 Ramos*. In open grasslands at low and medium altitudes; local. India to Indo-China and southern China.

#### 18. GAHNIA Forster

**GAHNIA JAVANICA** Moritzi Verz. Zoll. Pflanz. (1845-46) 98; Miq. Fl. Ind. Bat. 3 (1857) 340; F.-Vill. Novis. App. (1882) 309; Vidal Rev. Pl. Vasc. Filip. (1886) 285; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 103; Merr. op. cit. 263, 5 (1910) Bot. 334.

Luzon (Benguet, Laguna, Tayabas), Mindoro, Negros, Mindanao, *Williams 2621, Merrill 6162, 6596, Phil. Pl. 538, Elmer 11589, B. S. 19571 Ramos, 38538 Ramos & Edaña*. In the mossy forest, in open heaths, etc., altitude 1,700 to 2,700 m. Malay Peninsula to western China, south to New Guinea and Polynesia.

Local name: Tamauan (Buk.).

#### EXCLUDED SPECIES

**GAHNIA RAWACENSIS** Miq.; F.-Vill. Novis. App. (1882) 309.

#### 19. SCIRODENDRON Zippel

**SCIRODENDRON GHAERI** (Gaertn.) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 268, Interpret. Herb. Amb. (1917) 106.

*Chionanthus ghaeri* Gaertn. Fruct. 1 (1781) 190, t. 29, f. a-c; Boerl. in Journ. Linn. Soc. Bot. 31 (1896) 246.

*Scirpodendron costatum* Kurz in Journ. As. Soc. Beng. 38<sup>2</sup> (1869) 85; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 422; C. B. Rob. op. cit. 6 (1911) Bot. 195.

*Scirpodendron pandaniforme* Zipp. ex Kurz l. c. in syn.

*Scirpodendron sulcatum* Miq. Illustr. Fl. Archip. Ind. (1871) 65, t. 28. *Pandanus caricosus* Spreng. Syst. 3 (1826) 897.

Luzon (Cagayan, Tayabas), Polillo, Palawan, Biliran, Mindanao (Zamboanga), *Merrill 5257, 8114, 11218, Phil. Pl. 1295, B. S. 10249, 18592 McGregor, F. B. 17828, 19612 Curran*. In wet places near the seashore and along streams at low altitudes. Ceylon through Malaya to Australia and Polynesia.

Local names: Bilis (Sub.); gáas (Bik.).

#### 20. MAPANIA Aublet

**MAPANIA AFFINIS** Merr. in Journ. Str. Branch Roy. As. Soc. 85 (1922) 157.

Jolo, *Clemens 9330*. On forested slopes, altitude about 800 m. Borneo.

**MAPANIA GRACILLIMA** Kükenth. & Merr. in Philip. Journ. Sci. 9 (1914) Bot. 267.

Luzon (Tayabas), Mindanao (Zamboanga), *Merrill 8215, B. S. 26519 Ramos & Edaño*. On forested ridges, altitude about 1,100 m. Endemic.

**MAPANIA HUMILIS** (Hassk.) F.-Vill. Novis. App. (1882) 309; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 109; C. B. Rob. op. cit. 6 (1911) Bot. 194.

*Pandanophyllum humile* Hassk. in Tijdschr. Nat. Vereen. 10 (1843) 119; Miq. Fl. Ind. Bat. 3 (1856) 334.

*Lipironia humilis* Miq. Illustr. Fl. Archip. Ind. (1871) 61, t. 23.

Luzon (Apayao, Rizal, Nueva Vizcaya, Laguna, Tayabas, Sorsogon), Polillo, Mindoro, Palawan, Sibuyan, Samar, Negros, Panay, Mindanao, incl. *Elmer 14864* as *M. alpina* Elm. In damp primary forests at low and medium altitudes. Malay Peninsula and Archipelago.

Local names: Babakal (Sub.); lubigan (P. Bis.); maribari (S. L. Bis.).

**MAPANIA KURZII** C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 681; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 422; C. B. Rob. op. cit. 6 (1911) Bot. 194.

*Mapania banahaensis* Elm. Leaf. Philip. Bot. 2 (1909) 574.

Luzon (Laguna, Tayabas, Camarines, Sorsogon), Alabat, Polillo, Catanduanes, Palawan, Panay, Negros, *Elmer 7639, 16222, 15519, Merrill 10505, 7220, 4001, Whitford 1569, B. S. 31414 Ramos & Edaño, 30318, 13347 Ramos, 10248 McGregor*. In primary forests at low and medium altitudes. Malay Peninsula.

**MAPANIA MACROCEPHALA** (Gaudich.) K. Sch. ex Warb. in Engl. Bot. Jahrb. 13 (1891) 265; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 422.

*Hypolytrum macrocephalum* Gaudich. Bot. Freyc. Voy. (1826) 414.

*Lepironia macrocephala* Miq. Illustr. Fl. Archip. Ind. (1871) 64, t. 27.

Mindanao (Davao), Balut, *Merrill 5409, Elmer 11978*. In primary forests, altitude about 650 m. Moluccas to the Bismarck Archipelago.

Local name: Baroñgis (Bag.).

**MAPANIA PALUSTRIS** (Hassk.) F.-Vill. Novis. App. (1882) 309; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 681; Merr. in Philip. Journ. Sci. 9 (1914) Bot. 267.

*Pandanophyllum palustre* Hassk. in Tijdschr. Nat. Vereen. 10 (1843) 119.

*Lepironia palustris* Miq. Illustr. Fl. Archip. Ind. (1871) 63, t. 25.

Mindanao (Zamboanga, Agusan), *Merrill 7298, B. S. 37392 Ramos & Edaño*. In muddy places along small streams in forests at low altitudes. Malay Peninsula and Archipelago.

Local name: Kulibang (Sub.).

## 21. THORACOSTACHYUM Kurz

**THORACOSTACHYUM LUCBANENSE** (Elm.) Kükenth. ex Merr. in Philip. Journ. Sci. 11 (1916) Bot. 258.

*Mapania lucbanensis* Elm. Leaf. Philip. Bot. 2 (1909) 573.

Luzon (Laguna, Tayabas), Panay, Mindanao (Zamboanga), *Elmer B. S. 28469, 29177, 31136 Ramos & Edaño, 22929 McGregor, 20493, 10029 Ramos,*

36625, 37414 Ramos & Edaña, Elmer 9116. In primary forests at low and medium altitudes. Amboina.

Local names: Payong-payong (Sub.); tiñgol (Sub.).

## 22. SCLERIA Bergius

**SCLERIA ANNULARIS** (Nees) Kunth Enum. 2 (1837) 359; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104.

*Hypopyrum annulare* Nees in Linnaea 9 (1834) 303.

Luzon, (Loher 807), fide C. B. Clarke. Not seen. India and China.

**SCLERIA BANCANA** Miq. Fl. Ind. Bat. Suppl. (1862) 693; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 693, excl. syn. Presl.

*Scleria malaccensis* Boeck. in Linnaea 38 (1874) 507.

Busuanga, Palawan, Merrill 9202, B. S. 41175 Ramos. In old clearings, borders of thickets, etc., at low altitudes. Tenasserim through Malaya to New Guinea.

**SCLERIA CORYMBOSA** Roxb. Hort. Beng. (1814) 103, *nomen nudum*, Fl. Ind. ed. 2, 3 (1832) 574; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104.

Culion, Palawan, Merrill 656, 9402. In wet places at low altitudes. India to the Malay Peninsula.

**SCLERIA HEBECARPA** Nees in Wight Contrib. (1834) 117; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 105.

*Scleria wichurai* Boeck. in Engl. Bot. Jahrb. 5 (1884) 510.

Luzon (Rizal, Laguna), Palawan, Mindanao (Bukidnon, Zamboanga, Cotabato), B. S. 23136 McGregor, 12042 Ramos, 29679 Ramos & Edaña, 11703 Robinson. In thickets and open places at low and medium altitudes. India to Japan and Polynesia.

Var. **PUBESCENS** (Steud.) C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 689.

*Scleria pubescens* Steud. Syn. Pl. Glum. 2 (1855) 168.

Luzon (Laguna), Panay, Mindanao (Lanao), Clemens, B. S. 23796 Ramos, 30957 Ramos & Edaña. In dry open places at low altitudes. India to China and Malaya.

Local name: Dát (Tag.).

**SCLERIA LEVIS** Retz. Obs. 4 (1786) 13; C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 694.

Mindoro, Palawan, Negros, Merrill 9244, 8380, F. B. 5529 Merritt. In open wet places, ravines, etc., sea level to 1,200 m altitude. India to southern China, southward to Java.

**SCLERIA LITHOSPERMA** (Linn.) Sw. Prodr. (1788) 18; F.-Vill. Novis. App. (1882) 310; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 285; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 103; Merr. Fl. Manila (1912) 120.

*Scirpus lithospermus* Linn. Sp. Pl. (1753) 51.

*Scleria glaucescens* Presl Rel. Haenk. 1 (1828) 202.

Northern Luzon to Mindanao, in most islands and provinces. In dry thickets at low and medium altitudes. Pantropic.

Var. **ROXBURGHII** Thw. Enum. Pl. Zeyl. (1859-64) 354; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104.

Luzon, Mindanao, *B. S. 16409 Reillo, Merrill 11543, (Loher 805, 806)*. In thickets at low altitudes. India and Ceylon.

Local names: Dáat (Tag.); katábad (Tag.); taláid (Bag.).

**SCLERIA LUZONENSIS** Palla in Allgem. Bot. Zeitschr. 13 (1907) 49.

*Scleria chinensis* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 105; Merr. op. cit. 1 (1906) Suppl. 31, non Nees.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Pampanga, Rizal, Laguna, Bataan, Tayabas), Mindoro, Palawan, Negros, Panay, Mindanao, *Merrill 4834, 3958, 3964, 3921, 9523, Phil. Pl. 560, Kneucker Cyp. Exsic. 167, Elmer 8401, Whitford 1517, 1518, Williams 1227, 730*. In primary forests, on ridges, etc., altitude 800 to 2,200 m. Endemic.

Thought by Kükenthal to be but a variety of *S. multifoliata* Boeck.

Local names: Agagedán (Bon.); egededán (Bon.); mankot (Ig.); papan (Bon.).

**SCLERIA MERRILLII** Palla in Allgem. Bot. Zeitschr. 17 (1911) Beil. 8.

Luzon (Rizal), *Kneucker Cyp. Exsic. 249, Merrill Phil. Pl. 525* (as *S. zeylanica* Poir.), *B. S. 2029 Ramos*. In fallow rice paddies at low altitudes. Endemic.

This is perhaps the same as the form referred by C. B. Clarke to *S. annularis* Kunth.

**SCLERIA MOTLEYI** C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104.

*Scleria trigona* Merr. in Philip. Journ. Sci. 8 (1913) Bot. 363.

*Scleria trigonocarpa* Ridl. in Journ. Str. Branch Roy. As. Soc. 46 (1906) 228, *nomen*, *Mater. Fl. Malay. Pen. (Monocot.) 1 (1907) 110*.

Luzon (Pangasinan, Bulacan, Rizal, Tayabas, Camarines, Sorsogon), Catanduanes, Busuanga, Palawan, Panay, Leyte, *B. S. 1854, 30426 Ramos, 20681 Escritor, 29706, 33583, 34110 Ramos & Edaño, 35496 Martelino & Edaño, 25500 Yates, 29896 Fénix, Elmer 15411* as *S. sorsogonensis* Elm., *Wenzel 158*. In forests at low and medium altitudes. Borneo, Malay Peninsula.

Var. **DENSISPICATA** C. B. Clarke l. c.

Luzon (Ilocos Norte, Nueva Vizcaya, Pampanga), *B. S. 20997 Santos, 22441, 32845 Ramos*. In forests at low and medium altitudes, ascending to 800 m. Endemic.

**SCLERIA ORYZOIDES** Presl Rel. Haenk. 1 (1828) 201; Miq. Fl. Ind.

Bat. 3 (1857) 342; F.-Vill. Novis. App. (1882) 310; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 105.

Luzon (Cagayan, Isabela, Camarines), Palawan, *Merrill 144, Phil. Pl. 1294, F. B. 11621 Curran, B. S. 7777, 8063 Ramos*. In fresh-water swamps, 'old wet rice paddies, etc., at low altitudes. India and tropical East Africa to tropical Australia.

Local name: Agáas (Bik.).

**SCLERIA PERGRACILIS** (Nees) Kunth Enum. 2 (1837) 354; C. B. Clarke

in Hook. f. Fl. Brit. Ind. 6 (1894) 685; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 75.

*Hypophorum pergracile* Nees in Edinb. Philos. Journ. 17 (1834) 267.

Luzon (Bontoc), Mindanao (Cotabato), *Vanoverbergh 889, Copeland*. On open slopes, altitude 300 to 1,400 m. Tropical Africa through India to Yunnan and Indo-China.

Local name: Bangbangló (Bon.).



**SCLERIA PURPUREO-VAGINATA** Boeck. in Engl. Bot. Jahrb. 5 (1884) 513; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 105.

*Scleria sumatrensis* Vidal Rev. Pl. Vasc. Filip. (1886) 285, non Retz.

Batan Islands, Luzon (Cagayan, Abra, Pangasinan, Nueva Vizcaya, Batan, Rizal, Laguna, Sorsogon), Polillo, Mindoro, Palawan, Leyte, Panay, Negros, Mindanao, *F. B. 1929 Borden, B. S. 31169 Ramos & Edaña, 13932, 26971 Ramos, 29881 Fénix, 14248 McGregor, Wenzel 1691, Elmer 16063, Copeland 95*. In thickets and in open places along streams at low and medium altitudes; scarcely distinguishable from *S. scrobiculata* Nees except by its winged sheaths. Ceram Laut.

Local name: Tañgilad (Tag.).

**SCLERIA SCROBICULATA** Nees in Wight Contrib. (1834) 117, Nov. Act.

Acad. Nat. Cur. 19 (1843) Suppl. 1: 119; Miq. Fl. Ind. Bat. 3 (1856) 342; F.-Vill. Novis. App. (1882) 310; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 106; Merr. op. cit. 1 (1906) Suppl. 31, 3 (1908) Bot. 399, Fl. Manila (1912) 121, Sp. Blancoanae (1918) 83.

*Scleria foveolata* Llanos Frag. Pl. Filip. (1851) 103; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 79, non Cav.

*Scleria multifoliata* C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 106, p. p., non Boeck.

Throughout the Philippines, in thickets, open places, old clearings, etc., at low and medium altitudes; usually common. Andaman Islands to the Riu Kiu Islands, southward to New Guinea.

Of two of the three specimens referred by Clarke to *S. multifoliata* Boeck. I consider *Topping 460* to be *S. scrobiculata* Nees and *Merrill 4834* to be *S. merrillii* Palla.

Local names: Agagidán (Bon.); aladán (Ilk.); amangid (Ilk.); amgid (Tag.); árat (Pamp., Tag.); dáat (Tag.); dáhat (Bik.); dat (Pamp., P. Bis.); dáut (Tag.); gáat (Iv.); haras (P. Bis.); katábad (Tag.); mangked (Iv.); tangra (Ilk.); ulat (Pang., Tag.).

**SCLERIA SUMATRENSIS** Retz. Obs. 5 (1789) 19, t. 2; Rolfe in Journ. Bot. 23 (1885) 215; Usteri, Beitr. Ken. Philip. Veg. (1905) 132; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 106.

*Scleria purpurascens* Steud. Syn. Pl. Glum. 2 (1855) 169; F.-Vill. Novis. App. (1882) 310.

Palawan, Mindanao, Basilan, *B. S. 16349 Reillo, Merrill 9750, De Vore & Hoover 7*. In open places and in forests at low and medium altitudes, India to Sumatra, Java, and Borneo.

Local names: Balbalíli (Bon.); bulálo (Sub.); pangpáyung (C. Bis.).

**SCLERIA TESSELLATA** Willd. Sp. Pl. 4 (1805) 315, excl. syn. Rumph.; F.-Vill. Novis. App. (1882) 310; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104; Merr. Fl. Manila (1912) 120.

Luzon (Lepanto, Bontoc, Benguet, Pangasinan, Bulacan, Rizal), Panay, *B. S. 30025 Fénix, 12221 Ramos, Merrill 4370, 4617, Phil. Pl. 1444, Williams 1970*. In open grasslands at low and medium altitudes, ascending to 1,500 m. India to Japan southward to tropical Australia.

Local name: Katábad (Tag.).

**SCLERIA ZEYLANICA** Poir. in Lam. Encycl. 7 (1806) 3 p. p.; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 104; Merr. Fl. Manila (1912) 120.

Luzon (Ilocos Norte, Bulacan, Rizal), *Merrill 3665, Phil. Pl. 1451, B. S. 27626, 10905, 21688, 22001 Ramos*. In open rather wet places at low altitudes. India through Malaya to New Caledonia.

Local names: Dáat-babáe (Tag.); dáat-párang (Tag.); pugad-púgad (Tag.).

#### DOUBTFUL SPECIES

**SCLERIA MACROPHYLLIA** Presl Rel. Haenk. 1 (1828) 200; Miq. Fl. Ind. Bat. 3 (1857) 343; F.-Vill. Novis. App. (1882) 310.

"Hab. in insula Luzon" Presl. This has been reduced to *Scleria bancana* Miq. with which Presl's description does not remotely agree. In its leaves being 16 lines broad, its panicle a foot long and much branched, and in its fruits being the size of a pea *Scleria macrophylla* Presl does not agree with any of the known Philippine or Indo-Malayan species, but apparently belongs in the group of *Scleria macrocarpa* Nees. Presl's type was doubtless from South America or Mexico, not from the Philippines.

#### 23. DIPLACRUM R. Brown

**DIPLACRUM CARICINUM** R. Br. Prodr. (1910) 241; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 106; Merr. Fl. Manila (1912) 121. *Scleria caricina* Benth. Fl. Austral. 7 (1878) 426; F.-Vill. Novis. App. (1882) 309.

Luzon (Abra, Tarlac, Rizal, Camarines), Panay, Bucas Grande, Mindanao, *Merrill 3626, 8236, Loher 7157, B. S. 35034 Ramos & Pascasio, 30954, 33507 Ramos & Edaña*. In open grasslands at low and medium altitudes. India to southern China through Malaya to tropical Australia.

#### 24. UNCINIA Persoon

**UNCINIA RUPESTRIS** Raoul in Ann. Sci. Nat. III 2 (1844) 117 var. **CAPILLACEA** Kükenth. in Engl. Pflanzenreich 38 (1909) 64, Philip. Journ. Sci. 6 (1911) Bot. 58; Merr. op. cit. 5 (1910) Bot. 334.

Luzon (Benguet, Laguna), Mindanao (Davao), *B. S. 19560 Ramos, F. B. 16140 Curran, Merritt, & Zschokke*. In the mossy forest on Mts. Pulog, Banahao, and Apo, altitude 2,200 to 2,500 m. New Zealand, Tasmania.

Local name: Loniai (Bag.).

#### 25. CAREX Linnaeus

**CAREX BACCANS** Nees in Wight Contrib. (1834) '122; C. B. Clarke in Curtis's Bot. Mag. III 49 (1893) t. 7288, Journ. Linn. Soc. Bot. 37 (1904) 14, Philip. Journ. Sci. 2 (1907) Bot. 108; Merr. op. cit. 5 (1910) Bot. 334; Kükenth. in Engl. Pflanzenreich 38 (1909) 258, f. 39 E-H, Philip. Journ. Sci. 6 (1911) Bot. 59.

Luzon (Bontoc, Lepanto, Benguet). In damp thickets and in the mossy forest on the higher mountains, altitude 1,600 to 2,400 m. Himalayan region to southern China, Formosa, Sumatra, and Java.

Local names: Gihidsan (Bon.); silak (Ig.); mankat (Ig.).

**CAREX BREVICULMIS** R. Br. Prodr. (1810) 242, subsp. **ROYLEANA** Nees var. **KINGIANA** (Lév. & Van.) Kükenth. in Engl. Pflanzenreich 38 (1909) 469, Philip. Journ. Sci. 6 (1911) Bot. 62.

*Carex kingiana* Lév. & Van. in Bull. Acad. Internat. Geog. Bot. 10 (1901) 272.

Luzon (Benguet), *Merrill 6609, 6628, Phil. Pl. 561, B. S. 31771 Santos, 8853 McGregor*. In open grassy meadows and on damp open slopes, altitude 2,200 to 2,700 m. The species in Australia, the subspecies India to Japan, the variety in Japan.

**CAREX BREVISCAPA** C. B. Clarke in Hook. f. Fl. Brit. Ind. 6 (1894) 736; Kükenth. in Engl. Pflanzenreich 38 (1909) 474.

Luzon (Sorsogon), Palawan, *Merrill 9521, Elmer 15353*. On forested ridges, altitude about 800 m. Ceylon.

**CAREX BRUNNEA** Thunb. Fl. Jap. (1784) 38; C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 107; Merr. op. cit. 1 (1906) Suppl. 31, 5 (1910) Bot. 335; Kükenth. in Engl. Pflanzenreich 38 (1909) 599, Philip. Journ. Sci. 6 (1911) Bot. 63.

Luzon (Ilocos Norte, Abra, Bontoc, Benguet, Lepanto, Kalinga, Zambales, Pampanga, Rizal, Laguna, Tayabas, Bataan), Negros, Mindanao. In the mossy forest, on forested ridges and slopes, altitude 800 to 2,400 m.

Var. **SUBTEIOGYNA** Kükenth. in Fedde Repert. 8 (1910) 8, Philip. Journ. Sci. 6 (1911) Bot. 63.

Luzon (Benguet), *Merrill 4731, 6505, B. S. 8866 McGregor*. Borders of the mossy forest, altitude about 2,200 m. The species Japan to southern Asia, Malaya, Australia, and the Mascarene Islands, the variety endemic.

Local names: Silak (Ig.); tayalid (Bag.).

**CAREX CRYPTOSTACHYS** Brongn. in Bot. Duperr. Voy. (1828) 152, t. 25; F.-Vill., Novis. App. (1882) 310; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 220; Kükenth. in Engl. Pflanzenreich 38 (1909) 471, Philip. Journ. Sci. 6 (1911) Bot. 62.

Luzon (Nueva Vizcaya, Rizal, Laguna, Tayabas, Sorsogon), Mindanao (Zamboanga), *Merrill 8218, Elmer 7306, 14595, 16110, B. S. 1760 Ramos, 29334 Ramos & Edaña*. In forests at medium altitudes, ascending to 1,000 m. Formosa and southern China to the Malay Peninsula, Java, and Waigiou.

**CAREX ELMERI** Kükenth. in Fedde Repert. 8 (1910) 326, Leaf. Philip. Bot. 3 (1910) 853, Philip. Journ. Sci. 6 (1911) Bot. 64.

Luzon (Bontoc, Benguet, Laguna), Mindoro, Negros, *Vanoverbergh 868, Merrill 6972, 8025*. In forests, altitude 1,500 to 2,200 m. Endemic.

Doubtfully distinct from *C. loheri* C. B. Clarke.

**CAREX FILICINA** Nees in Wight Contrib. (1834) 123, var. **CEYLANICA** (Boeck.) Kükenth. in Philip. Journ. Sci. 6 (1911) Bot. 59; C. B. Clarke in Journ. Linn. Soc. Bot. 37 (1904) 11 (*C. filicina*), Philip. Journ. Sci. 2 (1907) Bot. 107; Merr. op. cit. 2 (1907) Bot. 263, 5 (1910) Bot. 335; Kükenth. in Engl. Pflanzenreich 38 (1909) 274.

*Carex ceylanica* Boeck. in Linnaea 40 (1876) 341; Kükenth. in Engl. Pflanzenreich 38 (1909) 279.

Luzon (Cagayan, Ifugao, Abra, Lepanto, Bontoc, Benguet, Laguna, Tayabas, Rizal), Negros, Mindanao (Bukidnon, Davao), *B. S.* 19559, 7213, 13986 Ramos, 19732, 19695, *McGregor*, *Kneucker Caric. Exsicc.* 372, *Elmer* 8587, 10728, *Merrill* 7496, *Phil. Pl.* 544, *Loher* 7155. In the mossy forest, altitude 1,400 to 2,500 m. India to China, southward to Java.

Local names: Silak (Ig.); táan (Ig.); taláyig (Bag).

Forma **SATURATA** (C. B. Clarke) Kükenth. in Engl. Pflanzenreich 38 (1909) 275 (as var. of *filicina*), *Philip. Journ. Sci.* 6 (1911) Bot. 59. *Carex saturata* C. B. Clarke in *Journ. Linn. Soc. Bot.* 37 (1904) 12.

Luzon (Laguna, Tayabas), *Whitford* 949, *F. B.* 866 *Klemme*. In the mossy forest on Mt. Banahao, altitude about 1,800 m. Java, Sumatra, Borneo.

Forma **DEPAUPERATA** Kükenth. l. cc.

Luzon (Lepanto, Bontoc), Mindoro, *Merrill* 4513, 4743, 6200. In the mossy forest, altitude 2,200 to 2,400 m. India to China, Java, and Sumatra.

**CAREX FUIRENOIDES** Gaudich. Bot. Freyc. Voy. (1826) 412, var. **CIRRHULOSA** (Nees) Kükenth. in Engl. Pflanzenreich 38 (1909) 287, *Philip. Journ. Sci.* 6 (1911) Bot. 61.

*Carex fuirenoides* F.-Vill. Novis. App. (1882) 310; C. B. Clarke in *Philip. Journ. Sci.* 2 (1907) Bot. 107, *Journ. Linn. Soc. Bot.* 37 (1904) 11, p. p., vix Gaudich.

*Carex cirrhulosa* Nees in Hook. *Journ. Bot. Kew Miscel.* 6 (1854) 29. *Carex fibrata* Boott ex Vidal Phan. Cuming. *Philip.* (1885) 156, *Rev. Pl. Vasc. Filip.* (1886) 286, *nomen nudum*.

? *Carex densiflora* Presl Rel. Haenk. 1 (1828) 204; F.-Vill. Novis. App. (1882) 310.

Luzon (Nueva Vizcaya, Rizal, Laguna), *Merrill* 109, *B. S.* 26203 Ramos, 29388 Ramos & Edaño. In forests at medium altitudes. The variety endemic, the species in the Marianne Islands.

**CAREX GRAEFFEANA** Boeck. in *Flora* 58 (1875) 22; C. B. Clarke in *Journ. Linn. Soc. Bot.* 37 (1904) 5, *Philip. Journ. Sci.* 2 (1907) Bot. 107; Kükenth. in Engl. Pflanzenreich 38 (1909) 403, *Philip. Journ. Sci.* 6 (1911) Bot. 62; Merr. op. cit. 5 (1910) Bot. 335.

Luzon (Bontoc, Benguet, Nueva Vizcaya), Negros, Leyte, Mindanao (Bukidnon, Davao), *B. S.* 8177, 8174 Ramos, 31742, 32076 Santos, 3370, 14401 *McGregor*, 37710, 38642 Ramos & Edaño, *Merrill* 6622, 9652, *Phil. Pl.* 566, *Elmer* 9842, 8532, *Wenzel* 625. On slopes in open places, along streams, and in the mossy forest, altitude 1,600 to 2,200 m. Samoa.

Local names: Alasas (Buk.); bagibi (Bag.); giron (Bag.); kigid (Bon.); sidak (Ig.); silak (Ig.).

**CAREX INDICA** Linn. Mant. 2 (1771) 574, var. **FISSILIS** (Boott) Kükenth. in Engl. Pflanzenreich 38 (1909) 264, *Philip. Journ. Sci.* 6 (1911) Bot. 59; F.-Vill. Novis. App. (1882) 310 (*indica*); Usteri Beitr. Ken. *Philip. Veg.* (1905) 132 (*indica*).

Palawan, *B. S.* 844 *Foxworthy*. On river banks, probably at low or medium altitudes. The species India to Java, the variety Borneo to Australia and Samoa.

**CAREX JAPONICA** Thunb. var. **CHLOROSTACHYS** (D. Don) Kükenth. in Engl. Pflanzenreich **38** (1909) 620.

*Carex chlorostachys* D. Don in Trans. Linn. Soc. **14** (1825) 330.

*Carex doniana* Spreng. Syst. **3** (1826) 825.

Luzon (Benguet), *B. S. 40359 Ramos & Edaño*. In openings in the mossy forest on Mt. Simacoco, altitude about 1,900 m. India to Korea, Japan, and Formosa.

**CAREX LIGATA** Boott in Benth. Fl. Hongk. (1861) 402, var. **NEXA** (Boott) Kükenth. in Engl. Pflanzenreich **38** (1909) 474, Philip. Journ. Sci. **6** (1911) Bot. 63.

*Carex nexa* Boott. l. c.

Luzon (Kalinga, Bontoc), *Vanoverbergh 496, 1139, B. S. 37491, 37516 Ramos & Edaño, 40765 Ramos*. In forests, altitude about 1,600 m. Central and southern China to the Riu Kiu Islands and Formosa.

Var. **FORMOSENSIS** (Lév. & Van.) Kükenth. in Engl. Pflanzenreich **38** (1909) 474.

*Carex formosensis* Lév. & Van. in Mém. Soc. Sci. Nat. Cherbourg **25** (1906) 216.

Luzon (Cagayan, Bontoc, Benguet), *Merrill Phil. Pl. 562, 1763* as *C. subtransversa* Clarke, *B. S. 31958, 31684 Santos, 13987 Ramos*. Along streams and trails, on cliffs and steep banks, etc., in and near the mossy forest, altitude 1,300 to 2,400 m. Formosa.

Local names: Egegedán (Bon.); silak (Ig.).

**CAREX LOHERI** C. B. Clarke in Journ. Linn. Soc. Bot. **37** (1904) 14, Philip. Journ. Sci. **2** (1907) Bot. 108; Merr. in Philip. Journ. Sci. **5** (1910) Bot. 335; Kükenth. in Engl. Pflanzenreich **38** (1909) 487, Philip. Journ. Sci. **6** (1911) Bot. 64.

Luzon (Lepanto, Benguet, Zambales, Laguna, Tayabas), *Merrill 4488, 6506, 6607, 6605, Phil Pl. 563, Elmer 8582, 8444, B. S. 5133, 19565 Ramos*. In the mossy forest, altitude 1,300 to 2,400 m. Endemic.

Forma **GRANDIMASCULA** Kükenth. in Philip. Journ. Sci. **6** (1911) Bot. 64.

Luzon (Benguet), *Merrill 4729*. In clearings near the mossy forest, altitude about 2,200 m. Endemic. Scarcely distinguishable from the species.

Local name: Silak (Ig.).

**CAREX MERRILLII** Kükenth. in Fedde Repert. **8** (1910) 7, Philip. Journ. Sci. **6** (1911) Bot. 63.

Luzon (Ifugao, Benguet), *Merrill 6623, 7806, Phil. Pl. 568, Yates*. In the mossy forest and in open places along trails, altitude about 2,250 m. Endemic.

**CAREX MYOSURUS** Nees in Wight Contrib. Bot. Ind. (1834) 122; Kükenth. in Engl. Pflanzenreich **38** (1909) 258, var. **EMINENS** (Nees) Boeck. in Linnaea **39** (1875) 335; Kükenth. op. cit. 259.

*Carex eminens* Nees in Wight Contrib. Bot. Ind. (1834) 122.

Luzon (Bontoc), *Vanoverbergh 992*. On slopes, altitude about 1,700 m. India.

**CAREX NIKKOENSIS** Franch. & Savat. Enum. Pl. Japon. 2 (1879) 132, 558; Kükenth. in Engl. Pflanzenreich 38 (1909) 252, f. A-E, Philip. Journ. Sci. 6 (1911) Bot. 59.

Luzon (Benguet), *Merrill 6631*. Along trails in the mossy forest, altitude about 2,300 m. Japan.

**CAREX NODIFLORA** Boeck. in Engl. Bot. Jahrb. 5 (1884) 516; Kükenth. in Engl. Pflanzenreich 38 (1909) 288, Philip. Journ. Sci. 6 (1911) Bot. 61.

*Carex cumingii* Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 286; C. B. Clarke in Journ. Linn. Soc. Bot. 37 (1904) 11, Philip. Journ. Sci. 2 (1907) Bot. 107.

Luzon (Isabela, Ilocos Norte, Rizal, Batangas, Laguna, Sorsogon), Alabat, Mindanao (Agusan), *Elmer 6449, 15328, 17781, 8304, Merrill 10470, Phil. Pl. 1481, B. S. 33013, 22411, 3350, 8006 Ramos*. In primary forests at low and medium altitudes. Endemic.

**CAREX PALAWANENSIS** Kükenth. in Leaf. Philip. Bot. 4 (1911) 1169.

Palawan, *Elmer 13146*. In damp soil in thickets along streams, altitude about 150 m. Endemic.

**CAREX PHACOTA** Spreng. Syst. 3 (1826) 826; Kükenth. in Engl. Pflanzenreich 38 (1909) 350, f. 56 A-C, Philip. Journ. Sci. 6 (1911) Bot. 62.

Luzon (Bontoc, Benguet), *Merrill Phil. Pl. 565, Williams 1246, B. S. 2505 Mearns*. In open damp places, altitude about 1,500 m. Himalayan region to China, southern Japan, and Java.

**CAREX PYCNOTHYRSOS** Kükenth. in Philip. Journ. Sci. 6 (1911) Bot. 60.

Luzon (Bontoc, Nueva Ecija), Negros, Mindanao (Agusan), *Merrill Phil. Pl. 543, Weber 1113, B. S. 26309, 37881 Ramos & Edaño*. In primary forests, altitude 250 to 1,200 m. Endemic.

Local name: Harakhaches (Neg.).

**CAREX RAFFLESIANA** Boott in Trans. Linn. Soc. 20 (1846) 132, Illustr. 1 (1858) 12, t. 33; Kükenth. in Engl. Pflanzenreich 38 (1909) 282, Philip. Journ. Sci. 6 (1911) Bot. 59.

Luzon (Benguet, Pampanga, Bataan, Laguna, Sorsogon), Palawan, Mindanao, *B. S. 8378 McGregor, 665, 679, 554 Foxworthy, 6076 Robinson, Whitford 1121, Merrill 4221, 4742, 4669, Elmer 6039*. In and near the mossy forest, altitude 800 to 2,200 m. Sumatra and Java to northeastern Australia.

Var. **SCABERRIMA** (Boeck.) Kükenth. in Engl. Pflanzenreich 38 (1909) 283, Philip. Journ. Sci. 6 (1911) Bot. 60; Merr. op. cit. 5 (1910) Bot. 335.

*Carex bengalensis* Roxb. var. *scaberrima* Boeck. in Linnaea 40 (1876) 347; Vidal Phan. Cuming. Philip. (1885) 156, Rev. Pl. Vasc. Filip. (1886) 285 (*bengalensis*).

*Carex scaberrima* C. B. Clarke in Journ. Linn. Soc. Bot. 37 (1904) 10, Philip. Journ. Sci. 2 (1907) Bot. 107, Kew Bull. Add. Series 8 (1908) 72.

*Carex cruciata* Merr. in Philip. Journ. Sci. 3 (1908) Bot. 399, non Wahl.

Batan Islands, Luzon (Cagayan to Sorsogon, in most provinces), Leyte, Mindanao, *Elmer* 11607, 17692, 15522, 1154, *Merrill* 7599, 4795, *B. S.* 3801, 12704 *Fénix*, 27035 *Ramos*. Common on ridges in and near the mossy forest, altitude 1,000 to 2,000 m. Sumatra to the Moluccas.

Local names: Chidak (Ig.); ikidsan (Klg.); taláyid (Bag.); tamalang (Bag.).

**Var. CONTINUA** (C. B. Clarke) Kükenth. in *Philip. Journ. Sci.* 6 (1911) Bot. 60.

*Carex continua* C. B. Clarke in *Hook. f. Fl. Brit. Ind.* 6 (1894) 717, *Journ. Linn. Soc. Bot.* 36 (1903) 281, 37 (1904) 11, *Philip. Journ. Sci.* 2 (1907) Bot. 107; *Merr. op. cit.* 1 (1906) Suppl. 31; Kükenth. in *Engl. Pflanzenreich* 38 (1909) 281.

Luzon (Ilocos Norte, Bontoc, Kalinga, Benguet, Nueva Vizcaya, Panganga, Bataan, Laguna, Tayabas), Mindoro, Negros, Mindanao (Zamboanga), *Merrill* 3197, 6971, 8189, 8208, *Phil. Pl.* 564, *Whitford* 189, 1145, *B. S.* 20999 *Santos*, 33143, 8221, 13495, 15141 *Ramos*, 14246 *McGregor*, *F. B.* 4384 *Merritt*. On ridges in and near the mossy forest, altitude 800 to 2,000 m. India to southern China and the Philippines.

**CAREX RAMOSII** Kükenth. in *Fedde Repert.* 8 (1910) 8, *Philip. Journ. Sci.* 6 (1911) Bot. 63.

Luzon (Kalinga, Pangasinan, Rizal), *B. S.* 1434, 20990, 40738, 40798 *Ramos*, 11859 *Robinson & Ramos*, 17866 *Otanes*, *Merrill Phil. Pl.* 536. In forests at medium altitudes. Endemic.

**CAREX RARA** Boott in *Proc. Linn. Soc.* 1 (1845) 284, *Trans. Linn. Soc.* 20 (1846) 139 subsp. **CAPILLACEA** (Boott), Kükenth. in *Engl. Pflanzenreich* 38 (1909) 102, *Philip. Journ. Sci.* 6 (1911) Bot. 58; *Merr. op. cit.* 5 (1910) Bot. 335.

*Carex capillacea* Boott *Illustr.* 1 (1858) 44, *t.* 110; C. B. Clarke in *Journ. Linn. Soc. Bot.* 37 (1904) 7, *Philip. Journ. Sci.* 2 (1907) Bot. 107.

Luzon (Benguet), *Merrill* 7715, 6626, 6632, 6612, 4732, *Phil. Pl.* 505, *B. S.* 31744 *Santos*, 8333 *McGregor*. In open wet borders of small streams, altitude 2,200 to 2,600 m. Japan and northeastern Asia to the Himalayan region and New South Wales.

**CAREX RHIZOMATOSA** Steud. in *Zoll. Verz. Ind. Archip.* (1854) 60, *Syn. Pl. Glum.* 2 (1855) 206; *Miq. Fl. Ind. Bat.* 3 (1857) 384; C. B. Clarke in *Journ. Linn. Soc. Bot.* 37 (1904) 12, *Philip. Journ. Sci.* 2 (1907) Bot. 108; Kükenth. in *Engl. Pflanzenreich* 38 (1909) 289, *f.* 44, *Philip. Journ. Sci.* 6 (1911) Bot. 61.

*Carex cumingiana* Steud. *Syn. Pl. Glum.* 2 (1855) 206; *Miq. Fl. Ind. Bat.* 3 (1857) 349; Boott *Illustr.* 3 (1862) 107, *t.* 324, 325; Boeck. in *Linnaea* 40 (1876) 367; F.-Vill. *Novis. App.* (1882) 310; Vidal *Phan. Cuming. Philip.* (1885) 156, *Rev. Pl. Vasc. Filip.* (1886) 286.

*Carex oligostachya* Nees in *Hook. Journ. Bot. Kew Miscel.* 6 (1854) 29.

Luzon (Bontoc, Rizal), Mindanao (Davao, Lanao), *B. S.* 2700 *Ramos*, *Clemens* 1096, *Williams* 2615, *Vanoverbergh* 323. On open slopes, altitude 800 to 1,400 m. India to Indo-China, Java, and the Moluccas.

**CAREX RHYNCHACHAENIUM** C. B. Clarke ex Merr. in Govt. Lab. Publ. (Philip.) 35 (1906) 5, Philip. Journ. Sci. 1 (1906) Suppl. 31, 2 (1907) Bot. 108, Kew Bull. Add. Series 8 (1908) 79; Kükenth. in Engl. Pflanzenreich 38 (1909) 480, Philip. Journ. Sci. 6 (1911) Bot. 62.

Luzon (Kalinga, Pampanga, Bataan, Laguna), Mindanao (Bukidnon, Zamboanga), *Elmer 6983, Merrill 8024, 8213, Phil. Pl. 512, B. S. 37575, 39007, 39081 Ramos & Edaña*. On forested ridges in and near the mossy forest, altitude 800 to 2,100 m. Endemic.

**CAREX SUBTRANSVERSA** C. B. Clarke in Philip. Journ. Sci. 2 (1907) Bot. 108, Kew Bull. Add. Series 8 (1908) 92; Kükenth. in Engl. Pflanzenreich 38 (1909) 614, Philip. Journ. Sci. 6 (1911) Bot. 63.

Luzon (Benguet), *Merrill 4730, 7714*. On dry open slopes of recent clearings, along trails, etc., altitude 1,900 to 2,300 m. Endemic.

**CAREX TRISTACHYA** Thunb. Fl. Jap. (1784) 38 var. **POCILLIFORMIS** (Boott) Kükenth. in Engl. Pflanzenreich 38 (1909) 471, Philip. Journ. Sci. 6 (1911) Bot. 62; Merr. op. cit. 5 (1910) 335.

*Carex pocilliformis* Boott Illustr. 4 (1867) 175, t. 593.

Luzon (Benguet), *Merrill 6606, 6630, 6629, B. S. 8856 McGregor*. In open meadows and on grassy slopes, altitude 2,200 to 2,500 m. Japan to Formosa, the species also in eastern and central China.

**CAREX TURRITA** C. B. Clarke in Journ. Linn. Soc. Bot. 37 (1904) 13, Philip. Journ. Sci. 2 (1907) Bot. 108, Kew Bull. Add. Series 8 (1908) 74; Kükenth. in Philip. Journ. Sci. 6 (1911) Bot. 63.

*Carex walkeri* Arn. var. *turrita* Kükenth. in Engl. Pflanzenreich 38 (1909) 546.

Luzon (Abra, Bontoc, Ifugao, Benguet), *Loher 700, B. S. 7288 Ramos, 40354 Ramos & Edaña*. Apparently in open places, altitude probably above 1,400 m. Endemic.

Local name: Tangtañgo (Bon.).

#### EXCLUDED SPECIES

**CAREX LONGEBRACTEATA** Steud.; F.-Vill. Novis. App. (1882) 310.

**CAREX HAENKEANA** Presl Rel. Haenk. 1 (1828) 205; Steud. Syn. Pl. Glum. 2 (1855) 241; Miq. Fl. Ind. Bat. 3 (1857) 354; F.-Vill. Novis. App. (1882) 310.

"Hab. in insulis Philippinis" Presl. This is the South American *Carex pseudocyperus* Linn. var. *haenkeana* Kükenth., the record as Philippine being based on an erroneously localized Malaspina Expedition specimen.

#### PALMAE

##### 1. PHOENIX Linnaeus

**PHOENIX HANCEANA** Naud. var. **PHILIPPINENSIS** Becc. in Philip. Journ. Sci. 3 (1908) Bot. 339, 14 (1919) 339.

Batan Islands (Sabtan), *B. S. 3744 Fénix*. Along mountain streams at low or medium altitudes. The species in southeastern China, Hainan, and Formosa.

Local name: Voyáyoí (Iv.).



## EXCLUDED SPECIES

PHOENIX DACTYLIFERA Linn.; Naves Novis. App. (1882) 282.

The date palm is very rarely found in gardens in the larger towns of the Philippines. It is not adapted to Philippine climatic conditions.

PHOENIX FARINIFERA Roxb.; Naves l. c.

PHOENIX SYLVESTRIS Roxb.; Naves l. c.

## 2. CORYPHA Linnaeus

CORYPHA ELATA Roxb. Fl. Ind. ed. 2, 2 (1832) 176; Merr. Fl. Manila (1912) 123, Sp. Blancoanae (1918) 84; Becc. in Philip. Journ. Sci. 14 (1919) 341, Leaf. Philip. Bot. 8 (1919) 3023; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 68, t. 24-28.

*Corypha umbraculifera* Blanco Fl. Filip. (1837) 228, ed. 2 (1845) 160, ed. 3, 1 (1877) 290; Naves Novis App. (1882) 281; Vidal Sinopsis Atlas (1883) 41, t. 93, f. A; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, non Linn.

*Corypha sylvestris* Mart. Hist. Nat. Palm. 3 (1849) 233, saltem quoad. cit. Philip.

*Sagus rumphii* Perr. in Mém. Soc. Linn. Paris 3 (1824) 143, non Willd.

*Livistona vidalii* Becc. in Webbia 1 (1905) 343.

Throughout the Philippines in most islands and provinces, in some regions widely scattered, in others subgregarious and abundant at low and medium altitudes. India to Malaya.

Local names: Bagátai (Is.); burí (Bis., Bik., Pamp., Tag.); busí (Pamp., Bis., Tag.); íbus (Tag.); piét (Tag., Pang.); sílad (Bik.); silag (Ilk., Pang.); sílal (Sub.); sírar (Bag.); takták (Is.).

CORYPHA MICROCLADA Becc. in Webbia 5 (1921) 7.

Biliran, B. S. 18720 *McGregor*. In open places at low altitudes. Endemic.

## 3. LICUALA Wurmbe

LICUALA SPINOSA Wurmbe in Verh. Bat. Genoots. 2 (1780) 469; Miq. Fl. Ind. Bat. 3 (1855) 53; Naves Novis. App. (1882) 281; Becc. in Perk. Frag. Fl. Philip. (1904) 45, Webbia 1 (1905) 338, Philip. Journ. Sci. 14 (1919) 339; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 88, t. 33.

Culion, Palawan, Balabac, *Merrill 543, Phil. Pl. 1463, B. S. 836 Foxworthy, 269 Bermejos, 448 Mangubat, F. B. 3611 Curran*. In thickets at low altitudes, sometimes immediately back of the mangrove in brackish mud; now cultivated in Manila for ornamental purposes. Malay Peninsula and Archipelago to the Moluccas.

Local names: Balatbát (P. Bis.); ugsáng (Sul.).

## EXCLUDED SPECIES

LICUALA ELEGANS Mart.; Naves Novis. App. (1882) 281.

LICUALA RUMPHII Blume; Naves l. c.

LICUALA SPECTABILIS Miq.; Naves l. c.

## 4. LIVISTONA R. Brown

**LIVISTONA MERRILLII** Becc. in Perk. Frag. Fl. Philip. (1904) 45, Webbia 1 (1905) 339, Philip. Journ. Sci. 14 (1919) 340.

*Livistona whitfordii* Becc. in Philip. Journ. Sci. 4 (1909) Bot. 615. Luzon (Cagayan, Zambales, Tayabas, Camarines), *Merrill 2071, Whitford 731, F. B. 17811, 10409, 17278, 10189, 5876 Curran, 18451 Alvarez, B. S. 33759 Ramos & Edaño*. In forests and in thickets at low altitudes. Endemic.

Local names: Anáhau (Ibn., Bik., Tag.); bal-láng (Ibn.); labik (Neg.); magálai (Bik.); tekis (Sbl.).

**LIVISTONA ROBINSONIANA** Becc. in Philip. Journ. Sci. 6 (1911) Bot. 230, 14 (1919) 341.

Luzon (Laguna), Polillo, *B. S. 9265 Robinson, 10471 McGregor, Loher 7056*. In forests at low altitudes. Endemic.

Local name: Pilíg (Tag.).

**LIVISTONA ROTUNDIFOLIA** (Lam.) Mart. var. **LUZONENSIS** Becc. in Leaf. Philip. Bot. 8 (1919) 3025, Philip. Journ. Sci. 14 (1919) 340; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 92, t. 36.

*Livistona rotundifolia* Becc. in Leaf. Philip. Bot. 2 (1919) 647; Merr. Fl. Manila (1912) 122; Naves Novis. App. (1882) 281, vix Mart.

*Corypha minor* Blanco Fl. Filip. (1837) 229, ed. 2 (1845) 161, ed. 3, 1 (1877) 290, non Jacq.

*Livistona blancoi* Merr. Sp. Blancoanae (1918) 84.

Luzon (Benguet, Union, Pangasinan, Zambales, Pampanga, Laguna, Tayabas, Camarines, Albay), Negros, Mindanao, *Merrill 3799, Sp. Blancoanae 919, Elmer 18054, 9293, F. B. 5834, 17344, 17689, 10631 Curran, 15322 Aguilar, 13576 Meyer & Foxworthy, 26228 Mabesa*. In forests at low and medium altitudes; sometimes planted for ornamental purposes.

Local names: Abiáng (Pamp., Pang.); aná-au (Ilk.); anáhau (Bik., P. Bis., Tag.); anáu (Pamp., Ibn.); bagsáng (S. L. Bis.); báhi (Bis.); bal-láng (Ibn.); balak (Mag.); bolong-úlong (Pamp.); bulús (Bik.); buláu (Bik.); bulnó (Bik.); iñgaing (Ig.); labíg (Ilk.); lúyong (Sbl.); palma brava (Sp.); pilíg (Tag.); tikis (Sbl.).

Var. **MICROCARPA** Becc. in Leaf. Philip. Bot. 8 (1919) 3024, Philip. Journ. Sci. 14 (1919) 341.

*Livistona microcarpa* Becc. in Philip. Journ. Sci. 2 (1907) Bot. 231.

Palawan, Mindanao (Davao), *F. B. 3734 Curran, Elmer 11967*. In forests at low altitudes. The species widely distributed in Malaya, the two varieties endemic.

Local name: Bal-la (Bag.).

Var. **MINDORENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 341.

*Livistona mindorensis* Becc. in Philip. Journ. Sci. 4 (1909) Bot. 615.

Mindoro, *F. B. 4108 Merritt*. Common in forests at low altitudes on Bungabong River. Endemic.

Local name: Panobau (Tag.).

**LIVISTONA SARIBAS** (Lour.) Merr. ex A. Chev. in Bull. Econ. Indochine 22 (1919) 501.

*Corypha saribas* Lour. Fl. Cochinch. (1790) 212, ed. Willd. (1793) 263, excl. syn. Rumph.

*Livistona cochinchinensis* Mart. Hist. Nat. Palm. 3 (1838) 319; Becc. Malesia 3 (1886) 69, Philip. Journ. Sci. 14 (1919) 340; Becc. & Hook. f. in Hook. f. Fl. Brit. Ind. 6 (1892) 434, Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 92, t. 35.

*Livistona spectabilis* Griff. in Calcutta Journ. Nat. Hist. 5 (1845) 336, Palms Brit. Ind. (1845) 130, t. 266 C.

*Livistona inaequisecta* Becc. in Philip. Journ. Sci. 4 (1909) Bot. 616.

Luzon (Cagayan, Laguna), *F. B. 17145, 17302, 17156, 10079 Curran, 14762 Darling*. In open, somewhat swampy regions at low altitudes, in Cagayan gregarious. Malay Peninsula, Indo-China.

Local names; Taráu (Ibn.); tikal (Tag.).

#### EXCLUDED SPECIES

**LIVISTONA PAPUANA** Becc.; Naves Novis. App. (1882) 282.

### 5. METROXYLON Rottboell

**METROXYLON SAGU** Rottb. in Nye Samml. Dansk. Vidensk. Selsk. Skrift. 2 (1783) 527; Naves Novis. App. (1882) 276; Merr. Interpret. Herb. Amb. (1917) 112; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 96, t. 37.

*Metroxylon rumphii* Mart. Hist. Nat. Palm. 3 (1838) 214, 313, t. 102, 159; Naves l. c.; Becc. in Leaf. Philip. Bot. 8 (1919) 3026, Phil. Journ. Sci. 14 (1919) 342, Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 105 ined.

Cebu, Bohol, Siquijor, Mindanao (Agusan, Surigao, Misamis, Zamboanga, Cotabato, Davao), Basilan, Sulu. Abundant in fresh-water swamps at low altitudes, in some places planted. Widely distributed in Malaya. The sago palm.

Local names: Ambolong (Mbo.); bagsáng (Bis.); langdáng (Bis.); lumbái (Bis.); lumbiá (C. Bis., Bag.); lumbiág (Sul.); sagú (Mbo., Bis.).

#### EXCLUDED SPECIES

**METROXYLON SYLVESTRE** Mart.; Naves Novis. App. (1882) 276.

**METROXYLON LONGISPINUM** Mart.; Naves l. c.

**METROXYLON FILARE** Mart.; Naves l. c.

### 6. COELOCOCCUS H. Wendland

**COELOCOCCUS AMICARUM** (Wendl.) W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 244, t. 45, 46.

*Sagus amicarum* Wendl. in Bot. Zeit. 36 (1878) 115.

*Coelococcus carolinensis* Dingl. in Bot. Centralbl. 32 (1887) 349.

Rarely planted, Panay, Mindanao (Zamboanga). Introduced from the Caroline Islands. Polynesian ivory palm.

## 7. ZALACCA Reinwardt

**ZALACCA CLEMENSIANA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 618, 14 (1919) 342, Leaf. Philip. Bot. 8 (1919) 3028, Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 49, ined.

Mindanao (Lanao, Zamboanga, Davao), *Clemens 1109, Elmer 11879, B. S. 37427, 37431, 37430 Ramos & Edaña*. In forests, altitude 600 to 900 m. Endemic.

Local names: Dalúbi (Sub.); kaúbi (Mag.); lakaúbi (Bag.); lubo (Sub.).

## EXCLUDED SPECIES

**ZALACCA EDULIS** Reinw.; Naves Novis. App. (1882) 274.

This has not as yet been found in the Philippines except as a recently introduced and cultivated palm.

## 8. KORTHALSIA Blume

**KORTHALSIA LACINIOSA** Mart. Hist. Nat. Palm. 3 (1838) 211, 343; Becc. in Philip. Journ. Sci. 14 (1919) 343, Leaf. Philip. Bot. 8 (1919) 343, Malesia 2 (1884) 74.

Luzon (Tayabas, Camarines, Sorsogon), *Elmer 15634, 16672, F. B. 24537 Aguilar, Klemme, (Vidal 4066)*; possibly also *B. S. 10464 McGregor* from Polillo. In primary forests at low and medium altitudes. Burma and Andaman and Nicobar Islands.

Local name: Dánan (Bik.).

**KORTHALSIA MERRILLII** Becc. in Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 81, ined., Philip. Journ. Sci. 14 (1919) 342.

Palawan, *Merrill 9410*. In primary forests at low altitudes. Endemic.

**KORTHALSIA SCAPHIGEROIDES** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 619, 14 (1919) 342, Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 67, ined.

Mindanao (Agusan, Surigao, Zamboanga), Basilan, *Merrill 7313, F. B. 6106, 4816 Hutchinson, 23913 Ponce*. In primary forests at low altitudes. Endemic.

Local name: Kapnigid (C. Bis.).

**KORTHALSIA SQUARROSA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 620, 14 (1919) 343, Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 103, ined.

Palawan, Balabac, *Merrill 5384, F. B. 4185 Curran*. In primary forests at low altitudes. Endemic.

## EXCLUDED SPECIES

**KORTHALSIA ANGUSTIFOLIA** Blume; Naves Novis. App. (1882) 273.

**KORTHALSIA ROBUSTA** Blume; Naves l. c.

## 9. PLECTOCOMIA Martius and Blume

**PLECTOCOMIA ELMERI** Becc. in Leaf. Philip. Bot. 8 (1919) 3029, Philip. Journ. Sci. 14 (1919) 342, Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 49, ined.

Mindanao (Davao), *Elmer 11887*. In forests, altitude about 900 m. Endemic.

Local name: Uñgáng (Bag.).

## 10. CALAMUS Linnaeus

**CALAMUS ARUGDA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 622, 14 (1919) 352.

Luzon (Cagayan), *F. B. 6649 Klemme, 26618 Velasco*. In primary forests at low altitudes. Endemic.

Local names: Arúgda (Ibn.); uái (Ilk.).

**CALAMUS BICOLOR** Becc. in Leaf. Philip. Bot. 8 (1919) 3055, Philip. Journ. Sci. 14 (1919) 356, Ann. Bot. Gard. Calcutta 11 Suppl. 126, t. 73 ined.

Mindanao (Davao), *Elmer 10541, 10618*. In primary forests, altitudes 1,200 to 1,800 m. Endemic.

Local names: Lási (Bag.); rási (Bag.); sambonótan (Bag.).

**CALAMUS BLANCOI** Kunth Enum. 3 (1841) 595; Mart. Hist. Nat. Palm. 3 (1849) 343; Walp. Ann. 3 (1853) 492, 5 (1858) 832; Miq. Fl. Ind. Bat. 3 (1855) 139; Becc. Rec. Bot. Surv. India 2 (1902) 204, Webbia 1 (1905) 346, Philip. Journ. Sci. 4 (1909) Bot. 635, 14 (1919) 349, Ann. Bot. Gard. Calcutta 11 (1908) 82, 216, t. 64, Leaf. Philip. Bot. 8 (1919) 3048; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, Sp. Blancoanae (1918) 86.

*Calamus gracilis* Blanco Fl. Filip. (1837) 267, ed. 2 (1845) 186, ed. 3, 1 (1877) 332, non Roxb.

*Calamus burensis* Naves Novis. App. (1882) 275, Vidal Cat. Pl. Prov. Manila (1880) 47, non Mart.

*Calamus brevifrons* Mart. Hist. Nat. Palm. 3 (1849) 338; Walp. Ann. 3 (1853) 488; Miq. Fl. Ind. Bat. 3 (1855) 127; Naves Novis. App. (1882) 275.

*Calamus parvifolius* Vidal Phan. Cuming. Philip. (1885) 154, non Roxb.

Luzon (Ilocos Norte!), *Cuming 1225, Zambales, Bataan, Bulacan*), Leyte, Mindanao (Zamboanga), *Elmer 7282, (Loher 1376), Merrill Sp. Blancoanae 791, F. B. 4819 Hutchinson, 387 Maule, 24697 Lazaro, B. S. 33047 Ramos*. In forests at low altitudes. Endemic.

Local names: Abit (Sbl.); alip (Sul.); talóla (Tag.); u-uái (Ibn.); yantók (Tag.).

**CALAMUS CUMINGIANUS** Becc. in Rec. Bot. Surv. Ind. 2 (1902) 210, Webbia 1 (1905) 346, Ann. Bot. Gard. Calcutta 11 (1908) 99, 348, t. 142, Leaf. Philip. Bot. 8 (1919) 3050, Philip. Journ. Sci. 14 (1919) 351.

Luzon (Tayabas), Mindanao (Agusan), *Cuming 762, Elmer 13646*. In primary forests at low and medium altitudes. Endemic.

Local name: Douung-douung (Mbo.).

**CALAMUS DIEPENHORSTII** Miq. Fl. Ind. Bat. Suppl. (1860-61) 594; Becc. in Ann. Bot. Gard. Calcutta 11 (1908) 96, 322, t. 126, var. **EXULANS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 627, 6 (1911) Bot. 230, 14 (1919) 350.

Polillo, Palawan, *Merrill 9357, B. S. 756 Foxworthy, 9111 Robinson (Loher 7054* from Rizal Province, Luzon, originally referred here by Beccari is *C. filispadix* Becc. fide Beccari). In primary forests at low altitudes. The variety endemic, the species in the Malay Peninsula, Sumatra, and (?) Borneo.

**CALAMUS DIMORPHACANTHUS** Becc. in Rec. Bot. Surv. India 2 (1902) 214, Webbia 1 (1905) 355, Ann. Bot. Gard. Calcutta 11 (1908) 117, 479, t. 219, Philip. Journ. Sci. 4 (1909) Bot. 631, 14 (1919) 355, Leaf. Philip. Bot. 8 (1919) 3055.

Luzon (Benguet, Union, Laguna), Panay, *Elmer 6238, 18103, 18337, (Loher 1370, 1371, Vidal 3956)*. In forests at medium altitudes, ascending to 1,700 m. Endemic.

Var. **MONTALBANICUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 631, 14 (1919) 355.

Luzon (Rizal, Bataan), (*Loher 7085*), *B. S. 29599 Ramos & Edaña*. In primary forests at medium altitudes. Endemic.

Var. **ZAMBALENSIS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 632, 14 (1919) 355.

Luzon (Zambales), *F. B. 8412 Curran & Merritt*. In mossy forests on exposed ridges, altitude about 2,000 m. Endemic.

**CALAMUS DISCOLOR** Mart. Hist. Nat. Palm. 3 (1849) 341; Kunth Enum. 3 (1841) 212; Miq. Fl. Ind. Bat. 3 (1855) 136; Naves Novis. App. (1882) 275; Becc. in Webbia 1 (1905) 355, Ann. Bot. Gard. Calcutta 11 (1908) 120, 495, t. 228, Philip. Journ. Sci. 4 (1909) Bot. 635, 14 (1919) 350, Leaf. Philip. Bot. 2 (1909) 649, 8 (1919) 3048.

*Calamus lindenii* Rod. Ill. Hort. 30 (1883) 157, t. 489; Ridley in Journ. Str. Branch Roy. As. Soc. 44 (1905) 200.

*Cycas ? hypoleuca* Presl Epim. (1851) 238; Walp. Ann. 3 (1852-53) 453; F.-Vill. Novis. App. (1880) 212; Foxw. in Philip. Journ. Sci. 6 (1911) Bot. 152, ex descr.

Luzon (Laguna, Tayabas, Sorsogon), *Elmer 9299, 16871, B. S. 12035 Ramos, F. B. 25744 Mabesa*. In primary forests at low or medium altitudes. Endemic.

Young plants are commonly cultivated in Manila for ornamental purposes.

Local names: Hamlís (Tag.); kumabói (Tag.); likbón (C. Bis.); simurán (P. Bis.); ubánon (C. Bis.); ulisí (C. Bis.); yaming (P. Bis.).

Var. **NEGROSENSIS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 635.

Negros, Siargao, Mindanao (Surigao), *F. B. 12432 Danao, 20893 Tamesis, 24024 Razon*. In primary forests at low and medium altitudes. Endemic.

**CALAMUS ELMERIANUS** Becc. in Leaf. Philip. Bot. 2 (1909) 647, 8 (1919) 3051, Philip. Journ. Sci. 14 (1919) 353, Ann. Bot. Gard. Calcutta 11 Suppl. 69, t. 37 ined.

Luzon (Tayabas), Dinagat, Mindanao (Agusan, Davao), *Elmer 14166, 11756, 9298, Merrill 7289, F. B. 24021 Razon, B. S. 34909 Ramos & Pascasio*. In primary forests; sometimes at low altitudes, more often in the mossy forest at 1,300 to 1,800 m.

Local names: Sababai (Mbo.); samánid (Bag.).

**CALAMUS FILISPADIX** Becc. in Philip. Journ. Sci. 6 (1911) Bot. 230, 14 (1919) 350, Leaf. Philip. Bot. 8 (1919) 3048.

*Calamus hookerianus* Becc. op. cit. 4 (1909) Bot. 621, non Becc. in Ann. Bot. Gard. Calcutta (1908).

Luzon (Rizal, Tayabas, Camarines, Sorsogon), Polillo, Masbate, Samar, Palawan, Mindanao (Agusan), *Elmer 13949, 16846, 12769, Merrill 7251, F. B. 26219 Mariano, 24824 Valencia, 10630 Curran, B. S. 13128 Foxworthy & Ramos, 10467 McGregor, 33761 Ramos & Edaña, 24427 Ramos*. In forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names: Kangnobnób (Mbo.); nókut (S. L. Bis.); pañganpañgánan (Tag.).

**CALAMUS FOXWORTHYI** Becc. in Philip. Journ. Sci. 14 (1919) 352, *nomen nudum*, Ann. Bot. Gard. Calcutta 11 Suppl. 81, t. 45 ined.

Palawan, *B. S. 690 Foxworthy*. On forested rocky slopes along streams, altitude about 1,000 m. Endemic.

**CALAMUS GRANDIFOLIUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 629, 14 (1919) 352.

Luzon (Laguna, Tayabas), *B. S. 9448 Robinson, (Loher 7088)*.

Local name: Uái (Tag., Neg.).

**CALAMUS HALCONENSIS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 633, 14 (1919) 356, Ann. Bot. Gard. Calcutta 11 Suppl. 116, t. 65 ined.

Luzon (Laguna), Mindoro, *F. B. 4399 Merritt, 25742 Mabesa, B. S. 39471 Ramos*. In primary forests, altitude 450 to 1,500 m. Endemic.

Local name: Lambútan (Tag.).

**CALAMUS JENNINGSIANUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 623, 14 (1919) 353.

Mindoro, *F. B. 4400 Merritt*. In forests, altitudes about 1,500 m. Endemic.

**CALAMUS MANILLENSIS** (Mart.) Wendl. in Kerch. Palm. (1878) 237; Becc. in Rec. Bot. Surv. India 2 (1902) 215, Webbia 1 (1905) 349, Ann. Bot. Gard. Calcutta 11 (1908) 108, 413, t. 226, f. 1, Leaf. Philip. Bot. 8 (1919) 3052, Philip. Journ. Sci. 14 (1919) 352.

*Daemonorops ? manillensis* Mart. Hist. Nat. Palm. 3 (1849) 330, t. 175, f. 1-3; Walp. Ann. 3 (1853) 480, 5 (1858) 829; Naves Novis. App. (1882) 275.

Luzon (Nueva Vizcaya, Tayabas), Dinagat, Mindanao (Agusan, Davao, Surigao), *Elmer 11714, 10560a, 14011, 14133, 14173, 16811, 17077, B. S. 18994 McGregor, 35255, 34693 Ramos & Pascasio, 26605 Ramos & Edaña*. In forests, altitude 600 to 1,000 m. Endemic.

Local names: Bayábong (Mbo.); bunlak (Mbo.); lintókan (Bag.). saráni (Bag.); tumárom (Mbo.).

**CALAMUS MAXIMUS** Blanco Fl. Filip. (1837) 266, ed. 2 (1845) 185, ed. 3 1 (1877) 331; Mart. Hist. Nat. Palm. 3 (1849) 343; Miq. Fl. Ind. Bat. 3 (1855) 139; Becc. in Perk. Frag. Fl. Philip. (1904) 45; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, Sp. Blancoanae (1918) 85.

*Calamus merrillii* Becc. in Webbia 1 (1905) 347, Ann. Bot. Gard. Calcutta 11 (1908) 105, 390, t. 167, Philip. Journ. Sci. 4 (1909) Bot. 629, 14 (1919) 351, Leaf. Philip. Bot. 8 (1919) 3057.

Luzon (Rizal, Laguna, Tayabas), Masbate, Mindanao (Agusan, Lanao, Davao), Basilan, *Merrill 1893, Sp. Blancoanae 879, Clemens 1112, 1124, Elmer 11885, 13926, F. B. 20654 Villamil, 25373, 23988 Mabesa, 25353 Bawan, 23977 Maneja, 26225 Mariano, 24822 Valencia, 24326 Acedillo*. In primary forests at medium altitudes, ascending to 1,200 m. Endemic.

Local names: Akab-ákab (Bag.); ápas (Tag.); buai-magi (Yak.); kalapi (Bik.); labni (Pamp.); lokuán (Tag.); palásan (Tag., Bik., Mbo.); parásan (S. L. Bis.); súpot (Tag.); tumalím-bábui (Tag.).

Var. **NANGA** (Becc.) comb. nov.

*Calamus merrillii* Becc. var. *nanga* Becc. in Philip. Journ. Sci. 14 (1919) 351, Leaf. Philip. Bot. 8 (1919) 3057, Ann. Bot. Gard. Calcutta 11 Suppl. 78, t. 42 ined.

Mindanao (Davao), *Elmer 11110, 11874*. In primary forests, altitude 600 to 1,000 m. Endemic.

Local name: Nañga (Bag.).

Var. **MERRITTIANUS** (Becc.) comb. nov.

*Calamus merrittianus* Becc. in Philip. Journ. Sci. 2 (1907) Bot. 233, 4 (1909) Bot. 629.

*Calamus merrillii* Becc. var. *merrittianus* Becc. in Philip. Journ. Sci. 14 (1919) 351, Ann. Bot. Gard. Calcutta 11 Suppl. 78, t. 42 ined.

Luzon (Tayabas), Mindoro, *F. B. 3912 Merritt, 26218 Mariano*. In primary forests at low altitudes. Endemic.

**CALAMUS MEGAPHYLLUS** Becc. in Philip. Journ. Sci. 14 (1919) 353, Leaf. Philip. Bot. 8 (1919) 3060, Ann. Bot. Gard. Calcutta 11 Suppl. 66, t. 55 ined.

Mindanao (Agusan, Davao), *Elmer 11878, 13542*. In forests up to 900 m altitude. Endemic.

Local names: Banakbo (Mbo.); lintókan (Bag.).

**CALAMUS MELANORHYNCHUS** Becc. in Philip. Journ. Sci. 14 (1919) 350, Leaf. Philip. Bot. 8 (1919) 3058, Ann. Bot. Gard. Calcutta 11 Suppl. 30, t. 16 ined.

Mindanao (Davao), *Elmer 11708*. In primary forests, altitude about 1,200 m. Endemic.

Local name: Dalimban (Bag.).

**CALAMUS MEYENIANUS** Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 425; Becc. in Rec. Bot. Surv. India 2 (1902) 217, Webbia 1 (1905) 346, Ann. Bot. Gard. Calcutta 11 (1908) 82, 215, t. 63, Philip. Journ. Sci. 14 (1919) 349.

Luzon (Pangasinan, Nueva Vizcaya), *B. S. 17755 Otones, 11442 McGregor*. In forests at low and medium altitudes. Endemic.

Local name: Bárít (Ilk.).

**CALAMUS MICROCARPUS** Becc. in Rec. Bot. Surv. India 2 (1902) 213, Webbia 1 (1905) 355, Ann. Bot. Gard. Calcutta 11 (1908) 117, 477, t. 213, Philip. Journ. Sci. 4 (1909) Bot. 627, 6 (1911) Bot. 230, 14 (1919) 356, Leaf. Philip. Bot. 8 (1919) 3055.



Luzon (Rizal, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Mindanao (Davao, Agusan, Lanao), *Elmer 10676, 13551, 15573, 16810, 16991, B. S. 9131 Robinson, 10465 McGregor, 12326 Foxworthy, F. B. 13305 Tamesis, 20667, 20668 Villamil, 27031 Villaflor, 24522 Cortez & Valderrama.* In primary forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names Agúsi (Mbo.); kalapít (Bik.); lambútan (Tag.); pagípi (Mbo.); paríti (Bag.); sipai (Tag.); tandúlang-gúbat (Tag.).

Var. **DIMINUTUS** Becc. in Philip. Journ. Sci. 14 (1919) 356.

Luzon (Laguna), *B. S. 16599 Ramos.* In primary forests at low altitudes. Endemic.

**CALAMUS MICROSPHAERION** Becc. in Perk. Frag. Fl. Philip. (1904) 45, *Webbia 1* (1905) 349, *Ann. Bot. Gard. Calcutta 11* (1908) 114, 453, *t. 204*, Philip. Journ. Sci. 4 (1909) Bot. 627, 14 (1919) 353.

Luzon (Bataan), Culion, *Merrill 507, Whitford, F. B. 20917 De Leon.* In forests at low altitudes. Endemic.

Local names: Kulaklíng (Tag.); lábit (Tag.).

Var. **SPINOSIOR** Becc. in Philip. Journ. Sci. 14 (1919) 354.

Palawan, *Merrill 9358, 9247.* In forests at low altitudes. Endemic.

**CALAMUS MINDORENSIS** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 235, 4 (1909) Bot. 625, 14 (1919) 352, *Ann. Bot. Gard. Calcutta 11 Suppl. 88, t. 49* ined.

Luzon (Laguna), Mindoro, *McGregor 309, F. B. 6217 Merritt, F. B. 25745 Mabesa.* In forests at low altitudes. Endemic.

Local name: Tumalín (Tag.).

**CALAMUS MITIS** Becc. in Philip. Journ. Sci. 3 (1908) Bot. 341, 14 (1919) 353, *Ann. Bot. Gard. Calcutta 11 Suppl. 68, t. 36* ined.

Batan and Babuyan Islands, Luzon (Ilocos Norte), *B. S. 3817, 4075 Félix, F. B. 24810 Paraiso.* In forests at low and medium altitudes. Endemic.

Local names: Matkóng (Ilk., Ting.); tebdas- (Iv.).

**CALAMUS MOSELEYANUS** Becc. in Bot. Surv. India 2 (1902) 211, *Webbia 1* (1905) 348, *Ann. Bot. Gard. Calcutta 11* (1908) 105, 396, *t. 171*, Leaf. Philip. Bot. 8 (1919) 3053, Philip. Journ. Sci. 14 (1919) 352.

Mindanao (Zamboanga, Davao), Malanipa, *Hallier, Elmer 11886.* In forests at low altitudes, ascending to 1,000 m. Endemic.

Local name: Saráni (Bag.).

**CALAMUS MULTINERVIS** Becc. in Philip. Journ. Sci. 14 (1919) 352, Leaf. Philip. Bot. 8 (1919) 3060, *Ann. Bot. Gard. Calcutta 11 Suppl. 88, t. 49* ined.

Mindanao (Davao), *Elmer 11791, 11955.* In primary forests, altitude about 1,200 m. Endemic.

Local names: Balála (Bag.); úbli (Bag.).

**CALAMUS ORNATUS** Blume ex Schultes f. Syst. 7<sup>2</sup> (1830) 1326, var. **PHILIPPINENSIS** Becc. in Webbia 1 (1905) 346, Ann. Bot. Gard. Calcutta 11 (1908) 102, 370, Philip. Journ. Sci. 6 (1911) Bot. 230 (excl. syn. Blanco), 14 (1919) 350, Leaf. Philip. Bot. 8 (1919) 3054.

Luzon (Cagayan, Bataan, Laguna, Tayabas, Rizal, Sorsogon), Polillo, Mindoro, Negros, Mindanao (Davao), Surigao, Basilan, *Elmer* 7625, 9086, 11236, 15607, 16886, 18425, 17999, *Whitford* 343, 502, *Williams* 337, *F. B.* 212 *Barnes*, 2854 *Meyer*, 2439 *Borden*, 7154, 17252 *Curran*, 23973, 25041 *Maneja*, 3911, 3913 *Merritt*, 6089 *Everett*, 6107 *Hutchinson*, *B. S.* 9266 *Robinson*, 10461 *McGregor*, 16619, 23364 *Ramos*, 947 *Mangubat*.

In primary forests at low and medium altitudes. Endemic, the species in Malay Peninsula, Sumatra, Borneo, and Java.

Local names: Agúbak (Tag.); alimúran (Ibn.); kalapí (S. L. Bis., P. Bis., Bik.); kayapí (C. Bis.); likúto (Tag.); limúran (Tag., Pamp., Sbl.); lukuán (Tag.); mayañgyang (C. Bis.); palaklakánin (Tag.); tubo (Bag.); uái (Tag.).

**CALAMUS RAMULOSUS** Becc. in Perk. Frag. Fl. Philip. (1904) 46, Webbia 1 (1905) 349, Ann. Bot. Gard. Calcutta 11 (1908) 114, 454, t. 205, Philip. Journ. Sci. 14 (1919) 354.

Luzon (Tayabas), *Merrill* 2070. In forests at low altitudes. Endemic. Local name: Paulís (Tag.).

**CALAMUS REYESIANUS** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 237, 14 (1919) 353, Ann. Bot. Gard. Calcutta 11 Suppl. 86, t. 36 ined.

Luzon (Laguna, Tayabas), *Reyes*, *B. S.* 13312 *Ramos*, *F. B.* 25746 *Mabesa*. In forests at low and medium altitudes. Endemic.

Local names: Ápas (Tag.); lukuán (Tag.); samúlid (Tag.).

**CALAMUS SAMIAN** Becc. in Philip. Journ. Sci. 14 (1919) 353, Leaf. Philip. Bot. 8 (1919) 3059, Ann. Bot. Gard. Calcutta 11 Suppl. 92, t. 52 ined.

Luzon (Sorsogon), Mindanao (Davao), *Elmer* 11336, 17255. In primary forests, altitude about 1,300 m. Endemic.

Local name: Samian (Bag.).

**CALAMUS SIPHONOSPETHUS** Mart. Hist. Nat. Palm. 3 (1849) 342; Walp. Ann. 3 (1853) 491, 5 (1858) 832; Miq. Fl. Ind. Bat. 3 (1855) 137; Naves Novis. App. (1882) 275; Usteri Beitr. Ken. Philip. Veg. (1905) 130 (*tiphonolpathus*); Ceron Cat. Pl. Herb. Manila (1892) 175; Becc. in Rec. Bot. Surv. India 2 (1902) 213, Webbia 1 (1905) 350, Ann. Bot. Gard. Calcutta 11 (1908) 116, 471, Philip. Journ. Sci. 14 (1919) 354.

*Calamus inflatus* Warb. in Perk. Frag. Fl. Philip. (1904) 45.

Luzon (Cagayan, Isabela, Pampanga, Rizal, Laguna, Tayabas), Mindoro, Mindanao, *Merrill* 1891, 1643, *Elmer* 11652, *F. B.* 18558 *Alvarez*, 20633 *Villamil*, 23975 *Maneja*, 24321 *Acedillo*, 26223 *Mariano*, 11625 *Fischer*, 23825 *Mabesa*. In primary forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names: Bejúco (Sp., Tag.); bíri (Tag.); dagdág (Ilk.); hamlís (Tag.); husi (Neg.); lambútan (Tag.); malaúban (Tag.); oban-óban (Bag.); palimanók (Pamp.); papákin (Tag.); sipai (Tag.); súkol (Tag.); susúko (Tag.); talóla (Tag.); valit (Iv.).

Var. **BATANENSIS** Becc. in Philip. Journ. Sci. 3 (1908) Bot. 342, 14 (1919) 355, Ann. Bot. Gard. Calcutta 11 Suppl. 115 ined.

Batan Islands (Batan), *B. S. 3611 Fénix*. In forests along streams. Endemic.

Var. **FARINOSUS** Becc. in Ann. Bot. Gard. Calcutta 11 (1908) 474, Philip. Journ. Sci. 14 (1919) 355.

Luzon (Rizal), (*Loher 7083*), *F. B. 23972 Maneja*. In forests at medium altitudes. Endemic.

Var. **OLIGOLEPIS** Becc. (*minor et major*) in Webbia 1 (1905) 353, Ann. Bot. Gard. Calcutta 11 (1908) 475, 476, Philip. Journ. Sci. 14 (1919) 355.

Luzon (Rizal, Tayabas), (*Loher, Warburg*). In forests at low or medium altitudes. Endemic.

Var. **POLYLEPIS** Becc. in Webbia 1 (1905) 354, Ann. Bot. Gard. Calcutta 11 (1908) 477, *t. 216*.

Luzon (Rizal), (*Vidal 4068*). In forests at low or medium altitudes. Endemic.

Var. **SUBLEVIS** Becc. l. cc. Philip. Journ. Sci. 14 (1919) 355.

Luzon (Ilocos Norte, Zambales, Rizal, Bataan, Laguna, Tayabas), *Whitford 308*, *F. B. 1577 Borden*, *2635 Meyer*, *6225*, *6514 Curran*, *25739 Mabesa*, *13985 Merritt & Darling*, *25100 Paraiso*, *B. S. 26643*, *29601 Ramos & Edaño*, *4713*, *33182 Ramos*, *10787 McGregor*. In forests at low and medium altitudes. Endemic.

**CALAMUS SPINIFOLIUS** Becc. in Rec. Bot. Surv. India 2 (1902) 202, Webbia 1 (1905) 348, Ann. Bot. Gard. Calcutta 11 (1908) 107, 410, *t. 178*, Philip. Journ. Sci. 14 (1919) 353.

Luzon (Pampanga, Bataan), Palawan, Panay, *F. B. 17309 Curran*, *20947 De Leon*, *1454 Ahern's collector*. In forests at low altitudes. Endemic.

Local names: Kuraklíng (Pamp., Tag.); síka (Tagb.); yantók (Tag.).

**CALAMUS SYMPHYSIPUS** Mart. in Hist. Nat. Palm. 3 (1849) 336; Becc. in Ann. Bot. Gard. Calcutta 11 (1908) 346, *t. 141*, Leaf. Philip. Bot. 8 (1919) 3049, Philip. Journ. Sci. 14 (1919) 351.

Luzon (Sorsogon), Bucas Grande, Mindanao (Agusan), *Elmer 16701*, *13902*, *B. S. 35035 Ramos & Edaño*. In primary forests up to 900 m altitude. Celebes.

Local name: Bolánog (Mbo.).

**CALAMUS TRISPERMUS** Becc. in Perk. Frag. Fl. Philip. (1904) 46, Webbia 1 (1905) 349, Ann. Bot. Gard. Calcutta 11 (1908) 108, 412, *t. 180*, Philip. Journ. Sci. 4 (1909) Bot. 625, 14 (1919) 352.

Luzon (Rizal), *Merrill 1645*, (*Loher 7071*). In forests at medium altitudes. Endemic.

**CALAMUS USITATUS** Blanco Fl. Filip. (1837) 265, ed. 2 (1845) 185, ed. 3, 1 (1877) 330, t. 99 (as *C. mollis*); Mart. Hist. Nat. Palm. 3 (1849) 340; Miq. Fl. Ind. Bat. 3 (1855) 131; Vidal Sinopsis Atlas (1883) 42, t. 93, f. D; Merr. Sp. Blancoanae (1918) 85; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) t. 11, 12.

*Calamus mollis* Naves in Blanco Fl. Filip. ed. 3 (1877-83) t. 99; Vidal Rev. Pl. Vasc. Filip. (1886) 280; Becc. in Rec. Bot. Surv. India 2 (1902) 204, Perk. Frag. Fl. Philip. (1904) 46, Ann. Bot. Gard. Calcutta 11 (1908) 82, 212, t. 61, 62, Webbia 1 (1905) 345, Philip. Journ. Sci. 3 (1908) Bot. 342, 14 (1919) 348, Leaf. Philip. Bot. 8 (1919) 3046; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, Philip. Journ. Sci. 3 (1908) Bot. 399, Fl. Manila (1912) 124, non Blanco.

*Calamus haenkeanus* Mart. Hist. Nat. Palm. 3 (1849) 337; Kunth Enum. 3 (1841) 211; Walp. Ann. 2 (1852) 488, 5 1858) 831; Miq. Fl. Ind. Bat. 3 (1855) 127; Naves Novis. App. (1882) 275.

Batan and Babuyan Islands, Luzon (Ilocos Norte, Bontoc, Apayao, Nueva Ecija, Nueva Vizcaya, Bulacan, Rizal, Bataan, Zambales, Laguna, Tayabas, Camarines, Sorsogon), Palawan, Biliran, Samar, Mindanao (Surigao), *Elmer 11969, 17052, 17727, 18201, Merrill 7407, 1642, 1743, 1411, 2077, Williams 561, B. S. 28131 Fénix, 11218, 18634 McGregor, 9571 Robinson, 4032 Fénix, 381 Ramos, F. B. 23981 Maneja, 24536 Aguilar, 17034, 5957, 6297, 5982, 6338, 17273, 8489 Curran, 2480, 2481, 3026 Borden, 24195 Bawan, 25102 Paraiso*. In secondary forests and thickets at low and medium altitudes. Endemic.

Local names: Abét (Tag.); abít (Tag.); arít (Bag.); babúyan (Sbl.); bálit (Ilk.); bári (Ibn.); bárit (Ibn., Ilk.); digtan (Tag.); hanápas (Bik.); kakalsán (Tag.); pagípe (C. Bis.); ritoko (Ting.); tindaróra (Bik.); tandúlang-párang (Tag.); tagalóa (S. L. Bis.); tagókan (P. Bis.); tolóláng-lutúkan (Tag.); uéi (Pang.); uái (Tag., Ilk.); uhói (Tagb.); válet (Iv.); yantók (Tag., Sbl.).

Var. **MAJOR** (Becc.) comb. nov.

*Calamus mollis* var. *major* Becc. in Webbia 1 (1905) 345, Philip. Journ. Sci. 14 (1919) 349.

Luzon (Bataan), *F. B. 2499 Meyer, Whitford 80*. In forests at low altitudes.

Local name: Uái (Tag.).

Var. **PALAWANICUS** (Becc.) comb. nov.

*Calamus mollis* var. *palawanicus* Becc. in Philip. Journ. Sci. 2 (1907) Bot. 233, 14 (1919) 345, Leaf. Philip. Bot. 8 (1919) 3047.

Palawan, *Elmer 12607, F. B. 3613 Curran, B. S. 609 Foxworthy, 191, 196 Bermejós*. In forests at low altitudes. Endemic.

**CALAMUS VIDALIANUS** Becc. in Rec. Bot. Surv. India 2 (1902) 212, Webbia 1 (1905) 350, Ann. Bot. Gard. Calcutta 11 (1908) 115, 464, t. 211, Philip. Journ. Sci. 4 (1909) Bot. 634.

*Calamus horrens* Vidal Rev. Pl. Vasc. Filip. (1886) 280; Ceron Cat. Pl. Herb. Manila (1902) 175, non Blume.

Luzon (Nueva Ecija, Rizal, Bataan, Tayabas, Camarines), *F. B. 20948 De Leon, 22162 Alvarez, B. S. 13214, 22286 Ramos, 33762 Ramos & Edaño*. In primary forests at low and medium altitudes.

Local names: Butárák (Ilk.); yantók (Tag.).

**CALAMUS VINOSUS** Becc. in Philip. Journ. Sci. 14 (1919) 352, *nomen nudum*, Leaf. Philip. Bot. 8 (1919) 3061.

Mindanao (Agusan), *Elmer 14158*. On forested ridges, altitude about 1,450 m. Endemic.

**CALAMUS VIRIDISSIMUS** Becc. in Philip. Journ. Sci. 14 (1919) 353, Leaf. Philip. Bot. 8 (1919) 3059, Ann. Bot. Gard. Calcutta 11 Suppl. 84, t. 47 ined.

Mindanao (Davao), *Elmer 11938*. In forests, altitude about 300 m. Endemic.

Local name: Akal (Bag.).

#### DOUBTFUL AND EXCLUDED SPECIES

**CALAMUS ALBUS** Pers.; Naves Novis. App. (1882) 276; Vidal Cat. Pl. Prov. Manila (1880) 47.

**CALAMUS CONCINNUS** Mart.; Naves op. cit. 275.

**CALAMUS CURAG** Blanco ex Miq. Fl. Ind. Bat. 3 (1855) 113; Becc. in Ann. Bot. Gard. Calcutta 11 (1908) 498.

Blanco published no such species, but casually mentions a form known locally as *kurag*, or *purag*.

**CALAMUS EQUESTRIS** Willd.; Naves Novis. App. (1882) 276.

**CALAMUS JAVENSIS** Blume; Naves op. cit. 275.

**CALAMUS NITIDUS** Mart.; Linden Ill. Hort. 28 (1881) 16.

"Philippines." This is an Indian species, Linden's specimen being either erroneously named or erroneously localized.

**CALAMUS PISICARPUS** Blume; Naves op. cit. 275.

**CALAMUS PHILIPPENSIS** Linden Ill. Hort. 28 (1881) 16, *nomen nudum*, "Philippines."

**CALAMUS RHOMBOIDEUS** Blume; Naves op. cit. 276.

**CALAMUS SCIPIONUM** Lour.; Naves l. c.

**CALAMUS VERUS** Blanco Becc. in Ann. Bot. Gard. Calcutta 11 (1908) 503.

This is merely a *lapsus calami*, Blanco being erroneously cited instead of Loureiro. The page reference given conforms to Loureiro, Flora Cochinchinensis, not to Blanco, Flora de Filipinas.

#### 11. DAEMONOROPS Blume

**DAEMONOROPS AFFINIS** Becc. in Leaf. Philip. Bot. 8 (1919) 3042, Philip. Journ. Sci. 14 (1919) 359.

Mindanao (Agusan), *Elmer 13978*. In the mossy forests on exposed peaks and ridges, altitude about 1,200 m. Endemic.

Local name: Bag-bág (Mbo.).

**DAEMONOROPS CLEMENSIANUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 636, 14 (1919) 359, Ann. Bot. Gard. Calcutta 12<sup>1</sup> (1911) 163, t. 67.

Mindanao (Lanao), *Clemens 1227*. This is possibly a mixture of the fruits of *D. ochrolepis* Becc. and the leaves of some other species of doubtful status. Endemic.

**DAEMONOROPS CURRANII** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 238, 4 (1909) Bot. 636, 14 (1919) 359, Ann. Bot. Gard. Calcutta 12 (1911) 142, t. 58, Leaf. Philip. Bot. 8 (1919) 3033.

Palawan, *Elmer 12663, F. B. 3791 Curran*. In forests at low altitudes. Endemic.

As later noted by Beccari the portion of leaf-sheath and the fragment of the spadix on the left of the original plate do not belong here but appertain to *D. pedicellaris* Becc.

Local names: Pit-pit (Tagb.); saranoi (Tagb.).

**DAEMONOROPS GRACILIS** Becc. in Leaf. Philip. Bot. 8 (1919) 3014, Philip. Journ. Sci. 14 (1919) 359.

Palawan, (*Elmer 12945*). In forests. Endemic.

**DAEMONOROPS LOHERIANUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 637, 14 (1919) 358, Ann. Bot. Gard. Calcutta 12<sup>1</sup> (1911) 104, t. 41.

Luzon (Rizal), (*Loher 7073*). In forests at low or medium altitudes. Endemic.

**DAEMONOROPS MARGARITAE** (Hance) Becc. var. **PALAWANICUS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 636, 14 (1919) 358, Leaf. Philip. Bot. 8 (1919) 3030, Ann. Bot. Gard. Calcutta 12<sup>1</sup> (1911) 57.

Palawan, *Merrill 9359, Elmer 12943, B. S. 899 Foxworthy*. In forests at low altitudes. The variety endemic, the species in southeastern China.

**DAEMONOROPS MOLLIS** (Blanco) Merr. Sp. Blancoanae (1918) 86.

*Calamus mollis* Blanco Fl. Filip. (1837) 264, ed. 2 (1845) 184, ed. 3, 1 (1877) 329; Mart. Hist. Nat. Palm. 3 (1849) 336; Kunth Enum. 3 (1841) 594; Walp. Ann. 3 (1853) 486, 5 (1858) 831; Miq. Fl. Ind. Bat. 3 (1855) 123.

*Daemonorops gaudichaudii* Mart. Hist. Nat. Palm. 3 (1849) 331; Walp. Ann. 3 (1853) 481; Naves Novis. App. (1882) 275; Becc. in Perk. Frag. Fl. Philip. (1904) 47, Rec. Bot. Surv. India 2 (1902) 226, Webbia 1 (1905) 355, Philip. Journ. Sci. 3 (1908) Bot. 342, 14 (1919) 359, Leaf. Philip. Bot. 8 (1919) 3031, Ann. Bot. Gard. Calcutta 12<sup>1</sup> (1911) 157, t. 64.

*Daemonorops fuscus* Mart. Hist. Nat. Palm. 3 (1849) 331; Walp. Ann. 3 (1853) 481, Becc. Rec. Bot. Surv. India 2 (1902) 226; Naves Novis. App. (1882) 274.

*Calamus usitatus* Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, non Blanco.

Babuyan Islands to Mindanao, in most islands and provinces, *Whitford 289, 1371, Elmer 11880, 12494, Merrill Sp. Blancoanae 685, B. S. 1212, 24394 Ramos, 948 Mangubat, 11358, 14192 McGregor, 4066 Fénix, 29368, 33720 Ramos & Edaña, 24876, 24777 Edaña, 22577 Ramos & Deroy, 28401*

*Fénix*, F. B. 21713 *Abellanosa*, 3741, 6218 *Merritt*, 22163 *Alvarez*, 2601 *Meyer*, 17310, 17218, 17252, 10190 *Curran*, 25040, 23974 *Maneja*, 24108 *Bernardo*, 25519 *Cenabre*, 24825 *Valencia*, 20892 *Tamesis*. In primary forests at low and medium altitudes, often common. Endemic.

Local names: Alimúran (Ibn.); alundayág (Ibn.); babúyan (Tag.); bag-bág (Tag.); baritau (Ibn.); batárag (Ilk.); batásan (P. Bis.); digitán (Tag.); diítan (Tag.); ditán (Ibn., Tag.); gatásan (Tag., S. L. Bis., Bik., P. Bis.); hamlís (Tag.); lakaóan (Bik.); labnig (Bik.); lisan (Sub.); mamuktóng (Tag.); nákat (Bag.); núkot (S. L. Bis.); samúlig (Bik.); sumúlíd (Tag.); tabáñga (Tag.); tákol (Bik.); tamarúra (Tagb.); tapnikid (C. Bis.); uái (Tag., Ilk.); uban-úban (P. Bis.); yantók (Tag.).

**DAEMONOROPS OCHROLEPIS** Becc. in *Perk. Frag. Fl. Philip.* (1904) 47, *Webbia* 1 (1905) 356, *Philip. Journ. Sci.* 6 (1911) Bot. 230, 14 (1919) 358, *Leaf. Philip. Bot.* 8 (1919) 3032, *Ann. Bot. Gard. Calcutta* 12<sup>1</sup> (1911) 160, *t. 65*, incl. var. *radulosus* Becc. in *Philip. Journ. Sci.* 4 (1909) Bot. 636, *Ann. Bot. Gard. Calcutta* 12<sup>1</sup> (1911) 162, *t. 66*.

Luzon (Ilocos Norte, Nueva Ecija, Rizal, Laguna, Tayabas, Sorsogon), Polillo, Mindanao, *Merrill* 2069, *Elmer* 11875, 14120, 14838, 16869, *B. S.* 13101 *Foxworthy & Ramos*, 13235 *Ramos*, 9039 *Robinson*, 26644 *Ramos & Edaña*, 33048 *Ramos*, F. B. 8490, 10190 *Curran*, 16221 *Mariano*, 25740 *Mabesa*. In primary forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names: Ditán (Tag.); ligid-lígid (Tag.); mayáñgan (Mbo.); palaklakánin (Tag.); saladíñgan (Bag.); sumúlíd (Tag.).

**DAEMONOROPS OLIGOLEPIS** Becc. in *Leaf. Philip. Bot.* 8 (1919) 3035, *Philip. Journ. Sci.* 14 (1919) 359.

Mindanao (Davao), *Elmer* 11757. In primary forests, altitude about 1,100 m. Endemic.

Local name: Rogmán (Bag.).

**DAEMONOROPS PANNOSUS** Becc. in *Leaf. Philip. Bot.* 8 (1919) 3033, *Philip. Journ. Sci.* 14 (1919) 359.

Mindanao (Davao), *Elmer* 11600. In forests along streams, altitude about 1,200 m. Endemic.

Local name: Sabilóg (Bag.).

**DAEMONOROPS PEDICELLARIS** Becc. in *Leaf. Philip. Bot.* 8 (1919) 3040, *Philip. Journ. Sci.* 14 (1919) 358.

Mindanao (Agusan, Lanao, Davao), *Elmer* 11896, 14132, 13853, *Clemens* 1230. In primary forests, altitude 650 to 1,250 m. Endemic.

Local names: Hiyod (Mbo.); oban-óban (Mbo.); rogmán (Bag.).

**DAEMONOROPS URDANETANUS** Becc. in *Leaf. Philip. Bot.* 8 (1919) 3038, *Philip. Journ. Sci.* 14 (1919) 358.

Mindanao (Agusan), *Elmer* 14201. In primary forests, altitude about 1,600 m. Endemic.

Local name: Saháan (Mbo.).

**DAEMONOROPS VIRESCENS** Becc. in *Perk. Frag. Fl. Philip.* (1904) 47, *Webbia* 2 (1905) 357, *Ann. Bot. Gard. Calcutta* 12<sup>1</sup> (1911) 201, *t. 91*, *Philip. Journ. Sci.* 14 (1919) 358.

Palawan, *Merrill* 868. In forests at low altitudes. Endemic.

## EXCLUDED SPECIES

- DAEMONOROPS ACCEDENS Blume; Naves Novis. App. (1882) 274.  
 DAEMONOROPS ANGUSTIFOLIUS Griff.; Naves op. cit. 274.  
 DAEMONOROPS CALAPPARIUS Blume; Naves op. cit. 275.  
 DAEMONOROPS DRACO Mart.; Naves op. cit. 274.  
 DAEMONOROPS MELANOCHAETES Blume; Mart. Hist. Nat. Palm. 3 (1849) 203; Vidal Cat. Pl. Prov. Manila (1880) 47; Naves Novis. App. (1882) 275.  
 The Haenke specimen cited by Martius as representing Blume's species was doubtless wrongly identified.  
 DAEMONOROPS NIGER Blume; Naves op. cit. 274.  
 DAEMONOROPS OBLONGUS Mart; Naves l. c.  
 DAEMONOROPS RUMPHII Mart.; Naves l. c.

## 12. CARYOTA Linnaeus

CARYOTA CUMINGII Lodd. ex Mart. Hist. Nat. Palm. 3 (1849) 315; Walp. Ann. 3 (1853) 466; Miq. Fl. Ind. Bat. 3 (1855) 41; Hook. f. in Curtis's Bot. Mag. III 25 (1869) t. 5762; Naves Novis. App. (1882) 279; Vidal Sinopsis Altas (1883) 42, t. 93, f. B; Becc. in Webbia 1 (1905) 331, Perk. Frag. Fl. Philip. (1904) 48, Philip. Journ. Sci. 14 (1919) 338; Merr. Fl. Manila (1912) 123, Sp. Blancoanae (1918) 87.

*Caryota urens* Blanco Fl. Filip. (1837) 740, ed. 2 (1845) 510, ed. 3, 3 (1879) 142, t. 349; Naves Novis. App. (1882) 279, Vidal Cat. Pl. Prov. Manila (1880) 47, non Linn.

*Caryota merrillii* Becc. in Webbia 1 (1905) 333, Philip. Journ. Sci. 14 (1919) 338.

Luzon (Apayao, Union, Rizal, Nueva Ecija, Pangasinan, Nueva Vizcaya, Laguna, Tayabas), Mindoro, Palawan, Guimaras, Panay, Mindanao, Merrill 2880, 8036, 9360, Sp. Blancoanae 736, Elmer 5657, 18286, F. B. 10348, 8490 Curran, 6216 Merritt, 119 Gammill, 9077 Whitford & Hutchinson, 19961, 20492 Villamil, B. S. 873 Foxworthy, 28160 Fénix, 11243 McGregor. In forests at low and medium altitudes; sometimes planted in towns for ornamental purposes. Endemic.

Local names: Anivung (Ibn.); anibong (Ibn., Ilk., Tag.); bahi (Man.); batikan (C. Bis.); datipan (Tag.); hagol (Bik.); lagipan (Pamp.); lulug (Tag.); pugáhan (Tag.); pugúhan (Mbo.); patikan (P. Bis., Sul.); pola (Bag.); takípan (Sul.); tagípan (Pamp.).

CARYOTA MAJESTICA Linden in Ill. Hort. 28 (1881) 16, *nomen nudum*; Becc. in Perk. Frag. Fl. Philip. (1904) 48, Webbia 1 (1905) 335, Philip. Journ. Sci. 14 (1919) 338.

Luzon (Rizal), Merrill 1892, 8490. In forests at low and medium altitudes. Endemic.

Local name: Anibong (Tag.).

This is perhaps *C. rumphiana* Mart. var. *philippinensis* Becc.; the material is imperfect.



**CARYOTA MITIS** Lour. Fl. Cochinch. (1790) 569, ed. Willd. (1793) 697; Becc. & Hook. f. Fl. Brit. Ind. 6 (1892) 423; Becc. in Philip. Journ. Sci. 14 (1919) 338, Leaf. Philip. Bot. 8 (1919) 3020.

*Caryota sobolifera* Wall. Cat. (1848) No. 8594; Naves Novis. App. (1882) 279.

Palawan, *Elmer 12606, F. B. 3838, 4148 Curran*. In forests near streams at low altitudes; cultivated in Manila for ornamental purposes. Burma and Indo-China to the Malay Peninsula, Sumatra, Java, and Borneo.

Local name: Bató (Tagb.).

**CARYOTA RUMPHIANA** Mart. var. **PHILIPPINENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 337, Leaf. Philip. Bot. 8 (1919) 3019.

*Caryota rumphiana* Naves Novis. App. (1882) 274; Becc. in Webbia 1 (1905) 331, Perk. Frag. Fl. Philip. (1904) 48, vix Mart.

*Caryota maxima* Blume in Mart. Hist. Nat. Palm. 3 (1838) 195; Merr. Fl. Manila (1912) 123.

Luzon (Cagayan, Rizal, Laguna, Tayabas, Sorsogon), Mindoro, Negros, Mindanao (Agusan, Davao, Cotabato), *Elmer 10940, 13623b, 9301, 14929, 15572, 15931, Merrill 2006, 8037, Whitford 1373, F. B. 10064, 19403, 17157, 17764 Curran, 19961 Villamil, 7850 Curran & Merritt, B. S. 13471 Foxworthy & Ramos, 11572 Robinson*. In primary forests at low and medium altitudes.

Var. **OXYODONTA** Becc. in Philip. Journ. Sci. 14 (1919) 337.

Luzon (Laguna), *F. B. 10045 Curran*. In forested valleys at medium altitudes. The two varieties endemic, the species widely distributed in Malaya.

Local names: Anihung (It.); anivung (Ibn.); bagsang (Bis.); kalalios (Bis.); lumang (Ibn.); pogáhan (Mbo.); pola (Bag.); pugáhan (Tag.); pulá (Mag.).

#### DOUBTFUL AND EXCLUDED SPECIES

**CARYOTA GRIFFITHII** Becc.; Naves Novis. App. (1882) 279.

**CARYOTA PROPINQUA** Blume; Naves l. c.

**CARYOTA NANA** Linden Ill. Hort. 28 (1881) 16, *nomen nudum* "Philippines."

**CARYOTA SPECIOSA** Linden l. c. *nomen nudum* "Philippines."

#### 13. ARENGA Labillardière

**ARENGA AMBONG** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 229, 14 (1919) 335.

*Arenga tremula* Becc. op. cit. 4 (1909) Bot. 612, 14 (1919) 335, quoad descr., excl. syn., non *Caryota tremula* Blanco.

*Wallichia oblongifolia* Becc. in Webbia 1 (1905) 328, non Griff.

Luzon (Tayabas, Sorsogon), Palawan, Basilan, Balabac, Cebu, Mindanao (Zamboanga), Sulu Archipelago, *Merrill 5372, 8367, Elmer 12596, 16237, Ahern 653, Copeland 1681, F. B. 10213, 10280, 3542 Curran, 4032 Hutchinson, B. S. 735, 10816 Foxworthy, 1737 McGregor*. In forests at low altitudes. Endemic.

Local names: Ambúng (Sul.); banísan (Sul.); bat-bát (Tagb.).

**ARENGA PINNATA** (Wurmb) Merr. Interpret. Herb. Amb. (1917) 119, Sp. Blancoanae (1918) 88; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 26, t. 78.

- Saguerus pinnatus* Wurmbe in Verh. Bot. Genoots. 1 (1779) 351.  
*Borassus gomutus* Lour. Fl. Cochinch. (1790) 618.  
*Arenga saccharifera* Labill. in Mém. Inst. Paris 4 (1801) 209; F.-Vill. Novis. App. (1882) 280; Vidal Sinopsis Atlas (1883) 42, t. 93, f. C; Becc. in Perk. Frag. Fl. Philip. (1904) 48, *Webbia* 1 (1905) 328; Merr. Fl. Manila (1912) 126.  
*Sagrus gomutus* Perr. in Mém. Soc. Linn. Paris 3 (1824) 142; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 306.  
*Caryota onusta* Blanco Fl. Filip. (1837) 741, ed. 2 (1845) 511, ed. 3, 3 (1879) 143, t. 419.  
*Arenga gamuto* Merr. in Philip. Journ. Sci. 9 (1914) Bot. 63. (There is no "*Saguerus gamuto* Houtt." as indicated in literature.)

Luzon (Rizal, Cavite, Bataan, Laguna, Tayabas), Polillo, Biliran, Mindanao. Planted here and there about towns, and abundant in some forested areas but never at any great distance from settled areas; generally planted in most islands and provinces. It has all the appearance of an introduced palm that has become naturalized. Sugar palm.

Local names: Bagátbat (C. Bis.); bagóbat (C. Bis.); bat-bát (C. Bis.); hibiók (P. Bis.); hidiók (Bik., P. Bis.); hiliók (Mbo.); ibiók (C. Bis.); idióg (C. Bis.); idiók (C. Bis.); igók (P. Bis.); irók (Sbl.); kábo-négro (Tag.); káong (Tag.); káuing (Tag.); onau (C. Bis.); rapítan (Ilk.); unau (C. Bis.).

**ARENGA TREMULA** (Blanco) Becc. in Philip. Journ. Sci. 4 (1909) Bot. 612, quoad syn. excl. descr.; Merr. Sp. Blancoanae (1918) 87; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 34, t. 9.

*Caryota tremula* Blanco Fl. Filip. (1837) 744, ed. 2 (1845) 512, ed. 3, 3 (1879) 144; Kunth Enum. 3 (1841) 549; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88.

*Wallichia tremula* Mart. Hist. Nat. Palm. 3 (1849) 315; Miq. Fl. Ind. Bat. 3 (1855) 34; Naves Novis. App. (1882) 280; Vidal Rev. Pl. Vasc. Filip. (1886) 279.

*Arenga mindorensis* Becc. in Perk. Frag. Fl. Philip. (1904) 48, *Webbia* 1 (1905) 329, Philip. Journ. Sci. 14 (1919) 355.

*Saguerus mindorensis* O. F. Cook in Invent. Seeds Import. U. S. Dept. Agr. 33 (1915) 10.

*Didymosperma tremulum* Wendl. & Drude in Kerch. Palm. (1878) 243.

Luzon (Bataan, Batangas, Laguna, Tayabas), Mindoro, Mindanao (Davao), Merrill 1790, Sp. Blancoanae 828, Elmer 18472, 11192, Baker 1807. F. B. 10203, 5469 Curran, 8768 Merritt, B. S. 12395 McGregor, 13102 Foxworthy & Ramos, 19468 Ramos. In thickets and secondary forests at low altitudes. Endemic.

Local names: Abígi (Bik.); abíki (Bik.); báris (Bag.); bat-bát (Tagb.); bilis (Bik.); dayáka (Tag.); dumáka (Tag.); dumayáka (Tag.); gumáka (Bik.); gumayáka (Tag.); rumáka (Bik.); tipon-típon (Bik.).

#### DOUBTFUL AND EXCLUDED SPECIES

**ARENGA MANILLENSIS** Wendl. Index Palm. (1864) 3, *nomen nudum*; Naves Novis. App. (1882) 280.

*Saguerus manillensis* Lodd. l. c. in syn.

A *nomen nudum* and hence indeterminable; probably the same as one of the three species listed above.

*ARENCA OBTUSIFOLIA* Mart.; Naves Novis. App. (1882) 280.

A species of the Malay Peninsula allied to *A. pinnata* (Wurmb) Merr.; not known from the Philippines.

#### 14. *ORANIA* Zippel

*ORANIA DECIPIENS* Becc. in Philip. Journ. Sci. 4 (1909) Bot. 614, 14 (1919) 333.

Mindoro, *F. B. 4120 Merritt*. In primary forests at low altitudes. Endemic.

Var. *MINDANAOENSIS* Becc. in Philip. Journ. Sci. 14 (1919) 333.

Mindanao (Zamboanga), *F. B. 9179 Whitford & Hutchinson*. In primary forests at low altitudes. Endemic.

Var. *MONTANA* Becc. in Leaf. Philip. Bot. 8 (1919) 3018, Philip. Journ. Sci. 14 (1919) 333.

Mindanao (Agusan, Davao), *Elmer 11881, 13970*. In forests, altitude 800 to 1,000 m. Endemic.

Local name: Bãṅga (Tag., P. Bis., Bag., Mbo.).

*ORANIA PALINDAN* (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88, Philip. Journ. Sci. 1 (1906) Suppl. 32, Sp. Blancoanae (1918) 88; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 110, t. 42.

*Caryota palindan* Blanco Fl. Filip. ed. 2 (1845) 513, ed. 3, 3 (1879) 145.

*Orania regalis* Naves Novis. App. (1882) 279, non Blume.

*Orania philippinensis* Scheff. ex Becc. in Ann. Jard. Bot. Buitenz. 2 (1885) 156; Becc. in Webbia 1 (1905) 335, Philip. Journ. Sci. 14 (1919) 332.

Luzon (Cagayan, Union, Benguet, Zambales, Bataan, Rizal, Batangas, Laguna, Tayabas, Camarines), Samar, *F. B. 1610 Borden, 5818, 10410, 17068, 10708 Curran, 8413 Curran & Merritt, 2183 Meyer, 20988 Villamil, B. S. 12391 McGregor, 24107, 24131 Ramos, Elmer 61, 74, 18248, Merrill Sp. Blancoanae 144, Phil. Pl. 1900*. In forests at low and medium altitudes. Endemic.

Var. *SIBUYANENSIS* (Becc.) comb. nov.

*Orania philippinensis* Scheff. var. *sibuyanensis* Becc. in Leaf. Philip. Bot. 8 (1919) 3017, Philip. Journ. Sci. 14 (1919) 332.

Sibuyan, *Elmer 12066*. In primary forests, altitude about 225 m. Endemic.

Local names: Ambobãṅga (Ibn.); bãṅga (Buk., P. Bis.); barangói (Tag., Pamp., Sbl.); niogniógan (Tag.); palindán (Tag.).

*ORANIA PARAGUANENSIS* Becc. in Webbia 1 (1905) 335; Philip. Journ. Sci. 14 (1919) 332.

Palawan, *Merrill 869, 9269, Phil. Pl. 1316*. In primary forests at low altitudes; probably not distinct from *O. palindan* Merr., which it exactly resembles in habit.

Local name: Bãṅga (Tagb.).

**ORANIA RUBIGINOSA** Becc. in Philip. Journ. Sci. 14 (1919) 333.

Luzon (Cagayan, Isabela, Tayabas), *B. S. 10658, 10575 McGregor, 13390 Ramos, F. B. 17259, 17192 Curran*. In forests at low altitudes. Endemic.

Local name: Kalahán (Ibn.).

#### EXCLUDED SPECIES

**ORANIA MACROCLADUS** Mart.; Naves Novis. App. (1882) 280.

#### 15. HETEROSPATHE Scheffer

**HETEROSPATHE ELATA** Scheff. in Ann. Jard. Bot. Buitenz. 1 (1876) 141, 162; Becc. *Webbia* 1 (1905) 328, Philip. Journ. Sci. 14 (1919) 325, Leaf. Philip. Bot. 8 (1919) 3013; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 86, t. 32.

Luzon (Cagayan, Laguna, Tayabas, Camarines), Mindoro, Masbate, Cebu, Samar, Panay, Siquijor, Dinagat, Bucas Grande, Mindanao (Davao, Zamboanga), *F. B. 10352, 10481, 13238, 17064 Curran, 9684 Merritt, 19749 Villamil, 9030 Whitford & Hutchinson, B. S. 35243, 34624 Ramos & Pascasio, Whitford 1395, Elmer 11968, 18222, Merril 2770*. In forests at low altitudes, sometimes planted. Moluccas; introduced in Guam.

Local names: Balaniúg (Sub.); dagumáka (Ibn.); dayumáka (Ibn.); dumayáka (Ibn.); niogniógan (Tag.); sagasí (Tag.); sagisí (Bik., Tag., S. L. Bis.); salanióg (Bag.); tagisí (Bik.).

**HETEROSPATHE NEGROSENSIS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 611, 14 (1919) 326, Leaf. Philip. Bot. 8 (1919) 3014.

Luzon (Tayabas, Sorsogon), Negros, Panay, *Elmer 9439, 10147, 17297, Whitford 1539, F. B. 13639 Curran & Foxworthy, B. S. 9443, 9358 Robinson, 30752, 28684 Ramos & Edaño*. In forests at medium altitudes. Endemic.

**HETEROSPATHE PHILIPPINENSIS** Becc. in Philip Journ. Sci. 4 (1909) Bot. 610, 14 (1919) 326, Leaf. Philip. Bot. 8 (1919) 3013.

*Ptychoraphis philippinensis* Becc. in Ann. Jard. Bot. Buitenz. 2 (1885) 90, Malesia 3 (1886) 109, *Webbia* 1 (1905) 47.

*Rhopaloblaste* sp. Vidal Phan. Cuming. Philip. (1885) 153.

Luzon (Apayao, Ifugao, Benguet, Nueva Vizcaya, Rizal, Laguna, Camarines, Sorsogon), Leyte, *F. B. 10856, 10892 Curran, 13019 Merritt, 21752 Fischer, B. S. 19784, 19785 McGregor, 8198, 15260 Ramos, 28391 Fénix, 33606 Ramos & Edaño, Elmer 16519*. In primary forests at medium altitudes, ascending to 1,600 m or higher. Endemic.

Local names: Sanakti (Ig.); tagisí (Bik.).

**HETEROSPATHE SIBUYANENSIS** Elm. Leaf. Philip. Bot. 8 (1919) 3014, Philip. Journ. Sci. 14 (1919) 325.

Sibuyan, *Elmer 12350*. In forests, altitude about 225 m. Endemic. Local name: Bilis (C. Bis.).

#### 16. ONCOSPERMA Blume

**ONCOSPERMA GRACILIPES** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 228, 4 (1909) Bot. 610, 14 (1919) 330, Leaf. Philip. Bot. 8 (1919) 3017.

Luzon (Laguna, Tayabas, Sorsogon), Biliran, *Merrill 4010, Elmer 15223, Baker 3704, B. S. 18490, 22876 McGregor, 13213 Ramos, F. B. 10148, 10396 Curran, 26801 Mabesa*. In forests at low altitudes. Endemic.

Local name: Anibong (Tag.).

**ONCOSPERMA HORRIDUM** (Griff.) Scheff. in *Nat. Tijdschr. Nederl. Ind.* 32 (1871) 189; Becc. in *Philip. Journ. Sci.* 4 (1909) Bot. 610, 6 (1911) Bot. 230, 14 (1919) 330, *Leafl. Philip. Bot.* 8 (1919) 3017.

*Areca horrida* Griff. in *Calcutta Journ. Nat. Hist.* 5 (1845) 465.

Polillo, Mindanao (Agusan, Zamboanga, Davao), *Elmer 11876, 13886, Copeland 1626, B. S. 9277 Robinson*. In forests at low and medium altitudes, ascending to 800 m. Malay Peninsula and Archipelago.

Local names: Anibong (Tag., Mbo.); tanáian (Bag.).

**ONCOSPERMA PLATYPHYLLUM** Becc. in *Philip. Journ. Sci.* 4 (1909) Bot. 609, 14 (1919) 330.

Negros, *Whitford 1670, F. B. 17347 Curran*. In forests at low and medium altitudes. Endemic.

Local name: Anibong (P. Bis.).

**ONCOSPERMA TIGILLARIA** (Jack) Ridl. in *Journ. Str. Branch Roy. As. Soc.* 33 (1900) 173.

*Areca tigillaria* Jack *Malay Miscel.* 2<sup>1</sup> (1820) 88.

*Oncosperma filamentosa* Blume *Rumphia* 2 (1836) 97, t. 82, 103; Becc. in *Philip. Journ. Sci.* 4 (1909) Bot. 610, 14 (1919) 330, *Leafl. Philip. Bot.* 8 (1919) 3016.

*Areca nibung* Mart. *Hist. Nat. Palm.* 3 (1838) 173, t. 153; Naves *Novis. App.* (1882) 279.

Palawan, *Elmer 12662, F. B. 3790 Curran*. In somewhat swampy places immediately back of the mangrove more or less subject to the influence of brackish water. Malay Peninsula and Archipelago.

Local name: Anibong (Bis., Tagb.).

#### 17. ACTINORHYTIS Wendland and Drude

**ACTINORHYTIS CALAPPARIA** (Blume) Wendl. & Drude in *Linnaea* 39 (1875) 184; Becc. in *Leafl. Philip. Bot.* 8 (1919) 3010, *Philip. Journ. Sci.* 14 (1919) 324.

*Areca calapparia* Blume *Rumphia* 2 (1836) 70, in nota, t. 100, f. 2.

*Seaforthia calapparia* Mart. *Hist. Nat. Palm.* 3 (1849) 313.

*Ptychosperma calapparia* Miq. *Fl. Ind. Bat.* 3 (1855) 20; Naves *Novis. App.* (1882) 377.

Mindanao (Davao), *Elmer 11238*. Isolated trees in settled areas, altitude about 500 m, undoubtedly introduced. Widely distributed in the Malay Archipelago.

Local name: Tañgálo (Bag.).

#### 18. PTYCHORAPHIS Beccari

**PTYCHORAPHIS CAGAYANENSIS** Becc. in *Philip. Journ. Sci.* 14 (1919) 326.

*Heterospathe cagayanensis* Becc. op. cit. 4 (1909) Bot. 611.

Luzon (Cagayan), *F. B. 12286 Klemme, 16757 Curran*. In primary forests at low altitudes. Endemic.

Local name: Dagumáka (Ibn.).

**PTYCHORAPHIS ELMERI** Becc. in Philip. Journ. Sci. 14 (1919) 328, Leaf. Philip. Bot. 8 (1919) 3010.

*Heterospatha elmeri* Becc. in Leaf. Philip. Bot. 2 (1909) 646.

Negros, *Elmer 9669*. In forests, altitude about 1,000 m. Endemic.

Local name: Bilísan (C. Bis.).

**PTYCHORAPHIS INTERMEDIA** Becc. in Leaf. Philip. Bot. 8 (1919) 3011, Philip. Journ. Sci. 14 (1919) 328.

Samar, Biliran, Mindanao (Agusan), *Elmer 13663*, *B. S. 18107 McGregor, 24753 Ramos*. In forests 600 to 1,000 m and above. Endemic.

Local names: Lubilúbi (S. L. Bis.); marighoi (Mbo.).

**PTYCHORAPHIS MICROCARPA** Becc. in Philip. Journ. Sci. 14 (1919) 327.

Camiguin de Misamis, *B. S. 14678 Ramos*. In forests at medium altitudes. Endemic.

#### 19. ADONIDIA Beccari

**ADONIDIA MERRILLII** (Becc.) Becc. in Philip. Journ. Sci. 14 (1919) 329; Brown & Merr. in Philip Bur. Forestry Bull. 18 (1919) 15, t. 2, 3.

*Normanbya merrillii* Becc. in Philip. Journ. Sci. 14 (1909) Bot. 606, t. 30, 31, Leaf. Philip. Bot. 8 (1919) 3009; Merr. Fl. Manila (1912) 127.

*Actinorhysis calapparia* Vidal Sinopsis Atlas (1883) 42, t. 94, f. B, non Wendl. & Drude.

Coron, Palawan, *Elmer 12708, Merrill 9415*. On limestone formations in open places, often subgregarious, and in sandy soil near the seashore at low altitudes. Cultivated in Manila for ornamental purposes since about 1875. A monotypic, endemic genus.

Local names: Búñga de china (Tag.); búñga de jolo (Tag.); oring-óring (Tagb.).

#### 20. PINANGA Blume

**PINANGA BARNESII** Becc. in Webbia 1 (1905) 320, Philip. Journ. Sci. 3 (1908) Bot. 340, 6 (1911) Bot. 229, 14 (1919) 320, Leaf. Philip. Bot. 8 (1919) 3002.

*Pinanga barnesii* Becc. var. *macrocarpa* Becc. in Philip. Journ. Sci. 2 (1907) Bot. 227.

Babuyan Islands, Luzon (Cagayan, Union, Pampanga, Rizal, Bataan, Laguna, Camarines, Tayabas), Polillo, Catanduanes, Mindoro, Panay, Siargao, Mindanao, *F. B. 122 Barnes, 2762 Meyer, 6309, 10757, 17756 Curran, 6853, 11385 Merritt, B. S. 13248, 13419 Ramos, 6937 Robinson, 10466, 23202 McGregor, 4144 Fénix, 28525, 31204, 33700 Ramos & Edaño, 13248, 13419, 13858, 30528 Ramos, 34862 Ramos & Pascasio, 2003 Foxworthy, McGregor 275, Elmer 7924, 9297, Whitford 799*. In primary forests chiefly at medium altitudes, ascending to 1,600 m. Endemic.

Local names: Abísi (Tag.); bubulin (Sub.); búñgang-matsíng (Tag.); gasígan (Neg.); katidi (Ig.); sauag (Sub.).

**PINANGA BASILANENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 322.

Mindanao (Zamboanga), Basilan, *B. S. 16119 Reillo, 3662, 36623 Ramos & Edaño*. In primary forests at low or medium altitudes. Endemic.

Local name: Buburis (Sub.).

**PINANGA BATANENSIS** Becc. in Philip. Journ. Sci. 3 (1908) Bot. 340, 14 (1919) 322.

Batan Islands (Batan), *B. S. 3841 Fénix*. Along mountain streams in forests. Endemic.

Local name: Dapiau (Iv.).

**PINANGA COPELANDII** Becc. in Webbia 1 (1905) 317, 14 (1919) 320, Leaf. Philip. Bot. 8 (1919) 3002.

Luzon (Camarines, Sorsogon), Negros, Mindanao (Agusan, Davao), *Weber 1134, Copeland 1283, Elmer 10467, 13375, Whitford 1669, Merrill 7281, Phil. Pl. 1594, B. S. 15918 Fénix, 23619 Ramos, F. B. 2415a Cortez & Valderrama*. In damp primary forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names: Abikí (Bik.); bagtoan (Mbo.); habikí (Bik.); hiliuásiu (P. Bis.); tambingálan (Mbo.); timbañgálan (Bag.).

**PINANGA CURRANII** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 226, 14 (1919) 320.

Palawan, *F. B. 3515 Curran*. In primary forests at low altitudes. Endemic.

**PINANGA GEONOMAIFORMIS** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 602, 14 (1919) 318.

Luzon (Rizal, Laguna, Tayabas), *F. B. 10155 Curran, 26797 Mabesa, B. S. 20474 Ramos, 28565 Ramos & Edaño*. In damp primary forests at low and medium altitudes. Endemic.

**PINANGA HETEROPHYLLA** Becc. in Philip. Journ. Sci. 14 (1919) 319.

Luzon (Sorsogon), Negros, *F. B. 19346 Curran, 23635 Ramos*. In primary forests, altitude 100 to 700 m. Endemic.

**PINANGA INSIGNIS** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 223, 14 (1919) 322, Leaf. Philip. Bot. 8 (1919) 3004.

Luzon (Apayao, Pangasinan, Nueva Vizcaya, Rizal, Laguna, Camarines, Tayabas, Sorsogon), Mindoro, Leyte, Mindanao (Agusan, Zamboanga, Surigao, Bukidnon), *Elmer 8028, 13950, 14909, 15445, 17656, Whitford 1388, Bolster 222, Wenzel 534, Merrill Phil. Pl. 1135, B. S. 11233 McGregor, 33512 Ramos & Edaño, 15111, 13236 Ramos, 26067, 29969, 28237 Fénix, 25566 Yates, F. B. 9502 Merritt, 10491 Curran, 7791 Curran & Merritt*. In primary forests at low and medium altitudes. Endemic.

Var. **GASTEROCARPA** Becc. in Philip. Journ. Sci. 14 (1919) 322.

Masbate, Negros, *F. B. 17348 Curran, 11555 Rosenbluth, 13560 Meyer & Foxworthy*. In primary forests at low and medium altitudes. The Luzon material placed here by Beccari I refer to the typical form of the species. Endemic.

Var. **LEPTOCARPA** Becc. l. c.

Negros, *Whitford 1621*. In primary forests at low and medium altitudes. Endemic.

Subsp. **LOHERIANA** Becc. l. c.

Luzon (Laguna), (*Loher 7092*), *B. S. 9789 Robinson*. In forests on Mt. Banahao, altitude about 1,000 m. Endemic.

Local names: Bañga (Tag.); saláuak (Sub.); sarámau (Tag.); saráuag (P. Bis., Mbo.); takón (Ibn.); tibanglán (Tag.); tibanglóan (Bik., S. L. Bis.).

**PINANGA ISABELENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 318.

Luzon (Isabela), *B. S. 10660 McGregor*. In forests near the sea at low altitudes. Endemic.

**PINANGA MACULATA** Porte in Ill. Hort. 10 (1863) 92, t. 361; Drude in Bot. Zeit. 35 (1877) 636, t. 5, f. 12-13; Becc. Malesia 3 (1886) 145, Webbia 1 (1905) 325, Perk. Frag. Fl. Philip. (1904) 48, Philip. Journ. Sci. 14 (1919) 317; C. H. Wright in Curtis's Bot. Mag. IV 1 (1905) t. 8011.

Palawan, *Merrill 712*. In primary forests at an altitude of about 500 m, a juvenile sterile specimen, its identity with Porte's species problematical.

I have observed juvenile forms of *Pinanga* with mottled leaves in Laguna and Pampanga Provinces, Luzon; and in Mindoro. Endemic.

**PINANGA MODESTA** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 225, 14 (1919) 318.

Bucas Grande, Mindanao (Davao, Bukidnon, Lanao, Agusan, Zamboanga), Basilan, *Clemens 487*, *Copeland, Merrill 8302*, *B. S. 15751 Fénix*, *35098 Ramos & Pascasio*, *39002 Ramos & Pascasio*, *F. B. 3987 Hutchinson*, *4583 Mearns & Hutchison*. In primary forests at low and medium altitudes, ascending to 1,200 m. Endemic.

Local names: Lampigi (Lan.); mambuding (Yak.); tigahui (Buk.).

**PINANGA NEGROSENSIS** Becc. in Leaf. Philip. Bot. 2 (1909) 642, 8 (1919) 3006, Philip. Journ. Sci. 14 (1919) 322.

Negros, Dinagat, *Elmer 10030*, *B. S. 35182 Ramos & Pascasio*. In damp forested ravines, altitude about 900 m. Endemic.

**PINANGA PHILIPPINENSIS** Becc. in Malesia 3 (1887) 180, Perk. Frag. Fl. Philip. (1904) 48, Webbia 1 (1905) 324; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 32; Becc. in Philip. Journ. Sci. 14 (1919) 320, Leaf. Philip. Bot. 8 (1919) 3003; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 112, t. 44.

*Pinanga elmeri* Becc. in Webbia 1 (1905) 322, Philip. Journ. Sci. 3 (1908) Bot. 341, 14 (1919) 320, Leaf. Philip. Bot. 8 (1919) 3004; Merr. Philip. Journ. Sci. 1 (1906) Suppl. 32, 2 (1907) Bot. 264.

Babuyan Islands, Luzon (Cagayan, Ilocos Norte, Ifugao, Bontoc, Benguet, Pangasinan, Nueva Vizcaya, Bulacan, Rizal, Bataan, Zambales, Laguna, Tayabas, Sorsogon), Mindoro, Leyte, Negros, Panay. Common on exposed ridges in the mossy forest, sometimes in ravines, altitude 800 to 1,800 m; represented by numerous collections. Endemic.

Local names: Búa-ti-báked (Ilk.); búa-ti-bákis (Ilk.); buñgãṅ-dakígan (Ilk.); gatílei (Bon.); katídai (Ig.); katíldi (Ig.); lubiá (Tag.); mamá (Ilk.); matsíng (Tag.).



**PINANGA RIGIDA** Becc. in Leaf. Philip. Bot. 2 (1909) 644, 8 (1919) 3005, Philip. Journ. Sci. 14 (1919) 321.

Luzon (Tayabas), Negros, *Elmer 10187*, *B. S. 28732 Ramos & Edaña*. In the mossy forest, altitude 1,200 to 1,800 m. Endemic.

*Elmer 10147* is not cited by Beccari in the original description; this is pretty clearly referable to *Heterospathe negrosensis* Becc. The type, *Elmer 10187*, is clearly a *Pinanga*. This note is published in reference to Elmer's statement, Leaf. Philip. Bot. 8 (1919) 3006, that *Pinanga rigida* Becc. was probably referable to *Heterospathe* or *Ptychoraphis*.

**PINANGA SAMARANA** Becc. in Philip. Journ. Sci. 14 (1919) 321.

Samar, *B. S. 17535 Ramos*. In forests at low or medium altitudes. Endemic.

**PINANGA SCLEROPHYLLA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 603, 14 (1919) 322.

Mindoro, *F. B. 4468 Merritt*. In primary forests, altitude about 1,500 m. Endemic.

**PINANGA SIBUYANENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 324, Leaf. Philip. Bot. 8 (1919) 3006.

Sibuyan, *Elmer 12425*. In forests along streams, altitude about 600 m. Endemic.

Local name: Tibañgán (C. Bis.).

**PINANGA SPECIOSA** Becc. in Webbia 1 (1905) 316, Philip. Journ. Sci. 14 (1919) 323, Leaf. Philip. Bot. 8 (1919) 3005.

Mindanao (Agusan, Lanao, Zamboanga, Davao), *Copeland 1265*, *Elmer 10484*, *13739*, *13941*, *14023*, *Clemens 374*, *F. B. 9271 Whitford & Hutchinson*, *28206 Elumir*. In primary forests, altitude 400 to 1,200 m. Endemic.

Local names: Banísan (Sub.); sakolon (Mbo.); saráuang (Bag.); sa-dáuang (Bag.).

**PINANGA URDANETANA** Becc. in Leaf. Philip. Bot. 8 (1919) 3008, Philip. Journ. Sci. 14 (1919) 321.

Mindanao (Agusan), Bukidnon, *Elmer 14137*, *B. S. 38612*, *38611*, *38610*, *38570 Ramos & Edaña*. On forested slopes, altitude about 1,400 m. Endemic.

Local names: Sagasí (Buk.); sagisí (Buk.); salang-ísog (Mbo.).

**PINANGA UROSPERMA** Becc. in Philip. Journ. Sci. 3 (1908) Bot. 341.

Babuyan Islands (Camiguin), Luzon (Apayao), *B. S. 4044*, *28038 Fénix*. On forested slopes at medium altitudes. Endemic.

Local name: Lagás (Ibn.).

**PINANGA WOODIANA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 604, 14 (1919) 322, Leaf. Philip. Bot. 8 (1919) 3003.

Luzon (Bontoc), Mindoro, Mindanao (Davao), *Merrill 5680*, *Elmer 10485*, *11334*, *B. S. 38078*, *40651 Ramos & Edaña*. In primary forests, altitude 1,050 to 1,350 m. Endemic.

Local names: Irár (Bag.); mumuing (Mang.).

## 21. ARECA Linnaeus

**ARECA CATECHU** Linn. Sp. Pl. (1753) 1189 (err. *cathecu*); Blanco Fl. Filip. (1837) 714, ed. 2 (1845) 494, ed. 3, 3 (1879) 129, t. 350; Miq. Fl. Ind. Bat. 3 (1855) 8; Vidal Sinopsis Atlas (1883) 42, t. 94, f. A; Naves Novis. App. (1882) 278; Becc. in Philip. Journ. Sci. 3 (1908) Bot. 340, 6 (1911) Bot. 229; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 32, Fl. Manila (1912) 128, Sp. Blancoanae (1918) 89; Becc. in Leaflet. Philip. Bot. 8 (1919) 2997, Philip. Journ. Sci. 14 (1919) 304; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 20, t. 4, 5.

*Areca alba* "Rumph;" Naves Novis. App. (1882) 278.

Cultivated throughout the settled areas of the Philippines, in some places spontaneous; possibly a native of the Philippines, having been found once spontaneous in primary forests in Palawan. Old World Tropics generally, introduced in the New World.

Var. **BATANENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 304.

Batan Islands, *B. S. 3824 Fénix*. Along a mountain stream. Endemic.

Var. **LONGICARPA** Becc. in Philip. Journ. Sci. 6 (1911) Bot. 229, 14 (1919) 304, t. 2, f. 2.

Palillo, *B. S. 10470 McGregor*. Probably from planted trees. Endemic.

Local names: Boá (Ilk., Ig., Ibn.); buá (Ibn.); buñga (Tag., Bis., Sul.); dapiau (Iv.); huá (It.); lúgos (Sul.); lúyos (Pamp.); pasa (Yak.) takob-tob (Bik.); vuá (Ibn.); va (It.).

Var. **SILVATICA** Becc. l. c. pl. 1, f. 2.

Palawan, *Merrill 9447*. In primary forests at a place where an old trail crosses a small stream near Lake Manguao. Endemic.

**ARECA CALISO** Becc. in Leaflet. Philip. Bot. 8 (1919) 2998, Philip. Journ. Sci. 14 (1919) 310.

Luzon (Sorsogon), Biliran, Leyte, Samar, Mindanao (*Agusan, Davao*), *Elmer 11898, 13814, 14839, B. S. 18875 McGregor, 24130, 15388 Ramos, 24881 Edaña*. In forests, altitude 350 to 850 m. Endemic.

Local names: Kalíso (Bag.); sakolon (Mbo.).

**ARECA CAMARINENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 309, t. 3, f. 3.

Luzon (Camarines), *F. B. 14268 Aguilar, B. S. 33829 Ramos & Edaña*. In forests at low altitudes. Endemic.

Local name: Monó (Bik.).

**ARECA COSTULATA** Becc. in Philip. Journ. Sci. 14 (1919) 312.

Leyte, Dinagat, *B. S. 15236 Ramos, 35242 Ramos & Pascasio*. In primary forests at low and medium altitudes. Endemic.

**ARECA HUTCHINSONIANA** Becc. in Philip. Journ. Sci. 14 (1919) 312.

*Areca mammillata* Becc. var. *mindanaoensis* Becc. op. cit. 4 (1909) Bot. 602.

Mindanao (Lanao, Zamboanga), Basilan, *F. B. 9141 Whitford & Hutchinson, 4019 Hutchinson, 23159 Agama, 25242 Alvarez, B. S. 36953, 37288 Ramos & Edaña, 38364 Brown*. In primary forests at low altitudes. Endemic.

Local names: Pisa (Yak.); pitha (Sub.); sambuláyan (Sub.).

**ARECA IPOT** Becc. in Leaf. Philip. Bot. 2 (1909) 639, 8 (1919) 2998, Philip. Journ. Sci. 6 (1911) Bot. 229 (var. *polillensis* Becc.) 14 (1919) 308, t. 3, f. 4; Merr. Sp. Blancoanae (1918) 89.

*Areca catechu* Linn. var. *humilis* Blanco Fl. Filip. (1837) 716, ed. 2 (1845) 495, ed. 3, 3 (1879) 120; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88.

*Areca glandiformis* Naves Novis. App. (1882) 278 (prob.), non Lam.

Luzon (Laguna, Tayabas), Polillo, *Merrill Sp. Blancoanae 844, F. B. 10178 Curran, B. S. 6938, 9712 Robinson, 10469, 10463 McGregor*. Planted in and about towns, and along streams in forests at low and medium altitudes. Endemic.

Local names: Buñgañgípot (Tag.); ípod (Tag.); ípot (Tag.); mañgípod (Tag.); saksíg (Tag.) saksik (Tag.).

**ARECA MACROCARPA** Becc. in Philip. Journ. Sci. 4 (1909) Bot. 601, 14 (1919) 306, t. 3, f. 2.

Mindanao (Zamboanga), *F. B. 9103 Whitford & Hutchinson*. Probably but a form or variety of *Areca catechu* Linn. Endemic.

**ARECA MAMMILLATA** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 220.

*Areca vidaliana* Becc. op. cit. 222, 14 (1919) 312.

Palawan, *Merrill Phil. Pl. 1464, F. B. 3816 Curran, B. S. 21575 Escritor, 619 Foxworthy*. In swampy forests at low altitudes, and also on forested slopes. Endemic.

Local names: Boga (Tagb.); pita (Tagb.).

**ARECA PARENS** Becc. in Philip. Journ. Sci. 14 (1919) 307, t. 3, f. 1.

Luzon (Camarines), *F. B. 21712 Peñas, Soriano, & Abellanosa*. Along streams at low altitudes. Endemic.

Local name: Takobtób (Bik.).

**ARECA WHITFORDII** Becc. in Philip. Journ. Sci. 2 (1907) Bot. 219, 14 (1919) 306, Leaf. Philip. Bot. 8 (1919) 2997.

Luzon (Sorsogon), Mindoro, *Whitford 1372, Elmer 16240*. In semi-swampy forests at low altitudes. Endemic.

Var. **LUZONENSIS** Becc. in Philip. Journ. Sci. 14 (1919) 306.

Luzon (Cagayan, Nueva Vizcaya), *B. S. 11384 McGregor, F. B. 17770 Curran*. Wild in forests and in river swamps at low and medium altitudes. Endemic.

Local name: Buñgañg-gúbat (Tag.).

#### EXCLUDED SPECIES

**ARECA TRIANDRA** Roxb.; Naves Novis. App. (1882) 278.

## 22. ELAEIS Jacquin

**ELAEIS GUINEENSIS** Jacq. Select. Am. (1763) 280, *t. 172*; Merr. Fl. Manila (1912) 126; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 84, *t. 30, 31*.

Cultivated for ornamental purposes, and producing fruits abundantly. A native of tropical Africa. African oil palm.

## 23. COCOS Linnaeus

**COCOS NUCIFERA** Linn. Sp. Pl. (1753) 1188; Blanco Fl. Filip. (1837) 716, ed. 2 (1845) 495 (*nucigera*), ed. 3, 3 (1879) 123, *t. 364*; Naves Novis. App. (1882) 282; Vidal Sinopsis Atlas (1883) 42, *t. 94, f. D*; Miq. Fl. Ind. Bat. 3 (1855) 64 (incl. var. *macrocarpa* Miq. var. *saccharina* Miq.); Merr. Fl. Manila (1912) 125, Sp. Blancoanae (1918) 89, 90.

*Cocos mamillaris* Blanco Fl. Filip. (1837) 722 (*mamillaris*), ed. 2 (1845) 499, ed. 3, 3 (1879) 123.

Very extensively cultivated in the Philippines, especially in those regions where the dry season is not too prolonged; one of the most important agricultural crops of the Archipelago. Pantropic in cultivation, probably a native of Polynesia, certainly not a native of the Philippines. Coconut.

Local names: Coco (Sp.); cocotéro (Sp.); gira-gira (Sbl.); í-ing (It.); iniúg (Ibn.); lobí (S. L. Bis.); lubí (C. Bis.); nióg (Ilk., Bik., Bis., Ibn., Tag.); ñgot-ñgot (Pamp., Sbl.); oñgót (Ibn.); ponlaing (Sub.); punláing (Yak.).

## 24. NYPA Wurmbr

(*Nipa* Thunb.)

**NYPA FRUTICANS** Wurmbr in Verh. Bat. Genoots. 1 (1779) 350; Miq. Fl. Ind. Bat. 3 (1855) 150; Naves Novis. App. (1882) 284; Vidal Sinopsis Atlas (1883) 42, *t. 94, f. C*; Blanco Fl. Filip. ed. 2 (1845) 461, ed. 3, 3 (1879) 68, *t. 386*; Becc. in Webbia 1 (1905) 357; Merr. Fl. Manila (1912) 125, Sp. Blancoanae (1918) 90; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 98, *t. 38-41* (mostly as *Nipa*).

*Nipa fruticans* Thunb. in Vet. Akad. Nya Handl. Stockh. 3 (1782) 231.

*Nipa fruticosa* Lam. ex Perr. in Mem. Soc. Linn. Paris 3 (1824) 132; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 306.

*Nipa litoralis* Blanco Fl. Filip. (1837) 662.

Along tidal streams in brackish swamps throughout the Philippines, in favorable habitats gregarious over large areas. India, through Malaya to tropical Australia.

Local names: Anípa (Ibn.); lasá (Tag.); nipá (Sp.-Fil.); paúid (Tag.); pinóg (It.); pinók (Ibn.); sagá (Sbl.); sasá (Pamp., Tag.), tatá (Ibn.).

## EXCLUDED GENERA AND SPECIES

**BENTINCKIA RENDA** Mart.; Naves Novis. App. (1882) 280.

**BORASSUS DICHOTOMA** White; Naves op. cit. 281.

**BORASSUS FLABELLIFORMIS** Linn.; Naves op. cit. 280.

- CALYPTROCALYX SPICATUS Blume; Naves op. cit. 280.  
 CHAMAEROPS EXCELSA Thunb.; Naves op. cit. 282.  
 CERATOLOBUS GLAUDESCENS Blume; Naves op. cit. 273.  
 DRYMOPHLOEUS APPENDICULATUS Becc.; Naves op. cit. 277.  
 IGUANURA sp.; Vidal Rev. Pl. Vasc. Filip. (1886) 279; Ceron Cat. Pl. Herb. (1892) 174.  
 KENTIA MOLUCCANA Becc.; Naves l. c.  
 LODOICEA SEYCHELLARUM Labill.; Naves op. cit. 281.  
 NENGA LATISECTA Blume; Naves op. cit. 277.  
 PHOLIDOCARPUS IHUR Blume; Naves op. cit. 281.  
 PLECTOCOMIA ELONGATA Mart.; Naves op. cit. 274.  
 PTYCHOSPERMA COCHINCHINENSIS Miq.; Naves op. cit. 277.  
 PTYCHOSPERMA KUHLLII Miq.; Naves l. c.  
 PTYCHOSPERMA PUNICEA Miq.; Naves l. c.  
 PTYCHOSPERMA RUMPHII Blume; Naves l. c.  
 PTYCHOSPERMA SAXATILIS Blume; Naves l. c.  
 PTYCHOSPERMA VESTIARIA Miq.; Naves l. c.  
 RHAPIS ARUNDINACEA Llanos in Mem. Acad. Cienc. Madrid III 2 (1857) 499; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Naves Novis. App. (1882) 282, *nomen nudum*.  
 RHAPIS FLABELLIFORMIS L'Hérit.; Naves Novis. App. (1882) 282.  
 This is occasionally cultivated in Manila gardens as a pot plant, but it never produces flowers here.  
 RHAPIS JAVANICA Blume; Naves l. c.

The above twenty-two species were credited to the Philippines by Naves, but none of the genera has known indigenous representatives in the Archipelago. A few of the species in the list now occur as recently introduced and cultivated forms.

Since about 1905 a large number of palms have been introduced into Manila for cultivation as ornamental species. Some of these are now mature and flower and fruit freely; others have not as yet produced flowers. None of them occurs outside of cultivation, and for the most part they are as yet rare in cultivation. The list of these recently introduced and cultivated palms includes such species as: *Acoelorrhaphe wightii* Wendl., *Archontophoenix alexandrae* H. Wendl. & Drude, *Attalea cohune* HBK., *Chrysalidocarpus lutescens* Wendl., *Cocos plumosa* Hook., *Coccothrinax garberi* Sarg., *Cyrtostachys lakka* Becc., *Dictyosperma alba* Wendl. & Drude, *Dypsis madagascariensis* Nichols, *Howea belmoreana* Becc., *Hypophorbe amaricaulis* Mart., *Latania commersonii* Gmel., *L. loddigesii* Mart., *Livistona australis* Mart., *L. chinensis* R. Br., *Martinezia caryotaefolia* HBK., *Oreodoxia regia* HBK., *Phoenix pusilla* Gaertn., *P. roebelenii* O'Brien, *P. rupicola* T. And., *Pinanga kuhlii* Blume, *Pritchardia gaudichaudii* Wendl., *P. pacifica* Seem. & H. Wendl., *Ptychosperma macarthurii*

H. Wendl., *Raphia ruffia* Mart., *Sabal adansonii* Guerns., *S. blackburneanum* Glazeb., *S. mauritiiforme* Griseb. & Wendl., *S. palmetto* Lodd., *Thrinax argentea* Lodd., *T. robusta* Wendl., and *Washingtonia filifera* Wendl.

## ARACEAE

## 1. POTHOS Linnaeus

**POTHOS ACUMINATISSIMUS** Merr. in Philip. Journ. Sci. 11 (1916) Bot. 175.

Samar, *B. S. 24125 Ramos*. In primary forests at low altitudes. Endemic.

**POTHOS CYLINDRICUS** Presl Epim. (1851) 243; Walp. Ann. 3 (1853) 501; Schott Aroid. 1 (1853) 23, t. 48, Prodr. (1860) 569; Miq. Fl. Ind. Bat. 3 (1855) 180; Engl. in DC. Monog. Phan. 2 (1879) 86, Pflanzenreich 21 (1905) 36, f. 17, D, E; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 282; Naves Novis. App. (1882) 287.

Luzon (Camarines, Albay), Leyte, Panay, Mindanao (Davao), *Cuming 914, Williams 2937, Piper 481, Wenzel 387, B. S. 22143 Ramos, 32451 McGregor*. In primary forests at low and medium altitudes. Endemic.

Local name: Palipí (Bik.).

**POTHOS DOLICHOPHYLLUS** Merr. in Philip. Journ. Sci. 11 (1916) Bot. 4.

Luzon (Sorsogon), Samar, *B. S. 17628, 23708 Ramos*. In primary forests at low altitudes. Endemic.

**POTHOS HERMAPHRODITUS** (Blanco) Merr. Sp. Blancoanae (1918) 90.

*Batis hermaphrodita* Blanco Fl. Filip. (1837) 791, ed. 2 (1845) 541, ed. 3, 3 (1879) 197.

*Pothos longifolius* Presl Epim. (1851) 242; Schott Aroid. 1 (1853) 22, t. 34, Prodr. (1860) 563; Walp. Ann. 3 (1853) 501; Miq. Fl. Ind. Bat. 3 (1856) 180; Naves Novis. App. (1882) 262; Engl. in DC. Monog. Phan. 2 (1879) 82, Pflanzenreich 21 (1905) 25, f. 9; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 282; Merr. Interpret. Herb. Amb. (1917) 124.

*Pothos chapelieri* Naves Novis. App. (1882) 286, non Schott.

Luzon (Pangasinan, Rizal, Laguna, Tayabas), Samar, Leyte, Panay, Siargao, Mindanao (Davao), *Cuming 682, Merrill 2792, Sp. Blancoanae 57, Phil. Pl. 4, Elmer 18005, Wenzel 265, Loher 7045, B. S. 34871 Ramos & Pascasio, 13622, 24475 Ramos, 19211 Reillo, 16859 Serviñas, F.-B. 24911 Mabesa*. In primary forests at low and medium altitudes. Sumatra, Java, Celebes, Moluccas.

Local names: Apis (Tag.); hipan (Bik.); oro-óla (Bik.).

**POTHOS INAEQUILATERUS** (Presl) Engl. in DC. Monog. Phan. 2 (1879) 88, Pflanzenreich 21 (1905) 37; Naves Novis. App. (1882) 287.

*Scindapsus inaequilaterus* Presl Epim. (1851) 241; Walp. Ann. 3 (1853) 500.

*Pothos cummingianus* Schott in Oester. Bot. Wochenbl. (1855) 19, Prodr. (1860) 570; Walp. Ann. 5 (1858) 910 (*cumingianus*); Miq. Fl. Ind. Bat. 3 (1856) 181; Vidal Rev. Pl. Vasc. Filip. (1886) 282, Phan. Cuming. Philip. (1885) 154.

Luzon (Albay, Sorsogon), Samar, Leyte, *Cuming 908, Wenzel 357, 1110, Elmer 17050* as *P. peninsularis* Elm., *B. S. 24474 Ramos*. In primary forests at low and medium altitudes. Endemic.

**POTHOS LUZONENSIS** (Presl) Schott in Oester. Bot. Wochenbl. (1855) 19, Aroid. 1 (1853) 25, t. 56, Prodr. (1860) 574; Miq. Fl. Ind. Bat. 3 (1856) 182; Walp. Ann. 5 (1858) 910; Naves Novis. App. (1882) 287; Engl. in DC. Monog. Phan. 2 (1879) 93, Pflanzenreich 21 (1905) 42; Vidal Rev. Pl. Vasc. Filip. (1886) 282, Phan. Cuming. Philip. (1885) 154.

*Goniurus luzonensis* Presl Epim. (1851) 244; Walp. Ann. 3 (1853) 500.

Luzon (Zambales, Rizal, Bataan, Camarines), *Cuming 1045, Merrill Phil. Pl. 1529, Loher 7036, 7037, F. B. 5948 Curran*. In primary forests at low and medium altitudes. Endemic.

Local name: Uarat-uárat (Bik.).

**POTHOS OVATIFOLIUS** Engl. in Pflanzenreich 21 (1905) 40.

Luzon (Tayabas, Camarines, Sorsogon), Samar, Mindanao (Agusan), *Ahern 155, Elmer 14014, 15204, B. S. 24543 Ramos, 28549 Ramos & Edaña, F. B. 12247 Curran*. In primary forests at low or medium altitudes. Endemic.

Local names: Kalíkip (Tag.); kalot-kágot (Bik.); maláang-lakop-lákop (S. L. Bis.).

**POTHOS PHILIPPINENSIS** Engl. in Pflanzenreich 21 (1905) 315; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 32.

Luzon (Apayao, Nueva Ecija, Bulacan, Bataan, Tayabas), Samar, *F. B. 369 Barnes, B. S. 34031, 36414 Ramos & Edaña, 20742 Escritor, 28190 Fénix, 13054 Ramos, 1640 Foxworthy, Whitford 341, 1046bis, Williams 486*. In primary forests at low and medium altitudes. Endemic.

Local names: Bagubalának (S. L. Bis.); baladaúan (Bik., Tag.); bayámi (Tag.); malagayámon (Tag.); orolaypan (Bik.); tibátib (Tag.); tagoápi (Bik.).

**POTHOS RUMPHII** Schott Melet. 1 (1832) 21; Engl. Pflanzenreich 21 (1905) 38, f. 16; Naves Novis. App. (1882) 287; Merr. Interpret. Herb. Amb. (1917) 124.

*Scindapsus rumphii* Presl Epim. (1851) 241.

Luzon (Rizal, Laguna, Tayabas, Camarines, Albay, Sorsogon), Negros, Samar, Panay, Leyte, Mindanao, Basilan, *B. S. 31078, 28585 Ramos & Edaña, 24144, 22132, 19367 Ramos, 15435 Reillo, F. B. 9656 Curran, Loher 7033, Wenzel 22, Clemens 685, Merrill 7309, Weber 1044, Elmer 15854* as *P. clemensii* Elm. Celebes, Moluccas, New Guinea.

Local names: Amlóng (Bik., Bis., Tag.); bislag (Mbo.); dílang-báka (Tag.); takúling (C. Bis.).

#### EXCLUDED SPECIES

**POTHOS BARBERIANUS** SCHOTT; Naves Novis. App. (1882) 287.

**POTHOS BECCARIANUS** Engl.; Naves l. c.

**POTHOS GRACILIS** Roxb.; Naves l. c.

**POTHOS LEPTOSTACHYUS** Schott; Naves l. c.

POTHOS LONGIPES Schott; Naves l. c.

POTHOS LOUREIRI Hook.; Naves l. c.

POTHOS MACROPHYLLUS De Vriese; Naves op. cit. 286.

POTHOS OXYPHYLLUS Miq.; Naves op. cit. 287.

POTHOS ROXBURGHII De Vriese; Naves op. cit. 286.

POTHOS SUMATRANUS Miq.; Naves op. cit. 287.

POTHOS VRIESEANUS Schott; Naves op. cit. 286.

POTHOS ZOLLINGERI Schott; Naves op. cit. 287.

POTHOS CELATOCAULIS N. E. Br. in Gard. Chron. 13 (1880) 200; Engl. in Bot. Jahrb. 25 (1898) 5, Pflanzenreich 37 (1908) 44.

This was described from Bornean material, and Engler, l. c., referred to it *Warburg 14603*, from Davao, Mindanao. Later, Pflanzenreich 21 (1905) 44, Engler admits the species as one of doubtful status from Borneo only. It is probably a *Rhaphidophora*, *R. celatocaulis* v. A. v. R. in Bull. Jard. Bot. Buitenz. 1 (1920) 382.

POTHOS SCANDENS Linn. Engl. Pflanzenreich 21 (1905) 26, quoad Philip.; Naves Novis. App. (1882) 286; Vidal Rev. Pl. Vasc. Filip. (1886) 177.

*Vidal 1990* is referred here by Engler, who gives the range of the species as from India to Indo-China, Java, Sumatra, and Borneo. I suspect the Philippine specimen to be referable to *P. hermaphroditus* Merr. in which species the relative length and width of the petiole and lamina are exceedingly variable.

## 2. ANADENDRON Schott

ANADENDRON MONTANUM (Blume) Schott in Bonplandia 5 (1857) 45, Prodr. (1860) 391; Engl. in DC. Monog. Phan. 2 (1879) 97, Pflanzenreich 21 (1905) 49; Naves Novis. App. (1882) 287.

*Calla montana* Blume Cat. Gew. Buitenz. (1823) 62.

Mindanao (Zamboanga), *B. S. 37023 Ramos & Edaño*. In primary forests at low altitudes. Siam and Indo-China to the Malay Peninsula, Sumatra, Java, and Borneo.

### EXCLUDED SPECIES

ANADENDRON AFFINE Schott; Naves Novis. App. (1882) 287.

## 3. POTHOIDIUM Schott

POTHOIDIUM LOBBIANUM Schott in Oester. Bot. Wochenbl. 7 (1857) 70, Aroid. 1 (1857) 26, t. 57, Gen. Aroid. (1858) 96, t. 96, Prodr. (1860) 576; Naves Novis. App. (1882) 287; Engl. in DC. Monog. Phan. 2 (1879) 95, Pflanzenreich 21 (1905) 46; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 32.

Northern Luzon (Cagayan) to Palawan and Mindanao, in most or all islands and provinces. In primary forests at low and medium altitudes. A monotypic genus. Celebes, Ternate.

Local names: Ariuan (Ibn.); balong-kahinai (P. Bis.); barálta (Tag.); magutapílak (P. Bis.); malagayáman (Sbl.); pakokalañgan (Mbo.); vara alta (Sp.).



## 4. ACORUS Linnaeus

**ACORUS CALAMUS** Linn. Sp. Pl. (1753) 324; Miq. Fl. Ind. Bat. 3 (1856) 175; Naves Novis. App. (1882) 287; Engl. in DC. Monog. Phan. 2 (1879) 216, Pflanzenreich 21 (1905) 309; Merr. Fl. Manila (1912) 130.

Luzon (Bontoc, Benguet), *Merrill Phil. Pl. 1789, Vanoverbergh 2585*. In swamps, altitude about 1,300 m, here native or thoroughly naturalized; cultivated here and there at low altitudes. North temperate regions generally.

Local names: Acóro (Sp.); bueng (Pamp.); dálau (Ilk.); dárau (Ilk.); déngau (Bon.); lubígan (Tag.).

**ACORUS GRAMINEUS** Soland. in Ait. Hort. Kew 1 (1789) 474; Engl. Pflanzenreich 21 (1905) 312; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 288.

Luzon (Laguna), *B. S. 14949 Ramos*. On rocks or ledges in beds of small streams at low or medium altitudes. Japan to southern China.

## 5. RHAPHIDOPHORA Hasskarl

**RHAPHIDOPHORA ACUMINATA** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 265.

Luzon (Batangas, Sorsogon), Leyte, *Wenzel 1139, B. S. 23300 Ramos, 22669 Ramos & Deroy*. In primary forests at low altitudes. Endemic.

**RHAPHIDOPHORA COPELANDII** Engl. in Bot. Jahrb. 37 (1905) 115; Engl. ex Krause in Pflanzenreich 37 (1908) 49.

*Rhaphidophora trinervia* Elm. Leaf. Philip. Bot. 8 (1919) 3073.

Luzon (Benguet, Ifugao, Laguna), Mindanao (Davao), *Copeland 1193, Merrill 7700, Williams 2605, Elmer 18057, B. S. 19706 McGregor*. In forests and on ledges in thickets, altitudes 400 to 1,600 m. Endemic.

**RHAPHIDOPHORA ELMERI** Engl. & Krause in Engl. Bot. Jahrb. 44 (1910) Beibl. 101: 11.

Luzon (Tayabas, Sorsogon), Negros, *Elmer (9286, 9268), 10135a, 15116*. In forests at medium altitudes. Endemic.

**RHAPHIDOPHORA GRANDIFOLIA** Krause in Engl. Bot. Jahrb. 44 (1910) Beibl. 101: 11.

Negros, *Elmer 9464*. In forests. Endemic.

Local name: Dakoling (C. Bis.).

**RHAPHIDOPHORA LAGUNENSIS** Elm. Leaf. Philip. Bot. 8 (1919) 2072.

Luzon (Laguna), *Elmer 17812, Pascasio*. In the mossy forest, summit of Mt. Maquiling, altitude about 1,100 m. Endemic.

**RHAPHIDOPHORA MERRILLII** Engl. Bot. Jahrb. 37 (1905) 115; Engl. & Krause in Engl. Pflanzenreich 37 (1908) 51; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 32, 5 (1910) Bot. 335, Fl. Manila (1912) 129, Sp. Blancoanae (1918) 90.

*Pothos pinnata* Blanco Fl. Filip. (1837) 646, ed. 2 (1845) 450, ed. 3, 3 (1879) 48, t. 339, non Linn.

*Epipremnum merrillii* Engl. & Krause in Engl. Pflanzenreich 37 (1908) 137.

Luzon (Bontoc, Benguet, Union, Nueva Vizcaya, Zambales, Bataan, Rizal, Laguna, Tayabas, Sorsogon), Polillo, Palawan, Leyte, Negros, Mindanao, *Merrill 9434, Sp. Blancoanae 715, Elmer 5539, 7296, 15135* as *Epipremnum glaucocephalum* Elm., *B. S. 11292, 10370 McGregor, 6004, 5883 Curran*. In thickets and forests at low and medium altitudes. Endemic.

Local names: Amiling (Is.); amlóng (Bik., Bis.); amólóng (Ilk.); amúling (Is.); bagák (S. L. Bis.); bakág (Bik.); balikupkúp (Bis.); balision (Is.); bisako (Bis.); daila (Bis.); dibátib (Bis.); dukúp (Bon.); garban (Bis.); garusíba (Ibn.); gátgati (Bon.); gayáman (Sbl.); horoa (Bis.); kígau (Bon.); kilat (Sbl.); malapakpák-baláuai (Tag.); mamisi (Ig.); maragayáman (Sbl.); tabátib (Tag.); takóling (C. Bis.); takótin (Bis.); tampinbanal (Tag.); tibátib (Tag.).

**RHAPHIDOPHORA MONTICOLA** Krause in Engl. Bot. Jahrb. 44 (1910) Beibl. 101: 12.

Luzon (Laguna, Sorsogon), Negros, Leyte, *Elmer 10098, 16790* as *R. bulusanensis* Elm., *Merrill 7154, Wenzel 1160, B. S. 23455 Ramos, F. B. 21387 Villamil*. In primary forests ascending into the mossy forest, altitude 700 to 1,200 m. Endemic.

**RHAPHIDOPHORA PERKINSIAE** Engl. in Engl. Bot. Jahrb. 37 (1905) 115; Engl. & Krause in Engl. Pflanzenreich 37 (1908) 37.

Luzon (Benguet, Bataan, Rizal, Laguna, Tayabas), *Elmer 6305, Loher 7035, Whitford 1169, Merrill 9667, F. B. 26747 Mabesa, 7826 Curran & Merritt*. In primary forests on trees and in thickets about limestone cliffs and boulders, altitude 1,000 to 1,600 m. Endemic.

Local names: Ámlong (Tag., Ig.); madulúnang (Ig.).

**RHAPHIDOPHORA PHILIPPINENSIS** Engl. & Krause in Engl. Pflanzenreich 37 (1908) 137.

Samar, Mindanao (Agusan, Lanao), *Clemens 1229, Elmer 13776, B. S. 24405 Ramos*. In forests at low and medium altitudes. Endemic.

Local name: Mananáu (S. L. Bis.).

**RHAPHIDOPHORA RIGIDA** Krause in Leaf. Philip. Bot. 6 (1914) 2284.

Luzon (Sorsogon), Negros, *Elmer 10220, 15056*. In primary forests, altitude about 1,250 m; apparently very near *R. philippinensis* Engl. & Krause.

**RHAPHIDOPHORA STENOPHYLLA** Elm. Leaf. Philip. Bot. 8 (1919) 3073.

Luzon (Laguna), *Elmer 18449*. Margins of forests at low altitudes. Endemic.

**RHAPHIDOPHORA TODAYENSIS** Krause in Leaf. Philip. Bot. 6 (1914) 2284.

Mindoro, Mindanao (Davao), *Elmer 10849, B. S. 39735 Ramos*. In forests at low altitudes. Endemic.

**RHAPHIDOPHORA WARBURGII** Engl. Bot. Jahrb. 37 (1905) 116; Engl. & Krause in Engl. Pflanzenreich 37 (1908) 51.

Luzon (Cagayan or Isabela), *Warburg* in herb. Berol. Probably from primary forests at low altitudes. Endemic.

## EXCLUDED SPECIES

- RHAPHIDOPHORA DECURSIVA Schott; Naves Novis. App. (1882) 288.  
 RHAPHIDOPHORA FALLAX Schott; Usteri Beitr. Ken. Philip. Veg. (1905) 130.  
 RHAPHIDOPHORA LANCIFOLIA Schott; Naves Novis. App. (1882) 288.  
 RHAPHIDOPHORA MONTANA Schott; Naves l. c.  
 RHAPHIDOPHORA PEEPLA Schott; Naves l. c.  
 RHAPHIDOPHORA PERTUSA Schott; Naves l. c.  
 RHAPHIDOPHORA SYLVESTRIS Engl.; Naves l. c.

## 6. EPIPREMNUM Schott

EPIPREMNUM ELMERIANUM Engl. ex Engl. & Krause in Pflanzenreich  
 37 (1908) 66.

Leyte, *Elmer 7295*. In forests at low and medium altitudes. Endemic.

EPIPREMNUM PHILIPPINENSE Engl. & Krause in Engl. Pflanzenreich  
 37 (1908) 137.

Luzon (Laguna, Tayabas, Sorsogon), *Elmer 7623, 9253, 14522, 15113* as *E. miniatum* Elm., *16422* as *E. sorsogonense* Elm., *B. S. 10052, 20548, 23299* Ramos, *35419* Martelino & Edaña. In forests, altitude about 650 m. Endemic.

EPIPREMNUM PINNATUM (Linn.) Engl. Pflanzenreich 37 (1908) 60,  
*f. 25*.

*Pothos pinnata* Linn. Sp. Pl. ed. 2 (1763) 1374.

*Epipremnum robinsonii* Krause in Notizbl. Kgl. Bot. Gart. Berlin  
 5 (1912) 266.

Luzon (Tayabas), Polillo, Mindanao (Davao), *Whitford 746, B. S. 15866* Fénix, *Robinson 9181, Elmer 16061* as *E. multicephalum* Elm. In forests near the seashore. Tenasserim to New Guinea and Polynesia.

Local names: Lukmói (Tag.); tibátib (Tag.).

EPIPREMNUM TRUNCATUM Engl. & Krause in Engl. Pflanzenreich 37  
 (1908) 63.

Luzon (Camarines, Sorsogon), Biliran, Leyte, Mindanao (Agusan), *Elmer 7291, 13729, 14721, Merrill 7343, F. B. 27244* Palma, *B. S. 18925* McGregor. In primary forests at low altitudes. Endemic.

Local names: Lukmói (Tag.); pasagianit (Mbo.).

## EXCLUDED SPECIES

EPIPREMNUM GIGANTEUM Schott; Naves Novis. App. (1882) 288.

## 7. EPIPREMNOPSIS Engler

EPIPREMNOPSIS HUEGELIANA (Schott) Engl. in Engl. & Krause Pflanzenreich 37 (1908) 138.

*Rhaphidophora huegeliana* Schott in Bonplandia 5 (1857) 45, Prodr. (1860) 384.

*Epipremnum mirabile* Naves Novis. App. (1882) 288; Vidal Rev. Pl. Vasc. Filip. (1886) 281; Engl. in Bot. Jahrb. 37 (1905) 119; Usteri Beitr. Ken. Philip. Veg. (1905) 130, non Schott.

*Epipremnum medium* Engl. in DC. Monog. Phan. 2 (1879) 250, quoad Philip.; Naves Novis. App. (1882) 289.

*Epipremnopsis media* Engl. ex Engl. & Krause in Pflanzenreich 37 (1908) 1, quoad Philip.

Batan and Babuyan Islands, Luzon (Bataan, Laguna, Camarines, Sorsogon), Catanduanes, Panay, Mindanao (Agusan, Zamboanga, Cotabato), *B. S. 35662 Ramos & Edaña, 22852 McGregor, 11716 Robinson, 3902 Fénix, Elmer 16052, 18223, Merrill 8071.* In forests at low and medium altitudes. Endemic.

Local names: Lusígut (Ilk.); takhib (Iv.).

#### 8. SCINDAPSUS Schott

**SCINDAPSUS AUREUS** (Lind. & André) Engl. in Pflanzenreich 37 (1908) 80; Merr. Fl. Manila (1912) 139.

*Pothos aurea* Lindl. & André in Ill. Hort. (1880) 69, t. 381.

Cultivated for ornamental purposes, but never observed in flower. A native of the Solomon Islands.

**SCINDAPSUS CURRANII** Engl. & Krause in Pflanzenreich 37 (1908) 138.

Luzon (Cagayan, Laguna, Tayabas, Sorsogon), Mindoro, Negros, Camiguin de Misamis, *F. B. 8014, 8027 Curran & Merritt, 13711 Curran, 11376 Merritt, 26916 Mabesa, 25707 Foxworthy, B. S. 24064 Ramos, Elmer 18475, 14590, 16556.* In primary forests at low altitudes. Endemic.

Local name: Lukmói (Tag.).

**SCINDAPSUS FALCIFOLIUS** Engl. Bot. Jahrb. 37 (1905) 119; Engl. & Krause in Pflanzenreich 37 (1908) 79.

Jolo, Warburg in herb. Berol. Celebes.

**SCINDAPSUS HEDERACEUS** Schott in Bonplandia 5 (1857) 45; Naves Novis. App. (1882) 289; Engl. & Krause in Pflanzenreich 37 (1908) 76, 138, f. 32, E-N.

*Scindapsus pictus* Hassk. var. *argyraeus* Engl. Bot. Jahrb. 25 (1898) 13, Pflanzenreich 37 (1908) 80.

*Scindapsus argyraea* Engl. in DC. Monog. Phan. 2 (1879) 255; Naves Novis. App. (1882) 289 (*argyracea*).

Luzon (Laguna, Sorsogon), Catanduanes, Negros, Leyte, *F. B. 4274 Everett, 26436 Catalan, B. S. 15019, 12028, 30388 Ramos, 23151 McGregor, 29233 Ramos & Edaña, Elmer 15230.* In primary forests at low altitudes. Malay Peninsula and Cochinchina to Borneo, Sumatra, and Java.

*Scindapsus argyraea* Engl. as represented by *Engl. Araceae exsic. 265* is a juvenile form with mottled leaves; this is common in Laguna Province, Luzon. In mature plants the leaves are usually not mottled.

Local names: Maragayáman (Ilk.); putoputóhan (Tag.).

#### EXCLUDED SPECIES

**SCINDAPSUS PERTUSUS** Schott; Vidal Cat. Pl. Prov. Manila (1880) 47.

#### 9. SPATHIPHYLLUM Schott

**SPATHIPHYLLUM COMMUTATUM** Schott in Oester. Bot. Wochenbl. 7 (1857) 158, Prodr. (1860) 424, Ann. Mus. Bot. Lugd.-Bat. 3 (1863) 79; Engl. in DC. Monog. Phan. 2 (1879) 230; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 281; Naves

Novis. App. (1882) 288; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 264; Engl. & Krause in Pflanzenreich 37 (1908) 133, f. 55, A-G.

Luzon (Tayabas, Camarines, Albay, Sorsogon), Polillo, Biliran, Mindoro, Leyte, Mindanao, *B. S. 33596, 38523 Ramos & Edaña, 10401, 18707 McGregor, 23571, 15385 Ramos, 6476 Robinson, F. B. 11415 Merritt, Wenzel 235, Merrill 5486, 4080, Copeland 1263, Williams 2364*. In damp primary forests at low and medium altitudes. Celebes, Amboina.

All other species of this genus are confined to tropical America.

#### 10. CYRTOSPERMA Griffith

**CYRTOSPERMA MERKUSII** (Hassk.) Schott in Oester. Bot. Wochenbl. (1859) 61, Prodr. (1860) 403; Engl. in DC. Monog. Phan. 2 (1879) 271, Pflanzenreich 48 (1911) 20, f. 7, G-K.

*Lasia merkusii* Hassk. Cat. Hort. Bogor. (1844) 59, Pl. Jav. Rar. (1848) 161.

*Cyrtosperma griffithii* Merr. in Philip. Journ. Sci. 2 (1907) Bot. 422 sphalm.

Luzon (Sorsogon), Mindoro, Samar, Leyte, Mindanao, *Elmer 15234, Merrill 5218, B. S. 1515 Bermejós, 24267 Ramos, 6678 Robinson*. In ravines along streams, probably often planted. Java and Borneo to New Guinea.

Local names: Galiáng (Bik); palau (C. Bis.); palauán (S. L. Bis., P. Bis.).

#### 11. AMORPHOPHALLUS Blume

**AMORPHOPHALLUS CAMPANULATUS** (Roxb.) Blume ex Decne. in Ann. Mus. Hist. Nat. Paris 3 (1834) 366; Miq. Fl. Ind. Bat. 3 (1856) 201; Engl. in DC. Monog. Phan. 2 (1879) 309, Pflanzenreich 48 (1911) 76; Naves Novis. App. (1882) 289; Merr. Fl. Manila (1912) 130, Philip. Journ. Sci. 10 (1915) Bot. 290, Interpret. Herb. Amb. (1917) 127, Sp. Blancoanae (1918) 91.

*Arum campanulatum* Roxb. Pl. Coromandel 3 (1819) 69, t. 272.

*Arum decurrens* Blanco Fl. Filip. (1837) 656, ed. 2 (1845) 457, ed. 3, 3 (1879) 62.

*Amorphophallus decurrens* Kunth Enum. 3 (1841) 581; Miq. Fl. Ind. Bat. 3 (1856) 202; Engl. in DC. Monog. Phan. 2 (1879) 319, Pflanzenreich 48 (1911) 108; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 290.

Luzon, most or all provinces, Mindoro. In thickets and secondary forests, along roads, trails, etc., at low and medium altitudes in the settled areas, often common. India through Malaya to Polynesia.

Local names: Ánto (Bis.); ápon (Tag.); apong-ápong (Tag.); bagáng (Ibn.); bagóng (Bik., Sul.); oroi (Bis.); pamangkílon (Bis.); puñgápuñg (Tag.); tigi-ñga magmánto (Ilk.); tokod-banuá (Pamp.).

**AMORPHOPHALLUS LONGISPATHEUS** Engl. & Gehrm. in Engl. Pflanzenreich 48 (1911) 91.

Mindanao (Davao), *Williams 2684*. In thickets or forests at medium altitudes. Endemic.

**AMORPHOPHALLUS LUZONIENSIS** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 289.

Luzon (Cagayan), *F. B. 19560 Curran, Weber*. In crevices of limestone ledges at low altitudes. Endemic.

**AMORPHOPHALLUS MERRILLII** Krause in Notizbl. Kgl. Bot. Gart. Berlin 5 (1912) 266.

Panay (Batbatan Island), Cavilli, *Merrill 7177, McGregor*. Abundant in primary forests on Cavilli, a small island in Sulu Sea. Endemic.

**AMORPHOPHALLUS RIVIERI** Durieu Cat. Jard. Bordeaux (1869) 12, var. **KONJAC** (C. Koch) Engl. in DC. Monog. Phan. 2 (1879) 313, Pflanzenreich 48 (1911) 85.

*Amorphophallus konjac* C. Koch in Berl. Allg. Gartenz. (1858) 166.

Luzon (Rizal, Bataan, Laguna), Mindoro, Palawan, Balabac, Panay, Mindanao, *McGregor 274, Elmer 18185, Merrill 9419, Whiford 1338, F. B. 17649 Curran, B. S. 26211 Ramos, 15641 Fénix*. In thickets and forests at low altitudes. Indo-China, Japan.

Local names: Bulañg-an (Mang.); puñgápung (Tag.).

**AMORPHOPHALLUS VARIABILIS** Blume in Rumphia 1 (1835) 146, t. 35, 37; Kunth Enum. 3 (1841) 33; Miq. Fl. Ind. Bat. 3 (1856) 200; Naves Novis. App. (1882) 290; Engl. in DC. Monog. Phan. 2 (1879) 313, Pflanzenreich 48 (1911) 80; Usteri Beitr. Ken. Philip. Veg. (1895) 130.

Luzon (Union), Mindanao (Davao), Basilan, *Copeland 1264, B. S. 15444 Reillo, 9999 Robinson*. In light forests at low altitudes. Java.

Local name: Bagóng (Bag.).

#### EXCLUDED SPECIES

**AMORPHOPHALLUS BULBIFER** Blume; Naves Novis. App. (1882) 290.

**AMORPHOPHALLUS DUBIUS** Blume; Naves op. cit. 289.

**AMORPHOPHALLUS GIGANTEUS** Blume; Naves op. cit. 290.

**AMORPHOPHALLUS TITANUM** Becc.; Naves op. cit. 289.

**AMORPHOPHALLUS TUBERCULIGERA** Schott; Naves l. c.

#### 12. HOMALOMENA Schott

**HOMALOMENA ELMERI** Engl. ex Engl. & Krause in Pflanzenreich 55 (1912) 42.

Palawan, *Elmer 13229, F. B. 21586 Danao*. In forests along streams at low altitudes; scarcely distinct from *H. palawanensis* Engl. & Krause. Endemic.

**HOMALOMENA PALAWANENSIS** Engl. ex Engl. & Krause in Pflanzenreich 55 (1912) 39, f. 19.

Palawan, *B. S. 912 Foxworthy*. Margins of pools at low altitudes. Endemic.

**HOMALOMENA PHILIPPINENSIS** Engl. ex Engl. & Krause in Pflanzenreich 55 (1912) 55, f. 33.

*Homalomena rubescens* Kunth var. *latifolia* Engl. Bot. Jahrb. 55 (1898) 18.

Luzon (Isabela, Union, Pangasinan, Pampanga, Rizal, Bataan, Laguna, Sorsogon), Mindoro, Palawan, Panay, Leyte, Biliran, Negros, Mindanao. Along small streams in primary forests at low altitudes; common. Endemic.

Local names: Alipaiu (Tag.); alupayi (Tag.); hayau (Sub.); payau (Tag.); salet-nga-nalabága (Ilk.); tahíg (Bik.).

**HOMALOMENA PYGMAEA** (Hassk.) Engl. in Bot. Jahrb. 25 (1898) 18; Engl. & Krause in Engl. Pflanzenreich 55 (1912) 34, f. 15.

*Aglaonema pygmaeum* Hassk. in Hoen. & De Vriese Tijdschr. 9 (1842) 161, Cat. Hort. Bogor. (1844) 57.

*Chamaecladon lanceolatum* Miq. Fl. Ind. Bat. 3 (1856) 212, t. 40; Schott Gen. Aroid. (1858) t. 60.

Negros, *Whitford 1591*. Along stream beds, in cañons, altitude about 175 m. Malay Peninsula, Sumatra, Java, Borneo, and Celebes.

#### EXCLUDED SPECIES

**HOMALOMENA ALBA** Hassk.; Naves Novis. App. (1882) 290.

**HOMALOMENA AROMATICA** Schott; Naves l. c.

**HOMALOMENA COERULESCENS** Jungh.; Naves l. c.

**HOMALOMENA MINOR** Griff.; Naves l. c.

**HOMALOMENA MIQUELIANA** Schott; Naves l. c.

**HOMALOMENA PROPINQUA** Schott; Naves l. c.

**HOMALOMENA RUBESCENS** Kunth; Naves l. c.

**HOMALOMENA RUBRA** Hassk.; Naves l. c.

**HOMALOMENA SAGITTIFOLIA** Jungh.; Naves l. c.

**HOMALOMENA CORDATUM** Schott; Usteri Beitr. Ken. Philip. Veg. (1905) 130.

**HOMALOMENA PALUDOSUM** Hook. f.; Usteri l. c.

**HOMALOMENA ROSTRATUM** Griff.; Usteri l. c.

The last three species were credited to the Philippines on the basis of specimens collected in Negros by Usteri and determined by Engler. The latter author, however, does not credit them to the Philippines in his recent monographic treatment of the group.

#### 13. SCHISMATOGLOTTIS Zollinger and Moritzi

**SCHISMATOGLOTTIS CALYPTRATA** (Roxb.) Zoll. & Mor. Syst. Verz. (1854) 83; Naves Novis. App. (1882) 291; Usteri Beitr. Ken. Philip. Veg. (1905) 130; Merr. Interpret. Herb. Amb. (1917) 129; Engl. Pflanzenreich 55 (1912) 115 (var. *concolor* Hallier f.).

Luzon (Bataan, Cavite, Laguna, Tayabas, Albay), Samar, Leyte, Panay, Mindanao, *Merrill 7603, 7273* (forma *grandifolia* Engl.), *7275, 6703, B. S. 24952 Fénix*. In damp shaded ravines usually along streams on banks and cliffs at low and medium altitudes. Burma, through Malaya to New Guinea.

Local name: Alapáyí (Tag.).

**SCHISMATOGLOTTIS LATIFOLIA** Miq. Fl. Ind. Bat. 3 (1856) 214, var. **VIRIDIS** Engl. ex Engl. & Krause in Pflanzenreich 55 (1912) 117. *Schismatoglottis luzonensis* Engl. Pflanzenreich 55 (1912) 121, non Engl. op. cit. 88.

*Alocasia merrillii* Engl. & Krause in Engl. Bot. Jahrb. 54 (1916) Beibl. 118: 124, Pflanzenreich 71 (1920) 79.

Luzon (Pampanga, Nueva Vizcaya, Laguna, Camarines), Mindanao, *B. S. 2015 Foxworthy, 33830, 33783 Ramos & Edaño, 11248 McGregor, 6736 Robinson, F. B. 1243 Borden Copeland 1310, Baker 1034, Elmer 17829, Merrill 8072*. In shaded ravines along streams on banks and cliffs at low and medium altitudes. Java, Celebes.

**SCHISMATOGLOTTIS LUZONENSIS** Engl. in Pflanzenreich 55 (1912) 88.

Luzon (Rizal), Panay, *Merrill 5047, B. S. 30875 Ramos & Edaño*. On wet ledges in small stream beds at low altitudes. Endemic.

**SCHISMATOGLOTTIS MERRILLII** Engl. in Pflanzenreich 55 (1912) 89.

Luzon (Bontoc, Benguet), *B. S. 12679 Fénix, 8772 McGregor, F. B. 5099 Curran*. On ledges and cliffs in ravines along streams, altitude 1,200 to 1,600 m. Endemic.

Local names: Atúped (Ilk.); pihau (Ig.); píkau (Bon.); picháu (Ig.).

**SCHISMATOGLOTTIS MINDANAOANA** Engl. in Pflanzenreich 55 (1912) 103.

Mindanao (Agusan, Lanao, Davao), *Merrill 7320, Elmer 13489, Clemens 1225*. In damp primary forests along small streams at low and medium altitudes. Endemic.

**SCHISMATOGLOTTIS PUSILLA** Engl. in Bot. Jahrb. 1 (1881) 184, Pflanzenreich 55 (1912) 103, f. 64.

Leyte, *Jagor 1018a* in herb. Berol. Endemic.

**SCHISMATOGLOTTIS RAMOSII** Engl. in Pflanzenreich 55 (1912) 98.

*Schismatoglottis rizalensis* Engl. op. cit. 100.

Luzon (Bulacan, Rizal), *B. S. 3351, 13023 Ramos*. On cliffs and boulders along streams in shaded ravines at low altitudes. Endemic.

Local name: Talísig (Tag.).

**SCHISMATOGLOTTIS WARBURGIANA** Engl. in Bot. Jahrb. 55 (1898) 20, Pflanzenreich 55 (1912) 90, f. 57.

Mindanao (Davao), *Warburg 14605* in herb. Berol. In forests up to 600 m altitude. Endemic.

#### EXCLUDED SPECIES

**SCHISMATOGLOTTIS PICTA** Schott; Naves Novis. App. (1882) 291.

**SCHISMATOGLOTTIS RUPESTRIS** Zoll. & Mor.; Naves l. c.

#### 14. AGLAONEMA Schott

**AGLAONEMA COMMUTATUM** Schott Syn. (1856) 123, Prodr. (1860) 304, Gen. Aroid. (1859) t. 59; Regel Gartenflora (1865) t. 470; Engl. Pflanzenreich 64 (1919) 27, f. 10, G.

*Aglaonema marantaefolium* Blume var. *maculatum* Hook. in Curtis's Bot. Mag. III 21 (1865) t. 5500.

*Aglaonema marantifolium* Blume var. *commutatum* Engl. in DC. Monog. Phan. 2 (1879) 441.



Not uncommon in cultivation in Manila as an ornamental on account of its mottled leaves. Widely cultivated in tropical botanical gardens, probably a native of the Moluccas.

For some years I thought that this might be *Aglaonema maculatum* Blume. Blume's species is based entirely on *Dracunculo Luzonis primo seu indorum Gavay Sinbuga* Camel in Ray Hist. Nat. 3 App. (1704) 36, and Camel's specimens were from Leyte and apparently from wild plants. I now suspect *Aglaonema maculatum* Blume to be a form of *A. oblongifolium* Kunth. There is no evidence that *A. commutatum* Schott is of ancient cultivation in the Philippines.

**AGLAONEMA CORDIFOLIUM** Engl. Pflanzenreich 64 (1915) 29, f. 14, A-C.

Mindanao (Davao), (*Warburg 14604*). In primary forests at low altitudes. Endemic.

**AGLAONEMA DENSINERVIUM** Engl. Bot. Jahrb. 37 (1905) 134, Pflanzenreich 64 (1915) 13.

Negros, Leyte, Siquijor, Mindanao, Basilan, *Copeland 418*, *Piper 466*, *Clemens 476*, *Wenzel 1128*, *Williams 2429*, *Merrill 7347*, *8204*, *F. B. 4774*, *Mearns & Hutchinson, B. S. 26139 Fénix*, *15452 Reillo*. In primary forests at low and medium altitudes. Endemic.

**AGLAONEMA HAENKEI** (Presl) Schott in Bonplandia 7 (1859) 30, Prodr. (1860) 301; Naves Novis. App. (1882) 291; Engl. in DC. Monog. Phan. 2 (1879) 439, Pflanzenreich 64 (1915) 17; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 281; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 400.

*Scindapsus haenkei* Presl Epim. (1851) 240; Walp. Ann. 3 (1853) 500; Miq. Fl. Ind. Bat. 3 (1856) 183.

*Caladium seguinum* Presl Rel. Haenk. 1 (1827) 148, non Vent.

Babuyan Islands, Luzon (Apayao, Laguna, Cavite), Panay, *Merrill 4186*, *Elmer 17668*, *B. S. 4089 Fénix*, *35350 Martelino & Edaño*, *12404*, *32590 McGregor*, *10008 Ramos*, *F. B. 26047 Mabesa*. In primary forests chiefly along streams at low and medium altitudes. Celebes.

**AGLAONEMA OBLONGIFOLIUM** (Roxb.) Kunth Enum. 3 (1841) 55; Merr. Interpret. Herb. Amb. (1917) 129.

*Calla oblongifolia* Roxb. Hort. Beng. (1814) 65, Fl. Ind. ed. 2, 3 (1832) 516.

*Aglaonema marantifolium* Blume Rumphia 1 (1835) 153, t. 66; Engl. in DC. Monog. Phan. 2 (1879) 441, Pflanzenreich 64 (1915) 27, t. 10, f. A-F; Naves Novis. App. (1882) 291; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 33.

? *Aglaonema maculatum* Blume Rumphia 1 (1835) 154; Kunth Enum. 3 (1841) 56; Miq. Fl. Ind. Bat. 3 (1856) 217; Schott Syn. (1856) 123, Prodr. (1860) 306, Engl. in DC. Monog. Phan. 2 (1879) 442, Pflanzenreich 64 (1915) 34.

Northern Luzon (Cagayan) to Mindanao, in most or all islands and provinces, incl. *Elmer 16520* as *A. alpinum* Elm. In primary forests chiefly along streams; the leaves are sometimes mottled. Amboina, Banda.

Local names: Dampíng-banál (Tag.); pamitágen (Mang.); pauangkílon (C. Bis.).

**AGLAONEMA PHILIPPINENSE** Engl. in Bot. Jahrb. 25 (1898) 21, Pflanzenreich 64 (1915) 29.

*Aglonema latifolium* Engl. Bot. Jahrb. 37 (1905) 134.

Luzon (Laguna, Tayabas, Camarines), Panay, Mindanao (Davao), Gregory 86, B. S. 18139 Robinson, 23084, 23088, 22847, 23077 McGregor. In forests at low altitudes. Endemic.

#### EXCLUDED SPECIES

**AGLAONEMA MODESTUM** Schott ex Engl. in DC. Monog. Phan. 2 (1879) 442, Pflanzenreich 64 (1915) 29, f. 13.

The type of this is a specimen collected by Gaudichaud supposedly in Luzon, but which in all probability came from Macao; the species occurs in southern China, but has not been detected in the Philippines. See Merrill in Philip. Journ. Sci. 13 (1918) Bot. 133.

**AGLAONEMA PICTUM** Kunth; Naves Novis. App. (1882) 291.

**AGLAONEMA SIMPLEX** Schott; Naves Novis. App. (1882) 291; ? Vidal Rev. Pl. Vasc. Filip. (1886) 281.

Vidal's doubtful record for this Bornean species was based on his No. 1996 from San Mateo, Rizal Province, Luzon. I have not seen the specimen but suspect it to be the same as *A. haenkei* Schott or *A. oblongifolium* Kunth.

#### 15. ALOCASIA Necker

**ALOCASIA ATROPURPUREA** Engl. Pflanzenreich 71 (1920) 132.

Luzon (Ifugao, Mt. Polis), B. S. 19663 McGregor. In the mossy forest at medium altitudes. Endemic.

**ALOCASIA CULIONENSIS** Engl. in Engl. Bot. Jahrb. 37 (1905) 135; Engl. & Krause Pflanzenreich 71 (1920) 102.

Luzon (Pangasinan), Mindoro, Culion, Palawan, Panay, Merrill 555, 9819, 9824, 9507, B. S. 29883 Félix, 31264 Ramos & Edaña, 39602 Ramos. In primary forests at low altitudes. Endemic.

To be compared with *A. longiloba* Miq.

**ALOCASIA HETEROPHYLLA** (Presl) Merr. in Philip. Journ. Sci. 3 (1908) Bot. 220, Fl. Manila (1912) 133; Engl. & Krause Pflanzenreich 71 (1920) 101, f. 22.

*Caladium heterophyllum* Presl Rel. Haenk. 1 (1827) 148.

*Colocasia ? heterophylla* Kunth Enum. 3 (1841) 40; Miq. Fl. Ind. Bat. 3 (1856) 204; Schott Prodr. (1860) 139.

*Alocasia warburgii* Engl. in Engl. Bot. Jahrb. 25 (1898) 25; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 33.

*Alocasia manilensis* Engl. Bot. Jahrb. 25 (1898) 23; Engl. & Krause Pflanzenreich 71 (1920) 95, f. 19, E, F.

Luzon (Ilocos Norte, Pampanga, Rizal, Bataan, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Alabat, Panay, Negros, Samar, Jolo. In primary forests at low and medium altitudes. *Alocasia manilensis* Engl. is merely a juvenile form. Celebes.

Local name: Naroknarok (Mbo.).

**ALOCASIA MACRORRHIZA** (Linn.) Schott Melet. (1832) 18; Engl. in DC. Monog. Phan. 2 (1879) 502; Naves Novis. App. (1882) 293; Merr. Interpret. Herb. Amb. (1917) 130, Sp. Blancoanae (1918) 91; Engl. & Krause Pflanzenreich 71 (1920) 84, f. 15.

*Arum macrorrhizon* Linn. Sp. Pl. (1753) 965.

*Calla maxima* Blanco Fl. Filip. (1837) 658.

*Arum grandifolium* Blanco op. cit. ed. 2 (1845) 458, ed. 3, 3 (1879) 63, t. 177.

*Calla badian* Blanco Fl. Filip. (1837) 658.

*Alocasia indica* Naves Novis. App. (1882) 293, Usteri Beitr. Ken. Philip. Veg. (1905) 130; Merr. Fl. Manila (1912) 133, Engl. & Krause Pflanzenreich 71 (1920) 87, quoad Philip., non Schott.

Throughout the Philippines in old clearings and secondary forests at low and medium altitudes (incl. *Elmer 17381* as *A. talipan* Elm.), the older plants often with a tall stout caudex. India to Malaya; planted for ornamental purposes in other tropical countries.

Local names: Abá (Ibn.); aba-ába (Ig.); badiáng (Tag., Bis.); bagíáng (Bis.); bíra (Ilk.); bíga (Tag., Ilk., Bis., Pamp.); bilbíla (Bon.); gabi (Bik.); galiáng (Bis.); gandus (Pamp.); malabíga (Tag.); ragiáng (Bis.); sininába (Ilk.); talípan (Bik.); taliáng (Bis.).

**ALOCASIA MAQUILINGENSIS** Merr. in Philip. Journ. Sci. 13 (1918) Bot 3.

Luzon (Laguna, Sorsogon), *Baker 868*, *Merrill 7153*, *Elmer 17955*, *16181* as *A. vulcanica* Elm., *B. S. 6737 Robinson*, *16926 Servinas*. On slopes in primary forests, on Mt. Maquiling, altitude 100 to 600 m. Endemic.

**ALOCASIA MICHOLITZIANA** Sander in Gard. Chron. 51 (1912) Suppl. XV, f. 9; N. E. Br. in Curtis's Bot. Mag. IV 9 (1913) t. 8522; Engl. & Krause Pflanzenreich 71 (1920) 89.

Luzon (Apayao, Benguet), *Merrill 9744*, *B. S. 28024*, *28421 Fénix*. In thickets about limestone boulders, altitude about 1,300 m. Endemic.

**ALOCASIA PORTEI** (Schott) Engl. & Becc. in DC. Monog. Phan. 2 (1879) 645; Naves Novis. App. (1882) 294; Merr. Fl. Manila (1912) 132. *Schizocasia portei* Schott in Bonplandia 10 (1862) 148; Engl. in DC. Monog. Phan. 2 (1879) 495; Engl. & Krause Pflanzenreich 71 (1920) 117.

*Alocasia indica* Schott var. *heterophylla* Engl. in DC. Monog. Phan. 2 (1879) 502.

*Alocasia indica* Schott var. *diversifolia* Engl. Pflanzenreich 71 (1920) 88.

Luzon (Bataan, Laguna, Camarines), *Lyon*, *Holman*. In old clearings at medium altitudes. Endemic.

Local name: Badiáng (Bik.).

**ALOCASIA REVERSA** N. E. Br. in Gard. Chron. III 8 (1890) 38; Hook. f. in Curtis's Bot. Mag. III 52 (1896) t. 7498; Usteri Beitr. Ken. Philip. Veg. (1905) 130; Engl. & Krause Pflanzenreich 71 (1920) 95.

This was based on cultivated specimens supposedly of Philippine origin. I have seen no specimens. Endemic.

**ALOCASIA SANDERIANA** Bull. Cat. (1894) 8, *fig.*; Merr. Fl. Manila (1912) 132; Engl. & Krause Pflanzenreich 71 (1920) 104.

*Schizocasia sanderiana* Engl. in Bot. Jahrb. 25 (1898) 26.

Mindanao (Misamis, Agusan), *Merrill 7276, F. B. 4762 Mearns & Hutchinson*. In damp primary forests at low altitudes. A very beautiful species common in greenhouse cultivation in Europe and America. Endemic.

**ALOCASIA SINUATA** N. E. Br. in Gard. Chron. (1885) 678; Engl. & Krause Pflanzenreich 71 (1920) 102.

This was described from cultivated specimens supposedly of Philippine origin; *Merrill 9568* from Palawan possibly represents it. Endemic.

**ALOCASIA WENZELII** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 2.

Biliran, Samar, Leyte, Mindanao (Agusan), *Wenzel 97, B. S. 24266 Ramos, 18929 McGregor, F. B. 7615 Hutchinson*. In forests at low altitudes; perhaps a gigantic form of *A. zebrina* C. Koch & Veitch. Endemic.

Local name: Handúroi (S. L. Bis.).

**ALOCASIA ZEBRINA** C. Koch & Veitch in Wochenschr. Gärtn. Pflanzenk. 6 (1863) 331, Fl. des Serres 15: t. 1541; Naves Novis. App. (1882) 294; Engl. in DC. Monog. Phan. 2 (1879) 507; Merr. Fl. Manila (1912) 133; Engl. & Krause Pflanzenreich 71 (1920) 105.

Luzon (Laguna, Tayabas, Sorsogon), *Whitford 645, Elmer 17790, 14911, B. S. 6731 Robinson*. In primary forests at low and medium altitudes. Endemic.

Local name: Badiáng (Bik.).

#### EXCLUDED SPECIES

**ALOCASIA ALBA** Schott; Naves Novis. App. (1882) 293.

**ALOCASIA CUCULLATA** Schott; Naves l. c.

**ALOCASIA LONGILOBA** Miq.; Naves op. cit. 294.

**ALOCASIA LOWII** Hook. f.; Naves l. c.

**ALOCASIA MONTANA** Schott; Naves op. cit. 293.

**ALOCASIA ODORA** C. Koch; Naves op. cit. 294.

**ALOCASIA PUBERA** Schott; Naves op. cit. 293.

#### 16. COLOCASIA Schott

**COLOCASIA ESCULENTUM** (Linn.) Schott Melet. 1 (1832) 18; Merr. Fl. Manila (1912) 134, Interpret Herb. Amb. (1917) 131, Sp. Blancoanae (1918) 92.

*Arum esculentum* Linn. Sp. Pl. (1753) 965.

*Arum colocasia* Linn. l. c.

*Colocasia antiquorum* Schott Melet. 1 (1832) 18, Naves Novis. App. (1882) 292; Engl. in DC. Monog. Phan. 2 (1879) 491; Hook. f. in Curtis's Bot. Mag. III 50 (1894) t. 7364; Engl. & Krause in Engl. Pflanzenreich 71 (1920) 65.

*Calla gaby* Blanco Fl. Filip. (1837) 659.

*Caladium esculentum* Vent. Jard. Cels. (1800) sub. *t.* 30; Blanco Fl. Filip. ed. 2 (1845) 459, ed. 3, 3 (1879) 64.

*Caladium colocasia* W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 208.

*Caladium violaceum* Desf. Cat. Hort. Paris ed. 3 (1829) 7; Naves Novis. App. (1882) 292.

Generally cultivated throughout the Philippines, but not a native of the Archipelago. It rarely produces flowers in the Philippines. A number of varieties are recognized by Filipinos. Pantropic in cultivation. Taro.

Local names: Abá (Ilk.); áua (Ilk.); abálong (Bis.); amóang (Bon.); gábi (Tag.); pising (Bon.); dagmái (Bis.); kimpói (Bis.); lagbái (Tag., Bis.); linsá (Bik.); lubíngan (If.); natóñg (Bik.).

#### EXCLUDED SPECIES

COLOCASIA AFFINIS Schott; Naves Novis. App. (1882) 293.

COLOCASIA FALLAX Schott; Naves l. c.

COLOCASIA INDICA Engl.; Naves l. c.

#### 17. CALADIUM Ventenat

CALADIUM BICOLOR (Ait.) Vent. Jard. Cels. (1800) *t.* 30; Naves Novis. App. (1882) 291; Merr. Fl. Manila (1912) 131; Engl. & Krause in Engl. Pflanzenreich 71 (1920) 31.

*Arum bicolor* Ait. Hort. Kew 3 (1789) 316.

Cultivated for its variegated leaves; occasional in the settled areas as an escape. A native of tropical America.

Local names: Corazón de maría (Sp.); linsáng-pulá (Bik.).

#### 18. TYPHONIUM Schott

TYPHONIUM DIVARCATUM (Linn.) Decne. in Nouv. Ann. Mus. Paris 3 (1834) 367; Engl. in DC. Monog. Phan. 2 (1879) 611; Naves Novis. App. (1882) 295 et in Blanco Fl. Filip. ed. 3 (1877-83) *t.* 330, var. MOTLEYANUM (Schott) Engl. in DC. Monog. Phan. 2 (1879) 612.

*Typhonium motleyanum* Schott Prodr. (1860) 106; Usteri Beitr. Ken. Philip. Veg. (1905) 130; Engl. Pflanzenreich 73 (1920) 115.

Introduced and cultivated only; occasional in old gardens, but scarcely established. India to the Moluccas.

TYPHONIUM FLAGELLIFORME (Lodd.) Blume in Wall. Cat. (1832) No. 8928; Engl. Pflanzenreich 73 (1920) 112, *f.* 16.

*Arum flagelliforme* Lodd. Bot. Cab. (1819) *t.* 396.

*Arum cuspidatum* Blume Cat. Gew. Buitenz. (1823) 101.

*Typhonium cuspidatum* Decne. in Nouv. Ann. Mus. Paris 3 (1834) 367; Engl. in DC. Monog. Phan. 2 (1879) 616; Naves Novis. App. (1882) 295; Merr. Fl. Manila (1912) 131, Sp. Blancoanae (1918) 92.

*Arum divaricatum* Blanco Fl. Filip. (1837) 657, ed. 2 (1845) 458, ed. 3, 3 (1879) 62, non Linn.

Luzon (Ilocos Norte, Cavite, Rizal), *Merrill 4171, 7128, 7111, Sp. Blancoanae 676, 970, B. S. 1369 Robinson*. In waste places about settlements, along trails, roads, etc., at low altitudes. India to Indo-China through Malaya to Timor, and the Marianne Islands.

## EXCLUDED SPECIES

*TYPHONIUM TRILOBATUM* Schott; Naves Novis. App. (1882) 295.

This, like *T. divaricatum* Decne., has apparently been cultivated in Manila, as it is represented in the Kew herbarium by *Loher 2428*, from Manila. It is not a native of the Philippines.

## 19. ARISAEMA Martius

**ARISAEMA CUSPIDATUM** (Roxb.) Engl. in DC. Monog. Phan. 2 (1879) 536, Pflanzenreich 73 (1920) 158.

*Arum cuspidatum* Roxb. Fl. Ind. ed. 2, 3 (1832) 506.

*Arisaema roxburghii* Kunth Enum. 3 (1841) 18; Hook. f. Fl. Brit. Ind. 6 (1893) 497.

Palawan, *Merrill 9339*. In primary forests at low altitudes. Assam, Malay Peninsula, Penang.

**ARISAEMA POLYPHYLLUM** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 90, Philip. Journ. Sci. 1 (1906) Bot. 33, 2 (1907) Bot. 264, 5 (1910) Bot. 336, *Sp. Blancoanae* (1918) 92; Engl. Pflanzenreich 73 (1920) 182.

*Calla polyphylla* Blanco Fl. Filip. (1837) 659.

*Caladium digitatum* Blanco op. cit. ed. 2 (1845) 459, ed 3, 3 (1879) 64.

*Arisaema cumingii* Schott Syn. Aroid. (1856) 28 (*cumingii*), Prodr. (1860) 52; Miq. Fl. Ind. Bat. 3 (1856) 198; Engl. in DC. Monog. Phan. 2 (1879) 558; Naves Novis. App. (1882) 294; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 281.

*Arisaema sarasinorum* Engl. Bot. Jahrb. 37 (1905) 143.

Luzon (Ilocos Norte, Ifugao, Bontoc, Benguet, Rizal, Bataan, Laguna, Tayabas), Mindoro, Panay, Negros, Mindanao. In forests and in open places, altitude 1,000 to 2,400 m, in the mossy forest often growing as an epiphyte on mossy trunks. Celebes.

Local names: *Bía* (Ibn.); *bíla* (Bon.); *igigin-di-gáyang* (Bon.); *takin-di-gáyang* (Bon.); *tigtigki* (Ig.).

Var. **ANGUSTIFOLIUM** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 336; Engler l. c.

Luzon (Bontoc, Benguet, Zambales), *Merrill 6472, Elmer 6330, F. B. 18387 Alvarez*. In the pine region and in forests, altitude 800 to 2,000 m. Endemic.

## EXCLUDED SPECIES

**ARISAEMA FIMBRIATUM** Mast. in Gard. Chron. II 2 (1884) 680, 689, *f. 119*; Hook. f. in Curtis's Bot. Mag. III 46 (1890) *t. 7150*.

This was originally described from cultivated specimens supposed to have come from the Philippines; it is a native of the Langkawi Islands, north of Penang, and nothing remotely resembling it is known from the Philippines.

**ARISAEMA LAMINATUM** Blume; Naves Novis. App. (1882) 294.

## 20. CRYPTOCORYNE Fischer

**CRYPTOCORYNE APONOGETIFOLIA** Merr. in Philip. Journ. Sci. 14 (1919) 370.

Negros, Panay, *B. S. 31119 Ramos & Edaña, F. B. 19411 Curran*. Submerged in shallow water of streams at low altitudes. Endemic.

**CRYPTOCORYNE PYGMAEA** Merr. in Philip. Journ. Sci. 14 (1919) 371.

Mindanao (Zamboanga), *Merrill 8147, Copeland*. In crevices of ledges in stream beds in damp shaded ravines, altitude about 300 m. Endemic.

**CRYPTOCORYNE USTERIANA** Engl. ex Usteri Beitr. Ken. Philip. Veg. (1905) 130, Engl. Bot. Jahrb. 54 (1916) Beibl. 118: 125; Pflanzenreich 73 (1920) 240, f. 60.

Guimaras, (*Usteri*). I have seen only the type, which is preserved in the Berlin herbarium. Endemic.

## EXCLUDED SPECIES

**CRYPTOCORYNE CILIATA** Fisch.; Naves Novis. App. (1882) 295.

## 21. PISTIA Linnaeus

**PISTIA STRATIOTES** Linn. Sp. Pl. (1753) 963; Blanco Fl. Filip. (1837) 651, ed. 2 (1845) 454, ed. 3, 3 (1879) 55, t. 468; Presl Epim. (1851) 240; Miq. Fl. Ind. Bat. 3 (1856) 218; Engl. in DC. Monog. Phan. 2 (1879) 634; Naves Novis. App. (1882) 296; Vidal Phan. Cuming. Philip. (1885) 154, Rev. Pl. Vasc. Filip. (1886) 281; Merr. Fl. Manila (1912) 130, Sp. Blancoanae (1918) 93; Engl. Pflanzenreich 73 (1920) 259, f. 63.

*Pistia cumingii* Klotz. in Abh. Akad. Berlin (1854) 354; Walp. Ann. 5 (1858) 913.

*Pistia stratiotes* Linn. var. *cuneata* Engl. in DC. Monog. Phan. 2 (1879) 634.

Northern Luzon to Mindanao. Floating in shallow water of lakes and slow streams at low altitudes; often abundant. Pantropic.

Local names: Alaluán (Ibn.); dagáylo (Mbo.); darahíro (Bik.); daraído (Bik.); daraíro (Bik.); kaiápo (Bis.); kiápo (Tag.); kiúpu (Mag.); loloán (Ilk.).

## EXCLUDED GENERA AND SPECIES

**CHAMAECLADON OVALIFOLIUM** Schott; Naves Novis. App. (1882) 290.

**CHAMAECLADON PYGMAEUM** Engl.; Naves op. cit. 291.

**CUSUARIA MARANTIFOLIA** Schott; Naves op. cit. 289.

**DIEFFENBACHIA SEGUINE** Schott; Naves op. cit. 291.

**LAGENANDRA TOXICARIA** Dalz.; Naves op. cit. 295.

**LASIA SPINOSA** Thwaites; Naves op. cit. 289.

**THEIROPHONIUM CRENATUM** Blume; Naves op. cit. 295.

**THEIROPHONIUM WIGHTII** Engl.; Naves l. c.

**PIPTOSPATHE** sp.; Usteri Beitr. Ken. Philip. Veg. (1905) 130.

## LEMNACEAE

## 1. SPIRODELA Schleiden

**SPIRODELA POLYRRHIZA** (Linn.) Schleid. in *Linnaea* 13 (1839) 392; Hegelm. Monogr. Lemn. (1868) 151, 156; Engl. Bot. Jahrb. 21 (1895) 284; Merr. Fl. Manila (1912) 134.

*Lemna polyrrhiza* Linn. Sp. Pl. (1753) 970; Naves Novis. App. (1882) 296; Usteri Beitr. Ken. Philip. Veg. (1905) 131.

Northern Luzon to Mindanao, *F. B. 11622 Curran, Merrill 5121, 4445*. Floating on stagnant fresh water at low and medium altitudes. Temperate and tropical regions of both hemispheres.

## 2. LEMNA Linnaeus

**LEMNA PAUCICOSTATA** Hegelm. Lemn. (1868) 294, Engl. Bot. Jahrb. 21 (1895) 294; Usteri Beitr. Ken. Philip. Veg. (1905) 131; Merr. Fl. Manila (1912) 134, Sp. Blancoanae (1918) 93.

*Lemna gibba* Blanco Fl. Filip. (1837) 672, ed. 2 (1845) 468, ed. 3, 3 (1879) 78; Naves Novis. App. (1882) 296, non Linn.

*Lemna oligorrhiza* Naves Novis. App. (1882) 296, non Kurz.

Luzon to Mindanao, floating on stagnant fresh water at low and medium altitudes, often abundant. Widely distributed in the warmer parts of both hemispheres.

Local names: Inaliá (Tag.); liá (Tag.); liyá (Tag.).

**LEMNA TRISULCA** Linn. Sp. Pl. (1753) 970; Naves Novis. App. (1882) 296; Hegelm. Lemn. (1868) 134, Engl. Bot. Jahrb. 21 (1895) 293.

Luzon (Benguet), Mindanao (Lanao), *Clemens, B. S. 8782 McGregor*. Floating on stagnant fresh water at medium altitudes. Widely scattered in both hemispheres.

## EXCLUDED SPECIES

LEMNA MINOR Linn.; Naves Novis. App. (1882) 296.

## 3. WOLFFIA Horkel

**WOLFFIA ARRHIZA** (Linn.) Wimm. Fl. Schles. (1857) 140; Hegelm. Monogr. Lemn. (1868) 124, Engl. Bot. Jahrb. 21 (1895) 301; Naves Novis. App. (1882) 296.

*Lemna arrhiza* Linn. Mant. 2 (1771) 294.

Luzon (Pampanga, Bulacan, Rizal), *Merrill 4244*. Floating on stagnant fresh-water pools at low altitudes. Warmer parts of both hemispheres.

Local names: Dugmán (Bis.); liá (Tag.).

## EXCLUDED SPECIES

WOLFFIA DELILII Schleid.; Naves Novis. App. (1882) 296.

WOLFFIA SHLEIDENI Miq.; Naves l. c.

## FLAGELLARIACEAE

## 1. JOINVILLEA Gaudichaud

**JOINVILLEA BORNEENSIS** Becc. Nelle Foreste di Borneo (1902) 198.

*Joinvillea malayana* Ridley in Journ. Str. Branch Roy. As. Soc. 44 (1905) 199; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 181.



Palawan, Jolo, *B. S. 575 Foxworthy, Merrill 9515, Clemens 9374*. In forests and on ridges, altitude 650 to 1,000 m. Malay Peninsula, Borneo. Local name: Odyúng (Tagb.).

## 2. FLAGELLARIA Linnaeus

**FLAGELLARIA INDICA** Linn. Sp. Pl. (1753) 333; Blanco Fl. Filip. ed. 2 (1845) 196, ed. 3, 1 (1877) 347; Miq. Fl. Ind. Bat. 3 (1856) 249; Naves Novis. App. (1880) 263; Vidal Rev. Pl. Vasc. Filip. (1886) 279; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 87, Sp. Blancoanae (1918) 93.

*Flagellaria philippinensis* Elm. Leaf. Philip. Bot. 1 (1908) 274.

Batan Islands to Mindanao and Palawan, in all or most islands and provinces. In secondary forests at low and medium altitudes; common. Tropical Africa, tropical Asia through Malaya to tropical Australia and the Marianne Islands.

*Flagellaria philippinensis* Elm. is a form with very large leaves; all intergrades between it and the typical form occur.

Local names: Anuád (Ilk.); aráyan (Tag.); auái (Iv.); auái-si-gáyang (Is.); baling-uái (Tag., Pamp.); boboáya (Mbo.); hoág-uái (Bik.); huág (S. L. Bis., Mbo); húak (Bis.); inǵúal (Ilk.); inǵúla (Tag.); inúal (Pang.); kala-uái (Ibn.); kala-uaiuai (Ibn.); ouág-oái (Bik.); ouag-ouág (Mbo.); páua (P. Bis.); sagákap (P. Bis.); tauá (P. Bis.); tinúung (Ibn.); uág (Sul., Bis., Bag., Bik.); uái-ti-uák (Ilk.); uák (Bis.); venag-aíang (Is.).

## 3. HANGUANA Blume

**HANGUANA MALAYANA** (Jack) Merr. in Philip. Journ. Sci. 10 (1915) Bot. 3.

*Veratrum ? malayanum* Jack Malay Miscel. 1 (1820) 25; Hook. Bot. Miscel. 2 (1831) 74.

*Hanguana kassintu* Blume Enum. Pl. Jav. (1827) 15, ed. 2 (1830) 15.

*Veratonia malayana* Miq. Fl. Ind. Bat. 3 (1859) 553.

*Susum malayanum* Planch. ex Hook. f. Fl. Brit. Ind. 6 (1892) 391.

Mindoro, Palawan, Mindanao (Lanao, Surigao), *Merrill 7221, 9498, Piper 529, Clemens 1134a*. In thickets back of the mangrove swamps, ascending to 900 m in forests. Malay Peninsula and Archipelago.

## CENTROLEPIDACEAE

### 1. CENTROLEPIS Labillardière

**CENTROLEPIS PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 2 (1907) Bot. 264.

Mindoro, *Merrill 6160, Phil. Pl. 87*. In open heaths, altitude about 2,400 m. Endemic.

This was also credited to Borneo, by Turrill, but Miss Gibbs later described the Bornean form as *C. kinabaluensis* Gibbs, Phytogeog. Dutch New Guinea (1917) 99. Only one other species of the family is known north of Australia, this being a species of *Centrolepis* in Indo-China.

## XYRIDACEAE

## 1. XYRIS Linnaeus

**XYRIS COMPLANATA** R. Br. Prodr. (1810) 256; Naves Novis. App. (1880) 268; Hallier f. in Nova Guinea 8 (1913) 903, Beihefte Bot. Centralbl. 34<sup>2</sup> (1916) 45.

*Xyris anceps* Merr. in Philip. Journ. Sci. 5 (1910) Bot. 172, non Lam. Luzon (Isabela), Semirara, B. S. 8065 Ramos, Merrill 4151. In open grasslands at low altitudes. Malay Archipelago to Australia.  
Local name: Gumi-gúmi (Tag.).

**XYRIS PAUCIFLORA** Willd. Phytogr. (1794) 2, t. 1; Miq. Fl. Ind. Bat. 3 (1859) 529; Naves Novis. App. (1880) 268; Merr. Fl. Manila (1912) 135.

Luzon (Pangasinan, Tarlac, Bulacan, Rizal), *Loher 6985, Merrill 3628, Phil. Pl. 463, B. S. 4911 Ramos*. In open grasslands at low altitudes. India to China and Formosa through Malaya to Australia.

## EXCLUDED SPECIES

**XYRIS INDICA** Linn.; Naves Novis. App. (1880) 268.

**XYRIS OPERCULATA** Labill.; Naves l. c.

## ERIOCAULONACEAE

## 1. ERIOCAULON Linnaeus

**ERIOCAULON ALATUM** H. Lecomte in Journ. de Bot. 21 (1908) 104, f. 2; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 232, Fl. Manila (1912) 136.

Luzon (Rizal), *Merrill 7362, B. S. 1831 Ramos, 19270 Reillo*. In open wet grasslands at low altitudes. Indo-China.

**ERIOCAULON ALPESTRE** Hook. f. & Th. ex Koern. in Miq. Ann. Mus. Bot. Lugd.-Bat. 3 (1867) 163; Ruhl. in Engl. Pflanzenreich 13 (1903) 95; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 291.

Mindanao (Davao), *Copeland 1431*. In open wet places, altitude about 1,800 m. India to Japan south to Indo-China.

**ERIOCAULON BREVIPELUNCULATUM** Merr. in Philip. Journ. Sci. 2 (1907) Bot. 265.

Mindoro, *Merrill 6214*. On seepage slopes in open heaths on Mt. Halcon, altitude about 2,400 m, Borneo.

**ERIOCAULON CINEREUM** R. Br. Prodr. (1810) 254; Benth. Fl. Austral. 7 (1878) 193; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 291, Fl. Manila (1912) 136.

*Eriocaulon sieboldianum* Sieb. & Zucc. ex Steud. Syn 2 (1855) 272; Ruhl. in Engl. Pflanzenreich 13 (1903) 111, f. 15 A-G.

Luzon (Rizal), *Merrill Phil. Pl. 293, 1276, B. S. 24072 Ramos*. In fallow wet rice lands at low altitudes. Africa to Japan, Malaya, and Australia.

Local name: Dundunsúg (P. Bis.).

**ERIOCAULON DEPAUPERATUM** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 336.

Luzon (Lepanto, Benguet), *Merrill 4520, 6590, B. S. 40528 Ramos & Edaño*. In pools and small shallow ponds, altitude 2,200 to 2,800 m. Endemic.

**ERIOCAULON ECHINULATUM** Mart. in Wall. Pl. As. Rar. 3 (1832) 28; Ruhl. in Engl. Pflanzenreich 13 (1903) 106.

Culion, *B. S. 41325 Ramos*. In open grassy places at low altitudes. Tanasserim to Indo-China and southern China.

**ERIOCAULON MERRILLII** Ruhl. in Perk. Frag. Fl. Philip. (1904) 136; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 291, Fl. Manila (1912) 136.

Luzon (Nueva Vizcaya, Nueva Ecija, Tarlac, Zambales, Rizal, Sorsogon), Polillo, Culion, Sibuyan, Mindanao (Lanao), *Merrill 572, 7122, 3624, Elmer 14350, 12243, B. S. 14149 McGregor, 9031 Robinson*. In open wet places, old rice paddies, along small streams, etc., at low altitudes. Endemic. Distinct from *E. truncatum* Ham.?

Local name: Boibotánis (P. Bis.).

**ERIOCAULON NIGRICEPS** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 290.

Luzon (Lepanto, Benguet), *B. S. 5544 Ramos, 31747 Santos, Merrill 4646, 7748, Elmer 6617, Williams 946, 1004*. In open wet places, altitude 1,400 to 2,300 m. Endemic.

**ERIOCAULON TRUNCATUM** Mart. in Wall. Pl. As. Rar. 3 (1832) 29; Steud. Syn. 2 (1859) 270; Ruhl. in Engl. Pflanzenreich 13 (1903) 107; Naves Novis. App. (1882) 299.

Luzon (Abra, Ifugao, Bontoc, Nueva Vizcaya, Rizal, Camarines), *B. S. 33721 Ramos & Edaño, 24089 Ramos, 19980, 20172, 20149 McGregor, 19267 Reillo*. In open wet places, rice paddies, etc., at low and medium altitudes. India to southern China and Malaya.

*Cuming 2326*, credited to the Philippines by Ruhland, was from Malacca.

Local names: Bauaṅg-bauaṅgan (Bik.); dasdasnuk (Bon.).

#### EXCLUDED SPECIES

**ERIOCAULON LONGISSIMUM** Usteri Beitr. Ken. Philip. Veg. (1905) 131.

This is a misprint for *E. longifolium* Nees, a species unknown from the Philippines.

**ERIOCAULON SEXANGULARE** Linn.; Naves Novis. App. (1882) 299; Miq. Fl. Ind. Bat. 3 (1857) 523; Ruhl. in Engl. Pflanzenreich 13 (1903) 110.

**ERIOCAULON SETACEUM** Linn.; Naves l. c.

#### BROMELIACEAE

##### 1. ANANAS Tournefort

**ANANAS COMOSUS** (Linn.) Merr. Interpret. Herb. Amb. (1917) 133, Sp. Blancoanae (1918) 94.

*Bromelia comosa* Linn. in Stickman Herb. Amb. (1754) 21, Amoen. Acad. 4 (1759) 130.

*Bromelia ananas* Linn. Sp. Pl. (1753) 285; Blanco Fl. Filip. (1837) 230, ed. 2 (1845) 162, ed. 3, 1 (1877) 291, t. 458.

*Bromelia pigna* Perr. in Mém. Soc. Linn. Paris 3 (1824) 103; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 304.

*Ananas sativus* Schultes f. Syst. 7<sup>2</sup> (1830) 1283; Merr. Fl. Manila (1912) 137.

*Ananassa sativa* Lindl. Bot. Reg. (1827) sub. t. 1068; Miq. Fl. Ind. Bat. 3 (1859) 584; Naves Novis. App. (1880) 256; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 24.

*Ananassa ananas* Karst. Deutsch. Fl. (1880-83) 466.

Widely cultivated in the Philippines; in some regions, Palawan, thoroughly naturalized. A native of tropical America, now cultivated in all tropical countries. Pineapple.

Local names: Apangdán (Bon.); pangdán (Bon.); piña (Sp.).

#### EXCLUDED GENERA

**BILLBERGIA ZEBRINA** Lindl.; Naves Novis. App. (1880) 257.

**PITCAIRNIA BRACHIATA** Cham.; Naves l. c.

#### COMMELINACEAE

##### 1. POLLIA Thunberg

**POLLIA MACROPHYLLA** Benth. Fl. Austral. 7 (1878) 90; C. B. Clarke in DC. Monog. Phan. 3 (1881) 128; Naves Novis. App. (1880) 269; Ceron Cat. Pl. Herb. (1892) 173.

Philippines, fide C. B. Clarke, who cites specimens from *Cuming* and *Llanos*. These, however, need critical comparison with *P. sorzogonensis* (E. Meyer) Steud. New Guinea, Solomon Islands, tropical Australia.

**POLLIA SORZOGONENSIS** (E. Meyer) Steud. Nomencl. ed. 2, 2 (1841) 368; Miq. Fl. Ind. Bat. 3 (1859) 541; C. B. Clarke in DC. Monog. Phan. 3 (1881) 126; Naves Novis. App. (1880) 269; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 34, 3 (1908) Bot. 400, Sp. Blancoanae (1918) 94.

*Aclisia sorzogonensis* E. Meyer in Presl Rel. Haenk. 1 (1827) 138, t. 25.

*Lechea minor* Blanco Fl. Filip. (1837) 52, ed. 2 (1845) 35, ed. 3, 1 (1877) 65, non Linn.

*Aclisia cumingiana* Klotz. in Hassk. Commel. Ind. (1870) 47.

Northern Luzon (Cagayan) to Palawan and Mindanao. Common in primary forests at low and medium altitudes. Southern China to Java and the Moluccas.

Local names: Alikbáñgon (Tag.); lohod-lóhod (Bis.); luho-lúho (S. L. Bis.); salibáñgung (Bag.).

**POLLIA SUMATRANA** Hassk. Commel. Ind. (1870) 56; C. B. Clarke in DC. Monog. Phan. 3 (1881) 125; Naves Novis. App. (1880) 269; Vidal Rev. Pl. Vasc. Filip. (1886) 278.

Luzon (Rizal, Bulacan, Laguna), Polillo, Biliran, Samar, Leyte, Mindanao, *Piper* 483, *Elmer* 7153, *B. S.* 6724 *Robinson*, 15702 *Fénix*, 18667 *McGregor*, 1088, 24425 *Ramos*. In primary forests at low and medium altitudes. Sumatra.

Clarke's description is based on Cuming's Philippine plant. I do not know whether or not it is identical with Hasskarl's type.

Local names: Aregbabáñgon (S. L. Bis.); idog (Mbo.); mantauási (Buk.).

**POLLIA THYRSIFLORA** (Blume) Steud. Nomencl. ed. 2, 2 (1841) 368; C. B. Clarke in DC. Monog. Phan. 3 (1881) 124; Naves Novis. App. (1880) 269; Vidal Rev. Pl. Vasc. Filip. (1886) 278; Hallier f. in Nova Guinea 8 (1913) 907, Beihefte Bot. Centrabl. 34<sup>a</sup> (1916) 51.

*Tradescantia thyrsiflora* Blume Enum. Pl. Jav. 1 (1827) 6.

*Pollia philippinensis* Elm. Leaf. Philip. Bot. 1 (1908) 275.

Luzon (Cagayan to Sorsogon) to Palawan and Mindanao, *Elmer* 9162, 13545, 15329, *Wenzel* 1166, *Merrill* 9268, 4007, *Loher* 6981, *F. B.* 19623 *Curran*, *B. S.* 25857 *Yates*, 12651 *Fénix*. In primary forests at low and medium altitudes. Andaman Islands to Java and Celebes.

Local names: Talibáñgung (Bag.); sapilko (Ig.).

#### EXCLUDED SPECIES

**POLLIA ACLISIA** Hassk.; Naves Novis. App. (1880) 268.

**POLLIA CRISPATA** Benth.; Naves op. cit. 269.

**POLLIA JAPONICA** Thunb.; Naves op. cit. 268.

#### 2. COMMELINA Plumier

**COMMELINA BENGHALENSIS** Linn. Sp. Pl. (1753) 41; Miq. Fl. Ind. Bat. 3 (1859) 533; C. B. Clarke in DC. Monog. Phan. 3 (1881) 159; Naves Novis. App. (1880) 269; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 400, Fl. Manila (1912) 138, Sp. Blancoanae (1918) 94. *Commelina polygama* Blanco Fl. Filip. (1837) 25 (*poligama*), ed. 2 (1845) 18, ed. 3, 1 (1877) 34, t. 13, non Roth.

Throughout the Philippines in open grasslands and waste places in the settled areas at low and medium altitudes, often common. Tropical Africa and Asia to Japan and Malaya.

Local names: Alibáñgon (Tag.); bias-bías (Pamp.); kabiláu (Bis.); kuhási (Iv.); kulkul-lási (Ilk.); sabiláu (Bis.); sambiláu (Bis.); uligbóñgon (Tag.).

**COMMELINA CHAMISSONIS** Klotz. ex C. B. Clarke in DC. Monog. Phan. 3 (1881) 186; Naves Novis. App. (1880) 270.

The type is a specimen from Luzon, collected by *Chamisso*, probably from either Cavite or Batangas Province or possibly from the vicinity of Manila. I have seen no specimens I can with certainty refer to it, but some may have been distributed sub *C. nudiflora* Linn. Australia.

**COMMELINA NUDIFLORA** Linn. Sp. Pl. (1753) 4; C. B. Clarke in DC. Monog. Phan. 3 (1881) 144; Naves Novis. App. (1880) 269; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 400, Fl. Manila (1912) 138.

*Tradescantia cristata* Naves in Blanco Fl. Filip. ed. 3 (1877-83) t. 83, non Linn.

Throughout the Philippines in open grasslands, waste places, etc., at low and medium altitudes, often common. Pantropic.

Local names: Alikbáñgon (Tag.); bañgar-an-laláki (If.); gatiláng (Bon.) katkataúang (Bon.); kitkit-aúang (Bon.); kohási (Iv.); kolási (Ilk.); kulkul-lási (Ilk.).

**COMMELINA UNDULATA** R. Br. Prodr. (1810) 270; C. B. Clarke in DC. Monog. Phan. 3 (1881) 179; Naves Novis. App. (1880) 270; Ceron Cat. Pl. Herb. Manila (1892) 173.

Philippines fide C. B. Clarke l. c. India to southern China, Riu Kiu Islands, Moluccas, tropical Australia.

EXCLUDED SPECIES

**COMMELINA BARBATA** Lam.; Naves Novis. App. (1880) 270.

**COMMELINA COMMUNIS** Linn.; Naves l. c.

**COMMELINA OBLIQUA** Ham.; Naves l. c.

**COMMELINA SALICIFOLIA** Roxb.; Naves op. cit. 269.

**COMMELINA SUBULATA** Roth; Naves l. c.

**COMMELINA SUFFRUTICOSA** Blume; Naves op. cit. 270.

3. **ANEILEMA** R. Brown

**ANEILEMA AZUREUM** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 292.

Luzon (Bulacan), Semirara, Merrill 4134, B. S. 21669 Ramos. In open wet grasslands at low altitudes. Endemic.

**ANEILEMA GIGANTEUM** (Vahl) R. Br. Prodr. (1810) 271; Naves Novis. App. (1880) 271; C. B. Clarke in DC. Monog. Phan. 3 (1881) 212; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 294.

*Commelina gigantea* Vahl Enum. 2 (1806) 177.

Semirara, Mindanao (Bukidnon), Merrill 4132, B. S. 31385 Escritor, 39210 Ramos & Edaña, 26138 Félix, F. B. 26553 Rola. In open grasslands at low and medium altitudes. Tropical Africa and Asia through Malaya to tropical Australia.

**ANEILEMA HUMILE** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 4.

Alabat, Merrill 10459. On wet slopes in primary forests at low altitudes. Endemic.

**ANEILEMA MALABARICUM** (Linn.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 232, Fl. Manila (1912) 138.

*Tradescantia malabarica* Linn. Sp. Pl. ed. 2 (1762) 412.

*Commelina nudicaulis* Burm. f. Fl. Ind. (1768) 17, t. 8, f. 1.

*Commelina nudiflora* Linn. Mant. 1 (1767) 177, non Sp. Pl. (1753).

*Aneilema nudiflorum* R. Br. Prodr. (1810) 271; Miq. Fl. Ind. Bat. 3 (1859) 537; Naves Novis. App. (1880) 271, t. 467; C. B. Clarke in DC. Monog. Phan. 3 (1881) 210; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278.

*Commelina trichocolea* Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 448; Walp. Ann. 1 (1849) 885.

Throughout the Philippines. Common in open grasslands, waste places, etc., at low and medium altitudes. India to China, the Riu Kiu Islands, and Malaya.

Local names: Aligbãñgon (Pang.); aligbãñgon-laláki (Tag.); alitbãñgun (Tag.); fañgau (Bon.); olikbãñgon (Tag.); takdáyan (Ig.).

**ANEILEMA PLATYPHYLLUM** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 293.

Luzon (Pangasinan, Rizal), B. S. 985, 3342, 20985 Ramos, 17900 Otanes. Along streams in shaded places at low altitudes. Endemic.

**ANEILEMA SPIRATUM** (Linn.) R. Br. ex C. B. Clarke in DC. Monog. Phan. 3 (1881) 207; Naves Novis. App. (1880) 270.

*Commelina spirata* Linn. Mant. 2 (1771) 176.

This is credited to the Philippines by C. B. Clarke on the basis of a specimen from Lake Bay, Luzon, collected by *Baume* and preserved in the Paris herbarium. This specimen may be *A. malabaricum* (Linn.) Merr., or I may have included *A. spiratum* R. Br. in my conception of *A. malabaricum* (Linn.) Merr. India to Indo-China, China, and Java.

**ANEILEMA VERSICOLOR** Dalz. in Hook. Journ. Bot. Kew Miscel. 3 (1851) 136; C. B. Clarke in DC. Monog. Phan. 3 (1881) 208; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 232, Fl. Manila (1912) 139.

Luzon (Rizal), Culion, *Merrill 3644, 518, Phil. Pl. 1980, 763, Loher 6986, B. S. 10877 Ramos, 19171 Reillo*. In open wet grasslands, fallow rice paddies, etc., at low altitudes. India.

**ANEILEMA VITIENSE** Seem. Fl. Vit. (1865-73) 314, t. 96; C. B. Clarke in DC. Monog. Phan. 3 (1881) 220; Naves Novis. App. (1880) 271.

Philippines, *Moseley*, fide C. B. Clarke. Fiji, Samoa.

Var. **PETIOLATA** C. B. Clarke l. c.

Northern Luzon (Cagayan) to Palawan and Mindanao, in most islands and provinces, *Merrill 4862, 5332, 5119, 7134, Phil. Pl. 33, Weber 1022, Elmer 13557, 15366, 18053, Wenzel 4, Whitford 973, B. S. 12409 McGregor, 18081 Robinson, 15701 Félix, 29057, 30928 Ramos & Edaño*. In damp shaded ravines usually along small streams at low and medium altitudes, ascending to 1,400 m. The variety endemic, the species in Samoa and Fiji.

*Aneilema scaberrima* (Blume) Kunth has been credited to the Philippines by Hallier f., Beihefte Bot. Centralbl. 34<sup>2</sup> (1916) 50, as *A. protensum* Wall., but I suspect that the specimen he examined is *A. vitiense* Seem.

Local names: Balúkid (Buk.); dalidígan (Mbo.).

#### EXCLUDED SPECIES

**ANEILEMA DIMORPHUM** Dalz.; Naves Novis. App. (1880) 270.

**ANEILEMA GLAUCUM** Thw.; Naves l. c.

**ANEILEMA HAMILTONIANUM** Wall.; Naves l. c.

**ANEILEMA HERBACEUM** Wall.; Naves op. cit. 270.

**ANEILEMA LOUREIRII** Hance; Naves l. c.

**ANEILEMA MEDIUM** R. Br.; Naves l. c.

**ANEILEMA MONADELPHUM** Kunth; Naves op. cit. 271.

**ANEILEMA SCAPIFLORUM** Wight; Naves op. cit. 270.

**ANEILEMA SINICUM** Lindl.; Naves op. cit. 271.

#### 4. FORRESTIA A. Richard

**FORRESTIA HISPIDA** Less. & A. Rich. Sert. Astrolab. (1834) 2, t. 1, var. **PHILIPPINENSIS** (Merr.) comb. nov.

*Forrestia philippinensis* Merr. in Govt. Lab. Publ. (Philip.) 35 (1906) 5, Philip. Journ. Sci. 2 (1907) Bot. 266.

*Forrestia hispida* Less. & A. Rich. var. *glabrior* Hallier f. in Nova Guinea 8 (1913) 906, Beihefte Bot. Centralbl. 34<sup>2</sup> (1916) 46.

Luzon (Laguna, Tayabas, Camarines, Albay, Sorsogon), Polillo, Caudanuanes, Mindoro, Leyte, Negros, Panay, Samar, Mindanao (Agusan, Bukidnon, Lanao), Basilan. In thickets and old clearings in the vicinity of primary forests and in primary forests at low and medium altitudes; represented by numerous collections. The variety in Borneo, the species in New Guinea.

Local names: Arigbabáñgon (S. L. Bis.); lohod-lohód (C. Bis.); malitágo (Mbo.); mani-utús (Lan.); salimbágun (Bag.); tahig-tahíg (Bik.).

#### EXCLUDED SPECIES

FORRESTIA GLABRATA Hassk.; Naves Novis. App. (1880) 271.

FORRESTIA MARGINATA Hassk.; Naves l. c.

FORRESTIA MOLLIS Hassk.; Naves l. c.

#### 5. CYANOTIS D. Don

CYANOTIS AXILLARIS (Linn.) D. Don Prodr. Fl. Nepal. (1825) 46; R. & S. Syst. 7<sup>2</sup> (1830) 1154; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 447; C. B. Clarke in DC. Monog. Phan. 3 (1881) 244; Naves Novis. App. (1880) 272; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278; Merr. Fl. Manila (1912) 140.

*Commelina axillaris* Linn. Sp. Pl. (1753) 42.

Northern Luzon to Palawan and Mindanao, in most islands and provinces. In clearings, open places along streams, rice paddies, etc., at low and medium altitudes; often common. India to China through Malaya to Australia.

Local names: Alikbáñgon (Tag.); alitbáñgon (Tag.); kulásin-marinték (Pang.); sabiláu (P. Bis.).

CYANOTIS CAPITATA (Blume) C. B. Clarke in DC. Monog. Phan. 3 (1881) 243; Naves Novis. App. (1880) 272.

*Tradescantia capitata* Blume Enum. Pl. Jav. (1827-28) 6.

Northern Luzon to Palawan and Mindanao, *Clemens 773, Copeland 740, Merrill 803, 4426, 8154, 5462, 1804, F. B. 3453 Hutchinson, B. S. 26076 Fénix, 23850 Ramos, 32555 McGregor*. Along streams in shaded ravines, in damp thickets, etc., at low and medium altitudes; really distinct from *C. moluccana* (Roxb.) Merr.? Japan to Indo-China and Java.

CYANOTIS CRISTATA (Linn.) R. & S. Syst. 7<sup>2</sup> (1830) 1150; Miq. Fl. Ind. Bat. 3 (1859) 544; C. B. Clarke in DC. Monog. Phan. 3 (1881) 247; Naves Novis. App. (1880) 272; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278; Merr. Fl. Manila (1912) 140, Sp. Blancoanae (1918) 95.

*Commelina cristata* Linn. Sp. Pl. (1753) 42.

*Tradescantia cristata* Linn. Syst. ed. 12 (1767) 233; Blanco Fl. Filip. (1837) 231, ed. 2 (1845) 163, ed. 3, 1 (1877) 293.

*Zygomenes cristata* W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 404.

Luzon (most or all provinces), Basilan. In old clearings, open places along streams, about cliffs, etc., at low and medium altitudes. India to Mauritius and Malaya.

Local names: Alikbáñgon (Tag.); kulásing-akabaleg (Pang.).



**CYANOTIS MOLUCCANA** (Roxb.) Merr. in Philip. Journ. Sci. 2 (1907) Bot. 266, Fl. Manila (1912) 139.

*Commelina moluccana* Roxb. Fl. Ind. 1 (1820) 176.

*Cyanotis uniflora* Hassk. Commel. Ind. (1870) 104; C. B. Clarke in DC. Monog. Phan. 3 (1881) 242; Naves Novis. App. (1880) 272; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 34.

Luzon (Bontoc, Pampanga, Rizal, Bataan, Laguna, Sorsogon), Mindoro, Leyte, Mindanao, *Baker 500, Wenzel 542, Merrill 4206, 6227, 7132, Williams 249*. On bowlders in ravines, along small streams, etc., at low and medium altitudes. Java, Borneo, Moluccas.

Not always readily distinguishable from *C. capitata* Clarke.

**CYANOTIS PEDUNCULATA** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 266.

Leyte, *Wenzel 1024*. In forests, altitude about 500 m. Endemic.

#### EXCLUDED SPECIES

**CYANOTIS PAPILIONACEA** R. & S.; Naves Novis. App. (1880) 272.

**CYANOTIS TUBEROSA** R. & S.; Naves l. c.

**CYANOTIS VAGA** R. & S.; Naves l. c.

#### 6. FLOSCOPA Loureiro

**FLOSCOPA SCANDENS** Lour. Fl. Cochinch. (1790) 193; C. B. Clarke in DC. Monog. Phan. 3 (1881) 265; Naves Novis. App. (1880) 272; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278; Merr. Sp. Blancoanae (1918) 95.

*Tradescantia rufa* Presl Rel. Haenk. 1 (1827) 138.

*Floscopa rufa* Hassk. in Miq. Pl. Jungh. (1852) 151; Miq. Fl. Ind. Bat. 3 (1859) 542.

*Tradescantia geniculata* Blanco Fl. Filip. (1837) 232, ed. 3, 1 (1877) 294, non Jacq.

Northern Luzon (Cagayan) to the Calamian Islands and Mindanao, in most or all islands and provinces. In wet places along small streams at low and medium altitudes. India to China through Malaya to tropical Australia.

Local names: Aligbáñgon (Tag.); babiláu (S. L. Bis.); kúmpai (P. Bis.); púgad-labúyo (Tag.); sambiláu (S. L. Bis.).

#### 7. RHOEO Hance

**RHOEO DISCOLOR** (L'Hérit.) Hance in Walp. Ann. 3 (1853) 660; Naves Novis. App. (1882) 273, Blanco Fl. Filip. ed. 3 (1877-83) t. 84; Merr. Fl. Manila (1912) 139, Sp. Blancoanae (1918) 94.

*Tradescantia discolor* L'Hérit. Sert. Angl. (1788) 8, t. 12; Blanco Fl. Filip. (1837) 232, ed. 2 (1845) 163, ed. 3, 1 (1877) 294, t. 84.

Planted for ornamental purposes, sometimes long-persistent after cultivation but scarcely established. A native of tropical America.

#### 8. ZEBRINA Schnizlein

**ZEBRINA PENDULA** Schnizl. in Bot. Zeit. 7 (1849) 870; C. B. Clarke in DC. Monog. Phan. 3 (1881) 318; Merr. in Philip. Journ. Sci. 7 (1912) Bot. 232, Fl. Manila (1912) 140.

Introduced from tropical America and cultivated as an ornamental, now more or less established in coconut groves, etc., at medium altitudes. Wandering Jew.

### PONTERIACEAE

#### 1. EICHORNIA Kunth

**EICHORNIA CRASSIPES** (Mart.) Solms in DC. Monog. Phan. 4 (1883) 527.

*Pontederia crassipes* Mart. Nov. Gen. Sp. Pl. 1 (1824) 9, t. 4.

*Eichornia speciosa* Kunth Enum. Pl. 4 (1843) 131.

*Piaropus crassipes* Britton in Ann. N. Y. Acad. Sci. 7 (1893) 241.

Introduced about 1912 as an ornamental, now very abundant in shallow water of lakes and in slow streams in central Luzon, occurring also in northern Luzon and in Negros. Within a few years to be expected throughout the Philippines. A native of tropical America, now pantropic. Water hyacinth.

#### 2. MONOCHORIA Presl

**MONOCHORIA HASTATA** (Linn.) Solms in DC. Monog. Phan. 4 (1883) 523; Merr. Fl. Manila (1912) 141, Sp. Blancoanae (1918) 95.

*Pontederia hastata* Linn. Sp. Pl. (1753) 288.

*Monochoria hastaeifolia* Presl Rel. Haenk. 1 (1827) 128; Miq. Fl. Ind. Bat. 3 (1859) 548; Naves Novis. App. (1880) 267.

*Pontederia vaginalis* Blanco Fl. Filip. (1837) 255, ed. 2 (1845) 178, ed. 3, 1 (1877) 320, t. 466, non Burm. f.

*Monochoria dilatata* Kunth Enum. 4 (1843) 134; Naves Novis. App. (1880) 268.

Luzon to Mindanao, *Elmer 14319*, *Merrill 4088*, *Phil. Pl. 1121*, *Sp. Blancoanae 419*, *McGregor 93*, *Clemens 179*, *B. S. 1456 Mangubat*. In open wet lands, swamps, etc., at low and medium altitudes. India to southern China and Malaya.

Local names: Gabi-gábi (Bis); gabi-gabíhan (Tag.); kosol-kósol (Bis.); payau-páyau (Bis).

**MONOCHORIA VAGINALIS** (Burm. f.) Presl Rel. Haenk. 1 (1827) 128; Miq. Fl. Ind. Bat. 3 (1859) 548; Naves Novis. App. (1880) 267; Solms in DC. Monog. Phan. 4 (1883) 524; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 278; Merr. Fl. Manila (1912) 141, Interpret. Herb. Amb. (1917) 135.

*Pontederia vaginalis* Burm. f. Fl. Ind. (1768) 80; Linn. Mant. 2 (1771) 222; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 446.

*Monochoria ovata* Kunth Enum. 4 (1843) 665; Naves Novis. App. (1880) 268.

Throughout the Philippines at low and medium altitudes; common in open wet places, rice paddies, swamps, etc. Tropical and subtropical Asia to Malaya.

Local names: Biga-bigáan (Tag.); bil-lagut (Ilk.); gabi-gábi (P. Bis., C. Bis.); gabing-uák (Tag.) hahalung (If.); hakhaklung (If.); kalabúa (Tag.); lagtáng (Bik.); lapalápa (Ilk.); saksaklung (Ig.); saksakong (Bon.); upi-úpi (Bik.).

Var. **PAUCIFLORA** (Blume) comb. nov.*Pontederia pauciflora* Blume Enum. Pl. Jav. 1 (1827) 32.*Pontederia plantaginea* Roxb. Fl. Ind. ed. 2, 2 (1832) 123.*Monochoria pauciflora* Kunth Enum. 4 (1843) 135; Naves Novis. App. (1880) 268.*Monochoria plantaginea* Kunth l. c.; Naves l. c.*Monochoria vaginalis* Presl, var. *plantaginea* Solms in DC. Monog. Phan. 4 (1883) 524.

Luzon (Ilocos Norte, Bontoc, Benguet, Nueva Vizcaya), *Merrill 4616*, *Phil. Pl. 1723*, *Elmer 5953*, *B. S. 31813 Santos*, *11371 McGregor*, *14109 Robinson*, *F. B. 16531 Curran & Merritt*, *15516 Merritt & Darling*. In swamps, rice paddies, etc., altitude 1,000 to 2,000 m. India to China and Java.

The family Philydraceae has been credited to the Philippines on the basis of a *Cuming* specimen so labeled; Caruel in DC. Monog. Phan. 3 (1881) 3; Naves Novis. App. (1880) 268. *Cuming's* specimen was from the Malay Peninsula, not from the Philippines. No representative of the family is known from the Archipelago.

## JUNCACEAE

1. **JUNCUS** Linnaeus

**JUNCUS BUFONIUS** Linn. Sp. Pl. (1753) 328; Buchenau in Engl. Pflanzenreich 25 (1906) 105; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 294.

Luzon (Benguet), *Merrill 7794*. Along the bridle trails in the mossy forest on Mt. Santo Tomas, altitude 1,900 m; probably introduced. Warmer parts of both hemispheres.

**JUNCUS EFFUSUS** Linn. Sp. Pl. (1753) 326; Buchenau in Engl. Pflanzenreich 25 (1906) 135.

*Juncus communis* E. Meyer Junc. Gen. Monogr. Spec. (1819) 20; Naves Novis. App. (1882) 273.

Luzon (Benguet, Bontoc), Mindanao (Davao). In open swampy places, altitude 1,400 to 2,300 m. Warmer parts of both hemispheres, especially common in the North Temperate Zone.

Local names: Badili (Ig.); balili (Bon.); piñgót (Bon.); sudsúd (Ig.).

**JUNCUS PRISMATOCARPUS** R. Br. Prodr. (1810) 259, var. **LESCHENAULTII** (J. Gay) Buchenau in Engl. Bot. Jahrb. 6 (1885) 137, Engl. Pflanzenreich 25 (1906) 180.

*Juncus leschenaultii* J. Gay ex Laharpe in Mém. Soc. Linn. Paris 3 (1827) 205; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 176.

Luzon (Lepanto, Benguet), *Merrill 4517*, *4739*, *Williams 1974bis*, *B. S. 2791*, *4261 Mearns*. In cold open swamps, altitude 1,500 to 2,300 m. India and Ceylon to Kamchatka and Japan, to southern China, Australia, and New Zealand.

2. **LUZULA** de Candolle

**LUZULA CAMPESTRIS** (Linn.) DC. Fl. Fr. 3 (1805) 161; Naves Novis. App. (1882) 273; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 337, in nota; Buchenau in Engl. Pflanzenreich 25 (1906) 83, f. 52-55.

*Juncus campestris* Linn. Sp. Pl. (1753) 329.

Luzon (Benguet), *B. S.* 8426 *McGregor*, 31787 *Santos*. On slopes in pine forests, at Pauai, extending into the mossy forest along trails, altitude 2,000 to 2,400 m. Temperate regions in both hemispheres.

**LUZULA EFFUSA** Buchenau *Krit. Verz. Junc.* (1880) 53, 88, *Engl. Pflanzenreich* 25 (1906) 61; *Merr.* in *Philip. Journ. Sci.* 5 (1910) *Bot.* 337.

Luzon (Benguet), *Merrill* 6490. In the upper border of the mossy forest and in the summit grasslands on Mt. Pulong, altitude about 2,700 m. Himalayan region, China.

## STEMONACEAE

### 1. STEMONA Loureiro

**STEMONA PHILIPPINENSIS** *Merr.* in *Govt. Lab. Publ. (Philip.)* 6 (1904) 16.

Masbate, *Merrill* 3061. On ridges in thickets of forests at low altitudes. Endemic.

Local name: Sigíd (P. Bis.).

**STEMONA TUBEROSA** *Lour.* *Fl. Cochinch.* (1790) 404; *C. H. Wright* in *Journ. Linn. Soc. Bot.* 32 (1896) 495; *Merr.* in *Govt. Lab. Publ. (Philip.)* 6 (1904) 16, *Interpret. Herb. Amb.* (1917) 135.

*Roxburghia gloriosoides* *Roxb.* *Pl. Coromandel* 1 (1795) 29, *t.* 32.

Luzon, without definite locality, Palawan, Leyte, Negros, *Merrill* 792, *Loher* 6969, *Wenzel* 1746, *Eskridge*. In thickets and forests at low altitudes; rare or local. India to Formosa and southward to the Moluccas.

Local name: Lubilubí (C. Bis.).

## LILIACEAE

### 1. IPHIGENIA Kunth

**IPHIGENIA INDICA** (*Linn.*) *Kunth Enum.* 4 (1843) 213; *Hook. f. Fl. Brit. Ind.* 6 (1892) 357; *C. B. Rob.* in *Philip. Journ. Sci.* 3 (1908) *Bot.* 176.

*Melanthium indicum* *Linn. Mant.* 2 (1771) 226.

Luzon (Cavite, Rizal, Laguna), Mindanao (Bukidnon, Davao), *Weber* 1462, *Williams* 2962, *Loher* 1913. In open grasslands at low and medium altitudes; rare or local. India to Australia.

### 2. THYSANOTUS R. Brown

**THYSANOTUS CHINENSIS** *Benth.* *Fl. Hongk.* (1861) 372; *Hallier f.* in *Nova Guinea* 8 (1914) 991.

*Thysanotus chrysantherus* *F. Muell. Fragm.* 5 (1866) 202; *Naves Novis. App.* (1880) 266; *Vidal Phan. Cuming. Philip.* (1885) 153, *Rev. Pl. Vasc. Filip.* (1886) 277.

Luzon (Ilocos Norte, Ilocos Sur, Bontoc, Lepanto, Benguet, Pangasinan), *Cuming* 981, *Merrill* 4451, 7750, *Williams* 971, 1455, *B. S.* 4905, 27527 *Ramos, F. B.* 4836, 15618 *Curran*. On open grassy slopes at medium altitudes, ascending to 1,600 m. Malay Peninsula, Indo-China, southern China, New Guinea, tropical Australia.

### 3. DIANELLA Lamarck

**DIANELLA CAERULEA** *Sims* in *Curtis's Bot. Mag.* 15 (1801) *t.* 505; *Red. Lil.* 2 (1805) *t.* 79; *Merr.* in *Philip. Journ. Sci.* 2 (1907) *Bot.* 266, 5 (1910) *Bot.* 337; *Hallier f.* in *Nova Guinea* 8 (1914) 993.

Luzon (Cagayan, Ilocos Norte, Bontoc, Benguet, Pangasinan, Bulacan, Rizal, Bataan, Nueva Vizcaya, Laguna, Tayabas, Camarines, Sorsogon), Catanduanes, Polillo, Mindoro, Leyte, Negros, Mindanao. In forests at medium and higher altitudes, ascending to 2,200 m; represented by numerous collections. New Guinea, New Caledonia, Queensland, Fiji.

Local names: Abláas (Bag.); bariu-báriu (P. Bis.); duñgau (Ig.); oyon-éyon (P. Bis.).

**DIANELLA ENSIFOLIA** (Linn.) DC. in Red. Lil. 1 (1802) *t. 1*; Naves Novis. App. (1880) 264; Vidal Rev. Pl. Vasc. Filip. (1886) 277, Phan. Cuming. Philip. (1885) 153; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 266, 3 (1908) Bot. 401, 5 (1910) Bot. 337; Hallier f. in Nova Guinea 8 (1914) 992.

*Dracaena ensifolia* Linn. Mant. 1 (1767) 63.

*Dianella robusta* Elm. Leaf. Philip. Bot. 5 (1913) 1806.

Palawan, Panay, Jolo, Bucas Grande, Mindanao, *B. S. 35067, 34801 Ramos & Pascasio, 30995 Ramos & Edaño, 21562 Escritor, Elmer 12900, Merrill 5317, 9338, Clemens 9377*. In light forests at low altitudes. India to the Mascarene Islands, China, Formosa, Malaya, tropical Australia, and Polynesia.

**DIANELLA JAVANICA** (Blume) Kunth Enum. 5 (1850) 52; Hallier f. in Nova Guinea 8 (1914) 992.

*Rhuacophila javanica* Blume Enum. 1 (1827) 14; Ridl. in Journ. Linn. Soc. Bot. 42 (1914) 166.

*Dianella austro-caledonica* Seem. Fl. Vit. (1865-73) 312; Lauterb. in Engl. Bot. Jahrb. 50 (1913) 294.

Batan Islands, Luzon (Ifugao, Bontoc, Lepanto, Benguet, Zambales, Tayabas, Camarines, Albay), Mindoro, Mindanao (Davao), *B. S. 31337 Santos, 8478, 17671, 8873 McGregor, 5408 Ramos, 37636 Ramos & Edaño, Cuming 929, Merrill 5504, 6585, Williams 2556, 1274, 1533, Elmer 5797, Copeland 1035*. On open slopes, in ravines, and in forests, altitude 1,000 to 2,400 m. Malay Peninsula, Sumatra, Java, Borneo, Celebes, Moluccas, New Guinea, New Caledonia.

Local names: Apilug (Ig.); sapiláu (Ig.); talobatub (Bon.); uráya (Ig.).

#### DOUBTFUL AND EXCLUDED SPECIES

**DIANELLA BANCANA** Miq.; Naves Novis. App. (1880) 264.

**DIANELLA MONTANA** Blume; Naves l. c.

**DIANELLA PHILIPPENSIS** Perr. in Mém. Soc. Linn. Paris 3 (1824) 112; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 305.

"Espece nouvelle de Mindanao" Perrottet. *A nomen nudum*.

**DIANELLA REVOLUTA** R. Br.; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Supp. 1: 445.

Meyen's Jala Jala specimen, so identified by Schauer, is probably referable to the species I have interpreted as *D. caerulea* Sims.

## 4. ALOE Tournefort

**ALOE VERA** Linn. Sp. Pl. (1753) 320; Berger in Engl. Pflanzenreich 33 (1908) 228, f. 84, A-D; Merr. Sp. Blancoanae (1918) 95.

*Aloe humilis* Blanco Fl. Filip. (1837) 256, ed 2 (1845) 179, ed. 3, 1 (1877) 321, t. 95, non Linn.

*Aloe barbadensis* Mill. Gard. Dict. ed. 8 (1768) No. 2; Naves Novis. App. (1880) 266.

Cultivated for ornamental and medicinal purposes, *Merrill Sp. Blancoanae* 1005. Subtemperate and tropical regions generally, often cultivated.

Local names: Dìlang-boáia (Bis.); dìlang-hálo (Bis.); sábila (Tag.); sábila-píña (Tag.).

## EXCLUDED SPECIES

**ALOE UMBELLATA** DC.; Naves Novis. App. (1880) 266.

## 5. ALLIUM Tournefort

No species of this genus occurs naturally in the Philippines, although several are cultivated. These include the onion, *Allium cepa* Linn., locally known as *cebollas* or *sibuyas*, *lasoná* (Ilk.); the garlic, *Allium sativum* Linn., locally known as *ájos* and *báuang*; and *A. tuberosum* Roxb., a form locally known as *cuchái* or *ganda*. The last is the form described by Blanco as *Allium tricoccum* (non Ait.) and by Loureiro as *Allium angulosum* (non Linn.). Other species credited to the Philippines by Naves Novis. App. (1880) 267 are *Allium fistulosum* Linn., *A. jacquemontii* Kunth, *A. ascalonicum* Linn., and *A. uliginosum* Don = *A. tuberosum* Roxb.; I have seen no Philippine specimens of the first three, and it is probable that they do not occur in the Philippines even in cultivation.

## 6. LILIUM Tournefort

**LILIUM LONGIFLORUM** Thunb. in Trans. Linn. Soc. 2 (1794) 333; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 400.

Y'Ami and Batan Islands, *Worcester, B. S. 3774 Fénix*. On open grassy slopes at low altitudes. Japan, China, Formosa.

Local name: Vonítan (Iv.).

**LILIUM PHILIPPINENSE** Baker in Gard. Chron. (1873) 1141, f. 243, Journ. Linn. Soc. Bot. 14 (1874) 228 (*philippense*); Curtis's Bot. Mag. III 32 (1876) t. 6250; Naves Novis. App. (1880) 266; Vidal Rev. Pl. Vasc. Filip. (1886) 277; Merr. Philip. Journ. Sci. 5 (1910) Bot. 337.

Luzon (Bontoc, Benguet, Pangasinan), *B. S. 31851 Santos, 8791 McGregor, 4349, 3493 Mearns, 8291 Ramos, Merrill 4802, Williams 1132, Elmer 6389*. On open slopes in the pine region, altitude 1,100 to 2,300 m. Formosa.

Local names: Kanyon (Ilk.); luplúpak (Ig.); soyásoi (Ig.); tuktukpáu (Bon.); tubtubkau (Ig.).

## 7. YUCCA Dillenius

**YUCCA ALOIFOLIA** Linn. Sp. Pl. (1753) 319; Naves Novis. App. (1880) 266; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 32, Fl. Manila (1912) 145.

Planted here and there for ornamental purposes, but not naturalized. A native of tropical America.

## EXCLUDED SPECIES

YUCCA GLORIOSA Linn.; Naves Novis. App. (1880) 266.

YUCCA SUPERBA Haw.; Naves l. c.

## 8. TAETSIA Medicus

(*Cordyline* Commerson)

TAETSIA FRUTICOSA (Linn.) Merr. Interpret. Herb. Amb. (1917) 137, Sp. Blancoanae (1918) 96.

*Convallaria fruticosa* Linn. in Stickman Herb. Amb. (1754) 16, Amoen. Acad. 4 (1759) 126, Syst. ed. 10 (1759) 894.

*Asparagus terminalis* Linn. Sp. Pl. ed. 2 (1762) 450.

*Dracaena terminalis* Rich. in Lam. Encycl. 2 (1786) 324; Blanco Fl. Filip. (1837) 263, ed. 2 (1845) 183, ed. 3, 1 (1877) 328, t. 98.

*Cordyline terminalis* Kunth in Abh. Acad. Berlin (1820) 30, Enum. 5 (1850) 25; Miq. Fl. Ind. Bat. 3 (1855) 558; Naves Novis. App. (1880) 265; Merr. Fl. Manila (1912) 145.

Widely cultivated for ornamental purposes, but not a native of the Archipelago. Pantropic in cultivation, probably a native of Malaya.

Local names: Bastón de San José (Sp.); daṅgá (Ilk.); dang-ṅgá (Bon.); donglá (If.); kiláa (Bis.); kilála (Bik.); sagilála (Tag.); tókor-pári (Pamp.); tónkod-obíspo (Tag.); túngkod-pári (Tag.).

## 9. PLEOMELE Salisbury

PLEOMELE ANGUSTIFOLIA (Roxb.) N. E. Br. in Kew Bull. (1914) 277; Merr. Interpret. Herb. Amb. (1917) 137, Sp. Blancoanae (1918) 96.

*Dracaena angustifolia* Roxb. Hort. Beng. (1814) 24, Fl. Ind. ed. 2, 2 (1832) 155; Naves Novis. App. (1880) 264; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 35, 3 (1908) Bot. 400.

*Pandanus inermis* Blanco Fl. Filip. ed. 2 (1845) 537, ed. 3, 3 (1879) 184, non Roxb.

Batan Islands and northern Luzon to Palawan and Mindanao, in most or all islands and provinces. Chiefly in primary forests at low and medium altitudes; represented by more than 50 individual collections. India through Malaya to Australia.

Local names: Gigiman (Pang.); malasambál (Tag.); pasiú (Ibn.); saranakatmano (Bag.); taligbúhuk (Tag.); uhaṅgo-nu-kurang (Iv.).

PLEOMELE MULTIFLORA (Warb.) comb. nov.

*Dracaena multiflora* Warb. ex Sarasin Reisen in Celebes 1 (1905) 136, t. 4.

Batan Islands, Luzon (Nueva Ecija, Tayabas), Polillo, Mindoro, Palawan, Ticao, Masbate, Sulu Archipelago, Merrill 9424, 5402 B. S. 26434 Ramos & Edaño, 10407 McGregor, 39508 Ramos, F. B. 18815 Foxworthy, De Mesa, & Villamil. Chiefly on limestone formations along the seashore. Celebes.

## EXCLUDED SPECIES

DRACAENA ACUMINATA Thunb.; Naves Novis. App. (1880) 264.

DRACAENA DRACO Linn.; Naves op. cit. 265.

10. **CORDYLIN** Royen ex Adanson*(Sansevieria* Thunberg)**CORDYLIN ROXBURGHIANA** (Schultes) comb. nov.*Sansevieria roxburghiana* Schultes Syst. 7 (1829) 357; Naves Novis. App. (1880) 265; N. E. Br. in Kew Bull. (1915) 227, f. 12, D. E.*Sansevieria zeylanica* Roxb. Pl. Coromandel. 2 (1798) 43, t. 184, quoad fig.; Naves Novis. App. (1880) 265, Fl. Filip. ed. 3 (1877-83) t. 422; Miq. Fl. Ind. Bat. 3 (1859) 559; Merr. Fl. Manila (1912) 144, non Willd.*Cordylina hyacinthoides* W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 249, non *Aloe hyacinthoides* Linn.

Often cultivated, but in many regions naturalized, occurring in thickets and hedges at low and medium altitudes. A native of tropical Asia, now pantropic in cultivation. Bowstring hemp.

Local names: Aspi-aspi (Pamp.); baniat (Is.); bontót-pálos (Tag.); dildila (Ilk.); kakaróhai (Ibn.); pakaróhai (Ibn.); rabo de león (Sp.); rabo de tigre (Sp.); sígre (Is.); sináua (Tag.); tígi (Ibn.); tigre (Sp.).

## EXCLUDED SPECIES

SANSEVIERIA GRANDICUSPIS Haw.; Naves Novis. App. (1880) 265.

SANSEVIERIA GUINEENSIS Willd.; Naves l. c.

11. **ASPARAGUS** Tournefort**ASPARAGUS COCHINCHINENSIS** (Lour.) Merr. in Philip. Journ. Sci. 15 (1919) 230.*Melanthium cochinchinense* Lour. Fl. Cochinch. (1790) 216.*Asparagus lucidus* Lindl. Bot. Reg. (1844) Misc. 29, var. *dolichocladus* Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 96.

Luzon (Benguet), *Loher* 1928, without data, but probably from above 1,200 m altitude. Japan, China, Formosa.

The above is the only indigenous species of the genus. Introduced and occasionally cultivated species include the common asparagus (Sp. espárrago) *Asparagus officinalis* Linn., *A. plumosus* Baker, and *A. sprengeri* Regel; see Merrill, Fl. Manila (1912) 143. Naves has credited *Asparagus declinatus* Linn. and *A. racemosus* Willd. to the Philippines, Novis. App. (1880) 264, but both were apparently admitted on erroneous identifications.

12. **DISPORUM** Salisbury**DISPORUM LUZONIENSE** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 338.*Disporum pullum* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 182, non Salisb.

Luzon (Lepanto, Bontoc, Benguet), *Merrill* 4857, 6619, *Phil. Pl.* 899, *B. S.* 31675 Santos, 5942 Ramos, 8483 McGregor, 4316 Mearns. In the mossy forest, altitude 1,700 to 2,400 m. Endemic.

13. **LIRIOPE** Loureiro**LIRIOPE BRACHYPHYLLA** Merr. in Philip. Journ. Sci. 2 (1907) Bot. 266.

Mindoro, *Merrill* 5710. On seepage slopes in open heath on Mt. Halcon, altitude about 2,400 m. Endemic.



**LIRIOPE GRAMINIFOLIA** (Linn.) Baker in Journ. Linn. Soc. Bot. 17 (1879) 499.

*Dracaena graminifolia* Linn. Syst. ed. 12 (1767) 246.

*Liriope spicata* Lour. Fl. Cochinch. (1790) 201; C. H. Wright in Journ. Linn. Soc. Bot. 36 (1903) 79.

*Ophiopogon spicatus* Ker in Bot. Reg. t. 593; Naves Novis. App. (1880) 264.

Luzon (Ilocos Norte, Benguet), *F. B. 968 Barnes, B. S. 33196 Ramos*. On open slopes, altitude about 1,400 m. Japan to Manchuria, southward to Hongkong and Formosa.

#### 14. OPHIOPOGON Ker

**OPHIOPOGON JAPONICUS** (Linn. f.) Ker in Curtis's Bot. Mag. (1807) t. 1063; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 35, 5 (1910) Bot. 338.

*Convallaria japonica* Linn. f. Suppl. (1781) 204.

Luzon (Bontoc, Lepanto, Benguet, Nueva Ecija, Zambales, Pampanga, Bataan, Laguna, Tayabas), Mindanao (Bukidnon, Davao). Chiefly in the mossy forest, altitude 850 to 2,400 m; represented by numerous collections. Japan to southern China and Formosa.

Local names: Langigit (Ig.); takaáu (Bon.); uli-úli (Bag.).

**OPHIOPOGON MALAYANUS** Ridl. in Journ. Str. Branch Roy. As. Soc. 41 (1904) 34.

Jolo, *Clemens 9374*. On forested slopes, altitude about 700 m. Malay Peninsula, Borneo.

#### 15. ALETRIS Linnaeus

**ALETRIS SPICATA** (Thunb.) Franch. in Journ. de Bot. 10 (1896) 199; Merr. in Philip. Journ. Sci. 1 (1908) Suppl. 182, 5 (1910) Bot. 338.

*Hypoxis spicata* Thunb. Fl. Jap. (1784) 136.

*Aletris japonica* Lamb. in Trans. Linn. Soc. 10 (1811) 407, non Thunb.

Luzon (Abra, Bontoc, Benguet), *Merrill 4685, 4801, Clemens 9178, Vanoverbergh 568, B. S. 7242 Ramos, 31668 Santos*. On open grassy slopes in the pine region, altitude 1,600 to 2,300 m. Japan, China, Formosa.

Local name: Salenganga (Ig.).

#### 16. SMILAX Tournefort

**SMILAX BRACTEATA** Presl Rel. Haenk. 1 (1827) 131; Kunth Enum. 5 (1850) 251; Miq. Fl. Ind. Bat. 3 (1859) 566; A. DC. Monog. Phan. 1 (1878) 197; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 87, Fl. Manila (1912) 142, Sp. Blancoanae' (1918) 97.

*Smilax pseudochina* Blanco Fl. Filip. (1837) 795, ed. 2 (1845) 548, ed. 3, 3 (1879) 204, non Linn.

*Smilax fistulosa* Blanco op. cit. 796, 549, 205; A. DC. Monog. Phan. 1 (1878) 211.

*Smilax divaricata* Blanco op. cit. 795, 548, 206, p. p.; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 87.

*Smilax blancoi* Kunth Enum. 5 (1850) 262; A. DC. Monog. Phan. 1 (1878) 211.

*Smilax indica* Naves Novis. App. (1880) 262, non Vitm.

Luzon (Benguet, Pangasinan, Bulacan, Rizal, Bataan, Laguna, Tayabas), *Merrill 2548, Sp. Blancoanae 572, Phil. Pl. 313, B. S. 17777 Otanes*. Common in thickets and secondary forests at low and medium altitudes. Endemic.

Local names: Banág (Ilk., Tag., Ig.); banál (Ig.); barág (Pamp.); kamágsa-óbat (Tag.); hampás-tigbálang (Tag.); kolót-bábui (Tag.); rónas (Pamp.).

**SMILAX CHINA** Linn. Sp. Pl. (1753) 1029; Naves Novis. App. (1880) 261; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 267, 5 (1910) Bot. 339.

Luzon (Bontoc, Lepanto, Benguet, Zambales), Mindoro, Negros, *B. S. 31754 Santos, 5413, 5733 Ramos, 8411 McGregor, F. B. 17382 Curran, Merrill 4749, 4497, 6126, 6211, 6140, 6552, 6494, 7043, Williams 1340, 2008*. In the mossy forest, altitude 1,600 to 2,400 m. Japan, China.

Local names: Buánal (Ig.); palitpit (Bon.).

**SMILAX ELMERI** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 6.

*Smilax reticulata* Elm. Leaf. Philip. Bot. 8 (1915) 2740, non Desv., nec Heer.

Luzon (Sorsogon), Bucas Grande, Mindanao (Bukidnon, Agusan), *Elmer 13684, 16132, B. S. 35065 Ramos & Pascasio, 38761 Ramos & Edaño*. On forested ridges up to 1,000 m altitude. Endemic.

Local name: Simbanag (Mbo.).

**SMILAX RECTA** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 5.

Luzon (Tayabas, east coast), *B. S. 28560, 28472 Ramos & Edaño*. On forested slopes at low or medium altitudes. Endemic.

**SMILAX LEUCOPHYLLA** Blume Enum. Pl. Jav. 1 (1827) 18; Naves Novis. App. (1880) 263; Stapf in Trans. Linn. Soc. Bot. 4 (1894) 242; Ceron Cat. Pl. Herb. Manila (1892) 172; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 96, Sp. Blancoanae (1918) 97.

*Smilax latifolia* Blanco Fl. Filip. ed. 2 (1845) 548, ed. 3, 3 (1879) 204, non R. Br.

*Smilax vicaria* Kunth Enum. 5 (1850) 262; A. DC. Monog. Phan. 1 (1878) 212; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 35, 2 (1907) Bot. 267, 436.

*Smilax macrophylla* Naves Novis. App. (1880) 262, non Roxb.

Luzon (Benguet, Pangasinan, Pampanga, Rizal, Bataan, Laguna), Mindoro, Culion, Palawan, Mindanao, *Merrill 3771, 1713, 659, 5579, Sp. Blancoanae 951, 690, Elmer 12613, Williams 1555, B. S. 20554, 10888 Ramos, 22776 McGregor, 12664, 15865 Fénix, 1992 Foxworthy, F. B. 1877 Ahern's collector*. Chiefly in primary forests at medium altitudes. Malay Peninsula, Java, Borneo, Moluccas.

Local names: Banág (Tag.); banál (Ig.); kaguno (Neg.); kámot-kabág (Tag.); sarsaparíllang-putí (Tag.); sípit-uláng (Tag.).

**SMILAX LOHERI** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 294.

Luzon (Nueva Ecija, Rizal), *Loher 6968, B. S. 26506 Ramos & Edaño, 40708 Ramos*. In the mossy forest at or above 900 m altitude.

Local name: Kiting-kiting (Neg.).

**SMILAX LUCIDA** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 5.

Luzon (Rizal, Tayabas, east coast), *B. S. 26611 Ramos & Edaña, 40787 Ramos*. In forests at low or medium altitudes. Endemic.

Local name: Báru (Ibn.).

**SMILAX LUZONENSIS** Presl Rel. Haenk. 1 (1827) 131; Kunth Enum. 5 (1850) 261; Miq. Fl. Ind. Bat. 3 (1859) 566; Merr. in Philip. Journ. Sci. 10 (1915) Bot. 295.

*Smilax helferi* A. DC. Monog. Phan. 1 (1878) 176, quoad. syn. Presl; Naves Novis. App. (1880) 262.

Luzon (Ilocos Norte), Panay, Catanduanes, Mindanao (Bukidnon, Lanao), *B. S. 33327, 30228 Ramos, 35611 Martelino & Edaña, 38849 Ramos & Edaña, Clemens 835, 905, Presl!* in herb. Prague. In forests at medium altitudes. Endemic.

**SMILAX PYGMAEA** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 339.

Luzon (Benguet), *Merrill 6598, B. S. 8902*. In the summit grasslands on Mt. Pulog, altitude about 2,800 m. Endemic.

**SMILAX VERRUCULOSA** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 173.

Luzon (Ifugao, Bontoc, Benguet), *Topping 13, Merrill 7742, Elmer 5820, 8572, Williams 1046, B. S. 19702 McGregor, 37672 Ramos & Edaña, 2810 Mearns, F. B. 15617 Curran*. In thickets about limestone cliffs, in forests and ravines, altitude 1,300 to 1,600 m. Endemic.

Local names: Baná (Bon.); pauá (Bon.).

**SMILAX WILLIAMSII** Merr. in Philip. Journ. Sci. 5 (1910) Bot. 173.

Luzon (Tayabas, east coast), Mindanao (Lanao, Bukidnon, Davao), *Williams 2579, Clemens 751, B. S. 29139, 38760 Ramos & Edaña*. In thickets or forests at medium altitudes. Endemic.

Local name: Banúg (Bag.).

#### EXCLUDED SPECIES

**SMILAX ASPERA** Linn.; Naves Novis. App. (1880) 262.

**SMILAX BARBATA** Wall.; Naves op. cit. 263.

**SMILAX BAUHINIOIDES** Kunth; Naves op. cit. 262.

**SMILAX BLUMEI** A. DC.; Naves op. cit. 263.

**SMILAX FEROX** Wall.; Naves op. cit. 262.

**SMILAX JAVENSIS** A. DC.; Naves l. c.

**SMILAX GRANDIFOLIA** Regel; Naves l. c.

**SMILAX KLOTZSCHII** Kunth; Naves l. c.

**SMILAX LAEVIS** Wall.; Naves op. cit. 261.

**SMILAX MACRABUCHA** Duch.; Naves op. cit. 263.

**SMILAX MACROCARPA** Blume; Naves op. cit. 262.

**SMILAX ODORATISSIMA** Blume; Naves l. c.; Stapf in Trans. Linn. Soc. Bot. 4 (1894) 242.

**SMILAX OVALIFOLIA** Roxb.; Naves op. cit. 263.

SMILAX POLYACANTHA Wall.; Naves op. cit. 262.

SMILAX WIGHTII A. DC.; Naves l. c.

SMILAX ZEYLANICA Linn.; Naves l. c.

#### EXCLUDED GENERA

HETEROSMILAX BORNEENSIS A. DC.; Naves Novis. App. (1880) 261.

SCILLA sp.; Naves op. cit. 266.

TULIPA GESNERIANA Linn.; Naves op. cit. 266.

XEROTES LONGIFOLIA R. Br.; Naves op. cit. 273.

#### AMARYLLIDACEAE

##### 1. ATAMOSCO Greene

ATAMOSCO ROSEA (Lindl.) Greene Pittonia 3 (1897) 188.

*Zephyranthes rosea* Lindl. in Bot. Reg. 10 (1824) t. 821; Merr. Fl. Manila (1912) 147.

*Habranthus versicolor* Herb. in Curtis's Bot. Mag. t. 2485; Naves Novis. App. (1880) 255, Fl. Filip. ed. 3 (1877-83) t. 271, 375.

Widely distributed in cultivation in and about towns, sometimes persisting from previous cultivation but scarcely naturalized. A native of tropical America.

##### 2. CRINUM Linnaeus

CRINUM ASIATICUM Linn. Sp. Pl. (1753) 292; Blanco Fl. Filip. (1837) 251, ed. 2 (1845) 175, ed. 3, 1 (1877) 314, t. 168; Miq. Fl. Ind. Bat. 3 (1859) 580; Naves Novis. App. (1880) 254; Merr. in Philip. Journ. Sci. 1 (1906) Bot. 35, Fl. Manila (1912) 147, Sp. Blancoanae (1918) 98.

*Crinum giganteum* Blanco Fl. Filip. ed. 2 (1845) 175, ed. 3, 1 (1877) 315, non Andr.

*Haemanthus pubescens* Blanco Fl. Filip. (1837) 253, non Linn. f.

Throughout the Philippines along sandy seashores, sometimes planted inland. India to Malaya and western Polynesia.

Local names: Agabáhan (Bis.); agákong (Bon.); bákong (Tag., Bag., Ilk., Sbl.); bilíba (Sub.); kábong (Bik.); palagúkon (Bis.); saknib (Bon.); salibángbang (Bis.); tebá (Bon.).

CRINUM GRACILE E. Meyer in Presl Rel. Haenk. 1 (1827) 120; Kunth Enum. 5 (1850) 566; Naves Novis. App. (1880) 255; Baker Handb. Amaryl. (1888) 81.

*Crinum cumingii* Baker in Gard. Chron. II 16 (1881) 72, Handb. Amaryl. (1888) 81; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 275.

Luzon (Nueva Ecija, Laguna), Mindoro, Mindanao, *Cuming 1882, Presl!* in herb. Prague, *Merrill 4063, McGregor, 152, 228, Elmer 17667, Baker 3725, Bolster 303*. In primary forests at low altitudes. Endemic.

CRINUM LATIFOLIUM Linn. Sp. Pl. (1753) 291; Merr. Fl. Manila (1912) 148.

Cultivated in towns for ornamental purposes, but scarcely naturalized. A native of India.

- CRINUM ZEYLANICUM** Linn. Syst. ed. 12 (1767) 236; Baker Handb. Amaryll. (1888) 87; Merr. Fl. Manila (1912) 148.  
*Crinum ornatum* Herb. Amaryll. (1837) 262; Naves Novis. App. (1880) 255.

Cultivated for ornamental purposes but nowhere naturalized. A native of tropical Asia.

Local names: Lilio (Sp.); lirio (Tag.).

#### EXCLUDED SPECIES

- CRINUM AMABILE** Donn; Naves Novis. App. (1880) 254.  
**CRINUM AMOENUM** Roxb.; Naves l. c.  
**CRINUM DEFIXUM** Ker; Naves l. c.  
**CRINUM PRATENSE** Hub.; Naves l. c.  
**CRINUM SUMATRANUM** Roxb.; Naves l. c.

#### 3. HYMENOCALLIS Salisbury

- HYMENOCALLIS LITTORALE** (Jacq.) Salisb. in Trans. Hort. Soc. 1 (1812) 338; Merr. Sp. Blancoanae (1918) 98.

*Pancratium littorale* Jacq. Select. Stirp. Amer. (1763) 99.

*Pancratium illyricum* Blanco Fl. Filip. (1837) 251, ed. 2 (1845) 176, ed. 3, 1 (1877) 316, t. 411 (as *Hymenocallis adnata* Herb.), non Linn.

*Pancratium maritimum* Blanco op. cit. 252, 177, 316; Naves Novis. App. (1880) 256; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 86, non Linn.

*Hymenocallis adnata* Herb. Amaryll. (1837) 215; Naves Novis. App. (1880) 256.

*Hymenocallis tenuiflora* Herb. Amaryll. Suppl. (1837) 44; Merr. Fl. Manila (1912) 149.

Cultivated in Manila and other towns, occasional in waste places, etc., but apparently propagating only by its bulbs. A native of tropical America.

#### 4. EUCHARIS Planchon and Linden

- EUCHARIS GRANDIFLORA** Planch. & Linden Fl. des Serres I 9 (1853-54) 255; Merr. Fl. Manila (1912) 149.

This occurs in the Philippines only as a cultivated ornamental in Manila and in a few of the larger towns. A native of South America. The Amazon lily.

#### 5. EURYCLES Salisbury

- EURYCLES AMBOINENSIS** (Linn.) Lindl. in Loud. Encycl. Pl. (1829) 242; Miq. Fl. Ind. Bat. 3 (1859) 582; Naves Novis. App. (1880) 255; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 276; Merr. Fl. Manila (1912) 149, Sp. Blancoanae (1918) 99.

*Pancratium amboinense* Linn. Sp. Pl. (1753) 291; Blanco Fl. Filip. (1837) 252, ed. 2 (1845) 177, ed. 3, 1 (1877) 317, t. 406.

*Eurycles sylvestris* Salisb. in Trans. Hort. Soc. 1 (1812) 337.

Luzon (Cavite, Rizal, Laguna), Mindoro, Palawan. In secondary forests at low altitudes, never far from settlements and hence probably introduced; often cultivated for ornamental purposes. Malay Peninsula and Archipelago to tropical Australia.

Local names: Abod (Bis.); abur (Bis.); dausum (Bis.); katañgal (Bis.); kosol (Bis.); panabor (Bis.); taliunú (Bik.); talaonor (Bis.); tambal (Tag.); tanual (Bis.).

#### 6. PANCRATIUM Linnaeus

**PANCRATIUM ZEYLANICUM** Linn. Sp. Pl. (1753) 290; Blanco Fl. Filip. (1837) 253, ed. 2 (1845) 177, ed. 3, 1 (1877) 317, *t. 321*; Naves Novis. App. (1880) 256; Merr. Fl. Manila (1912) 148, Sp. Blancoanae (1918) 99.

Luzon (Union, Camarines), Palawan, Biliran, *Merrill Sp. Blancoanae 378, B. S. 18534 McGregor, 881 Foxworthy*. In coconut and abaca plantations, thickets, etc., sometimes planted. Certainly not a native of the Philippines. India to Malaya.

Local names: Baoang-báoang (Bis.); hagobaóa (Bis.); katoñgal (Tag.).

#### EXCLUDED SPECIES

**PANCRATIUM MALABATHRICUM** Herb.; Naves Novis. App. (1880) 256.

#### 7. HIPPEASTRUM Herbert

**HIPPEASTRUM MINIATUM** Herb. Amaryll. Suppl. (1837) 31; Naves Novis. App. (1880) 255; Merr. Sp. Blancoanae (1918) 99.

*Amaryllis atamasco* Blanco Fl. Filip. (1837) 254, ed. 2 (1845) 178, ed. 3, 1 (1877) 319, *t. 359*; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 85, non Linn.

Luzon (Union, Rizal, Laguna, Tayabas), Panay, Mindanao, Siassi, *Merrill Sp. Blancoanae 1048, Elmer 17433b*. Introduced and planted for ornamental purposes, but more or less naturalized in coconut groves, etc. A native of tropical America.

Local name: Lirio (Tag.).

#### 8. POLIANTHES Linnaeus

**POLIANTHES TUBEROSA** Linn. Sp. Pl. (1753) 316; Blanco Fl. Filip. (1837) 259, ed. 2 (1845) 181, ed. 3, 1 (1877) 323; Naves Novis. App. (1880) 254; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 85, Fl. Manila (1912) 146, Sp. Blancoanae (1918) 99.

Cultivated for its fragrant flowers but nowhere naturalized. A native of tropical America. Tuberose.

Local names: Azucéna (Sp.); nádo (C. Bis.).

#### 9. AGAVE Linnaeus

**AGAVE CANTALA** Roxb. Hort. Beng. (1814) 25; Berger Agav. (1915) 236; Merr. Interpret. Herb. Amb. (1917) 144, Sp. Blancoanae (1918) 99.

*Furcraea cantala* Haw. Syn. Pl. Succul. Suppl. (1819) 42.

*Agave cantala* Roxb. Fl. Ind. ed. 2, 2 (1832) 167; Naves Novis. App. (1880) 253; Merr. Fl. Manila (1912) 146.

*Agave americana* Blanco Fl. Filip. (1837) 258, ed. 2 (1845) 180, ed. 3, 1 (1877) 322, *t. 96*; Naves Novis. App. (1880) 253; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 23; Usteri Beitr. Ken. Philip. Veg. (1905) 129, non Linn.

Introduced from Mexico at an early date in colonial history, now widely distributed in the Philippines, in some provinces extensively grown for its fiber. Pantropic.

Local names: magéi (all dialects); pita (C. Bis.).

**AGAVE SISALANA** Perrine ex Engelm. in Trans. Acad. Sci. St. Louis 3 (1875) 314; Berger Agav. (1915) 230. f. 66.

Introduced in the early part of the present century, and now widely planted for its fiber. A native of tropical America. Sisal.

#### EXCLUDED SPECIES

**AGAVE MEXICANA** Lam.; Naves Novis. App. (1880) 253.

#### 10. CURCULIGO Gaertner

**CURCULIGO AGUSANENSIS** Elm. Leaf. Philip. Bot. 5 (1913) 1645.

Luzon (Sorsogon), Mindanao (Zamboanga, Agusan), *Elmer 13584, 17005, B. S. 36910 Ramos & Edaña*. In forests at low altitudes. Endemic.

Local names: Kuyabáng (Sub.); pagátpat (Mbo.); tayábong (Sub.).

**CURCULIGO BREVIPEDUNCULATA** Elm. Leaf. Philip. Bot. 5 (1913) 1647.

Palawan, Balabac, Panay, *Elmer 13164, Merrill 5373, Phil. Pl. 1318, B. S. 32576 McGregor*. In forests at low altitudes. Endemic.

**CURCULIGO CAPITULATA** (Lour.) O. Kuntze Rev. Gen. Pl. (1891) 703; Merr. Interpret. Herb. Amb. (1917) 142.

*Leucojum capitulatum* Lour. Fl. Cochinch. (1790) 199.

*Curculigo recurvata* Dry. in Ait. Hort. Kew ed. 2, 2 (1811) 253; Naves Novis. App. (1880) 253; Merr. in Philip. Journ. Sci. 3 (1908) Bot. 401; Elm. Leaf. Philip. Bot. 5 (1913) 1645.

Batan Islands, Luzon (Bontoc, Benguet, Laguna, Tayabas, Sorsogon, Biliran, Leyte, Panay, Siargao, Mindanao), *Merrill 9670, Phil. Pl. 847, Elmer 6202, 7771, 18196, Williams 1150, B. S. 35389 Ramos & Edaña, 31962 Santos, 15299, 23571 Ramos, 18867 McGregor, 14006 Robinson, F. B. 4893 Curran*. In thickets and forests, chiefly at medium altitudes, ascending to 1,800 m. India to southern China through Malaya to tropical Australia.

Local names: Abang-ábang (Bik.); atukgan (Ig.); katuágan (Ig.); talauánġit (Bag.); tayúbang (Bon.); tokán (Ig.); tolábang (If.).

**CURCULIGO GLABRA** Merr. in Philip. Journ. Sci. 2 (1907) Bot. 267; C. B. Rob. op. cit. 6 (1911) Bot. 196; Elm. Leaf. Philip. Bot. 5 (1913) 1645.

Luzon (Sorsogon), Polillo, Alabat, Mindoro, *Merrill 5750, 10449, Elmer 14990, B. S. 10366 McGregor*. In primary forests at low and medium altitudes. Endemic.

**CURCULIGO ORCHIOIDES** Gaertn. Fruct. 1 (1788) 63, t. 16; Elm. Leaf. Philip. Bot. 5 (1913) 1645; Merr. Sp. Blancoanae (1918) 100.

*Gethyllis acaulis* Blanco Fl. Filip. (1837) 260, ed. 2 (1845) 181, ed. 3, 1 (1877) 324.

Luzon (Bontoc, Pangasinan, Rizal, Sorsogon), Mindoro, Semirara, Palawan, Biliran, Panay, Mindanao, *Merrill 4144, Sp. Blancoanae 260, Elmer 16484, Williams 2927, Copeland 472, B. S. 32413, 18637 McGregor, 26122 Fénix, 1520 Bermejos, 6739 Robinson, 21440 Escritor, 17858 Otones*. In open grasslands, chiefly in cogonales (*Imperata* areas), at low and medium altitudes. India to Java.

Local names: Sulsulitík (Bon.); taloáñgi (Bag.); tataluanñgi (Buk.).

**CURCULIGO WEBERI** Elm. Leaf. Philip. Bot. 5 (1913) 1646.

Samar, Mindanao (Agusan, Lanao), *Elmer 14304, Weber 1081, Clemens 1225, Taylor 285, B. S. 17657 Ramos*. In forests at low and medium altitudes. Endemic.

Local name: Bongbón (C Bis.).

#### EXCLUDED SPECIES

**CURCULIGO ENSIFOLIA** R. Br.; Naves Novis. App. (1880) 253.

**CURCULIGO LATIFOLIA** Dry.; Naves l. c.

#### 11. HYPOXIS Linnaeus

**HYPOXIS AUREA** Lour. Fl. Cochinch. (1790) 200.

*Hypoxis franquevillei* Miq. Fl. Ind. Bat. 3 (1859) 586; Naves Novis. App. (1880) 253.

*Hypoxis flava* Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 85 sphalm.

Luzon (Bontoc, Benguet, Nueva Ecija), Mindanao (Lanao, Bukidnon), *Elmer 6585, Merrill 247, 4453, Phil. Pl. 848, Williams 1063, B. S. 15775 Fénix, 31818 Santos*. In open grasslands at medium and higher altitudes, ascending to 2,300 m. India to Japan southward to Java.

Local name: Kitkitlí (Ig.).

#### EXCLUDED GENERA AND SPECIES

**AMARYLLIS CARNEA** Schultes; Naves Novis. App. (1880) 255.

**AMARYLLIS FORMOSISSIMA** Linn.; Naves l. c.

**AMARYLLIS VITTATA** Ait.; Naves l. c.

**FURCRAEA GIGANTEA** Vent.; Naves op. cit. 253.

**FURCRAEA RIGIDA** Haw.; Naves op. cit. 254.

**HERMIONE TAZETTA** Haw.; Naves op. cit. 256.

#### TACCACEAE

##### 1. TACCA Forster

**TACCA ELMERI** Krause in Leaf. Philip. Bot. 6 (1914) 2283.

Palawan, Leyte, *Elmer 12679, Weber 1522*. In light forests at low altitudes. Endemic.

Local name: Odang-ódang (Tagb.).

**TACCA PALMATA** Blume Enum. Pl. Jav. 1 (1827) 83; Miq. Fl. Ind. Bat. 3 (1859) 577; Naves Novis. App. (1880) 257; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 35, Fl. Manila (1912) 150, *Sp. Blancoanae* (1918) 100.

*Tacca montana* Schultes Syst. 7<sup>1</sup> (1829) 168; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 276.



*Tacca vesicaria* Blanco Fl. Filip. (1837) 261.

*Tacca palmata* Blanco Fl. Filip. ed. 2 (1845) 182, ed. 3, 1 (1877) 325.

*Tacca rumphii* Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 442; Miq. Fl. Ind. Bat. 3 (1859) 577; Naves Novis. App. (1880) 257.

Luzon (Pangasinan, Nueva Ecija, Bulacan, Rizal, Bataan, Laguna), Semirara, Panay. In thickets and secondary forests at low altitudes. Malay Archipelago.

Local names: Kanálong (Bis.); magsalóro (Bis.); payung-payúñgan (Tag.).

**TACCA PINNATIFIDA** Forst. Char. Gen. (1776) 70, t. 35; Presl Rel. Haenk. 1 (1827) 148; Blanco Fl. Filip. ed. 2 (1845) 182, ed. 3, 1 (1877) 327; Miq. Fl. Ind. Bat. 3 (1859) 577; Naves Novis. App. (1880) 257; Hook. f. in Curtis's Bot. Mag. III 49 (1893) t. 7299, 7300; Merr. Fl. Manila (1912) 150, Sp. Blancoanae (1918) 101.

*Tacca gaogao* Blanco Fl. Filip. (1837) 262, 856.

Luzon (Ilocos Norte) to Palawan and Mindanao, in most islands and provinces. Chiefly in sandy soil in thickets near the sea. Tropical Africa and Asia through Malaya to Australia and Polynesia.

Local names: Gau-gáu (Tag.); kanóbong (Bis.); panarién (Ilk.); tambóbon (Sbl.); tayóbong (Bis.); yabyában (Tag.).

#### EXCLUDED SPECIES

**TACCA ASPERA** Roxb.; Naves Novis. App. (1880) 258.

**TACCA LANCAEFOLIA** Zoll.; Naves l. c.

### DIOSCOREACEAE

#### 1. DIOSCOREA Plumier

**DIOSCOREA ALATA** Linn. Sp. Pl. (1753) 1033; Blanco Fl. Filip. (1837) 799, ed. 2 (1845) 550, ed. 3, 3 (1879) 207; Miq. Fl. Ind. Bat. 3 (1859) 572; Naves Novis. App. (1880) 259; Merr. Fl. Manila (1912) 151, Interpret. Herb. Amb. (1917) 146, Sp. Blancoanae (1918) 102; Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 39.

Cultivated throughout the Philippines for its edible tubers, but certainly not a native of the Archipelago. Pantropic in cultivation, a native of the Old World Tropics.

Local names: fpoi (Ig.); kinampái (Bis.); lúktu' (If.); úbi (Tag.), Bik., Ibn., Ilk., It., Bis.).

**DIOSCOREA BULBIFERA** Linn. Sp. Pl. (1753) 1033; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 445; Miq. Fl. Ind. Bat. 3 (1859) 574; Naves Novis. App. (1880) 258; Ceron Cat. Pl. Herb. Manila (1892) 171; Merr. Fl. Manila (1912) 151; Prain & Burkill in Leaf. Philip. Bot. 5 (1913) 1596, Journ. As. Soc. Beng. II 10 (1914) 26.

Luzon (Bontoc, Union, Nueva Ecija, Batangas, Bulacan, Rizal, Bataan, Zambales, Sorsogon), Masbate, Leyte, Mindanao. In thickets at low

and medium altitudes; represented by numerous collections. India to China and Malaya.

Local names: Aribúkbuk (Ilk.); bayag-kabáyo (Tag.); dadákan (Bag.); pulúgan (Bik.); ubí-ubíhan (Tag.); utóŋg-utóŋgan (Tag.).

**DIOSCOREA CUMINGII** Prain & Burkill in Journ. As. Soc. Beng. II 4 (1908) 449, 10 (1914) 25, Leaflet. Philip. Bot. 5 (1913) 1595.

*Dioscorea inaequifolia* Elmer ex Prain & Burkill in Leaflet. Philip. Bot. 5 (1913) 1595, Journ. As. Soc. Beng. II 10 (1914) 24.

Luzon (Apayao, Bontoc, Benguet, Lepanto, Rizal, Bataan, Laguna, Nueva Vizcaya, Rizal, Camarines, Sorsogon), Mindoro, Mindanao, *Cuming 1469, Elmer 15333, 8692, Merrill 4455, 7683, Phil. Pl. 2034, F. B. 22956bis Calycosa, 3376 Ahern's collector, 69 Barnes, B. S. 8207 Ramos*. In thickets and forests at low and medium altitudes, ascending to 1,400 m. Endemic.

Local names: Lima-limá (Tag.); pari (Bag.).

**DIOSCOREA DIVARICATA** Blanco Fl. Filip. (1837) 797, ed. 2 (1845) 550, ed. 3, 3 (1879) 207; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 35, 2 (1907) Bot. 436, Sp. Blancoanae (1918) 101.

*Dioscorea batatas* Naves Novis. App. (1880) 258, non Decne.

*Dioscorea foxworthyi* Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 34.

Luzon (Ilocos Norte, Pangasinan, Pampanga, Rizal, Bataan, Laguna), *B. S. 22425, 33185 Ramos, 29960, 30092 Fénix, 1558 Foxworthy, F. B. 2572 Borden, Merrill Sp. Blancoanae 391*. In thickets and secondary and primary forests at low and medium altitudes. Endemic.

Local names: Baliákag (Bis.); bulói (Tag.); dulián (Ilk.); durián (Ilk.); dúyan (Pang.); kirói (Tag.); kobág (Tag.); pakít (Tag.); ubág (Tag.).

**DIOSCOREA ELMERI** Prain & Burkill in Leaflet. Philip. Bot. 5 (1913) 1594, Journ. As. Soc. Beng. II 10 (1914) 24 (incl. var. *vera* and var. *dubia*).

Batan Islands, Luzon (Laguna, Tayabas), Samar, *Elmer 9156, 8265, B. S. 28717, 24196 Ramos & Edaña, 3659 Fénix*. In forests at low altitudes; really distinct from *D. cumingii* Prain & Burkill? Endemic.

**DIOSCOREA ESCULENTA** (Lour.) Burkill in Gard. Bull. Straits Settl. 1 (1917) 396; Merr. Interpret. Herb. Amb. (1917) 147, Sp. Blancoanae (1918) 102.

*Oncus esculentus* Lour. Fl. Cochinch. (1790) 194.

*Dioscorea papillaris* Blanco Fl. Filip. (1837) 801, ed. 2 (1845) 552, ed. 3, 3 (1879) 200.

*Dioscorea tugui* Blanco Fl. Filip. (1837) 800.

*Dioscorea sativa* Blanco Fl. Filip. ed. 2 (1845) 551, ed. 3, 3 (1879) 209, Naves Novis. App. (1880) 259, non Linn.

*Dioscorea fasciculata* Roxb. Fl. Ind. ed. 2, 2 (1832) 801; Naves Novis. App. (1880) 260; Merr. Fl. Manila (1912) 151.

*Dioscorea tiliaefolia* Kunth Enum. 5 (1840) 401; Miq. Fl. Ind. Bat. 3 (1859) 576; Naves Novis. App. (1880) 260; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 276.

*Dioscorea aculeata* Naves Novis. App. (1880) 260; Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 19, Leaflet. Philip. Bot. 5 (1913) 1593 (var. *tiliaefolia* Prain & Burkill), non Linn.

Batan Islands, Luzon (Cagayan, Benguet, Union, Pangasinan, Nueva Vizcaya, Bulacan, Rizal, Bataan, Laguna), Semirara, *Merrill 3805, 2727, 2709, 4147, Sp. Blancoanae 677, 202, Phil. Pl. 325, Elmer 6421, B. S. 32265, 14381, 23076 McGregor, 21120 Escritor, 21720 Ramos, F. B. 3280 Ahern's collector, 24879 Mabesa*. In thickets and secondary forests at low altitudes, also often cultivated. India to Malaya and Polynesia.

Local names: Anég (Ibn.); bóga (Ilk.); dúkai (Iv.); kamigíng (Bik.); lúttu (Ibn.); tón̄go (Tag.) túgi (Tag., Ilk.); túñgo (Tag.).

**DIOSCOREA FILIFORMIS** Blume Enum. Pl. Jav. 1 (1827) 22; Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 38.

*Dioscorea myriantha* Kunth Enum. 5 (1850) 382; Miq. Fl. Ind. Bat. 3 (1859) 571; Naves Novis. App. (1880) 258; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 276; Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 38.

Luzon (Nueva Ecija, Rizal, Bataan, Batangas, Laguna), Culion, Palawan, Mindanao (Jolo), *Merrill 466, 857, 8058, 3167, 8120, 8244, Baker 460, B. S. 22266 Ramos, 209, 330 Bermejós, F. B. 6036 Zschokke*. In thickets and in ravines at low altitudes. Java, Celebes, Moluccas.

**DIOSCOREA FLABELLIFOLIA** Prain & Burkill in Leaf. Philip. Bot. 5 (1913) 1593, Journ. As. Soc. Beng. II 10 (1914) 12.

Luzon (Laguna, Sorsogon), Catanduanes, Mindoro, *Loher 7027, Elmer 9095, 16677, B. S. 30278, 23564, 39412 Ramos, 22830 McGregor*. In forests at low and medium altitudes. Borneo.

**DIOSCOREA GRATA** Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 35.

Luzon (Rizal), *Loher 7012, 7017*, without data as to habitat. Endemic.

**DIOSCOREA HISPIDA** Dennst. Schlüssel Hort. Malabar. (1818) 33; Merr. Interpret. Herb. Amb. (1917) 148, Sp. Blancoanae (1918) 103.

*Dioscorea hirsuta* Blume Enum. Pl. Jav. 1 (1827) 21; Miq. Fl. Ind. Bat. 3 (1859) 575; Naves Novis. App. (1880) 260.

*Dioscorea daemona* Roxb. Hort. Beng. (1814) 72, *nomen nudum*, Fl. Ind. ed. 2, 3 (1832) 805; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 86, Fl. Manila (1912) 151.

*Dioscorea triphylla* Blarco Fl. Filip. (1837) 799, ed. 2 (1845) 551, ed. 3, 3 (1879) 208; Miq. Fl. Ind. Bat. 3 (1859) 573; Naves Novis. App. (1880) 259; Prain & Burkill in Journ. As. Soc. Bengal II 10 (1914) 25, Leaf. Philip. Bot. 5 (1913) 1595, non Linn.

Throughout the Philippines in thickets and forests at low and medium altitudes. India to southwestern China and Formosa through Malaya to New Guinea.

Local names: Bagai (Mbo.); gáyos (Bis.); kalút (Tag., Pamp., Sbl.); karót (Ilk.); karóti (Sul.); káyos (Tag.); kolót (Bis.); korót (S. L. Bis.); kulót (Sbl.); mamó (Bik.); namí (Tag.); orkót (Bis.).

**DIOSCOREA LOHERI** Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 33; Merr. Sp. Blancoanae (1918) 101.

*Dioscorea* sp. (*cobag na quiroi*) Blanco Fl. Filip. (1837) 798, ed. 2 (1845) 550, ed. 3, 3 (1879) 206.

Luzon (Rizal), *Merrill Sp. Blancoanae* 634, *Phil. Pl.* 6, 1498, *B. S.* 12529 Ramos. In thickets at low altitudes. This is perhaps referable to *D. divaricata* Blanco, the plants from not fully grown tubers. Endemic.

Local names: Kirói (Tag.); kobág (Tag.).

**DIOSCOREA LUZONENSIS** Schauer in *Nov. Act. Acad. Nat. Cur.* 19 (1843) *Suppl.* 1: 444; *Miq. Fl. Ind. Bat.* 3 (1859) 571; *Naves Novis. App.* (1880) 258; *Vidal Phan. Cuming. Philip.* (1885) 153, *Rev. Pl. Vasc. Filip.* (1886) 276; *Merr. in Philip. Journ. Sci.* 5 (1910) Bot. 339; *Prain & Burkill in Leaf. Philip. Bot.* 5 (1913) 1597, *Journ. As. Soc. Beng. II* 10 (1914) 28.

Luzon (Bontoc, Lepanto, Ilocos Norte, Union, Nueva Vizcaya, Bulacan, Rizal, Batangas, Laguna, Tayabas), *Cuming* 779, *Elmer* 18290, 18466, *Merrill Sp. Blancoanae* 117, *Phil. Pl.* 1070, *F. B.* 24909 Mabesa, 13218 Curran, 13336 Tamesis, 3293 Ahern's collector, *B. S.* 13734, 37240, 21752, 1380 Ramos. In thickets at low and medium altitudes. Endemic.

Local names: Aribúbu (Ilk.); kamán̄geg (Ilk.); kirini (Tag.); mayatbáng (Tag.); pakít (Tag.); ubág (Tag.).

**DIOSCOREA MERRILLII** Prain & Burkill in *Leaf. Philip. Bot.* 5 (1913) 1598, *Journ. As. Soc. Beng. II* 10 (1914) 35.

Mindoro, Mindanao (Davao), *Merrill* 5657, *Elmer* 11924. In old clearings and in thickets, altitude about 700 m. Endemic.

**DIOSCOREA NUMMULARIA** Lam. *Encycl.* 3 (1789) 231; *Naves Novis. App.* (1880) 258; *Merr. in Philip. Journ. Sci.* 2 (1907) Bot. 276; *Prain & Burkill in Leaf. Philip. Bot.* 5 (1913) 1599, *Journ. As. Soc. Beng. II* 10 (1914) 35.

Luzon (Bontoc to Sorsogon, in most or all provinces), Polillo, Leyte, Camiguin de Misamis, Mindanao, Basilan. In thickets and forests at low and medium altitudes.

Var. **GLAUCA** Prain & Burkill in *Journ. As. Soc. Beng. II* 10 (1914) 35.

Luzon (Benguet), *Elmer* 5638. Scarcely distinguishable from the type. The species in Celebes, Moluccas, New Guinea to Prince of Wales Island.

Local names: Banán (Bag.); malabalukbúk-dágis (Pamp.); pakít (Tag.); pinót (Tag.); úbing-básol (Tag.).

**DIOSCOREA PENTAPHYLLA** Linn. *Sp. Pl.* (1753) 1032; Blanco *Fl. Filip.* (1837) 802, ed. 2 (1845) 552, ed. 3, 3 (1879) 210; *Miq. Fl. Ind. Bat.* 3 (1859) 574; *Naves Novis. App.* (1880) 259; *Merr. in Philip. Journ. Sci.* 1 (1906) *Suppl.* 35, 3 (1908) Bot. 401, *Fl. Manila* (1912) 152, *Sp. Blancoanae* (1918) 103; *Prain & Burkill in Journ. As. Soc. Beng. II* 10 (1914) 23.

Luzon (Rizal, Bataan, Laguna), Panay, *Merrill Sp. Blancoanae* 458, *F. B.* 1971 Ahern's collector, *B. S.* 12176 Ramos. In thickets at low and medium altitudes. India to Yunnan, southward through Malaya to New Guinea.

Local names: Kasi (Ig.); lima-limá (Tag.) sapáng (Bis.).

The Philippine form is apparently referable to var. *malaica* Prain & Burkill l. c.

**DIOSCOREA PEPEROIDES** Prain & Burkill in Elm. Leaf. Philip. Bot. 5 (1913) 1597, Journ. As. Soc. Beng. II 10 (1914) 28 (var. *vera* Prain & Burkill).

Luzon (Benguet, Rizal), Golo, Palawan, *Elmer 6399, 6400, Merrill 9441, 6512, 11552, 11555, Loher 7007, 7010*. In thickets up to 1,300 m altitude, in Palawan about limestone formations at sea level.

Var. **SAGITTIFOLIA** Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 28.

Luzon (Nueva Vizcaya), *B. S. 8178 Ramos*. In thickets at low or medium altitudes. The species and this variety endemic, another variety in Indo-China.

**DIOSCOREA SOROR** Prain & Burkill in Leaf. Philip. Bot. 5 (1913) 1598, Journ. As. Soc. Beng. II 10 (1914) 34 (var. *vera* Prain & Burkill).

Luzon (Lepanto, Bataan), *Elmer 6737, Bona, B. S. 5941 Ramos*. In thickets at low and medium altitudes. Endemic. Probably the same as *D. divaricata* Blanco.

Var. **GLAUCA** Prain & Burkill in Journ. As. Soc. Beng. II 10 (1914) 34.

Luzon (Bulacan), *Yoder*. In thickets at low altitudes. Endemic.

#### EXCLUDED SPECIES

**DIOSCOREA EBURNEA** Lour.; Naves Novis. App. (1880) 260.

**DIOSCOREA GLABRA** Roxb.; Naves op. cit. 258.

**DIOSCOREA JAPONICA** Thunb.; Naves op. cit. 259.

**DIOSCOREA OPPOSITIFOLIA** Linn.; Naves op. cit. 258.

**DIOSCOREA PYRIFOLIA** Kunth Enum. 5 (1850) 384; Miq., Fl. Ind. Bat. 3 (1859) 571; Naves Novis. App. (1880) 258.

This record was based on *Cuming 2314* as Philippine, but this number was from Malacca; the species does not occur in the Philippines.

**DIOSCOREA SATIVA** Linn.; Naves op. cit. 259.

**DIOSCOREA SPICULATA** Blume; Naves l. c.

**DIOSCOREA VULGARIS** Miq.; Naves l. c.

#### 2. STENOMERIS Planchon

**STENOMERIS CUMINGIANA** Becc. in Nuov. Giorn. Bot. Ital. 2 (1870) 8, t. 2; Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 70; Rolfe in Journ. Bot. 23 (1885) 215, Rev. Pl. Vasc. Filip. (1886) 278; Taubert in Engl. Bot. Jahrb. 15 (1893) Beibl. 38: 2.

Luzon (Laguna, Sorsogon), Mindoro, Sibuyan, Leyte, Mindanao (Zamboanga), *Cuming 1739* in herb. Webb., *Wenzel 1210, 962, 718, Elmer 12064, F. B. 26909 Mabesa, B. S. 39429 Ramos*. In forests at low and medium altitudes. Endemic.

**STENOMERIS DIOSCOREAEFOLIA** Planch. in Ann. Sci. Nat. Bot. III 18 (1852) 320; Walp. Ann. 6 (1860) 42; Becc. in Nuov. Giorn. Bot. Ital. 2 (1870) 8; Scheff. in Nat. Tijdschr. Nederl. Ind. 34 (1874) 70; Vidal Phan. Cuming. Philip. (1885) 153, Rev. Pl. Vasc. Filip. (1886) 276; Rolfe in Journ. Bot. 23 (1885) 216; Taubert in Engl. Bot. Jahrb. 15 (1893) Beibl. 38: 2; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 268.

Luzon (Rizal, Laguna, Tayabas, Albay, Sorsogon), Catanduanes, Mindoro, Leyte, Biliran, Dinagat, Mindanao, *Cuming 375, Merrill 5775, 8301, Phil. Pl. 427, Elmer 9098, Baker 3333, B. S. 1005, 30339, 23514 Ramos, 35192 Ramos & Pascasio*. In thickets, old clearings, etc., at low and medium altitudes. Endemic.

**STENOMERIS WALLISII** Taubert in Engl. Bot. Jahrb. 15 (1893) Beibl. 38: 2.

Luzon, *Wallis!* in herb. Berol. Endemic.

The genus has one other known species in Borneo and the Malay Peninsula.

#### EXCLUDED GENUS

**RAJANA** sp.; Naves Novis. App. (1880) 260.

#### IRIDACEAE

##### 1, BELAMCANDA Adanson

**BELAMCANDA CHINENSIS** (Linn.) DC. in Red. Lil. 3 (1802) t. 121; Usteri Beitr. Ken. Philip. Veg. (1905) 129; C. B. Rob. in Philip. Journ. Sci. 6 (1911) Bot. 196; Merr. Fl. Manila (1912) 152.

*Ixia chinensis* Linn. Sp. Pl. (1753) 36.

*Pardanthus chinensis* Ker in König & Sims Ann. Bot. 1 (1805) 247; Naves Novis. App. (1880) 252, Fl. Filip. ed. 3 (1877-83) t. 376.

Planted for ornamental purposes but nowhere naturalized. A native of southeastern Asia, now cultivated in most warm countries.

Local name: Abanico (Sp.).

##### 2. PATERSONIA R. Brown

**PATERSONIA LOWII** Stapf in Trans. Linn. Soc. Bot. 4 (1894) 241, t. 20, f. 7-9; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 268.

Mindoro, *Merrill 5507*. In an open heath on Mt. Halcon, altitude about 2,400 m. Borneo. The genus a typical Australian one.

##### 3. ELEUTHERINE Herbert

**ELEUTHERINE PALMIFOLIA** (Linn.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 233, Fl. Manila (1912) 153, Sp. Blancoanae (1918) 104. *Sisyrinchium palmifolium* Linn. Mant. 1 (1767) 122; Naves Novis. App. (1880) 252.

*Eleutherine plicata* Herb. in Bot. Reg. 29 (1843) sub t. 57.

*Antholyza meriana* Blanco Fl. Filip. (1837) 24, ed. 2 (1845) 18, ed. 3, 1 (1877) 33, t. 100; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 85, non Linn.

A native of tropical America, introduced and now naturalized in some parts of the Philippines, occurring in hemp plantations and, occasionally, in waste places about towns, etc.; also planted for ornamental purposes.

Local names: Ahos-áhos (C. Bis.); hagusáhis (S. L. Bis.).

#### EXCLUDED GENERA AND SPECIES

**ANTHOLYZA AETHIOPICA** Linn.; Naves Novis. App. (1880) 252.

**IRIS SUSIANA** Linn.; Naves op. cit. 253.

**GLADIOLUS SEGETUM** Ker; Naves l. c.

**WATSONIA MERIANA** Ker; Naves l. c.

## MUSACEAE

## 1. MUSA Linnaeus

**MUSA ERRANS** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 390, t. 17, f. 6-8; Merr. Sp. Blancoanae (1918) 105.

*Musa troglodytarum* Linn. var. *errans* Blanco Fl. Filip. (1837) 247, ed. 2 (1845) 172, ed. 3, 1 (1877) 310.

*Musa amboinensis* Naves Novis. App. (1880) 218, non Rumph.

Luzon (Apayao, Bulacan, Bataan, Rizal, Laguna), *Merrill Sp. Blancoanae* 873, *Teodoro, B. S. 28268 Fénix*. In forests at low and medium altitudes. Endemic.

Local names: Pau-uá (Ibn.); ságing-matsíng (Tag.); ságing-na-ligau (Tag.).

Var. **BOTOAN** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 391, t. 7, f. 5-10; Merr. Sp. Blancoanae (1918) 106.

*Musa troglodytarum* Blanco Fl. Filip. (1837) 246, ed. 2 (1845) 172, ed. 3, 1 (1877) 310, t. 89, non Linn.

Luzon (Rizal), *Merrill Sp. Blancoanae* 217, *Teodoro*. Planted in most parts of the Philippines; really referable to *M. errans* as a variety?

Local names: Baláiang (Ilk.); butúan (Tag.); butúhan (Tag.); vul-luṅgán (Ibn., It.).

**MUSA GLAUCA** Roxb. Pl. Coromandel 3 (1819) t. 300; Naves Novis. App. (1880) 218; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 387; Merr. Sp. Blancoanae (1918) 104.

*Musa troglodytarum* Linn. var. *dolioformis* Blanco Fl. Filip. (1837) 855, ed. 2 (1845) 174, ed. 1 (1877) 312.

Luzon (Cavite, Laguna), *Merrill Sp. Blancoanae* 946, 537. In ravines, etc., at low and medium altitudes. Burma, Pegu.

Local name: Virgen (Sp.).

**MUSA PARADISIACA** Linn. Sp. Pl. (1753) 1043; Miq. Fl. Ind. Bat. 3 (1859) 588; Naves Novis. App. (1880) 215; Merr. Fl. Manila (1912) 154; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 412; K. Schum. in Engl. Pflanzenreich 1 (1900) 19, f. 3.

The plantains are those bananas which are edible after being cooked and very inferior or inedible raw. A number of forms or varieties occur in the Philippines, which from a species standpoint are scarcely to be distinguished from *Musa sapientum* Linn., the bananas. Following custom the forms are distributed between the two Linnean binomials. It is by no means certain that the numerous varieties which have been proposed by Blanco, Teodoro, and Quisumbing are correctly distributed as between *Musa paradisiaca* Linn. and *M. sapientum*.

I am of the opinion that no more weight should be placed on the numerous forms of the banana than on similar forms of other exceedingly variable cultivated plants such as the orange, the apple, rice, the common bean, sugar cane, etc., because relatively speaking the differences in cultivated bananas are certainly no greater than those in the cultivated forms of the other plants mentioned above. No attempt has been made to correlate these Philippine forms or varieties with extra-Philippine ones although some, perhaps many, of our cultivated bananas are certainly identical with

those of tropical Asia and Malaya. Quisumbing, Phil. Agr. Review 12<sup>a</sup> (1919) 1-73 t. 1-30, described and figured a number of varieties from extra-Philippine plants, cultivated at Los Baños, which have not been included in this enumeration. They are *Musa sapientum* Linn. var. *gladiata* Quis., origin unknown; var. *oanga* Quis., from New Guinea; var. *klum* Quis., from India; var. *misi* Quis., from Samoa; var. *saloor* Quis., from Borneo; var. *chuntara* Quis., from Siam; var. *pop* Quis., from Borneo; var. *maori* Quis., from Raratonga; var. *sicsec* Quis., from New Guinea; var. *languma* Quis., from New Guinea; var. *radja* Quis., from Java (= *Musa regia* Rumph.!); var. *nam* Quis., apparently from Indo-China; var. *yanaikonban* Quis., from India; var. *rachidis* Quis., from the Malay Peninsula; var. *cochinchinensis* Quis., from Indo-China (= *Musa odorata* Lour.!); var. *katali* Quis., from India; var. *khai* Quis., from Siam; var. *krie* Quis., origin unknown; var. *yan* Quis., origin unknown; var. *hazara* Quis., from India; var. *maduranga* Quis., from India; *Musa paradisiaca* Linn. var. *enosa* Quis., from Java (= *Musa corniculata* Rumph.!); and var. *tiparot* Quis., origin unknown.

Var. **MAGNA** Blanco Fl. Filip. (1837) 244, ed. 2 (1845) 171, ed. 3, 1 (1877) 307; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 413; Merr. Sp. Blancoanae (1918) 108; Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 67, t. 12, f. 212, 213.

Planted here and there for its fruit. Endemic?

Local name: Tundók (Tag.).

Var. **MAXIMA** Blanco Fl. Filip. (1837) 245, ed. 2 (1845) 171, ed. 3, 1 (1877) 308; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 414; Merr. Sp. Blancoanae (1918) 109.

Planted here and there for its fruit, *Merrill Sp. Blancoanae* 920. Endemic?

Local names: Batábia (Tag.); matábia (Tag.).

Var. **SUBRUBEA** Blanco Fl. Filip. (1837) 245, ed. 2 (1845) 171, ed. 3, 1 (1877) 307; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 414, t. 16, f. 1-5; Merr. Sp. Blancoanae (1918) 109.

Planted here and there. Endemic?

Teodoro's figure and description were apparently based on material of Cuban origin and hence may well not represent the form Blanco described.

**MUSA SAPIENTUM** Linn. Syst. ed. 10 (1759) 1303; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 393.

*Musa paradisiaca* Linn. subsp. *sapientum* O. Kuntze Rev. Gen. Pl. 1 (1892) 692; K. Schum. in Engl. Pflanzenreich 1 (1900) 20.

The bananas, distinguishable from the plantains (*Musa paradisiaca*) chiefly in the consistency and characters of the mature fruits. A number of forms are found in the Philippines in cultivation, many in all probability introduced from other parts of Malaya and from tropical Asia.

Var. **ANGAO** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 58, t. 5, f. 30; t. 7, f. 69; t. 9, f. 126; t. 11, f. 192, 193; t. 26, f. 2.

Mindanao (Misamis). Cultivated at Los Baños.

Local name: Añgau (C. Bis.).



Var. **BACA** Quis. in Philip. Agr. Review 12<sup>3</sup> (1919) 51, t. 5, f. 23; t. 7, f. 60; t. 9, f. 118; t. 11, f. 176, 177.

Luzon (Cavite). Cultivated at Los Baños.

Local name: Súñgai-báka (Tag.).

Var. **BINUTIG** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 401, t. 10, f. 1-5.

Teodoro's specimens were apparently from Leyte, according to material prepared by him from plants cultivated at Los Baños.

Local name: Binutig (S. L. Bis.).

Var. **CANARA** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 406, t. 10, f. 6-10.

Cultivated at Los Baños, origin unknown but probably Philippine, and very likely from Camarines Province, where *kanára* is a well-known banana.

Var. **CANAYA** Quis. in Philip. Agr. Review 12<sup>3</sup> (1919) 44, t. 4, f. 18; t. 6, f. 54; t. 9, f. 111; t. 10, f. 162, 163; t. 20, f. 2.

Mindanao (Surigao). Cultivated at Los Baños.

Local name: Kanáya (C. Bis.).

Var. **CINEREA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 397, t. 13, f. 1-5; Merr. Sp. Blancoanae (1918) 106.

*Musa paradisiaca* Linn. var. *cinerea* Blanco Fl. Filip. (1837) 250, ed. 2 (1845) 175, ed. 3, 1 (1877) 313.

One of the commonest bananas in the Philippines, *Merrill Sp. Blancoanae* 926.

Local names: Latúndan (Tag.); letóndal (Tag.); tórdan (Tag.).

Var. **COMPRESSA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 408, t. 7, f. 1-5; Merr. Sp. Blancoanae (1918) 108.

*Musa paradisiaca* Linn. var. *compressa* Blanco Fl. Filip. (1837) 240, ed. 2 (1845) 168, ed. 3, 1 (1877) 304.

A very common banana in most parts of the Philippines.

Local names: Bisco (Tag.); obispo (Tag.); sabá (Tag.).

This is probably better placed under *M. paradisiaca* Linn.

Var. **DINALAGA** Quis. in Philip. Agr. Review 12<sup>3</sup> (1919) 55, t. 5, f. 31; t. 7, 66; t. 9, f. 122; t. 11, f. 184, 185; t. 26, f. 1.

Luzon (Tayabas). Cultivated at Los Baños.

Local name: Dinalága (Tag.).

Var. **DOOL** Quis. in Philip. Agr. Review 12<sup>3</sup> (1919) 35, t. 4, f. 6; t. 6, f. 44; t. 9, f. 101; t. 10, f. 142, 143; t. f. 15, f. 1.

Mindanao (Bukidnon). Cultivated at Los Baños.

Local name: Duol (Buk.).

Var. **EDA** Quis. in Philip. Agr. Review 12<sup>3</sup> (1919) 37, t. 4, f. 9; t. 6, f. 47; t. 9, f. 104; t. 10, f. 148, 149; t. 15, f. 1.

Mindanao (Surigao). Cultivated at Los Baños.

Local name: Eda-án (C. Bis.).

- Var. **FLABELLATA** Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 66, t. 5, f. 35; t. 8, f. 78, 87; t. 12, f. 208, 209; t. 29, f. 2.  
Luzon (Laguna, Bulacan). Cultivated at Los Baños.  
Local names: Binendito (Tag.); inabaníko (Tag.).  
Perhaps better placed under *M. paradisiaca* Linn.
- Var. **GALATAYAN** Quis. in Philip. Agr. Review. 12<sup>s</sup> (1919) 40, t. 4, f. 13; t. 6, f. 50; t. 9, f. 108; t. 10, f. 154, 155; t. 18, f. 1.  
Luzon (Cavite). Cultivated at Los Baños.  
Local name: Galatáyán (Tag.).
- Var. **DARYAO** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 403, t. 8, f. 1-5.  
Leyte, *Teodoro*, cultivated at Los Baños.  
Local name: Daryau (S. L. Bis.).
- Var. **GARANGAO** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 401, t. 10, f. 6-10.  
Leyte, *Teodoro*, cultivated at Los Baños.  
Local name: Garangau (S. L. Bis.).
- Var. **GLABERRIMA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 399, t. 15, f. 1-5; Merr. Sp. Blancoanae (1918) 106.  
*Musa paradisiaca* Linn. var. *glaberrima* Blanco Fl. Filip. (1837) 245, ed. 2 (1845) 171, ed. 3, 1 (1877) 308.  
Luzon (Rizal, Laguna), *Merrill Sp. Blancoanae 865, Teodoro*.  
Local names: Dinuguan (Tag.); durugó (Tag.); galámai-señora (Tag.).
- Var. **GLAUCA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 402, t. 11, f. 6-10; Merr. Sp. Blancoanae (1918) 107.  
*Musa paradisiaca* Linn. var. *glauca* Blanco Fl. Filip. (1837) 250, ed. 2 (1845) 175, ed. 3, 1 (1877) 312.  
Luzon (Rizal), *Merrill Sp. Blancoanae 912*.  
Local names: Bingti-kohol (Tag.); tinalong (Tag.); veinte-kohol (Tag.).
- Var. **GRANDIS** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 410, t. 14, f. 1-3.  
Luzon (Laguna). Occasionally planted.  
Local name: Sabáng-ilóko (Tag.).
- Var. **HUMILIS** (Perr.).  
*Musa humilis* Perr. in Mém. Soc. Linn. Paris 3 (1824) 131; C. B. Rob. in Philip. Journ. Sci. 3 (1908) 306; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 393, t. 18, f. 1-5.  
Mindanao (Zamboanga, Cotabato). A peculiar form with small obovoid fruits.  
Local name: Pula-pulá (Mag.).
- Var. **KINAMAY** Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 57, t. 5, f. 32; t. 7, f. 67; t. 9, f. 125; t. 11, f. 190, 191; t. 23, f. 1.  
Luzon (Bulacan). Cultivated at Los Baños.  
Local name: Kinamáí (Tag.).

Var. **INARNIBAL** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 406, t. 9, f. 1-5.

Luzon (Laguna), *Teodoro*.

Local name: Inarníbal (Tag.).

Var. **LACATAN** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 405, t. 11, f. 1-5; Merr. Sp. Blancoanae (1918) 107.

*Musa paradisiaca* Linn. var. *lacatan* Blanco Fl. Filip. (1837) 243, ed. 2 (1845) 170, ed. 3, 1 (1877) 305, t. 88.

A widely cultivated banana and one of the most popular varieties in the Philippines.

Local names: Bañgáran (Bik.); lakatán (Tag., S. L. Bis.).

Var. **LONGA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 407; Merr. Sp. Blancoanae (1918) 108.

*Musa paradisiaca* Linn. var. *longa* Blanco Fl. Filip. (1837) 245, ed. 2 (1845) 171, ed. 3, 1 (1877) 308.

Known only from Blanco's description.

Local name: Kinauáyan (Tag.).

Var. **PUMILA** (Blanco).

*Musa paradisiaca* Linn. var. *pumila* Blanco Fl. Filip. (1837) 244, ed. 2 (1845) 171, ed. 3, 1 (1877) 306.

*Musa cavendishii* Lamb. var. *pumila* Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 412.

*Musa sapientum* Linn. var.; Merr. Sp. Blancoanae (1918) 108.

Occasionally planted; perhaps a dwarfed form of the *buñgulan*.

Local name: Tampóhin (Tag.).

Var. **PADILAT** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 63, t. 5, f. 38; t. 7, f. 71; t. 8, f. 88; t. 12, f. 202, 203; t. 23, f. 1.

Babuyan Islands (Dalupiri). Cultivated at Los Baños.

Local name: Padílat (Ilk.).

Var. **PAMOTION** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 49, t. 5, f. 21; t. 7, f. 59; t. 9, f. 116; t. 11, f. 172, 173; t. 22, f. 1.

Mindanao (Surigao). Cultivated at Los Baños.

Local name: Pamotíon (C. Bis.).

Var. **PELIPIA** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 42, t. 4, f. 14; t. 6, f. 51; t. 9, f. 109; t. 10, f. 158, 159; t. 18, f. 2.

Mindanao (Surigao). Cultivated at Los Baños.

Local name: Pelípia (C. Bis.).

Var. **PRINCIPE** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 50, t. 5, f. 22; t. 7, f. 61; t. 9, f. 117; t. 11, f. 174, 175; t. 22, f. 2.

Philippines, without locality. Cultivated at Los Baños.

Var. **PUTIAN** Quis. in Philip. Agr. Review 12<sup>a</sup> (1919) 36, t. 4, f. 8; t. 6, f. 46; t. 9, f. 103; t. 10, f. 146, 147; t. 15, f. 2.

Cultivated at Los Baños, from the Visayan Islands.

Local name: Putían (Bis.).

- Var. **RAINES** Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 55, t. 5, f. 27; t. 7, f. 65; t. 9, f. 124; t. 11, f. 186, 187; t. 25, f. 1.  
Polillo. Cultivated at Los Baños.  
Local name: Raines-na-putí (Tag.).
- Var. **SAROC SOC** Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 39, t. 4, f. 11; t. 6, f. 49; t. 9, f. 104; t. 10, f. 152, 153; t. 17, f. 1.  
Luzon (Camarines). Cultivated at Los Baños.  
Local names: Saroksók (Bik.); sinaroksók (Bik.).
- Var. **SISION** Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 35, t. 4, f. 7; t. 6, f. 45; t. 9, f. 102; t. 10, f. 144, 145.  
Panay (Capiz). Cultivated at Los Baños.  
Local name: Sisíon (P. Bis.).
- Var. **SUAVEOLENS** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 400, t. 14, f. 6-10; Merr. Sp. Blancoanae (1918) 106.  
*Musa paradisiaca* Linn. var. *suaveolens* Blanco Fl. Filip. (1837) 244, ed. 2 (1845) 171, ed. 3, 1 (1877) 306.  
One of the most popular bananas in the Philippines, *Merrill Sp. Blancoanae* 928.  
Local name: Buñgúlan (Tag.).
- Var. **TERNATENSIS** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 404, t. 7, f. 1-5; Merr. Sp. Blancoanae (1918) 107.  
*Musa paradisiaca* Linn. var. *suaveolens* Blanco Filip. (1837) 243, ed. 2 (1845) 170, ed. 3, 1 (1877) 305.  
Occasionally cultivated, *Merrill Sp. Blancoanae* 216.  
Local names: Glória (Tag., Ilk., Ibn.); ternáte (Tag.).
- Var. **TOMBAK** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 407; Merr. Sp. Blancoanae (1918) 108; Quis. in Philip. Agr. Review 12<sup>s</sup> (1919) 33, t. 4, f. 4; t. 6, f. 42; t. 9, f. 99; t. 10, f. 138, 139; t. 14, f. 2.  
*Musa paradisiaca* Linn. var. *tombak* Blanco Fl. Filip. (1837) 246, ed. 2 (1845) 171, 3, 1 (1877) 307.  
Cultivated here and there, *Merrill Sp. Blancoanae* 953.  
Local names: Goyóran (Tag.); tinumbága (Tag.); tómbak (Tag.).
- Var. **TULDOC** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 407, t. 10, f. 1-5.  
Luzon (Rizal). Cultivated by Teodoro at Los Baños.  
Local name: Tuldók (Tag.).
- Var. **TUDLONG** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 402, t. 11, f. 6-10.  
Leyte, cultivated by Teodoro at Los Baños.  
Local name: Tudlong (S. L. Bis.).
- Var. **VIOLACEA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 398, t. 5, f. 6-10; Merr. Sp. Blancoanae (1918) 106.  
*Musa paradisiaca* Linn. var. *violacea* Blanco Fl. Filip. (1837) 245, ed. 2 (1845) 171, ed. 3, 1 (1877) 307.  
Cultivated here and there.  
Local name: Morádo (Sp.).

**MUSA TEXTILIS** Née in Anal. Cienc. Nat. 4 (1801) 123; Hook. Lond. Journ. Bot. 7 (1848) 268; Baker in Ann. Bot. 7 (1893) 211; K. Schum. in Engl. Pflanzenreich 1 (1900) 19; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 199; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 388, t. 18, f. 6-10; Merr. Sp. Blancoanae (1918) 105.

*Musa abaca* Perr. in Mém. Soc. Linn. Paris 3 (1824) 130; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 305.

*Musa troglodytarum* Linn. var. *textoria* Blanco Fl. Filip. (1837) 247, ed. 2 (1845) 173, ed. 3, 1 (1877) 311.

*Musa mindanaensis* Rumph.; Miq. Fl. Ind. Bat. 3 (1859) 588; Naves Novis. App. (1880) 218.

Abacá or Manila hemp of commerce. Very extensively cultivated in those provinces from central Luzon to Mindanao where the dry season is not pronounced. In Luzon the chief abacá provinces are Camarines, Albay, and Sorsogon. The islands of Samar and Leyte are very important producing centers, as are also parts of Mindanao, especially Davao. Endemic.

Local name: Abaká (most dialects). The species is variable, and sundry forms have distinctive local names.

**MUSA URANOSCOPOS** Lour. Fl. Cochinch. (1790) 645, excl. syn. Rumph.

*Musa coccinea* Andr. Bot. Rep. t. 47; Naves Novis. App. (1880) 218; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 199; Teodoro op. cit. 10 (1915) Bot. 388.

Planted here and there for ornamental purposes on account of its very showy red bracts. A native of southeastern Asia.

#### DOUBTFUL AND EXCLUDED SPECIES

**MUSA ALPHURICA** Rumph.; Naves Novis. App. (1880) 217.

**MUSA CORNICULATA** Rumph.; Naves l. c.

**MUSA ORNATA** Roxb.; Naves op. cit. 218.

**MUSA SIMIARUM** Rumph.; Naves op. cit. 217.

**MUSA URANOSCOPOS** Rumph.; Naves op. cit. 218.

**MUSA CHAPARA** Perr. in Mém. Soc. Linn. Paris 3 (1825) 131; C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 305; Teodoro op. cit. 10 (1915) Bot. 415.

Unrecognizable except that it is a form or variety of *Musa sapientum* Linn.

**MUSA ENSETE** Gmel.; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 387.

This occurs on the grounds of the College of Agriculture at Los Baños as a recently introduced and cultivated species and has no claims to be considered as Philippine.

**MUSA NIGRA** Perr. in Mém. Soc. Linn. Paris 3 (1824) 131; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 415.

Unrecognizable except that it is a form or variety of *Musa sapientum* Linn.

**MUSA PARADISIACA** Linn. var. *ULNARIS* Blanco Fl. Filip. (1837) 246, ed. 2 (1845) 172, ed. 3, 1 (1877) 309; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 414; Merr. Sp. Blancoanae (1918) 107.

A purely imaginary variety, the description based on hearsay data, probably inspired by one of the *tundók* varieties.

**MUSA CAVENDISHII** Lamb.; Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 410, incl. var. *hawaiiensis* Teodoro l. c. t. 15, f. 6-10.

This is generally considered as a distinct species, but I believe it to be merely a variety of *Musa sapientum* Linn. Teodoro's descriptions were based on recently introduced and cultivated specimens.

**MUSA SAPIENTUM** Linn. var. **CUBENSIS** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 397, t. 11, f. 6-10.

The description was based on material originating in Cuba.

**MUSA SAPIENTUM** Linn. var. **AMERICANA** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 398, t. 7, f. 6-10.

This variety was based on material of Cuban origin.

## 2. RAVENALA Adanson

**RAVENALA MADAGASCARIENSIS** Gmel. Syst. (1791) 567; Naves Novis. App. (1880) 219; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 199; Merr. Fl. Manila (1912) 155; K. Schum. in Engl. Pflanzenreich 1 (1900) 29, f. 6.

Planted in Manila and in other large towns for ornamental purposes, a native of Madagascar. The so-called traveler's palm.

## 3. HELICONIA Linnaeus

**HELICONIA BIHAI** Linn. Mant. 2 (1771) 211; Naves Novis. App. (1880) 215; K. Schum. in Engl. Pflanzenreich. 1 (1900) 36.

*Heliconiopsis amboinensis* Miq. Fl. Ind. Bat. 3 (1859) 590; Naves l. c.

Planted occasionally for ornamental purposes. A native of tropical America, naturalized in some parts of the Old World.

### EXCLUDED GENUS

**STRELITZIA REGINAE** Banks Naves Novis. App. (1880) 219.

## ZINGIBERACEAE

### 1. ZINGIBER Adanson

**ZINGIBER APOENSE** Elm. Leaf. Philip. Bot. 8 (1915) 2914.

Mindanao (Davao), *Elmer 10545, 11750*. In forests, 1,000 to 1,300 m. Endemic.

Local name: Bogóbog (Bag.).

**ZINGIBER BREVIFOLIUM** N. E. Br. in Gard. Chron. 26 (1886) 390, non K. Schum. (1904).

Described from cultivated specimens said to have originated in the Philippines. Otherwise unknown. Endemic.

**ZINGIBER BULUSANENSE** Elm. Leaf. Philip. Bot. 8 (1919) 2993.

Luzon (Sorsogon), *Elmer 16914, 15178*. In primary forests, altitude about 450 m. Endemic.

**ZINGIBER CASSUMUNAR** Roxb. in *Asiat. Research* 11 (1810) 347, *t. 5*, Fl. Ind. 1 (1820) 49; Vidal Phan. *Cuming. Philip.* (1885) 152, *Rev. Pl. Vasc. Filip.* (1886) 274; Naves Novis. *App.* (1880) 220; Ridl. in *Govt. Lab. Publ. (Philip.)* 35 (1906) 84.

Mindanao (Misamis), (*Cuming 1605*). I have seen no Philippine material representing this species. Pantropic in cultivation, a native of tropical Asia.

**ZINGIBER MOLLE** Ridl. in *Leafl. Philip. Bot.* 2 (1909) 607, *nomen nudum*, *Philip. Journ. Sci.* 4 (1909) Bot. 168.

Luzon (Bontoc, Lepanto, Benguet, Pampanga, Tayabas), *F. B. 4886*, 4914 *Curran*, 14490 *Darling*, *B. S. 5364 Ramos*, 1991, 1985 *Foxworthy*, *Merrill 4843*. In ravines along streams and in forests, altitude 1,100 to 1,600 m. Endemic.

Local name: Kaláuing (Bon.).

**ZINGIBER NEGROSENSE** Elm. *Leafl. Philip. Bot.* 8 (1915) 2917.

Negros, Mindanao (Davao), *Elmer 10421*, 11768. In forested ravines, altitude about 1,050 m. Endemic.

**ZINGIBER OFFICINALE** Rosc. in *Trans. Linn. Soc.* 7 (1807) 348, *Monandr. Pl.* (1828) *t. 83*; Miq. *Fl. Ind. Bat.* 3 (1859) 593; Naves Novis. *App.* (1880) 220; K. Schum. in *Engl. Pflanzenreich* 20 (1904) 170, *f. 23*; Merr. *Fl. Manila* (1912) 159, *Sp. Blancoanae* (1918) 110. *Amomum zingiber* Linn. *Sp. Pl.* (1753) 1; Blanco *Fl. Filip.* (1837) 2, ed. 2 (1845) 2, ed. 3, 1 (1877) 3, *t. 131*.

*Zingiber blancoi* Hassk. in *Flora* 47 (1864) 20.

Widely cultivated although not on an extensive scale, and nowhere naturalized. Pantropic in cultivation, a native of tropical Asia. Ginger.

Local names: Agát (Pang.); baseng (Ilk.); gengibre (Sp.); laíal (Sbl.); laiya (If.); layá (Ilk., Bon., Ibn., It.); lúya (Tag.).

**ZINGIBER PUBISQUAMA** Ridl. in *Philip. Journ. Sci.* 4 (1909) Bot. 169.

Mindanao (Lanao), *Clemens 1163a*. In open grasslands, cogon (*Imperata*) type, altitude about 650 m. Endemic.

**ZINGIBER SYLVATICUM** Elm. *Leafl. Philip. Bot.* 8 (1915) 2919.

Luzon (Cagayan, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Cautanduanes, Negros, *Elmer 9843*, 18004, 14992, 14936, *B. S. 19456*, 30521, 22048 *Ramos*, 13076 *Foxworthy*, 10237, 10238 *McGregor*, 9198 *Robinson*. In forests chiefly at medium altitudes, ascending to 1,300 m. Endemic.

**ZINGIBER ZERUMBET** (Linn.) Sm. *Exot. Bot.* 2 (1804) 103, *t. 112*; Miq. *Fl. Ind. Bat.* 3 (1859) 593; Naves Novis. *App.* (1880) 220; K. Schum. in *Engl. Pflanzenreich* 20 (1904) 172, *f. 24*; Ridl. in *Philip. Journ. Sci.* 4 (1909) Bot. 199; Merr. *Fl. Manila* (1912) 159, *Sp. Blancoanae* (1918) 111.

*Amomum zerumbet* Linn. *Sp. Pl.* (1753) 1; Blanco *Fl. Filip.* (1837) 2, ed. 2 (1845) 2, ed. 3, 1 (1877) 3, *t. 370*.

*Zingiber cassumunar* Naves in Blanco *Fl. Filip.* ed. 3 (1877-83), *t. 370*, non Roxb.

*Zingiber zerumbet* Sm. var. *magnum* Elm. *Leafl. Philip. Bot.* 8 (1919) 2922.

Northern Luzon to Mindanao, in most or all islands and provinces. In thickets in and near settlements at low and medium altitudes. A native of tropical Asia, now pantropic.

Local names: Balauág (Bik.); barik (Tag.); lampúyang (Buk.); langkauás (Tag.); layág sa-súlug (Bik.); luang-ósiu (Tag.); tamohílang (Buk.); tumbóng-áso (Tag.).

EXCLUDED SPECIES

ZINGIBER AMERICANS Blume; Naves Novis. App. (1880) 221.

ZINGIBER AQUOSUM Blume; Naves l. c.

ZINGIBER ELATUM Roxb.; Naves l. c.

ZINGIBER GRACILE Jack; Naves l. c.

ZINGIBER GRAMINEUM Blume; Naves l. c.

ZINGIBER INFLEXUM Blume; Naves l. c.

ZINGIBER MARGINATUM Roxb.; Naves l. c.

ZINGIBER ODORIFERUM Blume; Naves l. c.

ZINGIBER OVOIDEUM Blume; Naves op. cit. 220.

ZINGIBER PURPUREUM Rosc.; Naves l. c.

ZINGIBER ROSEUM Roxb.; Naves op. cit. 221.

ZINGIBER SQUARROSUM Roxb.; Naves l. c.

2. LANGUAS Koenig

(*Alpinia* auctt., non Linnaeus\*)

LANGUAS APOENSIS (Elm.) comb. nov.

*Alpinia apoensis* Elm. Leaf. Philip. Bot. 8 (1915) 2888.

Catanduanes, Mindanao (Davao), *Elmer 11889, B. S. 30490 Ramos*. In primary forests up to an altitude of 1,200 m. Endemic.

Local name: Otin-ótin (Bag.).

LANGUAS BRACHYANTHA (Merr.) comb. nov.

*Alpinia brachyantha* Merr. in Philip. Journ. Sci. 10 (1915) Bot. 296.

Luzon (Cagayan), *Weber 1571, B. S. 13920 Ramos, F. B. 19617 Curran*. In forests at low or medium altitudes. Endemic.

LANGUAS BREVILABRIS (Presl) comb. nov.

*Alpinia brevilabris* Presl Rel. Haenk. 1 (1827) 110, t. 17; Naves Novis. App. (1880) 225; Ridl. in Philip. Journ. Sci. 4 (1919) Bot. 190; K. Schum. in Engl. Bot. Jahrb. 27 (1899) 276, Pflanzenreich 20 (1904) 314.

*Alpinia fraseriana* Usteri Beitr. Ken. Philip. Veg. (1905) 128, non Oliv.

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\* The genus *Alpinia* of Linnaeus was based wholly on a tropical American plant, *Alpinia racemosa* Linn. = *Renealmia racemosa* A. Rich., and is thus identical with *Renealmia* Linn. f. (1781), which it should replace. As between the two generic names, no matter which one be applied to the American group, *Alpinia* is clearly not applicable to the Indo-Malayan genus long known under this name.



Batan Islands and northern Luzon to Mindanao. In most islands and provinces. Common in primary forests at low and medium altitudes.

Local names: Ápat (Ig.); bagongbóng (Bis.); bánai (Pamp.); gagad-no-kóran (Iv.); katkátan (Pamp.); katólan (Bis.); katótang (Bis.); luyalúya (Tag.); malatalbák (Tag.); panáuil (Bon.); parapád (Ig.); tagbák (Bik., Tag., C. Bis.); tagbák-gúbat (Tag.); tagbák-matsing (Tag.); tagbás (C. Bis.); talbák (Tag.); tugís (S. L. Bis.).

**LANGUAS COPELANDII** (Ridl.) comb. nov.

*Alpinia copelandii* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 164.

Mindanao (Zamboanga), *Copeland*. In forests at low altitudes. Endemic.

**LANGUAS CUMINGII** (K. Schum.) comb. nov.

*Alpinia cumingii* K. Schum. in Engl. Pflanzenreich 20 (1904) 315; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 187.

*Alpinia chinensis* Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 274, non Rosc.

Luzon (Albay), *Cuming 859*. Of this I have seen only a few detached flowers. Endemic.

**LANGUAS DIVERSIFOLIA** (Elm.) comb. nov.

*Alpinia diversifolia* Elm. Leaf. Philip. Bot. 8 (1915) 2919.

*Vanoverberghia diversifolia* Elm. op. cit. 2913.

Luzon (Benguet), *Elmer 8853*. In damp ravines, altitude about 1,000 m. Endemic.

**LANGUAS FLABELLATA** (Ridl.) comb. nov.

*Alpinia flabellata* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 188.

Batan Islands and northern Luzon to Mindanao, *Merrill Phil. Pl. 831, B. S. 31885 Santos, 2718, 2871 Mearns*. Not always easily distinguishable from *A. brevilabris* Presl. In forests at medium altitudes ascending to 2,000 m. Endemic.

Var. **MAJOR** (Ridl.) comb. nov.

*Alpinia flabellata* Ridl. var. *major* Ridl. l. c.

Range and habitat of the species and doubtfully distinct even as a variety.

Local names: Biláu (Sub.); tagbák-gúbat (Bik.); tagbák-laláki (Tag.); tuká-máya (Tag.).

**LANGUAS FOXWORTHYI** (Ridl.) comb. nov.

*Alpinia foxworthyi* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 189; Elm. Leaf. Philip. Bot. 8 (1915) 2887.

Palawan, *B. S. 772 Foxworthy, Elmer 12930*. In forests at low altitudes. Endemic.

**LANGUAS GLABRESCENS** (Ridl.) comb. nov.

*Alpinia glabrescens* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 185.

Batan Islands (Batan, Sabtan), *B. S. 3679 Fénix, 3141 Mearns, 10156 McGregor*. On slopes at low altitudes. Endemic unless identical with some Formosan species represented by *Faurie 975* of his 1913 collection.

Local name: Gagád (Iv.).

**LANGUAS GRAMINEA** (Ridl.) comb. nov.

*Alpinia graminea* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 189; Elm. Leaf. Philip. Bot. 8 (1919) 2966.

Luzon (Cagayan, Nueva Ecija, Laguna, Tayabas, Sorsogon), Catanduanes, Negros, Panay, *F. B. 7267, 11208 Everett, B. S. 26359, 30678 Ramos & Edaño, 25411 Yates, 28375 Félix, 30239 Ramos, Elmer 16228*. In forests up to 800 m altitude. Endemic.

Perhaps but a narrow-leaved form of *L. brevilabris* (Presl) Merr.

Local names: Barañgin (Ibn.); lampiñgit (Neg.); tagbák (P. Bis.).

**LANGUAS HAENKEI** (Presl) comb. nov.

*Alpinia haenkei* Presl Symb. 1 (1832) 66, t. 43; K. Schum. in Engl. Pflanzenreich 20 (1904) 341; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 86, Philip. Journ. Sci. 4 (1909) Bot. 184.

*Alpinia malaccensis* Presl Rel. Haenk. 1 (1827) 110; Naves Novis. App. (1880) 225; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 275, non Rosc.

*Alpinia philippinensis* Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 86; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 37.

Batan Islands and northern Luzon to Palawan and Mindanao, in most or all islands and provinces. In primary forests at low and medium altitudes, often common, represented by over 60 individual collections. Endemic.

Local names: Bagumbúng (Tag.); barápat (Ig.); birao-bírao (Sul.); púnan (C. Bis.); sakiápág (Neg.); simiónan (Buk.); tagbák-babáe (Tag.); tagbák-laláki Tag.); tagusáhis (P. Bis.) talbák (Tag.); tamotámo (Sbl.); tukáng-máya (Tag.); kalaueg (Ig.).

**LANGUAS ILLUSTRIS** (Ridl.) comb. nov.

*Alpinia illustris* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 185.

Mindoro, Palawan, *B. S. 514 Foxworthy, 39485 Ramos*. In forests along stream at low altitudes; very similar to *A. malaccensis* Rosc. Endemic.

**LANGUAS LONGIPETIOLATA** (Elm.) comb. nov.

*Alpinia longipetiolata* Elm. Leaf. Philip. Bot. 8 (1919) 2969.

Luzon (Sorsogon), *Elmer 16167, 16954, B. S. 23441 Ramos*. In forests up to 600 m altitude. Endemic.

**LANGUAS MACROSCAPHIS** (K. Schum.) comb. nov.

*Alpinia macroscaphis* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 284, Pflanzenreich 20 (1904) 337, f. 40, B. C.

Mindanao (prob. Davao), (*Warburg*). The type is preserved in the Berlin herbarium. I have seen no specimens. Endemic.

**LANGUAS MOLLIS** (Presl) comb. nov.

*Alpinia mollis* Presl Rel. Haenk. 1 (1827) 110; Naves Novis. App. (1880) 225; K. Schum. in Engl. Pflanzenreich 20 (1904) 368; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 191.

"Hab. in insula Luzon." The type was collected by Haenke. It is known only from the original description and is a species of doubtful status. Endemic.

**LANGUAS MUSAEFOLIA** (Ridl.) comb. nov.

*Alpinia musaeifolia* Ridl. in Leaf. Philip. Bot. 2 (1909) 604, Philip. Journ. Sci. 4 (1909) Bot. 186.

Negros, *Elmer 9539*. In forests, altitude about 1,200 m. Endemic.  
Local name: Lunhás (C. Bis.).

**LANGUAS PENDULIFLORA** (Ridl.) comb. nov.

*Alpinia penduliflora* Ridl. in Leaf. Philip. Bot. 2 (1909) 570, Philip. Journ. Sci. 4 (1909) Bot. 187.

Leyte, *Elmer 7288*. Probably from forests at low altitudes. Endemic.

**LANGUAS PUBIFLORA** (Benth.) comb. nov.

*Hellenia pubiflora* Benth. in Hook. Lond. Journ. Bot. 2 (1843) 235.

*Alpinia pubiflora* K. Schum. in Engl. Pflanzenreich 20 (1904) 313, f. 39, F, G; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 188; Elm. Leaf. Philip. Bot. 8 (1919) 2965.

Luzon (Tayabas, Sorsogon), Guimaras, Camiguin de Misamis, Mindanao, *B. S. 34699 Ramos & Pascasio, 14728 Ramos, F. B. 9100 Whitford & Hutchison, 34 Ritchie, Elmer 10456, 16546, Copeland 319, Piper 606*. In forests at low and medium altitudes. New Guinea, Caroline Islands.

Local names: Tagbág (Sul.); tagbák (P. Bis.).

**LANGUAS PULCHELLA** (K. Schum.) comb. nov.

*Alpinia pulchella* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 276, t. 2, f. E, Pflanzenreich 20 (1904) 315; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 189.

Mindanao (Davao), (*Warburg*). I have seen no material representing this species. New Guinea.

**LANGUAS PYRAMIDATA** (Blume) comb. nov.

*Alpinia pyramidata* Blume Enum. Pl. Jav. 1 (1827) 58; Naves Novis. App. (1880) 225; Ridl. in Elm. Leaf. Philip. Bot. 2 (1909) 604, Philip. Journ. Sci. 4 (1909) Bot. 186; Elm. Leaf. Philip. Bot. 8 (1919) 2967.

*Alpinia galanga* Naves Novis. App. (1880) 225, vix Sw.

*Alpinia galanga* Sw. var. *pyramidata* K. Schum. in Engl. Pflanzenreich 20 (1904) 316.

Luzon (Rizal, Laguna, Camarines, Sorsogon), Panay, Leyte, Mindanao (Lanao, Agusan), Palawan, *Elmer 16352, Wenzel 1407, Clemens 612, B. S. 21556 Escritor, 23865 Fénix, 35279 Martelino & Edaño*. In old clearings, etc., sometimes planted. Himalayan region through Malaya to the Moluccas.

Local names: Langkauás (Tag., Bis., Bik.); lankauás (Tag., Pamp., Bis., Mbo.); pal-la (Mand.).

**LANGUAS ROMBLONENSIS** (Elm.) comb. nov.

*Alpinia romblonensis* Elm. Leaf. Philip. Bot. 8 (1915) 2889.

Romblon, Samar, *Elmer 12050, B. S. 21238 Escritor* (from Romblon, not from Panay as labeled), *17548 Ramos*. Along streams at low altitudes. Endemic.

Local name: Tagbák (P. Bis.).

**LANGUAS ROSEA** (Elm.) comb. nov.

*Alpinia rosea* Elm. Leaf. Philip. Bot. 8 (1915) 2890.

Sibuyan, *Elmer 12509*. In dense forests, altitude about 1,350 m. Endemic.

**LANGUAS RUFA** (Presl) comb. nov.

*Hellenia rufa* Presl Rel. Haenk. 1 (1827) 114, t. 21; Miq. Fl. Ind. Bat. 3 (1859) 604.

*Alpinia rufa* Naves Novis. App. (1880) 226; K. Schum. in Engl. Bot. Jahrb. 27 (1899) 293, Pflanzenreich 20 (1904) 361; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 190, Leaf. Philip. Bot. 2 (1909) 604, 8 (1915) 2887.

Luzon (Laguna, Camarines, Tayabas, Sorsogon), Polillo, Catanduanes, Samar, Leyte, Panay, Negros, Bucas, Mindanao, Basilan. In forests at low and medium altitudes. Endemic.

Local names: Bihai (C. Bis.); kaukos (Bag.); tagbág (Mbo.); tagbák (Tag.).

**LANGUAS SIBUYANENSIS** (Elm.) comb. nov.

*Alpinia sibuyanensis* Elm. Leaf. Philip. Bot. 8 (1915) 2891.

Sibuyan, *Elmer 12316*. In forests along streams, altitude about 225 m. Endemic.

Local name: Bobonan (P. Bis.).

**LANGUAS SPECIOSA** (Wendl.) comb. nov.

*Zerumbet speciosum* Wendl. Sert. Hann. (1798) t. 19.

*Alpinia nutans* Rosc. in Sm. Exot. Bot. 2 (1805) t. 106; Naves Novis. App. (1880) 226.

*Alpinia cernua* Naves Novis. App. (1880) 226, Fl. Filip. ed. 3 (1877-83) t. 464, non Sims.

*Alpinia speciosa* K. Schum. Fl. Kaiser-Wilhelmsl. (1887) 29, Engl. Bot. Jahrb. 27 (1899) 284, t. 3, f. A, B, Pflanzenreich 20 (1904) 339, f. 40 D-F.

Occasionally cultivated for ornamental purposes, but not a native of the Archipelago and nowhere naturalized. China, Japan; cultivated in other warm countries.

**LANGUAS SUBFUSICARPA** (Elm.) comb. nov.

*Alpinia subfuscarpa* Elm. Leaf. Philip. Bot. 8 (1915) 2892.

Mindanao (Davao), *Elmer 10506*. In damp primary forests, altitude about 1,200 m. Endemic.

Local name: Bosadak (Bag.).

**LANGUAS TRACHYASCUS** (K. Schum.) comb. nov.

*Alpinia trachyascus* K. Schum. in Engl. Pflanzenreich 20 (1904) 336; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 185.

Mindanao (Davao), *Warburg 14514* in herb. Berol. I have seen only the type which has the facies of *Alpinia haenkei* Presl. Endemic.

**LANGUAS VANOVERBERGHII** (Merr.) comb. nov.

*Alpinia vanoverberghii* Merr. in Philip. Journ. Sci. 7 (1912) Bot. 75.

Luzon (Bontoc), *Vanoverbergh 573*. On slopes, altitude about 1,350 m. Endemic.

Local names: Kalaúin (Bon.); kalaúing (Bon.); takáng (Bon.).

**LANGUAS VULCANICA** (Elm.) comb. nov.

*Alpinia vulcanica* Elm. Leaf. Philip. Bot. 8 (1919) 2971.

Luzon (Camarines, Sorsogon), Bucas Grande, *Elmer 16168*, *B. S. 33864* Ramos & Edaño, *35051* Ramos & Pascasio, *23428* Ramos. In primary forests at low and medium altitudes, ascending to 800 m. Endemic.

**LANGUAS WENZELII** (Merr.) comb. nov.

*Alpinia wenzelii* Merr. in Philip. Journ. Sci. 9 (1914) Bot. 353.

Leyte, *Wenzel 623*. In forests, altitude about 500 m. Endemic.

## EXCLUDED SPECIES

**ALPINIA ARCTIFLORA** F.-Muell.; Naves Novis. App. (1880) 227.

**ALPINIA CAPITELLATA** Jack; Naves op. cit. 226.

**ALPINIA CHINENSIS** Rosc.; Naves op. cit. 225.

**ALPINIA COERULEA** Benth.; Naves op. cit. 227.

**ALPINIA ELATIOR** Jack; Naves op. cit. 226.

**ALPINIA GIGANTEA** Blume; Naves op. cit. 225.

**ALPINIA JAVANICA** Blume; Naves op. cit. 226.

**ALPINIA MUTICA** Roxb.; Naves l. c.

**ALPINIA RUBRA** (Miq.) Naves l. c.

**ALPINIA SCABRA** (Blume) Naves l. c.

**ALPINIA SPICATA** Roxb.; Naves l. c.

**ALPINIA STACHYOIDES** Hance; Naves l. c.

3. **KOLOWRATIA** Presl**KOLOWRATIA CONGESTA** (Elm.) comb. nov.

*Alpinia congesta* Elm. Leaf. Philip. Bot. 8 (1919) 2968.

Luzon (Sorsogon), *Elmer 16144*. On forested slopes, altitude about 450 m. Endemic.

**KOLOWRATIA ELEGANS** Presl Rel. Haenk. 1 (1827) 113, *t. 20*; Miq. Fl. Ind. Bat. 3 (1859) 610; Naves Novis. App. (1880) 228; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 86, Philip. Journ. Sci. 4 (1909) Bot. 181; Merr. Fl. Manila (1912) 159, Sp. Blancoanae (1918) 110.

*Renealmia gracilis* Blanco Fl. Filip. (1837) 1.

*Renealmia exaltata* Blanco op. cit. ed. 2 (1845) 1, ed. 3, 1 (1877) 2, *t. 1*, non Linn.

*Hellenia gracilis* Hassk. in Flora 47 (1864) 19.

*Alpinia gracilis* Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 316; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 275.

*Alpinia elegans* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 288, Pflanzenreich 20 (1904) 352, *f. 41 C*; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 84, Philip. Journ. Sci. 1 (1906) Suppl. 37.

Luzon (Apayao, Amburayan, Lepanto, Nueva Vizcaya, Pampanga, Bulacan, Nueva Ecija, Bataan, Rizal, Laguna, Tayabas, Sorsogon), Polillo, Mindoro, Leyte. In thickets along streams at low and medium altitudes; represented by numerous collections. Endemic.

Local names: Bagombón (Tag.); katkátan (Bis.); katótang (Bis.); salbák (Tag.); tagbák (Tag.); tugbák (Tag.).

**KOLOWRATIA ERUCAEFORMIS** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 182.

Bucas, *Merrill 5258*. On dry slopes at the borders of forests at low altitudes. Endemic.

The genus is confined to the Philippines.

## 4. LEPTOSOLENA Presl

**LEPTOSOLENA HAENKEI** Presl Rel. Haenk. 1 (1827) 111, t. 28; Naves Novis. App. (1880) 227; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 181.

*Alpinia leptosolenia* K. Schum. in Engl. Pflanzenreich 20 (1904) 312.

*Leptosolenia insignis* Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 84, Philip. Journ. Sci. 4 (1909) 181; Elm. Leaf. Philip. Bot. 8 (1915) 2907.

Luzon (Ilocos Norte, Bontoc, Benguet, Union, Nueva Vizcaya, B. S. 8211, 8172, 32863 Ramos, 21093 Escritor, 37896 Ramos & Edaña, Elmer 6428, Lete 84, Vanoverbergh 384. In thickets and on open slopes at low and medium altitudes. A monotypic endemic genus.

Local names: Bánai (Ilk.); kaláuin (Bon.); panáuil (Bon.).

## 5. ADELMERIA Ridley

(*Elmeria* Ridley, non Rydberg)

**ADELMERIA ALPINA** Elm. Leaf. Philip. Bot. 8 (1915) 2885.

Mindanao (Davao), Elmer 10534, 10642. In forests, altitude 1,200 to 2,100 m. Endemic.

Local names: Lurasising (Bag.); pusadók (Bag.).

**ADELMERIA GIGANTIFOLIA** (Elm.) Elm. Leaf. Philip. Bot. 8 (1919) 2963.

*Zingiber gigantifolium* Elm. op. cit. 8 (1915) 2916.

Luzon (Tayabas, Sorsogon), Elmer 9282, 14603. In forests on talus slopes and along small streams, altitude 500 to 700. Endemic.

**ADELMERIA OBLONGA** Merr. in Philip. Journ. Sci. 9 (1914) Bot. 443.

*Adelmeria albida* Elm. Leaf. Philip. Bot. 8 (1919) 2964.

Luzon (Bontoc, Benguet, Sorsogon), Panay, Negros, Elmer 6255, 15912, Vanoverbergh 3108, Eskridge, B. S. 30884 Ramos & Edaña. In forests at low and medium altitudes, ascending to 1,500 m. Endemic.

**ADELMERIA PARADOXA** (Ridl.) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 444.

*Hornstedtia paradoxa* Ridl. in Govt. Lab. Publ. (Philip.) 35 (1905) 85.

*Elmeria bifida* Ridl. in Leaf. Philip. Bot. 2 (1909) 568.

*Adelmeria bifida* Ridl. op. cit. 603; Philip. Journ. Sci. 4 (1909) Bot. 179.

Luzon (Apayao, Bontoc, Benguet, Nueva Ecija, Pangasinan, Rizal, Laguna, Tayabas), Panay, Mindanao (Lanao), Elmer 6629, 18145, 8568, 7706, Merrill 4786, 7517, Lohr 7001, B. S. 29652, 26458, 30675, 38032 Ramos & Edaña, F. B. 15854 Merritt. In the mossy forest and in damp forested ravines, altitude 1,000 to 1,800 m. Endemic.

Local name: Parápat (Ig.)

**ADELMERIA PINETORUM** (Ridl.) Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 180.

*Elmeria pinetorum* Ridl. in Leaf. Philip. Bot. 2 (1909) 569.

Luzon (Bontoc, Benguet), *Elmer 8548, Vanoverbergh 453*. In thickets and on open slopes about limestone boulders, altitude 1,300 to 1,500 m. Endemic.

Local names: Alauín (Bon.); barápat (Ig.).

#### 6. PLAGIOSTACHYS Ridley

**PLAGIOSTACHYS CORRUGATA** Elm. Leaf. Philip. Bot. 8 (1915) 2908.

Mindanao (Davao), *Elmer 11130*. In forests, altitude about 450 m. Endemic.

The flowers are unknown; probably no *Plagiostachys*.

**PLAGIOSTACHYS ELEGANS** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 178.

Mindanao (Lanao), *Clemens*. In forests, altitude about 900 m. Endemic.

**PLAGIOSTACHYS ESCRITORII** Elm. Leaf. Philip. Bot. 8 (1915) 2910, (1919) 2989.

Luzon (Laguna, Sorsogon), Samar, Mindanao, *Elmer 10516, 10544, 17501, 18071, 16216, 18477a, 16062, B. S. 15919 Fénix, 24242 Ramos, 21504 Escritor, 37290, 37262 Ramos & Edaño*. In forests at medium altitudes, ascending to 1,300 m. Endemic.

Local names: Bosadak (Bag.); pupundia (Sub.).

**PLAGIOSTACHYS PARVIFLORA** (Presl) Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 178.

*Amomum parviflorum* Presl Rel. Haenk. 1 (1827) 112, t. 19; Naves Novis. App. (1880) 224.

*Alpinia parviflora* Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 316 quoad syn. Presl, Vidal Phan. Cuming. Philip. (1885) 152, Rev Pl. Vasc. Filip. (1886) 275, p. p.; K. Schum. in Engl. Bot. Jahrb. 27 (1899) 299, Engl. Pflanzenreich 20 (1904) 368.

Luzon (Sorsogon, Leyte, Panay, Mindanao (Agusan), *Elmer 16215, Wenzel 305, Merrill 7318, B. S. 31256 Ramos*. In primary forests at low altitudes. Endemic.

**PLAGIOSTACHYS PHILIPPINENSIS** Ridl. in Leaf. Philip. Bot. 2 (1909) 571, Philip. Journ. Sci. 4 (1909) Bot. 177; C. B. Rob. op. cit. 6 (1911) Bot. 197; Elm. Leaf. Philip. Bot. 9 (1919) 2989.

*Plagiostachys ridleyi* Elm. Leaf. Philip. Bot. 8 (1915) 2911, (1919) 2989.

Luzon (Laguna, Tayabas, Camarines), Polillo, Catanduanes, Sibuyan, Panay, Samar, Mindanao, *B. S. 33614, 31245, 31239, 29272 Ramos & Edaño, 24157 Ramos, 11253 McGregor, Baker 3457, Clemens 855, Elmer 7915, Williams 2402, Elmer 12209*. In primary forests at low and medium altitudes. Endemic.

Local name: Tagbák (S. L. Bis., Mbo.).

**PLAGIOSTACHYS ROLFEI** (K. Schum.) Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 179.

*Alpinia rolfei* K. Schum. in Engl. Pflanzenreich 20 (1904) 368.

*Alpinia parviflora* Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 316, p. p. quoad Cuming 1327.

Luzon (Cagayan, not Albay!), *Cuming 1327*. Not seen. Endemic.

## 7. VANOVERBERGHIA Merrill

**VANOVERBERGHIA SEPULCHREI** Merr. in Philip. Journ. Sci. 7 (1912) Bot. 76; Elm. Leaf. Philip. Bot. 8 (1915) 2913, (1919) 2990.

Luzon (Ifugao, Bontoc, Benguet, Sorsogon), Panay, *Vanoverbergh* 956, *Sandkuhl* 257, *Elmer* 8560, 17383, *F. B.* 947 *Barnes*, *B. S.* 12913 *Fénix*, 30734, 30134 *Ramos & Edaña*. In ravines along streams at medium altitudes, ascending to 1,500 m. A monotypic endemic genus.

Local names: Agbáb (Bon.); barápat (Ig.); chakchákil (Ig.).

## 8. AMOMUM Linnaeus

**AMOMUM BULUSANENSE** Elm. Leaf. Philip. Bot. 8 (1919) 2973.

Luzon (Sorsogon), *Elmer* 16395. In primary forests, altitude about 600 m. Endemic.

**AMOMUM CONOIDEUM** (Ridl.) Elm. Leaf. Philip. Bot. 8 (1919) 2972.

*Hornstedtia conoidea* Ridl. in Leaf. Philip. Bot. 2 (1909) 605, Philip. Journ. Sci. 4 (1909) Bot. 175.

Luzon (Laguna, Sorsogon), Negros, Mindanao (Davao, Lanao), *Elmer* 10246, 16924, 17896, 11131, *Clemens*, *Barrett*. In damp forested ravines at medium altitudes. Endemic.

Valeton, in Bull. Jard. Bot. Buitenz. III 3 (1921) 174, 176, cites *Elmer* 10246, the type of this species, as possibly representing *Hornstedtia alliacea* Valeton and as *H. deliana* Valeton, the former definitely known from Java and Sumatra, the latter from Sumatra. Ridley's specific name is the oldest.

**AMOMUM DALICAN** (Elm.) comb. nov.

*Hornstedtia dalican* Elm. Leaf. Philip. Bot. 8 (1915) 2906.

Mindanao (Davao), *Elmer* 11626, 11759. Along small streams in forests, altitude about 1,100 m. Endemic

Local name: Dalikán (Bag.).

**AMOMUM DEUTERAMOMUM** K. Schum. in Engl. Bot. Jahrb. 27 (1899)

313, Pflanzenreich 20 (1904) 237; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 173.

Mindanao (Davao), (*Warburg* 15735). In forests. Not seen. Endemic.

**AMOMUM ELEGANS** Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 84, Philip. Journ. Sci. 4 (1909) Bot. 172.

Luzon (Bataan), Mindanao (Lanao), *Whitford* 300, 207, *Clemens* 1061, *F. B.* 3033 *Borden*. In primary forests at low and medium altitudes. Endemic.

Local names: Luya-luyáhan (Tag.); tagbák-gúbat (Tag.).

**AMOMUM FUSIFORME** Ridl. in Leaf. Philip. Bot. 2 (1909) 604, *nomen nudum*, Philip. Journ. Sci. 4 (1909) Bot. 171.

Negros, Samar, Mindanao (Zamboanga, Surigao), *Bolster* 331, 224, *Elmer* 9509, *B. S.* 24159 *Ramos*, 36690, 37001 *Ramos & Edaña*. In primary forests at low and medium altitudes. Endemic.

Local names: Loya-lóya (C. Bis.); mali-máli (Sub.); satagbák (C. Bis.).



**AMOMUM IROSINENSIS** (Elm.) comb. nov.*Hornstedtia irosinensis* Elm. Leaf. Philip. Bot. 8 (1919) 2981.*Hornstedtia peninsula* Elm. op. cit. 2983.Luzon (Sorsogon), *Elmer 16332, 16263, 16455*. In forested ravines, altitude 350 to 500 m. Endemic.**AMOMUM LEPICARPUM** Ridl. in Leaf. Philip. Bot. 2 (1909) 605, Philip. Journ. Sci. 4 (1909) Bot. 174.*Hornstedtia lepicarpa* Elm. Leaf. Philip. Bot. 8 (1919) 2979.*Hornstedtia subviridis* Elm. op. cit. 2987.Luzon (Laguna, Sorsogon), Negros, Mindanao (Davao), *Elmer 10044, 17176, 17869, 10835, 16437, 17788*. In forests at low and medium altitudes. Endemic.**AMOMUM LINEARIFOLIUM** Elm. Leaf. Philip. Bot. 8 (1919) 2975.Luzon (Sorsogon), *Elmer 16926*. In thickets bordering forests, altitude about 300 m. Endemic.**AMOMUM LOHERI** K. Schum. in Engl. Pflanzenreich 20 (1904) 247; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 171.Luzon, without locality, *Loher 675*. I saw Loher's specimen at Kew in 1907 and at that time made a note that it was very similar to *A. trilobum* Ridl. Endemic.**AMOMUM LOPHOPHORUM** (Ridl.) Elm. Leaf. Philip. Bot. 8 (1919) 2973.*Hornstedtia lophophora* Ridl. in Leaf. Philip. Bot. 2 (1909) 607, Philip. Journ. Sci. 4 (1909) Bot. 176.Negros, Mindanao (Davao), *Elmer 10365, 10519*. In forested ravines, altitude about 1,200 m. Endemic.**AMOMUM LUZONENSE** Elm. Leaf. Philip. Bot. 8 (1919) 2976.Luzon (Sorsogon), Biliran, (*Elmer 15645*), *B. S. 18696 McGregor*, det. *Elmer*. In secondary forests at low or medium altitudes. Endemic.**AMOMUM MICROCHEILA** (Ridl.) comb. nov.*Hornstedtia microcheila* Ridl. in Leaf. Philip. Bot. 2 (1909) 606, Philip. Journ. Sci. 4 (1909) Bot. 176.Negros, *Elmer 10279*. On seepage banks along streams, altitude about 900 m. Endemic.**AMOMUM MINDANAENSE** Elm. Leaf. Philip. Bot. 8 (1915) 2894.Mindanao (Davao), *Elmer 10822*. In primary forests, altitude about 1,100 m. Endemic.

Local name: Tanaulak (Bag.).

**AMOMUM MURICARPUM** Elm. Leaf. Philip. Bot. 8 (1915) 2896.*Hornstedtia muricarpa* Elm. op. cit. 8 (1919) 2980:Mindanao (Cotabato, Zamboanga, Davao), *Elmer 10947, B. S. 15846 Fénix, 11555 Robinson, 36603 Ramos & Edaña*. In primary forests at low and medium altitudes. Endemic.

Local names: Lalañgod (Sub.); panikabán (Bag.); túgis (Buk.).

**AMOMUM PALAWANENSE** Elm. Leaf. Philip. Bot. 8 (1915) 2897.Palawan, *Elmer 12795*. In forests along streams at low altitudes. Very similar to *A. mindanaense* Elm. Endemic.

**AMOMUM PANDANICARPUM** Elm. Leaf. Philip. Bot. 8 (1915) 2899.*Hornstedtia pandanicarpa* Elm. op. cit. 8 (1919) 2979.*Hornstedtia sorsogonensis* Elm. op. cit. 2985.

Luzon (Sorsogon), Panay, Mindanao (Bukidnon, Davao), *Elmer 10508, 16223, 16755, B. S. 31184, 38758 Ramos & Edaña*. In primary forests at low and medium altitudes, ascending to 1,100 m. Endemic.

Local name: Dalikán (Bag.).

**AMOMUM PHILIPPINENSE** (Ridl.) comb. nov.*Hornstedtia philippinensis* Ridl. in Govt. Lab. Publ. (Philip.) 35

(1906) 86 p. p., Leaf. Philip. Bot. 2 (1909) 605, Philip. Journ.

Sci. 4 (1909) Bot. 175; Elm. Leaf. Philip. Bot. 8 (1915) 2905,

(1919) 2981.

Luzon (Laguna, Tayabas, Sorsogon), Mindoro, Palawan, Biliran, Negros, Panay, Leyte, Mindanao, *Elmer 9281, 9280, 11973, 16713, 17903, 7285, Merrill 9762, Williams 2888, B. S. 804 Foxworthy, 34554 Ramos & Pascasio, 31123 Ramos & Edaña, F. B. 3737 Merritt*. In forests at low and medium altitudes. Endemic.

The fruit described by Ridley does not belong to this species; see Elmer, Leaf. Philip. Bot. 8 (1919) 2980, for the true fruit characters.

Local names: Dalikán (Mbo.); lulutúkoan (Sub.); parápad (Ig.); tagbák (P. Bis.); tumbák (Neg.).

**AMOMUM PROPINQUUM** Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906)

84, Philip. Journ. Sci. 4 (1909) Bot. 172; Elm. Leaf. Philip. Bot.

8 (1915) 2894; Merr. Sp. Blancoanae (1918) 111.

*Amomum echinatum* Blanco Fl. Filip. ed. 2 (1845) 3, ed. 3, 1 (1877) 4, non Willd.*Amomum aculeatum* Naves Novis. App. (1880) 224, non Roxb.*Hornstedtia propinqua* Elm. Leaf. Philip. Bot. 8 (1919) 2979.

Luzon (Benguet, Batangas, Laguna, Tayabas, Sorsogon), Masbate, Biliran, Mindanao (Davao), *Elmer 6284, 15900, 15614, 18456, Merrill Sp. Blancoanae 925, F. B. 1704 Clark*. In forests at low and medium altitudes. Endemic.

Local name: Túgis (S. L. Bis.).

**AMOMUM PUBESCENS** (Ridl.) comb. nov.*Amomum lepicarpum* Ridl. var. *pubescens* Ridl. in Leaf. Philip. Bot. 2 (1909) 604.*Hornstedtia pubescens* Elm. op. cit. 8 (1919) 2979.

Negros, *Elmer 10384*. In forests, altitude about 1,100 m. Endemic.

**AMOMUM PUBIMARGINATUM** Elm. Leaf. Philip. Bot. 8 (1915) 2900.

Mindanao (Davao), *Elmer 10546*. In primary forests, altitude about 1,300 m. Endemic.

Local name: Tabák-bukalod (Bag.).

**AMOMUM PURPUREUM** (Elm.) comb. nov.*Hornstedtia purpurea* Elm. Leaf. Philip. Bot. 9 (1919) 2984.

Luzon (Sorsogon), *Elmer 16819, 17023*. In densely forested ravines, altitude about 450 m. Endemic.

**AMOMUM TRILOBUM** Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 85, Philip. Journ. Sci. 4 (1909) Bot. 173.

Luzon (Ilocos Norte, Bontoc, Bulacan, Pampanga, Laguna, Rizal), Palawan, Panay, *Bolster 67, Elmer 17566, B. S. 4602, 4655 Ramos, 817 Foxworthy, F. B. 12698 Rosenbluth & Tamesis*. In primary forests at low and medium altitudes. Endemic.

Local name: Tagbák (Tag.).

**AMOMUM WARBURGII** K. Schum. in Engl. Pflanzenreich 20 (1904) 257; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 171.

*Costus warburgii* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 346.

Mindanao (probably Davao), *Warburg*. The type, a mere scrap, has distinctly the appearance of *Costus*; to be compared with *Costus clemensiae* Ridl. A species of very indefinite status. Endemic.

#### EXCLUDED SPECIES

**AMOMUM CARDAMOMUM** Linn.; Naves Novis. App. (1880) 223.

**AMOMUM CILIATUM** Blume; Naves l. c.

**AMOMUM DEALBATUM** Roxb.; Naves l. c.

**AMOMUM GRACILE** Blume; Naves l. c.

**AMOMUM HATUANUM** (Rumph.) Naves op. cit. 224.

**AMOMUM HETERANTHUM** Blume; Naves op. cit. 223.

**AMOMUM MAXIMUM** Roxb.; Naves op. cit. 224.

**AMOMUM VILLOSUM** Lour.; Naves op. cit. 223.

#### 9. PHAEOMERIA Lindley

**PHAEOMERIA SPECIOSA** (Blume) comb. nov.

*Elettaria speciosa* Blume Enum. Pl. Jav. (1827) 51.

*Alpinia magnifica* Rosc. Monandr. Pl. (1828) t. 75.

*Phaeomeria magnifica* K. Schum. in Engl. Pflanzenreich 20 (1904) 262.

*Phaeomeria imperialis* Lindl. Nat. Syst. ed. 2 (1836) 446; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 177; Elm. Leafl. Philip. Bot. 8 (1915) 2907.

Mindanao (Davao, Bukidnon), *Elmer 10652, Williams 2943, Wester 49*. In ravines, probably introduced. Malay Peninsula, Java, Celebes.

Local name: Tikála (Buk.).

#### 10. HEDYCHIUM Koenig

**HEDYCHIUM CORONARIUM** Koenig in Retz. Obs. 3 (1783) 73; Miq. Fl.

Ind. Bat. 3 (1859) 608; Naves Novis. App. (1880) 227; Vidal Phan.

Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 274;

K. Schum. in Engl. Pflanzenreich 20 (1904) 44, f. 8, A, C; Ridl.

in Philip. Journ. Sci. 4 (1909) Bot. 164; Merr. Fl. Manila (1912)

157; Elm. Leafl. Philip. Bot. 8 (1919) 2978.

*Hedychium lingulatum* Hassk. Pl. Jav. Rar. (1848) 135; Naves Novis. App. (1880) 227.

Introduced and cultivated for ornamental purposes, in some regions in the southern Philippines naturalized. In Mindanao certainly of prehistoric introduction, in Luzon of recent introduction. A native of India, now pantropic, cultivated and naturalized.

Local names: Bánai (Bis.); dansúli (Buk.); kámia (Tag., Bik., Sp., C. Bis.); katkátan (Bis.); katotang (Bis.).

**HEDYCHIUM PHILIPPINENSE** K. Schum. in Engl. Pflanzenreich 20 (1904) 47; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 164; Elm. Leaflet. Philip. Bot. 8 (1915) 2903.

*Hedychium mindanaense* Elm. Leaflet. Philip. Bot. 8 (1915) 2904, (1919) 2978.

Luzon (Rizal, Laguna, Tayabas, Sorsogon), Polillo, Negros, Leyte, Mindanao, Jolo, *Elmer 10673, 7909, 15968, Loher 6996, Clemens 747, B. S. 22897 McGregor, 35015 Ramos & Pascasio, 27947 Ocampo, 20777 Escritor, 15206, 10962, 10003 Ramos, F. B. 4252 Everett*. In damp forests at low and medium altitudes, ascending to 1,100 m; often epiphytic or pseudoepiphytic. Endemic.

Local names: Dainsúli (Sub.); kaláuag (Bag.); tagbák (P. Bis.).

#### EXCLUDED SPECIES

**HEDYCHIUM HASSELTII** Blume; Naves Novis. App. (1880) 227.

### 11. KAEMPFERIA Linnaeus

**KAEMPFERIA GALANGA** Linn. Sp. Pl. (1753) 2; Naves Novis. App. (1880) 222; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 165; K. Schum. in Engl. Pflanzenreich 20 (1904) 77; Merr. Fl. Manila (1912) 157, Sp. Blancoanae (1918) 110.

*Kaempferia rotunda* Blanco Fl. Filip. (1837) 5, ed. 2 (1845) 4, ed. 3, 1 (1877) 7; Naves Novis. App. (1880) 222; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 84, non Linn.

*Kaempferia latifolia* Hornem. Hassk. in Flora 47 (1864) 22, quoad syn. Blanco.

Luzon (Bontoc, Rizal), Mindanao (Bukidnon), *Merrill Sp. Blancoanae 942, B. S. 26075 Fénix, 4560 Ramos*. In open grasslands at low and medium altitudes. India through Malaya to the Moluccas.

Local names: Disól (Ilk.); dosó (Bon.); dosól (Sbl.); dotó (Bon.); dusó (Tag.); dusóg (Tag.); dusól (Tag.); gisol (Tag., Pamp.); kisól (Buk., Bis.); kosól (Bis.); kusól (Pamp.).

**KAEMPFERIA PHILIPPINENSIS** Merr. in Philip. Journ. Sci. 10 (1915) Bot. 296.

Luzon (Laguna), *B. S. 14952 Ramos*. In forests along streams at low or medium altitudes. Endemic.

#### EXCLUDED SPECIES

**KAEMPFERIA LATIFOLIA** Don; Naves Novis. App. (1880) 223.

**KAEMPFERIA PANDURATA** Roxb.; Naves l. c.

12. **BOESENBERGIA** O. Kuntze*(Gastrochilus* Wallich, non Don)**BOESENBERGIA LONGIPETIOLATA** (Ridl.) comb. nov.*Gastrochilus longipetiolatus* Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 166.Mindanao (Zamboanga), *F. B. 9110 Whitford & Hutchinson, B. S. 36798 Ramos & Edaño*. In primary forests at low altitudes. Endemic.

Local name: Bubúnad (Sub.).

13. **CURCUMA** Linnaeus**CURCUMA LONGA** Linn. Sp. Pl. (1753) 2; Blanco Fl. Filip. (1837) 5, ed. 2 (1845) 4, ed. 3, 1 (1877) 6, t. 3; Naves Novis. App. (1880) 221; K. Schum. in Engl. Pflanzenreich 20 (1904) 108; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 167.*Curcuma xanthorrhiza* Naves in Blanco Fl. Filip. ed. 3 (1877-83) t. 3, Novis. App. (1880) 222, non Roxb.Widely distributed in the Philippines in and about towns, sometimes in open waste places, sometimes planted, *Merrill Sp. Blancoanae 917, Elmer 11933*. A native of India, now pantropic. Turmeric.

Local names: Añgai (Pamp.); barák (Kuy.); diláu (Tag.); duláu (S. L. Bis.); kalabága (Bis.); kaláuag (Mbo., Bis.); kinambói (Bis.); kulálo (Pamp.); kulyáu (Ilk.); kúnig (Ilk.); kúnik (Ibn.); lampúyang (P. Bis.); láuag (Sub.); lúyang-diláu (Tag.); pañgas (Pamp.); salampauyan (Bag.).

**CURCUMA ZEDOARIA** (Berg.) Rosc. Monandr. Pl. (1828) t. 109; K. Schum. in Engl. Pflanzenreich 20 (1904) 110; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 84, Philip. Journ. Sci. 4 (1909) Bot. 166; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 433; Fl. Manila (1912) 158, Sp. Blancoanae (1918) 109; Elm. Leaf. Philip. Bot. 8 (1919) 2977 (err. *zedoaria*).*Amomum zedoaria* Berg. Mat. Med. (1788) 41.*Curcuma zerumbet* Roxb. Pl. Coromandel 2 (1798) t. 101; Naves Novis. App. (1880) 222.*Costus nigricans* Blanco Fl. Filip. (1837) 3, ed. 2 (1845) 3, ed. 3, 1 (1877) 5.*Costus luteus* Blanco Fl. Filip. (1837) 4, ed. 2 (1845) 3, ed. 3, 1 (1877) 6.*Roscoea nigro-ciliata* Hassk. in Flora 47 (1864) 21.*Roscoea lutea* Hassk. l. c.

In open waste places in and near towns throughout the Philippines, often abundant; certainly introduced. India to Malaya.

Local names: Alimpuyás (C. Bis.); alimpuyíng (C. Bis.); barák (Tag.); bolon (Tag.); gánda (Sbl.); kónik (Ilk.); konikó (Bon.); lampúyang (P. Bis.); langkúas (Ilk.); luya-luyáhan (Tag.); tamahíba (Tag.); tamahílan (Bik.); tamó (Pamp., Tag.); tamokánsi (Tag.); únig (If.).

## EXCLUDED SPECIES

**CURCUMA AERUGINOSA** Roxb.; Naves Novis. App. (1880) 222.**CURCUMA AUSTRALASICA** Hook. f.; Naves op. cit. 221.**CURCUMA CAESIA** Roxb.; Naves op. cit. 222.**CURCUMA PURPURASCENS** Blume; Naves l. c.**CURCUMA VIRIDIFLORA** Roxb.; Naves op. cit. 221.

14. **GLOBBA** Linnaeus

**GLOBBA AUREA** Elm. Leaf. Philip. Bot. 8 (1915) 2902.

Busuanga, Palawan, *Elmer 13243, Merrill 7199, 9342, B. S. 21569 Escritor, 19339 Weber*. In thickets and in rock crevices along streams at low and medium altitudes. Endemic.

**GLOBBA BREVIFOLIA** K. Schum. in Engl. Pflanzenreich 20 (1904) 145; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 160.

*Globba parviflora* Presl var. *brevifolia* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 330.

Luzon (Zambales), Corregidor, *Warburg 14066, F. B. 13216 Curran*. In thickets or forests at low or medium altitudes. Endemic.

Apparently very close to *G. campsophylla* K. Schum.

**GLOBBA CAMPSOPHYLLA** K. Schum. in Engl. Pflanzenreich 20 (1904) 145; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 83, Philip. Journ. Sci. 4 (1909) Bot. 159.

*Globba parviflora* Vidal Phan. Cuming. Philip. (1885) 152; K. Schum. in Engl. Bot. Jahrb. 27 (1899) 330, non Presl.

Luzon (Nueva Ecija, Rizal, Tayabas, Bulacan, Bataan), Catanduanes, Panay, Samar, Mindanao, *Cuming 1090, Elmer 11284, Merrill 4177, 5207, Phil. Pl. 334, F. B. 1461 Ahern's collector, 7208 Curran, B. S. 1110, 24277, 19444, 30296 Ramos, 6132 Robinson, 24975 Félix, 21392 Escritor*. In damp thickets and forests, on and about cliffs, etc., at low and medium altitudes. Endemic.

Local names: Luya-luyáhan (Tag.); malasabután (S. L. Bis.); tangbák (Tag.).

**GLOBBA GRACILIS** K. Schum. in Engl. Pflanzenreich 20 (1904) 145; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 161, Leaf. Philip. Bot. 2 (1909) 605.

Mindanao (Misamis, Davao), *Warburg 14580* in herb. Berol., *F. B. 4752 Mearns & Hutchinson*. In primary forests, altitude 300 to 1,000 m. Endemic.

**GLOBBA LATIFOLIA** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 161.

Mindoro, Panay, Mindanao (Zamboanga), *Merrill 4064, Williams 2334, B. S. 30976 Ramos & Edaña, 32197 McGregor*. In damp primary forests at low and medium altitudes. Endemic.

**GLOBBA LEUCOCARPA** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 161.

Luzon (Benguet), Polillo, Mindoro, Leyte, *Elmer 6465, 7298, Merrill 1789, McGregor 201*. In damp primary forests, on shaded cliffs, etc., at low and medium altitudes. Endemic.

**GLOBBA MARANTINA** Linn. Mant. 2 (1771) 170; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 427; Presl Rel. Haenk. 1 (1827) 115; Llanos Frag. Pl. Filip. (1851) 7; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 2, t. 351; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 274; Naves Novis. App. (1880) 219; K. Schum. in Engl. Pflanzenreich 20 (1904) 156; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 162; Merr. Fl. Manila (1912) 156, Sp. Blancoanae (1918) 111.

*Globba barthei* Gagnep. in Bull. Soc. Bot. France 48 (1901) 208, t. 7, f. 1-4; K. Schum. in Engl. Pflanzenreich 20 (1904) 159; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 83.

*Globba ectobolus* K. Schum. in Engl. Pflanzenreich 20 (1904) 156, f. 19, L.

*Globba heterobracteata* K. Schum. op. cit. 159, f. 19, H.

Luzon (Union, Nueva Ecija, Pangasinan, Pampanga, Bulacan, Cavite, Rizal, Bataan), Palawan, Panay, Negros. In thickets in and near towns at low and medium altitudes, often abundant. Certainly introduced. Malay Peninsula and Archipelago to New Guinea and the Bismarck Archipelago.

Local names: Bangliú (Ilk.); barák (Tag.); luyan-luyáan (Pang.).

**GLOBBA MERRILLII** Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 83, Philip. Journ. Sci. 4 (1909) Bot. 160.

Luzon (Bataan), *Merrill 3869, Whitford 481, F. B. 1598 Borden*. Along streams in primary forests and on exposed forested ridges up to 1,000 m altitude; not easily distinguishable from *G. campophylla* K. Schum. Endemic.

**GLOBBA PARVIFLORA** Presl Rel. Haenk. 1 (1827) 115; Miq. Fl. Ind. Bat. 3 (1859) 592; Naves Novis. App. (1880) 220; K. Schum. in Engl. Pflanzenreich 20 (1904) 146; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 83, Philip. Journ. Sci. 4 (1909) Bot. 159; Elm. Leaf. Philip. Bot. 8 (1919) 2977.

Luzon (Rizal, Albay, Sorsogon), Leyte, Mindanao, *Merrill 2783, 2782, Elmer 15666, 15381, B. S. 16503 Reillo, F. B. 2910 Mearns, 12453 Danao*. In forests at low and medium altitudes. Endemic.

**GLOBBA PYRAMIDATA** Gagnep. in Bull. Soc. Bot. France 48 (1901) 204, t. 4, f. 7-10; K. Schum. in Engl. Pflanzenreich 20 (1904) 146; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 158.

Mindanao (Agusan), *Weber 1128*. In primary forests at low altitudes. Indo-China.

**GLOBBA USTULATA** Gagnep. in Bull. Soc. Bot. France 48 (1901) 208, t. 7, f. 5-7; K. Schum. in Engl. Pflanzenreich 20 (1904) 158; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 163.

Balabac (*Marche 227B*). The type is preserved in the Paris Museum; I have seen no specimens. A variety in Indo-China fide Gagnepain.

#### EXCLUDED SPECIES

**GLOBBA AURANTIACA** Miq.; Naves Novis. App. (1880) 219.

**GLOBBA CAREYANA** Roxb.; Naves op. cit. 220.

**GLOBBA CILIATA** Jack; Naves op. cit. 219.

**GLOBBA LEUCANTHA** Miq.; Naves l. c.

**GLOBBA MACULATA** Blume; Naves l. c.

**GLOBBA PATENS** Miq.; Naves l. c.

**GLOBBA SALTATORIA** Rosc.; Naves l. c.

**GLOBBA STROBILIFERA** Zoll.; Naves l. c.

15. *COSTUS* Linnaeus

**COSTUS CLEMENSÆ** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 193.

Mindanao (Zamboanga, Lanao), *Clemens 1173*, *B. S. 36578 Ramos & Edaño*. On forested slopes, altitude about 700 m. Endemic.

Local name: Tiuasi-tiuasi (Sub.).

**COSTUS GLABRA** (K. Schum.) comb. nov.

*Costus speciosus* Sm. var. *glabra* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 343, Pflanzenreich 20 (1904) 398.

*Herba spiralis II laevis* Rumph. Herb. Amb. 6: 143, t. 64, f. 2.

*Costus speciosus* Elm. Leaf. Philip. Bot. 8 (1919) 2977, non Sm.

Luzon (Tayabas, Albay, Sorsogon), Polillo, Samar, Leyte, Panay, *Wenzel 227*, *Elmer 14707*, *Whitford 830*, *B. S. 6299*, *6926 Robinson*, *35478 Martelino & Edaño*, *24820*, *24811 Edaño*, *15302 Ramos*. In forests, old clearings, abacá plantations, etc., at low and medium altitudes. Moluccas.

**COSTUS HIRSUTUS** Blume Enum. Pl. Jav. 1 (1827) 61.

*Costus speciosus* Sm. var. *hirsuta* K. Schum. in Engl. Bot. Jahrb. 27 (1899) 343, Pflanzenreich 20 (1904) 398.

Luzon (Bontoc, Benguet, Union, Batangas), *Vanoverbergh 1392*, *Cuzner 21*, *Lete 264*. In thickets and forests, altitudes 300 to 1,200 m. India to southern China and Formosa through Malaya to New Guinea.

**COSTUS SERICEUS** Blume Enum. Pl. Jav. 1 (1827) 62; Naves Novis. App. (1880) 227.

*Costus speciosus* Sm. var. *argyrophyllus* Wall. ex Baker in Hook. f. Fl. Brit. Ind. 6 (1892) 249; Ridl. in Govt. Lab. Publ. (Philip.) 35 (1906) 84, Philip. Journ. Sci. 4 (1909) Bot. 192.

*Costus speciosus* Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 274; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 192, non Sm.

Luzon (Benguet, Nueva Vizcaya, Bataan, Rizal, Cavite, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Masbate, Negros, Panay, Cebu, Leyte, Mindanao, Basilan, Jolo. Common in primary forests, old clearings, etc., at low and medium altitudes. Burma, through Malaya to New Guinea.

Local names: Tiuási (Sub.); tubong-usá (Bik.).

**COSTUS SPECIOSUS** (Koenig) Sm. in Trans. Linn. Soc. 1 (1791) 249; Miq. Fl. Ind. Bat. 3 (1859) 610; Naves Novis. App. (1880) 227, in Blanco Fl. Filip. ed. 3 (1877-83) t. 442; K. Schum. in Engl. Pflanzenreich 20 (1904) 398; Merr. Fl. Manila (1912) 160.

*Banksia speciosa* Koenig in Retz. Obs. 3 (1783) 75.

Occasionally cultivated for ornamental purposes. This very large-flowered form is a native of the Malay Peninsula and is, I believe, specifically distinct from the common wild Philippine form. It is cultivated in various parts of Malaya and in some other tropical countries.

## EXCLUDED SPECIES

**COSTUS POTIERÆ** F.-Muell.; Naves Novis. App. (1880) 227.

## EXCLUDED GENERA

**ELETTARIA ALBA** Blume; Naves Novis. App. (1880) 224.

**ELETTARIA ANTHOIDES** Teysm.; Naves l. c.



- ELETTARIA CARDAMOMUM Maton; Naves l. c.  
 ELETTARIA COCCINEA Blume; Naves l. c.  
 ELETTARIA FOETENS Blume; Naves l. c.  
 ELETTARIA HEMISPHAERICA Blume; Naves l. c.  
 ELETTARIA MACROCEPHALA Miq.; Naves op. cit. 225.  
 ELETTARIA MINUTA Blume; Naves op. cit. 224.  
 ELETTARIA MOLLIS Blume; Naves l. c.  
 ELETTARIA PINANGA Miq.; Naves op. cit. 225.  
 ELETTARIA PUNICEA (Roxb.) Naves op. cit. 224.  
 ELETTARIA RUBRA Miq.; Naves op. cit. 225.  
 ELETTARIA SOLARIS Blume; Naves op. cit. 224.  
 ELETTARIA SPECIOSA Blume; Naves l. c.  
 ELETTARIA TOMENTOSA Miq.; Naves op. cit. 225.  
 ELETTARIA VILLOSA Miq.; Naves l. c.  
 ROSCOEA PURPUREA Spreng.; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99; Naves Novis. App. (1880) 223.

## CANNACEAE

## 1. CANNA Linnaeus

- CANNA COCCINEA Mill. Gard. Dict. ed. 8 (1768) No. 3; Miq. Fl. Ind. Bat. 3 (1859) 613; Naves Novis. App. (1880) 229; Merr. Fl. Manila (1912) 161; Kränzl. in Engl. Pflanzenreich 56 (1912) 60.

Cultivated for ornamental purposes, but nowhere naturalized. A native of Central and South America.

- CANNA FLACCIDA Salisb. Ic. Stirp. Rar. (1791) t. 2; Merr. Fl. Manila (1912) 162 (*C. flaccida* Salisb. x *iridiflora* Ruiz & Pav.); Kränzl. in Engl. Pflanzenreich 56 (1912) 49.

Widely cultivated for its showy flowers, but not naturalized and apparently never or very rarely producing seeds. A native of tropical America.

Local names: Bandera española (Sp.); kambút bandera española (Ilk.).

- CANNA GLAUCA Linn. Sp. Pl. (1753) 1; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 198; Merr. Fl. Manila (1912) 162; Kränzl. in Engl. Pflanzenreich 56 (1912) 54.

Cultivated for ornamental purposes, Merrill 648, 6690, 6691. A native of tropical America.

- CANNA INDICA Linn. Sp. Pl. (1753) 1; Blanco Fl. Filip. (1837) 6, ed. 2 (1845) 5, ed. 3, 1 (1877) 8, t. 4; Naves Novis. App. (1880) 229; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 198; Merr. op. cit. 5 (1910) Bot. 340, Fl. Manila (1912) 161, Sp. Blancoanae (1918) 111. *Canna orientalis* Rosc. Monandr. Pl. (1828) t. 12; Kränzl. in Engl. Pflanzenreich 56 (1912) 47. ?

Throughout the Philippines in the settled areas, occurring in waste places in and near settlements. A native of tropical America, now pan-tropic

Local names: Balunsáying (Bis.); baṅgali (Bik.); kakuentásan (Tag.); kiuíṅgan (If.); kolintásan (Bis.); kuentas-kuentásan (Tag.); lása (Iv.); saging-ságing (Tag.); tapuráṅga (Bis.); tíkas (Tag.); tikas-tikas (Tag., P. Bis.); tikis-tíkis (Tag.); tukas-túkas (Tag.).

**CANNA REEVESII** Lindl. Bot. Reg. 23 (1837) *t.* 2004; Kränzl. in Engl. Pflanzenreich 56 (1912) 50, *f.* 10, A-C.

Cultivated for ornamental purposes, but nowhere spontaneous, *Merrill 6692*, det. Kränzlin. A native of tropical America.

**CANNA SPECIOSA** Rosc. Monandr. Pl. (1828) *t.* 17; Naves Novis. App. (1880) 229; Merr. Fl. Manila (1912) 161; Kränzl. in Engl. Pflanzenreich 56 (1912) 44, *f.* 8 D.

Occasional in open waste places, naturalized, *Merrill 6689*. A native of tropical America.

Local name: Kambút-ṅganalabága (Ilk.).

**CANNA WARCEWICZII** Dietr. in Allg. Gart. Zeit. 19 (1851) 290, fig.; Merr. Fl. Manila (1912) 162; Kränzl. in Engl. Pflanzenreich 56 (1912) 64.

Cultivated for ornamental purposes, but nowhere established. A native of tropical America.

Local name: Kambut-ṅga-naṅgísit (Ilk.).

#### EXCLUDED SPECIES

**CANNA MONTANA** Blume; Naves Novis. App. (1880) 229.

**CANNA EDULIS** Ker.; Naves l. c.

**CANNA PEDUNCULATA** Sims; Naves l. c.

**CANNA RUBRICAULIS** Link; Naves l. c. = *C. edulis* Ker.

**CANNA FLAVESCENS** Link; Naves l. c.

All our forms of *Canna* are introduced plants in the Philippines. Two or three characteristic species are thoroughly naturalized, especially *Canna indica* Linn., which was introduced at an early date in colonial history. A very large number of garden forms, mostly hybrids, have been introduced from Europe and America since the beginning of the present century, but it is impossible to determine their botanical origins, as the necessary data are lacking; few of these hybrids ever produce seeds here, but are reproduced by means of their rhizomes.

#### MARANTACEAE

##### 1. DONAX Loureiro

**DONAX CANNAEFORMIS** (Forst. f.) K. Schum. in Engl. Bot. Jahrb. 15 (1893) 440; Rolfe in Journ. Bot. 45 (1907) 243; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 193; Valetton ex Merr. Interpret. Herb. Amb. (1917) 166; Merr. Sp. Blancoanae (1918) 112.

*Thalia cannaeformis* Forst. f. Prodr. (1786) 1.

*Maranta arundinacea* Blanco Fl. Filip. (1837) 7, ed. 2 (1845) 5, ed. 3, 1 (1877) 9, *t.* 5, non Linn.

- Clinogyne grandis* Benth. & Hook. f. ex Rolfe in Journ. Bot. 23 (1885) 465; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 275.
- Donax arundastrum* K. Schum. in Engl. Pflanzenreich 11 (1902) 33; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 37, Forestry Bureau Bull. 1 (1903) 16; Perk. Frag. Fl. Philip. (1904) 68, t. 1 f. G-J, non Lour.
- Actoplanes cannaeformis* K. Schum. in Engl. Pflanzenreich 11 (1902) 34 p. p. excl. syn. Miq.
- Phrynium dichotomum* Roxb. in Asiat. Research 11 (1810) 324; Schauer in Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 427.
- Maranta dichotoma* Wall. Cat. (1832) No. 6615; Naves Novis. App. (1880) 228; Miq. Fl. Ind. Bat. 3 (1859) 611; Usteri Beitr. Ken. Philip. Veg. (1905) 128.
- Maranta grandis* Miq. Fl. Ind. Bat. Suppl. (1860-1) 616; Naves Novis. App. (1880) 228.

Batan Islands and northern Luzon to Palawan and Mindanao, in all or most islands and provinces. Common in secondary forests, especially along streams at low and medium altitudes. Java and Borneo to New Guinea, the Aru and Admiralty Islands, New Hebrides, and the Marianne Islands.

Local names: Alaró (Bis.); aratán (Gad.); babán (Chab.); bambán (Ilk., Bis., Mbo., Tag., Sul., Buk.); banbán (Tag., Bik., Bis., Bag., Ibn.); bankólid (Mbo.); baras-barásan (Tag.); bonbón (Tag.); buabán (Bag.); daromáka (Ilk.); darumáka (Ilk.); garomáka (Ilk.); lankuás (Ilk.); mambán (Bik., S. L. Bis.); manbán (Tag.); matalbák (Tag.); matapál (Isn.); miní (Ig.); niní (Ig.); niník (Iv.).

## 2. PHRYNIUM Willdenow

**PHRYNIUM PHILIPPINENSE** Ridl. in Leaflet. Philip. Bot. 2 (1909) 569, Philip. Journ. Sci. 4 (1909) Bot. 195.

*Phrynium capitatum* Presl Rel. Haenk. 1 (1827) 109; Naves Novis. App. (1880) 228, non Willd.

*Phrynium densiflorum* Naves Novis. App. (1880) 228; Vidal Phan. Cuming. Philip. (1885) 152, Rev. Pl. Vasc. Filip. (1886) 275, non Blume.

Babuyan Islands, Luzon (Isabela, Nueva Vizcaya, Rizal, Laguna, Tayabas, Albay, Sorsogon), Alabat, Polillo, Mindoro, Palawan, Panay, Leyte, Negros, Mindanao. In forests at low and medium altitudes; scarcely distinguishable from *P. capitatum* Willd. Endemic.

Local names: Bogigkík (Mbo.); hagikhík (Bis.); hagithít (Tag.); lutatában (P. Bis.); okos (Bag.).

### EXCLUDED SPECIES

**PHRYNIUM LATIFOLIUM** Blume; Naves Novis. App. (1880) 228.

**PHRYNIUM MAXIMUM** Blume; Naves l. c.

**PHRYNIUM PUBINERVE** Blume; Naves l. c.

Some species of *Calathea* have been introduced into the Philippines and are occasionally found in cultivation for ornamental purposes.

## 3. MARANTA Linnaeus

**MARANTA ARUNDINACEA** Linn. Sp. Pl. (1753) 2; Naves Novis. App. (1880) 228; K. Schum. in Engl. Pflanzenreich 11 (1902) 125; Perk. Frag. Fl. Philip. (1904) 72, t. 2; Merr. in Govt. Lab. Publ. (Philip.) 6 (1904) 29, Fl. Manila (1912) 163; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 197.

*Maranta ramosissima* Wall. Pl. As. Rar. 3 (1832) 51, t. 286; Naves Novis. App. (1880) 228.

Widely distributed in the Philippines in cultivation for its starchy rhizomes. A native of tropical America, now pantropic. Arrowroot.

Local names: Ararú (Ibn., It.); arorú (Tag.); arurú (Tag.); báí (Iv.); galamáka (Bon.); sagú (Bik., Ilk.).

Var. **VARIEGATA** (N. E. Br.) Ridl. in Gard. Chron. III 9 (1891) 73; Merr. Fl. Manila (1912) 163.

*Phrynium variegatum* N. E. Br. in Ill. Hort. 33 (1886) 125, t. 606.

Cultivated for ornamental purposes.

## 4. MONOPHRYNIUM K. Schumann

**MONOPHRYNIUM CONGESTUM** Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 197.

Luzon (Apayao, Tayabas, Laguna), *F. B. 9548 Curran, B. S. 28082, 28245 Fénix*. In primary forests at low or medium altitudes. Endemic.

Local names: Aláuan (Ibn.); arúpi (Ibn.).

**MONOPHRYNIUM FASCICULATUM** (Presl) K. Schum. in Engl. Pflanzenreich 11 (1902) 68; Perk. Frag. Fl. Philip. (1904) 69, t. 1, f. A-F; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 196.

*Calathea fasciculata* Presl Rel. Haenk. 1 (1827) 108, t. 10, f. 1; Naves Novis. App. (1880) 229.

*Phrynium fasciculatum* Horan. Monogr. (1862) 11.

Luzon (Cagayan, Laguna, Tayabas), Samar, Leyte, Biliran, Mindanao (Surigao), *B. S. 34797 Ramos & Pascasio, 28589 Ramos & Edaño, 24136, 13356 Ramos, 22837 McGregor, Elmer 9148, Wenzel 378*. In primary forests at low and medium altitudes. Halmahera. The only representative of the genus known outside of the Philippines.

Local names: Hagithít (Tag.); hagithít-na-daytoi (S. L. Bis.).

**MONOPHRYNIUM SIMPLEX** Elm. Leaf. Philip. Bot. 1 (1908) 276; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 196.

Luzon (Laguna, Tayabas), *Elmer 7611, 9147, 17502*. On forested slopes near streams, altitude about 750 m. Endemic.

## 5. PHACELOPHRYNIUM K. Schumann

**PHACELOPHRYNIUM BRACTEOSUM** (Warb.) K. Schum. in Engl. Pflanzenreich 11 (1902) 123; Perk. Frag. Fl. Philip. (1904) 71, t. 3, f. F-O; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 268; Ridl. op. cit. 4 (1909) Bot. 195.

*Phrynium bracteosum* Warb. ex K. Schum. l. c. in syn.

Luzon (Sorsogon), Mindoro, Samar, Leyte, Biliran, Mindanao (Agusan, Lanao), *Merrill 7288, 5202, 5232, Elmer 16145, 15240, Clemens 423, Wenzel*

232, *B. S.* 34564 Ramos & Pascasio, 24732 Edaña, 15229, 17456, 39780 Ramos, 18818 McGregor. In primary forests at low and medium altitudes. Borneo.

**PHACELOPHRYNIUM CYLINDRICUM** Merr. in Philip. Journ. Sci. 13 (1918) Bot. 269.

Catanduanes, Panay, *B. S.* 30503 Ramos, 31271 Ramos & Edaña. In primary forests at low altitudes. Endemic.

**PHACELOPHRYNIUM INTERRUPTUM** (Warb.) K. Schum. in Engl. Pflanzenreich 11 (1902) 121; Perk. Frag. Fl. Philip. (1904) 70, t. 3, f. A-E; Ridl. in Philip. Journ. Sci. 4 (1909) Bot. 194.

*Phrynium interruptum* Warb. ex K. Schum. l. c. in syn.

Luzon (Ilocos Norte, Benguet, Bulacan, Rizal, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Samar, Panay, Leyte, Mindanao (Agusan, Davao). In forests at low and medium altitudes, represented by about fifty individual collections. Endemic.

Local names: Bambán (Tag.); hagikhík (S. L. Bis.); hagitit (Tag., Bik.); kokos (Bag.); nítni (Ig.).

## BURMANNIACEAE

### 1. BURMANNIA Linnaeus

**BURMANNIA CLEMENTIS** Schltr. in Philip. Journ. Sci. 1 (1906) Suppl. 305.

Mindanao (Lanao), *Clemens* 24. In grasslands, altitude about 650 m. Endemic.

**BURMANNIA COELESTIS** D. Don Prodr. Fl. Nepal. (1825) 44; Naves Novis. App. (1880) 252; Merr. in Philip. Journ. Sci. 4 (1909) Bot. 250.

*Burmammia azurea* Griff. Notul. 3 (1851) 236, Ic. Pl. As. (1851) t. 272, f. 1; Becc. Malesia 1 (1878) 242, t. 15, f. 1-3.

Luzon (Pangasinan), *B. S.* 4913 Ramos. Probably in open places at low altitudes. India to Borneo and the Caroline Islands.

**BURMANNIA LONGIFOLIA** Becc. Malesia 1 (1878) 244; Naves Novis. App. (1880) 252; Rendle in Journ. Bot. 34 (1896) 355; Merr. in Philip. Journ. Sci. 2 (1907) Bot. 268.

Mindoro, Negros, Camiguin de Misamis, Mindanao (Agusan, Davao), Merrill 5741, Elmer 13690, *B. S.* 14428 Ramos, F. B. 13611 Curran & Foxworthy. On ridges in wet mossy forests, altitude 1,200 to 1,600 m. Malay Peninsula, Borneo, Amboina, New Guinea.

Local names: Bagumbáan (Mbo.); pamaláuan (Bag.).

### EXCLUDED GENERA AND SPECIES

**BURMANNIA DISTICHA** Linn.; Naves Novis. App. (1880) 252.

**BURMANNIA SUMATRANA** Miq.; Naves l. c.

**BURMANNIA TUBEROSA** Becc.; Naves l. c.

**GYMNOSIPHON APHYLLUM** Blume; Naves l. c.

**SARCOSIPHON CLANDESTINUM** Blume; Naves l. c.

## APOSTASIACEAE \*

## 1. NEUWIEDIA Blume

**NEUWIEDIA VERATRIFOLIA** Blume in Hoev. & De Vriese Tijdschr. Nat. Gesch. 1 (1834) 142, in Ann. Sci. Nat. II 2 (1834) 94; Reichb. f. in Bonpl. 5 (1857) 58, in nota; Miq. Fl. Ind. Bat. 3 (1859) 748; Naves Novis. App. (1882) 251; Rolfe in Journ. Linn. Soc. 25 (1889) 231, 241; Hook. f. in Hook. Icon. Pl. 20 (1891) *t. 1987*; Rolfe in Orch. Rev. 4 (1896) 329; Kränzl. Orch. Gen. et Sp. 1 (1897) 3, p. p.; Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 5, *fig. 3*; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 15; Ames in Philip. Journ. Sci. 2 (1907) Bot. 311; J. J. Sm. in Bull. Jard. Buitenz. II 14 (1914) 1.

Mindoro, *Merrill 5681*. Mt. Halcon, in forest at 750 m altitude. In Java and Borneo.

## EXCLUDED OR SYNONYMOUS SPECIES

**NEUWIEDIA ZOLLINGERI** Reichb. f. apud Naves Novis. App. (1882) 251; Rolfe in Journ. Linn. Soc. 25 (1889) 231; Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 5.

This Javan and Bornean species is credited to the Philippines solely on the basis of Naves's record.

## 2. APOSTASIA Blume

**APOSTASIA WALLICHII** R. Br. in Wall. Pl. Asiat. Rar. 1 (1830) 75, *t. 84*; Miq. Fl. Ind. Bat. 3 (1859) 748; Rolfe in Journ. Linn. Soc. 25 (1889) 239; Hook. f. Fl. Brit. Ind. 6 (1890) 175; Ridl. in Journ. Linn. Soc. 32 (1896) 415; Kränzl. Orch. Gen. et Sp. 1 (1897) 7; Trim. Handb. Fl. Ceyl. 4 (1898) 238; Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 7, *fig. 4*; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 18, Fig.-Atlas (1908) *fig. 3*, in Bull. Dept. Agr. Ind. Néerl. 13 (1907) 1; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 232; Ames in Philip. Journ. Sci. 2 (1907) Bot. 311.

*Mesodactylus deflexa* Wall. Pl. Asiat. Rar. 1 (1830) 74.

Luzon (Camarines), Sibuyan, Mindoro, Palawan, *F. B. 18750 Darling, Merrill 5521, 5639, Elmer 13141*. Terrestrial, up to 1,000 m altitude. In India, Ceylon, Malay Peninsula, Sumatra, Java, Borneo, and New Guinea.

## EXCLUDED OR SYNONYMOUS SPECIES

**APOSTASIA ODORATA** Blume apud Naves Novis. App. (1882) 251; Rolfe in Journ. Linn. Soc. 25 (1889) 239.

The Philippine record, repeated by Rolfe, is based wholly on the earlier one of Naves; the species is known only from Java.

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\* The enumeration of the Apostasiaceae and the Orchidaceae was prepared by Prof. Oakes Ames, who was materially assisted in the bibliographic research connected therewith by Mr. F. Tracy Hubbard.— E. D. M.

## ORCHIDACEAE \*

## 1. CORDULA Rafinesque

**CORDULA ARGUS** (Reichb. f.) Rolfe in Orch. Rev. 20 (1912) 2.

*Cypripedium argus* Reichb. f. in Gard. Chron. (1873) 608, (1874) 710, III 7 (1890) 259; Hook. f. in Bot. Mag. 101 (1875) t. 6175; Naves Novis. App. (1882) 251; Veitch Man. Orch. Pl. pt. 4 (1889) 11; Sander Reichenbachia I 2 (1890) 77, t. 83; Ceron Cat. Pl. Herb. Manila (1892) 169; Kränzl. Orch. Gen. et Sp. 1 (1897) 56.

*Cypripedium barbatum* Lindl. var. *argus* Vos. in Belg. Hort. 25 (1875) 57.

*Cypripedium pitcherianum* Manda in Am. Flor. 3 (1887) 178.

*Cypripedium moensianum* Hort. ex L. Linden in Lindenia 3 (1887) 69, t. 129.

*Cypripedium argus* Reichb. f. var. *moensii* Hort. ex Veitch Man. Orch. Pl. pt. 4 (1889) 11.

*Cypripedium argus* Reichb. f. subvar. *nigricans* Veitch Man. Orch. pl. pt. 4 (1889) 11.

*Paphiopedilum argus* Stein Orchideenb. (1892) 453; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 40, in Engl. Pflanzenreich IV. 50 (1903) 90; Ames Orch. 1 (1905) 63, 2 (1908) 23, 5 (1915) 10.

*Paphiopedilum argus* Stein var. *moensii* Stein Orchideenb. (1892) 450; Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 91; Ames Orch. 2 (1908) 24.

*Paphiopedilum argus* Stein var. *nigricans* Hort. ex Stein Orchideenb. (1892) 454; Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 91; Ames Orch. 2 (1908) 24.

Luzon (Bontoc, Benguet, Tayabas), Negros (Oriental Negros), *Van-overbergh 262, 1186, 4042, Elmer 6296, 9433, Lyon 158, B. S. 32015 Santos, 20735 Escritor*. Grassy slopes at 1,300 to 2,200 m altitude.

**CORDULA BARBATA** (Lindl.) Rolfe in Orch. Rev. 20 (1912) 2.

*Cypripedium barbatum* Lindl. in Bot. Reg. 27 (1841) Misc. 53, 28 (1842) t. 17; Hook. in Bot. Mag. 72 (1846) t. 4234; Miq. Fl. Ind. Bat. 3 (1859) 737; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 237; Veitch Man. Orch. Pl. pt. 4 (1889) 12, text cut; Hook. f. Fl. Brit. Ind. 6 (1890) 174; Ridl. in Journ. Linn. Soc. 32 (1896) 414; Kränzl. Orch. Gen. et Sp. 1 (1897) 62; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 229.

*Paphiopedilum barbatum* Pfitz. in Pringsh. Jahrb. 19 (1888) 159, in Engl. & Prantl Pflanzenfam. 2, Abt. 6 (1888) 84, in Engl. Bot. Jahrb. 19 (1894) 40, in Engl. Pflanzenreich IV. 50 (1903) 91; Ames Orch. 2 (1908) 24, 5 (1915) 10.

Palawan, *B. S. 640, 645 Foxworthy*. Mt. Victoria, in rocky forest at 930 to 1,000 m altitude. In Malay Peninsula and western Siam.

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\* See preceding footnote.

**CORDULA CILIOLARIS** (Reichb. f.) Rolfe in Orch. Rev. 20 (1912) 2.

*Cypripedium ciliolare* Reichb. f. in Gard. Chron. II 18 (1882) 488, 20 (1883) 46; Rodigas in Ill. Hort. 31 (1884) 127, t. 530; Veitch Man. Orch. Pl. pt. 4 (1889) 16; Kränzl. Orch. Gen. et Sp. 1 (1897) 64.

*Paphiopedilum ciliolare* Stein Orchideenb. (1892) 462, fig. 145; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 40, in Engl. Pflanzenreich IV. 50 (1903) 89; Ames Orch. 2 (1908) 23, 5 (1915) 11, in Philip. Journ. Sci. 6 (1911) Bot. 39.

Luzon (Bontoc), Dinagat, Mindanao (Surigao, Agusan), *B. S. 37996* Ramos & Edaña, 34586 Ramos & Pascasio, Lyon 142, Weber 110. Forest slopes at 310 to 1,830 m altitude.

**CORDULA HAYNALDIANA** (Reichb. f.) Rolfe in Orch. Rev. 20 (1912) 2.

*Cypripedium haynaldianum* Reichb. f. Xen. Orch. 2 (1874) 222, 3 (1881) 33, t. 212, in Gard. Chron. II 7 (1877) 272, 752; Hook. f. in Bot. Mag. 103 (1877) t. 6296; Naves Novis. App. (1882) 251; Veitch Man. Orch. Pl. pt. 4 (1889) 28; Kränzl. Orch. Gen. et Sp. 1 (1897) 71.

*Paphiopedilum haynaldianum* Stein Orchideenb. (1892) 470; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41, in Engl. Pflanzenreich IV. 50 (1903) 66, fig. 31 A-C; Ames Orch. 2 (1908) 22, 5 (1915) 10, in Philip. Journ. Sci. 6 (1911) Bot. 39; Memml. in Orchis 14 (1920) 18.

Luzon (Kalinga, Tarlac, Rizal), *Wallis s. n., Lyon 49, Boettcher s. n., Ramos s. n.* Sea level to 1,000 m altitude.

**CORDULA PHILIPPINENSIS** (Reichb. f.) Rolfe in Orch. Rev. 20 (1912) 2.

*Cypripedium philippinense* Reichb. f. in Bonpl. 10 (1862) 335; Veitch Man. Orch. Pl. pt. 4 (1889) 42, text cut; Kränzl. Orch. Gen. et Sp. 1 (1897) 46; Rolfe in Orch. Rev. 22 (1914) 253, fig. 29.

*Cypripedium laevigatum* Batem. in Bot. Mag. 91 (1865) t. 5508; Dombraïn in Paxt. Floral Mag. 5 (1866) t. 298; Morr. in Belg. Hort. 17 (1867) 102, t. 6; Van Houtte in Fl. des Serres 17 (1869) 83, t. 1760-61; Batem. Second Cent. Orch. Pl. (1867) t. 101; Naves Novis. App. (1882) 251; Ceron Cat. Pl. Herb. Manila (1892) 169.

*Cypripedium roebbelenii* Reichb. f. in Gard. Chron. II 20 (1883) 684; Kränzl. Xen. Orch. 3 (1893) 113, t. 265, Orch. Gen. et Sp. 1 (1897) 47.

*Selenipedium laevigatum* May in Rev. Hort. 57 (1885) 301.

*Cypripedium cannartianum* Hort ex L. Linden in Lindenia 3 (1887) 93, t. 141.

*Cypripedium roebbelenii* Reichb. f. var. *cannartianum* L. Linden in Lindenia 3 (1887) 93, in syn.

*Paphiopedilum laevigatum* Pfitz. in Engl. & Prantl Pflanzenfam. 2, Abt. 6 (1888) 84.

*Cypripedium philippinense* Reichb. f. var. *platytaenium* Desbois Bull. Orchidéenne (1890), *Cypriped.* (1898) 285.



*Phapiopedilum philippinense* Stein Orchideenb. (1892) 480; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41, in Engl. Pflanzenreich IV. 50 (1903) 61, fig. 28 A-E; Ames Orch. 2 (1908) 19, 5 (1915) 10.

*Paphiopedilum roebelinii* Stein Orchideenb. (1892) 480, 482, in syn.; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41 (as *roëbelinii*), in Engl. Pflanzenreich IV. 50 (1903) 62.

*Paphiopedilum philippinense* Stein var. *platytaenium* Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 61; Ames Orch. 2 (1908) 20.

*Paphiopedilum philippinense* Stein var. *cannaertianum* Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 62 (as *cannaertianum*); Ames Orch. 2 (1908) 20; Memml. in Orchis 14 (1920) 18.

*Paphiopedilum philippinense* Stein var. *roebbelenii* Kerchové apud Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 62, in syn.; Ames Orch. 2 (1908) 20.

*Cypripedium philippinense* Reichb. f. var. *roebbelenii* Veitch apud Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 62, in syn.

Palawan (Apulit Island), Merrill 9423.

## 2. HERMINIUM R. Brown

- HERMINIUM ANGUSTIFOLIUM** (Lindl.) Benth. ex Hook. f. Fl. Brit. Ind. 6 (1890) 129; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 332, t. 434; Kränzl. Orch. Gen. et Sp. 1 (1901) 553; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 25, Fig.-Atlas (1908) fig. 7; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 197; Ames Orch. 2 (1908) 25, 5 (1915) 12; Merr. in Philip. Journ. Sci. 13 (1918) Bot. 135.
- Aceras angustifolia* Lindl. in Wall. Cat. (1832) No. 7061, nomen; Lindl. in Bot. Reg. 18 (1832) sub t. 1525; Lindl. Gen. & Sp. Orch. (1835) 282; Wight Icon. 5<sup>1</sup> (1852) 11, t. 1691.
- Aceras longicurvius* C. Wright ex A. Gray in Mem. Am. Acad. II 6 (1858) 411.

Luzon (Bontoc, Lepanto, Benguet). Reasonably common in this region at about 2,000 to 2,300 m altitude. In British India, China, Japan, and Java.

## 3. HABENARIA Willdenow

- HABENARIA ALAGENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 312, Orch. 5 (1915) 12.

*Habenaria luzonensis* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1550.

Luzon (Tayabas, Sorsogon), Catanduanes, Mindoro, Leyte, Mindanao (Camiguin Island), Elmer 7254, 7636a, 15474, 15748, B. S. 28510 Ramos & Edaña, 14440 Ramos, Merrill 5803, Wenzel 0971, 0972, 0984, Ramos s. n. Terrestrial, apparently near streams, up to 3,000 m in Mindoro.

- HABENARIA ANGUSTATA** (Blume) Ktze. Rev. Gen. Pl. 2 (1891) 664; Ames in Philip. Journ. Sci. 2 (1907) Bot. 312; Orch. 2 (1908) 26, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 137.

*Mecosa angustata* Blume Bijdr. (1825) 404, fig. 1.

*Platanthera angustata* Lindl. Gen. & Sp. Orch. (1835) 290; Reichb. f. in Bonpl. 5 (1857) 34; Miq. Fl. Ind. Bat. 3 (1859) 714; Naves Novis. App. (1882) 251; Kränzl. Orch. Gen. et Sp. 1 (1899) 647; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 29, Fig.-Atlas (1908) fig. 12.

*Platanthera amesiana* Schltr. in Fedde Repert. 9 (1911) 212.

*Habenaria amesiana* Ames Orch. 5 (1915) 12.

Luzon (Benguet, Bataan, Laguna, Albay), Negros (Oriental Negros), Mindanao (Camiguin Island), *B. S. 31983 Santos, 14442 Ramos, 2948 Mearns, Ramos & Edaño s. n., Whitford 162, Elmer 10002, Merrill 7494.* In Java and Borneo.

**HABENARIA ARISTULIFERA** Reichb. f. in Bonpl. 3 (1855) 213; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 273; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 84, Orch. Gen. et Sp. 1 (1897) 231; Ames Orch. 2 (1908) 32, 5 (1915) 13.

*Habenaria cumingii* Kränzl. Orch. Gen. et Sp. 1 (1898) 262; Ames Orch. 5 (1915) 13.

Luzon (Rizal, Laguna), Alabat, Mindanao (Davao), *Cuming 2091, Wilkes Exped., B. S. 12530, 14590, 16957 Ramos, Weber 283, Merrill 10435, Taylor 9, 10.*

**HABENARIA BISAETA** Ames Orch. 2 (1908) 30, *text cut*, 5 (1915) 13.

*Habenaria tipulifera* Par. & Reichb. f. apud Vidal Phan. Cuming. Philip. (1885) 151; Vidal Rev. Pl. Vasc. Filip. (1886) 273; Ames Orch. 5 (1915) 15.

Luzon (Bontoc, Benguet), *Cuming 2095, Vanoverbergh 788, 1359, 1480, R. S. Williams 1936, Merrill 4325, F. B. 4887 Curran, B. S. 4461 Mearns, Ramos & Edaño 57, 73.* Terrestrial in mountain regions at about 1,300 to 2,300 m altitude.

**HABENARIA BOADANENSIS** Ames Orch. 7 (1922) 153.

Luzon (Benguet), *Ramos & Edaño 78.* Mt. Boadan, on open slopes at 2,000 m altitude.

**HABENARIA CONGESTA** Ames Orch. 2 (1908) 38, *text cut*, 5 (1915) 13; Merr. Fl. Manila (1912) 167.

Luzon (Lepanto), Panay (Antique), Guimaras, Busuanga, Culion, Mindanao (Zamboanga), Jolo, *Merrill 4479, Yoder 26, s. n., B. S. 18008 Robinson, 41397 Lopez, 41333 Ramos, Hallier s. n., F. Link s. n.* Apparently in dry open situations at low altitude.

**HABENARIA COPELANDII** Ames Orch. 2 (1908) 29, *text cut*, 5 (1915) 13.

Luzon (Bontoc, Nueva Ecija, Bataan, Rizal, Cavite, Laguna, Batangas), Panay, Culion, Coron, *Vanoverbergh 1320, 3664, 4050, Copeland 1403, Merrill 4172, F. B. 3243 Ahern's collector, B. S. 4588, 22398, 41147, 41321 Ramos, 6139 Robinson, 1248 Mangubat, 26316, 26489 Ramos & Edaño, 32444 McGregor, Native collector s. n.* At about 15 to 1,250 m altitude.

**HABENARIA CURRANII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 2, Orch. 5 (1915) 13.

Luzon (Cagayan, Benguet), *F. B. 17138 Curran, B. S. 12578 Fenix.* Lallocc, edge of forest at 50 m altitude, and Sablan.

**HABENARIA DELESSERTIANA** Kränzl. in Ann. Conserv. Jard. Bot. Genève 1 (1897) 108, Orch. Gen. et Sp. 1 (1897) 233; Ames in Philip. Journ. Sci. 7 (1912) Bot. 2, Orch. 5 (1915) 13.

Luzon (Laguna), Mindanao (Lanao), *Cuning 2086, pro parte, B. S. 12407* McGregor, *M. S. Clemens 865*. Calauan and Camp Keithley.

**HABENARIA DIPHYLLA** (Nim.) Dalz. in Hook. Kew Journ. Bot. 2 (1850) 262; Reichb. f. in Walp. Ann. 3 (1852) 588; Hook. f. Fl. Brit. Ind. 6 (1890) 151; Kränzl. Orch. Gen. et Sp. 1 (1898) 346; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 185, t. 137; Ames Orch. 2 (1908) 37, 5 (1915) 13.

*Liparis diphyllus* Nim. in Grah. Cat. Bomb. Pl. (1839) 252.

*Habenaria jerdoniana* Wight Icon. 5<sup>1</sup> (1852) 14, t. 1715; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 154.

*Habenaria sutteri* Reichb. f. in Linnaea 25 (1852) 229.

*Habenaria cordata* Naves Novis. App. (1882) 250; Merr. Sp. Blancoanae (1918) 21, non R. Br.

*Habenaria ahernii* Schltr. in Engl. Bot. Jahrb. 53 (1915) 502.

Luzon (Ilocos Norte, Rizal, Laguna), *F. B. 3241 Ahern's collector, Ramos 1071, 4668, B. S. 21331, 32754 Ramos, Native collector s. n.* In India.

**HABENARIA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1550, Orch. 5 (1915) 14.

Mindanao (Davao), *Elmer 11845a*. Todaya, Mt. Apo.

**HABENARIA FALCIGERA** Reichb. f. in Linnaea 41 (1876) 100; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 153, Orch. Gen. et Sp. 1 (1898) 345; Ames Orch. 2 (1908) 36, 5 (1915) 14.

Luzon (Bontoc, Benguet), *Wallis s. n., Vanoverbergh 1239, B. S. 8792* McGregor, *4332 Mearns, F. B. 4884 Curran*.

**HABENARIA GOODYEROIDES** D. Don Prodr. Fl. Nepal. (1825) 25; Hook. f. Fl. Brit. Ind. 6 (1890) 161 (excl. syn. *P. grandis* Blume); King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 326, t. 430; Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 79; Ames Orch. 2 (1908) 27, 5 (1915) 14, 6 (1920) 8; Schltr. in Engl. Bot. Jahrb. 45, Beibl. No. 104 (1911) 3, in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 5; Merr. Fl. Manila (1912) 167; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 138.

*Herminium goodyeroides* Lindl. in Wall. Cat. (1832) No. 7066, *nomen*.

*Peristylus goodyeroides* Lindl. Gen. & Sp. Orch. (1835) 299, in Bot. Reg. 26 (1840) Misc. 81; Ceron Cat. Pl. Herb. Manila (1892) 169; Grant Orch. Burma (1898) 329 (excl. syn. *P. grandis* Blume); Kränzl. Orch. Gen. et Sp. 1 (1898) 503 (excl. syn. *P. grandis* Blume); J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 32, Fig.-Atlas (1908) fig. 14, in Nova Guinea 12 (1915) Bot. 178.

*Platanthera goodyeroides* Vidal Phan. Cuming. Philip. (1885) 151.

*Habenaria lauterbachii* Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 239, *nomen*.

Luzon (Bontoc, Union, Benguet, Bataan, Rizal, Cavite, Laguna), Panay (Antique), Mindanao (Bukidnon, Lanao). A fairly common species in

the Philippines, especially in Luzon, up to 1,300 m altitude in Bontoc. In India, Yunnan, Assam, Burma, Andaman Islands, Sumatra, Java, Borneo, New Guinea, and Formosa.

**HABENARIA HALCONENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 312, Orch. 5 (1915) 14.

*Platanthera halconensis* Schltr. in Fedde Repert. 9 (1911) 212.

Mindoro, Merrill 5835. Mt. Halcon, terrestrial on open heath at 2,650 m altitude.

**HABENARIA HYSTRIX** Ames Orch. 2 (1908) 35, 5 (1915) 14.

*Dissorhynchium muricatum* Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 434, t. 1, fig. A.

*Habenaria muricata* Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 273; Rolfe in Journ. Bot. 24 (1886) 59; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 140, Orch. Gen. et Sp. 1 (1898) 326; Ames Orch. 1 (1905) 64, non Rodr. (1882).

Luzon (Bataan, Rizal, Cavite, Laguna, Batangas, Tayabas, Sorsogon), Siquijor, Dumarán, Mindanao (Zamboanga). A rather widely distributed species in the Philippines and fairly common in Luzon at about 120 to 300 m altitude. Also in British North Borneo.

**HABENARIA INTRUDENS** Ames Sched. Orch. 6 (1923) 1, fig. 1.

*Habenaria lacertifera* Ames Orch. 2 (1908) 39, 5 (1915) 14, non Benth.

Luzon (Benguet, Bulacan, Rizal), F. B. 5085 Curran, R. S. Williams 1933, B. S. 21706, 21999 Ramos. At 90 to 100 m altitude.

**HABENARIA LEIBERGII** Ames Orch. 2 (1908) 34, text cut, 5 (1915) 14, in Philip. Journ. Sci. 4 (1909) Bot. 600.

Luzon (Ilocos Norte, Bontoc, Bataan, Rizal), B. S. 32866 Ramos, 5266 Topping, Vanoverbergh 620, Leiberg 6112, Reillo s. n. Mountain regions of Luzon.

**HABENARIA LINGULOSA** Ames Orch. 2 (1908) 33, text cut, 5 (1915) 14.

Luzon (Bontoc, Benguet), Vanoverbergh 900, 1525, Merrill 4845. Near streams in mountain regions up to 1,400 m altitude.

**HABENARIA MALINTANA** (Blanco) Merr. Sp. Blancoanae (1918) 112; Ames Orch. 6 (1920) 276.

*Thelymitra malintana* Blanco Fl. Filip. (1837) 642, ed. 2 (1845) 447, ed. 3, 3 (1879) 40; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 85.

*Habenaria pelorioides* Par. & Reichb. f. in Trans. Linn. Soc. 30 (1874) 135, 139, t. 27, fig. A, 1-3; Reichb. f. Otia Bot. Hamb. 1 (1878) 39; Hook. f. Fl. Brit. Ind. 6 (1890) 166; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 85, Orch. Gen. et Sp. 1 (1897) 234; Grant Orch. Burma (1898) 340; Ames Orch. 2 (1908) 31, 5 (1915) 15.

*Habenaria trinervis* Naves Novis. App. (1882) 250, non Wight.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Pangasinan, Tarlac, Zambales, Bataan, Rizal). A common species in Luzon, in the forest, up to 1,300 m altitude in Bontoc. In Burma.

**HABENARIA MEARNsii** Ames in Philip. Journ. Sci. 7 (1912) Bot. 3, Orch. 5 (1915) 15.

Luzon (Benguet), *B. S. 4313 Mearns, 8815, 8835 McGregor*. Pauai and Mt. Pulog, at about 2,300 m altitude.

**HABENARIA MILITARIS** Reichb. f. var. **PHILIPPINENSIS** Ames Orch. 2 (1908) 40, 5 (1915) 15.

Mindanao (Zamboanga, Cotabato, Davao), *Copeland 1425, 1586, Merrill 8299, Weber 214, 287*. Terrestrial in damp soil at 60 to 1,000 m altitude. The variety endemic, the species a native of Cochinchina and China.

**HABENARIA PONEROSTACHYS** Reichb. f. in Bonpl. 3 (1855) 213; Kränzl. in Engl. Bot. Jahrb. 16 (1892) 179, Orch. Gen. et Sp. 1 (1898) 385; Ames in Philip. Journ. Sci. 7 (1912) Bot. 4, Orch. 5 (1915) 15.

Leyte, Negros, Mindanao (Camiguin Island, Cotabato), *Cuming 2095, Wenzel 0636, Merrill 7022, B. S. 14415 Ramos, Weber 200*. Terrestrial in forest at 230 to 1,600 m altitude.

**HABENARIA RETICULATA** Ames Orch. 7 (1922) 154.

Luzon (Benguet), *Ramos & Edaña 108*. Mt. Pulogloko, on open pine slopes, at 2,000 m altitude.

**HABENARIA ROBINSONII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 5, Orch. 5 (1915) 15.

Luzon (Laguna, Batangas, Tayabas), *Merrill 1095, 6306, B. S. 9666 Robinson, 25541 Yates, F. B. 29030 Sulit*.

**HABENARIA ROSULATA** Ames in Philip. Journ. Sci. 7 (1912) Bot. 5, Orch. 5 (1915) 15.

Luzon (Tayabas), *B. S. 13203 Foxworthy & Ramos*. Quinatacutan.

**HABENARIA VANOVERBERGHII** Ames Orch. 5 (1915) 15.

Luzon (Bontoc), *Vanoverbergh 3687*. In wet soil, at 1,300 m altitude.

**HABENARIA WARBURGIANA** Kränzl. Orch. Gen. et Sp. 1 (1898) 467; Ames Orch. 5 (1915) 16.

Luzon (Ilocos Norte, Bontoc, Zambales), *Warburg s. n., Vanoverbergh 567, 3654, 3923, B. S. 32841 Ramos*. Up to 1,300 m altitude in Bontoc.

**HABENARIA ZEPHYRICA** Ames Orch. 5 (1915) 16.

Mindanao (Lanao), *M. S. Clemens s. n.*, Lake Lanao, Camp Keithley, terrestrial.

#### EXCLUDED OR SYNONYMOUS SPECIES

**HABENARIA AHERNII** Schltr. in Engl. Bot. Jahrb. 53 (1915) 502 = *Habenaria diphylla* (Nim.) Dalz.

**HABENARIA AMESIANA** Ames Orch. 5 (1915) 12 = *Habenaria angustata* (Blume) Ktze.

**HABENARIA CORDATA** Naves Novis. App. (1882) 250; Merr. Sp. Blancoanae (1918) 21 = *Habenaria diphylla* (Nim.) Dalz.

**HABENARIA CUMINGII** Kränzl. Orch. Gen. et Sp. 1 (1897) 262; Ames Orch. 5 (1915) 13 = *Habenaria aristulifera* Reichb. f.

- HABENARIA GRAMINEA Lindl. apud Naves Novis. App. (1882) 251.
- HABENARIA LACERTIFERA Ames Orch. 2 (1908) 39, 5 (1915) 14, non Benth.  
= *Habenaria intrudens* Ames.
- HABENARIA LUZONENSIS Ames in Elm. Leafl. Philip. Bot. 5 (1912) 1550 =  
*Habenaria alagensis* Ames.
- HABENARIA MURICATA Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl.  
Vasc. Filip. (1886) 273; Rolfe in Journ. Bot. 24 (1886) 59;  
Kränzl. in Engl. Bot. Jahrb. 16 (1892) 140, Orch. Gen. et Sp. 1  
(1898) 326; Ames Orch. 1 (1905) 64, non Rodr. (1882) = *Habe-  
naria hystrix* Ames.
- HABENARIA PELORIOIDES Par. & Reichb. f. in Trans. Linn. Soc. 30 (1874)  
135, 139, t. 27, fig. A, 1-3; Kränzl. in Engl. Bot. Jahrb. 16  
(1892) 85, Orch. Gen. et Sp. 1 (1897) 234; Ames Orch. 2 (1908)  
31, 5 (1915) 15 = *Habenaria malintana* (Blanco) Merr.
- HABENARIA RUMPHII Lindl. apud Naves Novis. App. (1882) 250.
- HABENARIA THISBE Vidal Phan. Cuming. Philip. (1885) 151 = *Oberonia  
thisbe* Reichb. f.
- HABENARIA TIPULIFERA Par. & Reichb. f. apud Vidal Phan. Cuming.  
Philip. (1885) 151; Vidal Rev. Pl. Vasc. Filip. (1886) 273; Ames  
Orch. 5 (1915) 15 = *Habenaria bisaeta* Ames.
- HABENARIA TRINERVIS Naves Novis. App. (1882) 250, non Wight = *Ha-  
benaria malintana* (Blanco) Merr.

#### 4. DISPERIS Swartz

- DISPERIS PHILIPPINENSIS Schltr. in Fedde Repert. 9 (1911) 436;  
Ames Orch. 5 (1915) 17.

Luzon (Pampanga, Batangas, Sorsogon), *Merrill 4215, Curran & Mer-  
ritt s. n., Elmer 17355*. Terrestrial at 300 to 700 m altitude.

#### 5. THELYMITRA Blume

- THELYMITRA JAVANICA Blume Bijdr. (1825) 419; Lindl. Gen. & Sp.  
Orch. (1840) 519; Blume Fl. Jav. Orch. (1858) 116 (Orch. Arch.  
Ind. 137), t. 44, fig. 3, t. 48A; Miq. Fl. Ind. Bat. 3 (1859) 737; J. J.  
Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 45, Fig.-Atlas (1908) fig.  
25; Ames Orch. 2 (1908) 41, 5 (1915) 18.

Luzon (Bontoc, Benguet), *Vanoverbergh 1357, 1476, R. S. Williams  
1944, Merrill 4848, F. B. 4998 Curran, B. S. 4325 Mearns, 31929 Santos,  
Ramos & Edaño 61, 63*. On open slopes at 1,350 to 2,300 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

- THELYMITRA MALINTANA Blanco Fl. Filip. (1837) 642, ed. 2 (1845) 447,  
ed. 3, 3 (1879) 40; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905)  
85 = *Habenaria malintana* (Blanco) Merr.

## 6. MICROTIS R. Brown

**MICROTIS UNIFOLIA** (Forst. f.) Reichb. f. Beitr. Syst. Pflanzenk. (1871) 62; Kränzl. in Engl. Bot. Jahrb. 6 (1885) 55; Ames Orch. 1 (1905) 65, 2 (1908) 41, 5 (1915) 18; J. J. Sm. Orch. Jav. Fig.-Atlas (1908) fig. 26; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

*Ophrys unifolia* Forst. f. Fl. Ins. Austral. Prodr. (1786) 59.

*Epipactis porrifolia* Sw. in Kongl. Svensk. Vet.-Akad. Nya Handl. 21 (1800) 233.

*Microtis rara* R. Br. Prodr. Nov. Holl. (1810) 321; Lindl. Gen. & Sp. Orch. (1840) 396; Hook. f. Fl. Tasm. 2 (1860) 24; Reichb. f. Beitr. Syst. Pflanzenk. (1871) 22.

*Microtis porrifolia* R. Br. Prod. Nov. Holl. (1810) 320, by inference only; Spreng. Syst. Veg. 3 (1826) 713; Hook. f. Fl. N. Zeal. 1 (1853) 245; Benth. Fl. Austral. 6 (1873) 347; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 47.

*Microtis banksii* A. Cunn. ex Hook. in Bot. Mag. 62 (1835) sub t. 3377.

*Microtis pulchella* Lindl. Gen. & Sp. Orch. (1840) 395; Hook. f. Fl. Tasm. 2 (1860) 24, t. 118, non R. Br.

*Microtis arenaria* Lindl. Gen. & Sp. Orch. (1840) 396; Hook. f. Fl. Tasm. 2 (1860) 24.

*Microtis frutetorum* Schlechtendal in Linnaea 20 (1847) 568; Reichb. f. in Walp. Ann. 1 (1849) 807.

*Microtis javanica* Reichb. f. in Bonpl. 5 (1857) 36.

Luzon (Bontoc, Lepanto, Benguet), *Vanoverbergh 743, 1356, 1479, R. S. Williams 1935, Merrill 4345, Topping 97, B. S. 31930a Santos, Ramos & Edaño 98, F. B. 16344 Curran, Merritt, & Zschokke*. Grassy slopes up to 1,300 m altitude in Bontoc. In Java and Australia.

## 7. CORYBAS Salisbury

**CORYBAS MERRILLII** Ames Orch. 2 (1908) 42, 5 (1915) 19; Schltr. in Fedde Repert. 19 (1923) 20.

*Corysanthes merrillii* Ames Orch. 1 (1905) 65, text cut.

Luzon (Bataan, Laguna), *Merrill 3871, Whitford 451, Leiberg 6074, B. S. 26664 Brown, Elmer 17939*. Mt. Mariveles and Mt. Maquiling, terrestrial on mossy cliffs.

## 8. CRYPTOSTYLIS R. Brown

**CRYPTOSTYLIS ARACHNITES** (Blume) Hassk. Cat. Hort. Bogor. (1844) 48; Reichb. f. in Bonpl. 5 (1857) 36; Blume Fl. Jav. Orch. (1858) 112 (Orch. Arch. Ind. 133), t. 45, fig. 2; Hook. f. Fl. Brit. Ind. 6 (1890) 118; Ridl. in Journ. Linn. Soc. 32 (1896) 407; Trim. Handb. Fl. Ceyl. 4 (1898) 209; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 59, Fig.-Atlas (1908) fig. 37; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 225; Ames Philip. Journ. Sci. 2 (1907) Bot. 313, Orch. 2 (1908) 44, 5 (1915) 19, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 139.

*Zosterostylis arachnites* Blume Bijdr. (1825) 419, fig. 32; Lindl. Gen. & Sp. Orch. (1840) 446; Miq. Fl. Ind. Bat. 3 (1859) 721; Hook. in Bot. Mag. 89 (1863) t. 5381.

*Zosterostylis zeylanica* Lindl. Gen. & Sp. Orch. (1840) 446; Thw. Enum. Pl. Zeyl. (1864) 312.

*Zosterostylis walkerae* Wight Icon. 5<sup>1</sup> (1852) 20, t. 1748 IV.

*Cryptostylis philippinensis* Schltr. in Engl. Bot. Jahrb. 58 (1922) 54.

Luzon (Apayao, Rizal, Tayabas, Sorsogon), Polillo, Mindoro, Biliran, Leyte, Negros (Occidental Negros), Mindanao (Camiguin Island, Davao). A common, variable, and widely distributed species in the Philippines. Terrestrial, in forest at 30 to 1,000 m altitude. In India, Ceylon, Malay Peninsula, Java, and Borneo (Sarawak).

J. J. Smith, in Bull. Jard. Bot. Buitenz. III 3 (1921) 239, expresses doubt as to *B. S. 20462* being referable to *Cryptostylis arachnites*. A re-examination of all available specimens from the Philippines indicates that there is only one species present. I cannot separate this from *C. arachnites*. It is probable that Smith in studies of living material has been able to detect differences among the species of *Cryptostylis* allied with *C. arachnites* which are evanescent in herbarium specimens. *Cryptostylis arachnites* is a very variable species, flowers on the same raceme exhibiting a wide range of variation in the labellum.

#### EXCLUDED OR SYNONYMOUS SPECIES

CRYPTOSTYLIS PHILIPPINENSIS Schltr. in Engl. Bot. Jahrb. 58 (1922) 54 =  
*Cryptostylis arachnites* (Blume) Hassk.

#### 9. GALEOLA Loureiro

GALEOLA ALTISSIMA (Blume) Reichb. f. Xen. Orch. 2 (1865) 77; Hook. f. Fl. Brit. Ind. 6 (1890) 98; Grant Orch. Burma (1895) 349; Ridl. in Journ. Linn. Soc. 32 (1896) 395; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 67, Fig.-Atlas (1908) fig. 44; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 202; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 139.

*Cyrtosia altissima* Blume Bijdr. (1825) 396, Rumphia 1 (1835) t. 70; Lindl. Gen. & Sp. Orch. (1830) 26.

*Erythrorchis altissima* Blume Rumphia 1 (1835) 200; Lindl. Gen. & Sp. Orch. (1840) 438, p. p.; Reichb. f. in Walp. Ann. 3 (1852) 602; Miq. Fl. Ind. Bat. 3 (1859) 720.

*Haematorchis altissima* Blume Rumphia 4 (1848) t. 200 B.

Luzon (Cagayan), *F. B. 17812 Curran, B. S. 13985 Ramos*. In Malay Peninsula, Burma, and Java.

GALEOLA KUHLLII Reichb. f. Xen. Orch. 2 (1865) 78; Naves Novis. App. (1882) 247.

*Vanilla pterosperma* Lindl. in Wall. Cat. (1832) No. 7402, *nomen*.

*Erythrorchis altissima* Lindl. Gen. & Sp. Orch. (1840) 438, p. p., non Blume.

*Erythrorchis kuhllii* Reichb. f. Xen. Orch. 2 (1862) t. 119.

*Galeola hydra* Reichb. f. Xen. Orch. 2 (1865) 77; Hook. f. Fl. Brit. Ind. 6 (1890) 89; Grant Orch. Burma (1895) 350; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 264, t. 351; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 68, Fig.-Atlas



(1908) *fig. 45*; Ames in Philip. Journ. Sci. 2 (1907) Bot. 313; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 202; Ames Orch. 2 (1908) 46.

*Galeola pterosperma* Schltr. in Engl. Bot. Jahrb. 45 (1910) 386; J. J. Sm. in Bull. Jard. Bot. Buitenz. II 9 (1913) 10; Ames Orch. 5 (1915) 19.

Babuyan Islands (Camiguin Island), Luzon (Rizal, Laguna, Tayabas, Sorsogon), Mindoro, Samar, Panay (Capiz), Leyte, Mindanao (Lanao, Davao). A common and widely distributed species in the Philippines at 75 to 180 m altitude. In Sikkim, Himalaya, Burma, Malay Peninsula, Java, and Sumatra.

The valid name of this species has been a source of difference of opinion. It has been most widely known as *Galeola hydra* Reichb. f., but in 1910 Schlechter proposed the combination *Galeola pterosperma* (Lindl.) Schltr. In doing so he overlooked the fact that the name-bringing synonym *Vanilla pterosperma* Lindl. is a *nomen nudum* and has no standing. The earliest valid name is *Galeola kuhlii* Reichb. f., published in Xen. Orch. 2 (1865) 78, in which Reichenbach cites, in synonymy, the plate published prior to the description [Xen. Orch. 2 (1862) t. 119]. This plate was published as *Erythrorchis kuhlii* and has full analytical drawings. According to the international rules adopted at Vienna in 1905 (Sect. 4, Art. 37) this plate constitutes valid publication.

**GALEOLA PHILIPPINENSIS** Ames Sched. Orch. 6 (1923) 5.

Luzon (Sorsogon), *Elmer 16122*.

#### EXCLUDED OR SYNONYMOUS SPECIES

**GALEOLA HYDRA** Reichb. f. Xen. Orch. 2 (1865) 77; Ames in Philip. Journ. Sci. 2 (1907) Bot. 313, Orch. 2 (1908) 46 = *Galeola kuhlii* Reichb. f.

**GALEOLA PTEROSPERMA** Schltr. in Engl. Bot. Jahrb. 45 (1910) 386; Ames Orch. 5 (1915) 19 = *Galeola kuhlii* Reichb. f.

#### 10. VANILLA Swartz

**VANILLA CALOPOGON** Reichb. f. in Otia Bot. Hamb. 1 (1878) 40; Rolfe in Journ. Linn. Soc. 32 (1896) 459; Ames Orch. 5 (1915) 21, 6 (1920) 277.

Luzon (Ilocos Norte), *Cuming 2070, Loher 630, B. S. 32928 Ramos*.

**VANILLA OVALIS** Blanco Fl. Filip. ed. 2 (1845) 448, ed. 3, 3 (1879) 42; Ames Orch. 5 (1915) 21; Merr. Sp. Blancoanae (1918) 112.

*Epidendrum vanilla* Blanco Fl. Filip. (1837) 643, non Linn.

*Vanilla majajensis* Blanco Fl. Filip. ed. 2 (1845) 593, ed. 3, 3 (1879) 43.

*Vanilla planifolia* Ait. apud Naves Novis. App. (1882) 248.

*Vanilla aromatica* Sw. apud Naves Novis. App. (1882) 248.

*Vanilla philippinensis* Rolfe in Journ. Linn. Soc. 32 (1896) 459; Ames Orch. 2 (1908) 47.

Luzon (Bulacan, Rizal, Laguna, Tayabas, Sorsogon), Sibuyan, Biliran, Mindanao (Dapitan, Lanao, Butuan), *Cuming 2132, Merrill Sp. Blancoanae 665, Holman s. n., Serrato s. n., Elmer 9259, 12534, 16035, F. B. 4585 Mearns & Hutchinson, 28614 Sulit, B. S. 19346 Wester, 18952 McGregor, M. S. Clemens s. n.*

## EXCLUDED OR SYNONYMOUS SPECIES

- VANILLA ALBIDA Blume apud Naves Novis. App. (1882) 248.
- VANILLA APHYLLA Blume apud Naves Novis. App. (1882) 248.
- VANILLA AROMATICA Sw. apud Naves Novis. App. (1882) 248 = *Vanilla ovalis* Blanco.
- VANILLA PHILIPPINENSIS Rolfe in Journ. Linn. Soc. 32 (1896) 459; Ames Orch. 2 (1908) 47 = *Vanilla ovalis* Blanco.
- VANILLA PLANIFOLIA Ait. apud Naves Novis. App. (1882) 248 = *Vanilla ovalis* Blanco.
- VANILLA MAJAIJENSIS Blanco Fl. Filip. ed. 2 (1845) 593, ed. 3, 3 (1879) 43 = *Vanilla ovalis* Blanco.
- VANILLA SPECIOSA Boxall ex Vidal ex Naves Novis. App. (1882) 248, *nomen*.

## 11. LECANORCHIS Blume

- LECANORCHIS JAVANICA Blume Mus. Bot. Lugd.-Bat. 2 (1856) 188, Fl. Jav. Orch. (1858) 150 (Orch. Arch. Ind. 178), t. 63, fig. 1, t. 66A; Miq. Fl. Ind. Bat. 3 (1859) 718; J. J. Sm. in Nova Guinea 8 (1909) Bot. 136, 12 (1913) 7, 12<sup>3</sup> (1915) 185, in Bull. Dept. Agr. Ind. Néerl. 43 (1910) 1; Ames Orch. 6 (1920) 277.
- Lecanorchis triloba* J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 19 (1908) 26, in Nova Guinea 8 (1909) Bot. 10, t. 3, fig. 9; Ames Orch. 5 (1915) 21.

Luzon (Laguna, Sorsogon), Leyte, Mindanao (Agusan), B. S. 22961 McGregor, Elmer 16369, Wenzel 0120, 0282, 0851, Weber 71. Terrestrial, in damp forest, at 150 to 320 m altitude. In Java and New Guinea.

J. J. Smith, in Nova Guinea 12<sup>3</sup> (1915) 185, suggests that *Lecanorchis papuana* Schltr. is the same as this species.

## EXCLUDED OR SYNONYMOUS SPECIES

- LECANORCHIS TRILOBA J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 19 (1908) 26; Ames Orch. 5 (1915) 21 = *Lecanorchis javanica* Blume.

## 12. APHYLLORCHIS Blume

- APHYLLORCHIS BENGUETENSIS Ames Orch. 2 (1908) 49, *text cut*, 5 (1915) 22.

Luzon (Benguet, Laguna), Mindanao (Agusan, Davao), F. B. 5086 Curran, B. S. 16565 Ramos, Serrato s. n., Elmer 11848, 13841.

- APHYLLORCHIS HALCONENSIS Ames Sched. Orch. 6 (1923) 7.

Mindoro, Ramos & Edaña s. n. Terrestrial at 1,000 m altitude.

- APHYLLORCHIS PALLIDA Blume Bijdr. (1825) fig. 77 (without description); Lindl. Gen. & Sp. Orch. (1840) 536 (mention only); Blume Mus. Bot. Lugd.-Bat. 1 (1849) 30, Fl. Jav. Orch. (1858) 43 (Orch. Arch. Ind. 52), t. 13, fig. 1 and t. 17D; Miq. Fl. Ind. Bat. 3 (1859) 721; Hook. f. Fl. Brit. Ind. 6 (1890) 117; Ridl. in Journ. Linn. Soc. 32 (1896) 405; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 71, Fig.-Atlas (1908) fig. 47; Ridl. Mat. Fl. Mal. Penin.

1 (1907) 205; Ames in Philip. Journ. Sci. 2 (1907) Bot. 313, Orch. 2 (1908) 50, 5 (1915) 22, 6 (1920) 11, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 139.

Mindoro, *Merrill 5810, 5811*. Terrestrial in humid forest, Mt. Halcon and vicinity, at 330 to 930 m altitude. In Malay Peninsula, Java, and Borneo.

### 13. EPIPOGUM Gmelin

**EPIPOGUM ROSEUM** (D. Don) Lindl. in Journ. Linn. Soc. 1 (1857) 177; Ames Orch. 2 (1908) 48, 5 (1915) 22.

*Limodorum roseum* D. Don Prodr. Fl. Nepal. (February, 1825) 30.

*Galera nutans* Blume Bijdr. (July, 1825) 416, fig. 3; Lindl. Gen. & Sp. Orch. (1840) 500; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 187, Fl. Jav. Orch. (1858) 117 (Orch. Arch. Ind. 139) t. 52, fig. 3, t. 54E.

*Ceratopsis rosea* Lindl. Gen. & Sp. Orch. (1840) 384.

*Podanthera pallida* Wight Icon. 5<sup>1</sup> (1852) 22, t. 1759.

*Galera rosea* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 188, Fl. Jav. Orch. (1858) 117 (Orch. Arch. Ind. 139).

*Galera pallida* Blume Fl. Jav. Orch. (1858) 117 (Orch. Arch. Ind. 139), in obs.

*Epipogum nutans* Reichb. f. in Bonpl. 5 (February, 1857) 36; Lindl. in Journ. Linn. Soc. 1 (1857) 177; Miq. Fl. Ind. Bat. 3 (1859) 718; Thw. Enum. Pl. Zeyl. (1864) 311; Benth. Fl. Austral. 6 (1873) 308; Hook. f. Fl. Brit. Ind. 6 (1890) 124; Fitzger. Austral. Orch. 2<sup>5</sup> (1896) t.; Rolfe in Dyer. Fl. Trop. Afr. 7 (1897) 188; Trim. Handb. Fl. Ceyl. 4 (1898) 222; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 253, t. 335; Ames Orch. 1 (1905) 68; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 61, Fig.-Atlas (1908) fig. 39; Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 37; J. J. Sm. in Nova Guinea 12<sup>3</sup> (1915) 185.

*Epipogum guilfoylei* F. v. Muell. Fragm. 8 (1873) 30, comb. non faciet, ex Benth. Fl. Austral. 6 (1873) 308, in syn.

.Luzon (Nueva Vizcaya, Laguna), Mindoro, Leyte, Negros (Oriental Negros), Mindanao (Lanao, Davao), *Merrill 231, Copeland 1241, 5623, Gates 6317, B. S. 17915 Brown, Wenzel 0284, 0289, 0427, Elmer 9467, 10536, M. S. Clemens s. n., Weber 277, Ramos s. n.* Terrestrial in forest, at 500 to 700 m altitude. In India, Ceylon, Java, New Guinea, Australia, and Africa.

#### EXCLUDED OR SYNONYMOUS SPECIES

**EPIPOGUM NUTANS** Reichb. f. in Bonpl. 5 (February, 1857) 36; Ames Orch. 1 (1905) 68 = *Epipogum roseum* (D. Don) Lindl.

### 14. NERVILIA Commerson ex Gaudichaud

**NERVILIA ARAGOANA** Gaudich. in Freyc. Voy. Uranie et Physic. Bot. (1829) 422, t. 35; Schltr. in Engl. Bot. Jahrb. 45 (1911) 405 (excl. syn. *Pogonia gracilis* Blume), in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 3, in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 43; J. J. Sm. in Nova Guinea 12<sup>3</sup> (1915) 182; Ames Orch. 5 (1915) 23.

*Pogonia flabelliformis* Lindl. in Wall. Cat. (1832) No. 7400, *nomen*, Gen. & Sp. Orch. (1840) 415; Miq. Fl. Ind. Bat. 3 (1859) 715; Naves Novis. App. (1882) 248; Hook. f. Fl. Brit. Ind. 6 (1890) 121; Grant Orch. Burma (1895) 353; Ridl. in Journ. Linn. Soc. 32 (1896) 408; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 57, Fig.-Atlas (1908) fig. 36, Orch. Amb. (1905) 10; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 158, t. 125; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 203.

*Pogonia carinata* Wight Icon. 5<sup>1</sup> (1852) 15, t. 1720, non Lindl.

Luzon (Zambales, Rizal, Laguna), Mindanao (Lanao), *Sandkuhl* s. n., B. S. 22683 Ramos, 17918 Brown, M. S. Clemens s. n., 546. Terrestrial, in forest. In India, Burma, Malay Peninsula, Java, Sumatra, and New Guinea, and said to extend to Samoa.

*Pogonia nervilia* Blume is commonly referred to this species as a synonym, but J. J. Smith [in Nova Guinea 8 (1809) 10] treats it as a valid species. Further study is needed to determine its status.

*Pogonia gracilis* Blume is treated by J. J. Smith [Fl. Buitenz. 6 (Orch. Jav.) (1905) 58] as a distinct species, but in his notes Smith states that he regards it as a weak form of *Pogonia flabelliformis* Lindl. which is conspecific with *Nervilia aragoana* Gaudich.

**NERVILIA CRISPATA** (Blume) Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 82, in nota, in Engl. Bot. Jahrb. 45 (1911) 402, in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neuguin.) (1911) 38; Ames Orch. 5 (1915) 23.

*Pogonia crispata* Blume Mus. Bot. Lugd.-Bat. 1 (1849) 32, Fl. Jav. Orch. (1858) 127 (Orch. Arch. Ind. 151), t. 52, fig. 4A-C; Miq. Fl. Ind. Bat. 3 (1859) 716; Reichb. f. Xen. Orch. 2 (1863) t. 126, V, VI, 10, (1865) 87; Naves Novis. App. (1882) 248; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 56, Fig.-Atlas (1908) fig. 35.

*Bolborchis javanica* Zoll. & Mor. Syst. Verz. Java (1845-46) 89; Reichb. f. in Walp. Ann. 1 (1849) 775.

*Coelogyne javanica* Lindl. Fol. Orch. Coelog. (1854) 17.

*Nervilia fimbriata* Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 82.

Palawan, Merrill 9288. Taytay, in forests on dry slopes. In Java and German New Guinea.

*Pogonia prainiana* King & Pantl. has been referred to this species, which would extend the range to India, if this reduction is correct.

**NERVILIA DILATATA** (Blume) Schltr. in Engl. Bot. Jahrb. 45 (1911) 402; Ames Orch. 5 (1915) 23, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 140.

*Pogonia dilatata* Blume Fl. Jav. Orch. (1858) 127 (Orch. Arch. Ind. 151), t. 10, fig. 4, 1 and 2; Ames Orch. 1 (1905) 66.

Luzon (Benguet), Bancalan, Elmer 6259, Merrill 7741, Weber 1574. Grassy hillsides at about 1,600 m altitude. In Borneo.

Although the determination has been carefully made, there is room for uncertainty as to the identity of the Philippine material with the Bornean species. In twenty years but three incomplete specimens have been obtained.

**NERVILIA DISCOLOR** (Blume) Schltr. in Engl. Bot. Jahrb. 45 (1911) 403; Ames Orch. 5 (1915) 23.

*Cordyla discolor* Blume Bijdr. (1825) 417.

*Rophostemon discolor* Blume Fl. Jav. Praef. (1828) VI; Lindl. Gen. & Sp. Orch. (1840) 453.

*Pogonia discolor* Blume Mus. Bot. Lugd.-Bat. 1 (1849) 32, Fl. Jav. Orch. (1858) 128 (Orch. Arch. Ind. 152.), t. 57, fig. 1; Miq. Fl. Ind. Bat. 3 (1859) 716; Hook. f. in Bot. Mag. 100 (1874) t. 6125; Naves Novis. App. (1882) 248.

*Pogonia pudica* Ames Orch. 2 (1908) 44, text cut.

*Pogonia plicata* Ames Orch. 2 (1908) 43, non Lindl.

Luzon (Bontoc, Laguna, Batangas), Panay (Antique), Mindanao (Davao), *Vanoverbergh 459, 1201, 1460, Elmer s. n., 8180, 9346, B. S. 17917 Brown, F. B. 21501 Tamesis, 21331 Foxworthy & Catalan, Copeland 427, R. S. Williams 3088, McLean s. n., McGregor 5748*. Grassy hillsides, at 350 to 1,240 m altitude. In Java.

#### 15. STEREOSANDRA Blume

**STEREOSANDRA JAVANICA** Blume Mus. Bot. Lugd.-Bat. 2 (1856) 176, Fl. Jav. Orch. (1858) 27 (Orch. Arch. Ind. 31), t. 10, fig. 3, t. 11G; Miq. Fl. Ind. Bat. 3 (1859) 717; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 63, Fig.-Atlas (1908) fig. 41; Ames Orch. 1 (1905) 67, 2 (1908) 46, 5 (1915) 24; Schltr. in Engl. Bot. Jahrb. 45 (1911) 406.

Luzon (Benguet, Bataan, Rizal, Sorsogon), Mindanao (Zamboanga, Agusan), *Elmer 6458, 17302, Merrill s. n., B. S. 12124 Ramos, 38349 Brown, Weber 300*. In Java.

#### 16. DIDYMOPLEXIS Griffith

**DIDYMOPLEXIS PALLENS** Griff. in Calc. Journ. Nat. Hist. 4 (1844) 383, t. 17; Kurz in Journ. Bot. 4 (1866) 40 (excl. syns. *Epiphanes* and *Gastrodia*); Hemsl. in Journ. Linn. Soc. 20 (1884) 308; Hook. f. Fl. Brit. Ind. 6 (1890) 122; Ridl. in Journ. Linn. Soc. 32 (1896) 408; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 260, t. 346; J. J. Sm. in Icon. Bogor. 2 (1903) 5, t. 101B, Fl. Buitenz. 6 (Orch. Jav.) (1905) 77, Fig.-Atlas (1908) t. 51; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 206; Ames Orch. 2 (1908) 51, 5 (1915) 24; Schltr. in Engl. Bot. Jahrb. 45 (1911) 408; Merr. Fl. Manila (1912) 165.

? *Leucorchis sylvatica* Blume Mus. Bot. Lugd.-Bat. 1 (1849) 31, Fl. Jav. Orch. (1858) 124 (Orch. Arch. Ind. 147) text cut; Miq. Fl. Ind. Bat. 3 (1859) 722.

? *Arethusa ecristata* Griff. Notul. 3 (1851) 378, Icon. Pl. Asiat. 3 (1851) 343, 344.

? *Apetalon minutum* Wight Icon. 5<sup>1</sup> (1852) 22, t. 1758.

*Epiphanes pallens* Reichb. f. in Seem. Fl. Vit. (1868) 266, in nota.

? *Arethusa bengalensis* Hort. Bot. Calc. ex Hemsl. in Journ. Linn. Soc. 20 (1884) 311, in syn.

Luzon (Pampanga, Rizal, Laguna), *Bolster 27, Loher 6002, F. B. 21333 Foxworthy & Catalan*. Saprophyte, near brooks. In India, Malay Peninsula, and Java.

**DIDYMOPLEXIS PHILIPPINENSIS** Ames Orch. 5 (1915) 24.

Luzon (Camarines), Palawan, Leyte, *B. S.* 22083 Ramos, Merrill 9409. Wenzel 0362. In forest at 6 to 300 m altitude.

17. **GASTRODIA** R. Brown

**GASTRODIA JAVANICA** (Blume) Lindl. Gen. & Sp. Orch. (1840) 384; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 175, Fl. Jav. Orch. (1858) 121 (Orch. Arch. Ind. 145) *t.* 52, *fig.* 1; Miq. Fl. Ind. Bat. 3 (1859) 717; Thw. Enum. Pl. Zeyl. (1864) 311; Naves Novis. App. (1882) 247; Hook. f. Fl. Brit. Ind. 6 (1890) 123; Trim. Handb. Fl. Ceyl. 4 (1898) 221; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 75, Fig.-Atlas (1908) *fig.* 50; Schltr. in Engl. Bot. Jahrb. 45 (1911) 410; Ames in Philip. Journ. Sci. 7 (1912) Bot. 6, Orch. 5 (1915) 25.

*Epiphanes javanica* Blume Bijdr. (1825) 421, *fig.* 4.

Luzon (Pampanga, Tayabas), Mindoro, Palawan, Leyte, Mindanao (Davao), Merrill 4211, 7233, Elmer 7276, Weber 274, *B. S.* 28718 Ramos & Edaña, Ramos s. n. Terrestrial, apparently more general in mountainous regions. In Ceylon (?) and Java.

18. **SPIRANTHES** L. C. Richard

**SPIRANTHES SINENSIS** (Pers.) Ames Orch. 2 (1908) 53, 5 (1915) 26, 6 (1920) 11; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 160, in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 357; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 140.

*Ophrys spiralis* Georgi Bemerk. Reise Russ. Reich. 1 (1775) 232, non Linn.

*Aristotelea spiralis* Lour. Fl. Cochinch. 2 (1790) 522, non *Spiranthes spiralis* Koch.

*Epidendrum aristotelia* Raeusch. Nomencl. Bot. ed. 3 (1797) 265, *nomen*.

*Neottia spiralis*  $\delta$  Willd. Sp. Pl. 4 (1805) 74.

*Neottia sinensis* Pers. Syn. Pl. 2 (1807) 511; Poir. in Lam. Encyc. Suppl. 4 (1816) 85.

*Neottia australis* R. Br. Prodr. Nov. Holl. (1810) 319; Poir. in Lam. Encyc. Suppl. 4 (1816) 86; D. Don Prodr. Fl. Nepal (1825) 27.

*Neottia flexuosa* Sm. in Rees. Cycl. 24 (1819) No. 9.

*Neottia parviflora* Sm. in Rees Cycl. 24 (1819) No. 10, non Blume.

*Neottia amoena* Bieb. Fl. Taur. Cauc. 3 (1819) 606.

*Spiranthes pudica* Lindl. Collect. Bot. (1821) *t.* 30, in Bot. Reg. 10 (1824) sub *t.* 823; Spreng. Syst. Veg. 3 (1826) 708, p. p.

*Neottia australis* R. Br.  $\beta$  *chinensis* Lindl. in Bot. Reg. 7 (1822) *t.* 602.

*Spiranthes australis* Lindl. in Bot. Reg. 10 (1824) sub *t.* 823; Spreng. Syst. Veg. 3 (1826) 708; Lindl. Gen. & Sp. Orch. (1840) 464 (excl. syns. *Neottia strateumatica* R. Br., *Spiranthes strateumatica* Lindl., and *Orchis strateumatica* Linn.); A. Rich. in Ann. Sci. Nat.

- II 15 (1841) 78, Monogr. Orch. Nil.-Gher. (1841) 10, 30; Reichb. f. Icon. Fl. Germ. 13-14 (Orch. Eur.) (1851) 152, t. 124 (476); Wight Icon. 5<sup>1</sup> (1851) 15, t. 1724; Hook. f. Fl. Tasm. 2 (1855) 15; Lindl. in Journ. Linn. Soc. 1 (1857) 178; Miq. Fl. Ind. Bat. 3 (1859) 722; Benth. Fl. Hongk. (1861) 360; Miq. Sumatra (1862) 275; Thw. Enum. Pl. Zeyl. (1864) 312; Hook. f. Handb. N. Zeal. Fl. (1864) 272; Miq. Prol. Fl. Jap. (1866-67) 141; Benth. Fl. Austral. 6 (1873) 314; Franch. & Sav. Enum. Pl. Jap. 2 (1879) 37; Fitzger. Austral. Orch. 1<sup>2</sup> (1880) t. 1; Naves Novis. App. (1882) 249; Kränzl. in Engl. Bot. Jahrb. 6 (1885) 55; Ridl. in Journ. Linn. Soc. 24 (1888) 392; Hook. f. Fl. Brit. Ind. 6 (1890) 102; Kränzl. in Notizbl. Bot. Gart. Berl. 2 (1898) 105; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 278, t. 369; Trim. Handb. Ceyl. Fl. 4 (1898) 217; Palibin Consp. Fl. Korea pt. 3 (1901) 4 [in Act. Hort. Petrop. 19 (1901) 104]; Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 240; Ames Orch. 1 (1905) 69; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 81, Fig.-Atlas (1908) fig. 55; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 163; Nakai in Journ. Coll. Sci. Imp. Univ. Tokyo 31 (Fl. Korea 2) (1911) 225.
- Spiranthes parviflora* Lindl. in Bot. Reg. 10 (1824) sub t. 823.
- Spiranthes flexuosa* Lindl. in Bot. Reg. 10 (1824) sub t. 823; Spreng. Syst. Veg. 3 (1826) 708; Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 352.
- Neottia crispata* Blume Bijdr. (1825) 406.
- Spiranthes amoena* Spreng. Syst. Veg. 3 (1826) 708 (excl. syn. *Spiranthes congesta* Lindl.); Lindl. in Wall. Cat. (1832) No. 7377; Bunge Enum. Pl. Chin. (1831) 63; Ledeb. Fl. Alt. 4 (1833) 173; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 160, in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 349.
- Neottia pudica* Sweet Hort. Brit. ed. 2 (1830) 485.
- Spiranthes wightiana* Lindl. in Wall. Cat. (1832) No. 7378, nomen; Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 359.
- Calanthe australis* Ait. ex Loud. Hort. Brit. Suppl. 2 (1839) 615, nomen.
- Spiranthes longispicata* A. Rich. in Ann. Sci. Nat. II 15 (1841) 78, Monogr. Orch. Nil.-Gher. (1841) 10, 30.
- Spiranthes densa* A. Rich. in Ann. Sci. Nat. II 15 (1841) 78, Monogr. Orch. Nil.-Gher. (1841) 10, 31.
- Spiranthes indica* Steud. Nomencl. Bot. ed. 2, 2 (1841) 625.
- Spiranthes crispata* Zoll. & Mor. Syst. Verz. Java (1845-46) 89; Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 352.
- Spiranthes* Griff. Notul. 3 (1851) 384, Icon. Pl. Asiat. 3 (1851) t. 348.
- Spiranthes novaezelandiae* Hook. f. Fl. N. Zeal. 1 (1853) 243; Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 355; Ames Orch. 7 (1922) 128, in obs.
- Spiranthes australis* Lindl. var. *pudica* Lindl. in Hook. Kew Journ. Bot. 7 (1855) 38.

- Spiranthes stylites* Lindl. in Journ. Linn. Soc. 1 (1857) 178; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 160, in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 358.
- Gyrostachys australis* Blume Fl. Jav. Orch. (1858) 108 (Orch. Arch. Ind. 129).
- Gyrostachys australis* Blume var. *amoena* Blume Fl. Jav. Orch. (1858) 108 (Orch. Arch. Ind. 129).
- Gyrostachys australis* Blume var. *wightiana* Blume Fl. Jav. Orch. (1858) 108 (Orch. Arch. Ind. 129).
- Gyrostachys australis* Blume var. *flexuosa* Blume Fl. Jav. Orch. (1858) 109 (Orch. Arch. Ind. 130) t. 38, fig. 2.
- Gyrostachys australis* Blume var. *parviflora* Blume Fl. Jav. Orch. (1858) 109 (Orch. Arch. Ind. 130).
- Gyrostachys australis* Blume var. *crispata* Blume Fl. Jav. Orch. (1858) 109 (Orch. Arch. Ind. 130) t. 37, fig. 3.
- Gyrostachys amoena* Blume Fl. Jav. Orch. (1858) 108 (Orch. Arch. Ind. 129), text cut only.
- Spiranthes australis* Lindl. var. *wightiana* Lindl. ex Hook. f. Fl. Brit. Ind. 6 (1890) 102.
- Gyrostachys stylites* Ktze. Rev. Gen. Pl. 2 (1891) 664.
- Spiranthes chinensis* Ames apud Schltr. in Notes Roy. Bot. Gard. Edinb. 24 (1912) 105.
- Spiranthes australis* Lindl. var. *suishanensis* Hayata Icon. Fl. Formosa 6 (1916) 86.
- Spiranthes suishanensis* Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 161.
- Gyrostachys crispata* Blume apud Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 352, in syn.
- Gyrostachys flexuosa* Blume apud Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 352, in syn.
- Gyrostachys parviflora* Blume apud Schltr. in Beihefte Bot. Centralbl. 37, Abt. 2 (1920) 352, in syn.

Luzon (Bontoc, Benguet), Mindanao (Agusan), *Vanoverbergh 1269, 3668, 3922, Elmer 6623, R. S. Williams 1923, Merrill 4344, F. B. 4951 Curran, Weber 80*. Terrestrial, at 360 to 1,500 m altitude. In India, Afghanistan, Ceylon, China, Formosa, Japan, Manchuria, Siberia, Java, Sumatra, Borneo, Australia, Tasmania, and New Zealand.

*Spiranthes novaezelandiae* Hook. f. does not appear to be a distinct species, but is probably a good geographic variety of *Spiranthes sinensis* differing in the structure of the column.

#### EXCLUDED OR SYNONYMOUS SPECIES

SPIRANTHES AUSTRALIS Lindl. in Bot. Reg. 10 (1824) sub t. 823; Naves Novis. App. (1882) 249; Ames Orch. 1 (1905) 69, *Spiranthes sinensis* (Pers.) Ames.

SPIRANTHES PUSILLA Miq. apud Naves Novis. App. (1882) 249.

Possibly a form of *Spiranthes sinensis* (Pers.) Ames.



19. *EPIPACTIS* (Haller) Boehmer, non Zinn\*

**EPIPACTES CLAUSA** A. A. Eaton ex Ames Orch. 3 (1908) 41, *t. 38*;  
Ames in Philip. Journ. Sci. 4 (1909) Bot. 663.

*Goodyera clausa* Schltr. in Engl. Bot. Jahrb. 45 (1911) 392; Ames  
Orch. 5 (1915) 26.

Luzon (Lepanto, Benguet, Tayabas), Negros (Occidental Negros),  
*Merrill 4591, 7759, Elmer 8052, Banks s. n.*

**EPIPACTIS ELMERI** Ames Sched. Orch. 6 (1923) 12, *fig. 3*.

Luzon (Sorsogon), *Elmer 14884*.

**EPIPACTIS LUZONENSIS** Ames comb. nov.

*Goodyera luzonensis* Ames Orch. 5 (1915) 26.

Luzon (Tayabas), *B. S. 2465 Foxworthy, Merrill 7488*. Mt. Banahao at  
about 2,000 m altitude.

**EPIPACTIS PHILIPPINENSIS** Ames Orch. 2 (1908) 60, *text cut*.

*Goodyera philippinensis* Schltr. in Engl. Bot. Jahrb. 45 (1911) 392;  
Ames Orch. 5 (1915) 27.

Luzon (Bontoc, Benguet, Zambales, Bataan, Cavite, Laguna), Mindoro.  
Reasonably common in Luzon at 100 to 1,100 m altitude.

**EPIPACTIS RAMOSII** Ames Sched. Orch. 6 (1923) 14.

*Goodyera ramosii* Ames in Philip. Journ. Sci. 8 (1913) Bot. 409, Orch.  
5 (1915) 27.

Mindanao, (Camiguin Island), *B. S. 14421, 14446 Ramos*. On a dead  
tree, in mossy forest.

**EPIPACTIS RUBICUNDA** (Blume) A. A. Eaton in Proc. Biol. Soc. Wash.  
21 (1908) 65; Ames in Philip. Journ. Sci. 4 (1909) Bot. 664.

*Neottia rubicunda* Blume Bijdr. (1825) 408.

*Neottia grandis* Blume Bijdr. (1825) 407; Lindl. Gen. & Sp. Orch.  
(1840) 494.

*Goodyera rubicunda* Lindl. in Bot. Reg. 25 (1839) Misc. 61, Gen. &  
Sp. Orch. (1840) 493, in Journ. Linn. Soc. 1 (1857) 184; Miq. Fl.  
Ind. Bat. 3 (1859) 728; Naves Novis. App. (1882) 248; J. J. Sm.  
Fl. Buitenz. 6 (Orch. Jav.) (1905) 121, Fig.-Atlas (1909) *fig. 88*;  
Ames Orch. 5 (1915) 27.

*Speiranthos grandis* Hassk. Cat. Pl. Bogor. (1844) 47.

*Goodyera rubens* Blume Fl. Jav. Orch. (1858) 36 (Orch. Arch. Ind.  
43) *t. 9c, figs. 17-26, t. 9d, fig. 1*; Hook. f. Fl. Brit. Ind. 6 (1890)  
111; Ridl. in Journ. Linn. Soc. 32 (1896) 403, Mat. Fl. Mal. Penin.  
1 (1907) 219.

*Goodyera grandis* Blume Fl. Jav. Orch. (1858) 36 (Orch. Arch. Ind.  
43); Miq. Fl. Ind. Bat. 3 (1859) 728; Naves Novis. App. (1882)  
248.

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\* Zinn's *Epipactis* as to apparent source of name is this, but as to majority  
of species given is *Serapias* Linn.

*Goodyera celebica* Blume Fl. Jav. Orch. (1858) 36 (Orch. Arch. Ind. 43); Miq. Fl. Ind. Bat. 3 (1859) 728.

*Orchiodes rubicundum* Ktze. Rev. Gen. Pl. 2 (1891) 675.

*Orchiodes celebicum* Ktze. Rev. Gen. Pl. 2 (1891) 675.

*Orchiodes grande* Ktze. Rev. Gen. Pl. 2 (1891) 675.

Luzon (Laguna, Sorsogon), Panay (Capiz), Negros (Oriental Negros), Mindanao (Lanao, Cotabato, Davao), *Elmer 10173, 11150, 14867, B. S. 31096, 31455 Ramos & Edaña, 6049 Robinson, Weber 201, Cuming s. n., M. S. Clemens s. n.* Terrestrial in damp forest at 110 to 260 m altitude. In Malay Peninsula and Java.

**EPIPACTIS VIRIDIFLORA** (Blume) Ames Orch. 2 (1908) 61.

*Neottia viridiflora* Blume Bijdr. (1825) 408; Lindl. Gen. & Sp. Orch. (1840) 494.

*Physurus viridiflorus* Lindl. in Journ. Linn. Soc. 1 (1857) 180; Miq. Fl. Ind. Bat. 3 (1859) 734.

*Goodyera viridiflora* Blume Fl. Jav. Orch. (1858) 34 (Orch. Arch. Ind. 41), t. 9c, fig. 2, 12-16; Ames Orch. 5 (1915) 27.

*Orchiodes viridiflorum* Ktze. Rev. Gen. Pl. 2 (1891) 675.

Luzon (Benguet, Bataan), Negros (Oriental Negros), Mindanao (Davao), *R. S. Williams 1085, B. S. 6191 Robinson, F. B. 13657 Curran, Elmer 9820, Copeland s. n.* Epiphyte, up to 2,000 m altitude in Davao. In Java.

20. **LEPIDOGYNE** Blume

**LEPIDOGYNE LONGIFOLIA** Blume Fl. Jav. Orch. (1858) 78 (Orch. Arch.

Ind. 94) t. 25; Miq. Fl. Ind. Bat. 3 (1859) 745; Naves Novis. App. (1882) 249; Ridl. in Journ. Linn. Soc. 32 (1896) 405; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 129, Fig.-Atlas (1909) fig. 95; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 224; J. J. Sm. in Nova Guinea 8 (1909) 18, t. 6, fig. 17, 8<sup>3</sup> (1912) 526, 12 (1913) 10; Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1553, Orch. 5 (1915) 28.

*Neottia longifolia* Blume Bijdr. (1825) 406; Lindl. Gen. & Sp. Orch. (1840) 476.

*Speiranthus longifolia* Hassk. Cat. Pl. Bogor. (1844) 47.

*Lepidogyne sceptrum* Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) 55.

Negros (Oriental Negros), Leyte, *Elmer 9579, Wenzel 0399, 0789, 0850, 0904.* Terrestrial in mountain regions, at 500 to 600 m altitude in Leyte. In Malay Peninsula, Java, and New Guinea.

*Lepidogyne minor* Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1922) 56 is probably conspecific.

21. **DICEROSTYLIS** Blume

**DICEROSTYLIS LANCEOLATA** Blume Fl. Jav. Orch. (1858) 98 (Orch.

Arch. Ind. 116) t. 38, fig. 1, 1-11; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 117, Fig.-Atlas (1908) fig. 85; Ames Orch. 5 (1915) 28.

*Hylophila lanceolata* Miq. Fl. Ind. Bat. 3 (1859) 746; Hook. f. Fl. Brit. Ind. 6 (1890) 110; Ridl. in Journ. Linn. Soc. 32 (1896) 403, Mat. Fl. Mal. Penin. 1 (1907) 223.

Batan Islands, *B. S. 3781 Fenix.* Santo Domingo de Basco, near Mt. Iraya, in mossy forest. In Malay Peninsula and Java.

**DICEROSTYLIS RUBRA** (Ames) Schltr. in Engl. Bot. Jahrb. 45 (1911) 392; Ames Orch. 5 (1915) 28.

*Hylophila rubra* Ames in Philip. Journ. Sci. 2 (1907) Bot. 315, *nomen*, Orch. 2 (1908) 65, *text cut*.

Luzon (Laguna), Mindoro, Panay (Antique), Sibuyan, *F. B. 4378 Merritt, Elmer 12517, Baker 3573, B. S. 32201 McGregor*. Mt. Halcon and Mt. Giting-giting, terrestrial, up to 1,450 m altitude.

## 22. ERYTHRODES Blume

**ERYTHRODES BOETTCHERI** Ames Sched. Orch. 6 (1923) 8.

Luzon (Kalinga), *Boettcher s. n.* At 1,000 m altitude.

**ERYTHRODES MERRILLII** Ames Orch. 3 (1908) 79, *t. 54*, 5 (1915) 29.

*Herpysma merrillii* Ames in Philip. Journ. Sci. 2 (1907) Bot. 313.

Mindoro, *Merrill 5836*. Mt. Halcon, in damp ravine at 730 m altitude.

**ERYTHRODES VRYDAGZYNOIDES** Ames Orch. 5 (1915) 29.

Leyte, *Wenzel 0150, 0225*. Dagami, in forest at 60 m altitude.

**ERYTHRODES WEBERI** Ames Orch. 5 (1915) 30.

Mindanao (Lanao, Agusan), Jolo, *M. S. Clemens s. n., Weber 156, 156A, J. Clemens s. n.* Lake Lanao and Talacogon, terrestrial in shady forest at 10 m altitude. In Jolo at 830 m altitude.

**ERYTHRODES WENZELII** Ames Orch. 5 (1915) 31.

Palawan, Leyte, *Merrill 7218, Wenzel s. n.*

## 23. KUHLSSELTIA J. J. Smith

**KUHLSSELTIA WHITEHEADII** (Rendle) Ames Orch. 5 (1915) 32.

*Zeuxine whiteheadii* Rendle in Journ. Bot. 34 (1896) 358.

*Haemaria merrillii* Ames in Philip. Journ. Sci. 2 (1907) Bot. 315; Orch. 3 (1908) 21, *t. 30*.

*Kuhlhasseltia merrillii* Schltr. in Fedde Repert. 9 (1911) 437.

Luzon (Laguna), Mindoro, *B. S. 6567 Robinson, 19577 Ramos, Copeland s. n., Merrill 5819, 5840*. Mt. Banahao and Mt. Halcon, terrestrial in mossy forest at 1,400 to 2,000 m altitude.

## EXCLUDED OR SYNONYMOUS SPECIES

**KUHLSSELTIA MERRILLII** Schltr. in Fedde Repert. 9 (1911) 437 = *Kuhlhasseltia whiteheadii* (Rendle) Ames.

## 24. CYSTORCHIS Blume

**CYSTORCHIS APHYLLA** Ridl. in Journ. Linn. Soc. 32 (1896) 400; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 93, Fig.-Atlas (1908) *fig. 64*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 212; Ames in Philip. Journ. Sci. 2 (1907) Bot. 313, Orch. 2 (1908) 56, 5 (1915) 33.

Luzon (Benguet, Pampanga, Bataan), *Merrill s. n., 3135, R. S. Williams 1921, Elmer 7012, F. B. 7496 Curran*. Terrestrial, in forest. In Malay Peninsula and Java.

**CYSTORCHIS JAVANICA** Blume Fl. Jav. Orch. (1858) 73 (Orch. Arch. Ind. 87) *t. 24, fig. 1, 1-16*; Hook. f. Fl. Brit. Ind. 6 (1890) 97; Ames in Philip. Journ. Sci. 6 (1911) Bot. 39, Orch. 5 (1915) 33. *Etaeria javanica* Blume Bijdr. (1825) 410. *Aetheria javanica* Blume apud Lindl. Gen. & Sp. Orch. (1840) 491. *Hetaeria javanica* Miq. Fl. Ind. Bat. 3 (1859) 725. *Cystorchis variegata* Blume var. *purpurea* Ridl. in Journ. Linn. Soc. 32 (1896) 399; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 93, Fig.-Atlas (1908) *fig. 63*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 212; J. J. Sm. in Nova Guinea 8 (1909) 14; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 3; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 140.

Mindanao (Davao), *Weber 286*. Magum-Compostela Trail, in dense forest at 45 m altitude. In Malay Peninsula, Sumatra, Java, Borneo, and Dutch New Guinea.

**CYSTORCHIS LUZONENSIS** Ames Orch. 5 (1915) 33.

Luzon (Laguna), Mindoro, *Merrill 5146, B. S. 17910 Brown, Quisumbing 1221, Ramos & Edaña s. n.* Mt. Maquiling and Mt. Halcon, terrestrial in forest at 800 to 1,600 m altitude.

#### 25. CYSTOPUS Blume

**CYSTOPUS MINDANAENSIS** Ames Orch. 5 (1915) 34.

Mindanao (Camiguin Island), *B. S. 14422 Ramos*. Mt. Mahinog, on tree top.

**CYSTOPUS PHILIPPINENSIS** Ames Orch. 5 (1915) 35.

Luzon (Tayabas, Sorsogon), *B. S. 9446 Robinson, 23636 Ramos*. Infanta and Lake Pulog, the latter in moss at 500 m altitude.

#### 26. ANOECTOCHILUS Blume

**ANOECTOCHILUS** sp. Ames Orch. 5 (1915) 36.

Leyte, *Wenzel 0286*.

#### EXCLUDED OR SYNONYMOUS SPECIES

**ANOECTOCHILUS ARGYRONEURUM** Boxall ex Naves Novis. App. (1882) 250, *nomen*.

**ANOECTOCHILUS BULLENII** Boxall ex Naves Novis. App. (1882) 250, *nomen*.

**ANOECTOCHILUS DAYI** Boxall ex Naves Novis. App. (1882) 250, *nomen*.

**ANOECTOCHILUS INTERMEDIUM** Boxall ex Naves Novis. App. (1882) 250, *nomen*.

**ANOECTOCHILUS REINWARDTII** Blume apud Naves Novis. App. (1882) 250.

A Javan, Sumatran, and Malayan species misdetermined by Naves.

**ANOECTOCHILUS ROXBURGHII** Lindl. apud Naves Novis. App. (1882) 250.

A native of India and China, wrongly determined by Naves.

27. **MACODES** Lindley

**MACODES PETOLA** (Blume) Lindl. Gen. & Sp. Orch. (1840) 497; Reichb. f. Xen. Orch. 1 (1858) 227, t. 96, fig. 1, 1-5; Blume Fl. Jav. Orch. (1858) 100 (Orch. Arch. Ind. 119) t. 31, fig. 2, t. 36D; Naves Novis. App. (1882) 249; Ridl. in Journ. Linn. Soc. 32 (1896) 399; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 103, Fig.-Atlas (1908) fig. 73; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 215; Ames Orch. 5 (1915) 36.

*Neottia petola* Blume Bijdr. (1825) 407, fig. 2.

Luzon (Laguna, Tayabas), Mindanao (Agusan), *B. S. 13705 Ramos, 9464 Robinson, Elmer 14180, 18108, 18436*. Mt. Maquiling and Mt. Binuang, forest slope, the latter at 300 m altitude. In Malay Peninsula and Java.

## EXCLUDED OR SYNONYMOUS SPECIES

**MACODES SETACEUS** Boxall ex Naves Novis. App. (1882) 249, *nomen*.

**MACODES STRIATUS** Boxall ex Naves Novis. App. (1882) 249, *nomen*.

**MACODES VEITCHII** Boxall ex Naves Novis. App. (1882) 249, *nomen*.

**MACODES XANTHOPHYLLUS** Boxall ex Naves Novis. App. (1882) 249, *nomen*.

28. **CHEIROSTYLIS** Blume

**CHEIROSTYLIS OCTODACTYLA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 314, Orch. 3 (1908) 46, t. 40, 5 (1915) 37.

Luzon (Laguna), Mindoro, *Merrill 5834, 7495*. Mt. Banahao and Mt. Halcon, in forest at 2,500 to 2,700 m altitude.

**CHEIROSTYLIS PHILIPPINENSIS** Ames Orch. 2 (1908) 59, 5 (1915) 37.

Luzon (Kalinga, Benguet, Tayabas), Panay (Iloilo), Negros (Oriental Negros), *Elmer 6035, 9701, Topping 19, Boettcher s. n., Merrill 4015, B. S. 18196 Robinson*. In mountainous regions at 330 to 830 m altitude.

29. **PHILIPPINAEA** Ames and Schlechter

**PHILIPPINAEA WENZELII** (Ames) Ames & Schltr. in Ames Orch. 6 (1920) 278, t. 100.

*Adenostylis wenzelii* Ames Orch. 5 (1915) 41.

Luzon (Sorsogon), Leyte, Mindanao (Agusan), *Elmer 13884, 16668, Wenzel 0119, 0210, 0510, 0562*. Terrestrial at 60 to 500 m altitude.

30. **ADENOSTYLIS** Blume

**ADENOSTYLIS BENGUETENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1551, Orch. 5 (1915) 39.

Luzon (Benguet), *Elmer 8856*. Baguio.

**ADENOSTYLIS ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1552, in Philip. Journ. Sci. 8 (1913) Bot. 408, Orch. 5 (1915) 39.

Luzon (Bontoc, Benguet, Bataan), Palawan, *Vanoverbergh 69, 1099, 2259, 4054, Elmer 8648, 12634, F. B. 6240 Curran*. Terrestrial, on woody hillocks up to 1,300 m altitude.

**ADENOSTYLIS LEYTENSIS** Ames Orch. 5 (1915) 39.

Luzon (Sorsogon), Leyte, *Elmer 15672, Wenzel 0349*. Terrestrial.

**ADENOSTYLIS LUZONENSIS** Ames Orch. 2 (1908) 57, *text cut*, 5 (1915) 39.

*Zeuxine luzonensis* Ames in Philip. Journ. Sci. 2 (1907) Bot. 314, *nomen*.

Luzon (Bontoc, Lepanto), Mindoro, *Vanoverbergh 787, Merrill 4604, 5841*. Terrestrial on mountains, in the forest, at 930 to 1,300 m altitude.

**ADENOSTYLIS MARIVELENSIS** Ames Orch. 2 (1908) 58, *text cut*, 5 (1915) 39.

Luzon (Bataan), Negros (Occidental Negros), *Merrill 798, 3963, F. B. 6517 Curran, Weber 17, Merrill 7019, Banks s. n., R. S. Williams 627*.

**ADENOSTYLIS PHILIPPINENSIS** Ames Sched. Orch. 6 (1923) 9.

Leyte, *Wenzel 0375*. Terrestrial in forest at 60 m altitude.

**ADENOSTYLIS STRATEUMATICA** (Linn.) Ames Orch. 2 (1908) 59, 5 (1915) 40.

*Orchis strateumatica* Linn. Sp. Pl. (1753) 943, ed. 2 (1763) 1336.

*Spiranthes strateumatica* Lindl. in Bot. Reg. 10 (1824) sub *t. 823*.

*Adenostylis emarginata* Blume Bijdr. (1825) 414.

*Adenostylis integerrima* Blume Bijdr. (1825) 414, *fig. 17*.

*Pterygodium sulcatum* Roxb. Fl. Ind. ed. 2, 3 (1832) 452.

*Tripleura pallida* Lindl. in Wall. Cat. (1832) No. 7391, *nomen*, Gen. & Sp. Orch. (1840) 452.

*Zeuxine sulcata* Lindl. in Wall. Cat. (1832) No. 7392, *nomen*, Gen. & Sp. Orch. (1840) 485; Griff. Notul. 3 (1851) 396, Icon. Pl. Asiat. 3 (1851) *t. 349*; Blume Fl. Jav. Orch. (1858) 55 (Orch. Arch. Ind. 67); Miq. Fl. Ind. Bat. 3 (1859) 723; Benth. Fl. Hongk. (1861) 360; Thwaites Enum. Pl. Zeyl. (1861) 312; Hook. f. Fl. Brit. Ind. 6 (1890) 106; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 286, *t. 381*; Trim. Handb. Fl. Ceyl. 4 (1898) 215; Matsum. Ind. Pl. Jap. 2 (1905) 264; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 108, Fig.-Atlas (1908) *fig. 76*, Orch. Amb. (1905) 12; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 168; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 217.

*Zeuxine emarginata* Lindl. Gen. & Sp. Orch. (1840) 485; Reichb. f. in Bonpl. 5 (1857) 36.

*Zeuxine integerrima* Lindl. Gen. & Sp. Orch. (1840) 486; Blume Fl. Jav. Orch. (1858) 55 (Orch. Arch. Ind. 67), *t. 19, fig. 1, t. 23c*; Miq. Fl. Ind. Bat. 3 (1859) 723.

*Zeuxine membranacea* Lindl. Gen. & Sp. Orch. (1840) 486; Blume Fl. Jav. Orch. (1858) 56 (Orch. Arch. Ind. 68), *t. 22, fig. 2, t. 23A*.

? *Corycium humile* Herb. Ham. ex Lindl. Gen. & Sp. Orch. (1840) 485, in syn.

*Neottia strateumatica* R. Br. ex Steud. Nom. Bot. ed. 2, 2 (1841) 190.

*Zeuxine bracteata* Wight Icon. 5<sup>1</sup> (1852) 16, *t. 1724bis*.

*Zeuxine brevifolia* Wight Icon. 5<sup>1</sup> (1852) 16, *t. 1725*.

*Zeuxine robusta* Wight Icon. 5<sup>1</sup> (1852) 16, *t. 1726*.

*Zeuxine tripleura* Lindl. in Journ. Linn. Soc. 1 (1857) 186.

*Zeuxine procumbens* Blume Fl. Jav. Orch. (1858) 56 (Orch. Arch. Ind. 68) t. 22, fig. 3, t. 23B.

*Zeuxine* sp. Vidal Rev. Pl. Vasc. Filip. (1886) 273.

*Zeuxine strateumatica* Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 77.

Mindanao (Misamis, Agusan), *M. S. Clemens 6, 679a, Weber s. n.* Terrestrial in the forest, apparently at low altitude. In Afghanistan, India, Ceylon, Malay Peninsula, China, Assam, Japan, Java, and Amboina.

**ADENOSTYLIS VANOVERBERGHII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 408, Orch. 5 (1915) 40.

Luzon (Bontoc, Lepanto), *Vanoverbergh 1490, 3936, Ramos & Edaña 67, 84.* In wet or mossy forest at 930 to 2,540 m altitude.

**ADENOSTYLIS WEBERI** Ames Orch. 5 (1915) 40.

Mindanao (Davao), *Weber 280.* Mt. Binatun, in bamboo forest at 580 m altitude.

**ADENOSTYLIS ZAMBOANGENSIS** Ames Sched. Orch. 6 (1923) 10.

Mindanao (Zamboanga), *Copeland 1567.* Terrestrial, in forest at 130 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**ADENOSTYLIS WENZELII** Ames Orch. 5 (1915) 41 = *Philippinaea wenzelii* (Ames) Schltr. & Ames.

### 31. MYRMECHIS Blume

**MYRMECHIS GRACILIS** Blume Fl. Jav. Orch. (1858) 64 (Orch. Arch. Ind. 77), t. 21, fig. 2; Franch. & Sav. Enum. Pl. Jap. 2 (1879) 39; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 105, Fig.-Atlas (1908) fig. 74; Matsum. Ind. Fl. Jap. 2 (1905) 254; Ames in Philip. Journ. Sci. 2 (1907) Bot. 315, Orch. 2 (1908) 63, 5 (1915) 42.

*Anecochilus gracilis* Blume Bijdr. (1825) 413.

*Anaectochilus gracilis* Blume apud Lindl. Gen. & Sp. Orch. (1840) 500.

*Rhamphidia alsinefolia* Lindl. in Journ. Linn. Soc. 1 (1857) 182; Miq. Fl. Ind. Bat. 3 (1859) 730.

*Rhamphidia japonica* Reichb. f. in Bot. Zeit. 36 (1878) 75.

*Myrmechis japonica* Rolfe in Journ. Linn. Soc. 36 (1903) 44, sub

*Myrmechis chinensis* Rolfe.

Luzon (Benguet, Bataan), Mindoro, Mindanao (Misamis, Bukidnon, Davao), *B. S. 8422 McGregor, 38520 Ramos & Edaña, Merrill 3865, F. B. 4432, 4460 Merritt, 4622 Mearns & Hutchinson, Elmer 11372.* In mountain regions, up to 2,100 m altitude in Benguet, and 3,300 m altitude in Mindanao. In Java and Japan.

**MYRMECHIS PERPUSILLA** Ames Sched. Orch. 6 (1923) 15.

Luzon (Benguet), *Copeland 124.*

**MYRMECHIS PHILIPPINENSIS** Ames Orch. 2 (1908) 64, text cut, 5 (1915) 42.

Luzon (Bataan), *Leiberg 6066.* Mt. Mariveles, terrestrial at 800 m altitude.

## 32. VRYDAGZYNEA Blume

**VRYDAGZYNEA ALBIDA** Blume Fl. Jav. Orch. (1858) 62 (Orch. Arch. Ind. 75), *t. 19, fig. 2*; Hook. f. Fl. Brit. Ind. 6 (1890) 97; Ridl. in Journ. Linn. Soc. 32 (1896) 397; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 89, Fig.-Atlas (1908) *fig. 61*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 211; Ames in Philip. Journ. Sci. 2 (1907) Bot. 313; Orch. 2 (1908) 55, 5 (1915) 42.

*Etaeria albida* Blume Bijdr. (1825) 410.

*Aetheria albida* Blume apud Lindl. Gen. & Sp. Orch. (1840) 491.

*Hetaeria albida* Blume apud Miq. Fl. Ind. Bat. 3 (1859) 726; Naves Novis. App. (1882) 249.

Luzon (Rizal, Tayabas, Sorsogon), Mindoro, Samar, Negros (Oriental Negros), Leyte, Mindanao (Zamboanga, Davao), Jolo. A rather common and widely distributed species in the Philippines. Terrestrial in dense forest at 137 to 1,000 m altitude. In Malay Peninsula and Java.

**VRYDAGZYNEA WEBERI** Ames Orch. 5 (1915) 42.

Luzon (Apayao, Rizal, Laguna, Tayabas, Sorsogon), Polillo, Leyte, *Weber 333, Elmer 14616, 14685, 17374, 18028, B. S. 9191, 9489 Robinson, 2978 Ramos & Edaña, 25401 Yates, Wenzel 0244, 0630*. Terrestrial, up to 600 m altitude in Leyte.

## 33. HETAERIA Blume

**HETAERIA BLACKII** Ames Orch. 5 (1915) 43.

Mindanao (Lanao, Davao), *M. S. Clemens 439, Black s. n.*

**HETAERIA LANCIFOLIA** Ames Orch. 5 (1915) 44 (as *lancifolium*).

Luzon (Apayao), *Weber 327*. Abulug-Narig Trail, terrestrial in forest at 76 m altitude.

**HETAERIA LEYTENSIS** Ames Sched. Orch. 6 (1923) 14.

Leyte, *B. S. 42081b Edaña*. At 300 m altitude.

**HETAERIA MINDANAENSIS** Ames Orch. 5 (1915) 45.

Mindanao (Agusan) *Weber 317*. Sangaan-Cabadbaran Trail, terrestrial in shady forest at 22 m altitude.

**HETAERIA OBLONGIFOLIA** Blume Fl. Jav. Orch. (1858) 85 (Orch. Arch. Ind. 102), *t. 32, fig. 3*; Miq. Fl. Ind. Bat. 3 (1859) 725; Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 241; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 113, Fig.-Atlas (1908) *fig. 80*; Ames Orch. 1 (1905) 70, 2 (1908) 62, 5 (1915) 46; J. J. Sm. in Nova Guinea 8 (1909) 17, 8<sup>9</sup> (1912) 525.

*Etaeria oblongifolia* Blume Bijdr. (1825) 410, *fig. 14*.

*Aettieria oblongifolia* Lindl. Gen. & Sp. Orch. (1840) 491.

*Etaeria rubicunda* Reichb. f. in Bonpl. 3 (1855) 214.

*Rhamphidia tenuis* Lindl. in Journ. Linn. Soc. 1 (1857) 182; Miq. Fl. Ind. Bat. 3 (1859) 730; Naves Novis. App. (1882) 248.

*Hetaeria tenuis* Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 273; Rolfe in Journ. Bot. 24 (1886) 59; Ceron Cat. Pl. Herb. Manila (1892) 169.

*Goodyera rubicunda* J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 121 (as to syn. *Aetheria rubicunda* Reichb. f.).



Luzon (Ilocos Norte, Cagayan, Benguet, Rizal, Laguna, Tayabas), Ticao, Mindoro, Negros (Oriental Negros), Palawan, Balabac, Mindanao (Zamboanga, Lanao). A common and widely distributed species in the Philippines. Terrestrial in forest at 30 to 90 m altitude. In Java, Molucca Islands, New Guinea, and possibly Samoa.

**HETAERIA WENZELII** Ames Orch. 5 (1915) 46.

Leyte, *Wenzel 0227*. Dagami, terrestrial in forest at 60 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**HETAERIA ALBIDA** Blume apud Miq. Fl. Ind. Bat. 3 (1859) 726; Naves Novis. App. (1882) 240 = *Vrydagzynea albida* Blume.

**HETAERIA JAVANICA** (Blume) Miq. Fl. Ind. Bat. 3 (1859) 725 = *Cystorchis javanica* Blume.

**HETAERIA TENUIS** Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 273; Rolfe in Journ. Bot. 24 (1886) 59; Ceron Cat. Pl. Herb. Manila (1892) 169 = *Hetaeria oblongifolia* Blume.

**HETAERIA VARIEGATA** Miq. apud Naves Novis. App. (1882) 249.

This is probably referable to *Cystorchis javanica* Blume.

34. **TROPIDIA** Lindley

**TROPIDIA CALCARATA** Ames in Philip. Journ. Sci. 7 (1912) Bot. 7, Orch. 5 (1915) 47.

Luzon (Rizal, Laguna), *B. S. 13603 Ramos, Merrill 7144, Catalan 223, Elmer 18188*.

**TROPIDIA MINDANAENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1553, Orch. 5 (1915) 47.

Mindanao (Davao), *Elmer 11785*. Todaya, Mt. Apo.

**TROPIDIA MINDORENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 315, Orch. 5 (1915) 47.

Mindoro, *Merrill 5552*. Binabay River, terrestrial in humid forest at 300 m altitude.

**TROPIDIA ROBINSONII** Ames Sched. Orch. 6 (1923) 16.

Luzon (Tayabas), *B. S. 9496 Robinson*.

**TROPIDIA SEPTEMNERVIS** (Schauer) Reichb. f. in Linnaea 25 (1852) 230; Ames Orch. 5 (1915) 47, in textu.

*Ptychochilus septemnervis* Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 431, t. 12, fig. B.

*Tropidia minor* Ames Orch. 2 (1908) 65, text cut, 5 (1915) 47.

Luzon (Nueva Ecija, Pampanga, Bataan, Laguna), Mindoro, Leyte, *Merrill 4204, Whitford 1368, B. S. 16558 Ramos, 1542 Bermejos, 26267 Ramos & Edaño, 17927 Brown, Wenzel 0557, F. B. 7501 Curran*. Terrestrial in forest at 500 m in Leyte.

EXCLUDED OR SYNONYMOUS SPECIES

**TROPIDIA CURCULIGOIDES** Lindl. apud Naves Novis. App. (1882) 249.

A native of Java, Borneo, and Malacca, wrongly attributed to the Philippines. Cf. Ames Orch. 5 (1915) 47, in textu.

**TROPIDIA GRAMINEA** Blume apud Naves Novis. App. (1882) 249.

**TROPIDIA GRANDIS** Hance apud Naves Novis. App. (1882) 249.

**TROPIDIA MINOR** Ames Orch. 2 (1908) 65, *text cut*, 5 (1915) 47 = *Tropidia septemnervis* (Schauer) Reichb. f.

### 35. CORYMBORCHIS Thouars

**CORYMBORCHIS CONFUSA** Ames Orch. 5 (1915) 48.

*Corymbis disticha* Lindl. Fol. Orch. Corymbis (1854) 1, quoad Philip.; Thou. apud Miq. Fl. Ind. Bat. 3 (1859) 736, quoad Philip.

*Chloidia confusa* Ames Orch. 2 (1908) 67, *text cut*.

*Corymbis confusa* Schltr. in Engl. Bot. Jahrb. 45 (1911) 395.

Luzon (Ilocos Norte, Apayao), Leyte, Bancalan, Mindanao (Agusan, Zamboanga), Jolo, *B. S. 32723, 32752 Ramos, 37295 Ramos & Edaño, 28227 Fenix, Cuming s. n., Weber 320, 339, Wenzel 0209, Elmer 13433, R. S. Williams 2153, J. Clemens s. n.* Terrestrial, in forest at sea level to 830 m altitude.

### 36. CHRYSOGLOSSUM Blume

**CHRYSOGLOSSUM VILLOSUM** Blume Bijdr. (1825) 338, *fig. 7*; Lindl. Gen. & Sp. Orch. (1830) 14; De Vriese Ill. Orch. Ind. Neerl. (1854) *t. 12, fig. 4*; Blume Fl. Jav. Orch. (1858) 137 (Orch. Arch. Ind. 162), *t. 47*; Miq. Fl. Ind. Bat. 3 (1859) 626; Reichb. f. in Walp. Ann. 6 (1861) 206; Hook. f. Fl. Brit. Ind. 5 (1890) 783; Ridl. in Journ. Linn. Soc. 32 (1896) 316; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 173, Fig.-Atlas (1909) *fig. 131*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 112; Ames in Philip. Journ. Sci. 2 (1907) Bot. 316, Orch. 2 (1908) 67, 5 (1915) 48, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 143.

Mindoro, *Merrill 5838*. Binabay River, terrestrial at about 300 m altitude. In Malay Peninsula, Java, and Borneo.

### 37. NEPHELAPHYLLUM Blume

**NEPHELAPHYLLUM MINDORENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 316, Orch. 3 (1908) 83, *t. 55, 5* (1915) 48.

Luzon (Nueva Ecija), Mindoro, *B. S. 26319, 26494, 26652 Ramos & Edaño, Merrill 5623*. Terrestrial on dry slopes and in humid forest at 200 to 300 m altitude.

### 38. DIGLYPHOSA Blume

**DIGLYPHOSA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1555, Orch. 5 (1915) 48.

Mindanao (Davao), *Elmer 11815*. Todaya, Mt. Apo.

### 39. COELOGYNE Lindley

**COELOGYNE ASPERATA** Lindl. in Journ. Hort. Soc. 4 (July, 1849) 221, Fol. Orch. Coelog. (1854) 3; J. Linden Pescat. 1 (1854) *text to t. 7*; Miq. Fl. Ind. Bat. 3 (1859) 666; Reichb. f. in Walp. Ann. 6 (1861) 224; Warner & Will. Orch. Alb. 7 (1888) *t. 311*; Hook. f. Fl. Brit. Ind. 5 (1890) 835; Veitch. Man. Orch. Pl. pt. 6 (1890) 31; Ridl. in Journ. Linn. Soc. 31 (1896) 287, 32 (1896) 326; L. Linden in Lindenia 13 (1897) 15, *t. 582*; Ridl. in Journ. Bot. 36 (1898) 214, Mat. Fl. Mal. Penin. 1 (1907) 129; Pfitz. in

Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 76; Ames Orch. 2 (1908) 68, 5 (1915) 49; J. J. Sm. in Nova Guinea 8 (1909) 20, 8<sup>2</sup> (1912) 527, 12 (1913) 10, 12<sup>3</sup> (1915) 196; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 143.

*Coelogyne lowii* Lindl. in Paxt. Mag. Bot. 16 (September, 1849) 225, *t.* and *text cut*; J. Linden Pescat. 1 (1854) *t.* 7; Boxall ex Naves Novis. App. (1882) 237.

*Pleione asperata* Ktze. Rev. Gen. Pl. 2 (1891) 680.

Samar, Leyte, Negros (Oriental Negros), Mindanao (Agusan, Surigao, Davao), Basilan, *B. S.* 17624 Ramos, 15500, 16257 Reillo, Wenzel *s. n.*, Elmer 10008, Weber 55, 250, Bolster 294, *F. B.* 6103 Hutchinson. Epiphyte in forest at 75 to 430 m altitude. In Malay Peninsula, Sumatra, Borneo, and New Guinea.

**COELOGYNE BILAMELLATA** Lindl. Fol. Orch. Coelog. (1854) 14; Miq. Fl. Ind. Bat. 3 (1859) 668; Naves Novis. App. (1882) 237; Ridl. in Journ. Linn. Soc. 31 (1896) 287; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 24; Ames Orch. 2 (1908) 73, *text cut*, 5 (1915) 94.

*Panisea bilamellata* Reichb. f. in Walp. Ann. 6 (1861) 240.

*Pleione bilamellata* Ktze. Rev. Gen. Pl. 2 (1891) 680.

Luzon (Laguna, Tayabas), Leyte, Mindanao (Zamboanga, Agusan, Bukidnon, Surigao), *B. S.* 15131 Ramos, 39046 Ramos & Edaña, Elmer 7727, 13900, Wenzel 0412, 0494, 0513, Merrill 8202, Bolster 288. Epiphyte in forest, up to 1,000 m altitude in Mindanao. Reported from Borneo.

**COELOGYNE CANDOONENSIS** Ames Sched. Orch. 6 (1923) 18, *fig.* 4.

Mindanao (Bukidnon), *B. S.* 38894 Ramos & Edaña. In forest at 1,830 m altitude.

**COELOGYNE CHLOROPTERA** Reichb. f. in Gard. Chron. II 19 (1883) 466; Kränzl. Xen. Orch. 3 (1890) 69, *t.* 235, *fig.* I. 1-6; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 55, *fig.* 18L; Ames Orch. 2 (1908) 71, *t.*, 5 (1915) 49.

*Coelogyne sparsa* Ames Orch. 1 (1905) 72, p. p. (as to *Elmer* 5842), non Reichb. f.

Luzon (Cagayan, Kalinga, Bontoc, Benguet, Pampanga, Bataan, Tayabas), Negros (Oriental Negros). A fairly common species in Luzon, on trees and rocks at 1,000 to 1,530 m altitude.

**COELOGYNE CONFUSA** Ames Orch. 5 (1915) 49.

Mindanao (Camiguin Island), *B. S.* 14430 Ramos. Epiphyte.

**COELOGYNE ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1556, Orch. 5 (1915) 50.

Mindanao (Bukidnon, Davao), *B. S.* 38583 Ramos & Edaña, Elmer 10694. Mt. Lipa and Todaya, Mt. Apo, up to 1,300 m altitude.

**COELOGYNE INTEGERRIMA** Ames in Philip. Journ. Sci. 4 (1909) Bot. 665, 6 (1911) Bot. 40; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340; Ames Orch. 5 (1915) 50.

Luzon (Bontoc, Benguet, Tayabas), Vanoverbergh 3646, Merrill 6350, *B. S.* 8454, 8519, 8822 McGregor, 31711 Santos, Elmer 9258. Mountain regions at 1,750 to 2,450 m altitude.

**COELOGYNE LOHERI** Rolfe in Kew Bull. (1908) 414; Ames Orch. 5 (1915) 50, 6 (1920) 279.

Luzon (Bontoc, Benguet), *Loher 549, Vanoverbergh 1197, 2867, 3906, 4041, Boettcher s. n., B. S. 31909 Santos*. Mountain regions up to 1,700 m altitude.

**COELOGYNE LONGIRACHIS** Ames Orch. 7 (1922) 88.

Mindanao (Bukidnon), *B. S. 38671 Ramos & Edaño*. Mahilucot River, along streams in forest at 1,300 m altitude.

**COELOGYNE MARMORATA** Reichb. f. in Linnæa 41 (1877) 116; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 85; Ames Orch. 5 (1915) 50, Sched. Orch. 6 (1923) 20.

*Coelogyne zahlbrucknerae* Kränzl. in Fedde Repert. 17 (1921) 389.

Luzon (Benguet), *Wallis s. n., Schultze s. n., Loher s. n.* Sablan, May, 1909.

**COELOGYNE MERRILLII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 40, Orch. 5 (1915) 51.

Luzon (Benguet, Rizal), *Merrill 6620, Phil. Pl. 716, Haight 14, B. S. 31814 Santos, 29764 Ramos & Edaño, Lyon 164*. Mountain regions at 300 to 2,300 m altitude.

**COELOGYNE MINUTISSIMA** Kränzl. in Fedde Repert. 17 (1921) 390. Philippines, probably Luzon, *Loher s. n.*

No specimen seen.

**COELOGYNE PALAWANENSE** Ames Orch. 5 (1915) 51.

Palawan, *Merrill 9499*. Mt. Capoas at 1,000 m altitude.

**COELOGYNE QUINQUELAMELLATA** Ames Orch. 6 (1920) 280.

Mindanao (Surigao), *Wenzel 01175, 01179, 01182, 01183, 01206*. Epiphyte in forest at 150 m altitude.

**COELOGYNE RAMOSII** Ames Orch. 7 (1922) 90.

Mindanao (Bukidnon, Agusan), *B. S. 38892, 38944 Ramos & Edaño, Elmer 14130*. Mt. Candon and Cabadbaran (Mt. Urdaneta) up to 1,850 m altitude.

**COELOGYNE ROCHUSSENI** De Vriese Ill. Orch. Ind. Neerl. (1854) t. 2, t. 11, fig. 6; Miq. Fl. Ind. Bat. 3 (1859) 666; Reichb. Xen. Orch. 1 (1856) 212, t. 85; Ridl. in Journ. Linn. Soc. 32 (1896) 321; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 144, Fig.-Atlas (1909) fig. 107; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 128; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 70, figs. 22E, 23; Ames in Philip. Journ. Sci. 4 (1909) Bot. 664; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 7; Ames Orch. 5 (1915) 52, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 145.

*Coelogyne macrobulbon* Hook. f. Fl. Brit. Ind. 5 (1890) 830.

*Pleione rochussenii* Ktze. Rev. Gen. Pl. 2 (1891) 680.

*Pleione macrobulbon* Ktze. Rev. Gen. Pl. 2 (1891) 680.

Luzon (Pampanga), Mindanao (Lanao), *M. S. Clemens s. n., Lyon s. n.* Camp Keithley, September, 1907. In Malay Peninsula, Sumatra, Java, Celebes, and Borneo.

**COELOGYNE SPARSA** Reichb. f. in Gard. Chron. II 19 (1883) 306; Veitch Man. Orch. Pl. pt. 6 (1890) 49; Kränzl. Xen. Orch. 3 (1890) 70, t. 235, fig. II. 7-12; Wittmack in Gartenfl. 46 (1897) 449, t. 1442; Ames Orch. 1 (1905) 71 (excl. *Elmer 5842*), 2 (1908) 70, text cut, 5 (1915) 53; Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 54, fig. 18, J. K.

*Pleione sparsa* Ktze. Rev. Gen. Pl. 2 (1891) 680.

Luzon (Rizal, Bataan), Panay (Antique), Negros (Oriental Negros), Palawan, *B. S. 2176 Ramos, 647 Foxworthy, Weber 11, 15, 16, Merrill 3961, Whitford 1090, Lyon 133, R. S. Williams 626, 759, Yoder s. n., Elmer 10210, McGregor 5806*. Mountain regions, epiphytic at 900 to 1,050 m altitude.

**COELOGYNE SWANIANA** Rolfe in Kew Bull. (1894) 183, in Orch. Rev. 2 (1894) 198, in Sander Reichenbachia II 2 (1894) 105, t. 92; Hook. f. in Bot. Mag. 124 (1898) t. 7602; Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 68, fig. 22C; Ames Orch. 5 (1915) 53.

Only horticultural specimens of this species have been seen.

**COELOGYNE VANOVERBERGHII** Ames Orch. 5 (1915) 53.

Bontoc, *Vanoverbergh 2865*. Bauco at 1,700 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**COELOGYNE CILIATA** Boxall ex Naves Novis. App. (1882) 237, *nomen*.

**COELOGYNE CONCHOIDEA** Reichb. f. in Walp. Ann. 6 (1861) 237; Naves Novis. App. (1882) 237 = *Pholidota imbricata* Lindl.

**COELOGYNE CUMINGII** Lindl. apud Naves Novis. App. (1882) 237.

Cuming's specimen, on which this species was based, was from Singapore, not from the Philippines.

**COELOGYNE FIMBRIATA** Lindl. apud Naves Novis. App. (1882) 237.

**COELOGYNE IMBRICATA** (Lindl.) Reichb. f. in Walp. Ann. 6 (1861) 238 = *Pholidota imbricata* Lindl.

**COELOGYNE LOWII** Lindl. in Paxt. Mag. Bot. 16 (September, 1849) 225, t. and text cut; J. Linden Pescat. 1 (1854) t. 7; Boxall ex Naves Novis. App. (1882) 237 = *Coeologyne asperata* Lindl.

**COELOGYNE PALLIDA** (Lindl.) Reichb. f. in Walp. Ann. 6 (1861) 238 = *Pholidota imbricata* Lindl.

**COELOGYNE PANDURATA** Lindl. apud Naves Novis. App. (1882) 237.

**COELOGYNE PUMILA** Reichb. f. in Walp. Ann. 6 (1861) 236 = *Acoridium pumilum* (Reichb. f.) Rolfe.

**COELOGYNE RHOMBOPHORA** Reichb. f. in Linnaea 41 (1877) 116 = *Acoridium rhombophorum* (Reichb. f.) Ames.

**COELOGYNE RUMPHII** Lindl. apud Naves Novis. App. (1882) 237.

**COELOGYNE SPARSA** Ames Orch. 1 (1905) 72, p. p. (as to *Elmer 5842*), non Reichb. f. = *Coeologyne chloroptera* Reichb. f.

**COELOGYNE SPECIOSA** Lindl. apud Naves Novis. App. (1882) 237.

**COELOGYNE TRIFIDA** Reichb. f. apud Naves Novis. App. (1882) 237.

- COELOGYNE TRIOTOS Reichb. f. in Walp. Ann. 6 (1861) 238, in Hamb. Gartenz. 18 (1862) 34; Naves Novis. App. (1882) 237 = *Pholidota imbricata* Lindl.
- COELOGYNE VENTRICOSA (Blume) Reichb. f. in Walp. Ann. 6 (1861) 237 = *Pholidota ventricosa* (Blume) Reichb. f.
- COELOGYNE VISCOSA Boxall ex Vidal ex Naves Novis. App. (1882) 237, *nomen*.
- COELOGYNE ZAHLBRUCKNERAE Kränzl. in Fedde Repert. 17 (1921) 389 = *Coelogyne marmorata* Reichb. f.

## 40. PSEUDACORIDIUM Ames

- PSEUDACORIDIUM WOODIANUM Ames Orch. 7 (1922) 79.  
*Dendrochilum woodianum* Ames in Philip. Journ. Sci. 2 (1907) Bot. 318, *nomen*, Orch. 2 (1908) 80, *text cut*, 5 (1915) 66.  
 Mindoro, Merrill 5816. Mt. Halcon, at 2,260 to 2,830 m altitude.

## 41. ACORIDIUM Nees and Meyen

- ACORIDIUM AFFINE Ames Orch. 7 (1922) 80.  
*Dendrochilum affine* Ames Orch. 2 (1908) 95, 5 (1915) 55.  
 Luzon (Bataan), Merrill 3218, Whitford 1354, B. S. 5184 Topping.
- ACORIDIUM ANFRACTOIDES Ames Orch. 7 (1922) 80.  
*Dendrochilum anfractoides* Ames Orch. 3 (1908) 13, t. 28, 5 (1915) 55, in Philip. Journ. Sci. 4 (1909) Bot. 665; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.  
 Luzon (Benguet), F. B. 4312a Mearns, B. S. 8358, 8834, 8858 McGregor, Haight 10, Ramos & Edaña 11, 48, 48a, 49. In mossy forest at 1,930 to 2,160 m altitude.
- ACORIDIUM ANFRACTUM Ames in Proc. Biol. Soc. Wash. 19 (1906) 148.  
*Dendrochilum anfractum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, fig. 38P; Ames Orch. 2 (1908) 91, t. 21, fig. I, 1, 5 (1915) 55.  
 Luzon (Lepanto, Benguet), Merrill 4482, Ramos & Edaña 10, 39, 40, 47. In mossy forest at 2,100 to 2,290 m altitude.
- ACORIDIUM AURICULARE Ames Orch. 7 (1922) 80.  
*Dendrochilum auriculare* Ames in Philip. Journ. Sci. 4 (1909) Bot. 595, Orch. 5 (1915) 55.  
 Luzon (Benguet), B. S. 5771, 5818 Ramos, Ramos & Edaña 9. In mossy forest at 2,060 m altitude.
- ACORIDIUM BINUANGENSE Ames Orch. 7 (1922) 80.  
*Dendrochilum binuangense* Ames Orch. 6 (1920) 281.  
 Luzon (Tayabas), B. S. 28620 Ramos & Edaña. Summit of Mt. Binuang at 500 m altitude.

**ACORIDIUM CINNABARINUM** (Pfitz.) Ames Orch. 7 (1920) 80.

*Dendrochilum cinnabarinum* Pfitz. in Engl. Pflanzenreich IV. 50.

II. B. 7 (1907) 104, fig. 35F; Ames Orch. 3 (1908) 10, 5 (1915) 56, 6 (1920) 282, in Philip. Journ. Sci. 4 (1909) Bot. 597; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

Luzon (Benguet, Rizal), Merrill 6475, Boettcher s. n., Ramos & Edaña 43, B. S. 8844 McGregor, F. B. 16348 Curran, Merritt, & Zschokke. In mossy forest at 2,160 to 2,930 m altitude.

**ACORIDIUM CONFUSUM** Ames Orch. 7 (1922) 80.

*Dendrochilum confusum* Ames in Philip. Journ. Sci. 6 (1911) Bot. 41, Orch. 5 (1915) 56.

Luzon (Laguna, Sorsogon), Leyte, F. B. 19124 Tamesis, B. S. 5640 Curran, Elmer 15068, Wenzel 0853. In forest at 700 m altitude.

**ACORIDIUM CURRANII** Ames Orch. 7 (1922) 80.

*Dendrochilum curranii* Ames Orch. 3 (1908) 15, t. 29, 5 (1915) 57.

Luzon (Rizal, Laguna), B. S. 3053, 16570, 19561 Ramos, 19152 Reillo, 3077 Curran, 6575, 6580 Robinson, Disdon s. n.

**ACORIDIUM ELMERI** Ames Orch. 7 (1922) 80.

*Dendrochilum elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1558, Orch. 5 (1915) 57.

Mindanao (Davao), Elmer 10635. Todaya, Mt. Apo, epiphyte in mossy forest at 2,500 m altitude.

**ACORIDIUM EXASPERATUM** Ames Sched. Orch. 6 (1923) 21, fig. 6.

Luzon (Rizal), B. S. 42338 Ramos. In mossy forest at 1,300 m altitude.

**ACORIDIUM EXILE** Ames Orch. 7 (1922) 80.

*Dendrochilum exile* Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 84, text cut, 5 (1915) 57.

Mindoro, Merrill 5721. Mt. Halcon.

**ACORIDIUM FOXWORTHYI** Ames Orch. 7 (1922) 80.

*Dendrochilum foxworthyi* Ames Orch. 3 (1908) 8, t. 26, 5 (1915) 57.

Luzon (Zambales), B. S. 2542 Foxworthy. Mt. Pinatubo at 1,800 m altitude.

**ACORIDIUM GRAMINIFOLIUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 144.

*Dendrochilum graminifolium* Pfitz. in Engl. Pflanzenreich IV. 50.

II. B. 7 (1907) 114, fig. 38 Q, R; Ames Orch. 2 (1908) 12, 83, t. 22, fig. II, 2, 5 (1915) 57.

Luzon (Lepanto, Benguet), Merrill 4594, 4764, F. B. 5734 Klemme, 15907 Bacani, Ramos & Edaña 32, B. S. 8487 McGregor.

**ACORIDIUM HASTATUM** Ames Orch. 7 (1922) 80.

*Dendrochilum hastatum* Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 99, text cut, 5 (1915) 58.

Mindoro, F. B. 4441 Merritt, Merrill 5759. Mt. Halcon at 2,260 m altitude.

**ACORIDIUM HUTCHINSONIANUM** Ames comb. nov.

*Dendrochilum hutchinsonianum* Ames in Philip. Journ. Sci. 2 (1907)

Bot. 317, nomen, Orch. 2 (1908) 96, text cut, 5 (1915) 58.

*Acoridium hutchinsonii* Ames Orch. 7 (1922) 81, sphalm.

*Dendrochilum hutchinsonii* Ames Orch. 7 (1922) 81, in syn.

Mindoro, Merrill 5813. Mt. Halcon, in mossy thickets at 2,660 m altitude.

**ACORIDIUM IRIGENSE** Ames Orch. 7 (1922) 81.

*Dendrochilum irigense* Ames Orch. 5 (1915) 58.

Luzon (Camarines), B. S. 22186 Ramos, Santos s. n. Mt. Iriga at 500 m altitude.

**ACORIDIUM LOHERI** Ames Orch. 7 (1922) 81.

*Dendrochilum loheri* Ames Orch. 3 (1908) 12, t. 27, fig. I, A, 5

(1915) 59, 6 (1920) 283; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

Luzon (Benguet), Loher 461A, Merrill 6476, Boettcher s. n.

**ACORIDIUM LONGIBULBUM** Ames Orch. 7 (1922) 81.

*Dendrochilum longibulbum* Ames in Philip. Journ. Sci. 7 (1912) Bot. 26, Orch. 5 (1915) 59.

Luzon (Bontoc, Lepanto), Vanoverbergh 782, 3830, Ramos & Edaño 25, 37, 46. At high altitudes.

**ACORIDIUM LUCBANENSE** Ames Orch. 7 (1922) 81.

*Dendrochilum lucbanense* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1559, Orch. 5 (1915) 60.

Luzon (Tayabas), Elmer 7571. Lucban, in mossy forest at 530 m altitude.

**ACORIDIUM LUZONENSE** Ames Orch. 7 (1922) 81.

*Dendrochilum luzonense* Ames Orch. 2 (1908) 121, text cut, 5 (1915) 60.

Luzon (Lepanto, Benguet), F. B. 5735 Klemme, 15729 Curran & Merritt, Ramos & Edaño 18, B. S. 5772 Ramos. At 1,600 to 2,000 m altitude.

**ACORIDIUM MACGREGORII** Ames Orch. 7 (1922) 81.

*Dendrochilum* sp. Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341.

*Dendrochilum macgregorii* Ames in Philip. Journ. Sci. 6 (1911) Bot. 42, Orch. 5 (1915) 60.

Luzon (Benguet), B. S. 8849 McGregor. Mt. Pulog.

**ACORIDIUM MALEOLENS** (Kränzl.) Ames Orch. 7 (1922) 81.

*Dendrochilum maleolens* Kränzl. in Orchis 2 (1908) 63; Ames Orch. 5 (1915) 54, 60

Luzon (Rizal), Loher s. n.

Described from a plant collected by Loher at Manila, and said to be near *Acoridium oliganthum* Ames. No specimen of this species has been seen.



**ACORIDIUM MARGINATUM** Ames Sched. Orch. 6 (1923) 23, fig. 5.

Luzon (Rizal), *Ramos s. n.* In forest at 1,630 m altitude.

**ACORIDIUM MERRILLII** Ames in Proc. Biol. Soc. Wash. 19 (1906) 151.

*Dendrochilum merrillii* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 119, fig. 38A, B; Ames Orch. 2 (1908) 12, 102, t. 23, fig. I, 1, text cut, 5 (1915) 60.

Luzon (Lepanto, Benguet), *Merrill 4585, 4858, B. S. 8353 McGregor, Ramos & Edaña 1, 21, 44.* At 2,100 to 2,800 m altitude.

**ACORIDIUM MICROCHILUM** (Schltr.) Ames Orch. 7 (1922) 81.

*Platyclinis microchila* Schltr. in Bull. Herb. Boiss. II 6 (April, 1906) 302.

*Acoridium venustulum* Ames in Proc. Biol. Soc. Wash. 19 (September, 1906) 147.

*Dendrochilum venustulum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38U; Ames Orch. 2 (1908) 12, 88, t. 22, fig. III, 3, in Philip. Journ. Sci. 4 (1909) Bot. 595; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341.

*Dendrochilum microchilum* Ames Orch. 2 (1908) 87, in textu, 5 (1915) 60, in Philip. Journ. Sci. 7 (1912) Bot. 26.

Luzon (Bontoc, Lepanto, Benguet, Nueva Vizcaya, Laguna). A rather common species in the above region, especially so in Benguet at about 1,800 to 2,400 m altitude.

**ACORIDIUM MINDANAENSE** Ames Sched. Orch. 6 (1923) 25, fig. 6.

Mindanao (Agusan), *Elmer 14095.*

**ACORIDIUM MINDORENSE** Ames Orch. 7 (1922) 81.

*Dendrochilum mindorense* Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 91, text cut, 5 (1915) 60.

Mindoro, *Merrill 5729, 5795.* Mt. Halcon at 2,000 m altitude.

**ACORIDIUM MONTANUM** Ames Sched. Orch. 5 (1923) 1.

*Acoridium linearifolium* Ames Orch. 7 (1922) 141, non Rolfe.

Luzon (Benguet), *Ramos & Edaña 56.* Mt. Boadan, in mossy forest at about 2,000 m altitude.

**ACORIDIUM OCELLATUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 151.

*Dendrochilum ocellatum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 117, fig. 38C; Ames Orch. 2 (1908) 12, 101, t. 23, fig. II, 2, 5 (1915) 61, in Philip. Journ. Sci. 4 (1909) Bot. 596.

Luzon (Lepanto), *Merrill 4481a, Ramos & Edaña 7.* Mt. Data at 2,300 m altitude.

**ACORIDIUM OLIGANTHUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 150

*Dendrochilum oliganthum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 117, fig. 38E; Ames Orch. 2 (1908) 12, 98, t. 23, fig. IV, 4, 5 (1915) 61.

Luzon (Lepanto), *Merrill 4481b, Ramos & Edaña 35.* Mt. Data and Mt. Sinapsapan, at about 2,300 m altitude.

- ACORIDIUM PARVULUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 146.  
*Dendrochilum parvulum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38N; Ames Orch. 2 (1908) 12, 87, t. 21, fig. II, 2, 5 (1915) 61.  
 Luzon (Bataan, Rizal, Laguna), Merrill 3217b, Whitford 141, B. S. 29724, 29732, Ramos & Edaña, F. B. 8024 Curran & Merritt. Lamao River, Mt. Mariveles.
- ACORIDIUM PERPLEXUM** Ames Orch. 7 (1922) 142.  
 Luzon (Lepanto), Ramos & Edaña 55. In mossy forest, Mt. Sinapsapan at 2,000 m altitude.
- ACORIDIUM PHILIPPINENSE** Ames in Proc. Biol. Soc. Wash. 19 (1906) 149.  
*Dendrochilum philippinense* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, fig. 38F; Ames Orch. 2 (1908) 12, 97, t. 23, fig. V, 5, 5 (1915) 61, in Philip. Journ. Sci. 4 (1909) Bot. 595.  
 Luzon (Bontoc, Lepanto, Ifugao, Benguet). A fairly common species in the above region at about 2,000 to 2,300 m altitude.
- ACORIDIUM PULCHERRIMUM** Ames Orch. 7 (1922) 144.  
 Luzon (Benguet), Ramos & Edaña 45. In mossy forest, Mt. Natoo, at 1,930 m altitude.
- ACORIDIUM PULOGENSE** Ames Orch. 7 (1922) 81.  
*Dendrochilum pulogense* Ames in Philip. Journ. Sci. 4 (1909) Bot. 594; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340; Ames Orch. 5 (1915) 61.  
 Luzon (Benguet), F. B. 16347A Curran, Merritt, & Zschokke, Merrill 6478, B. S. 8355, 8842, 8843 McGregor, Haight 2, Boettcher s. n., Ramos & Edaña 24, 33.
- ACORIDIUM PUMILUM** (Reichb. f.) Rolfe in Orch. Rev. 12 (1904) 220; Ames Orch. 7 (1922) 81.  
*Dendrochilum pumilum* Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1864) 927; Naves Novis. App. (1882) 231; Vidal Phan. Cuming. Philip. (1885) 81, 149, Rev. Pl. Vasc. Filip. (1886) 268; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 58; Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, 4 (1909) Bot. 596; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 162; Ames Orch. 2 (1908) 93, text cut, 3 (1908) 6, 5 (1915) 61.  
*Coelogyne pumila* Reichb. f. in Walp. Ann. 6 (1861) 236.  
 Luzon (Bataan, Laguna, Tayabas). Fairly frequent, especially in Laguna, on the mountains at 950 to 2,000 m altitude.
- ACORIDIUM PURPUREUM** Ames Orch. 7 (1922) 81.  
*Dendrochilum purpureum* Ames Orch. 6 (1920) 286.  
 Luzon (Apayao), Boettcher s. n. Mt. Pasoan at 2,000 m altitude.
- ACORIDIUM QUADRILOBUM** Ames Orch. 7 (1922) 81.  
*Dendrochilum quadrilobum* Ames Orch. 5 (1915) 61.  
 Luzon (Apayao, Ifugao), Boettcher s. n., B. S. 19894, 19896 McGregor.

**ACORIDIUM RECURVUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 148.

*Dendrochilum recurvum* Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 318; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (November, 1907) 117, fig. 38T; Ames Orch. 2 (1908) 12, 90, t. 22, fig. IV, 4, 5 (1915) 62.

Luzon (Lepanto, Benguet), Mindoro, *Merrill 4584, 5509, 5831, Ramos & Edaño 2, 4, 23, 27*. In mossy forest, in mountain regions at 2,230 to 2,730 m altitude.

**ACORIDIUM RENIFORME** Ames Orch. 7 (1922) 81.

*Dendrochilum reniforme* Ames Orch. 5 (1915) 63.

Luzon (Rizal, Laguna), *B. S. 13759, 20440 Ramos, Calica s. n.* Mt. Canumay and San Antonio.

**ACORIDIUM RHOMBOPHORUM** (Reichb. f.) Ames Sched. Orch. 5 (1923) 1.

*Coelogyne rhombophora* Reichb. f. in Linnaea 41 (1877) 116.

*Pholidota rhombophora* Reichb. f. in Linnaea 41 (1877) 117, in textu; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 153.

*Acoridium whitfordii* Rolfe ex Ames Orch. 1 (1905) 73.

*Dendrochilum whitfordii* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 162; Ames Orch. 2 (1908) 100, text cut, 5 (1915) 64.

*Dendrochilum rhombophorum* Ames Orch. 3 (1908) 7, 5 (1915) 64.

Luzon (Bataan, Rizal, Laguna, Tayabas), *Wallis s. n., Whitford 139, Topping 360, Elmer 7395, 7679, F. B. 6516 Curran, B. S. 27935 Ocampo, 28619, 28620 Ramos & Edaño*. On mountains, usually at a fairly high altitude.

**ACORIDIUM SACCOLABIUM** (Kränzl.) Ames Sched. Orch. 5 (1923) 2.

*Dendrochilum saccolabium* Kränzl. in Ann. k. k. Hofmus. Wien 30 (1916) 56.

Without locality, *Loher s. n.* A fragment from the living type plant cultivated at Nymphenburg, near Munich, Bavaria, is in the Ames Herbarium.

**ACORIDIUM SERRATOI** Ames Sched. Orch. 6 (1923) 27, fig. 6.

Luzon (Laguna), *Serrato s. n.* In dense forest.

**ACORIDIUM SIMULACRUM** Ames Orch. 7 (1922) 82.

*Dendrochilum simulacrum* Ames Orch. 2 (1908) 92, text cut, 5 (1915) 64.

Luzon (Benguet, Tayabas), *F. B. 4981 Curran, Elmer 7586*. Mt. Tooglon and Lucban.

**ACORIDIUM SPHACELATUM** Ames Orch. 1 (1905) 1, t. 1, figs. 1, 4-6, 8, 10, 12, 14, 16, 18, 20.

*Dendrochilum sphacelatum* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 112, fig. 37 A, B, D, F, H, K; Ames Orch. 2 (1908) 82, 5 (1915) 64, 6 (1920) 287.

Luzon (Benguet), *Elmer 6554, Boettcher s. n., Sandkuhl 97*. Mt. Santo Tomas at 2,300 m altitude.

**ACORIDIUM STRICTIFORME** Ames in Proc. Biol. Soc. Wash. 19 (1906) 147.

*Dendrochilum strictiforme* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38L; Ames Orch. 2 (1908) 12, 89, t. 21, fig. III, 3, 5 (1915) 64, in Philip. Journ. Sci. 4 (1909) Bot. 597.

Luzon (Lepanto, Benguet, Tayabas), Leyte. A fairly common species in the mountains at 660 to 2,300 m altitude.

**ACORIDIUM TENELLUM** Nees & Meyen in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 131; Rolfe in Orch. Rev. 12 (1904) 219, 220; Ames Orch. 1 (1905) 3, t. 1, figs. 2, 3, 7, 11, 13, 15, 17, 19.

*Dendrochilum junceum* Reichb. f. in Otia Bot. Hamb. 1 (1878) 54; Reichb. f. Xen. Orch. 3 (1881) 30; Naves Novis. App. (1882) 245; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 78.

*Dendrochilum tenellum* Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 318; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (November, 1907) 112, fig. 37C, E, G, J, L; Ames Orch. 2 (1908) 81, 5 (1915) 64.

Babuyan Islands (Camiguin), Luzon (Apayao, Kalinga, Bontoc, Ifugao, Benguet, Nueva Vizcaya, Zambales, Bataan, Laguna, Sorsogon), Mindoro, Leyte. Probably the commonest and most widely distributed species of the genus in the Philippines, growing at fairly high altitudes on the mountains.

**ACORIDIUM TENUE** Ames in Proc. Biol. Soc. Wash. 19 (1906) 145.

*Dendrochilum tenue* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38M; Ames Orch. 2 (1908) 12, 86, t. 21, fig. V, 5, 5 (1915) 64.

Luzon (Bontoc, Ifugao, Laguna), Negros, Leyte, Mindanao (Misamis, Bukidnon, Agusan). One of the commoner and widely distributed species of the genus, growing in mossy forest at 500 to 2,160 m altitude.

**ACORIDIUM TENUIFOLIUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 145.

*Dendrochilum tenuifolium* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 114, fig. 38O; Ames Orch. 2 (1908) 12, 86, t. 21, fig. IV, 4, 5 (1915) 64; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

Luzon (Lepanto, Benguet, Albay). Rather common in Lepanto and Benguet, in mossy forest at 2,060 to 2,260 m altitude.

**ACORIDIUM TURPE** Ames in Proc. Biol. Soc. Wash. 19 (1906) 149.

*Dendrochilum turpe* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, fig. 38D; Ames Orch. 2 (1908) 12, 98, t. 23, fig. III, 3, 5 (1915) 64.

Luzon (Benguet), Merrill 4758, Ramos & Edaña 30, 42. Mountain regions at 500 to 2,260 m altitude.

**ACORIDIUM UNICORNE** Ames Orch. 7 (1922) 145.

Luzon (Benguet), Ramos & Edaña 43a, 54. Mt. Simakoko, in mossy forest at 2,160 m altitude.

**ACORIDIUM VANOVERBERGHII** Ames Orch. 7 (1922) 82.

*Dendrochilum vanoverberghii* Ames in Philip. Journ. Sci. 7 (1912) Bot. 27, Orch. 5 (1915) 65.

Luzon (Bontoc, Ifugao), Vanoverbergh 1046, B. S. 19893 McGregor.

**ACORIDIUM WENZELII** Ames Orch. 7 (1922) 82.

*Dendrochilum wenzelii* Ames Orch. 5 (1915) 65.

Luzon (Kalinga, Camarines), Leyte, B. S. 22161 Ramos, 42088 Edaña, Wenzel 0264, 0338, 0787, 0803, 0862, 0876, 0880, 0886, Boettcher s. n. In forest at 500 to 700 m altitude.

**ACORIDIUM WILLIAMSII** Ames in Proc. Biol. Soc. Wash. 19 (1906) 143.

*Dendrochilum williamsii* Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 114, fig. 38S; Ames Orch. 2 (1908) 12, 82, t. 22, fig. I, 1, 5 (1915) 66.

Luzon (Lepanto, Benguet), Ramos & Edaña 5, 38, R. S. Williams 1939. Mountain region at fairly high altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**ACORIDIUM ARACHNITES** Rolfe in Orch. Rev. 12 (1904) 219 = *Dendrochilum arachnites* Reichb. f.

**ACORIDIUM COBBIANUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum cobbianum* Reichb. f.

**ACORIDIUM CONVALLARIAEFORME** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum convallariaeforme* Schauer.

**ACORIDIUM COPELANDII** Ames in Proc. Biol. Soc. Wash. 19 (1906) 152 = *Dendrochilum copelandii* Ames.

**ACORIDIUM CUCULLATUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 152 = *Dendrochilum cucullatum* (Ames) Pfitz.

**ACORIDIUM CUCUMERINUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum cucumerinum* Reichb. f., spec. excl.

**ACORIDIUM FILIFORME** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum filiforme* Lindl.

**ACORIDIUM GLUMACEUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum glumaceum* Lindl.

**ACORIDIUM GRACILISCAPUM** Ames in Proc. Biol. Soc. Wash. 19 (1906) 152 = *Dendrochilum graciliscapum* (Ames) Pfitz.

**ACORIDIUM HUTCHINSONII** Ames Orch. 7 (1922) 81, sphalm = *Acoridium hutchinsonianum* Ames.

**ACORIDIUM LATIFOLIUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum latifolium* Lindl.

**ACORIDIUM LINEARIFOLIUM** Ames Orch. 7 (1922) 141, non Rolfe = *Acoridium montanum* Ames.

**ACORIDIUM LONGILABRE** Ames in Proc. Biol. Soc. Wash. 19 (1904) 152 = *Dendrochilum longilabre* (Ames) Pfitz.

**ACORIDIUM MAGNUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum magnum* Reichb. f.

**ACORIDIUM PARVULUM** Ames in Proc. Biol. Soc. Wash. 19 (1904) 146 = *Dendrochilum parvulum* (Ames) Pfitz.

**ACORIDIUM PHILIPPINENSE** Ames in Proc. Biol. Soc. Wash. 19 (1904) 149 = *Dendrochilum philippinense* (Ames) Pfitz.

**ACORIDIUM UNCATUM** Rolfe in Orch. Rev. 12 (1904) 220 = *Dendrochilum uncatum* Reichb. f.

**ACORIDIUM VENUSTULUM** Ames in Proc. Biol. Soc. Wash. 19 (September, 1906) 147 = *Acoridium microchilum* (Schltr.) Ames.

**ACORIDIUM WHITFORDII** Rolfe ex Ames Orch. 1 (1905) 73 = *Acoridium rhombophorum* (Reichb. f.) Ames.

#### 42. DENDROCHILUM Blume

**DENDROCHILUM ARACHNITES** Reichb. f. in Gard. Chron. II 17 (1882) 256; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 65; Ames in Philip. Journ. Sci. 2 (1907) Bot. 316; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 92; Ames Orch. 2 (1908) 119, *text cut*; 5 (1915) 55; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

*Platyclinis arachnites* Rolfe in Kew Hand-list Orch. (1896) 189, *nomen*.

*Acoridium arachnites* Rolfe in Orch. Rev. 12 (1904) 219.

Luzon (Lepanto, Benguet, Rizal), Mindoro, Leyte, Mindanao (Zamboanga, Bukidnon, Agusan, Davao). A common and rather widely distributed species. Epiphyte in forest at 660 to 2,300 m altitude.

**DENDROCHILUM BICALLOSUM** Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, *nomen*, Orch. 2 (1908) 117, *text cut*, 5 (1915) 56, in Philip. Journ. Sci. 4 (1909) Bot. 596.

Luzon (Laguna, Camarines), Mindoro, *F. B. 7797 Curran & Merritt, B. S. 21983 Ramos, 26674 Brown, 26438 Catalan, Santos s. n., Merrill 5812*. Mountain regions, epiphyte in trees at 300 to 830 m altitude.

Var. **MINOR** Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, *nomen*, Orch. 2 (1908) 118.

Mindoro, *Merrill 5663*. Mt. Halcon.

**DENDROCHILUM CAGAYANENSE** Ames in Philip. Journ. Sci. 6 (1911) Bot. 41, Orch. 5 (1915) 56.

Luzon (Cagayan, Apayao, Rizal, Laguna), Leyte, Mindanao (Davao), *F. B. 16722 Curran, B. S. 28425 Fenix, 15392, 16583 Ramos, Reillo s. n., Wenzel 0512, 0532, 0602, Elmer 11844*. Epiphyte, in forest, up to 700 m altitude in Leyte.

**DENDROCHILUM CLEMENSIAE** Ames Orch. 2 (1908) 109, *text cut*, 5 (1915) 56.

Mindanao (Lanao), *M. S. Clemens s. n., 642*.

**DENDROCHILUM COBBIANUM** Reichb. f. in Gard. Chron. II 14 (1880) 748; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 75; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 101; Ames Orch. 2 (1908) 112, *text cut*, 5 (1915) 56.

*Platyclinis cobbiana* Hemsl. in Gard. Chron. II 16 (1881) 656; Veitch Man. Orch. Pl. pt. 5 (1889) 80.

*Acoridium cobbianum* Rolfe in Orch. Rev. 12 (1904) 220.

Luzon (Bontoc, Benguet), Mindanao (Agusan). A fairly common species in Luzon at 1,400 to 2,400 m altitude.

**DENDROCHILUM CONVALLARIAEFORME** Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 429; Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 97 (excl. syn. *Acoridium copelandii* Ames); Ames Orch. 5 (1915) 56.

*Acoridium convallariaeforme* Rolfe in Orch. Rev. 12 (1904) 220.

Manila, *Meyen*.

No specimens of this species have been seen.

**DENDROCHILUM COPELANDII** Ames Orch. 2 (1908) 12, 115, t. 24, fig. I, 1, 5 (1915) 56.

*Acoridium copelandii* Ames in Proc. Biol. Soc. Wash. 19 (1906) 153.

Mindanao (Zamboanga), *Copeland s. n.*

**DENDROCHILUM CUCULLATUM** (Ames) Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 98, fig. 38J; Ames Orch. 2 (1908) 12, 115, t. 24, fig. III, 3, 5 (1915) 56.

*Acoridium cucullatum* Ames in Proc. Biol. Soc. Wash. 19 (1906) 153.

Mindanao (Davao), *Copeland s. n.* Mt. Apo, on mossy trees at 2,000 m altitude.

**DENDROCHILUM CYMBIFORME** Ames in Philip. Journ. Sci. 6 (1911) Bot. 41, Orch. 5 (1915) 57.

Luzon (Abra, Kalinga), *B. S. 7133, 7135 Ramos, Boettcher s. n.* Mt. Bawagan and Mt. Pastan, at 550 to 2,000 m altitude.

**DENDROCHILUM ECALLOSUM** Ames Orch. 6 (1920) 282.

Catanduanes, *B. S. 30240 Ramos*. Mt. Mariquidon, on tree in forest at 140 m altitude.

**DENDROCHILUM FILIFORME** Lindl. in Bot. Reg. 26 (1840) Misc. 52; Regel in Gartenfl. 18 (1869) 33, t. 604; Naves Novis. App. (1882) 231; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 68; Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 97; Ames Orch. 2 (1908) 113, text cut, 5 (1915) 57.

*Dendrochilum glumaceum* André in Ill. Hort. 25 (1878) t. 323, non Lindl.

*Platyclinis filiformis* Benth. ex Hemsl. in Gard. Chron. II 16 (1881) 656; Veitch Man. Orch. Pl. pt. 5 (1889) 80; Cogn. in Dict. Icon. Orch. (1902) *Platyclinis t. 1.*

*Acoridium filiforme* Rolfe in Orch. Rev. 12 (1904) 220.

Luzon (Rizal), *Cuming s. n., Ramos s. n.* Up to 660 m altitude.

**DENDROCHILUM GLUMACEUM** Lindl. in Bot. Reg. 27 (1841) Misc. 23; Hook. in Bot. Mag. 81 (1855) t. 4853; Miq. Fl. Ind. Bat. 3 (1859) 627; Reichb. f. in Walp. Ann. 6 (1861) 218; Batem. Second Cent. Orch. Pl. (1867) t. 134; Naves Novis. App. (1882) 231; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 76; Ames in Philip. Journ. Sci. 2 (1907) Bot. 317; Pftz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 104; Ames Orch. 2 (1908) 110, text cut, 5 (1915) 57.

*Platyclinis glumacea* Benth. in Journ. Linn. Soc. 18 (1881) 295, by inference only; ex Hemsl. in Gard. Chron. II 16 (1881) 656; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Pftz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1888) 128,

fig. 127 B-F; Veitch Man. Orch. Pl. pt. 5 (1889) 81, t.; Cogn. in Dict. Icon. Orch. (1902) *Platyclinis* t. 2; Ames Orch. 1 (1905) 74.

*Acoridium glumaceum* Rolfe in Orch. Rev. 12 (1904) 220.

Luzon (Isabela, Bontoc, Lepanto, Benguet, Nueva Vizcaya, Pampanga, Bataan, Rizal, Laguna, Tayabas, Camarines), Catanduanes, Leyte, Mindanao (Davao). The commonest species of the genus in the Philippines, especially so in Luzon. Epiphyte in forest at 30 to 2,300 m altitude.

Var. **VALIDUM** (Rolfe) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 104; Ames Orch. 2 (1908) 112.

*Platyclinis glumacea* Benth. ex Hemsl. var. *valida* Rolfe in Orch. Rev. 1 (1893) 115, 12 (1904) 73, fig. 18.

**DENDROCHILUM GRACILISCAPUM** (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 99, fig. 38H; Ames Orch. 2 (1908) 12, 118, t. 24, fig. II, 2, 5 (1915) 57.

*Acoridium graciliscapum* Ames in Proc. Biol. Soc. Wash. 19 (1906) 152.

Mindanao (Davao), *Copeland 1019, Elmer 10633, 10647, 11359*. Mt. Apo, epiphyte on mossy trees at 1,800 m altitude.

**DENDROCHILUM LATIFOLIUM** Lindl. in Bot. Reg. 29 (1843) Misc. 56; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 71; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 102, fig. B, C; Ames Orch. 2 (1908) 104, text cut, 5 (1915) 59.

*Platyclinis latifolia* Hemsl. in Gard. Chron. II 16 (1881) 656; Rendle in Journ. Bot. 34 (1896) 355; Ames Orch. 1 (1905) 74.

*Acoridium latifolium* Rolfe in Orch. Rev. 12 (1904) 220.

Luzon (Pampanga, Bataan, Tayabas, Camarines), Panay (Antique, Capiz), Negros (Occidental Negros), Mindanao (Lanao, Davao). A common species, especially in Luzon. Epiphyte in mountain regions at 300 to 1,000 m altitude.

**DENDROCHILUM LONGILABRE** (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 99, fig. 38K; Ames Orch. 2 (1908) 12, 119, t. 24, fig. IV, 4, 5 (1915) 59.

*Acoridium longilabre* Ames in Proc. Biol. Soc. Wash. 19 (1906) 152.

Mindanao (Davao), *Copeland 1025, ? Elmer 11419*. Mt. Apo, epiphyte on mossy trees at 1,530 m altitude.

**DENDROCHILUM LONGISPICATUM** Ames Orch. 2 (1908) 105, text cut, 5 (1915) 59.

Luzon (Bontoc, Benguet), Sibuyan, Panay (Capiz), Negros (Oriental Negros), *Vanoverbergh 899, 1533, 1729, 3871, 3940, 4043, R. S. Williams 1942, Merrill 4336, Elmer 9909, 12436, B. S. 35586, 35605 Martelino & Edaño, 4462 Mearns*. Epiphyte, in mountain regions up to 1,700 m altitude in Bontoc.

**DENDROCHILUM MAGNUM** Reichb. f. in Walp. Ann. 6 (1861) 240; Naves Novis. App. (1882) 231; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 74; Ames in Philip. Journ. Sci. 2 (1907) Bot. 317; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 100, fig. 33 H, J; Ames Orch. 2 (1908) 106, text cut, 5 (1915) 60.

*Acoridium magnum* Rolfe in Orch. Rev. 12 (1904) 220.



Luzon (Rizal), Mindoro, Panay (Antique), *Cuming s. n.*, Merrill 5611, 5730, Ramos s. n., B. S. 32383 McGregor. Mt. Halcon, in mossy forest at 2,000 m altitude, and Mt. Iriga at 1,630 m altitude.

**DENDROCHILUM MALINDANGENSE** Ames Orch. 2 (1908) 114, *text cut*, 5 (1915) 60.

Mindanao (Dapitan), *F. B. 4597 Mearns & Hutchinson*. Mt. Malindang at 1,230 m altitude.

**DENDROCHILUM MEARNsii** Ames Orch. 2 (1908) 116, *text cut*, 5 (1915) 60.

Camiguin de Misamis, Mindanao (Misamis, Bukidnon), *B. S. 14426 Ramos, 38523 Ramos & Edaño, F. B. 4605 Mearns & Hutchinson*. Up to 3,060 m altitude on Mt. Malindang.

**DENDROCHILUM NIVEUM** Ames Orch. 6 (1920) 284.

Luzon (Kalinga), *Boettcher s. n.* Balbalan at 1,000 m altitude.

**DENDROCHILUM PALAWANENSE** Ames Orch. 2 (1908) 103, *text cut*, 5 (1915) 61, in Elm. Leaf. Philip. Bot. 5 (1912) 1559.

Palawan, *B. S. 553, 557 Foxworthy, Elmer 13195*. In mossy scrub at 1,250 m altitude.

**DENDROCHILUM PANGASINANENSE** Ames Sched. Orch. 6 (1923) 29.

Luzon (Pangasinan), *B. S. 8286 Ramos*.

**DENDROCHILUM PRODIGIOSUM** Ames Orch. 7 (1922) 98.

Mindanao (Bukidnon), *B. S. 38521 Ramos & Edaño*. Mt. Lipa, in mossy forest at 2,160 m altitude.

**DENDROCHILUM PROPINQUUM** Ames Orch. 6 (1920) 285.

Leyte, *Wenzel 0279, 0329, 0376, 0398, 0449, 0497, 0548, 0582, 0682, 0805, 0809, 0857, 0868, 0911, 0920*. Jaro, epiphyte in forest at 500 to 700 m altitude.

**DENDROCHILUM RAMOSII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 410, Orch. 5 (1915) 62.

Luzon (Laguna), *B. S. 15003 Ramos, Reillo 4*. San Antonio.

**DENDROCHILUM UNCATUM** Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1864) 927, in Gard. Chron. II 16 (1881) 780; Naves Novis. App. (1882) 231; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 72; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 103, fig. 35 G, H; Ames Orch. 2 (1908) 108, *text cut*, 5 (1915) 65; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340.

*Dendrochilum uncatum* Reichb. f. var. *lancifolium* Reichb. f. in Gard. Chron. II 16 (1881) 780; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 104.

*Platyclinis uncata* Rolfe ex Vidal Phan. Cuming. Philip. (1885) 148; Vidal Rev. Pl. Vasc. Filip. (1886) 267.

*Acoridium uncatum* Rolfe in Orch. Rev. 12 (1904) 220.

Luzon (Benguet, Nueva Vizcaya, Pampanga, Bataan, Rizal, Laguna), Panay (Antique). A fairly common species in the mountains of Luzon, especially of Benguet Subprovince, at 1,000 to 2,300 m altitude.

**DENDROCHILUM WEBERI** Ames in Philip. Journ. Sci. 8 (1913) Bot. 410, Orch. 5 (1915) 65.

Mindanao (Agusan), Basilan, *Weber 59, B. S. 16240 Reillo*. Type from Cabadbaran River at 80 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**DENDROCHILUM AFFINE** Ames Orch. 2 (1908) 95, 5 (1915) 55 = *Acoridium affine* Ames.

**DENDROCHILUM ANFRACTOIDES** Ames Orch. 3 (1908) 13, t. 28, 5 (1915) 55, in Philip. Journ. Sci. 4 (1909) Bot. 665; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340 = *Acoridium anfractoides* Ames.

**DENDROCHILUM ANFRACTUM** (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, fig. 38P; Ames Orch. 2 (1908) 91, t. 21, fig. I. 1, 5 (1915) 55 = *Acoridium anfractum* Ames.

**DENDROCHILUM AURICULARE** Ames in Philip. Journ. Sci. 4 (1909) Bot. 595, Orch. 5 (1915) 55 = *Acoridium auriculare* Ames.

**DENDROCHILUM AURITUM** Reichb. f. apud Naves Novis. App. (1882) 231.

**DENDROCHILUM BINUANGENSE** Ames Orch. 6 (1920) 281 = *Acoridium binuangense* Ames.

**DENDROCHILUM BISTORTUM** (Wendl. & Kränzln.) J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 64; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 96, fig. 34 A-D; Ames Orch. 5 (1915) 54.

*Platyclinis bistorta* Wendl. & Kränzln. Xen. Orch. 3 (1900) 169, t. 299, fig. I. 1-5.

“Indischer Archipel. Insel Maschate (?) leg. W. Micholitz, imp. F. Sander.”—Wendland and Kränzlin. Merrill writes: “I do not know of any Malayan island by this name and suspect that Masbate of the Philippine Archipelago was intended; Micholitz has carried on extensive explorations in the Philippines.” It has not been possible to refer this to any species of Philippine origin.

**DENDROCHILUM CINNABARINUM** Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 104, fig. 35F; Ames Orch. 3 (1908) 10, 5 (1915) 56, 6 (1920) 282, in Philip. Journ. Sci. 4 (1909) Bot. 59; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340 = *Acoridium cinnabarinum* (Pfitz.) Ames.

**DENDROCHILUM CONFUSUM** Ames in Philip. Journ. Sci. 6 (1911) Bot. 41, Orch. 5 (1915) 56 = *Acoridium confusum* Ames.

**DENDROCHILUM CUCUMERINUM** Reichb. f. in Gard. Chron. II 22 (1884) 56, 649; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 71; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 103, fig. 35D, E; Ames Orch. 5 (1915) 54, 57.

*Platyclinis cucumerina* Rolfe in Kew Hand-list Orch. (1896) 189, nomen.

*Acoridium cucumerinum* Rolfe in Orch. Rev. 12 (1904) 220.

This was described from cultivated specimens of unknown origin and has been ascribed to the Philippines; it may prove to be a native of some other region.

- DENDROCHILUM CURRANII Ames Orch. 3 (1908) 15, t. 29, 5 (1915) 57 = *Acoridium curranii* Ames.
- DENDROCHILUM ELMERI Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1558, Orch. 5 (1915) 57 = *Acoridium elmeri* Ames.
- DENDROCHILUM EXILE Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 84, text cut, 5 (1915) 57 = *Acoridium exile* Ames.
- DENDROCHILUM FOXWORTHYI Ames Orch. 3 (1908) 8, t. 26, 5 (1915) 57 = *Acoridium foxworthyi* Ames.
- DENDROCHILUM GLUMACEUM André in Ill. Hort. 25 (1878) t. 323, non Lindl. = *Dendrochilum filiforme* Lindl.
- DENDROCHILUM GRAMINIFOLIUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 114, fig. 38 Q, R; Ames Orch. 2 (1908) 12, 83, t. 22, fig. II, 2, 5 (1915) 57 = *Acoridium graminifolium* Ames.
- DENDROCHILUM GRANDIFLORUM Schltr. in Fedde Repert. 8 (1910) 563; Ames Orch. 5 (1915) 54, 58, non Pfitz.
- The geographic origin of this species is not certainly known; Schlechter stated "Philippinen?," but a drawing received from him is marked "India." This species is very close to *Dendrochilum latifolium* Lindl.
- DENDROCHILUM HASTATUM Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 99, text cut, 5 (1915) 58 = *Acoridium hastatum* Ames.
- DENDROCHILUM HUTCHINSONIANUM Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, nomen, Orch. 2 (1908) 96, text cut, 5 (1915) 58, 7 (1922) 81, in syn. (as *D. hutchinsonii*) = *Acoridium hutchinsonianum* Ames.
- DENDROCHILUM HYMENANTHUM Reichb. f. apud Vidal Phan. Cuming. Philip. (1885) 149; Vidal Rev. Pl. Vasc. Filip. (1886) 268, sphalm = *Dendrobium hymenanthum* Reichb. f.
- DENDROCHILUM IRIGENSE Ames Orch. 5 (1915) 58 = *Acoridium irigense* Ames.
- DENDROCHILUM JUNCEUM Reichb. f. Otia Bot. Hamb. 1 (1878) 54, Xen. Orch. 3 (1881) 30; Naves Novis. App. (1882) 231; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 78 = *Acoridium tenellum* Nees & Meyen.
- DENDROCHILUM LOHERI Ames Orch. 3 (1908) 12, t. 27, I, A, 5 (1915) 59, 6 (1920) 283; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340 = *Acoridium loheri* Ames.
- DENDROCHILUM LONGIBULBUM Ames in Philip. Journ. Sci. 7 (1912) Bot. 26, Orch. 5 (1915) 59 = *Acoridium longibulbum* Ames.
- DENDROCHILUM LONGIFOLIUM Reichb. f. apud Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 108, fig. 36 B (as to *Jagor 680*).
- Jagor 680* is a specimen from Luzon, probably incorrectly identified by Pfitzer who had not seen the type of the species, which is a native of the Malay Peninsula.
- DENDROCHILUM LUCBANENSE Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1559, Orch. 5 (1915) 60 = *Acoridium lucbanense* Ames.

- DENDROCHILUM LUZONENSE Ames Orch. 2 (1908) 121, *text cut*, 5 (1915) 60 = *Acoridium luzonense* Ames.
- DENDROCHILUM MACGREGORII Ames in Philip. Journ. Sci. 6 (1911) Bot. 42, Orch. 5 (1915) 60 = *Acoridium macgregorii* Ames.
- DENDROCHILUM MALEOLENS Kränzl. in Orchis 2 (1908) 63; Ames Orch. 5 (1915) 54, 60 = *Acoridium maleolens* Ames.
- DENDROCHILUM MERRILLII (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 119, *fig. 38 A, B*; Ames Orch. 2 (1908) 12, 102, *t. 23, fig. I, 1, 5* (1915) 60 = *Acoridium merrillii* Ames.
- DENDROCHILUM MICROCHILUM (Schltr.) Ames Orch. 2 (1908) 87, in *textu*, 5 (1915) 60, in Philip. Journ. Sci. 7 (1912) Bot. 26 = *Acoridium microchilum* (Schltr.) Ames.
- DENDROCHILUM MINDORENSE Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, *nomen*, Orch. 2 (1908) 91, *text cut*, 5 (1915) 60 = *Acoridium mindorense* Ames.
- DENDROCHILUM OCELLATUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 117, *fig. 38 C*; Ames Orch. 2 (1908) 12, 101, *t. 23, fig. II, 2, 5* (1915) 61; in Philip. Journ. Sci. 4 (1909) Bot. 596 = *Acoridium ocellatum* Ames.
- DENDROCHILUM OLIGANTHUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 117, *fig. 38 E*; Ames Orch. 2 (1909) 12, 98, *t. 23, fig. IV, 4, 5* (1915) 61 = *Acoridium oliganthum* Ames.
- DENDROCHILUM PARVULUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, *fig. 38 N*; Ames Orch. 2 (1908) 12, 87, *t. 21, fig. II, 2, 5* (1915) 61 = *Acoridium parvulum* Ames.
- DENDROCHILUM PHILIPPINENSE (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, *fig. 38 F*; Ames Orch. 2 (1908) 12, 97, *t. 23, fig. V, 5, 5* (1915) 61, in Philip. Journ. Sci. 4 (1909) Bot. 595 = *Acoridium philippinense* Ames.
- DENDROCHILUM PULOGENSE Ames in Philip. Journ. Sci. 4 (1909) 594; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340; Ames Orch. 5 (1915) 61 = *Acoridium pulogense* Ames.
- DENDROCHILUM PUMILUM Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1864) 927; Naves Novis. App. (1882) 231; Vidal Phan. Cuming. Philip. (1885) 81, 149, Rev. Pl. Vasc. Filip. (1886) 268; J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 58; Ames in Philip. Journ. Sci. 2 (1907) Bot. 317, 4 (1909) Bot. 596; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 162; Ames Orch. 2 (1908) 93, *text cut*, 3 (1908) 6, 5 (1915) 61 = *Acoridium pumilum* (Reichb. f.) Rolfe.
- DENDROCHILUM PURPUREUM Ames Orch. 6 (1920) 286 = *Acoridium purpureum* Ames.
- DENDROCHILUM QUADRILOBUM Ames Orch. 5 (1915) 61 = *Acoridium quadrilobum* Ames.

- DENDROCHILUM RECURVUM Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 318; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (November, 1907) 117, fig. 38 T; Ames Orch. 2 (1908) 12, 90, t. 22, fig. IV, 4, 5 (1915) 62 = *Acoridium recurvum* Ames.
- DENDROCHILUM RENIFORME Ames Orch. 5 (1915) 63 = *Acoridium reniforme* Ames.
- DENDROCHILUM RHOMBOPHORUM (Reichb. f.) Ames Orch. 3 (1908) 7, 5 (1915) 64 = *Acoridium rhombophorum* (Reichb. f.) Ames.
- DENDROCHILUM SACCOLABIUM Kränzl. in Ann. k. k. Hofmus. Wien 30 (1916) 56 = *Acoridium saccolabium* (Kränzl.) Ames.
- DENDROCHILUM SIMULACRUM Ames Orch. 2 (1908) 92, text cut, 5 (1915) 64 = *Acoridium simulacrum* Ames.
- DENDROCHILUM SPHACELATUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 112, fig. 37 A, B, D, F, H, K; Ames Orch. 2 (1908) 82, 5 (1915) 64, 6 (1920) 287 = *Acoridium sphacelatum* Ames.
- DENDROCHILUM STRICTIFORME (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38 L; Ames Orch. 2 (1908) 12, 89, t. 21, fig. III, 3, 5 (1915) 64, in Philip. Journ. Sci. 4 (1909) Bot. 597 = *Acoridium strictiforme* Ames.
- DENDROCHILUM TENELLUM (Nees & Meyen) Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 318; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (November, 1907) 112, fig. 37 C, E, G, J, L; Ames Orch. 2 (1908) 81, 5 (1915) 64 = *Acoridium tenellum* Nees & Meyen.
- DENDROCHILUM TENUE (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38 M; Ames Orch. 2 (1908) 12, 86, t. 21, fig. V, 5, 5 (1915) 64 = *Acoridium tenue* Ames.
- DENDROCHILUM TENUIFOLIUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 114, fig. 38 O; Ames Orch. 2 (1908) 12, 85, t. 21, fig. IV, 4, 5 (1915) 64; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 340 = *Acoridium tenuifolium* Ames.
- DENDROCHILUM TURPE (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 118, fig. 38 D; Ames Orch. 2 (1908) 12, 98, t. 23, fig. III, 3, 5 (1915) 64 = *Acoridium turpe* Ames.
- DENDROCHILUM VANOVERBERGHII Ames in Philip. Journ. Sci. 7 (1912) Bot. 27, Orch. 5 (1915) 65 = *Acoridium vanoverberghii* Ames.
- DENDROCHILUM VENUSTULUM (Ames) Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 116, fig. 38 U; Ames Orch. 2 (1908) 12, 88, t. 22, fig. III, 3, in Philip. Journ. Sci. 4 (1909) Bot. 595; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341 = *Acoridium microchilum* (Schltr.) Ames.
- DENDROCHILUM WENZELII Ames Orch. 5 (1915) 65 = *Acoridium wenzelii* Ames.

- DENDROCHILUM WHITFORDII** (Rolfe) Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 162; Ames Orch. 2 (1908) 100, *text cut*, 5 (1915) 66 = *Acoridium rhombophorum* (Reichb. f.) Ames.
- DENDROCHILUM WILLIAMSII** Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 114, *fig. 38 S*; Ames Orch. 2 (1908) 12, 82, *t. 22, fig. I, 1*, 5 (1915) 66 = *Acoridium williamsii* Ames.
- DENDROCHILUM WOODIANUM** Ames in Philip. Journ. Sci. 2 (1907) Bot. 318, *nomen*, Orch. 2 (1908) 80, *text cut*, 5 (1915) 66 = *Pseudacoridium woodianum* Ames.

## 43. PHOLIDOTA Lindley

- PHOLIDOTA CARNEA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 37; Miq. Fl. Ind. Bat. 3 (1859) 669; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 158, Fig.-Atlas (1909) *fig. 118*; Ames Orch. 6 (1920) 66, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 149, Sched. Orch. 6 (1923) 20.
- Crinonia carnea* Blume Bijdr. (1825) 339.
- Coelogyne carnea* Reichb. f. in Walp. Ann. 6 (1861) 237.
- Crinonia elmeri* Ames Orch. 5 (1915) 67, *nomen*.
- Mindanao, *Elmer 18834*.
- PHOLIDOTA IMBRICATA** Lindl. in Hook. Exot. Fl. 2 (January, 1825) *t. 138*, in Bot. Reg. 14 (1829) *t. 1213*, 21 (1835) *t. 1777*, Gen. & Sp. Orch. (1830) 36; Lodd. Bot. Cab. 20 (1833) *t. 1934*; **Wight** Icon. 3<sup>2</sup> (1849) 9, *t. 907*; Dalz. & Gibs. Bomb. Fl. (1861) 262; Thw. Enum. Pl. Zeyl. (1864) 300; Benth. Fl. Austral. 6 (1873) 290; Naves Novis. App. (1882) 237; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 269; Fitzger. Austral. Orch. 2<sup>4</sup> (1893) *t.*; Hook. f. Fl. Brit. Ind. 5 (1890) 845; Grant Orch. Burma (1895) 161; Ridl. in Journ. Linn. Soc. 31 (1896) 287, 32 (1896) 328; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 144, *t. 201*; Trim. Handb. Fl. Ceyl. 4 (1898) 162; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 151, Fig.-Atlas (1909) *fig. 112*; Ames Orch. 1 (1905) 72, 2 (1908) 75, 5 (1915) 66; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 115; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 154; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 135; J. J. Sm. in Nova Guinea 8 (1909) Bot. 21, 8<sup>3</sup> (1912) Bot. 527, 12 (1913) Bot. 11; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 11, in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 188; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 149.
- Cymbidium imbricatum* Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 460.
- Ptilocnema bracteatum* D. Don Prodr. Fl. Nepal. (February, 1825) 33.
- Ornithidium imbricatum* Wall. ex Lindl. in Bot. Reg. 14 (1829) sub *t. 1213*, in syn.
- Pholidota pallida* Lindl. in Bot. Reg. 21 (1835) sub *t. 1777*; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 153.

*Pholidota conchoidea* Lindl. in Bot. Reg. 26 (1840) Misc. 84; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 154, fig. 50 K.

*Pholidota loricata* Reichb. f. in Bonpl. 5 (1857) 43; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 153.

*Coelogyne conchoidea* Reichb. f. in Walp. Ann. 6 (1861) 237; Naves Novis. App. (1882) 237.

*Coelogyne imbricata* Reichb. f. in Walp. Ann. 6 (1861) 238.

*Coelogyne pallida* Reichb. f. in Walp. Ann. 6 (1861) 238.

*Coelogyne triotos* Reichb. f. in Walp. Ann. 6 (1861) 238, in Hamb. Gartenz. 18 (1862) 34; Naves Novis. App. (1882) 237.

*Pholidota triotos* Reichb. f. in Walp. Ann. 6 (1861) 238, in syn.; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 154.

Luzon (Bontoc, Benguet, Bulacan, Bataan, Rizal), Polillo, Panay (Capiz), Samar, Leyte, Palawan, Mindanao (Zamboanga, Lanao, Davao), Basilan. A common and widely distributed species in the Philippines at 15 to 1,600 m altitude. In India, Burma, Assam, Siam, Malay Peninsula, China, Sumatra, Java, Celebes, Borneo, and New Guinea.

**PHOLIDOTA VENTRICOSA** (Blume) Reichb. f. in Bonpl. 5 (1857) 43; Rolfe in Gard. Chron. III 5 (1889) 585; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 154, Fig.-Atlas (1909) fig. 114; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 148, fig. 51; Ames Orch. 2 (1908) 75, 5 (1915) 66, in Philip. Journ. Sci. 4 (1909) Bot. 665; J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 43 (1910) 13; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 150.

*Chelonanthera ventricosa* Blume Bijdr. (1825) 383, fig. 51; Lindl. Gen. & Sp. Orch. (1833) 178; Miq. Fl. Ind. Bat. 3 (1859) 673.

*Coelogyne ventricosa* Reichb. f. in Walp. Ann. 6 (1861) 237.

*Pholidota sesquitoria* Kränzl. Xen. Orch. 3 (1893) 114, t. 266, fig. I. 1-7; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 146, fig. 50 F.

Luzon (Lepanto), Mindanao (Zamboanga), *F. B. 5715 Klemme, Copeland 1621*. At about 300 m altitude in Mindanao. In Sumatra, Java, and introduced into Borneo.

#### EXCLUDED OR SYNONYMOUS SPECIES

**PHOLIDOTA CONCHOIDEA** Lindl. in Bot. Reg. 26 (1840) Misc. 84; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 154, fig. 50 K = *Pholidota imbricata* Lindl.

**PHOLIDOTA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1557 = *Thecostele alata* (Roxb.) Par. & Reichb. f.

**PHOLIDOTA GLOBOSA** Lindl. apud Naves Novis. App. (1882) 237.

**PHOLIDOTA MEMBRANACEA** Teijsm. & Binn. apud Naves Novis. App. (1882) 237.

**PHOLIDOTA RHOMBOPHORA** Reichb. f. in Linnæa 41 (1877) 116, in textu; Pfitz. & Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 153 = *Acoridium rhombophorum* (Reichb. f.) Ames.

PHOLIDOTA TRIOTOS Reichb. f. in Walp. Ann. 6 (1861) 238, in syn.; Pfitz. in Engl. Pflanzenreich IV. 50. II. B. 7 (1907) 154 = *Pholidota imbricata* Lindl.

44. MALAXIS Solander ex Swartz

MALAXIS ACUMINATA D. Don Prodr. Fl. Nepal. (1825) 29.

*Microstylis wallichii* Lindl. in Wall. Cat. (1828) No. 1938, *nomen*. Gen. & Sp. Orch. (1830) 20; Ridl. in Journ. Linn. Soc. 24 (1888) 338.

Var. BILOBA (Lindl.) Ames comb. nov.

*Microstylis biloba* Lindl. in Wall. Cat. (1828) No. 1940, *nomen*, Gen. & Sp. Orch. (1830) 20; Par. & Reichb. f. in Trans. Linn. Soc. 30 (1874) 139.

*Dienia carinata* Reichb. f. in Bonpl. 3 (1855) 223.

*Microstylis carinata* Reichb. f. in Walp. Ann. 6 (1861) 207; Naves Novis. App. (1882) 230; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266; Ridl. in Journ. Linn. Soc. 24 (1888) 338.

*Microstylis wallichii* Lindl. var. *biloba* Hook. f. Fl. Brit. Ind. 5 (1888) 686; Grant Orch. Burma (1895) 18; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 16, t. 19; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 88.

*Malaxis biloba* Ames Orch. 2 (1908) 122, 5 (1915) 69.

Luzon (Bontoc, Bataan, Rizal, Cavite, Batangas, Laguna), Cuming 2144, Loher s. n., B. S. 1468, 3244 Ahern's collector, 1472, 4562, 13555, 21337, 22384a Ramos, 29515 Ramos & Edaña, Merrill 4175, Leiberger 6081, Native collector s. n., Vanoverbergh 1349, F. B. 24298, 24298bis Bawan & Borromeo. Terrestrial in forest. In India and Burma. The species proper does not occur in the Philippines.

MALAXIS ALAGENSIS Ames Orch. 2 (1908) 122, *text cut*, 5 (1915) 68.

*Microstylis alagensis* Ames in Philip. Journ. Sci. 2 (1907) Bot. 318.

Luzon (Tayabas), Mindoro, B. S. 25392, 25432, 25543 Yates, Merrill 5801, 5807, Ramos s. n. Terrestrial in humid forest at 130 to 400 m altitude.

MALAXIS ARIETINA Ames in Philip. Journ. Sci. 8 (1913) Bot. 411, Orch. 5 (1915) 68.

Mindanao (Camiguin Island, Agusan), B. S. 14418, 14443 Ramos, Weber 44, 69. Terrestrial up to 315 m altitude in Agusan.

MALAXIS ATROSANGUINEA Ames Sched. Orch. 6 (1923) 30, fig. 7.

Mindanao (Agusan), Elmer 13815.

MALAXIS BALABACENSIS Ames in Philip. Journ. Sci. 6 (1911) Bot. 42, Orch. 5 (1915) 68.

Luzon (Cavite, Laguna, Sorsogon), Leyte, Palawan, Balabac, Mindanao (Camiguin Island, Lanao, Bukidnon, Agusan, Surigao), Sibutu. A fairly common and rather widely distributed species. Terrestrial, in the forest at relatively low altitude, up to 130 m in Agusan and at 800 m in Cavite.



**MALAXIS BANCANOIDES** Ames Orch. 2 (1908) 129, *text cut*, 5 (1915) 68.

Sibuyan, *McGregor 14*. Mountains back of San Fernando, terrestrial at about 660 m altitude.

**MALAXIS BATAANENSIS** Ames in Philip. Journ. Sci. 6 (1911) Bot. 43, Orch. 5 (1915) 69.

*Malaxis flavescens* Ames Orch. 2 (1908) 127, 5 (1915) 70 (excl. syn.).

Luzon (Bataan), *B. S. 1674 Foxworthy, 6211 Robinson, Merrill 3885*. Lamao Forest Reserve, Mt. Mariveles, at 800 to 1,000 m altitude.

**MALAXIS BENGUETENSIS** Ames in Philip. Journ. Sci. 6 (1911) Bot. 43, Orch. 5 (1915) 69.

Luzon (Benguet), *B. S. 8362 McGregor, Boettcher s. n.* Pauai at 2,100 m altitude.

**MALAXIS BINABAYENSIS** Ames Orch. 2 (1908) 124, *text cut*, 5 (1915) 69.

*Microstylis binabayensis* Ames in Philip. Journ. Sci. 2 (1907) Bot. 318.

Mindoro, *Merrill 5804*. Binabay River, terrestrial in forest at 330 m altitude.

**MALAXIS BRACTEOSA** Ames Orch. 7 (1922) 111.

Luzon (Sorsogon), Mindanao (Bukidnon, Dapitan), *B. S. 38658, 38673 Ramos & Edaña, F. B. 4575 Mearns & Hutchinson, Elmer 15698*. Mahilucot River, terrestrial along streams, in forest at 100 to 1,400 m altitude.

**MALAXIS BULUSANENSIS** Ames Sched. Orch. 6 (1923) 33.

Luzon (Sorsogon), *Elmer 14830*.

**MALAXIS COPELANDII** Ames Orch. 2 (1908) 124, *text cut*, 5 (1915) 69.

Mindanao (Zamboanga), *Copeland s. n.*

**MALAXIS CUNEIPETALA** Ames Orch. 6 (1920) 288.

Leyte, *Wenzel 0724*. Jaro, terrestrial in forest at 800 m altitude.

**MALAXIS CURRANII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 44, Orch. 5 (1915) 69.

Luzon (Bontoc, Benguet), *Vanoverbergh 3919, F. B. 5105 Curran, B. S. 12721 Fenix*. Terrestrial, up to 1,300 m altitude in Bontoc.

**MALAXIS DAVAENSIS** Ames Orch. 5 (1915) 69.

Mindanao (Davao), *Weber 243*. Terrestrial in shade of forest at 1,075 m altitude.

**MALAXIS DENTATA** Ames Orch. 2 (1908) 125, *text cut*, 5 (1915) 70.

*Microstylis dentata* Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 319.

*Microstylis philippinensis* Kränzl. in Orchis 2 (November, 1907) 16.

*Malaxis philippinensis* Ames Orch. 5 (1915) 71.

Luzon (Rizal, Sorsogon, Camarines), Polillo, Mindoro, Leyte, Mindanao (Agusan), Jolo. A fairly common species, terrestrial or in trees at 60 to 1,000 m altitude.

- MALAXIS ELMERI** Ames Orch. 2 (1908) 126, *text cut*, 5 (1915) 70.  
Luzon (Benguet), *Elmer 6621, R. S. Williams 1110.*
- MALAXIS EPIPHYTICA** Ames Sched. Orch. 6 (1923) 34.  
Mindanao (Cotabato), *Weber 223.* At 900 m altitude.
- MALAXIS HUTCHINSONIANA** Ames Orch. 2 (1908) 128, *text cut*, 5 (1915) 70.  
*Microstylis hutchinsoniana* Ames in Philip. Journ. Sci. 2 (1907) Bot. 319.  
Mindoro, *Merrill 5809.* Mt. Halcon, terrestrial in forest at 760 m altitude.
- MALAXIS LATIFOLIA** Sm. in Rees Cycl. 22 (1819) No. 3; Ames in Philip. Journ. Sci. 6 (1911) Bot. 44, Orch. 5 (1915) 70, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 151.  
*Malaxis plicata* Roxb. Hort. Beng. (1814) 63, *nomen*; Roxb. Fl. Ind. ed. 2, 3 (1832) 456.  
*Dienia congesta* Lindl. in Bot. Reg. 10 (1824) sub *t. 825*, in Wall. Cat. (1828) No. 1936, Gen. & Sp. Orch. (1830) 22; Reichb. f. in Bonpl. 3 (1855) 250; Benth. Fl. Hongk. (1861) 352.  
*Gastroglottis montana* Blume Bijdr. (1825) 387.  
*Dienia fusca* Lindl. Gen. & Sp. Orch. (1830) 22.  
*Microstylis congesta* Reichb. f. in Walp. Ann. 6 (1861) 206; Hance Suppl. Fl. Hongk. (1872) 39; Naves Novis. App. (1882) 230; Ridl. in Journ. Linn. Soc. 24 (1888) 334, 32 (1896) 223; Hook. f. Fl. Brit. Ind. 5 (1890) 689; Grant Orch. Burma (1895) 16 (excl. syn. in part); King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 19, *t. 23*; Trim. Handb. Fl. Ceyl. 4 (1898) 141; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 14.  
*Microstylis trilobulata* Kurz Rept. Veg. Andam. Isles App. B (1870) xix, *nomen*; N. E. Br. in Gard. Chron. II 18 (1882) 393.  
*Microstylis bernaysii* F. v. Muell. Fragm. 11 (1878) 21.  
*Liparis bernaysii* F. v. Muell. Fragm. 11 (1878) 21, in syn.; Bernays Fl. Queensl. (?) 507; F. M. Bail. Syn. Queensl. Fl. (1883) 508.  
*Microstylis congesta* Reichb. f. var. *fusca* Ridl. in Journ. Linn. Soc. 24 (1888) 335.  
*Microstylis latifolia* J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 248, Fig.-Atlas (1910) *fig. 185*; Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 124; J. J. Sm. in Nova Guinea 12 (1913) 15.  
*Microstylis latifolia* J. J. Sm. var. *fusca* J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 249.  
*Malaxis latifolia* Sm. var. *fusca* Ames in Philip. Journ. Sci. 6 (1911) Bot. 45.

Luzon (Bontoc, Benguet, Rizal, Laguna, Sorsogon), Mindanao (Surigao). A fairly common species, though apparently localized. Terrestrial, in forest at 150 to 1,300 m altitude. In India, Ceylon, Burma, Malay Peninsula, Siam, China, Sumatra, Java, Celebes, Borneo, New Guinea, and Australia.

**MALAXIS LILACINA** Ames Sched. Orch. 6 (1923) 35.

Panay (Antique), Leyte, *McGregor 6205*, *Wenzel 0641, 0667*. At 600 to 900 m altitude.

**MALAXIS MACGREGORII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 45, Orch. 5 (1915) 71.

*Malaxis longipedunculata* Ames in Philip. Journ. Sci. 8 (1913) Bot. 411, Orch. 5 (1915) 70.

Luzon (Tayabas), Polillo, Leyte, Mindanao (Agusan, Davao), *B. S. 10440 McGregor, 25539 Yates, Wenzel 033, 052, 0132, 0237, 0238, 0503, 0847, Weber 294, 296, 313*. Terrestrial in forest at 60 to 600 m altitude.

**MALAXIS MERRILLII** Ames Orch. 2 (1908) 128, *text cut*, 5 (1915) 71.

*Microstylis merrillii* Ames in Philip. Journ. Sci. 2 (1907) Bot. 319.

Mindoro, *Merrill 5820*. Mt. Halcon, terrestrial, at base of cliffs at 1,930 m altitude.

**MALAXIS MINDANAENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1560, Orch. 5 (1915) 71.

Mindanao (Davao), *Elmer 11855*. Todaya, Mt. Apo, terrestrial in dense forest at 1,330 m altitude.

**MALAXIS MINDORENSIS** (Rendle) Ames Orch. 2 (1908) 131, 5 (1915) 71.

*Microstylis mindorensis* Rendle in Journ. Bot. 34 (1896) 356.

Mindoro, Mt. Dulangan, *Whitehead*. Known only from a photograph and a sketch of the type.

**MALAXIS NEGROSIANA** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1561, Orch. 5 (1915) 71, 6 (1920) 288.

Negros (Oriental Negros), Leyte, *Elmer 9600, Wenzel 0641, 0667*. Terrestrial or epiphytic in forest at 600 to 1,300 m altitude.

**MALAXIS PROPINQUA** Ames Orch. 6 (1920) 289.

Luzon (Bontoc), *Vanoverbergh 3916*. Terrestrial, on hills at 1,200 m altitude.

**MALAXIS QUADRIDENTATA** Ames Orch. 2 (1908) 130, *text cut*, 5 (1915) 72.

*Microstylis quadridentata* Ames in Philip. Journ. Sci. 2 (1907) Bot. 320.

Mindoro, *Merrill 5818, 5805*. Mt. Halcon, terrestrial in forest at 800 to 1,000 m altitude.

**MALAXIS QUADRILOBA** Ames Orch. 2 (1908) 131, *text cut*, 5 (1915) 72.

Luzon (Bontoc, Benguet, Bataan), Panay, (Antique), *Vanoverbergh 786, 1348, 3680, 3944, R. S. Williams 1108, B. S. 32381 McGregor, Merrill 3886* in part.

**MALAXIS RAMOSII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 45, Orch. 5 (1915) 72.

Luzon (Rizal, Laguna), *B. S. 4567 Ramos, 17040 Robinson, Baker 3573*. Up to 700 m altitude in Laguna.

**MALAXIS RIZALENSIS** Ames in Philip. Journ. Sci. 6 (1911) Bot. 46, Orch. 5 (1915) 72.

Luzon (Rizal), *B. S. 4561 Ramos*. Bosoboso, in thickets.

**MALAXIS TAYLORI** Ames Orch. 6 (1920) 290.

Mindanao (Agusan), *Elmer 13495, Taylor s. n.*

**MALAXIS UNCATA** Ames in Philip. Journ. Sci. 6 (1911) Bot. 46, Orch. 5 (1915) 72.

Luzon (Laguna), *F. B. 9552 Curran*. Paete-Piapi.

**MALAXIS WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 412, Orch. 5 (1915) 72.

Panay (Capiz), Leyte, *B. S. 31141 Ramos, Wenzel 034, 0130, 0144, 0211, 0239, 0503a*. Terrestrial, in forest at 60 to 500 m altitude.

**MALAXIS WILLIAMSII** Ames Orch. 2 (1908) 131, *text cut*, 5 (1915) 72.

Luzon (Benguet), *R. S. Williams 1109*. Baguio.

#### EXCLUDED OR SYNONYMOUS SPECIES

**MALAXIS ANCEPS** Reichb. f. in Walp. Ann. 6 (1861) 214 = *Oberonia anceps* Lindl.

**MALAXIS ANGUSTIFOLIA** Blume Bijdr. (1825) 393 = *Liparis caespitosa* (Thou.) Lindl.

**MALAXIS APOROPHYLLA** Reichb. f. in Walp. Ann. 6 (1861) 214 = *Oberonia aporophylla* Reichb. f.

**MALAXIS BILOBA** Ames Orch. 2 (1908) 122, 5 (1915) 69 = *Malaxis acuminata* D. Don var. *biloba* Ames.

**MALAXIS CAESPITOSA** Thou. Orch. Isles Afr. (1822) t. 89 = *Liparis caespitosa* (Thou.) Lindl.

**MALAXIS COMPRESSA** Blume Bijdr. (1825) 390, fig. 54 = *Liparis compressa* (Blume) Lindl.

**MALAXIS CYLINDRICA** Reichb. f. in Walp. Ann. 6 (1861) 208 = *Oberonia cylindrica* Lindl.

**MALAXIS DISTICHA** Thou. Orch. Isles Afr. (1822) t. 88 = *Liparis disticha* (Thou.) Lindl.

**MALAXIS FLAVESCENS** Ames Orch. 2 (1908) 127, 5 (1915) 70 (excl. syn.) = *Malaxis bataanensis* Ames.

**MALAXIS IRIDIFOLIA** Reichb. f. in Walp. Ann. 6 (1861) 208 = *Oberonia iridifolia* (Roxb.) Lindl.

**MALAXIS LATIFOLIA** Blume Bijdr. (1825) 393 = *Liparis latifolia* (Blume) Lindl.

**MALAXIS LONGIPEDUNCULATA** Ames in Philip. Journ. Sci. 8 (1913) Bot. 411, Orch. 5 (1915) 70 = *Malaxis macgregorii* Ames.

**MALAXIS MINIATA** Reichb. f. in Walp. Ann. 6 (1861) 215 = *Oberonia miniata* Lindl.

- MALAXIS MINIMA** Blume Bijdr. (1825) 391 = *Liparis caespitosa* (Thou.) Lindl.
- MALAXIS MONSTRUOSA** Blume Bijdr. (1825) 395 = *Oberonia monstrosa* (Blume) Lindl.
- MALAXIS PALLIDA** Blume Bijdr. (1825) 391 = *Liparis pallida* (Blume) Lindl.
- MALAXIS PARVIFLORA** Blume Bijdr. (1825) 392 = *Liparis parviflora* (Blume) Lindl.
- MALAXIS PHILIPPINENSIS** Ames Orch. 5 (1915) 71 = *Malaxis dentata* Ames.
- MALAXIS THISBE** Reichb. f. in Walp. Ann. 6 (1861) 213 = *Oberonia thisbe* Reichb. f.

45. **OBERONIA** Lindley

- OBERONIA ANCEPS** Lindl. Sert. Orch. (1838) sub t. 8, Fol. Orch. Oberonia (1859) 6; Hook. f. Fl. Brit. Ind. 5 (1888) 685; Ridl. in Trans. Linn. Soc. II 3 (1893) 359; Grant Orch. Burma (1895) 28; Ridl. in Journ. Linn. Soc. 32 (1896) 219; Schltr. in Perk. Frag. Fl. Filip. (1904) 43; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 238, Fig.-Atlas (1910) t. 174; Ames Orch. 1 (1905) 78, 5 (1915) 72; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 18; J. J. Sm. in Bull. Jard. Bot. Buitenz. II 26 (1918) 18.

*Oberonia imbricata* Wight Icon. 5<sup>1</sup> (1852) 3, t. 1629.

*Oberonia griffithii* Wight Icon. 5<sup>1</sup> (1852) 4.

*Malaxis anceps* Reichb. f. in Walp. Ann. 6 (1861) 214.

*Oberonia ancipita* Naves Novis. App. (1882) 230; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266; Ceron Cat. Pl. Herb. Manila (1892) 166, sphalm.

*Iridorchis anceps* Ktze. Rev. Gen. Pl. 2 (1891) 669.

Luzon (Bataan, Laguna, Tayabas), Polillo, Samar, Culion, Mindanao (Agusan), *Serrato s. n.*, *B. S. 16580, 24156 Ramos, Merrill 139, 569, s. n., Weber s. n.*

- OBERONIA APOROPHYLLA** Reichb. f. in Bonpl. 3 (1855) 223; Lindl. Fol. Orch. Oberonia (1859) 6; Naves Novis. App. (1882) 230; Ames Orch. 2 (1908) 140, 5 (1915) 72, in Philip. Journ. Sci. 4 (1909) Bot. 666.

*Malaxis aporophylla* Reichb. f. in Walp. Ann. 6 (1861) 214.

*Oberonia imbricata* Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266, non Lindl.

*Iridorchis aporophylla* Ktze. Rev. Gen. Pl. 2 (1891) 669.

Luzon (Bontoc, Benguet), Mindanao (Lanao), *Cuming 2113, Vanoverbergh 822, 1474, 3827, B. S. 8319, 8508 McGregor, M. S. Clemens 699.* Mountainous regions at 1,700 to 2,100 m altitude.

- OBERONIA BASILANENSIS** Ames Orch. 5 (1915) 72.

Basilan, *B. S. 16247 Reillo.*

- OBERONIA BENGUETENSIS** Ames in Philip. Journ. Sci. 7 (1912) Bot. 8, Orch. 5 (1915) 73.

Luzon (Benguet), *Merrill 4855.* Suyoc to Pauai, epiphyte in mossy forest at 2,200 m altitude.

**OBERONIA CYLINDRICA** Lindl. in Bot. Reg. 26 (1840) Misc. 20, Fol. Orch. Oberonia (1859) 1; Naves Novis. App. (1882) 230; Ames Orch. 1 (1905) 77, 5 (1915) 73; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Ames in Philip. Journ. Sci. 6 (1911) Bot. 47.

*Malaxis cylindrica* Reichb. f. in Walp. Ann. 6 (1861) 208.

*Iridorchis cylindrica* Ktze. Rev. Gen. Pl. 2 (1891) 669.

Luzon (Bontoc, Lepanto, Union, Benguet), Leyte, Bohol, Palawan. A fairly common species in the Philippines. Epiphyte at 6 to 2,650 m altitude.

**OBERONIA ELMERI** Ames in Elm. Leafl. Philip. Bot. 5 (1912) 1564, Orch. 5 (1915) 73.

Luzon (Benguet), *Elmer 8434, F. B. 5057 Curran*. Baguio, epiphyte at 1,580 m altitude.

**OBERONIA HISPIDULA** Ames in Philip. Journ. Sci. 7 (1912) Bot. 8, Orch. 5 (1915) 73.

Luzon (Benguet, Rizal, Tayabas), Mindanao (Agusan), *F. B. 5124 Curran, B. S. 19240 Reillo, Elmer 7406, 9261, 14084*. Epiphytic, at 800 to 1,230 m altitude.

**OBERONIA IRIDIFOLIA** (Roxb.) Lindl. in Wall. Cat. (1828) No. 1948, p. p., Gen. & Sp. Orch. (1830) 15 (excl. syn. *Malaxis ensiformis* Sm.), Fol. Orch. Oberonia (1859) 1; Benth. Fl. Austral. 6 (1873) 274; Naves Novis. App. (1882) 230; Hook. f. Fl. Brit. Ind. 5 (1888) 675; Grant Orch. Burma (1895) 31; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 8, t. 8; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 239, Fig.-Atlas (1910) fig. 175; Ames Orch. 1 (1905) 77, 5 (1915) 73; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 16; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 194; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 152.

*Cymbidium iridifolium* Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 458.

? *Cymbidium flavescens* Llanos Fragm. Pl. Filip. (1851) 96; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 74; Merr. Sp. Blancoanae (1918) 113.

*Malaxis iridifolia* Reichb. f. in Walp. Ann. 6 (1861) 208.

*Iridorchis iridifolia* Ktze. Rev. Gen. Pl. 2 (1891) 669.

Luzon (Bataan, Rizal, Sorsogon), Palawan, Mindanao (Zamboanga, Davao), Basilan, *F. B. 130 Barnes, 5174 Hutchinson, B. S. 5643, 24100 Ramos, Weber 269, 607*. Epiphytic, up to 400 m in Mindanao. In India, Burma, Malay Peninsula, China, Sumatra, Java, Borneo, and Australia.

**OBERONIA LEYTENSIS** Ames Orch. 6 (1920) 291, t. 98.

Leyte, *Wenzel 0945*. Epiphyte, in forest at sea level.

**OBERONIA LIPENSIS** Ames Orch. 7 (1922) 114.

Mindanao (Bukidnon), *B. S. 38535 Ramos*. Mt. Lipa, epiphytic in mossy forest at 2,200 m altitude.

**OBERONIA LUZONENSIS** Ames Orch. 5 (1915) 74.

Luzon (Laguna, Tayabas), Mindanao (Surigao), *Elmer 17558*, *B. S. 20809* *Escritor*, *34489* *Ramos & Pascasio*.

**OBERONIA MCGREGORII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 321, Orch. 3 (1908) 65, t. 48, 5 (1915) 74.

Luzon (Laguna), Mindoro, Mindanao (Agusan), *Reillo 16*, *B. S. 15009* *Ramos*, *Weber 168*. Epiphytic apparently at low altitudes.

**OBERONIA MERRILLII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 9, Orch. 5 (1915) 74; Merr. Fl. Manila (1912) 168.

Luzon (Nueva Ecija, Rizal, Tayabas), Busuanga, Mindanao (Zamboanga, Davao), *B. S. 5298* *McGregor*, *Merrill 7348*, *11219*, *Ramos s. n.*, *Weber s. n.*, ? *F. B. 9022* *Whitford & Hutchinson*, *26587* *Reyes*, *Copeland 1309*. Epiphyte at 18 to 400 m altitude.

**OBERONIA MINDORENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, Orch. 3 (1908) 67, t. 49, 5 (1915) 75.

Mindoro, Leyte, Mindanao (Agusan), *Merrill 5613*, *Wenzel 0420*, *0425*, *0559*, *Weber 316*. Epiphyte at 400 to 500 m altitude.

**OBERONIA MINIMA** Ames Orch. 5 (1915) 75.

Leyte, *Wenzel 046*. Dagami, epiphyte at 60 m altitude.

**OBERONIA MINUTISSIMA** Ames Orch. 7 (1922) 115.

Mindanao (Surigao) *Wenzel 01030*, *01032*. Placer, epiphytic in forest at 150 m altitude.

**OBERONIA MONSTRUOSA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 17; Miq. Fl. Ind. Bat. 3 (1859) 624; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 235, Fig.-Atlas (1910) fig. 171; Ames Orch. 5 (1915) 76.

*Malaxis monstrosa* Blume Bijdr. (1825) 395.

Mindanao (Agusan), *Weber 173*, *312*. Epiphytic at low altitude. In Java.

**OBERONIA OBESA** Ames Orch. 5 (1915) 76.

Luzon (Bontoc), *Vanoverbergh 407*.

**OBERONIA REILLOI** Ames Sched. Orch. 6 (1923) 40.

Luzon (Laguna), *Reillo 20*. Epiphyte.

**OBERONIA SETIGERA** Ames in Philip. Journ. Sci. 7 (1912) Bot. 10, Orch. 5 (1915) 77.

Luzon (Bataan), *Whitford 1122*. Mt. Mariveles, epiphyte, at 1,200 m altitude.

**OBERONIA SURIGAENSIS** Ames Orch. 6 (1920) 292.

Mindanao (Surigao), *Wenzel 01159*. Epiphyte, in forest at 150 m altitude.

**OBERONIA THISBE** Reichb. f. in Bonpl. 3 (1855) 223; Lindl. Fol. Orch. Oberonia (1859) 5; Naves Novis. App. (1882) 230; Ames Orch. 2 (1908) 141, 5 (1915) 77.

*Malaxis thisbe* Reichb. f. in Walp. Ann. 6 (1861) 213.

*Habenaria thisbe* Vidal Phan. Cuming. Philip. (1885) 151.

*Iridorchis thisbe* Ktze. Rev. Gen. Pl. 2 (1891) 669.

*Oberonia rufilabris* Ames Orch. 1 (1905) 78, non Lindl.

Luzon (Kalinga, Benguet, Laguna), Polillo, Mindanao (Surigao), *Boettcher s. n.*, *Elmer 5839*, *Reillo 52*, *B. S. 15039 Ramos*, *9255 Robinson*, *Cuming 2134*, *Piper 197*. Epiphyte at sea level to 2,000 m altitude.

**OBERONIA TOPPINGII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 413, Orch. 5 (1915) 77.

Luzon (Rizal), *Topping s. n.* Wawa.

**OBERONIA WENZELII** Ames Orch. 5 (1915) 77.

Leyte, *Wenzel 0386*, *0388*, *0414*, *0426*, *0436*. Jaro, epiphyte in forest at 500 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**OBERONIA ANCIPIITA** Naves Novis. App. (1882) 230; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266; Ceron Cat. Pl. Herb. Manila (1892) 166, sphalm = *Oberonia anceps* Lindl.

**OBERONIA IMBRICATA** Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266, non Lindl. = *Oberonia aporophylla* Reichb. f.

**OBERONIA MINIATA** Lindl. in Bot. Reg. 29 (1843) Misc. 6, Fol. Orch. Oberonia (1859) 6; Naves Novis. App. (1882) 230; Ames Orch. 5 (1915) 75.

*Malaxis miniata* Reichb. f. in Walp. Ann. 6 (1861) 215.

This species was based on material from Singapore. It has been credited to the Philippines, but there is little reason for considering it Philippine. It has not appeared in our modern collections.

**OBERONIA RUFILABRIS** Ames Orch. 1 (1905) 78, non Lindl. = *Oberonia thisbe* Reichb. f.

**OBERONIA SPATULATA** Lindl. apud Naves Novis. App. (1882) 230.

#### 46. HIPPEOPHYLLUM Schlechter

**HIPPEOPHYLLUM WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 413, Orch. 5 (1915) 78.

Leyte, *Wenzel 020*, *0158*. Dagami, epiphyte, at 60 m altitude.

#### 47. LIPARIS L. C. Richard

**LIPARIS AMESIANA** Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 210; Ames Orch. 5 (1915) 78.

*Cestichis gracilis* Ames Orch. 2 (1908) 136, *text cut*, non *Liparis gracilis* Hook. f.

Luzon (Bataan, Rizal), Mindanao (Bukidnon), *Copeland 274*, *Merrill s. n.*, *Weber 28*, *B. S. 1782*, *38632 Ramos*. Epiphyte in forest at 930 to 1,460 m altitude.



**LIPARIS BENGUETENSIS** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 210; Ames Orch. 5 (1915) 78.  
*Cestichis benguuetensis* Ames Orch. 1 (1905) 9, 75, t. 3, fig. I, 1-6, 2 (1908) 132.

Luzon (Bontoc, Benguet), Negros. Fairly common in Luzon in mountainous regions at 700 to 2,300 m altitude.

**LIPARIS BONTOCENSIS** Ames Sched. Orch. 6 (1923) 38.

Luzon (Bontoc), *Vanoverbergh 1245, 3947a*. At 1,650 to 1,700 m altitude.

**LIPARIS CAESPITOSA** (Thou.) Lindl. in Bot. Reg. 11 (1825) sub t. 882; A. Rich. Monogr. Orch. Isles France et Bourb. (1827) [in Mém. Soc. Hist. Nat. Par. 4 (1828) 47]; Lindl. Gen. & Sp. Orch. (1830) 32; Bojer Hort. Maur. (1837) 321; S. Moore in Baker Fl. Maur. & Seych. (1877) 342; Ridl. in Journ. Linn. Soc. 22 (1886) 290; Cordem. Fl. Réunion. (1895) 180; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 266, Fig.-Atlas (1910) fig. 204, in Nova Guinea 8 (1909) 35, 12<sup>3</sup> (1915) 221; Schltr. in Engl. Bot. Jahrb. 45 Beibl. 104 (1911) 17; Ames Orch. 5 (1915) 78, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 153.

*Malaxis caespitosa* Thou. Orch. Isles Afr. (1822) t. 89.

*Malaxis minima* Blume Bijdr. (1825) 391.

*Malaxis angustifolia* Blume Bijdr. (1825) 393.

*Liparis minima* Lindl. Gen. & Sp. Orch. (1830) 32; Miq. Fl. Ind. Bat. 3 (1859) 622; Naves Novis. App. (1882) 230; Ridl. in Journ. Linn. Soc. 22 (1886) 297; Schltr. in Fedde Repert. 10 (1911) 28.

*Liparis angustifolia* Lindl. Gen. & Sp. Orch. (1830) 31; Miq. Fl. Ind. Bat. 3 (1859) 622; Thw. Enum. Pl. Zeyl. (1864) 296.

*Liparis auriculata* Reichb. f. in Flora 55 (1872) 277, non Blume.

*Liparis pusilla* Ridl. in Journ. Linn. Soc. 22 (1886) 294; Hook. f. in Hook. Icon. Pl. 19 (1889) t. 1856 A, Fl. Brit. Ind. 5 (1890) 701; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 32, t. 41.

*Liparis prainii* Hook. f. in Hook. Icon. Pl. 19 (1889) t. 1857 A, Fl. Brit. Ind. 5 (1890) 700.

*Liparis duthiei* Hook. f. in Hook. Icon. Pl. 19 (1889) t. 1857 B, Fl. Brit. Ind. 5 (1890) 701; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 32, t. 42; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 93.

*Liparis obscura* Hook. f. in Hook. Icon. Pl. 19 (1889) t. 1886, Fl. Brit. Ind. 5 (1890) 701; Trim. Handb. Fl. Ceyl. 4 (1898) 147.

*Leptorchis caespitosa* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Leptorchis duthiei* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Leptorchis minima* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Leptorchis obscura* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Leptorchis prainii* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Leptorchis pusilla* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Cestichis caespitosa* Ames Orch. 2 (1908) 132, t.

Luzon (Benguet, Rizal), Leyte, Mindanao (Cotabato, Davao), R. S. Williams 428, 1954, Merrill 4684, B. S. 13558 Ramos, 19258 Reillo, Wenzel 0734, Weber 232, Elmer 11858. Epiphyte in forest at 800 to 1,160 m

altitude. In India, Ceylon, Sumatra, Java, Celebes, Borneo, New Guinea, Bourbon, Mauritius, Reunion, and Madagascar.

**LIPARIS CLEMENSIAE** Ames Orch. 5 (1915) 79.

*Cestichis clemensiae* Ames in Philip. Journ. Sci. 4 (1909) Bot. 666. Mindanao (Lanao), *M. S. Clemens* 129. Camp Keithley.

**LIPARIS COMPRESSA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 32; Miq. Fl. Ind. Bat. 3 (1859) 621; Naves Novis. App. (1882) 230; Ridl. in Journ. Linn. Soc. 22 (1886) 291, 32 (1896) 230; Hook. f. Fl. Brit. Ind. 5 (1890) 706; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 280, Fig.-Atlas (1910) *fig. 215*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 25; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 17; Ames Orch. 5 (1915) 79.

*Malaxis compressa* Blume Bijdr. (1825) 390, *fig. 54*.

*Leptorchis compressa* Ktze. Rev. Gen. Pl. 2 (1891) 670.

*Cestichis compressa* Ames Orch. 1 (1905) 76, *text cut*, 2 (1908) 134.

Luzon (Lepanto, Bataan), *Borden 1816, Merrill 4577*. Mt. Data and Mt. Mariveles, epiphyte in forest at 1,060 to 2,300 m altitude. In Malay Peninsula, Sumatra, Java, and Celebes.

**LIPARIS CONFUSA** J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 275, Fig.-Atlas (1910) *fig. 211*; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 17, in Fedde Repert. 10 (1911) 28, in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 205; J. J. Sm. in Bull. Jard. Buitenz. II 14 (1914) 32; Ames Orch. 5 (1915) 79, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 153.

*Liparis flaccida* Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 103, non Reichb. f.

*Cestichis vestita* Ames Orch. 2 (1908) 139, p. p., non *Liparis vestita* Reichb. f.

Luzon (Apayao, Bontoc, Benguet, Nueva Vizcaya, Rizal, Laguna, Tayabas, Sorsogon), Mindoro, Leyte, Samar, Mindanao (Zamboanga, Lanao, Agusan, Butuan, Davao), Basilan. Common and widely distributed in the Philippines. Epiphyte in forest at 15 to 1,430 m altitude. In Sumatra, Java, Celebes, Borneo, and New Guinea.

**LIPARIS CUMINGII** Ridl. in Journ. Linn. Soc. 22 (1886) 292; Hook. f. Fl. Brit. Ind. 5 (1890) 707; Ames Orch. 5 (1915) 79.

*Cestichis cumingii* Ames Orch. 1 (1905) 13, in Philip. Journ. Sci. 7 (1912) Bot. 7.

Luzon (Bontoc, Bataan, Laguna, Sorsogon), Leyte, Bohol,\* Mindanao (Zamboanga), *Weber 26, B. S. 17037 Robinson, Elmer 14703, 16296, Wenzel 0680, 0808, Copeland s. n., Vanoverbergh 710*. Epiphyte in forest at 600 to 1,400 m altitude.

**LIPARIS DUMAGUETENSIS** Ames Orch. 5 (1915) 80.

*Liparis elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1561, nec *Cestichis elmeri* Ames, nec *Liparis elmeri* (Ames) Schltr.

Luzon (Tayabas), Panay (Antique), Negros (Oriental Negros), Leyte, Mindanao (Camiguin Island), *Elmer 7566, 7579, 9445, 10236, Wenzel 0298, 0299, McGregor 5805, B. S. 14444 Ramos, 41401 Herre*. Terrestrial in forest at 600 to 1,300 m altitude.

\* Bopol, according to Hook. f. in Fl. Brit. Ind. 5 (1890).

**LIPARIS ELMERI** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 210; Ames Orch. 5 (1915) 80.

*Cestichis elmeri* Ames Orch. 1 (1905) 10, 75, t. 3, fig. II, 7-12, 2 (1908) 135.

Luzon (Benguet, Laguna, Tayabas), *Elmer 6553*, *R. S. Williams 1928*, *Ramos & Edaño 107*, *F. B. 5065 Curran*, *B. S. 26528 Ramos & Edaño*, *6085 Robinson*, *27940 Ocampo*. Epiphyte, 260 to 2,230 m altitude.

**LIPARIS FORBESII** Ridl. in Journ. Linn. Soc. 22 (1886) 283; ? J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 268, Fig.-Atlas (1910) fig. 205; Ames Orch. 5 (1915) 80.

*Leptorchis forbesii* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Cestichis forbesii* Ames Orch. 2 (1908) 135.

Luzon (Bontoc, Benguet), Mindanao (Lanao), *Vanoverbergh 711*, *1387*, *1478*, *3947*, *R. S. Williams 1941*, *M. S. Clemens 446*.

**LIPARIS FRAGILIS** Ames Orch. 5 (1915) 80.

*Cestichis fragilis* Ames in Philip. Journ. Sci. 8 (1913) Bot. 412.

Mindanao (Zamboanga), *Merrill 8184*, *8289*. Epiphyte at about 900 m altitude.

**LIPARIS HALCONENSIS** Ames Orch. 5 (1915) 80.

*Cestichis halconensis* Ames in Philip. Journ. Sci. 2 (1907) Bot. 321, Orch. 3 (1908) 63, t. 47.

Luzon (Ifugao), Mindoro, Panay (Antique), *Merrill 5799*, *McGregor 6182*, *B. S. 19882 McGregor*. Terrestrial at 400 to 730 m altitude.

**LIPARIS JARENSIS** Ames Orch. 6 (1920) 293.

Leyte, *Wenzel, 0628*, *0708*, *0799*, *0813*. Jaro, epiphyte in forest at 600 to 700 m altitude.

**LIPARIS LEYTENSIS** Ames Orch. 5 (1915) 80.

Panay (Capiz), Leyte, Mindanao (Agusan), *Wenzel 0216*, *0353*, *0721*, *Weber 160*, *B. S. 35607 Martelino & Edaño*. Epiphyte in forest at 12 to 800 m altitude.

**LIPARIS LINEARIFOLIA** Ames Orch. 5 (1915) 81.

*Cestichis linearifolia* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1563.

Mindanao (Davao), *Elmer 11494*, Todaya, Mt. Apo, epiphyte in dense forest at 2,000 m altitude.

**LIPARIS LONGIPES** Lindl. in Wall. Pl. Asiat. Rar. 1 (1830) 31, t. 35, Gen. & Sp. Orch. (1830) 30; Wight Icon. Pl. 3<sup>2</sup> (1849) 9, t. 906; Benth. in Hook. Kew Journ. Bot. 7 (1855) 33; Reichb. f. in Bonpl. 5 (1857) 57; Benth. Fl. Hongk. (1861) 352; Reichb. f. in Walp. Ann. 6 (1861) 218; Thw. Enum. Pl. Zeyl. (1864) 295; Reichb. f. in Seem. Fl. Vit. (1868) 302; Ridl. in Journ. Linn. Soc. 22 (1886) 293 (excl. syn. *L. elegans* Lindl.), 32 (1896) 229; Hook. f. Fl. Brit. Ind. 5 (1890) 703; Grant Orch. Burma (1895) 21; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 29, t. 37; Trim. Handb. Fl. Ceyl. 4 (1898) 147; Forbes & Hemsl. in Journ. Linn. Soc. 36 (1903) 7; Matsum. Ind. Pl. Jap. 2 (1905) 252; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.)

(1906) 93; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 25; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 200; Ames Orch. 6 (1920) 94, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 154.

*Liparis pendula* Lindl. in Bot. Reg. 24 (1838) Misc. 94; Regel Ind. Sem. Hort. Petrop. (1868) 79; Kränzl. in Orchis 2 (1907) 32.

*Liparis spathulata* Lindl. in Bot. Reg. 26 (1840) Misc. 81.

*Sturmia longipes* Reichb. f. in Bonpl. 3 (1855) 250.

? *Liparis boothii* Regel Ind. Sem. Hort. Petrop. (1864) Suppl. 14.

? *Liparis nesophila* Reichb. f. Otia Bot. Hamb. 1 (1878) 56, Xen. Orch. 3 (1881) 31.

*Liparis longipes* Lindl. var. *spathulata* Ridl. in Journ. Linn. Soc. 22 (1886) 294; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 30, t. 38.

*Liparis triloba* Ridl. in Journ. Linn. Soc. 22 (1886) 295; Ames Orch. 5 (1915) 84.

*Cestichis pendula* Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1889) 131, fig. 128 C-E, G.

*Leptorchis longipes* Ktze. Rev. Gen. Pl. 2 (1891) 670.

*Leptorchis triloba* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Stichorchis pendula* Pfitz. in Engl. & Prantl Nat. Pflanzenfam. Nachtr. 1 (1897) 103.

*Cestichis longipes* Ames Orch. 1 (1905) 75 (excl. Luzon specimen), 2 (1908) 137.

Luzon (Ilocos Norte, Laguna), Mindoro, Mindanao (Zamboanga), *Cuming s. n.*, *B. S. 27138 Ramos, 9679 Robinson, Ramos & Edaño s. n.*, *R. S. Williams 2176, F. B. 9218 Whitford & Hutchinson*. Epiphyte at 40 to 1,650 m altitude. In India, Ceylon, Burma, Malay Peninsula, China, Formosa, and Samoa.

**LIPARIS LYONII** Ames Orch. 5 (1915) 81.

*Cestichis lyonii* Ames in Philip. Journ. Sci. 6 (1911) Bot. 47.

Luzon (Bontoc, Benguet), *Vanoverbergh 3885, Lyon 155, Elmer 8463*.

**LIPARIS MAGNICALLOSA** Ames Orch. 7 (1922) 108.

Mindanao (Bukidnon), *B. S. 38739 Ramos & Edaño*. Mt. Candon, epiphyte in forest at 1,600 m altitude.

**LIPARIS MERRILLII** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 210; Ames Orch. 5 (1915) 81.

*Cestichis merrillii* Ames Orch. 1 (1905) 11, 75, t. 3, fig. III, 13-18, 2 (1908) 138, in Philip. Journ. Sci. 2 (1907) Bot. 321.

Luzon (Bontoc, Ifugao, Bataan, Rizal, Tayabas), Mindoro, Leyte, Mindanao (Misamis). A fairly common and widespread species, in mountainous regions, epiphyte in mossy forest at 300 to 3,060 m altitude.

**LIPARIS MONOPHYLLA** Ames Orch. 6 (1920) 294.

Leyte, *Wenzel 0660, 0673*. Jaro, epiphyte in forest at 600 m altitude.

**LIPARIS NEGROSIANA** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1562, Orch. 5 (1915) 81.

Negros (Oriental Negros), *Elmer 9606*. Dumaguete, terrestrial at 1,300 m altitude.

**LIPARIS NUTANS** Ames Orch. 5 (1915) 81.

*Cestichis nutans* Ames in Philip. Journ. Sci. 4 (1909) Bot. 597.

Palawan, Mindanao (Lanao, Agusan, Surigao), *B. S. 638 Foxworthy, M. S. Clemens s. n., Weber 70, Bolster 289*. In forest at 60 to 1,050 m altitude.

**LIPARIS PALAWANENSIS** Ames Sched. Orch. 6 (1923) 39.

Palawan, *Weber 616*. Alfonso XIII at sea level.

**LIPARIS PALLIDA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 31; Miq. Fl. Ind. Bat. 3 (1859) 622; Naves Novis. App. (1882) 230; Ridl. in Journ. Linn. Soc. 22 (1886) 296; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 272, Fig.-Atlas (1910), *fig. 209*; Ames Orch. 6 (1920) 295.

*Malaxis pallida* Blume Bijdr. (1825) 391.

*Leptorchis pallida* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Liparis latifolia* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1562, Orch. 5 (1915) 80, non Lindl.

Leyte, Mindanao (Bukidnon, Davao), *Wenzel 0775, 0908, 0930, B. S. 39120 Ramos & Edaño, Elmer 10648*. Epiphyte in forest at 500 to 2,250 m altitude. In Java.

**LIPARIS PARVIFLORA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 31; Miq. Fl. Ind. Bat. 3 (1859) 622; J. J. Sm. Fl. Buitenz. 6 (1905) 276, Fig.-Atlas (1910) *fig. 212*; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 17; Ames Orch. 5 (1915) 81, 6 (1920) 95, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 155.

*Malaxis parviflora* Blume Bijdr. (1825) 392.

*Liparis flaccida* Reichb. f. in Linnaea 41 (1876) 45; Ridl. in Journ. Linn. Soc. 22 (1886) 296, 32 (1896) 228; Hook. f. Fl. Brit. Ind. 5 (1890) 703; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 24.

*Leptorchis flaccida* Ktze. Rev. Gen. Pl. 2 (1891) 670.

*Leptorchis parviflora* Ktze. Rev. Gen. Pl. 2 (1891) 671.

*Cestichis vestita* Ames Orch. 2 (1908) 139, p. p., non *Liparis vestita* Reichb. f.

Luzon (Apayao, Bontoc, Rizal, Laguna, Tayabas), Polillo, Leyte, Busuanga, Mindanao (Cotabato, Davao), Basilan. A fairly common and widely distributed species in the Philippines. Epiphyte from about sea level to 1,450 m altitude. In Malay Peninsula, Sumatra, Java, Borneo, and Siam.

**LIPARIS PECTINATA** Ridl. in Journ. Linn. Soc. 22 (1886) 277; Ames Orch. 5 (1915) 82.

*Leptorchis pectinata* Ktze. Rev. Gen. Pl. 2 (1891) 671.

Luzon (Laguna), Biliran, Leyte, Mindanao (Davao), *Reillo 55, Cuming s. n., B. S. 18934 McGregor, 21450 Escritor, Wenzel 0207, 0223, 0380, 0481, 0578, Black s. n., Weber 279*. Terrestrial in forest at 60 to 500 m altitude.

**LIPARIS PHILIPPINENSIS** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 210; Ames Orch. 5 (1915) 83.

*Cestichis philippinensis* Ames Orch. 1 (1905) 7, 75, t. 2, 2 (1908) 138, in Philip. Journ. Sci. 2 (1907) Bot. 321.

Luzon (Abra, Bontoc, Lepanto, Benguet, Bataan, Pampanga, Rizal, Laguna), Mindoro, Panay (Antique), Negros (Oriental Negros), Leyte, Min-

danao (Agusan, Bukidnon, Davao). A common and widely distributed species, mostly in mountain regions at 300 to 2,900 m altitude.

**LIPARIS PRAVA** Ames Orch. 7 (1922) 109.

Leyte, *Wenzel 0718, 0749, 0804, 0834, 0842*. Jaro, epiphyte in forest at 500 to 800 m altitude.

**LIPARIS PROPINQUA** Ames Orch. 7 (1922) 110.

*Liparis gregaria* Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266, non Lindl.

*Cestichis disticha* Pfitz. in Engl. in Engl. & Prantl Nat. Pflanzenfam. 2 Abt. 6 (1888) 131, quoad Philip.; Ames in Philip. Journ. Sci. 2 (1907) Bot. 320.

*Liparis disticha* Ames Orch. 5 (1915) 79, non Lindl.

Luzon (Laguna), Mindoro, Palawan, Bancalan, Mindanao (Davao), *Cuming 2099, B. S. 6546 Robinson, Merrill 5638, 5643, F. B. 8598 Merritt, 28185 Elumir, Weber s. n., 011, Elmer 18305*. Epiphyte at sea level to 600 m altitude.

**LIPARIS RIZALENSIS** Ames Orch. 6 (1920) 295.

Luzon (Rizal, Tayabas), *B. S. 24070 Ramos, 26892 Edaña, 26533 Ramos & Edaña*. Epiphyte on forest slopes at about 300 m altitude.

**LIPARIS STRICTA** J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 5 (1907) 3; Ames Orch. 6 (1920) 95, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 155.

Basilan, Mindanao (Agusan), *B. S. 16250 Reillo, Weber 74*. Terrestrial in shaded forest at 400 m altitude in Mindanao. In Borneo.

**LIPARIS TRICALLOSA** Reichb. f. in Gard. Chron. II 11 (1879) 684; Ridl. in Journ. Linn. Soc. 22 (1886) 275; Hook. f. in Bot. Mag. 127 (1901) t. 7804; Ames Orch. 5 (1915) 83.

Sulu Archipelago (Buut Island), Jolo, *Burbidge s. n., J. Clemens s. n.* Wooded hillside at 660 m (?) altitude.

**LIPARIS TRICHOGLOTTIS** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1911) 203; Ames Orch. 5 (1915) 83.

*Cestichis trichoglottis* Ames Orch. 2 (1908) 139, text cut.

Luzon (Laguna, Tayabas), Mindanao (Lanao), Basilan, *B. S. 16564 Ramos, 16253 Reillo, Elmer 7612, M. S. Clemens 131*.

**LIPARIS WENZELII** Ames Orch. 5 (1915) 84.

Leyte, *Wenzel 0403*. Epiphyte in forest at 500 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**LIPARIS AFFINIS** Lindl. apud Naves Novis. App. (1882) 230.

**LIPARIS DIPHYLLOS** Nim. in Grah. Cat. Bomb. Pl. (1839) 252 = *Habenaria diphylla* (Nim.) Dalz.

**LIPARIS DISTICHA** Ames Orch. 5 (1915) 79, non Lindl. = *Liparis propinqua* Ames.

- LIPARIS ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1561, nec *Cestichis elmeri* Ames, nec *Liparis elmeri* (Ames) Schltr. = *Liparis dumaguetensis* Ames.
- LIPARIS GREGARIA** Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 266, non Lindl. = *Liparis propinqua* Ames.
- LIPARIS HABENARIA** F.-Muell. apud Naves Novis. App. (1882) 230.
- LIPARIS LATIFOLIA** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1562, Orch. 5 (1915) 80, non Lindl. = *Liparis pallida* (Blume) Lindl.
- LIPARIS MINIMA** Lindl. Gen. & Sp. Orch. (1830) 32; Naves Novis. App. (1882) 230 = *Liparis caespitosa* (Thou.) Lindl.
- LIPARIS MUCRONATA** Lindl. apud Naves Novis. App. (1882) 230.
- LIPARIS REFLEXA** Lindl. apud Naves Novis. App. (1882) 229.
- LIPARIS RHEEDII** Lindl. apud Naves Novis. App. (1882) 230.
- LIPARIS TRILOBA** Ridl. in Journ. Linn. Soc. 22 (1886) 295; Ames Orch. 5 (1915) 84 = *Liparis longipes* Lindl.
- LIPARIS VIRIDIFLORA** Lindl. apud Naves Novis. App. (1882) 230.

48. **DILOCHIA** Lindley

- DILOCHIA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1554, Orch. 5 (1915) 85.

Luzon (Rizal), Leyte, Mindanao (Davao), *Reillo s. n.*, *Wenzel 0446*, *0579*, *Elmer 10664*. Epiphyte, up to 500 m altitude in Leyte.

49. **CERATOSTYLIS** Blume

- CERATOSTYLIS DATAENSIS** Ames Orch. 7 (1922) 151.

Luzon (Lepanto), *Ramos & Edaño 76*. Mt. Data, epiphyte in mossy forest at 2,540 m altitude.

- CERATOSTYLIS ELMERI** Ames Sched. Orch. 6 (1923) 49.

Mindanao (Davao), *Elmer 11358*. Epiphyte at 2,580 m altitude.

- CERATOSTYLIS LATIPETALA** Ames in Philip. Journ. Sci. 4 (1909) Bot. 671, Orch. 5 (1915) 86.

Luzon (Rizal), Mindanao (Zamboanga, Misamis, Bukidnon, Agusan, Davao), *B. S. 19232 Reillo, 38815, 38953 Ramos & Edaño, F. B. 4661 Mearns & Hutchinson, Elmer 10614, 13801, Merrill 8134, Copeland s. n.* Mountainous regions up to 1,400 m altitude in Misamis.

- CERATOSTYLIS MINDANAENSIS** Ames Sched. Orch. 6 (1923) 51.

Mindanao (Bukidnon), *B. S. 39015 Ramos & Edaño*. At 1,600 m altitude.

- CERATOSTYLIS PHILIPPINENSIS** Rolfe ex Ames Orch. 1 (1905) 79, *text cut*, 2 (1908) 149, 5 (1915) 86; Ames in Philip. Journ. Sci. 6 (1911) Bot. 50.

Luzon (Bontoc, Lepanto, Benguet, Bataan, Camarines), Leyte. A rather common species in the mountainous regions of Luzon, at 700 to 2,100 m altitude.

**CERATOSTYLIS RAMOSA** Ames & Rolfe in Philip. Journ. Sci. 2 (1907) Bot. 323, *nomen*; Ames Orch. 2 (1908) 149, *text cut*, 5 (1915) 86.

Luzon (Bontoc, Bataan), Mindoro, Mindanao (Zamboanga), *Vanoverbergh 785, 1390, Whitford 457, Leiberg 6039, Merrill 8130, Merritt 4418*.

**CERATOSTYLIS RETISQUAMA** Reichb. f. in Bonpl. 5 (1857) 53; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 269; Ames Orch. 5 (1915) 86.

Philippines, *Cuming 2152*.

**CERATOSTYLIS RUBRA** Ames in Philip. Journ. Sci. 4 (1909) Bot. 670, Orch. 5 (1915) 86.

Luzon (Ilocos Norte, Rizal, Bataan, Camarines), Mindanao (Lanao), *B. S. 3042, 26220, 33231 Ramos, 3070 Foxworthy, 3046, 3072, M. S. Clemens, Santos s. n., Lyon J.*

**CERATOSTYLIS SENILIS** Reichb. f. Otia Bot. Hamb. 1 (1878) 54, Xen. Orch. 3 (1881) 30; Ames Orch. 2 (1908) 150, 5 (1915) 86.

Luzon (Bataan, Rizal, Laguna, Tayabas, Sorsogon), Mindanao (Surigao), *R. S. Williams 506, B. S. 3017, 13761, 19362 Ramos, Elmer 9262, 14964, Didson s. n., F. B. 7788 Curran & Merritt, Bolster 215, Taylor 28*. Epiphyte up to 900 m altitude in Tayabas and 1,000 m in Laguna.

**CERATOSTYLIS SUBULATA** Blume Bijdr. (1825) 306; Lindl. Gen. & Sp. Orch. (1833) 231; Reichb. f. in Bonpl. 5 (1857) 53; Miq. Fl. Ind. Bat. 3 (1859) 706; Reichb. f. Xen. Orch. 2 (1863) *t. 127, fig. II, 2*, 2 (1865) 93; Naves Novis. App. (1882) 245; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 299, Fig.-Atlas (1910) *fig. 229*; Ames in Philip. Journ. Sci. 2 (1907) Bot. 323, Orch. 2 (1908) 151, *text cut*, 5 (1915) 86, 6 (1920) 138, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 176.

*Appendicula teres* Griff. Notul. 3 (1851) 359, Icon. Pl. Asiat. 3 (1851) *t. 332*.

*Ceratostylis teres* Reichb. f. in Bonpl. 2 (1854) 89, in Walp. Ann. 6 (1862) 470; Hook. f. Fl. Brit. Ind. 5 (1890) 825; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 247, *t. 329*.

*Ceratostylis cepula* Reichb. f. in Bonpl. 5 (1857) 53.

*Ceratostylis gracilis* Reichb. f. Xen. Orch. 2 (1863) *t. 127, fig. I, 1*, 2 (1865) 92; Naves Novis. App. (1882) 245; Vidal Rev. Pl. Vasc. Filip. (1886) 269; Ridl. in Journ. Linn. Soc. 32 (1896) 307, p. p., Ames Orch. 1 (1905) 80; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 109, non Blume.

*Corymbis gracilis* Vidal Rev. Pl. Vasc. Filip. (1886) 272; Ceron Cat. Pl. Herb. Manila (1892) 168, non Blume.

*Ceratostylis malaccensis* Hook. f. Fl. Brit. Ind. 5 (1890) 825, in Hook. Icon. Fl. 21 (1892) *t. 2098*; Ridl. in Journ. Linn. Soc. 32 (1896) 308.

Luzon (Ifugao, Benguet, Nueva Vizcaya, Bataan, Pampanga, Rizal), Mindoro, Panay (Capiz), Mindanao (Lanao, Zamboanga, Bukidnon, Davao). A fairly common species in the Philippines. Epiphyte at 1,600



to 2,160 m altitude. In India, Assam, Malay Peninsula, Sumatra, Java, and Borneo.

**CERATOSTYLIS WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 421, Orch. 5 (1915) 87.

Leyte, Basilan, *Wenzel 013, 0175, 0661, 0678, 0745, B. S. 16256 Reillo*. Epiphyte at 60 to 800 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**CERATOSTYLIS GIGAS** Reichb. f. apud Naves Novis. App. (1882) 245.

**CERATOSTYLIS GRACILIS** Reichb. f. Xen. Orch. 2 (1863) t. 127, fig. I, 1, 2 (1865) 92; Naves Novis. App. (1882) 245; Vidal Rev. Pl. Vasc. Filip. (1886) 269; Ridl. in Journ. Linn. Soc. 32 (1896) 307, p. p., Ames Orch. 1 (1905) 80; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 109, non Blume = *Ceratostylis subulata* Blume.

**CERATOSTYLIS GRAMINEA** Blume apud Naves Novis. App. (1882) 245.

50. AGROSTOPHYLLUM Blume

**AGROSTOPHYLLUM ELMERI** Ames Sched. Orch. 6 (1923) 48.

Luzon (Laguna), *Elmer 18047*.

**AGROSTOPHYLLUM HASSELTII** (Blume) J. J. Sm. in Icon. Bogor. 2 (1903) 55, in textu, Fl. Buitenz. 6 (Orch. Java) (1905) 288, Fig.-Atlas (1910) fig. 220; Ames Orch. 5 (1915) 87.

*Appendicula hasseltii* Blume Bijdr. (1825) 304; Lindl. Gen. & Sp. Orch. (1833) 230; Miq. Fl. Ind. Bat. 3 (1859) 704.

*Appendicula graminifolia* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 24 (1862) 322.

*Appendicula elongata* Ridl. in Trans. Linn. Soc. II 3 (1893) 375; Ridl. in Journ. Linn. Soc. 32 (1896) 389.

*Podochilus hasseltii* Schltr. in Mém. Herb. Boiss. 21 (1900) 61; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 198.

Leyte, Mindanao (Agusan), *Wenzel 0610, 0719, 0742, 0763, 0798, Weber 307*. In the forest at 500 to 800 m altitude. In Malay Peninsula, Sumatra, and Java.

**AGROSTOPHYLLUM INOCEPHALUM** (Schauer) Ames Orch. 2 (1908) 148, 5 (1915) 87.

*Diploconchium inocephalum* Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 428, t. 12, fig. A.

Luzon (Benguet, Bataan), Mindanao (Lanao, Agusan), *R. S. Williams 1926, Lyon T., M. S. Clemens s. n., 130, Weber 6, 161, Elmer 13852*. On rocks or in trees from sea level to 500 m altitude.

**AGROSTOPHYLLUM LEYTENSE** Ames Orch. 6 (1920) 298.

Leyte, *Wenzel 0597, 0632, 0654*. Jaro, in forest at 600 to 700 m altitude.

**AGROSTOPHYLLUM LONGIVAGINATUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 420, Orch. 5 (1915) 87.

Luzon (Apayao, Rizal, Laguna), Mindoro, Leyte, *Weber 345, Serrato s. n., B. S. 16584 Ramos, 5656 Merrill, 42061 Lopez, Wenzel 0170, 0171, 0240, 0619, 0646, 0825*. In the forest at 30 to 600 m altitude.

**AGROSTOPHYLLUM MALINDANGENSE** Ames in Philip. Journ. Sci. 6 (1911) Bot. 50, Orch. 5 (1915) 88.

Mindanao (Misamis, Bukidnon, Davao), *F. B. 4610, Mearns & Hutchinson, B. S. 38836 Ramos & Edaña, Elmer 10868*. On mountains.

**AGROSTOPHYLLUM MEARNsii** Ames in Philip. Journ. Sci. 8 (1913) Bot. 420, Orch. 5 (1915) 88.

Luzon (Bataan), Mindanao (Misamis, Agusan), with *Whitford 457, F. B. 4607 Mearns & Hutchinson, Elmer 13700*. On mountains at 1,060 to 1,560 m altitude.

**AGROSTOPHYLLUM MERRILLii** Ames in Philip. Journ. Sci. 2 (1907) Bot. 323, Orch. 5 (1915) 88.

Mindoro, *Merrill 5844*. Mt. Halcon, in forest at 1,000 m altitude.

**AGROSTOPHYLLUM MINDANAENSE** Ames Orch. 5 (1915) 88.

*Agrostophyllum pelorioides* Ames in Philip. Journ. Sci. 8 (1913) Bot. 421, non Schltr.

Mindanao (Cotabato, Davao), *Weber 231, Copeland 1119*. On mountains at about 860 m altitude.

**AGROSTOPHYLLUM PHILIPPINENSE** Ames in Philip. Journ. Sci. 4 (1909) Bot. 669, Orch. 5 (1915) 88.

Babuyan Islands (Camiguin Island), Luzon (Bataan, Rizal, Sorsogon), Leyte, Negros. Apparently fairly common, especially in Leyte, and widespread. On mountains, in the forest at 60 to 700 m altitude.

**AGROSTOPHYLLUM WENZELii** Ames Orch. 5 (1915) 88.

Leyte, Mindanao (Agusan), *Wenzel 028, 0177, 0212, 0752, 0824, Weber 104, Elmer 13967*. At 60 to 800 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**AGROSTOPHYLLUM PELORIOIDES** Ames in Philip. Journ. Sci. 8 (1913) Bot. 421, non Schltr. = *Agrostophyllum mindanaense* Ames.

#### 51. GLOMERA Blume

**GLOMERA MERRILLii** Ames in Philip. Journ. Sci. 8 (1913) Bot. 419, Orch. 5 (1915) 89.

Mindanao (Zamboanga), *Merrill 8290*. Sax River, epiphyte in damp shaded ravine at about 200 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**GLOMERA ERYTHROSTOMA** Blume apud Naves Novis. App. (1882) 245.

#### 52. PODOCHILUS Blume

**PODOCHILUS BICAUDATUS** Schltr. in Fedde Repert. 3 (1906) 19; Ames in Philip. Journ. Sci. 4 (1909) Bot. 669, 8 (1913) Bot. 415, Orch. 5 (1915) 90.

Palawan, Basilan, *Usteri s. n., Merrill 775, B. S. 16255, 16259A Reillo*. Up to 560 m altitude on Palawan.

**PODOCHILUS CUMINGII** Schltr. in Fedde Repert. 3 (1906) 19; Ames in Philip. Journ. Sci. 4 (1909) Bot. 668, 8 (1913) Bot. 415, Orch. 5 (1915) 89.

*Podochilus zollingeri* Schltr. in Mém. Herb. Boiss. 21 (1900) 23, non Reichb. f.

Catanduanes, Luzon (Rizal), *B. S. 30310 Ramos, Reillo s. n.* Epiphyte in forest at about 100 m altitude.

**PODOCHILUS HYSTRICINUS** Ames Sched. Orch. 6 (1923) 42, fig. 8.

Leyte, *Wenzel 0262, 0878.* At 700 to 750 m altitude.

**PODOCHILUS INTRICATUS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, 416, Orch. 5 (1915) 90.

Luzon (Tayabas), Mindanao (Agusan, Davao), Basilan, *Disdon s. n., Elmer 13704, Copeland 1164, Weber 244, B. S. 16263 Reillo s. n., 19406 Ramos.* Epiphyte at 600 to 1,030 m altitude.

**PODOCHILUS LONGILABRIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1565, in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 90.

Luzon (Laguna, Tayabas, Camarines), *Quisumbing s. n., Whitford 939, Elmer 7585, B. S. 22038 Ramos.* Epiphyte at 1,160 to 1,500 m altitude.

**PODOCHILUS PLUMOSUS** Ames in Philip. Journ. Sci. 4 (1909) Bot. 668, 8 (1913) Bot. 415, Orch. 5 (1915) 90.

Luzon (Nueva Ecija, Zambales, Laguna, Tayabas), Panay (Capiz), Leyte, Mindanao (Zamboanga, Cotabato, Agusan, Surigao). A fairly common species, especially in Luzon. Epiphyte at 80 to 960 m altitude.

**PODOCHILUS RAMOSII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, 417, Orch. 5 (1915) 90.

Mindanao (Camiguin Island), *B. S. 14441 Ramos.*

**PODOCHILUS SCIUROIDES** Reichb. f. in Bonpl. 5 (1857) 41; Schltr. in Mém. Herb. Boiss. 21 (1900) 20; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 511, Fig.-Atlas (1912) fig. 388; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 192; Ames Orch. 6 (1920) 140, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 177.

*Cryptoglottis serpyllifolia* Reichb. f. in Bonpl. 5 (1857) 42, non Blume.

*Podochilus microphyllus* Hook. f. Fl. Brit. Ind. 6 (1890) 81; Grant Orch. Burma (1895) 320; Ridl. in Journ. Linn. Soc. 31 (1896) 301, 32 (1896) 386; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 177, non Lindl.

*Podochilus curviunguis* Schltr. in Fedde Repert. 10 (1911) 34; Ames Orch. 5 (1915) 89.

Luzon (Pampanga, Bataan, Tayabas), Mindanao (Zamboanga, Lanao), Basilan, *Merrill 4260, 8311, B. S. 1678 Foxworthy, 16259 Reillo, 28652 Ramos & Edaño, M. S. Clemens s. n.* Epiphyte in mossy forest at 450 to 850 m altitude. In Burma, Malay Peninsula, Sumatra, Java, Celebes, and Borneo.

**PODOCHILUS SERPYLLIFOLIUS** (Blume) Lindl. in Journ. Linn. Soc. 3 (1859) 37, in nota (by inference only); ex Miq. Fl. Ind. Bat. 3 (1859) 688; Naves Novis. App. (1882) 244; Schltr. in Mém. Herb. Boiss. 21 (1900) 20; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 508, Fig.-Atlas (1912) fig. 385; Ames Orch. 5 (1915) 90, 6 (1920) 140, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 177.

*Cryptoglottis serpyllifolia* Blume Bijdr. (1825) 297, fig. 42; Lindl. Gen. & Sp. Orch. (1833) 230; Reichb. f. in Walp. Ann. 6 (1864) 894.

*Hexameria disticha* R. Br. in Benn. Pl. Jav. Rar. (1838) 26, t. 7; Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 431; Miq. Fl. Ind. Bat. 3 (1859) 656.

Luzon, *Meyen s. n.*

**PODOCHILUS STRICTUS** Ames in Philip. Journ. Sci. 4 (1909) Bot. 669, 8 (1913) Bot. 415, Orch. 5 (1915) 90.

*Podochilus robinsonii* Ames in Philip. Journ. Sci. 6 (1911) Bot. 49, 8 (1913) Bot. 415.

*Podochilus lucescens* Ames Orch. 5 (1915) 90, non Blume.

Luzon (Cagayan, Rizal, Laguna, Tayabas, Camarines, Sorsogon), Caganduanes, Panay, Negros, Leyte, Samar, Mindanao (Zamboanga, Lanao, Agusan, Surigao, Davao), Basilan. A common, variable, and widely distributed species. Epiphyte at 10 to 1,500 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**PODOCHILUS ANCEPS** Schltr. in Mém. Herb. Boiss. 21 (1900) 33; Ames Orch. 2 (1908) 142 = *Appendicula anceps* Blume.

**PODOCHILUS CLEMENSIAE** Ames in Philip. Journ. Sci. 4 (1909) Bot. 667 = *Appendicula clemensiae* Ames.

**PODOCHILUS CORNUTUS** Schltr. in Mém. Herb. Boiss. 21 (1900) 34; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 194; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, Orch. 2 (1908) 143 = *Appendicula cornuta* Blume.

**PODOCHILUS CROTALINUS** Ames in Philip. Journ. Sci. 4 (1909) Bot. 667 = *Appendicula crotalina* (Ames) Schltr.

**PODOCHILUS CURVIUNGUIS** Schltr. in Fedde Repert. 10 (1911) 34; Ames Orch. 5 (1915) 89 = *Podochilus sciuroides* Reichb. f.

**PODOCHILUS ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1565 = *Appendicula elmeri* Ames.

**PODOCHILUS FENIXII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 48 = *Appendicula fenixii* (Ames) Schltr.

**PODOCHILUS FRUTICOSUS** Ames in Philip. Journ. Sci. 6 (1911) Bot. 48 = *Appendicula buxifolia* Blume.

**PODOCHILUS LONGICALCARATUS** Rolfe in Kew Bull. (1904) 186 = *Appendicula undulata* Blume var. *longicalcarata* (Rolfe) Ames.

**PODOCHILUS LUCBANENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1566 = *Appendicula lucbanensis* Ames.

- PODOCHILUS LUCESCENS** Ames Orch. 5 (1915) 90, non Blume = *Podochilus strictus* Ames.
- PODOCHILUS LUZONENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1567 = *Appendicula luzonensis* Ames.
- PODOCHILUS MALINDANGENSIS** Ames in Philip. Journ. Sci. 6 (1911) Bot. 49 = *Appendicula malindangensis* (Ames) Schltr.
- PODOCHILUS MICRANTHUS** Schltr. in Mém. Herb. Boiss. 21 (1900) 36, 39; Ames Orch. 2 (1908) 144 = *Appendicula micrantha* Lindl.
- PODOCHILUS NEGROSIANUS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1568 = *Appendicula negrosiana* Ames.
- PODOCHILUS PENDULUS** Schltr. in Mém. Herb. Boiss. 21 (1900) 48, quoad Philip.; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, 8 (1913) Bot. 415, Orch. 2 (1908) 145 = *Appendicula philippinensis* (Schltr.) J. J. Sm.
- PODOCHILUS PERPLEXUS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1569 = *Appendicula perplexa* Ames.
- PODOCHILUS PHILIPPINENSIS** Schltr. in Mém. Herb. Boiss. 21 (1900) 49; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322 = *Appendicula philippinensis* (Schltr.) J. J. Sm.
- PODOCHILUS REFLEXUS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, non Schltr. = *Appendicula micrantha* Lindl.
- PODOCHILUS ROBINSONII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 49, 8 (1913) Bot. 415 = *Podochilus strictus* Ames.
- PODOCHILUS SCALPELLIFORMIS** Blume apud Naves Novis. App. (1882) 244.  
 This is probably *Podochilus strictus* Ames.
- PODOCHILUS TENUIS** Lindl. apud Naves Novis. App. (1882) 244.
- PODOCHILUS UNDULATUS** Schltr. in Mém. Herb. Boiss. 21 (1900) 42 = *Appendicula undulata* Blume.
- PODOCHILUS UNDULATUS** Schltr. var. *LONGICALCARATUS* Schltr. in Mém. Herb. Boiss. 21 (1900) 43; Ames Orch. 2 (1908) 146 = *Appendicula undulata* Blume var. *longicalcarata* (Rolfe) Ames.
- PODOCHILUS XYTRIOPHORUS** Schltr. in Mém. Herb. Boiss. 21 (1900) 47; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, Orch. 2 (1908) 147 = *Appendicula xytriophora* Reichb. f.
- PODOCHILUS ZOLLINGERI** Schltr. in Mém. Herb. Boiss. 21 (1900) 23, non Reichb. f. = *Podochilus cumingii* Schltr.
53. APPENDICULA Blume
- APPENDICULA ANCEPS** Blume Bijdr. (1825) 299; Lindl. Gen. & Sp. Orch. (1833) 228; Miq. Fl. Ind. Bat. 3 (1859) 702; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 518, Fig.-Atlas (1912) fig. 393; Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 91.
- Metachilum cyathiferum* Lindl. in Wall. Cat. (1829) No. 2022, nomen; Lindl. Gen. & Sp. Orch. (1830) 74.

*Appendicula lewisii* Griff. in Calc. Journ. Nat. Hist. 4 (1844) 378, t. 19, Notul. 3 (1851) 360, Icon. Pl. Asiat. 3 (1851) t. 337; Reichb. f. in Walp. Ann. 6 (1864) 893; Hook. f. Fl. Brit. Ind. 6 (1890) 83; Ridl. in Journ. Linn. Soc. 32 (1896) 389.

*Appendicula cyathifera* Reichb. f. MSS ex Hook. f. Fl. Brit. Ind. 6 (1890) 83.

*Dendrobium vaginatum* Wall. MSS ex Hook. f. Fl. Brit. Ind. 6 (1890) 83.

*Appendicula complanata* Ridl. in Journ. Linn. Soc. 32 (1896) 389.

*Podochilus anceps* Schltr. in Mém. Herb. Boiss. 21 (1900) 33; Ames Orch. 2 (1908) 142; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 19.

Mindanao (Zamboanga), Basilan, *Merrill 8122, 8128, Copeland s. n., B. S. 16238, 16245 Reillo, 37006, 37361 Ramos & Edaño*. Terrestrial in forest at 560 m altitude. In Malay Peninsula, Java, Borneo, and Sumatra.

**APPENDICULA BUXIFOLIA** Blume Bijdr. (1825) 300; Lindl. Gen. & Sp. Orch. (1833) 228; Miq. Fl. Ind. Bat. 3 (1859) 702; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 532, Fig.-Atlas (1912) fig. 406; Ames Orch. 5 (1915) 93.

*Appendicula frutex* Ridl. in Journ. Linn. Soc. 31 (1896) 302.

*Podochilus buxifolius* Schltr. in Mém. Herb. Boiss. 21 (1900) 52.

*Podochilus fruticosus* Ames in Philip. Journ. Sci. 6 (1911) Bot. 48.

*Appendicula fruticosa* Ames in Philip. Journ. Sci. 8 (1913) Bot. 415.

Luzon (Laguna, Sorsogon), Mindanao (Misamis, Cotabato), *B. S. 16905 Serviñas, Elmer 16138, M. S. Clemens s. n., Weber 216*. Apparently in the mountain regions at about 600 m altitude. In Java.

**APPENDICULA CLEMENSIAE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 91.

*Podochilus clemensiae* Ames in Philip. Journ. Sci. 4 (1909) Bot. 667.

Luzon (Laguna, Tayabas, Sorsogon), Leyte, Samar, Mindanao (Lanao). *B. S. 13670, 19514, 24254 Ramos, 24909 Edaño, Disdon s. n., Elmer 15097, 15609, 16593, Wenzel 023, 096, 0187, 0741, M. S. Clemens s. n., Boettcher s. n.* Mountain regions usually, but at from 60 to 1,700 m altitude.

**APPENDICULA CORNUTA** Blume Bijdr. (1825) 302; Lindl. Gen. & Sp. Orch. (1833) 229; Miq. Fl. Ind. Bat. 3 (1859) 704; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 522, Fig.-Atlas (1912) fig. 396; Ames Orch. 5 (1915) 91.

*Appendicula congenera* Blume Bijdr. (1825) 303; Lindl. Gen. & Sp. Orch. (1833) 229; Miq. Fl. Ind. Bat. 3 (1859) 704.

*Dendrobium manillense* Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 430.

*Appendicula manillensis* Reichb. f. ex Miq. Fl. Ind. Bat. 3 (1859) 703; Naves Novis. App. (1882) 245.

*Appendicula bifaria* Lindl. in Hook. Kew Journ. 7 (1855) 35; Benth. Fl. Hongk. (1861) 358; Reichb. f. in Walp. Ann. 6 (1864) 893; Hook. f. Fl. Brit. Ind. 6 (1890) 82; Ridl. in Journ. Linn. Soc. 31 (1896) 301, 32 (1896) 387; King & Pantl. in Ann. Roy. Bot.

Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 248, t. 330; Rolfe in Journ. Linn. Soc. 36 (1903) 39.

*Appendicula reduplicata* Par. & Reichb. f. Otia Bot. Hamb. 1 (1878) 45.

*Podochilus cornutus* Schltr. in Mém. Herb. Boiss. 21 (1900) 34; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 194; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, Orch. 2 (1908) 143; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1912) 19.

*Podochilus brachiatus* Schltr. in Mém. Herb. Boiss. 21 (1900) 38.

*Podochilus congener* Schltr. in Mém. Herb. Boiss. 21 (1900) 40.

*Appendicula brachiata* Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1912) 337.

Luzon (Laguna), Mindoro, Negros (Oriental Negros), Leyte, Palawan Mindanao (Agusan, Davao), *B. S. 16573 Ramos, 641 Foxworthy, 41399 Herre, Merrill 5541, 5843, Wenzel 0106, 0302, 0310, 0311, Weber 122, Elmer 11829*. In humid forest at 210 to 2,000 m altitude. In India, Malay Peninsula, Java, Borneo, and China.

**APPENDICULA CROTALINA** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1912) 336, in Philip. Journ. Sci. 8 (1913) Bot. 416, Orch. 5 (1915) 93.

*Podochilus crotalinus* Ames in Philip. Journ. Sci. 4 (1909) Bot. 667.

Mindanao (Misamis, Cotabato, Davao), *M. S. Clemens s. n., Weber 230, Elmer 10695*. Mountainous regions up to 860 m altitude.

**APPENDICULA CUNEATA** Ames Sched. Orch. 6 (1923) 44, *fig. 9*, habit and flower.

Luzon (Tayabas), Leyte, Samar, Mindanao (Bukidnon, Cotabato, Davao), *B. S. 28750, 38644 Ramos & Edaña, 24236, 24524 Edaña, Wenzel 0635, 0668, 0685, 0702, Weber 237, Elmer 10696*.

**APPENDICULA ELMERI** Ames in Philip. Journ. Sci. 8 (1913) Bot. 416, Orch. 5 (1915) 92.

*Podochilus elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1565.

Mindanao (Agusan, Bukidnon, Cotabato, Davao), *Weber 86, 226, B. S. 38630, 39048 Ramos & Edaña, Elmer 10718*. Along streams at 400 to 1,300 m altitude.

**APPENDICULA FENIXII** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1912) 336; Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 91.

*Podochilus fenixii* Ames in Philip. Journ. Sci. 6 (1911) Bot. 48.

Batan Islands (Batan), *B. S. 3794 Fenix*. Mt. Iraya, near the summit.

**APPENDICULA IRIGENSIS** Ames Sched. Orch. 5 (1923) 5.

Luzon (Rizal), *B. S. 41941C Ramos*. Mt. Iriga, epiphyte in dense forest at 1,000 m altitude.

**APPENDICULA LEYTENSIS** Ames Sched. Orch. 6 (1923) 47, *fig. 9*, flower.

Leyte, *Wenzel 0251, 0283, 0359, 0364, 0417, 0482*. Epiphyte in forest at 500 m altitude.

**APPENDICULA LUCBANENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 92.

*Podochilus lucbanensis* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1566.

Luzon (Apayao, Abra, Bontoc, Rizal, Tayabas), Panay (Capiz), Mindanao (Camiguin Island, Agusan), *B. S. 28350 Fenix, 7143, 14427, 41941b, s. n., Ramos, 30778, 37888 Ramos & Edaña, Elmer 8086, 13688, 13743*. Apparently restricted to mountain regions.

**APPENDICULA LUZONENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 92.

*Podochilus luzonensis* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1567.

Luzon (Tayabas), *Elmer 7930*.

**APPENDICULA MALINDANGENSIS** (Ames) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) 337; Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 91.

*Podochilus malindangensis* Ames in Philip. Journ. Sci. 6 (1911) Bot. 49, in Elm. Leaf. Philip. Bot. 5 (1912) 1567.

Negros (Oriental Negros), Mindanao (Misamis, Bukidnon), *Elmer 9543, F. B. 4733 Mearns & Hutchinson, B. S. 38563 Ramos & Edaña*. Mountainous regions up to 1,560 m altitude.

**APPENDICULA MAQUILINGENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 417, Orch. 5 (1915) 92.

Luzon (Laguna, Camarines, Sorsogon), Catanduanes, Panay (Antique, Capiz), Leyte, Negros (Oriental Negros), Mindanao (Camiguin Island, Bukidnon, Davao), Jolo. A fairly common and widely distributed species at 40 to 2,000 m altitude, on rocks or on trees in mossy forest.

**APPENDICULA MERRILLII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, 418.

*Chilopogon merrillii* Ames Orch. 5 (1915) 91.

Mindanao (Zamboanga, Cotabato), *Merrill 8135, Weber 219, B. S. 36974 Ramos & Edaña*. Epiphyte at 700 to 1,160 m altitude.

**APPENDICULA MICRANTHA** Lindl. in Ann. Mag. Nat. Hist. 15 (1845) 386; Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 272; Ames Orch. 5 (1915) 91.

*Podochilus micranthus* Schltr. in Mém. Herb. Boiss. 21 (1900) 36, 39; Ames Orch. 2 (1908) 144.

*Podochilus reflexus* Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, non Schltr.

*Appendicula wenzelii* Ames in Philip. Journ. Sci. 8 (1913) Bot. 419, Orch. 5 (1915) 91.

Luzon (Pampanga, Bataan, Rizal, Laguna, Tayabas), Polillo, Mindoro, Panay, (Capiz, Antique), Negros, Leyte, Palawan, Mindanao (Bukidnon, Agusan, Davao). A common and widely distributed species in the Philippines. Terrestrial or epiphytic at 15 to 600 m altitude.



**APPENDICULA NEGROSIANA** Ames in Philip. Journ. Sci. 8 (1913) Bot. 416, Orch. 5 (1915) 93.

*Podochilus negrosianus* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1568.

Negros (Oriental Negros), *Elmer 9636*. In the Cuernos Mountains.

**APPENDICULA PERPLEXA** Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 92.

*Podochilus perplexus* Ames in Elm. Leaf. Philip. Bot. 5 (1921) 1569.

Luzon (Tayabas), *Elmer 7407*. Mt. Banahao, in shaded forest at 800 m altitude.

**APPENDICULA PHILIPPINENSIS** (Schltr.) J. J. Sm. Orch. Amb. (1905) 91, in textu; Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 92.

*Appendicula pendula* Blume apud Naves Novis. App. (1882) 245; Ames Orch. 5 (1915) 92.

*Podochilus pendulus* Schltr. in Mém. Herb. Boiss. 21 (1900) 48, quoad Philip.; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, 8 (1913) Bot. 415, Orch. 2 (1908) 145.

*Podochilus philippinensis* Schltr. in Mém. Herb. Boiss. 21 (1900) 49; Ames in Philip. Journ. Sci. 2 (1907) Bot. 322.

Luzon (Tayabas, Laguna, Sorsogon), Mindoro, Leyte, Palawan, Mindanao (Zamboanga, Bukidnon). A variable and fairly common species at 115 to 1,600 m altitude.

**APPENDICULA POLYANTHA** Ames Sched. Orch. 5 (1923) 6.

Luzon (Rizal), *B. S. 42058 Lopez, 29733 Ramos & Edaña*. Mt. Angilog, at 2,200 m altitude.

**APPENDICULA TAGALENSIUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 65.

Philippines, *Loher s. n.*

No specimens of this species have been seen.

**APPENDICULA UNDULATA** Blume Bijdr. (1825) 301; Lindl. Gen. & Sp. Orch. (1833) 229; Miq. Fl. Ind. Bat. 3 (1959) 703; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 527, Fig.-Atlas (1912) t. 402; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 179.

*Appendicula purpurascens* De Vriese Ill. Orch. Ind. Neerl. (1854) t. 12, fig. 1, non Blume.

*Appendicula peruligera* Reichb. f. in Bonpl. 5 (1857) 41.

*Podochilus unciferus* Hook. f. Fl. Brit. Ind. 6 (1890) 81, in Hook. Icon. Pl. 22 (1893) t. 2145; Ridl. in Journ. Linn. Soc. 32 (1896) 385, Mat. Fl. Mal. Penin. 1 (1907) 194.

*Podochilus undulatus* Schltr. in Mém. Herb. Boiss. 21 (1900) 42.

The species proper is a native of Malay Peninsula, Java, Sumatra, and Borneo, represented in the Philippines by the following variety:

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Var. **LONGICALCARATA** (Rolfe) Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 179.

*Podochilus longicalcaratus* Rolfe in Kew Bull. (1894) 186.

*Podochilus undulatus* Schltr. var. *longicalcaratus* Schltr. in Mém. Herb. Boiss. 21 (1900) 43; Ames Orch. 2 (1908) 146.

*Appendicula undulata* Blume var. *calcarata* Ames in Philip. Journ. Sci. 8 (1913) Bot. 416, Orch. 5 (1915) 93, sphalm.

Luzon (Rizal), Leyte, Mindanao (Agusan, Lanao, Zamboanga, Cotabato, Surigao, Davao), *Cuming s. n.*, *Reillo s. n.*, *B. S. 15389 Ramos, 37022, 37263 Ramos & Edaña, 42084 Edaña, Elmer 13622, M. S. Clemens 516, R. S. Williams 2331, Copeland 1584, Weber 207, 292, Wenzel 01095*. In mossy forest, apparently in mountainous regions; also in Borneo (Sarawak).

**APPENDICULA WEBERI** Ames in Philip. Journ. Sci. 8 (1913) Bot. 418, Orch. 5 (1915) 93.

Mindanao (Agusan, Cotabato), *Weber 88, 217, Elmer 13639*. On mountains, in damp shady forest at 430 to 690 m altitude.

**APPENDICULA XYTRIOPHORA** Reichb. f. in Seem. Fl. Vit. (1868) 299; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 272; Hook. f. Fl. Brit. Ind. 6 (1890) 84; Ridl. in Journ. Linn. Soc. 31 (1896) 301, 32 (1896) 391; Ames in Philip. Journ. Sci. 8 (1913) Bot. 415, Orch. 5 (1915) 92, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 179.

*Podochilus xytriophorus* Schltr. in Mém. Herb. Boiss. 21 (1900) 47;

Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, Orch. 2 (1908) 147.

Luzon (Benguet, Rizal, Laguna, Tayabas, Sorsogon), Polillo, Mindoro, Panay (Capiz), Leyte, Mindanao (Lanao, Cotabato, Davao). A common and widely distributed species in the Philippines; in mossy forest at 60 to 1,330 m altitude. In Malay Peninsula and Borneo.

#### EXCLUDED OR SYNONYMOUS SPECIES

**APPENDICULA ALBA** Blume apud Ames Orch. 5 (1915) 91.

This species does not occur in the Philippines.

**APPENDICULA FRUTICOSA** Ames in Philip. Journ. Sci. 8 (1913) Bot. 425 = *Appendicula buxifolia* Blume.

**APPENDICULA KUHLII** Reichb. f. apud Naves Novis. App. (1882) 244.

**APPENDICULA LONGIFOLIA** Blume apud Naves Novis. App. (1882) 245.

**APPENDICULA MANILENSE** Reichb. f. ex Miq. Fl. Ind. Bat. 3 (1859) 703; Naves Novis. App. (1882) 245 = *Appendicula cornuta* Blume.

**APPENDICULA PENDULA** Blume apud Naves Novis. App. (1882) 245; Ames Orch. 5 (1915) 92 = *Appendicula philippinensis* (Schltr.) J. J. Sm.

**APPENDICULA REFLEXA** Blume ex Ames in Philip. Journ. Sci. 2 (1907) Bot. 322, in syn. = *Appendicula micrantha* Lindl.

**APPENDICULA RHODIOLA** Reichb. f. apud Naves Novis. App. (1882) 245.

**APPENDICULA TORTA** Blume apud Naves Novis. App. (1882) 244.

**APPENDICULA WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 419, Orch. 5 (1915) 91 = *Appendicula micrantha* Lindl.

## 54. POLYSTACHYA Hooker

**POLYSTACHYA LUTEOLA** (Sw.) Hook. Exot. Fl. 2 (1824) t. 103; Spreng. Syst. Veg. 3 (1826) 742; Lindl. Gen. & Sp. Orch. (1830) 73; Boj. Hort. Maurit. (1837) 320; Lindl. in Bot. Reg. 24 (1838) Misc. 78; Mutel Mém. sur. plus. Orch. (in Mém. Strassb. Soc. Hist. Nat. 3) (1840) 3, t. 1, fig. 2; Focke in Tijdschr. Nat. Wetensch. 2 (1849) 203; A. Rich. in Sagra Hist. Isla Cuba 11 (Fl. Cub. Faner. 2) (1850) 247 (var. *angustifolia*); Reichb. f. in Nederl. Kruidk. Arch. 4 (1858) 331, in Walp. Ann. 6 (1863) 639; Thw. Enum. Pl. Zeyl. (1864) 308; Griseb. Fl. Brit. W. Ind. (1864) 628, Cat. Pl. Cub. (1866) 265; Sauv. Fl. Cub. (1873) 230; Reichb. f. in Linnaea 41 (1877) 128; Eggers Fl. St. Croix & Virg. Is. (U. S. Nat. Mus. Smithson. Inst. Bull. 13) (1879) 113, No. 970; Hemsl. in Godm. & Salv. Biol. Centr. Am. 3 (1883) 248; Chapm. Fl. So. U. S. ed. 2 (1883) 653, ed. 3 (1897) 482; Reichb. f. in Ber. Deutsch. Bot. Gesell. 3 (1885) 276; Rolfe in Journ. Bot. 23 (1885) 215; Cordem. Fl. l'île Réunion. (1895) 190; Cogn. in Mart. Fl. Bras. 3<sup>4</sup> (1895) 312; Dur. & Schinz Consp. Fl. Afr. 5 (1895) 35; Duss Fl. Phan. Antill. Franc. (in Ann. Inst. Col. Marseille 3) (1897) 597; Urb. Symb. Antill. 4 (Fl. Portor.) (1903) 170; Ames Contr. Knowl. Orch. Fl. So. Fla. (1904) 16; Cogn. in Bull. Soc. Roy. Bot. Belg. 43 (1906) 304; Pulle Enum. Vasc. Pl. Surinam (1906) 119; Cogn. in Urb. Symb. Antill. 6 (1909) 381; Ames in Philip. Journ. Sci. 4 (1909) Bot. 666; Boldingh Fl. Dutch. W. Ind. 1 (St. Eust., Saba & St. Mart.) (1909) 41.

*Epidendrum minutum* Aubl. Hist. Pl. Guian. Franc. 2 (1775) 824.

*Dendrobium polystachyon* Sw. in Kongl. Svensk. Vet.-Akad. Nya Handl. 21 (1800) 247; Willd. Sp. Pl. 4 (1805) 137; Sw. in Schrad. Neues Journ. Bot. 1 (1806) 95, Fl. Ind. Occ. 3 (1806) 1978, 1998; Pers. Syn. 2 (1807) 523; Lodd. Bot. Cab. 5 (1820) t. 458; Lindl. Coll. Bot. (1821) t. 20; Thou. Orch. Iles Austr. Afr. (1822) Troisième Tabl. Espec. (as *polystachion*), t. 84 (as *polystachys*); A. Rich. Monogr. Orch. Iles Fr. et Bourb. (1827) 50 [in Mém. Soc. Nat. Hist. Par. 4 (1828) 57], t. 8, fig. 4 (as *polystachyum*).

*Cranichis luteola* Sw. Fl. Ind. Occ. 3 (1806) 1433.

*Onychium flavescens* Blume Bijdr. (1825) 325.

*Polystachya mauritiana* Spreng. Syst. Veg. 3 (1826) 742; Rolfe in Elliot in Journ. Linn. Soc. 29 (1891) 53; Dur. & Schinz. Consp. Fl. Afr. 5 (1895) 35; Palacky Cat. Pl. Madag. Fasc. 1 (1906) 7; Hochreut. Sert. Madag. (in Ann. Conserv. Jard. Bot. Genève 11 & 12) (1908) 55 (21); Schltr. in Beihefte Bot. Centralbl. 33, Abt. 2 (1915) 414.

*Dendrobium flavescens* Lindl. Gen. & Sp. Orch. (1830) 85, in Bot. Reg. 30 (1844) Misc. 57; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 302.

*Epidendrum parviflorum* Pav. ex Lindl. Gen. & Sp. Orch. (1830) 73, in syn.

*Polystachya zeylanica* Lindl. in Bot. Reg. 24 (1838) Misc. 78; Reichb. f. in Walp. Ann. 6 (1863) 639; S. Moore in Baker Fl. Maurit. & Seych. (1877) 362; Hook. f. Fl. Brit. Ind. 6 (1890) 21; Trim. Handb. Fl. Ceyl. 4 (1898) 183.

- Polystachya zollingeri* Reichb. f. in Bonpl. 5 (1857) 39, in Walp. Ann. 6 (1863) 640.
- Polystachya extinctoria* Reichb. f. in Walp. Ann. 6 (1863) 638.
- Callista flavescens* Ktze. Rev. Gen. Pl. 2 (1891) 654.
- Dendrorchis extinctoria* Ktze. Rev. Gen. Pl. 2 (1891) 659.
- Dendrorchis minuta* Ktze. Rev. Gen. Pl. 2 (1891) 658.
- Dendrorchis zollingeri* Ktze. Rev. Gen. Pl. 2 (1891) 659.
- Epidendrum resupinatum* Sessé & Moc. Fl. Mex. ed. 2 (1894) 202, fide Cogn. in Urb. Symb. Antill.
- Polystachya minuta* Frapp. ex Cordem. Fl. l'Île Réunion. (1895) 190, in nota; Britton in Small Fl. SE. U. S. (1903) 328, ed. 2 (1913) 324; Fawc. & Rendle Fl. Jam. 1 (1910) 48, t. 7, figs. 4 & 5; Small Fl. Miami (1913) 55; Ames Orch. 5 (1915) 93; Schltr. in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 479; Britton & Millsp. Bahama Fl. (1920) 89; Schltr. in Urb. Symb. Antill. 8 (Fl. Doming.) (1920) 122; Britton in Addisonia 7 (1922) 19, t. 234; G. Wilson in Orch. Rev. 30 (1922) 324; Musgrove in Orch. Rev. 31 (1923) 167, in textu, non A. Rich. & Gal.
- Polystachya flavescens* J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 284, Fig.-Atlas (1910) fig. 218; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 24; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 180.

Luzon (Bontoc, Benguet, Pangasinan, Zambales, Rizal, Tayabas), Mindanao (Lanao), *Vanoverbergh 760, 1332, 3670, Elmer 8527, Fenix s. n., Boettcher s. n., B. S. 13550 Ramos, 20781 Escritor, M. S. Clemens s. n.* At sea level to 1,200 m' altitude. In India, Ceylon, Sumatra, Java, Borneo, Madagascar, Mauritius, Bourbon, and also in Florida, Central America, the West Indies, and northern South America.

The oldest name for the species is *Epidendrum minutum* Aubl. and although the combinations *Polystachya minuta* (Aubl.) Frapp. ex Cordem. and (Aubl.) Britton have been made, it seems inadvisable to use either on account of the already existing *Polystachya minuta* A. Rich. & Gal. in Ann. Sci. Nat. III 3 (1845) 27. The last named is presumably not a *Polystachya*, but its status is at present (and probably will remain) unsettled.

#### EXCLUDED OR SYNONYMOUS SPECIES

POLYSTACHYA MINUTA Frapp. ex Cordem. Fl. l'Île Réunion. (1895) 190, in nota; Britton in Small Fl. SE. U. S. (1903) 328; Ames Orch. 5 (1915) 93, non A. Rich. & Gal. = *Polystachya luteola* (Sw.) Hook.

#### 55. ACANTHOPHIPPIUM Blume

ACANTHOPHIPPIUM MANTINIANUM L. Linden & Cogn. in Journ. des Orch. 7 (1896) 138; Ames in Philip. Journ. Sci. 6 (1911) Bot. 50. Orch. 5 (1915) 93.

Luzon (Bontoc, Sorsogon), *Vanoverbergh 1203, Elmer 16409.* In wet places.

## 56. PHAJUS Loureiro

**PHAJUS FLAVUS** (Blume) Lindl. Gen. & Sp. Orch. (1831) 128; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 179; Miq. Fl. Ind. Bat. 3 (1859) 671; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 192, Fig.-Atlas (1909) fig. 144; Ames in Philip. Journ. Sci. 6 (1911) Bot. 50; Schltr. in Engl. Bot. Jahrb. 45 Beibl. 104 (1911) 24; Ames Orch. 5 (1915) 94.

*Limodorum flavum* Blume Bijdr. (1825) 375.

*Bletia woodfordii* Hook. in Bot. Mag. 54 (1827) t. 2719.

*Phajus maculatus* Lindl. in Wall. Cat. (1831) No. 3748, *nomen*, Gen. & Sp. Orch. (1831) 127; Lodd. Bot. Cab. 19 (1832) t. 1803; Hook. in Bot. Mag. 68 (1842) t. 3960; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 180, Fl. Jav. Orch. (1858) 9 (Orch. Arch. Ind. 9) t. 5, E; Reichb. f. in Walp. Ann. 6 (1862) 460; Veitch Man. Orch. Pl. pt. 6 (1890) 12; Hook. f. Fl. Brit. Ind. 5 (1890) 817, 6 (1890) 192; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 107, t. 149.

*Bletia flava* Wall. in Bibl. Anglo-Indica ic. 1147 ex Lindl. Gen. & Sp. Orch. (1831) 127, in syn.

*Phajus flexuosus* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 179, Fl. Jav. Orch. (1858) 7 (Orch. Arch. Ind. 6); Miq. Fl. Ind. Bat. 3 (1859) 671.

*Phajus crispus* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 180, Fl. Jav. Orch. (1858) 8 (Orch. Arch. Ind. 8) t. 4, fig. 2, A, B; Miq. Fl. Ind. Bat. 3 (1859) 671.

*Phajus platyphilus* Reichb. f. Xen. Orch. 1 (1856) 201, t. 76, fig. III, 4-6, in Bonpl. 5 (1857) 42; Miq. Fl. Ind. Bat. 3 (1859) 740.

*Phajus indigoferus* Reichb. f. Xen. Orch. 1 (1856) 202, t. 76, fig. IV, 7 & 8 (excl. syn.); Blume Fl. Jav. Orch. (1858) 7 (Orch. Arch. Ind. 7) t. 2, fig. 2; Naves Novis. App. (1882) 246, non Hassk.

*Phajus bracteosus* Reichb. f. in Bonpl. 5 (1857) 42; Miq. Fl. Ind. Bat. 3 (1859) 740; Naves Novis. App. (1882) 249.

Luzon (Bontoc, Lepanto, Sorsogon), Panay (Antique), B. S. 5616 Worcester, 32593 McGregor, Elmer 16530. At 1,200 to 1,500 m altitude in Panay. In India, Java, and Sumatra.

**PHAJUS HALCONENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 323, Orch. 5 (1915) 94.

*Phaius calanthoides* Ames Orch. 2 (1908) 153, *text cut*.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Laguna, Tayabas), Mindoro, Negros. Common in Luzon at fairly high altitudes, up to 2,130 m on Mt. Halcon.

**PHAJUS LINEARIFOLIUS** Ames in Philip. Journ. Sci. 7 (1912) Bot. 10, Orch. 5 (1915) 94.

Luzon (Bontoc), Vanoverbergh 1288, 3654. Terrestrial on hillocks and in brooks at 1,180 to 1,650 m altitude.

**PHAJUS LYONII** Ames Orch. 5 (1915) 94.

Luzon (Bontoc, Lepanto, Ifugao, Zambales, Laguna, Sorsogon), Leyte, Mindanao (Cotabato, Davao), *B. S. 5613 Worcester, 22226 Brown, Lyon s. n., Elmer 11798, 16524, Wenzel 0118, Weber 225, Wester s. n.* Terrestrial in the open or shade at 600 to 850 m altitude.

**PHAJUS MINDORENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 324, Orch. 5 (1915) 95.

Luzon (Laguna) Mindoro, *Merrill 5131, 5612, B. S. 17115 Robinson.* Epiphyte or terrestrial in mossy forest at 1,000 to 1,430 m altitude.

**PHAJUS PHILIPPINENSIS** N. E. Br. in Gard. Chron. III 6 (1889) 239; Ames in Philip. Journ. Sci. 8 (1913) Bot. 422, Orch. 5 (1915) 95.

Luzon (Bontoc, Nueva Vizcaya), *Vanoverbergh 3886, B. S. 11139 McGregor.* Up to 1,300 m altitude in Bontoc.

**PHAJUS RAMOSII** Ames Orch. 5 (1915) 96.

*Calanthe ramosii* Ames in Philip. Journ. Sci. 7 (1912) Bot. 12.

Luzon (Zambales), *B. S. 4987 Ramos.*

## EXCLUDED OR SYNONYMOUS SPECIES

**PHAJUS AMBOINENSIS** Blume apud Naves Novis. App. (1882) 246.

**PHAJUS BRACTEOSUS** Reichb. f. in Bonpl. 5 (1857) 42; Naves Novis. App. (1882) 249 = *Phajus flavus* (Blume) Lindl.

**PHAIUS CALANTHOIDES** Ames Orch. 2 (1908) 153, *text cut* = *Phajus halconensis* Ames.

**PHAJUS CALLOSUS** Lindl. apud Naves Novis. App. (1882) 246.

**PHAJUS GRANDIFOLIUS** Lour. Fl. Cochinch. (1790) 529; Naves Novis. App. (1882) 246; Ames in Philip. Journ. Sci. 4 (1909) Bot. 671, Orch. 5 (1915) 94.

There seems no real foundation for believing that this species occurs in the Philippines; the material referred to it is presumably *Phajus flavus* (Blume) Lindl.

**PHAJUS INDIGOFERUS** Reichb. f. Xen. Orch. 1 (1856) 202, *t. 76, fig. IV, 7 & 8* (excl. syn.); Naves Novis. App. (1882) 246, non Hassk. = *Phajus flavus* (Blume) Lindl.

**PHAJUS KUHLLII** Reichb. f. apud Naves Novis. App. (1882) 246.

**PHAJUS WALLICHII** Lindl. apud Naves Novis. App. (1882) 246.

57. **CALANTHE R.** Brown

**CALANTHE ANGUSTIFOLIA** (Blume) Lindl. Gen. & Sp. Orch. (1833) 251, Fol. Orch. Calanthe (1854) 5; Miq. Fl. Ind. Bat. 3 (1859) 710; Reichb. f. in Walp. Ann. 6 (1864) 914; Hook. f. Fl. Brit. Ind. 5 (1890) 854; Ridl. in Journ. Linn. Soc. 32 (1896) 330; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 205, Fig.-Atlas (1909) *fig. 152*; Ames in Philip. Journ. Sci. 2 (1907) Bot. 324; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 121; Ames Orch. 2 (1908) 154, 5 (1915) 96, 7 (1922) 150; J. J. Sm. in Bull. Jard. Bot. Buitenz. II 14 (1914) 30.

*Ambyglottis angustifolia* Blume Bijdr. (1825) 369.

*Calanthe phajoides* Reichb. f. Xen. Orch. 1 (1856) 207, t. 79, fig. II, 4 & 5, in Bonpl. 5 (1857) 37; Hook. f. in Hook. Ic. Pl. 19 (1889) t. 1864; Naves Novis. App. (1882) 246.

*Alismorchis angustifolia* Ktze. Rev. Gen. Pl. 2 (1891) 650.

*Alismorchis phajoides* Ktze. Rev. Gen. Pl. 2 (1891) 650.

Luzon (Benguet), Mindoro, *Ramos & Edaña 82, 109, Merrill 5677*. Terrestrial in mossy forest, at 2,130 to 2,260 m altitude in Mindoro. In Malay Peninsula, Sumatra, and Java.

**CALANTHE CONSPICUA** Lindl. Fol. Orch. Calanthe (1854) 4; Miq. Fl.

Ind. Bat. 3 (1859) 710; Reichb. f. in Walp. Ann. 6 (1864) 913;

Naves Novis. App. (1882) 246; Vidal Phan. Cuming. Philip. (1885)

149, Rev. Pl. Vasc. Filip. (1886) 269; Ames Orch. 5 (1915) 96.

*Calanthe lilacina* Loher in Gard. Chron. III 47 (1910) 66, text cut, in Fedde Repert. 11 (1912) 96.

Luzon (Albay, Sorsogon), Palawan, *Cuming 2097, B. S. 6459 Robinson, 23561 Ramos, Foxworthy 576*. At 290 to 485 m altitude.

**CALANTHE DAVAENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 422, Orch. 5 (1915) 97.

Mindanao (Davao), *Copeland s. n.* Mt. Apo, terrestrial at 2,000 m altitude.

**CALANTHE ELMERI** Ames Orch. 2 (1908) 155, text cut, 5 (1915) 97.

Luzon (Abra, Bontoc, Benguet), *B. S. 27003 Ramos, 12936 Fenix, Van-overbergh 2195, 2210, Lyon 153, Elmer 5886, 8382, Topping s. n., Weber 406*. Terrestrial, sea level to 1,800 m altitude.

**CALANTHE FURCATA** Batem. ex Lindl. in Bot. Reg. 24 (1838) Misc. 28;

Knowles & Westc. Floral Cab. 2 (1838) 46; Lindl. in Paxt. Flow.

Gard. 3 (1852) 37, Fol. Orch. Calanthe (1854) 25; Moore Ill. Orch.

Pl. (1857) Calanthe 5; Miq. Fl. Ind. Bat. 3 (1859) 711; Walp.

Ann. 6 (1864) 916; Naves Novis. App. (1882) 246; Vidal Phan

Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 269;

Ames Orch. 1 (1905) 81.

*Calanthe veratrifolia* R. Br. apud Naves Novis. App. (1882) 246;

J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 211, quoad syn. *C.*

*furcata* Batem. et quoad Philip.; J. J. Sm. Orch. Amb. (1905) 23,

quoad syn. *C. furcata* Batem. et quoad Philip.

*Alismorchis furcata* Ktze. Rev. Gen. Pl. 2 (1891) 650.

*Calanthe triplicata* Ames in Philip. Journ. Sci. 2 (1907) Bot. 326,

Orch. 2 (1908) 159, non *Orchis triplicata* Willem.

Luzon (Apayao, Kalinga, Bontoc, Benguet, Nueva Vizcaya, Pampanga, Bataan, Rizal, Laguna, Tayabas, Albay, Sorsogon), Mindoro, Panay (Capiz, Antique), Negros (Oriental Negros), Leyte, Mindanao (Camaguin Island, Zamboanga, Dapitan, Lanao, Bukidnon, Cotabato, Davao), Sibu. A common and very widely distributed species in the Philippines. Terrestrial at 60 to 3,100 m altitude.

It has been deemed advisable to adopt the name *C. furcata* for the Philippine material as there is no question as to its identity. As pointed out by J. J. Smith, in Merr. Interp. Rumph. Herb. Amb. (1917) 170, the combination *C. triplicata* Ames is untenable as *Orchis triplicata* Willem.,

the name-bringing synonym, is not conspecific. While *C. veratrifolia* R. Br., as to plant figured and described, is very probably conspecific with *C. furcata* Batem., it is open to grave doubt, as pointed out by Smith, l. c., whether *Limodorum veratrifolium* Willd., is the same as the plant that Brown figured and described. Should *Limodorum veratrifolium* Willd. be *Calanthe sylvatica* Lindl., as seems probable, the combination *Calanthe veratrifolia* R. Br., (as to name) would apply to that species. In view of the uncertain status of *Calanthe veratrifolia* R. Br. no attempt has been made to cite its bibliography, synonymy, or distribution.

**CALANTHE HALCONENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 324, Orch. 5 (1915) 97.

Luzon (Laguna), Mindoro, *Raymundo s. n.*, *Merrill 5489*. Terrestrial, in forest at 760 to 1,260 m altitude.

**CALANTHE HENNISII** Loher in Gard. Chron. III 46 (1909) 34, in Fedde Repert. 8 (1910) 384; Ames in Philip. Journ. Sci. 8 (1913) Bot. 423, Orch. 5 (1915) 97.

Luzon (Rizal, Tayabas), *Loher s. n.*, *Lyon 41*, *B. S. 13111 Foxworthy & Ramos, 41916 Ramos*. At 500 to 1,000 m altitude, according to Loher.

**CALANTHE LACERATA** Ames in Philip. Journ. Sci. 7 (1912) Bot. 11, Orch. 5 (1915) 97.

Luzon (Lepanto, Benguet, Tayabas, Camarines), *Merrill 4582, 4756, Ramos & Edaña 74, 114, F. B. 11355 Curran, Whitford 960*. Terrestrial or epiphytic ?, in forest at 1,000 to 2,500 m altitude.

**CALANTHE LYROGLOSSA** Reichb. f. Otia Bot. Hamb. 1 (1878) 53, Xen. Orch. 3 (1881) 30; Naves Novis. App. (1882) 246; Ames Orch. 2 (1908) 156, *text cut*, 5 (1915) 97.

*Alismorchis lyroglossa* Ktze. Rev. Gen. Pl. 2 (1891) 650.

Luzon (Apayao, Cagayan, Zambales, Bataan, Laguna), Negros (Oriental Negros), Palawan, *Wilkes, s. n.*, *Weber 343, s. n.*, *B. S. 4782, 19558 Ramos, F. B. 6306 Curran, Elmer 10083, Foxworthy 637*. Epiphyte at 50 to 1,100 m altitude.

**CALANTHE MAQUILINGENSIS** Ames Orch. 5 (1915) 97.

Luzon (Laguna), Negros (Oriental Negros), Leyte, *B. S. 17246 Brown, Elmer 10063, Wenzel 0658*. Terrestrial at 600 to 1,000 m altitude.

**CALANTHE MCGREGORII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 325, Orch. 5 (1915) 98.

Polillo, Mindoro, Mindanao (Lanao), *McGregor 177, B. S. 10452 McGregor, M. S. Clemens s. n.* Balete, Rio Baco.

**CALANTHE MINDORENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 325, Orch. 5 (1915) 98.

Mindoro, *Merrill 5525*. Terrestrial, ridge forest, Mt. Halcon at 760 m altitude.



**CALANTHE PULCHRA** (Blume) Lindl. Gen. & Sp. Orch. (1833) 250; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 202, Fig.-Atlas (1909) fig. 150; Ames in Philip. Journ. Sci. 2 (1907) Bot. 326, Orch. 2 (1908) 158, 5 (1915) 98, 6 (1920) 161, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 181.

*Amyglottis pulchra* Blume Bijdr. (1825) 371.

*Styloglossum nervosum* Breda Gen. & Sp. Orch. Java (1827) t. 10.

*Calanthe curculigoides* Lindl. in Wall. Cat. (1832) No. 7340, *nomen*, Gen. & Sp. Orch. (1833) 251, in Bot. Reg. 33 (1847) t. 8; Reichb. f. in Walp. Ann. 1 (1849) 792, 6 (1864) 913; Lindl. Fol. Orch. Calanthe (1854) 4; Miq. Fl. Ind. Bat. 3 (1859) 710; Hook. f. in Bot. Mag. 100 (1874) t. 6104; Hook. f. Fl. Brit. Ind. 5 (1890) 854; Veitch Man. Orch. Pl. pt. 6 (1890) 63; Ridl. in Journ. Linn. Soc. 32 (1896) 330, Mat. Fl. Mal. Penin. 1 (1907) 122.

*Alismorchis pulchra* Ktze. Rev. Gen. Pl. 2 (1891) 650.

*Calanthe curantigiodes* Ktze. Rev. Gen. Pl. 2 (1891) 650, *sphalm*, in syn.

Luzon (Sorsogon), Mindoro, Negros (Oriental Negros), Leyte, *Elmer 9576, 14883, Merrill 5849, 5850, Wenzel 0648, 0689*, mixed with 0704. Terrestrial at 130 to 760 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**CALANTHE AUSTRALIS** Ait. ex Loud. Hort. Brit. Suppl. 2 (1839) 615, *nomen* = *Spiranthes sinensis* (Pers.) Ames.

**CALANTHE EMARGINATA** Lindl. apud Naves Novis. App. (1882) 246.

**CALANTHE JUSNERII** Boxall ex Naves Novis. App. (1882) 247, *nomen*.

**CALANTHE LILACINA** Loher in Gard. Chron. III 47 (1910) 66, *text cut*, in Fedde Repert. 11 (1912) 96 = *Calanthe conspicua* Lindl.

**CALANTHE MASUCA** Boxall ex Naves Novis. App. (1882) 246, *nomen*.

**CALANTHE NIVALIS** Boxall ex Naves Novis. App. (1882) 246, *nomen*.

**CALANTHE PHAJOIDES** Reichb. f. Xen. Orch. 1 (1856) 207, t. 79, fig. II, 4 & 5; Naves Novis. App. (1882) 246 = *Calanthe angustifolia* (Blume) Lindl.

**CALANTHE RAMOSII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 12 = *Phajus ramosii* Ames.

**CALANTHE SPECIOSA** Lindl. apud Naves Novis. App. (1882) 246.

**CALANTHE TRIPLICATA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 326, Orch. 2 (1908) 159, non *Orchis triplicata* Willem. = *Calanthe furcata* Batem.

**CALANTHE VERATRIFOLIA** R. Br. apud Naves Novis. App. (1882) 246; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 211, quoad syn. *C. furcata* Batem. et quoad Philip.; J. J. Sm. Orch. Amb. (1905) 23, quoad syn. *C. furcata* Batem. et quoad Philip. = *Calanthe furcata* Batem.

## 58. ASCOTAINIA Ridley

**ASCOTAINIA ELMERI** Ames Orch. 5 (1915) 99; Schltr. in Fedde Repert. Beihefte 5 (Orch. Sino-Jap. Prodr.) (1919) 246; Ames Sched. Orch. 6 (1923) 79.

*Tainia elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1570.

*Tainia inamoena* Kränzl. in Fedde Repert. 17 (1921) 387.

Luzon (Bontoc, Benguet), Mindanao (Agusan, Davao), *Vanoverbergh* 1110, 2434, 4052, *Elmer* 8526, *Weber* 042, 061, 075, 0263, *Loher* s. n. Terrestrial in forest, at 3 to 1,300 m altitude.

## 59. SPATHOGLOTTIS Blume

**SPATHOGLOTTIS CHRYSANTHA** Ames Orch. 2 (1908) 161, *text cut*, 5 (1915) 99.

Luzon (Bontoc, Lepanto, Ifugao, Benguet, Nueva Vizcaya, Albay). *Vanoverbergh* 378, 1211, 4039, *F. B.* 14494 *Darling*, *Ramos & Edaño* 72, *B. S.* 14387, 19884 *McGregor*, 5374, 5546, 8179 *Ramos*, *Sandkuhl* 295, *Elmer* 5779, 8815, *Lyon* 156, *R. S. Williams* 1064, *Mearns* 2905. At 1,400 to 1,650 m altitude.

**SPATHOGLOTTIS ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1572, Orch. 5 (1915) 99.

*Spathoglottis aurea* Lindl. apud Naves Novis. App. (1882) 246;

Ames in Philip. Journ. Sci. 2 (1907) Bot. 327, Orch. 5 (1915) 99.

Mindoro, Negros (Oriental Negros), *Merritt* 4375, *Elmer* 10080. At 1,415 m altitude on Mt. Halcon and from Dumaguete (Cuernos Mountains).

**SPATHOGLOTTIS KIMBALLIANA** Hort. Sander ex Gartenflora 41 (1892) 184, *nomen*; Rolfe in Sander Reichenbachia II 2 (1894) 95, t. 88, *text cut*; Hook. f. in Bot. Mag. 121 (1895) t. 7443.

Var. **ANGUSTIFOLIA** Ames Orch. 5 (1915) 99.

Luzon (Ilocos Norte, Isabela, Albay), Sibuyan, *B. S.* 32872 *Ramos*, 21149 *Escritor*, 6284 *Robinson*, *Elmer* 12556. The species proper is from Borneo.

**SPATHOGLOTTIS PLICATA** Blume Bijdr. (1825) 401, *fig. 76*; Lindl. Gen. & Sp. Orch. (1831) 119, in Wall. Cat. (1831) No. 3734; Hassk. in Tijdschr. Nat. Gesch. 9 (1842) 139; Lindl. in Bot. Reg. 30 (1844) Misc. 45; Hassk. Pl. Jav. Rar. (1848) 126; De Vriese Ill. Orch. Ind. Neerl. (1854) t.; Moore Ill. Orch. Pl. (1857) Spathogl. 2; Miq. Fl. Ind. Bat. 3 (1859) 673; Reichb. f. in Walp. Ann. 6 (1862) 455; Hemsl. in Gard. Chron. II 18 (1882) 532; Naves Novis. App. (1882) 245; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 269; Linden & Rodigas in Lindenia 2 (1886) 15, t. 54; Kränzl. in Engl. Bot. Jahrb. 7 (1886) 438, in K. Schum. & Hollr. Fl. Kais. Wilhelmiland (1889) 33; Hook. f. Fl. Brit. Ind. 5 (1890) 813; Kränzl. Xen. Orch. 3 (1893) 112; Grant Orch. Burma (1895) 192; Ridl. in Journ. Linn. Soc. 31 (1896) 285, 32 (1896) 311; Kränzl. in Reinecke in Engl. Bot. Jahrb. 25 (1898) 603, in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 244; Volkens in Engl. Bot. Jahrb. 31 (1902) 461; Schltr. in Perk. Frag. Fl. Philip. (1904) 43; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 219, Fig.-Atlas (1909) *fig. 162*, Orch. Amb. (1905) 24; Ames Orch.

1 (1905) 83, 2 (1908) 61, 5 (1915) 100, 6 (1920) 164; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 117; Ames in Philip. Journ. Sci. 2 (1907) Bot. 327; J. J. Sm. in Nova Guinea 8 (1909) 25, 8<sup>3</sup> (1912) 529, 12 (1913) 14; Schltr. in Fedde Repert. 10 (1911) 70, in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 27; J. J. Sm. in Philip. Journ. Sci. 12 (1917) Bot. 255, in Merr. Interp. Rumph. Herb. Amb. (1917) 172; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 245; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 182.

*Bletia angustata* Gaudich. in Freyc. Voy. Uran. et Physic. Bot. (1826) 421.

*Bletia angustifolia* Gaudich. in Freyc. Voy. Uran. et Physic. Bot. (1826) t. 32.

*Paxtonia rosea* Lindl. in Bot. Reg. 24 (1838) Misc. 61, t. 60; Moore Ill. Orch. Pl. (1857) Paxtonia 4, t. 1; Reichb. f. in Walp. Ann. 6 (1862) 456; Naves Novis. App. (1882) 237.

*Spathoglottis lilacina* Griff. Notul. 3 (1851) 323 and Icon. Pl. Asiat. 3 (1851) t. 311, fig. III.

*Phajus rhumphii* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 179.

*Spathoglottis spicata* Lindl. in Journ. Linn. Soc. 3 (1859) 9.

Batan Islands, Luzon (Bontoc, Lepanto, Ifugao, Benguet, Nueva Vizcaya, Tarlac, Pampanga, Rizal, Laguna, Tayabas, Camarines, Sorsogon), Mindoro, Panay (Capiz), Negros (Occidental Negros), Samar, Leyte, Palawan, Dinagat, Mindanao (Zamboanga, Lanao, Cotabato, Bukidnon, Agusan, Surigao). A common and widely distributed species in the Philippines. Terrestrial at 160 to 1,500 m altitude. In Malay Peninsula, Formosa, Sumatra, Java, Amboina, Celebes, Borneo, New Guinea, and the Caroline Islands.

**SPATHOGLOTTIS TOMENTOSA** Lindl. in Bot. Reg. 31 (1843) sub t. 19; Reichb. f. in Walp. Ann. 6 (1862) 455; Naves Novis. App. (1882) 246; Vidal Phan. Cuming. Philip. (1885) 149; Kränzl. Xen. Orch. 3 (1893) 112; Ames Orch. 2 (1908) 163 (excl. Luzon spec.), 5 (1915) 100.

Mindanao (Misamis, Lanao, Agusan, Surigao), *Cuming 2108, M. S. Clemens 803, Weber 50, Bolster 256, (?) F. B. 7590 Hutchinson.* Terrestrial at 200 to 430 m altitude.

**SPATHOGLOTTIS VANOVERBERGHII** Ames Orch. 6 (1920) 299.

*Spathoglottis tomentosa* Ames Orch. 2 (1908) 163, non Lindl., as to specimens from Luzon.

Luzon (Bontoc, Lepanto, Benguet), *Vanoverbergh 163, 1109, 1112, 2106, 3943, 4046, Merrill 4287, Elmer 8478.* At 1,000 to 1,300 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**SPATHOGLOTTIS AFFINIS** De Vriese apud Naves Novis. App. (1882) 245.

**SPATHOGLOTTIS AUREA** Lindl. apud Naves Novis. App. (1882) 246; Ames in Philip. Journ. Sci. 2 (1907) Bot. 327, Orch. 5 (1915) 99 = *Spathoglottis elmeri* Ames.

**SPATHOGLOTTIS TOMENTOSA** Ames Orch. 2 (1908) 163, non Lindl., as to specimens from Luzon = *Spathoglottis vanoverberghii* Ames.

## 60. PLOCOGLOTTIS Blume

**PLOCOGLOTTIS BICALLOSA** Ames in Elm. Leaf. Philip. Bot. 5 (1915) 1571, Orch. 5 (1915) 100.

Luzon (Sorsogon), Negros (Oriental Negros), Mindanao (Camiguin Island), *Elmer 9577, 17117, B. S. 14437 Ramos*. Terrestrial at 1,300 m altitude in Negros.

**PLOCOGLOTTIS COPELANDII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 326, Orch. 5 (1915) 100.

*Plocoglottis acuminata* Ames Orch. 1 (1905) 82, non Blume.

Luzon (Laguna, Tayabas, Camarines, Sorsogon), Polillo, Mindoro, Panay (Capiz), Biliran, Leyte, Palawan, Mindanao (Camiguin Island, Zamboanga, Cotabato, Agusan, Davao). A common and widely distributed species. Terrestrial in forest at 10 to 580 m altitude.

**PLOCOGLOTTIS LUCBANENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1572, Orch. 5 (1915) 100.

Babuyan Islands (Camiguin Island), Luzon (Laguna, Tayabas, Sorsogon), *B. S. 4147 Fenix, F. B. 28938 Willie & Salvosa, Elmer 7707, 17123*. Terrestrial in damp forest at 915 m altitude in Tayabas.

**PLOCOGLOTTIS MCGREGORII** Ames Orch. 7 (1922) 121.

Panay (Antique), *B. S. 32189 McGregor*. East of Culasi, in mossy forest at 1,000 m altitude.

**PLOCOGLOTTIS MINDORENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 327, Orch. 5 (1915) 101.

Mindoro, Sibuyan, Mindanao (Surigao), *Merrill 5837, Elmer 12147, Bolster 278*. Terrestrial in forest at 10 to 330 m altitude.

**PLOCOGLOTTIS WENZELII** Ames Orch. 5 (1915) 101.

Leyte, *Wenzel 067, 0385, 0453*. Ormoc and Jaro, terrestrial in forest at 200 to 500 m altitude.

## EXCLUDED OR SYNONYMOUS SPECIES

**PLOCOGLOTTIS ACUMINATA** Ames Orch. 1 (1905) 82, non Blume = *Plocoglottis copelandii* Ames.

**PLOCOGLOTTIS LATIFOLIA** Blume apud Naves Novis. App. (1882) 247.

**PLOCOGLOTTIS LOWII** Reichb. f. apud Naves Novis. App. (1882) 247.

**PLOCOGLOTTIS MOLUCCANA** Blume apud Naves Novis. App. (1882) 247.

## 61. PACHYSTOMA Blume

**PACHYSTOMA PUBESCENS** Blume Bijdr. (1825) 376, *fig. 29*; Reichb. f. in Bonpl. 3 (1855) 251; Miq. Fl. Ind. Bat. 3 (1859) 675; Reichb. f. in Walp. Ann. 6 (1862) 463; Naves Novis. App. (1882) 247; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 186, Fig.-Atlas (1909) *fig. 140*; Ames in Philip. Journ. Sci. 6 (1911) Bot. 51, Orch. 5 (1915) 102.

*Pachyichilus pubescens* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 173, Fl. Jav. Orch. (1858) 24 (Orch. Arch. Ind. 27) *t. 10, fig. 1, t. 11E*.

Luzon (Cagayan, Bontoc, Lepanto, Benguet, Nueva Vizcaya, Rizal), Mindoro, *Vanoverbergh 1102, 2435, 4040, B. S. 7050, 7969 Ramos, 11135*

McGregor, 6774 Robinson, F. B. 11009 Merritt, 10942 Curran, Ramos s. n. Grassy hillsides up to 1,200 m altitude in Bontoc.

## 62. EULOPHIA R. Brown

**EULOPHIA DENTATA** Ames in Philip. Journ. Sci. 6 (1911) Bot. 51, Orch. 5 (1915) 102.

*Eulophia graminea* Naves Novis. App. (1882) 241 (?); Vidal Phan. Cuming. Philip. (1885) 150 (?), Rev. Pl. Vasc. Filip. (1886) 269 (?); Ames Orch. 2 (1908) 166, non Lindl.

Luzon (Bontoc, Isabela, Pangasinan), F. B. 17035 Curran, B. S. 7977 Ramos, Alberto 36, Cuming 2059.

**EULOPHIA MACRORHIZA** Blume Fl. Jav. Orch. (1858) 155 (Orch. Arch. Ind. 183) t. 63, fig. 2, t. 66B; Miq. Fl. Ind. Bat. 3 (1859) 742; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 227, Fig.-Atlas (1909) fig. 166; Ames Orch. 2 (1908) 167, 5 (1915) 104.

*Graphorchis macrorhiza* Ktze. Rev. Gen. Pl. 2 (1891) 662.

Luzon (Bataan, Tayabas, Sorsogon), Leyte, Whitford 621, Lyon 165, Elmer 16118, Wenzel 0121. Terrestrial at 60 to 1,000 m altitude. In Java.

**EULOPHIA MACROSTACHYA** Lindl. Gen. & Sp. Orch. (1833) 183, in Bot. Reg. 23 (1837) t. 1972; Wight Icon. 5<sup>1</sup> (1852) 8, t. 1667-68; Reichb. f. in Walp. Ann. 6 (1863) 646; Thw. Enum. Pl. Zeyl. (1864) 301; Hook. f. in Bot. Mag. 102 (1876) t. 6246, Fl. Brit. Ind. 6 (1890) 4; Trim. Handb. Fl. Ceyl. 4 (1898) 176; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 224, Fig.-Atlas (1909) fig. 164; Ames Orch. 2 (1908) 169, 5 (1915) 104; J. J. Sm. in Nova Guinea 8 (1909) 25, 12<sup>8</sup> (1915) 215; Rolfe in Gibbs in Journ. Linn. Soc. 42 (1914) 157; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Eulophia emarginata* Blume Fl. Jav. Orch. (1858) 152 (Orch. Arch. Ind. 180); Miq. Fl. Ind. Bat. 3 (1859) 741; Miq. Sumatra (1862) 274, non Lindl.

*Graphorchis macrostachya* Ktze. Rev. Gen. Pl. 2 (1891) 662.

*Graphorchis blumeana* Ktze. Rev. Gen. Pl. 2 (1891) 663.

Luzon (Laguna, Camarines, Sorsogon), Leyte, Mindanao (Camiguin Island, Zamboanga, Lanao). Fairly common in the Philippines. Terrestrial in forest at low altitudes. In India, Ceylon, Sumatra, Java, Ternate, Borneo, and New Guinea.

**EULOPHIA MERRILLII** Ames Orch. 5 (1915) 104.

Mindanao (Surigao), Merrill 5452. Caraga, open grassy slopes at about 100 m altitude.

**EULOPHIA SQUALIDA** Lindl. in Bot. Reg. 27 (1841) Misc. 77; Hook. f. Fl. Brit. Ind. 6 (1890) 6; Ridl. in Journ. Linn. Soc. 31 (1896) 289, 32 (1896) 332, 36 (1898) 214; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 225, Fig.-Atlas (1909) fig. 165; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 137; Ames in Philip. Journ. Sci. 4 (1909) Bot. 671, Orch. 5 (1915) 105, 6 (1920) 210; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Rolfe in Gibbs

- in Journ. Linn. Soc. 42 (1914) 157; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 192.
- Cyrtopera squalida* Reichb. f. in Bonpl. 5 (1857) 38; Lindl. in Journ. Linn. Soc. 3 (1859) 31; Miq. Fl. Ind. Bat. 3 (1859) 686; Reichb. f. in Walp. Ann. 6 (1863) 668; Naves Novis. App. (1882) 242.
- ? *Eulophia lutea* Blume Fl. Jav. Orch. (1858) 153 (Orch. Arch. Ind. 181); Miq. Fl. Ind. Bat. 3 (1859) 742.
- ? *Eulophia celebica* Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Miq. Fl. Ind. Bat. 3 (1859) 742.
- Eulophia elongata* Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Miq. Fl. Ind. Bat. 3 (1859) 742; Naves Novis. App. (1882) 241.
- Eulophia mucronata* Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Miq. Fl. Ind. Bat. 3 (1859) 742; Naves Novis. App. (1882) 242.
- Cyrtopodium squalidum* Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270.
- Eulophia elata* Hook. f. Fl. Brit. Ind. 6 (1890) 3, fide Ridl.
- Graphorchis elata* Ktze. Rev. Gen. Pl. 2 (1891) 662.
- ? *Graphorchis lutea* Ktze. Rev. Gen. Pl. 2 (1891) 662.
- Graphorchis squalida* Ktze. Rev. Gen. Pl. 2 (1891) 662.
- ? *Eulophia squalida* Lindl. var. *celebica* Schltr. in Fedde Repert. 10 (1911).

Luzon (Bontoc, Lepanto, Benguet, Zambales), Leyte, Bancalan, Palawan, Mindanao (Davao). A fairly common and rather widespread species in the Philippines. Terrestrial at 5 to 1,300 m altitude. In Malay Peninsula, ? Sumatra, Java, Celebes, and Borneo.

**EULOPHIA STRICTA** (Presl) Ames Orch. 5 (1915) 103.

- Bletia stricta* Presl Rel. Haenk. 1 (1827) 98; Naves Novis. App. (1882) 247.
- Eulophia exaltata* Reichb. f. in Bonpl. 5 (1857) 38; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 228, Fig.-Atlas (1910) fig. 167; Ames Orch. 1 (1905) 85, 2 (1908) 166, 5 (1915) 103; J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 13 (1907) 22.
- Eulophia leschenaultii* Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Naves Novis. App. (1882) 242.
- Cyrtopera ensiformis* Lindl. in Journ. Linn. Soc. 3 (1859) 31; Miq. Fl. Ind. Bat. 3 (1859) 686; Naves Novis. App. (1882) 242.
- Cyrtopodium ensiforme* Vidal Phan. Cuming. Philip. (1885) 80, 150, Rev. Pl. Vasc. Filip. (1886) 270; Schltr. in Perk. Frag. Fl. Philip. (1904) 43.
- Graphorchis exaltata* Ktze. Rev. Gen. Pl. 2 (1891) 662.
- Eulophia warburgiana* Kränzl. Xen. Orch. 3 (1893) 115, t. 266, fig. II, 8-12.
- Eulophia ensiformis* Schltr. in Perk. Frag. Fl. Philip. (1904) 202.

Luzon (Bontoc, Nueva Vizcaya, Rizal, Camarines), Mindanao (Zamboanga, Bukidnon, Lanao, Butuan, Davao). Not uncommon in the Philippines, terrestrial at 80 to 1,400 m altitude. In Java and Celebes.

**EULOPHIA VANOVERBERGHII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 13, Orch. 5 (1915) 105.

Luzon (Bontoc), *Vanoverbergh 336, 1188, 3876, 4051*. Terrestrial at about 1,300 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**EULOPHIA BICOLOR** Blume apud Naves Novis. App. (1882) 241.

**EULOPHIA ELONGATA** Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Naves Novis. App. (1882) 242 = *Eulophia squalida* Lindl.

**EULOPHIA ENSIFORMIS** Schltr. in Perk. Frag. Fl. Philip. (1904) 202 = *Eulophia stricta* (Presl) Ames.

**EULOPHIA EXALTATA** Reichb. f. in Bonpl. 5 (1857) 38; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 228, Fig.-Atlas (1910) fig. 167; Ames Orch. 1 (1905) 85, 2 (1908) 166, 5 (1915) 103; J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 13 (1907) 22 = *Eulophia stricta* (Presl) Ames.

**EULOPHIA GRAMINEA** Naves Novis. App. (1882) 241; (?) ; Vidal Phan. Cuming. Philip. (1885) 150 (?), Rev. Pl. Vasc. Filip. (1886) 269 (?); Ames Orch. 2 (1908) 166, non Lindl. = *Eulophia dentata* Ames.

**EULOPHIA LESCHENAULTII** Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Naves Novis. App. (1882) 242 = *Eulophia stricta* (Presl) Ames.

**EULOPHIA MUCRONATA** Blume Fl. Jav. Orch. (1858) 154 (Orch. Arch. Ind. 182); Naves Novis. App. (1882) 242 = *Eulophia squalida* Lindl.

**EULOPHIA SAUNDERSIANA** Reichb. f. apud Naves Novis. App. (1882) 242.

**EULOPHIA SUMATRANA** Blume apud Naves Novis. App. (1882) 242.

Closely allied to *Eulophia squalida* Lindl. The Philippine material is presumably referable to that species.

**EULOPHIA VENOSA** Reichb. f. apud Naves Novis. App. (1882) 242.

**EULOPHIA WARBURGIANA** Kränzl. Xen. Orch. 3 (1893) 115, t. 266, fig. II. 8-12 = *Eulophia stricta* (Presl) Ames.

63. **GEODORUM** Jackson

**GEODORUM NUTANS** (Presl) Ames Orch. 2 (1908) 164, 5 (1915) 106, 6 (1920) 306; Merr. Fl. Manila (1912) 166, Sp. Blancoanae (1918) 113; Wells in Philip. Journ. Sci. 14 (1919) 4.

*Dendrobium nutans* Presl Rel. Haenk. 1 (1827) 102, Symb. Bot. 1 (1832) 34, t. 23; Naves Novis. App. (1882) 234.

*Arethusa glutinosa* Blanco Fl. Filip. (1837) 641, ed. 2 (1845) 446, ed. 3, 3 (1879) 38, t. 429bis.

*Dendrobium haenkeanum* Steud. Nomencl. Bot. ed. 2, 1 (1840) 490.

*Geodorum semicristatum* Lindl. Fol. Orch. Geodorum (1854) 2; Miq. Fl. Ind. Bat. 3 (1859) 712; Reichb. f. in Walp. Ann. 6 (1863)

- 633; Naves Novis. App. (1882) 241; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Merr. in Govt. Lab. Publ. (Philip.) 8 (1903) 45, 52, 61, 75, 88, 152, 27 (1905) 84.  
 ? *Geodorum pallidum* Llanos in Mem. Real. Acad. Cienc. Madrid 4 (1859) 507; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 105.

Babuyan Islands (Dalupiri Island), Luzon (Nueva Vizcaya, Bataan, Rizal, Cavite, Laguna, Tayabas, Camarines, Sorsogon), Polillo, Masbate, Panay (Antique), Negros (Oriental Negros), Biliran, Samar, Palawan, Bancalan, Mindanao (Bukidnon, Davao). A common and widely spread, endemic species; terrestrial at sea level to 300 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

- GEODORUM CITRINUM Jacks. apud Naves Novis. App. (1882) 241.  
 GEODORUM DILATATUM R. Br. apud Naves Novis. App. (1882) 241.  
 GEODORUM PALLIDUM Llanos in Mem. Real. Acad. Cienc. Madrid 4 (1859) 507; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 105 = ? *Geodorum nutans* (Presl) Ames.  
 GEODORUM PICTUM Lindl. apud Naves Novis. App. (1882) 241.  
 GEODORUM PURPUREUM R. Br. apud Naves Novis. App. (1882) 241.  
 GEODORUM SEMICRISTATUM Lindl. Fol. Orch. Geodorum (1854) 2; Miq. Fl. Ind. Bat. 3 (1859) 712; Reichb. f. in Walp. Ann. 6 (1863) 633; Naves Novis. App. (1882) 241; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Merr. in Govt. Lab. Publ. (Philip.) 8 (1903) 45, 52, 61, 75, 88, 152, 27 (1905) 84 = *Geodorum nutans* (Presl) Ames.

64. DENDROBIUM Swartz

- DENDROBIUM ACLINIA Reichb. f. in Bonpl. 4 (1856) 329.  
*Dendrobium pseudaclinia* Lindl. in Journ. Linn. Soc. 3 (1859) 9; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 297; Ames Orch. 5 (1915) 134.

Luzon (Isabela, Zambales, Rizal), B. S. 5618, 19065 (cult.) Curran, Lyon 63, 148, 150, B. S. 19151 Reillo 7. Epiphyte up to 330 m altitude in Rizal.

Reichenbach states that his specimen came from "Ostindien," a very indefinite localization. Lindley in 1859 renamed the species, without justification, *Dendrobium pseudaclinia*, citing *D. aclinia* Reichb. f. as a synonym, and then made a new *D. aclinia* based on the genus *Aclinia* of Griffith. This proceeding is certainly unjustified and, moreover, the *D. aclinia* of Lindley is considered by J. D. Hooker, Fl. Brit. Ind. 5 (1890) 718, to be a peloric form of *D. incurvum* Lindl. Consequently *D. aclinia* Reichb. f. is reinstated in place of *D. pseudaclinia* Lindl.

- DENDROBIUM ACUMINATISSIMUM (Blume) Lindl. Gen. & Sp. Orch. (1830) 86; Lindl. in Bot. Reg. 30 (1844) Misc. 50; Miq. Fl. Ind. Bat. 3 (1859) 636; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 350, Fig.-Atlas (1910) fig. 265, in Nova Guinea 8 (1909) 71;



Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 170; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 35; Ames Orch. 5 (1915) 114; J. J. Sm. in Philip. Journ. Sci. 12 (1917) Bot. 256. *Grastidium acuminatissimum* Bl. Bijdr. (1825) 333.

*Dendrobium caudatum* Teijsm. & Binn. var. *javanica* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 24 (1862) 315.

*Callista acuminatissima* Ktze. Rev. Gen. Pl. 2 (1891) 654.

Leyte, Wenzel 047. Dagami, epiphyte at 60 m altitude. In Sumatra, Java, Amboina, and New Guinea.

**DENDROBIUM ACUMINATUM** Rolfe ex Ames Orch. 1 (1905) 86, 2 (1908) 1, 170, t. 17, 5 (1915) 114.

? *Dendrobium cymbidioides* Blume apud Naves Novis. App. (1882) 231.

*Sarcopodium cymbidioides* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 325, quoad Philip.

*Sarcopodium acuminatum* Rolfe in Orch. Rev. 18 (August, 1910) 239; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (November, 1910) 329, fig. 32 D, E.

Luzon (Kalinga, Bataan), Lyon 47, Boettcher s. n., Whitford 223, F. B. 738 Borden, Topping 461, Weber 23, Copeland s. n. Epiphyte at 1,000 to 2,000 m altitude.

**DENDROBIUM AGUSANENSE** Ames Sched. Orch. 6 (1923) 79.

Mindanao (Agusan), Elmer 12462. At 330 m altitude.

**DENDROBIUM ALBAYENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 14, Orch. 5 (1915) 115.

Luzon (Laguna, Tayabas, Albay), Negros (Occidental Negros), Leyte, Mindanao (Butuan, Agusan, Davao). A fairly common species; epiphytic at sea level to 900 m altitude.

**DENDROBIUM AMETHYSTOGLOSSUM** Reichb. f. in Gard. Chron. (1872) 109; Hook. f. in Bot. Mag. 98 (1872) t. 5968; Veitch Man. Orch. Pl. pt. 3 (1888) 16; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 115; Ames Orch. 5 (1915) 115.

*Callista amethystoglossa* Ktze. Rev. Gen. Pl. 2 (1891) 654.

Luzon (Benguet), Lyon 157.

**DENDROBIUM ANOSMUM** Lindl. in Bot. Reg. 31 (1845) Misc. 32; Naves Novis. App. (1882) 234; J. J. Sm. in Winkler in Engl. Bot. Jahrb. 48 (1912) 101, in Nova Guinea 12 (1913) Bot. 74, 12<sup>4</sup> (1916) Bot. 351, in Merr. Interp. Rumph. Herb. Amb. (1917) 175; Merr. Sp. Blancoanae (1918) 114; Ames in Merr. in Journ. Roy. Asiatic Soc. Straits Branch, Special No. (1921) 156.

*Dendrobium macrophyllum* Lindl. in Bot. Reg. 25 (1839) Misc. 36, 28 (1842) Misc. 84, 30 (1844) Misc. 47, Sert. Orch. (1840) t. 35; Paxt. Mag. Bot. 8 (1841) 97, t.; Hook. Cent. Orch. Pl. (1851) t. 12; Planch. Hort. Donat. (1855) 156, Atlas t. 1; Reichb. f. in Linden Pescat. 1 (1860) 40, t. 40, non A. Rich.

*Dendrobium macranthum* Hook. in Bot. Mag. 69 (1842) t. 3970; Paxt. Mag. Bot. 9 (1842) 238; Planch. in Fl. des Serres 8 (1852) 21, t. 757; Miq. Fl. Ind. Bat. 3 (1859) 642; Naves Novis. App. (1882) 233; Ceron Cat. Pl. Herb. Manila (1892) 166, non A. Rich.

- Epidendrum ruibarbarum redolens* Blanco Fl. Filip. ed. 2 (1845) 593.
- Dendrobium macrophyllum* Lindl. var. *giganteum* Lindl. in Gard. Chron. (1854) 219; Warner Sel. Orch. Pl. I (1862-65) t. 26.
- Dendrobium macranthum* Hook. var. *purpureo-marginatum* De Vriese Ill. Orch. Ind. Neerl. (1854) t. 17.
- Dendrobium macrophyllum* Lindl. var. *pallidum* Planch. Hort. Donat. (1855) 156.
- ? *Dendrobium retusum* Llanos in Mem. Real Acad. Cienc. Madr. 4 (1857) 498; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100.
- Dendrobium macranthum* Hook. var. *marginatum* De Vriese ex Miq. Fl. Ind. Bat. 3 (1859) 643; Naves Novis. App. (1882) 233.
- Dendrobium superbum* Reichb. f. in Walp. Ann. 6 (1861) 282, in Gard. Chron. II 17 (1882) 776; Warner & Will. Orch. Alb. 1 (1882) t. 42; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 267; Veitch Man. Orch. Pl. pt. 3 (1888) 77; Du Buyss. in l'Orchidoph. 12 (1892) 70; Ridl. in Journ. Bot. 36 (1898) 211; Cogn. in Dict. Icon. Orch. (1899) Dendrob. t. 20; Finet in Bull. Mus. Hist. Nat. Par. 6 (1903) 300; J. J. Sm. Orch. Amb. (1905) 67; Ames Orch. 1 (1905) 90, 2 (1908) 186, 5 (1915) 139; Rolfe in Orch. Rev. 14 (1906) 177, fig. 21; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 56; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 33; O'Brien in Gard. Chron. III 72 (1922) 9.
- Dendrobium superbum* Reichb. f. var. *anosmum* Reichb. f. in Walp. Ann. 6 (1861) 283; Veitch Man. Orch. Pl. pt. 3 (1889) 77; Rolfe in Lindenia 6 (1890) 51, t. 264; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 33.
- Dendrobium superbum* Reichb. f. var. *giganteum* Reichb. f. in Walp. Ann. 6 (1861) 283; Ames Orch. 2 (1908) 187; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 33.
- Dendrobium superbum* Reichb. f. var. *purpureo-marginatum* Reichb. f. in Walp. Ann. 6 (1861) 283; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 33.
- Dendrobium macrophyllum* Lindl. var. *purpureo-marginatum* De Vriese ex Reichb. f. in Walp. Ann. 6 (1861) 283, in syn.
- Dendrobium superbum* Reichb. f. var. *huttonii* Reichb. f. in Gard. Chron. (1869) 206; Rolfe in Lindenia 6 (1890) 52, sub t. 264; Ames Orch. 2 (1905) 187; O'Brien in Gard. Chron. III 72 (1922) 9, fig. 6.
- Epidendrum rhabarbarum redolens* Blanco Fl. Filip. ed. 3, 3 (1879) 45, t. 389.
- Dendrobium macranthum* Hook. var. *giganteum* Naves Novis. App. (1882) 233; Roman in Journ. des Orch. 6 (1895) 284.
- ? *Dendrobium macranthum* Hook. var. *album* Naves Novis. App. (1882) 233.
- Dendrobium superbum* Reichb. f. var. *burkei* Reichb. f. in Gard. Chron. II 21 (1884) 306; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 34; O'Brien in Gard. Chron. III 72 (1922) 9.
- Dendrobium scortechinii* Hook. f. Fl. Brit. Ind. 5 (1890) 741; Ridl. in Journ. Linn. Soc. 32 (1896) 264.
- Callista anosma* Ktze. Rev. Gen. Pl. 2 (1891) 653.

*Callista scortechinii* Ktze. Rev. Gen. Pl. 2 (1891) 655.

*Dendrobium superbum* Reichb. f. var. *dearei* Day ex Rolfe in *Lindenia* 6 (1890) 52, sub *t.* 264; Rolfe in *Orch. Rev.* 14 (1906) 177, *fig.* 22; O'Brien in *Gard. Chron.* III 72 (1922) 9.

*Dendrobium leucorhodum* Schltr. in *Fedde Repert. Beihefte* 1 (*Orch. Deutsch-Neu-Guin.*) (1912) 499.

Luzon (Abra, Bontoc, Lepanto, Benguet, Nueva Vizcaya, Rizal). Fairly frequent in Luzon, up to 760 m altitude in Bontoc. In Malay Peninsula, Indo-China (fide Finet), Celebes, Amboina, Borneo, and New Guinea.

**DENDROBIUM APOROIDES** (Lindl.) Merr. Sp. Blancoanae (1918) 113.

*Aporum incrassatum* Brongn. in *Duperr. Voy. Coquille* (1834) 204, *t.* 42B, non Blume.

*Epidendrum equitans* Blanco Fl. Filip. (1837) 645, ed. 2 (1845) 449, ed. 3, 3 (1879) 44, non *Dendrobium equitans* Kränzl.

*Eria aporoides* Lindl. in *Journ. Linn. Soc.* 3 (1859) 60; *Miq. Fl. Ind. Bat.* 3 (1859) 657; *Naves Novis. App.* (1882) 236; Merr. in *Govt. Lab. Publ. (Philip.)* 27 (1905) 84.

*Pinalia aporodes* Ktze. Rev. Gen. Pl. 2 (1891) 678.

*Dendrobium brongniartii* Kränzl. in *Engl. Pflanzenreich* IV. 50. II. B. 21 (1910) 210; Ames in *Philip. Journ. Sci.* 7 (1912) Bot. 15, *Orch.* 5 (1915) 116.

*Dendrobium equitans* Kränzl. in *Engl. Pflanzenreich* IV. 50. II. B. 21 (1910) 228, quoad Philip.

Luzon (Ilocos Norte, Cagayan, Nueva Vizcaya, Zambales, Rizal, Tayabas, Camarines, Sorsogon), Leyte, Basilan, Mindanao (Camiguin Island, Agusan, Surigao, Davao). A fairly common and widely distributed species in the Philippines at sea level to 1,000 m altitude.

**DENDROBIUM APPENDICULOIDES** Ames *Orch.* 7 (1922) 93.

Mindanao (Bukidnon), *B. S.* 38940 *Ramos & Edaño*. Mt. Candoon; epiphyte in forest at 1,650 m altitude.

**DENDROBIUM BASILANENSE** Ames in *Philip. Journ. Sci.* 7 (1912) Bot. 14, *Orch.* 5 (1915) 116.

Panay (Iloilo), Basilan, Mindanao (Zamboanga, Agusan), *B. S.* 18187 *Robinson, F. B.* 3968 *Hutchinson, Merrill* 8068, *Weber s. n.*, 45, 48, 132. Epiphyte at sea level to 400 m altitude.

**DENDROBIUM BULLENIANUM** Reichb. f. in *Bot. Zeit.* 20 (1862) 214; Kränzl. in *Engl. Pflanzenreich* IV. 50. II. B. 21 (1910) 133; Ames *Orch.* 5 (1915) 117.

*Dendrobium erythroxanthum* Reichb. f. in *Gard. Chron.* II 2 (1874) 162; Boxall ex *Naves Novis. App.* (1882) 234; Kränzl. in *Engl. Bot. Jahrb.* 25 (1898) 604.

No specimens seen, but drawings have been studied.

Regarding *Dendrobium bullenianum* Reichenbach states: "Sie soll aus Manilla stammen." Kränzl. gives in distribution "Luzon?... Samoa-Inseln." Reichenbach's specimen may have come from Polynesia rather than from the Philippines. *Dendrobium erythroxanthum* is supposed to have come from the Philippines.

It seems probable that *Dendrobium chameleon* Ames is conspecific, but sufficient evidence of this fact is at present lacking.

**DENDROBIUM BUSUANGENSE** Ames Orch. 6 (1920) 296, t. 101.

Busuanga, *Taylor s. n.* (cult. in Manila).

**DENDROBIUM CABADBARENSE** Ames Orch. 5 (1915) 117.

Mindanao (Agusan, Davao), *Weber 157, 192, 297*, with 310, *Black s. n.* Epiphyte at sea level to 100 m altitude.

**DENDROBIUM CANDOONENSE** Ames Orch. 7 (1922) 94.

Mindanao (Bukidnon), *B. S. 38716 Ramos & Edaña*. Epiphyte on forest slope, Mt. Candoon, at 1,650 m altitude.

**DENDROBIUM CARINATUM** (Linn.) Willd. Sp. Pl. 4 (1805) 133; Lindl. Gen. & Sp. Orch. (1830) 92; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 298; Ames Orch. 5 (1915) 118.

*Bontia luzonica, geniculis inferioribus carinulatis* Petiver Gazophyll. Decas 5 (1702) 70, t. 44, fig. 10.

*Epidendrum carinatum* Linn. Sp. Pl. (1753) 953, ed. 2 (1763) 1350.

*Dendrobium robinsonii* Ames in Philip. Journ. Sci. 8 (1913) Bot. 425, Orch. 5 (1915) 138.

Luzon (Zambales) Mindoro, *F. B. 6315 Curran, B. S. 3059 Foxworthy, 5642 Robinson*. Epiphyte in open sandy spots.

**DENDROBIUM CERAULA** Reichb. f. in Linnaea 41 (1876) 40; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 104; Ames Orch. 5 (1915) 118.

Luzon, *Jagor 895, 896* (in Herb. Berol.).

**DENDROBIUM CHAMELEON** Ames Orch. 2 (1908) 174, text cut, 5 (1915) 119; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 134.

Luzon (Benguet), *R. S. Williams 1940*. Baguio; epiphyte, hanging from the trees.

**DENDROBIUM CHRYSOGRAPHATUM** Ames Orch. 5 (1915) 119.

*Dendrobium angustifolium* Ames in Philip. Journ. Sci. 7 (1912) Bot. 14, non Lindl.

Luzon (Bontoc, Benguet, Zambales, Bataan, Rizal), *Vanoverbergh 708, 709, 1346, 1522, Ramos & Edaña 95, F. B. 6972 Curran, R. S. Williams 764, B. S. 29588 Ramos & Edaña*. Epiphyte at 1,450 to 2,000 m altitude.

**DENDROBIUM CLEMENSIAE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 16, Orch. 5 (1915) 120.

Negros (Occidental Negros), Leyte, Mindanao (Lanao), *Lyon 40, Wenzel 0530, 0591, 0599, 0906, M. S. Clemens 508*. Epiphyte at 500 to 700 m altitude in Leyte.

**DENDROBIUM CRUMENATUM** Sw. in Schrad. Journ. Bot. 2 (1799) 237, in Kongl. Svensk. Vet.-Akad. Nya Handl. 21 (1800) 246; Willd. Sp. Pl. 4 (1805) 137; Lindl. in Trans. Hort. Soc. 7 (1830) 40, Gen. & Sp. Orch. (1830) 88; Roxb. Fl. Ind. ed. 2, 3 (1832) 480;

Lindl. in Bot. Reg. 25 (1839) t. 22; Paxt. Mag. Bot. 6 (1839) 90, 10 (1843) 189; Edit. in Allg. Berl. Gartenz. 7 (1839) 254, 11 (1843) 175; Knowles & Westc. Floral Cab. 3 (1840) 47; Hook. in Bot. Mag. 69 (1843) t. 4013; Griff. Notul. 3 (1851) 315; De Vriese Ill. Orch. Ind. Neerl. (1852) t. 3, fig. VI; Miq. Fl. Ind. Bat. 3 (1859) 638; Reichb. f. in Walp. Ann. 6 (1861) 291; Miq. Sumatra (1862) 274, Choix des Pl. (1863) sub t. 22, p. p. (excl. fig.); Thw. Enum. Pl. Zeyl. (1864) 297; Naves Novis. App. (1882) 232; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Rolfe in Lindenia 5 (1889) 33, t. 207; Hook. f. Fl. Brit. Ind. 5 (1890) 729; Ridl. in Trans. Linn. Soc. II 3 (1893) 362; Grant Orch. Burma (1895) 80; Ridl. in Journ. Linn. Soc. 31 (1896) 270, 32 (1896) 254; Trim. Handb. Fl. Ceyl. 4 (1898) 151; Finet in Bull. Mus. Hist. Nat. Par. 6 (1903) 297; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 330, Fig.-Atlas (1910) fig. 249, Orch. Amb. (1905) 42; Ames Orch. 1 (1905) 88, 2 (1908) 175, 5 (1915) 121, 7 (1922) 95; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 48; J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 43 (1910) 45; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 235, fig. 19 C, D, 6-8; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 34; Merr. Fl. Manila (1912) 168; J. J. Sm. in Winkler in Engl. Bot. Jahrb. 48 (1912) 98; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 158.

*Onychium crumenatum* Blume Bijdr. (1825) 326.

*Callista crumenata* Ktze. Rev. Gen. Pl. 2 (1891) 653.

*Dendrobium cumulatum* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 115, quoad Philip.; Ames Orch. 5 (1915) 121.

*Dendrobium caninum* Merr. in Philip. Journ. Sci. 19 (1921) 344; Ridl. in Journ. Bot. 60 (1922) 274; Merr. in Journ. Bot. 61 (1923) 173, non *Epidendrum caninum* Burm. f.

Luzon (Benguet, Rizal, Zambales, Tayabas), Polillo, Samar (Basiao Island), Biliran, Leyte, Palawan, Mindanao (Camiguin Island, Zamboanga, Lanao, Agusan, Surigao, Davao). A common and widely distributed species in the Philippines, at sea level to 500 m altitude. In Ceylon, Burma, Malay Peninsula, Andaman Islands, Cochinchina, Sumatra, Java, Amboina, Timor, and Borneo.

**DENDROBIUM CULTRATUM** Schltr. in Fedde Repert. 10 (1911) 71; Ames Orch. 5 (1915) 121.

*Dendrobium sinuatum* Schltr. in Perk. Frag. Fl. Philip. (1904) 43; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 216, quoad Philip., non Lindl.

*Dendrobium atropurpureum* Ames Orch. 1 (1905) 86, 2 (1908) 172; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 217, quoad Philip., non Miq.

Luzon (Apayao, Ifugao, Pangasinan, Rizal, Tayabas), Polillo, Mindoro, Panay (Capiz), Negros (Occidental Negros), Samar, Palawan, Mindanao (Agusan, Surigao, Davao), Sibutu. A fairly common and widely distributed species in the Philippines, at sea level to 150 m altitude. In Celebes.

**DENDROBIUM DEAREI** Reichb. f. in Gard. Chron. II 18 (1882) 361; Warner & Will. Orch. Alb. 3 (1884) t. 120; Veitch Man. Orch. Pl. pt. 3 (1888) 37, text cut; Cogn. in Dict. Icon. Orch. (1905) Dendrob. t. 36; Ames in Philip. Journ. Sci. 4 (1909) Bot. 599; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 89; Rolfe in Orch. Rev. 19 (1911) 261; Ames Orch. 5 (1915) 122.

Mindoro, Dinagat, Mindanao, *F. B. 8525 Merritt, Lyon 121.*

**DENDROBIUM DISTICHUM** (Presl) Reichb. f. in Linnaea 41 (1876) 39; Naves Novis. App. (1882) 232; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 211 (excl. syn. in part); Ames Orch. 5 (1915) 122.

*Schizmoceras disticha* Presl Rel. Haenk. 1 (1827) 96, t. 13, fig. 2. *Dendrobium indivisum* Naves Novis. App. (1882) 231; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 217, quoad Philip.; Ames in Philip. Journ. Sci. 6 (1911) Bot. 52, non Miq.

Luzon (Benguet, Zambales, Bataan, Rizal, Camarines, Sorsogon), Polillo, Sulu Archipelago. A fairly common species in Luzon, at sea level to 900 m altitude.

**DENDROBIUM ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1573, Orch. 5 (1915) 123.

Luzon (Laguna, Tayabas), *B. S. 16568, 20458 Ramos, 20851 Escritor, Serrato s. n., Calica s. n., Elmer 9249.* Epiphyte, in forest at 830 m altitude in Tayabas.

**DENDROBIUM EPIDENDROPSIS** Kränzl. in Orchis 2 (1908) 79, fig. 12; Ames in Philip. Journ. Sci. 4 (1909) Bot. 598; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 106; Ames Orch. 5 (1915) 123.

Luzon (Benguet, Bataan, Rizal), *Loher s. n., Lyon 118, 161, F. B. 2109 Borden, Elmer 6839, B. S. 3060 Ramos.*

**DENDROBIUM ESCRITORII** Ames Orch. 5 (1915) 123.

Luzon (Tayabas, Camarines), Mindanao (Surigao), *B. S. 20683 Escritor, 22019 Ramos, 27405 Alambra, Wenzel 01091.* Epiphyte at 35 to 150 m altitude.

**DENDROBIUM EURORUM** Ames Orch. 5 (1915) 124.

Leyte, *Wenzel 065, 0612.* Epiphyte in forest at 120 to 500 m altitude.

**DENDROBIUM GERLANDIANUM** Kränzl. in Fedde Repert. 6 (1909) 317, in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 238; Ames Orch. 5 (1915) 125.

The species was described from a *Loher* plant from Manila. The type has not been seen, but from the description it would seem to approach *D. philippinense* Ames.

**DENDROBIUM HERCOGLOSSUM** Reichb. f. in Gard. Chron. II 26 (1886) 487; Edit. in Hamb. Gartenz. 42 (1886) 558; Hook. f. Fl. Brit. Ind. 6 (1890) 185; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 75.

*Dendrobium aduncum* Hook. f. in Bot. Mag. 110 (1884) t. 6784, non Lindl.

Mindanao (Lanao) (so reported), *Lyon 138*.

In view of the above cited (reported Philippine) specimen it does not seem improbable that the material referred to *D. aduncum* Lindl. by Naves and by Ceron is in reality this species.

**DENDROBIUM HETEROCARPUM** Wall. Cat. (1828) No. 20, *nomen*, ex Lindl. Gen. & Sp. Orch. (1830) 78, Pl. Asiat. Rar. 2 (1831) 84, t. 196; Lindl. in Bot. Reg. 30 (1844) Misc. 49; Paxt. Mag. Bot. 14 (1847) 68; Hook. in Bot. Mag. 79 (1853) t. 4708; Planch. in Fl. des Serres 8 (1854?) 253, t. 342; Lem. Jard. Fleur. 4 (1854) t. 386; Batem. Second Cent. Orch. Pl. (1867) t. 150; Douglas in Gard. Chron. II 25 (1886) 397; Hook. f. Fl. Brit. Ind. 5 (1890) 737; Berkl. in Orch. Rev. 1 (1893) 82; Grant Orch. Burma (1895) 97; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 53, t. 74; Trim. Handb. Fl. Ceyl. 4 (1898) 154; Cogn. in Dict. Icon. Orch. (1898) Dendrob. t. 10; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 368, Fig.-Atlas (1911) fig. 281; Ames Orch. 1 (1905) 89, 2 (1908) 176, *text cut*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 45; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Schltr. in Fedde Repert. 10 (1911) 37, Orchideen (1915) 260.

*Dendrobium aureum* Lindl. Gen. & Sp. Orch. (1830) 77, in Bot. Reg. 30 (1844) Misc. 51; Wight Icon. 5<sup>1</sup> (1852) 6, t. 1646; Lindl. in Fl. des Serres 7 (1852) 210; Reichb. f. in Walp. Ann. 6 (1861) 287; Thw. Enum. Pl. Zeyl. (1864) 297; Hemsl. in Gard. Chron. II 16 (1881) 688; Veitch Man. Orch. Pl. pt. 3 (1888) 19, *text cut*; Reichb. f. in Sander Reichenbachia I 2 (1890) 31, t. 63; Stein Orchideenb. (1892) 186; Du Buyss. in l'Orchidoph. 12 (1892) 184; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 56; Ames Orch. 5 (1915) 115.

*Dendrobium aureum* Lindl. var. *pallidum* Lindl. in Bot. Reg. 25 (1839) t. 20; Knowles & Westc. Floral Cab. 3 (1840) 48; Reichb. f. in Walp. Ann. 6 (1861) 287; Veitch Man. Orch. Pl. pt. 3 (1888) 19; Stein Orchideenb. (1892) 186.

*Dendrobium rhombeum* Lindl. in Bot. Reg. 29 (1843) t. 17, 30 (1844) Misc. 56; Reichb. f. in Bot. Zeit. 1 (1843) 333; Lindl. in Paxt. Flow. Gard. 3 (1852-53) 52; Naves Novis. App. (1882) 233; Reichb. f. in Sander Reichenbachia I 2 (1890) 31, in obs.

*Dendrobium heterocarpum* Wall. var. *henshallii* Hook. in Bot. Mag. 83 (1857) t. 4970; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 45.

*Dendrobium aureum* Lindl. var. *philippinense* Reichb. f. in Gard. Chron. II 13 (1880) 72; Veitch Man. Orch. Pl. pt. 3 (1888) 19; Stein Orchideenb. (1892) 187.

*Dendrobium atractodes* Ridl. in Journ. Linn. Soc. 23 (1885) 123, fide Kränzl.

*Dendrobium aureum* Lindl. var. *henshallii* Veitch Man. Orch. Pl. pt. 3 (1882) 19; Stein Orchideenb. (1892) 186.

*Callista aurea* Ktze. Rev. Gen. Pl. 2 (1891) 653.

*Callista heterocarpa* Ktze. Rev. Gen. Pl. 2 (1891) 654.

*Dendrobium aureum* Lindl. var. *rhombeum* Stein Orchideenb. (1892) 187.

*Dendrobium heterocarpum* Wall. var. *pallidum* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 45.

*Dendrobium heterocarpum* Wall. var. *philippinense* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 45.

*Dendrobium hildebrandii* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 34, p. p., non Rolfe, fide Schltr.

*Dendrobium minahassae* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 107, fide Schltr.

Luzon (Bontoc, Benguet, Bataan, Rizal, Albay, Sorsogon), Mindanao (Davao). Fairly common in the Philippines, especially in Luzon at 1,300 to 1,500 m altitude. In India, Ceylon, Burma, Malay Peninsula, Java, and Celebes.

It has seemed advisable to adopt the name *D. heterocarpum* in place of *D. aureum* Lindl., because the first definite union of the species occurs in Bot. Mag. 79 (1853) t. 4708 (cf. International Rules adopted at Vienna, Sect. 6, Art. 46) and also because it is the earliest name, although a *nomen*, and still further because it has been more commonly accepted by reputable authors.

**DENDROBIUM HYMENANTHUM** Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1861) 302; Naves Novis. App. (1882) 234; Ames in Philip. Journ. Sci. 4 (1909) Bot. 598; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 288; Ames Orch. 5 (1915) 125.

*Dendrochilum hymenanthum* Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268, sphalm.

Luzon (Rizal, Tayabas), Polillo, *Cuming 2135, Lyon 147, B. S. 3035 Ramos, 5647, 10453 McGregor, F. B. 23368 Mabesa.*

**DENDROBIUM INTERJECTUM** Ames Orch. 5 (1915) 125.

Leyte, *Wenzel 065a, 0534, 0574, 0594, 0677, 0691.* Epiphyte in forest at 120 to 700 m altitude.

**DENDROBIUM LEYTENSE** Ames Orch. 5 (1915) 126.

Leyte, *Wenzel 082, 0203, 0415.* Epiphyte in forest at 60 to 500 m altitude.

**DENDROBIUM LOHERIANUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 62.

Philippines, probably Luzon, *Loher s. n.*

Known only from the type collection.



**DENDROBIUM LUNATUM** Lindl. in Journ. Linn. Soc. 3 (1859) 4; Miq. Fl. Ind. Bat. 3 (1859) 630; Naves Novis. App. (1882) 231; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 218; Ames in Philip. Journ. Sci. 7 (1912) Bot. 17, in Elm. Leaf. Philip. Bot. 5 (1912) 1574, Orch. 5 (1915) 127.

Palawan, *Cuming s. n.*, 2136, *B. S.* 733, 907 *Foxworthy*, *Elmer* 12764, *Weber* 606, *Merrill* 9337, 9623, *Ledesma s. n.* Epiphyte at sea level to 500 m altitude.

**DENDROBIUM LUZONENSE** Lindl. in Bot. Reg. 30 (1844) Misc. 54; Reichb. f. in Walp. Ann. 6 (1861) 290; Naves Novis. App. (1882) 234; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 172, *fig. 12 A-D*; Ames Orch. 5 (1915) 127.

*Dendrobium alagense* Ames in Philip. Journ. Sci. 2 (1907) Bot. 328.

Luzon (Kalinga, Benguet, Sorsogon), Catanduanes, Mindoro, Leyte, Mindanao (Lanao, Agusan, Davao). A fairly common species; epiphyte at sea level to 1,300 m altitude.

**DENDROBIUM LYONII** Ames Orch. 2 (1908) 177, 5 (1915) 127, in Philip. Journ. Sci. 4 (1909) Bot. 672.

*Dendrobium acuminatum* Lyon in Gard. Chron. III 42 (1907) 210, *fig. 88*; Rolfe in Orch. Rev. 15 (1907) 312, as to plant spoken of; Kränzl. in Orchis 2 (1908) 73, *t. 16*, non Rolfe ex Ames; Edit. in Gard. Chron. III 46 (1909) 150, *fig. 64*, in Gardners' Mag. 52 (1909) 659, 660, *text cut*, non Rolfe ex Ames.

*Sarcopodium lyonii* Rolfe in Orch. Rev. 18 (1910) 240; Ames in Philip. Journ. Sci. 6 (1911) Bot. 53, in Addisonia 8 (1923) 17, *t. 265*.

*Sarcopodium acuminatum* Rolfe var. *lyonii* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 329, *fig. 32 A-C*.

Luzon (Bataan), *Lyon s. n.*, 10, *F. B.* 7153 *Curran*. Epiphyte at 660 to 1,100 m altitude.

**DENDROBIUM MACGREGORII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 17, Orch. 5 (1915) 128.

Polillo, *B. S.* 10457 *McGregor*.

**DENDROBIUM MARIVELENSE** Ames Orch. 2 (1908) 180, *text cut*, 5 (1915) 128.

*Dendrobium parciflorum* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 222, *quoad Philip.*; Ames in Philip. Journ. Sci. 7 (1912) Bot. 18, non Reichb. f.

Luzon (Bataan), Mindanao (Lanao), *Merrill s. n.*, *Whitford* 1127, *M. S. Clemens s. n.*

**DENDROBIUM MERRILLII** Ames Orch. 2 (1908) 181, *text cut*, 5 (1915) 126, in Philip. Journ. Sci. 4 (1909) Bot. 599; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 299.

*Dendrobium aloifolium* Reichb. f. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 206, quoad syn. *D. merrillii*; Ames Orch. 5 (1915) 115 (*D. aloifolium*).

Luzon (Ifugao, Pangasinan, Rizal, Tayabas), Samar, *B. S. 19989 McGregor, 29863 Fenix, 24355 Ramos, Loher 6017, Merrill 3357*. Epiphyte at apparently rather low altitude (350 m).

**DENDROBIUM MINDANAENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 423, Orch. 5 (1915) 128.

Luzon (Rizal), Polillo, Negros (Occidental Negros), Leyte, Culion, Palawan, Mindanao (Zamboanga, Agusan, Davao). A fairly common species of rather wide distribution. Terrestrial ? or epiphyte at low altitudes.

**DENDROBIUM MODESTUM** Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1861) 281; Naves Novis. App. (1882) 234; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 220; Ames Orch. 5 (1915) 128.

*Llanos s. n.*

Reichenbach described this species from a *Llanos* specimen from Manila and ascribed to it affinity with *D. aciculare* Lindl. Kränzl. in his monograph cites a *Cuming* specimen in the Lindley Herbarium. This species has not been recognized in any of the material collected during the past twenty years.

**DENDROBIUM MULTIRAMOSUM** Ames Orch. 5 (1915) 129.

Luzon (Benguet, Rizal), *Williams 1934, Lyon 42*.

**DENDROBIUM O'BRIENIANUM** Kränzl. in Gard. Chron. III 11 (1892) 266; Ames Orch. 2 (1908) 182, *text cut*, 5 (1915) 130; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 105, *fig. 5 N-O*.

*Dendrobium striatum* Hort. ex Gard. Chron. III 38 (1905) 382; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 298.

Known only from a cultivated specimen sent from Luzon by Micholitz to F. Sander Co.

**DENDROBIUM ORNITHOFLORUM** Ames Orch. 3 (1908) 60, *t. 46*, 5 (1915) 130.

Mindanao (Misamis), *F. B. 4627 Mearns & Hutchinson*. Mt. Malindang at 1,900 m altitude.

**DENDROBIUM PAPILIO** Loher in Gard. Chron. III 21 (1897) 416; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 231, excl. *Williams 1934*; Rolfe in Orch. Rev. 22 (1914) 272; Ames Orch. 5 (1915) 130.

*Dendrobium vanoverberghii* Ames in Philip. Journ. Sci. 8 (1913) Bot. 425, *t. 13*.

Luzon (Bontoc, Benguet), Negros (Oriental Negros), Mindanao (Davao). *Vanoverbergh 704, 1345, B. S. 31846 Santos, Weber 246, Herre s. n., Boettcher s. n.* Epiphyte at 1,450 to 2,200 m altitude.

**DENDROBIUM PERGRACILE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 423, Orch. 5 (1915) 131.

Mindanao (Lanao), *M. S. Clemens 999*. Camp Keithley, Lake Lanao.

**DENDROBIUM PHILIPPINENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 424, Orch. 5 (1915) 131.

*Dendrobium aciculare* Lindl. apud Vidal Phan. Cuming. Philip. (1885) 148; Vidal Rev. Pl. Vasc. Filip. (1886) 267; Hook. f. Fl. Brit. Ind. 5 (1890) 725, quoad Philip.; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 241, quoad Philip.; Ames Orch. 5 (1915) 113.

Luzon (Laguna, Tayabas), Mindoro, Leyte, *Cuming 2112, Loher 487, 6022, Lyon 67, Reillo s. n., B. S. 5641 Griffin, 20684 Escritor, 5658 Merrill, Wenzel 06, 077, 086, 0142*. Epiphyte, apparently at low altitudes.

**DENDROBIUM PLANIBULBE** Lindl. in Bot. Reg. 29 (1843) Misc. 54; Reichb. f. in Walp. Ann. 6 (1861) 301; Naves Novis. App. (1882) 232; Ames Orch. 5 (1915) 132.

*Dendrobium blumei* Lindl. in Journ. Linn. Soc. 3 (1859) 14; Miq. Fl. Ind. Bat. 3 (1859) 638; Naves Novis. App. (1882) 232; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 234, quoad syn. *D. planibulbe* Lindl. et quoad Philip.

Samar, Mindanao (Zamboanga, Agusan), *Cuming s. n., B. S. 24434 Ramos, Reillo s. n., Sablaya s. n., F. B. 5176 Hutchinson, Weber 174*. Epiphyte at low altitude.

**DENDROBIUM PLATYCAULON** Rolfe in Kew Bull. (1892) 139, in Gard. Chron. III 12 (1892) 29, fig. 212; Kränzl. in Engl. Pflanzenreich IV. 50 II. B. 21 (1910) 267; Ames in Philip. Journ. Sci. 6 (1911) Bot. 52, Orch. 5 (1915) 132.

? *Dendrobium lamellatum* Lindl. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 269, quoad Philip.; Ames Orch. 5 (1915) ix.

*Merrill* (cult.).

Known only from cultivated specimens.

**DENDROBIUM PLICATILE** Lindl. in Bot. Reg. 26 (1840) Misc. 10; Reichb. f. in Walp. Ann. 6 (1861) 307; Naves Novis. App. (1882) 234; Ames Orch. 5 (1915) 132.

*Dendrobium macraei* Ames Orch. 1 (1905) 89, 2 (1908) 176, non Lindl.

*Desmotrichum fimbriatum* Blume apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 354, quoad Philip.

Luzon (Tarlac, Pampanga, Bataan, Rizal, Laguna, Tayabas), Panay (Capiz), Leyte, Samar, Mindanao (Lanao, Cotabato, Agusan). A common and rather widely distributed species; epiphyte at 60 to 800 m altitude.

**DENDROBIUM POLYTRICHUM** Ames in Philip. Journ. Sci. 2 (1907) Bot. 328, *nomen*, Orch. 2 (1908) 183, 5 (1915) 133, 6 (1920) 297; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 240.

Luzon (Cagayan, Isabela, Bataan, Rizal, Laguna, Tayabas), Mindoro. A fairly common species, especially in Luzon; up to 260 m altitude in Mindoro.

**DENDROBIUM PRISTINUM** Ames Orch. 5 (1915) 133.

Luzon (Rizal), *B. S. 3041 Ramos*.

**DENDROBIUM PROFUSUM** Reichb. f. in Gard. Chron. II 21 (1884) 510; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 259; Ames Orch. 5 (1915) 134.

*Roebelen s. n.*

Known only from the description and a tracing of the analytical drawings in the Reichenbach Herbarium.

**DENDROBIUM PSEUDOCONVEXUM** Ames Orch. 5 (1915) 135.

Luzon (Bataan, Rizal, Laguna, Sorsogon). A number of collections have been made in Luzon. Epiphyte in forest at 600 to 700 m altitude.

**DENDROBIUM PTEROCARPUM** Ames Sched. Orch. 6 (1923) 80.

Mindanao (Davao), *Elmer 11528*. Epiphyte at 2,080 m altitude.

**DENDROBIUM PURPUREOSTELIDIUM** Ames Orch. 5 (1915) 136.

Luzon (Laguna, Sorsogon), Leyte, Mindanao (Agusan), Basilan, *B. S. 15103 Ramos, 16258 Reillo, Elmer 16203, Wenzel 0193, 0228, Weber 191*. Epiphyte at sea level and low altitudes.

**DENDROBIUM RAMOSII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 18, Orch. 5 (1915) 138.

Luzon (Bontoc, Lepanto, Benguet), *Vanoverbergh 9, 1715, B. S. 7049 Ramos, Lyon 154, Merrill 4682, Ramos & Edaña 115*. Apparently terrestrial in rather open ground in mountainous regions at 1,200 to 1,300 m altitude.

**DENDROBIUM SANDERAE** Rolfe in Gard. Chron. III 45 (1909) 374, fig. 163, in Orch. Rev. 17 (1909) 209, fig. 17; Ames in Philip. Journ. Sci. 4 (1909) Bot. 673; Fedde Repert. 8 (1910) 382; Rolfe in Bot. Mag. 136 (1910) t. 8351; Ames Orch. 5 (1915) 138.

Luzon (Bontoc, Lepanto, Benguet), *Vanoverbergh 560, 1263, 3112, B. S. 5614 Worcester, 3497 Mearns, Lyon 114*. Epiphyte at 1,000 to 1,650 m altitude.

**DENDROBIUM SCHUETZEI** Rolfe in Orch. Rev. 19 (1911) 224, 20 (1912) 289, 308, 337, fig. 47, in Gard. Chron. III 50 (1911) 42, III 52 (1912) 229, fig. 102; G. Wilson in Orch. World 3 (1912) 19, t.; Rolfe in Bot. Mag. 139 (1913) t. 8495; Ames Orch. 5 (1915) 138, 7 (1922) 96.

Mindanao (Surigao), *Lyon s. n.*

**DENDROBIUM SCOPA** Lindl. in Bot. Reg. 28 (1842) Misc. 55; Reichb. f. in Walp. Ann. 6 (1861) 303; Naves Novis. App. (1882) 234; Ames in Philip. Journ. Sci. 6 (1911) Bot. 52, 9 (1914) Bot. 13, Orch. 5 (1915) 139.

*Dendrobium thysanochilum* Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 152, fide Kränzl.

*Desmotrichum scopa* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 349.

Luzon (Tarlac, Rizal, Laguna), Mindoro, Leyte, Mindanao (Agusan), *Loddiges 273, Lyon s. n., 110, Reillo 53, Merrill 9167, Wenzel 064, Weber*

163, *Ramos* s. n. Epiphyte at sea level to 350 m altitude. In Guam and also probably in Formosa, Celebes (fide Kränzlin), New Guinea, and Samoa.

**DENDROBIUM SECUNDUM** Wall. Cat. (1828) No. 1996, *nomen*; Lindl. in Bot. Reg. 15 (1829) t. 1291, 30 (1844) Misc. 65, Gen. & Sp. Orch. (1830) 81; Hook. in Bot. Mag. 74 (1848) t. 4352; De Vriese Ill. Orch. Ind. Neerl. (1854) t. 6; Miq. Fl. Ind. Bat. 3 (1859) 641; Reichb. f. in Walp. Ann. 6 (1861) 296; Miq. Sumatra (1862) 274; Naves Novis. App. (1882) 233; Veitch Man. Orch. Pl. pt. 3 (1888) 73; Hook. f. Fl. Brit. Ind. 5 (1890) 730; Stein Orchideenb. (1892) 207; Grant Orch. Burma (1895) 120; Ridl. in Journ. Linn. Soc. 31 (1896) 271, 32 (1896) 259; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 358, Fig.-Atlas (1910) fig. 272; Kränzlin in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 98; Ames Orch. 5 (1915) 139, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 165.

*Pedilonum secundum* Blume Bijdr. (1825) 322.

*Dendrobium bursigerum* Lindl. in Journ. Linn. Soc. 3 (1859) 17; Miq. Fl. Ind. Bat. 3 (1859) 642; Edit. in l'Orchidoph. 2 (1882) 421; Reichb. f. in Gard. Chron. II 17 (1882) 424; Naves Novis. App. (1882) 233; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Ames Orch. 2 (1908) 173, 5 (1915) 117; Kränzlin in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 119, fig. 10 G-O; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 157.

*Callista bursigera* Ktze. Rev. Gen. Pl. 2 (1891) 654.

*Callista secunda* Ktze. Rev. Gen. Pl. 2 (1891) 653.

*Dendrobium secundum* Wall. var. *bursigerum* Ridl. in Journ. Linn. Soc. 31 (1896) 271.

Luzon (Bataan, Rizal, Camarines), Mindanao (Lanao, Agusan); R. S. Williams 765, B. S. 3097, 22155 *Ramos*, Weber 4, 144, F. B. 12287 Curran, Merrill 9321 (cult.). Epiphyte at 15 to 230 m altitude. In Burma, Malay Peninsula, Sumatra, Java, and Borneo.

**DENDROBIUM SINUOSUM** Ames Orch. 7 (1922) 96.

Leyte, Wenzel 0996. Tacloban, Tigbao, at sea level.

**DENDROBIUM SPURIUM** (Blume) J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 343, Fig.-Atlas (1910) fig. 260; Ames Orch. 2 (1908) 185, *text cut*, 5 (1915) 139; Kränzlin in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 264, figs. 34 A, B, 35 E-H; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 165.

*Dendrocolla spuria* Blume Bijdr. (1825) 290; Miq. Fl. Ind. Bat. 3 (1859) 697.

*Aërides spurium* Lindl. Gen. & Sp. Orch. (1833) 241.

*Dendrobium unguiculatum* Teijsm. & Binn. in Tijdschr. Ned. Ind. 5 (1853) 491; Miq. Fl. Ind. Bat. 3 (1859) 634; Reichb. f. in Walp. Ann. 6 (1861) 303; Naves Novis. App. (1882) 231.

*Dendrobium euphlebiium* Reichb. f. ex Lindl. in Journ. Linn. Soc. 3 (1859) 7; Miq. Fl. Ind. Bat. 3 (1859) 633; Reichb. f. Xen. Orch. 2 (1862) 26, t. 110, II 6; Naves Novis. App. (1882) 232;

Ridl. in Journ. Linn. Soc. 31 (1896) 268, 32 (1896) 258, Mat. Fl. Mal. Penin. 1 (1907) 49.

*Sarcochilus spurius* Reichb. f. in Walp. Ann. 6 (1863) 500.

*Thrixspermum spurium* Reichb. f. Xen. Orch. 2 (1867) 122.

*Callista euphlebica* Ktze. Rev. Gen. Pl. 2 (1891) 654.

*Callista unguiculata* Ktze. Rev. Gen. Pl. 2 (1891) 655.

Luzon (Cagayan, Bataan, Sorsogon), *F. B. 16727 Curran, Merrill 3692, Whitford 1118, Lyon 43, Weber 31, B. S. 23427 Ramos, Elmer 16384, 17311*. Epiphyte at 100 to 930 m altitude. In Malay Peninsula, Java, and Borneo.

**DENDROBIUM STELLA-SILVAE** (Loher & Kränzl.) Ames Orch. 5 (1915) 139.

*Sarcopodium stella-silvae* Loher & Kränzl. in Fedde Repert. 7 (1909) 40; Rolfe in Orch. Rev. 18 (August, 1910) 240; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 326, fig. 31 A-C; Ames in Philip. Journ. Sci. 8 (1913) Bot. 426.

Luzon (Abra, Bontoc, Rizal), *B. S. 7134 Ramos s. n., Vanoverbergh 2418, 2868, Loher s. n.* On forest slope at 1,000 m altitude.

**DENDROBIUM TAURINUM** Lindl. in Bot. Reg. 29 (1843) t. 28, 30 (1844) Misc. 62; Paxt. Mag. Bot. 10 (1843) 143, 217, t. & text cut; G. K. in Bot. Zeit. 1 (1843) 511; Reichb. f. in Walp. Ann. 6 (1861) 298; Van Houtte in Fl. des Serres 18 (1870) 133, t. 1904; Anderson in Gard. Chron. (1872) 974; Blanco Fl. Filip. ed. 3, Laminas (1877-83) t. 429; Naves Novis. App. (1882) 234; Hemsl. in Gard. Chron. II 17 (1882) 776; Veitch Man. Orch. Pl. pt. 3 (1888) 78; Du Buÿss. in l'Orchidoph. 12 (1892) 37; Stein Orchideenb. (1892) 210; L. Linden in Lindenia 13 (1898) 93, t. 621; Ames Orch. 1 (1905) 90, 2 (1908) 187, 5 (1915) 139; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 145, fig. 10A.

? *Dendrobium veratrifolium* Naves Novis. App. (1882) 233, non Lindl.

*Callista taurina* Ktze. Rev. Gen. Pl. 2 (1891) 655.

Luzon (Rizal, Laguna), Guimaras, Mindanao (Davao), *Lyon s. n., 24, B. S. 2018, 21333, 22245 Ramos, Reillo s. n., 41, Foxworthy s. n., Loher 480, Everett 4206, Black s. n., 3, Copeland 505*.

**DENDROBIUM TERNATENSE** J. J. Sm. in Bull. Dept. Agr. Ind. Néerl. 22 (1909) 26; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 246, fig. 20 A-C; Ames Orch. 5 (1915) 139.

*Dendrobium macrophyllum* Ames Orch. 2 (1908) 179, non A. Rich.; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 244, quoad Phillip.

Luzon (Bataan), *Whitford 1083*. Mt. Mariveles. Lamao River. Apparently rare in the Philippines. Epiphyte at 900 m altitude. In Ternate Island.

**DENDROBIUM TOPAZIACUM** Ames Orch. 5 (1915) 140.

Leyte, *Wenzel 0202*. Dagami, epiphyte at 60 m altitude.

**DENDROBIUM UNICORNE** Ames Orch. 5 (1915) 140.

Luzon (Laguna), Leyte, *B. S. 14987 Ramos, Wenzel 0292, 0527, 0563, 0872*. Epiphyte at 500 to 700 m altitude in Leyte.

**DENDROBIUM UNIFLORUM** Griff. Notul. 3 (1851) 305, Icon. Pl. Asiat. 3 (1851) t. 303; Ridl. in Trans. Linn. Soc. II 3 (1893) 363, in Journ. Linn. Soc. 31 (1896) 271, 32 (1896) 256, Mat. Fl. Mal. Penin. 1 (1907) 46; Ames Orch. 1 (1908) 91; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 185, quoad bibliog. et spec. (excl. descr.); Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 166.

*Dendrobium revolutum* Hook. f. Fl. Brit. Ind. 5 (1890) 732, quoad syn. *D. uniflorum* Griff. et spec. Malacca; Grant Orch. Burma (1895) 118, quoad syn. *D. uniflorum* Griff. et spec. Malacca; Ames Orch. 2 (1908) 184, quoad syn. *D. uniflorum* Griff. et spec., 5 (1915) 138; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 185, quoad descr. (excl. bibliog. et spec.), non Lindl.

Luzon (Ilocos Norte, Bataan, Laguna, Sorsogon), Sibuyan, Negros (Occidental Negros), Leyte, Dinagat, Mindanao (Lanao, Agusan, Surigao). Fairly common and of wide distribution in the Philippines. Epiphyte at 60 to 700 m altitude. In Malay Peninsula and Borneo (Sarawak).

Further study of the Philippine material has proved that the species concerned is *D. uniflorum* Griff. and not its near ally *D. revolutum* Lindl. with which it has been much confused.

**DENDROBIUM USTERI** Schltr. in Usteri Viert. Naturf. Gesell. Zurich 56 (1906) 450, in Bull. Herb. Boiss. II 6 (1906) 458; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 300; Ames Orch. 5 (1915) 141.

Negros, Guimaras, *Usteri s. n., Lyon 137*.

**DENDROBIUM USTERIOIDES** Ames Orch. 5 (1915) 142.

Luzon, Mindoro, *Lyon 22, F. B. 3693 Merritt 75*.

**DENDROBIUM VENTRICOSUM** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 209; Ames in Philip. Journ. Sci. 7 (1912) Bot. 19, Orch. 5 (1915) 144.

Luzon (Zambales, Sorsogon), Mindanao (Agusan, Surigao, Davao), *Loher s. n., 6004, Elmer 14441, 14779, 16423, Weber 119, 176, 179, Wenzel 01156, Black s. n.* Epiphyte at low altitudes in Mindanao.

**DENDROBIUM VERRUCULOSUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 426, Orch. 5 (1915) 144.

Luzon (Ilocos Norte), Leyte, *Lyon s. n., 143, B. S. 33236 Ramos, Wenzel 0140*. Epiphyte.

**DENDROBIUM VICTORIAE REGINAE** Loher in Gard. Chron. III 21 (1897) 399, 22 (1897) 121, *fig. 34*; Cogn. Dict. Icon. Orch. (1899) Dendrob. t. 21; Ames Orch. 1 (1905) 92, 5 (1915) 144; Kränzl. in Engl. Pflanzenreich IV. 50 II. B. 21 (1910) 109, *fig. 6 A, B*; Rolfe in Orch. Rev. 20 (1912) 17, *fig. 6*.

*Dendrobium coeleste* Loher in Gard. Chron. III 22 (1897) 1; Ames Orch. 5 (1915) 120.

*Dendrobium victoriae reginae* Loher var. *exile* Ames in Philip. Journ. Sci. 2 (1907) Bot. 328.

Luzon (Benguet), Mindoro, Negros, Mindanao (Camiguin Island), *Elmer 6272, B. S. 4326 Mearns, 31797 Santos, 14429 Ramos, Lyon 122, Boettcher s. n., Merrill 5503, 7011, Loher 483*. Epiphyte at 1,300 to 2,650 m altitude.

**DENDROBIUM WENZELII** Ames Orch. 5 (1915) 144.

Leyte, Mindanao (Lanao, Surigao), *Wenzel 039, 0139, M. S. Clemens 43, Hutchinson 7551*. Epiphyte at 30 to 60 m altitude.

**DENDROBIUM ZAMBOANGENSE** Ames Orch. 5 (1915) 145.

Mindanao (Zamboanga, Agusan), *Merrill 8174, Elmer 13697*. Epiphyte at about 1,100 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**DENDROBIUM ACICULARE** Lindl. apud Vidal Phan. Cuming. Philip. (1885) 148; Vidal Rev. Pl. Vasc. Filip. (1886) 267; Hook. f. Fl. Brit. Ind. 5 (1890) 725, quoad Philip.; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 241, quoad Philip.; Ames Orch. 5 (1915) 113 = *Dendrobium philippinense* Ames.

**DENDROBIUM ACUMINATUM** Lyon in Gard. Chron. III 42 (1907) 210, *fig. 88*; Rolfe in Orch. Rev. 15 (1907) 312, as to plant spoken of; Kränzl. in Orchis 2 (1908) 73, t. 16; Edit. in Gard. Chron. III 46 (1909) 150, *fig. 64*, in Gardners' Mag. 52 (1909) 659, 660, *text cut*, non Rolfe ex Ames = *Dendrobium lyonii* Ames.

**DENDROBIUM ADUNCUM** Wall. ex Lindl. apud Boxall ex Naves Novis. App. (1882) 234; Ceron Cat. Pl. Herb. Manila (1892) 166; Ames Orch. 5 (1915) 114, in nota.

This is a Himalayan species, and there is no sufficient reason for considering that it grows in the Philippines; cf. Ames l. c. for a critical note. It is not improbable that the plant reported as growing there may in reality be the closely related species *Dendrobium hercoglossum* Reichb. f.

**DENDROBIUM ALAGENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 328 = *Dendrobium luzonense* Lindl.

**DENDROBIUM ALBUM** Boxall ex Naves Novis. App. (1882) 234, *nomen*; Ceron Cat. Pl. Herb. Manila (1892) 166, *nomen*.

Boxall probably intended *Dendrobium album* Wight, which is a synonym of *D. aqueum* Lindl., an Indian species.

**DENDROBIUM ALOIFOLIUM** Reichb. f. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 206, quoad syn. *D. merrillii*; Ames Orch. 5 (1915) 115 (*D. aloefolium*) = *Dendrobium merrillii* Ames.



- DENDROBIUM ANGUSTIFOLIUM Ames in Philip. Journ. Sci. 7 (1912) Bot. 14, non Lindl. = *Dendrobium chrysographatum* Ames.
- DENDROBIUM ANTENNATUM Lindl. apud Naves Novis. App. (1882) 233.
- DENDROBIUM ATROPURPUREUM Ames Orch. 1 (1905) 86, 2 (1908) 172; Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 217, quoad Philip., non Miq. = *Dendrobium cultratum* Schltr.
- DENDROBIUM AUREOROSEUM Reichb. f. apud Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 125, p. p.; Ames Orch. 5 (1915) 115.
- This is a Javan species to which Kränzlin has referred a Philippine specimen collected by Cuming. J. J. Smith considers it to be a synonym of *Dendrobium nudum* Lindl.
- DENDROBIUM AUREUM Lindl. Gen. & Sp. Orch. (1830) 77; Ames Orch. 5 (1915) 115 = *Dendrobium heterocarpum* Lindl.
- DENDROBIUM BIFARIUM Lindl. apud Naves Novis. App. (1882) 233.
- DENDROBIUM BINNENDIJKII Reichb. f. apud Naves Novis. App. (1882) 232.
- DENDROBIUM BLUMEI Lindl. in Journ. Linn. Soc. 3 (1859) 14; Miq. Fl. Ind. Bat. 3 (1859) 638; Naves Novis. App. (1882) 232; Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 234, quoad syn. *D. planibulbe* Lindl. et quoad Philip. = *Dendrobium planibulbe* Lindl.
- DENDROBIUM BRONGNIARTII Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 210; Ames in Philip. Journ. Sci. 7 (1912) Bot. 15, Orch. 5 (1915) 116 = *Dendrobium aporoides* (Lindl.) Merr.
- DENDROBIUM BURSIGERUM Lindl. in Journ. Linn. Soc. 3 (1859) 17; Miq. Fl. Ind. Bat. 3 (1859) 642; Naves Novis. App. (1882) 233; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Ames Orch. 2 (1908) 173, 5 (1915) 117; Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 119, fig. 10 G-O = *Dendrobium secundum* Wall.
- DENDROBIUM CALCEOLUM Roxb. apud Naves Novis. App. (1882) 231.
- DENDROBIUM CALOPHYLLUM Reichb. f. apud Naves Novis. App. (1882) 232.
- DENDROBIUM CALOPOGON Reichb. f. apud Naves Novis. App. (1882) 232.
- DENDROBIUM CANALICULATUM R. Br. apud Naves Novis. App. (1882) 232.
- DENDROBIUM CANINUM Merr. in Philip. Journ. Sci. 19 (1921) 344, non *Epidendrum caninum* Burm. f. = *Dendrobium crumenatum* Sw.
- DENDROBIUM CAPILLIPES Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM CARNOSUM Teijsm. & Binn. apud Naves Novis. App. (1882) 234.
- DENDROBIUM CERINUM Reichb. f. in Gard. Chron. II 12 (1879) 554; Ridl. in Journ. Linn. Soc. 32 (1896) 263, in textu sub *D. sanguinolentum* Lindl.; Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 121; Ames Orch. 5 (1915) 119.

Reichenbach merely states that the type material came from the Malay Archipelago; Ridley, under *D. sanguinolentum* Lindl., doubts its being a

distinct species and states that Burbidge's specimen came from the Sulu Archipelago. No material comparable with this species has been seen from the Philippines; for discussion cf. Ames l. c.

DENDROBIUM COBBIANUM Reichb. f. in Gard. Chron. II 14 (1881) 748; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 297.

The origin of this plant is unknown; it was sent to Reichenbach without localization by the firm of Hugh Low & Co. Why it is included among the Philippine species is unknown, as there seems no ground upon which to assume that it came from the Philippines.

DENDROBIUM COELESTE Loher in Gard. Chron. III 22 (1897) 1; Ames Orch. 5 (1915) 120 = *Dendrobium victoriae reginae* Loher.

DENDROBIUM CONCINNUM Miq. apud Naves Novis. App. (1882) 234.

DENDROBIUM CONNATUM Lindl. apud Naves Novis. App. (1882) 231.

DENDROBIUM CONOSTALIX Reichb. f. in Walp. Ann. 6 (1861) 292; Usteri Beitr. Ken. Philip. Veg. (1905) 128; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 162; Ames Orch. 5 (1915) 120.

This is a Malayan species which has been reported from the Philippines. No material from the Philippines matches it and the reports seem erroneous. Cf. Ames l. c. for discussion.

DENDROBIUM CONVEXUM Lindl. apud Naves Novis. App. (1882) 231.

DENDROBIUM CREPIDATUM Lindl. apud Naves Novis. App. (1882) 232.

DENDROBIUM CUMULATUM Lindl. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 115, quoad Philip.; Ames Orch. 5 (1915) 121.

The Philippine specimens referred here by Kränzlin represent *Dendrobium crumenatum* Sw. Cf. Ames l. c.

DENDROBIUM CYMBIDIODES Blume apud Naves Novis. App. (1882) 231 = ? *Dendrobium acuminatum* Rolfe ex Ames.

DENDROBIUM DAYANUM Boxall ex Naves Novis. App. (1882) 234, *nomen*; Ceron Cat. Pl. Herb. Manila (1892) 166, *nomen*.

DENDROBIUM DRACONIS Reichb. f. apud Naves Novis. App. (1882) 233.

DENDROBIUM EQUITANS Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 228, quoad Philip. = *Dendrobium aporoides* (Lindl.) Merr.

This species is known only from Formosa.

DENDROBIUM EROSUM Lindl. apud Naves Novis. App. (1882) 233.

DENDROBIUM ERYTHROXANTHUM Reichb. f. in Gard. Chron. II 2 (1874) 162; Boxall ex Naves Novis. App. (1882) 234 = *Dendrobium bullenianum* Reichb. f.

DENDROBIUM EUPHLEBIUM Reichb. f. ex Lindl. in Journ. Linn. Soc. 3 (1859) 7; Naves Novis. App. (1882) 232 = *Dendrobium spurium* (Blume) J. J. Sm.

DENDROBIUM FIMBRIATUM Hook. apud Naves Novis. App. (1882) 232.

DENDROBIUM FLABELLUM Reichb. f. apud Naves Novis. App. (1882) 232.

- DENDROBIUM GEMELLUM Lindl. apud Naves Novis. App. (1882) 233.
- DENDROBIUM GOLDSCHMIDTIANUM Kränzlin. in Fedde Repert. 7 (1909) 40, in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 116.  
 "Provinz der Philippinen und Formosa."—Kränzlin. The specimen probably originated in Formosa, not in the Philippines.
- DENDROBIUM GOULDII Reichb. f. apud Naves Novis. App. (1882) 234.
- DENDROBIUM GRACILE Kränzlin. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 230, quoad Philip.; Ames Orch. 5 (1915) 125.  
 Kränzlin, in his monograph of the genus, refers *Loher 496* to this species. What the Loher plant is is open to question, but no material referable to *D. gracile* has been seen in the collections received.
- DENDROBIUM GRANDIFLORUM Lindl. apud Naves Novis. App. (1882) 232.
- DENDROBIUM HAENKEANUM Steud. Nomencl. Bot. ed. 2, 1 (1840) 490 = *Geodorum nutans* (Presl) Ames.
- DENDROBIUM HASSELTII Blume apud Naves Novis. App. (1882) 232.
- DENDROBIUM HETEROIDEUM Blume apud Naves Novis. App. (1882) 231.
- DENDROBIUM HYMENOPHYLLUM Lindl. apud Naves Novis. App. (1882) 233.
- DENDROBIUM INDIVISUM Naves Novis. App. (1882) 231; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Kränzlin. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 217, quoad Philip.; Ames in Philip. Journ. Sci. 6 (1911) Bot. 52, non Miq. = *Dendrobium distichum* (Presl) Reichb. f.
- DENDROBIUM INTERMEDIUM Teijsm. & Binn. apud Naves Novis. App. (1882) 232.
- DENDROBIUM JAVANICUM Lindl. apud Naves Novis. App. (1882) 234.
- DENDROBIUM JOHANNIS Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM KUHLLII Lindl. apud Naves Novis. App. (1882) 233.
- DENDROBIUM LABUANUM Lindl. apud Naves Novis. App. (1882) 231.
- DENDROBIUM LAMELLATUM Lindl. apud Kränzlin. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 269, quoad Philip.; Ames Orch. 5 (1915) ix.  
*Cuming 2074*, referred here by Kränzlin, is probably *Dendrobium platycaulon* Rolfe; cf. Ames l. c.
- DENDROBIUM LILACINUM Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM LOBBII Lindl. apud Naves Novis. App. (1882) 231.
- DENDROBIUM LONGICOLLE Lindl. in Bot. Reg. 26 (1840) Misc. 74; Ames Orch. 5 (1915) 127.  
*Diplocaulobium longicolle* Kränzlin. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 340.

The type was a specimen sent to Loddiges by Cuming from Singapore, where the species still occurs. There is no reason to consider it as Philippine.

- DENDROBIUM LUCENS Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM MACCARTHIAE Thw. apud Naves Novis. App. (1882) 233.
- DENDROBIUM MACRAEI Ames Orch. 1 (1905) 89, 2 (1908) 176, non Lindl. = *Dendrobium plicatile* Lindl.
- DENDROBIUM MACRANTHUM Hook. in Bot. Mag. 69 (1842) t. 3970; Naves Novis. App. (1882) 233; Ceron Cat. Pl. Herb. Manila (1892) 166, non A. Rich. = *Dendrobium anosmum* Lindl.
- DENDROBIUM MACROPHYLLUM Ames Orch. 2 (1908) 179, non A. Rich.; Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 244, quoad Philip. = *Dendrobium ternatense* J. J. Sm.
- DENDROBIUM MACROPHYLLUM Lindl. in Bot. Reg. 25 (1839) Misc. 36, 28 (1842) Misc. 84, 30 (1844) Misc. 47, Sert. Orch. (1840) t. 35; Paxt. Mag. Bot. 8 (1841) 97, t.; Hook. Cent. Orch. Pl. (1851) t. 12; Planch. Hort. Donat. (1855) 156, Atlas t. 1; Reichb. f. in Linden Pescat. 1 (1860) 40, t. 40, non A. Rich. = *Dendrobium anosmum* Lindl.
- DENDROBIUM MANILLENSE Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 430 = *Appendicula cornuta* Blume.
- DENDROBIUM METACHILINUM Reichb. f. in Bonpl. 3 (1855) 222, in Walp. Ann. 6 (1861) 290; Naves Novis. App. (1882) 234; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Ames Orch. 5 (1915) 128.
- The type of this species is *Cuming 2057*, which was unquestionably from the Malay Peninsula, not from the Philippines. The species is known only from the Malay Peninsula. Cf. Ames l. c.
- DENDROBIUM MINAX Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM MONILIFORME Sw. apud Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Naves Novis. App. (1882) 233.
- DENDROBIUM MONOPHYLLUM F. v. Muell. apud Naves Novis. App. (1882) 232.
- DENDROBIUM NUDUM Lindl. apud Naves Novis. App. (1882) 232.
- DENDROBIUM NUTANS Presl Rel. Haenk. 1 (1827) 102; Presl Symb. Bot. 1 (1832) 34, t. 23; Naves Novis. App. (1882) 234 = *Geodorum nutans* (Presl) Ames.
- DENDROBIUM PARCIFLORUM Kränz. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 222, quoad Philip.; Ames in Philip. Journ. Sci. 7 (1912) Bot. 18, non Reichb. f. = *Dendrobium marivelense* Ames.
- DENDROBIUM PARCUM Reichb. f. apud Naves Novis. App. (1882) 233.
- DENDROBIUM PAUCILACINIATUM J. J. Sm. apud Prain in Ind. Kew. Suppl. 3 (1908) 58.

Index Kewensis cites "Ins. Philip." as the locality; this is an error as the type was from Ternate.

DENDROBIUM PIERARDII Roxb. apud Naves Novis. App. (1882) 232.

DENDROBIUM PSEUDACLINIA Lindl. in Journ. Linn. Soc. 3 (1859) 9; Ames Orch. 5 (1915) 134 = *Dendrobium aclinia* Reichb. f.

DENDROBIUM PUGIONIFORME A. Cunn. apud Naves Novis. App. (1882) 232.

DENDROBIUM PUMILUM Reichb. f. apud Vidal Phan. Cuming. Philip. (1885) 148.

Probably *Dendrobium pumilum* Roxb. was intended, as Reichenbach apparently described no such species. Vidal referred here *Cuming 2102* as Philippine; the specimen in all probability came from the Malay Peninsula where the species is seemingly not uncommon.

DENDROBIUM PURPUREUM Blume apud Naves Novis. App. (1880) 233.

DENDROBIUM PUSILLUM Lindl. apud Naves Novis. App. (1882) 231.

DENDROBIUM RADIANS Reichb. f. apud Naves Novis. App. (1882) 233.

DENDROBIUM RAMOSUM Lindl. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 53, quoad Philip.

This is an Indian species, Kränzlin giving its other range as "Philippinen (?)." There is no reason for considering it as a Philippine species.

DENDROBIUM RETUSUM Llanos in Mem. Real. Acad. Cienc. Madr. 4 (1857) 498; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100 = ? *Dendrobium anosmum* Lindl.

DENDROBIUM REVOLUTUM Hook. f. Fl. Brit. Ind. 5 (1890) 732, quoad syn. *D. uniflorum* Griff. et spec. Malacca; Grant Orch. Burma (1895) 118, quoad syn. *D. uniflorum* Griff. et spec. Malacca; Ames Orch. 2 (1908) 184, quoad syn. *D. uniflorum* Griff. et spec., 5 (1915) 138; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 185, quoad descr. (excl. bibliog. et spec.), non Lindl. = *Dendrobium uniflorum* Griff.

DENDROBIUM RHOMBEUM Lindl. in Bot. Reg. 29 (1843) t. 17, 30 (1844) Misc. 56; Reichb. f. in Bot. Zeit. 1 (1843) 333; Lindl. in Paxt. Flow. Gard. 3 (1852-53) 52; Naves Novis. App. (1882) 233 = *Dendrobium heterocarpum* Wall.

DENDROBIUM ROBINSONII Ames in Philip. Journ. Sci. 8 (1913) Bot. 425, Orch. 5 (1915) 138 = *Dendrobium carinatum* (Linn.) Willd.

DENDROBIUM RUCKERI Lindl. in Bot. Reg. 29 (1843) Misc. 25, t. 60, 30 (1844) Misc. 52; Reichb. f. in Walp. Ann. 6 (1861) 288; Naves Novis. App. (1882) 234; Ames Orch. 5 (1915) 138.

When first described this was thought to be of Philippine origin. R. A. Rolfe, in Orch. Rev. 4 (1896) 87, has shown it to be an Indian species. Cf. Ames l. c.

DENDROBIUM SCABRILINGUE Lindl. apud Naves Novis. App. (1882) 232.

DENDROBIUM SCULPTUM Reichb. f. apud Naves Novis. App. (1882) 233.

DENDROBIUM SERRA Lindl. apud Naves Novis. App. (1882) 231.

DENDROBIUM SINUATUM Schltr. in Perk. Frag. Fl. Philip. (1904) 43; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 216, quoad Philip., non Lindl. = *Dendrobium cultratum* Schltr.

- DENDROBIUM STRIATUM** Hort. ex Gard. Chron. III 38 (1905) 382; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 298 = *Dendrobium o'brienianum* Kränzl.
- DENDROBIUM STRIOLATUM** Reichb. f. apud Naves Novis. App. (1882) 232.
- DENDROBIUM SUBTERES** Lindl. apud Naves Novis. App. (1882) 231.
- DENDROBIUM SUBULATUM** Blume apud Naves Novis. App. (1882) 232.
- DENDROBIUM SUPERBUM** Reichb. f. in Walp. Ann. 6 (1861) 282; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 267; Ames Orch. 1 (1905) 90, 2 (1908) 186, 5 (1915) 139 = *Dendrobium anosmum* Lindl.
- DENDROBIUM TENELLUM** Blume apud Naves Novis. App. (1882) 231.
- DENDROBIUM TERES** Blanco Fl. Filip. (1837) 638, non Roxb. = *Luisia teretifolia* Gaudich.
- DENDROBIUM TERETIFOLIUM** Blanco Fl. Filip. ed. 2 (1845) 444, ed. 3, 3 (1879) 34, non R. Br. = *Luisia teretifolia* Gaudich.
- DENDROBIUM TERETIFOLIUM** R. Br. apud Naves Novis. App. (1882) 232.
- DENDROBIUM TETRAEDRE** Blume apud Naves Novis. App. (1882) 232.
- DENDROBIUM TETRAGONUM** A. Cunn. apud Naves Novis. App. (1882) 232.
- DENDROBIUM TMESIPTERIS** Lindl. apud Naves Novis. App. (1882) 232.
- DENDROBIUM TUADENUM** Boxall ex Naves Novis. App. (1882) 234, *nomen*.
- DENDROBIUM UNGUICULATUM** Teijsm. & Binn. in Tijdschr. Ned. Ind. 5 (1853) 941; Naves Novis. App. (1882) 231 = *Dendrobium spurium* (Blume) J. J. Sm.
- DENDROBIUM VANOVERBERGHII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 425, t. 13 = *Dendrobium papilio* Loher.
- DENDROBIUM VEITCHIANUM** Lindl. apud Naves Novis. App. (1882) 231.
- DENDROBIUM VERATRIFOLIUM** Naves Novis. App. (1882) 233, non Lindl. = ? *Dendrobium taurinum* Lindl.
- DENDROBIUM XANTHOLEUCUM** Reichb. f. apud Naves Novis. App. (1882) 231.

65. **ERIA** Lindley

**ERIA ALBOLUTEA** Rolfe in Kew Bull. (1917) 80.

Described from cultivated specimens originating in the Philippines.

**ERIA ANCEPS** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 219, 237, fig. 18; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 129; Ames Orch. 5 (1915) 146.

Negros (Occidental Negros), Palawan, *Whitford 1601, F. B. 7275 Everett, B. S. 636 Foxworthy.*

**ERIA BARBIFRONS** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>3</sup> (1911) 52.

“Provinz der Philippinen und Süd-Formosa: Philippinen, vermuthlich Manila, von A. Loher gesandt.” Known only from the description.

**ERIA BINABAYENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 329; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 223, 242; Ames Orch. 5 (1915) 146.

*Trichotosia binabayensis* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 141.

Luzon (Laguna), Mindoro, *B. S. 16554 Ramos, Merrill 5661*. Epiphyte in humid forest at 215 m altitude in Mindoro.

**ERIA BONTOCENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 427, Orch. 5 (1915) 146.

Luzon (Bontoc), *Vanoverbergh 1386*.

**ERIA BRACHYSTACHYA** Reichb. f. in Bonpl. 3 (1855) 223; Lindl. in Journ. Linn. Soc. 3 (1859) 59; Miq. Fl. Ind. Bat. 3 (1859) 657; Reichb. f. in Walp. Ann. 6 (1861) 276; Naves Novis. App. (1882) 236; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 221, 241; Ames Orch. 2 (1908) 188, 5 (1915) 146; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 100.

*Pinalia brachystachya* Ktze. Rev. Gen. Pl. 2 (1891) 678.

*Eria wenzelii* Ames in Philip. Journ. Sci. 8 (1913) Bot. 428.

Babuyan Islands (Camiguin Island), Luzon (Kalinga, Rizal, Camarines, Sorsogon), Leyte, Mindanao (Agusan). A fairly common species of wide distribution. Epiphyte at sea level to 1,000 m altitude.

**ERIA BRACDESCENS** Lindl. in Bot. Reg. 27 (1841) Misc. 18, 30 (1844) t. 29; Paxt. Mag. Bot. 8 (1841) 118, 11 (1844) 116; Edit. in Gard. Chron. (1841) 231; Reichb. f. in Walp. Ann. 6 (1861) 277; Hemsl. in Gard. Chron. II 18 (1882) 468; Hook. f. Fl. Brit. Ind. 5 (1890) 796; Ridl. in Trans. Linn. Soc. II 3 (1893) 366; Grant Orch. Burma (1895) 135; Ridl. in Journ. Linn. Soc. 32 (1896) 293; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 120, t. 166; Williams in Bull. Herb. Boiss. II 4 (1904) 368; J. J. Sm. Orch. Amb. (1905) 74; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 101; Ames Orch. 2 (1908) 189, 5 (1915) 147; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 209, 231, fig. 11; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 88; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 168.

*Eria dillwynii* Hook. in Bot. Mag. 71 (1845) t. 4163; Lindl. in Bot. Reg. 31 (1845) Misc. 63; F. Kl. in Bot. Zeit. 3 (1845) 550; Paxt. Mag. Bot. 12 (1846) 140; Lindl. in Journ. Linn. Soc. 3 (1859) 55; Naves Novis. App. (1882) 236; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 87.

*Eria litoralis* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 24 (1862) 312.

*Pinalia bractescens* Ktze. Rev. Gen. Pl. 2 (1891) 679.

Luzon (Bataan, Rizal), Basilan, Samar, Mindanao (Zamboanga), *Lyon 123, 150, F. B. 4017, 6562 Hutchinson, Whitford 1082, B. S. 3000, 6562, 17641 Ramos*. Epiphyte, apparently at low altitudes.

**ERIA CANDOONENSIS** Ames Orch. 7 (1922) 101.

Mindanao (Bukidnon), *B. S. 38941 Ramos & Edaña*. Mt. Candoon, epiphyte at 1,650 m altitude.

**ERIA CARNICOLOR** Ames Orch. 7 (1922) 152.

Luzon (Bontoc), *B. S. 37937 Ramos & Edaña*. Mt. Masapilid, epiphyte in mossy forest at 1,600 m altitude.

**ERIA CLEMENSIAE** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 220, 238, *fig. 20*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 126; Ames Orch. 5 (1915) 147.

Luzon (Rizal), Panay (Antique), Leyte, Mindanao (Lanao, Bukidnon), *Reillo s. n.*, *B. S. 32192 McGregor*, *15390 Ramos*, *38891 Ramos & Edaña*, *Wenzel 0393, 0495*, *M. S. Clemens 602*. Epiphyte in forest at 500 to 1,000 m altitude.

**ERIA COCHLEATA** Lindl. in Bot. Reg. 30 (1844) Misc. 14; Reichb. f. in Walp. Ann. 6 (1861) 269; Naves Novis. App. (1882) 236.

Imported from the Philippines by Loddiges. Known only from the original description in which Lindley states that it has the appearance of *E. stellata* which is a synonym of *E. javanica* (Sw.) Blume. Kränzl. does not treat *E. cochleata* in his monograph of the genus in Das Pflanzenreich.

**ERIA COMPACTA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 329; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 208, 231; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 77, *fig. 15 A-D*; Ames Orch. 5 (1915) 147.

Mindoro, *Merritt 4420*. Mt. Halcon, at 1,415 m altitude.

**ERIA COPELANDII** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 203, 226, *fig. 3*; Ames Orch. 5 (1915) 147; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 217 in textu.

*Eria formosana* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>1</sup> (1911) 47, non Rolfe.

Mindanao (Misamis, Bukidnon, Davao), *F. B. 4596, 4600 Mearns & Hutchinson*, *B. S. 38524 Ramos & Edaña*, *Copeland 1423*. Epiphyte at 1,560 to 3,060 m altitude.

**Var. FUSIFORMIS** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 204, 227.

*Eria formosana* Kränzl. var. *fusiformis* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 47.

Luzon (Lepanto, Benguet), *Merrill 4590*, *Ramos & Edaña 85, 106, 111*, *F. B. 5067 Curran*. Epiphyte at 2,100 to 2,530 m altitude.

**ERIA CURRANII** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 210, 233, *fig. 13*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 79; Ames Orch. 5 (1915) 147.

Palawan, *F. B. 3904 Curran*.

**ERIA CYLINDROSTACHYA** Ames Orch. 2 (1908) 190, *text cut*, 5 (1915) 147; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 211, 234, *fig. 15*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 69, *fig. 51 L, M*.



Luzon (Benguet, Rizal), Mindanao (Misamis, Bukidnon, Davao), *Boettcher s. n.*, B. S. 29371, 38648, 39079 Ramos & Edaña, F. B. 4612 Mearns & Hutchinson, Copeland 1424, Elmer 10632, 10632a. Epiphyte at 100 to 1,560 m altitude.

**ERIA CYMBIFORMIS** J. J. Sm. in Rec. Trav. Bot. Néerl. 1 (1904) 152, *text cut*; Ames in Philip. Journ. Sci. 2 (1907) Bot. 330; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 224, 243, *fig. 26*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 104; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 40; Ames Orch. 5 (1915) 147.

Luzon (Cagayan, Bataan, Rizal, Laguna, Tayabas, Mindoro, Negros (Oriental Negros), Leyte, Mindanao (Davao)). A fairly common and widely distributed species. Epiphyte at 500 to 1,015 m altitude, in Sumatra.

**ERIA DAGAMENSIS** Ames Orch. 5 (1915) 147.

Luzon (Ifugao), Leyte, *Sandkuhl 296*, *Wenzel 0123, 0305, 0308, 0314, 0315, 0317, 0318, 0320, 0321, 0322, 0323, 0345, 0346*, B. S. 42087 Edaña Epiphyte in forest at 500 to 600 m altitude in Leyte.

**ERIA DAVAENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1575, Orch. 5 (1915) 149.

Mindanao (Davao), *Elmer 11321*. Todaya, Mt. Apo; epiphyte in humid forest at 1,300 m altitude.

**ERIA FASTIGATIFOLIA** Ames Orch. 2 (1908) 191, *text cut*, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 221, 240, *fig. 22*. *Trichotosia fastigiatifolia* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 162.

Luzon (Bontoc, Ifugao, Benguet, Rizal, Laguna, Tayabas, Sorsogon), Negros (Oriental Negros), Leyte. A fairly common species, especially in Luzon. Epiphyte at 300 to 1,300 m altitude.

**ERIA FLORIBUNDA** Lindl. in Wall. Cat. (1832) No. 7408, *nomen*, in Bot. Reg. 29 (1843) Misc. 43, 30 (1844) t. 20; Paxt. Mag. Bot. 11 (1844) 91; Lindl. in Journ. Hort. Soc. 3 (1848) 15, in Journ. Linn. Soc. 3 (1859) 60; Miq. Fl. Ind. Bat. 3 (1859) 661; Reichb. f. in Walp. Ann. 6 (1861) 276; Hemsl. in Gard. Chron. II 18 (1882) 468; Hook. f. Fl. Brit. Ind. 5 (1890) 792; Ridl. in Trans. Linn. Soc. II 3 (1893) 366; Grant Orch. Burma (1895) 140; Ridl. in Journ. Linn. Soc. 32 (1896) 290; Williams in Bull. Herb. Boiss. II 4 (1904) 368; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 400, Fig.-Atlas (1911) *fig. 303*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 96; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 209, 231, *fig. 10* (excl. syn. *E. densa* Ridl.); Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 120, *fig. 25 A-D*; Winkler in Engl. Bot. Jahrb. 48 (1912) 101; Ames Orch. 5 (1915) 149, 6 (1920) 124, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 170.

*Eria leucostachya* Lindl. in Journ. Hort. Soc. 3 (1848) 15.

*Eria floribunda* Lindl. var. *leucostachya* Lindl. in Paxt. Flow. Gard. 3 (1853) 116, *fig. 288*.

*Pinalia floribunda* Ktze. Rev. Gen. Pl. 2 (1891) 678.

Palawan, Mindanao (Cotabato, Agusan, Bukidnon), *B. S. 550, 633 Foxworthy, 38911, 39014, 39107 Ramos & Edaña, Merrill 9617, Weber 152, 228*. Epiphyte at 15 to 1,260 m altitude. In Burma, Malay Peninsula, Sumatra, Java, and Borneo.

**ERIA FUSCA** Blume Mus. Bot. Lugd.-Bat. 2 (1856) 183; Miq. Fl. Ind. Bat. 3 (1859) 658; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 388; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 222, 241; Ames Orch. 5 (1915) 149, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 170.

? *Eria hirta* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 184; Miq. Fl. Ind. Bat. 3 (1859) 658, fide Kränzl.

*Trichotosia ciliata* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 5 (1853) 492.

*Trichotosia fusca* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 5 (1853) 492; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 145.

*Eria ciliata* Miq. Fl. Ind. Bat. 3 (1859) 659; Reichb. f. in Walp. Ann. 6 (1861) 273.

*Pinalia ciliata* Ktze. Rev. Gen. Pl. 2 (1891) 678.

*Pinalia fusca* Ktze. Rev. Gen. Pl. 2 (1891) 678.

? *Pinalia hirta* Ktze. Rev. Gen. Pl. 2 (1891) 678.

? *Trichotosia hirta* Blume in Herb. Mus. Lugd.-Bat. ex Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 145, in syn.

Negros (Occidental Negros), Leyte, *F. B. 5582 Everett, Copeland 133, Wenzel 045, 0143, B. S. 40147 Lopez*. Epiphyte in forest at 60 m altitude in Leyte. In Java and Borneo and, perhaps, Celebes.

**ERIA GIGANTEA** Ames Orch. 2 (1908) 192, *text cut*, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 218, 239, *fig. 21*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 130; Ames in Addisonia 6 (1921) 41, *t. 213*.

Luzon (Isabela, Bataan, Rizal, Laguna), Mindanao (Misamis, Lanao), *Lyon 146, Topping 472, Merrill 4110, B. S. 3430 Ramos, 18995 Brown, F. B. 4606 Mearns & Hutchinson, M. S. Clemens s. n., 437*. Terrestrial (?) at 660 to 1,300 m altitude.

**ERIA GRACILISCAPA** Rolfe ex Ames Orch. 1 (1905) 93, 2 (1908) 193, 3 (1908) 88, *t. 57*, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 205, 228; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 108.

Luzon (Kalinga, Bataan, Tayabas), *Boettcher s. n., Whitford 307, Topping 474, F. B. 795 Borden, Elmer 7405*. Epiphyte at 600 to 1,000 m altitude.

**ERIA HALCONENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 330; Ames Orch. 3 (1908) 85, *t. 56*, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 224, 241.

*Trichotosia halconensis* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 149.

218, v. 1, pl. 4

# AN ENUMERATION OF PHILIPPINE FLOWERING PLANTS

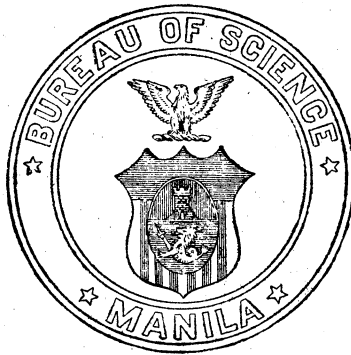
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BY

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VOLUME 1, FASCICLE 4



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**EXPLANATORY NOTE**

It was originally intended to issue this work in three volumes, the general introduction to be issued as a part of Volume 1 and the indices to form a part of Volume 3. Owing to the extent of the introduction, the bibliography, and the indices, it has been found best to issue all these data as Volume 4.

**IMPORTANT**

In binding Volumes 2 and 3 discard the title-page issued with fascicle 5 of each of these volumes and substitute therefor the revised title-pages found at the end of Volume 4.

**ELMER D. MERRILL.**

**MANILA, P. I., *November 1, 1923.***

Mindoro, Panay (Capiz), *Merrill 5510, 5742, B. S. 30716 Ramos & Edaña*. Terrestrial and epiphytic at 330 to 2,000 m altitude.

**ERIA HIRSUTIPETALA** Ames Orch. 7 (1922) 102.

Mindanao (Bukidnon), *B. S. 39124 Ramos & Edaña*. Mt. Candon, epiphyte in mossy forest at 1,830 m altitude.

**ERIA HUTCHINSONIANA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 380; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 204, 227, *fig. 4*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>3</sup> (1911) 80, *fig. 17 A-D*; Ames Orch. 5 (1915) 150.

Mindoro, *Merrill 5514*. Mt. Halcon, terrestrial on mossy ridge at 2,300 m altitude.

**ERIA JARENSIS** Ames Orch. 5 (1915) 150.

Luzon (Nueva Vizcaya, Laguna), Leyte, Mindanao (Surigao), *Wenzel 0356, 0357, 0358, 0365, 0377, Lyon 130, B. S. 20436 Ramos, 20090 McGregor*. Epiphyte in forest at 500 to 750 m altitude.

**ERIA JAVANICA** (Sw.) Blume Rumphia 2 (1836) 23; Ames Orch. 2 (1908) 193; J. J. Sm. in Nova Guinea 8 (1909) 86, 8<sup>3</sup> (1912) 577, 12<sup>4</sup> (1916) 352; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>3</sup> (1911) 26; Schltr. in Fedde Repert. 10 (1911) 91; J. J. Sm. Orch. Jav. Fig.-Atlas (1911) *fig. 287*; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 171.

*Dendrobium javanicum* Sw. in Kongl. Svensk. Vet.-Akad. Nya Handl. 21 (1800) 247; Willd. Sp. Pl. 4 (1805) 137.

*Dendrobium rugosum* Blume Bijdr. (July, 1825) 345.

*Eria stellata* Lindl. in Bot. Reg. 11 (August, 1825) *t. 904*; Lindl. Gen. & Sp. Orch. (1830) 67; Paxt. Mag. Bot. 2 (1836) 137, 4 (1838) 234; Hook. in Bot. Mag. 64 (1837) *t. 3605*; Reichb. f. in Bonpl. 5 (1857) 54; Miq. Fl. Ind. Bat. 3 (1859) 661; Reichb. f. in Walp. Ann. 6 (1861) 269; Hemsl. in Gard. Chron. II 18 (1882) 500; Naves Novis. App. (1882) 236; Ridl. in Trans. Linn. Soc. II 3 (1893) 366, in Journ. Linn. Soc. 31 (1896) 285, 32 (1896) 304; Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 248; Usteri Beitr. Ken. Philip. Veg. (1905) 128; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 98.

*Octomeria stellata* Spreng. Syst. Veg. 4 Cur. Post (1827) 310.

*Octomeria vaginata* Breda Gen. et Sp. Orch. Jav. (1827) *t. 5*.

*Eria rugosa* Lindl. Gen. & Sp. Orch. (1830) 66; Miq. Fl. Ind. Bat. 3 (1859) 661; Hemsl. in Gard. Chron. II 18 (1882) 500; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 378, Orch. Amb. (1905) 74; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 212, 235; Ames Orch. 5 (1915) 158.

*Eria fragrans* Reichb. f. in Bot. Zeit. 22 (1864) 415, in Trans. Linn. Soc. 30 (1874) 137; Hook. f. Fl. Brit. Ind. 5 (1890) 794; Grant Orch. Burma (1895) 140; King & Pantl. in Ann. Rôy. Bot. Gard. Calc. 8 (Orch. Sik-Himal.) (1898) 122, *t. 168*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>3</sup> (1911) 24.

*Eria striolata* Reichb. f. in Gard. Chron. III 3 (May 5, 1888) 554, in Ill. Hort. 35 (May, 1888) 35, *t. 48*; Ridl. in Journ. Linn. Soc.

- 31 (1896) 285, 36 (1896) 304, Mat. Fl. Mal. Penin. 1 (1907) 99; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 25.  
*Tainia stellata* Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2 Abt. 6 (1888) 153.  
*Dendrobium perakense* Hook. f. Fl. Brit. Ind. 5 (1890) 712, in Hook. Icon. Pl. 21 (1890) t. 2019.  
*Pinalia rugosa* Ktze. Rev. Gen. Pl. 2 (1891) 679.  
*Pinalia fragrans* Ktze. Rev. Gen. Pl. 2 (1891) 679.  
*Pinalia stellata* Ktze. Rev. Gen. Pl. 2 (1891) 679.  
*Pinalia striolata* Ktze. Rev. Gen. Pl. 2 (1891) 679.  
*Eria vaginata* Benth. ex Jacks. Ind. Kew. (1893) 864.  
*Sarcopodium perakense* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 328.  
*Eria javanica* Blume var. *philippinensis* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) fig. 14 E-J.

Luzon (Albay, Bontoc, Benguet, Rizal, Laguna), Leyte, Mindanao (Zamboanga, Lanao), *Loher 6003*, *Vanoverbergh 3911*, *Lyon s. n.*, *B. S. 15135 Ramos, 17905 Brown, Wenzel 0100, F. B. 12364 Hutchinson, M. S. Clemens s. n.* Up to 1,200 m altitude in Bontoc. In India, Burma, Malay Peninsula, Sumatra, Celebes, Amboina, Borneo, and New Guinea.

It seems probable that *Eria micholitzii* Kränzl. in Oesterr. Bot. Zeitschr. (1894) 459; Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1912) 653, *Eria pseudostellata* Schltr. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Schutzgeb. (1905) 182, and *Eria papuana* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 25 are conspecific. Schlechter reduces his *E. pseudostellata* and *E. papuana* Kränzl. (to which Kränzl. reduces his *E. micholitzii*) to *E. micholitzii* Kränzl. J. J. Smith states that *E. pseudostellata* Schltr. is probably the same as *E. javanica* Blume, and Kränzl., in Das Pflanzenreich, cites it as a synonym of that species.

**ERIA LAGUNENSIS** Ames Orch. 5 (1915) 150.

Luzon (Laguna), *Serrato s. n.* Epiphyte in thicket forest.

**ERIA LAMELLATA** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1576, Orch. 5 (1915) 152.

Biliran, Mindanao (Davao), *B. S. 18942 McGregor, Elmer 11715*. Epiphyte in humid forest at 660 to 1,300 m altitude.

**ERIA LEAVITTII** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 64, fig. 17 G, H.

*Eria ventricosa* Leavitt var. *benguetensis* Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 212, 234.

Luzon (Benguet), *Merrill 4849, B. S. 4986 Curran*. Terrestrial and epiphytic in mossy forest up to 1,950 m altitude.

**ERIA LEYTENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 427, Orch. 5 (1915) 152.

Leyte, Negros, *Wenzel 017, 0169, 0674, F. B. 19072 Curran*. Epiphyte at 60 to 600 m altitude.

**ERIA LOHERIANA** Kränzl. in Fedde Repert. 17 (1921) 387.

*Loher s. n.* Known only from the original description; no material has been seen.

**ERIA LONGIBRACTEATA** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 219, 238, *fig. 19*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 126; Ames Orch. 5 (1915) 152.

Luzon (Cagayan), Mindanao (Zamboanga, Misamis), *F. B. 16735 Curran, 4728 Mearns & Hutchinson, Merrill 8142*. Up to 1,900 m altitude in Misamis.

**ERIA LONGICRURIS** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 205, 228, *fig. 6*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 109; Ames Orch. 5 (1915) 152.

Mindanao (Misamis, Davao), *F. B. 4609 Mearns & Hutchinson, Elmer 11351*. At 2,800 m in Misamis.

**ERIA LONGILABRIS** Lindl. in Bot. Reg. 27 (1841) Misc. 38, 30 (1844) sub *t. 29, fig. 3*; Reichb. f. in Walp. Ann. 6 (1861) 277; Naves Novis. App. (1882) 236; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 210, 232; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 86; Ames Orch. 5 (1915) 152.

Panay, *Cuming s. n.* Known only from the description and the Cuming specimen.

As pointed out by Leavitt and by Ames this may be only a variety of *E. bractescens* Lindl., but for the present it is deemed best to maintain it as a separate species.

**ERIA LYONII** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 212, 234, *fig. 17*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 87; Ames Orch. 5 (1915) 152.

Luzon (Tarlac), *Lyon B, 116* in part (Luzon material). Terrestrial (?) near sea level.

**ERIA MACERA** Ames Orch. 7 (1922) 103.

Mindanao (Bukidnon), *B. S. 38512 Ramos & Edaño*. Epiphyte on mossy forest slope at 2,130 m altitude.

**ERIA MAJOR** Ridl. ex Stapf in Trans. Linn. Soc. II 4 (1894) 237, in syn.; Ridl. in Journ. Linn. Soc. 31 (1896) 280, 32 (1896) 288, Mat. Fl. Mal. Penin. 1 (1907) 90; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 218, 239; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 128; Ames Orch. 5 (1915) 155, 6 (1920) 131, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 172.

*Eria kingii* Hook. f. Fl. Brit. Ind. 5 (1890) 790, in Hook. Icon. Pl. 21 (1891) *t. 2066*, non F. v. Muell.

*Eria scortechinii* Stapf in Trans. Linn. Soc. II 4 (1894) 237, non Hook. f.

Mindanao (Misamis), *F. B. 4595 Mearns & Hutchinson*. Mt. Malindang at 1,750 m altitude.

**ERIA MAQUILINGENSIS** Ames Orch. 5 (1915) 152.

Luzon (Laguna), *B. S. 17909 Brown*. Mt. Maquiling, epiphyte in forest at 700 m altitude.

**ERIA MCGREGORII** Ames Orch. 5 (1915) 153.

Luzon (Ifugao), *B. S. 19876 McGregor*. Mt. Polis.

**ERIA MEARNsii** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 216, 236; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 37; Ames Orch. 5 (1915) 155.

Mindanao (Misamis, Agusan, Davao), *F. B. 4729 Mearns & Hutchinson, Elmer 11850, 13802*. Epiphyte up to 1,700 m altitude in Misamis.

**ERIA MERRILLII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 331; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 213, 235; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 56; Ames Orch. 5 (1915) 155.

Luzon (Rizal, Sorsogon), Mindoro, Leyte, Mindanao (Surigao), *Lyon 116 in part, 5626, Elmer 15552, Merrill 5519, Wenzel 0104, 0717*. Epiphyte at 60 to 800 m altitude.

**ERIA MERRITTII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 331; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 207, 230; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 107; Ames Orch. 5 (1915) 155.

Luzon (Rizal, Laguna), Mindoro, Leyte, *B. S. 19205 Reillo, 15122 Ramos, F. B. 4537 Merritt*. Epiphyte at 500 to 1,300 m altitude.

**ERIA MICROCHILA** Ames Orch. 7 (1922) 104.

Luzon (Bontoc), *B. S. 37997 Ramos & Edaño*. Mt. Causal. Epiphyte in mossy forest at 1,530 m altitude.

**ERIA MINDANAENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1577. Orch. 5 (1915) 155, 6 (1920) 207.

Sibuyan, Panay (Capiz), *Elmer 12271, B. S. 35379, 35633 Martelino & Edaño*. Epiphyte at 250 to 660 m altitude.

**ERIA ODORIFERA** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 223, 242, fig. 24; Ames Orch. 5 (1915) 156.

*Trichotosia odorifera* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 153.

Negros (Oriental Negros), Mindanao (Zamboanga, Davao), *Elmer 9521, 9658, Copeland 1182, Merrill 8153*. Epiphyte up to 1,600 m altitude in Davao.

**ERIA ORNATA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 66; De Vriese Ill. Orch. Ind. Néerl. (1854) t.; Reichb. f. in Bonpl. 5 (1857) 54; Lindl. in Journ. Linn. Soc. 3 (1859) 48 (excl. Indian and Burman plants); Miq. Fl. Ind. Bat. 3 (1859) 660 (excl. Indian and Burman plants); Reichb. f. in Walp. Ann. 6 (1861) 270; Naves Novis. App. (1882) 236; Vidal Phan. Cuming. Philip. (1885) 149, Rev Pl. Vasc. Filip. (1886) 268; Ridl. in Journ. Linn. Soc. 31 (1896) 285, ? 32 (1896) 302; Schltr. in Perk. Frag. Fl. Philip. (1904) 43; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 380, Fig.-Atlas (1911) fig. 288; Ames Orch. 1 (1905) 94, 2 (1908) 195, 5 (1915)



156; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 217, 237; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 50, fig. 11 A, B; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 173.

*Dendrolirium ornatum* Blume Bijdr. (1825) 345.

*Eria armeniaca* Lindl. in Bot. Reg. 27 (1841) Misc. 38, t. 42.

*Pinalia ornata* Ktze. Rev. Gen. Pl. 2 (1891) 678.

Luzon (Bontoc, Benguet, Nueva Vizcaya, Zambales, Rizal), Negros (Occidental Negros), Mindanao (Zamboanga, Agusan). A fairly common species in the Philippines at 10 to 1,450 m altitude. In ? Siam, Sumatra, Java, and Borneo.

**ERIA OVATA** Lindl. in Bot. Reg. 30 (1844) sub t. 29; G. K. in Bot. Zeit. 3 (1845) 95; Reichb. f. in Walp. Ann. 6 (1861) 277; Naves Novis. App. (1882) 236; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268; Ames Orch. 2 (1908) 195, 5 (1915) 156; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 207, 230, fig. 8; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 76.

*Eria elmeri* Ames Orch. 1 (1905) 93, 2 (1908) 196, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 208, 230, fig. 10; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 74.

Luzon (Bontoc, Lepanto, Benguet, Bataan, Laguna), Negros (Oriental Negros), Leyte. A fairly common species, epiphyte at 500 to 2,550 m altitude.

**ERIA PALAWANENSIS** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1578, Orch. 5 (1915) 156.

Palawan, *Elmer 13209*. Mt. Pulgar.

**ERIA PERSPICABILIS** Ames Orch. 5 (1915) 156.

Luzon (Ifugao), *B. S. 19733 McGregor*. Mt. Polis.

**ERIA PHILIPPINENSIS** Ames Orch. 1 (1905) 94, 5 (1915) 157; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 204, 227, fig. 5; Ames in Philip. Journ. Sci. 4 (1909) Bot. 673; Merr. & Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 66.

Luzon (Abra, Bontoc, Lepanto, Benguet, Bataan, Laguna). A common species in Luzon. Epiphyte in forest at relatively high altitudes.

**ERIA POLYURA** Lindl. in Bot. Reg. 27 (1841) Misc. 55, 28 (1842) t. 32; Paxt. Mag. Bot. 9 (1842) 142; Reichb. f. in Walp. Ann. 6 (1861) 279; Naves Novis. App. (1882) 236; Hemsl. in Gard. Chron. II 18 (1882) 500; Ames Orch. 1 (1905) 95, 2 (1908) 196, 5 (1915) 157; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 203, 226, fig. 2; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 115.

*Pinalia polyura* Ktze. Rev. Gen. Pl. 2 (1891) 679.

Luzon (Cagayan, Bontoc, Benguet, Bataan, Rizal, Laguna, Tayabas), Sibuyan, Panay (Antique), Leyte, Mindanao (Lanao, Surigao). A rather common and widely distributed species in the Philippines. Epiphyte at 60 to 2,050 m altitude.

**ERIA PROFUSA** Lindl. in Bot. Reg. 28 (1842) Misc. 3; Paxt. Mag. Bot. 12 (1845) 46; Reichb. f. in Walp. Ann. 6 (1861) 271; Hemsl. in Gard. Chron. II 18 (1882) 500; Trim. Handb. Fl. Ceyl. 4 (1898) 168; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 210, 233, fig. 14; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 105.

Luzon (Isabela, Rizal), Negros (Oriental Negros), Mindanao (Agusan), *Lyon F. 132, B. S. 3079, 3083 Ramos, F. B. 11237 Everett, Weber 111.* Epiphyte at 100 to 700 m altitude.

**ERIA PROPINQUA** Ames Orch. 7 (1922) 105.

Mindanao (Bukidnon), *B. S. 38939 Ramos & Edaña.* Mt. Candoon, on trees of forested slopes, at 1,650 m altitude.

**ERIA PUGUAHAANENSIS** Ames Orch. 5 (1915) 157.

Leyte, *Wenzel 0221.* Dagami, epiphyte in forest at 60 m altitude.

**ERIA RACEMOSA** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 206, 229; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 115; Ames Orch. 5 (1915) 158.

Luzon (Benguet), Mindanao (Misamis), *Curran s. n., Sandkuhl 225, F. B. 4609 Mearns & Hutchinson* in part.

**ERIA RAMOSA** Ames nom. nov.

*Eria vagans* Ames Orch. 7 (1922) 106, non Schltr.

Luzon (Bontoc, Benguet), *Vanoverbergh 2223, 3896, Elmer 8801.*

**ERIA RAMOSII** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 224, 243, fig. 25; Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1579, Orch. 5 (1915) 158.

*Trichotosia ramosii* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 156.

Luzon (Rizal), Negros (Oriental Negros), Mindanao (Agusan), *B. S. 1775 Ramos, 29731 Ramos & Edaña, Elmer 9803, 13755, 15098, 16136.* Epiphyte, forming dense mats, at 1,330 m altitude in Negros.

**ERIA RETROFLEXA** Lindl. in Journ. Linn. Soc. 3 (1859) 60; Miq. Fl. Ind. Bat. 3 (1859) 662; Naves Novis. App. (1882) 236; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268; Ames Orch. 2 (1908) 197, 5 (1915) 158; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 206, 229, fig. 7; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 76.

*Pinalia retroflexa* Ktze. Rev. Gen. Pl. 2 (1891) 679.

Luzon (Benguet, Bataan, Rizal, Tayabas), Negros (Oriental Negros), Leyte, Mindanao (Cotabato, Agusan). A not uncommon species, epiphyte at 60 to 860 m altitude.

**ERIA RHODOPTERA** Reichb. f. in Gard. Chron. II 18 (1882) 586; Rolfe in Orch. Rev. 17 (1909) 220, in Bot. Mag. 136 (1910), t. 8296; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 84; Ames Orch. 5 (1915) 158.

*Eria laucheana* Kränzl. in Gard. Chron. III 11 (1892) 809.

*Eria bractescens* Lindl. var. *latipetala* Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 210, 232, fig. 12; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 88.

Luzon (Rizal), Palawan, *B. S. 3000 Ramos, Weber 404*. Epiphyte at sea level to 600 m altitude.

**ERIA RINGENS** Reichb. f. in *Bonpl. 3* (1885) 222; Lindl. in *Journ. Linn. Soc. 4* (1859) 55 (erroneously referred to *E. ovata* R. Br.); Reichb. f. in *Walp. Ann. 6* (1861) 275, in *Trans. Linn. Soc. 30* (1874) 137; Naves Novis. App. (1882) 236; Hook. f. *Fl. Brit. Ind. 5* (1890) 793; Leavitt in *Philip. Journ. Sci. 4* (1909) Bot. 207, 229; Kränzl. in *Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>* (1911) 74; Ames in *Elm. Leaf. Philip. Bot. 5* (1912) 1579, *Orch. 5* (1915) 158.

*Eria polyura* Vidal Phan. Cuming. Philip. (1885) 149, *Rev. Pl. Vasc. Filip.* (1886) 268, non Lindl.

*Pinalia ringens* Ktze. *Rev. Gen. Pl. 2* (1891) 679.

Negros (Oriental Negros), *Cuming 2128, Elmer 10192*. Cuernos Mountains. In Burma.

**ERIA SENILIS** Ames *Orch. 5* (1915) 159.

Luzon (Sorsogon), Panay (Antique), Leyte, Mindanao (Lanao), *Elmer 16375, B. S. 32575 McGregor, Wenzel 0333, 0335, 0348, 0455, 0852, 0890, 0892, 0894, 0897, 0898, 0899, 0900, 0901, 0902, 0903, 0932, 0933, M. S. Ciemens s. n.* Epiphyte in forest at 500 to 900 m altitude.

**ERIA TAYLORII** Ames *Sched. Orch. 5* (1923) 31.

Luzon (Laguna), *Taylor 25*. Mt. Maquiling, epiphyte in mossy forest at 1,000 m altitude.

**ERIA TRIDENS** Ames in *Elm. Leaf. Philip. Bot. 5* (1912) 1580, *Orch. 5* (1915) 159.

Mindanao (Davao), *Elmer 11850a*. Todaya, Mt. Apo.

**ERIA VANOVERBERGHII** Ames in *Philip. Journ. Sci. 7* (1912) Bot. 20, *Orch. 5* (1915) 159.

Luzon (Kalinga, Bontoc, Tayabas), *Boettcher s. n., Vanoverbergh 789, 1347, B. S. 26523 Ramos & Edaña*. Epiphyte at 300 to 1,550 m altitude.

**ERIA VENTRICOSA** Leavitt in *Philip. Journ. Sci. 4* (1909) Bot. 211, 234, *fig. 16*; Merr. & Merritt in *Philip. Journ. Sci. 5* (1910) Bot. 341; Kränzl. in *Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>* (1911) 63; Ames *Orch. 5* (1915) 159.

Luzon (Bontoc, Ifugao, Benguet, Bataan, Tayabas), Mindoro, and possibly from Mindanao. A fairly common species in Luzon, epiphyte in forest at 1,650 to 2,400 m altitude.

**ERIA VULPINA** Reichb. f. in *Bonpl. 3* (1855) 222; Lindl. in *Journ. Linn. Soc. 3* (1859) 57; Miq. *Fl. Ind. Bat. 3* (1859) 660; Reichb. f. in *Walp. Ann. 6* (1861) 273; Naves Novis. App. (1882) 236; Vidal Phan. Cuming. Philip. (1885) 149, *Rev. Pl. Vasc. Filip.* (1886) 268; Ames in *Philip. Journ. Sci. 2* (1907) Bot. 332, *Orch. 2* (1908) 198, 5 (1915) 160; Leavitt in *Philip. Journ. Sci. 4* (1909) Bot. 222 241, *fig. 23*.

*Eria vestita* Lindl. in *Bot. Reg. 30* (1844) Misc. 76, 31 (1845) sub *t. 2* in textu, quoad spec. *Cuming*; Reichb. f. in *Walp. Ann. 6* (1861) 274, quoad Philip.; Hook. f. in *Bot. Mag. 95* (1868) sub *t. 5807* in textu, quoad Philip.; Naves Novis. App. (1882) 236.

*Pinalia vulpina* Ktze. Rev. Gen. Pl. 2 (1891) 679.

*Trichotosia vulpina* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 141.

Luzon (Bontoc, Pampanga, Rizal, Laguna, Tayabas, Sorsogon), Mindoro, Sibuyan, Negros (Oriental Negros), Leyte, Mindanao (Camiguin Island, Zamboanga), Basilan. A common and widely distributed species in the Philippines. Epiphyte at 60 to 1,600 m altitude.

**ERIA WHITFORDII** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 215; 236; Ames Orch. 5 (1915) 160.

*Eria aeridostachya* Reichb. f. apud Ames in Philip. Journ. Sci. 2 (1907) Bot. 329; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 213, nota; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 35, quoad syn. *E. whitfordii* et quoad Philip.

Luzon (Isabela, Bataan, Laguna, Sorsogon), Mindoro, Negros (Oriental Negros), Leyte, *Lyon 135, G, Whitford 1119, Merrill s. n., 5518, Reillo 10, Elmer 9731, 16457, Wenzel 0434, 0580*. Epiphyte at 500 to 2,150 m altitude.

**ERIA WOODIANA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 332; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 205, 228; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 105, *fig. 14 J, K*.

Luzon (Laguna, Camarines), Mindoro, Leyte, *B. S. 17072 Robinson, 42082 Edaña, Taylor 1, Merrill 5490, Wenzel 0324, 0864, 0924*. Epiphyte at 500 to 1,500 m altitude.

**ERIA ZAMBOANGENSIS** Ames Orch. 5 (1915) 160.

Mindanao (Zamboanga, Bukidnon), *Merrill 8143, B. S. 38686, 39123 Ramos & Edaña*. Epiphyte in mossy forest at 1,300 to 1,830 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**ERIA AERIDOSTACHYA** Reichb. f. apud Ames in Philip. Journ. Sci. 2 (1907) Bot. 239; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 213, nota; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 35, quoad syn. *E. whitfordii* et quoad Philip. = *Eria whitfordii* Leavitt.

For a discussion of the differences and identity of *Eria aeridostachya* Reichb. f. ex Lindl. cf. Leavitt. l. c.

**ERIA ALBIDO-TOMENTOSA** Lindl. apud Naves Novis. App. (1882) 236.

**ERIA AMICA** Reichb. f. apud Naves Novis. App. (1882) 236.

**ERIA APOROIDES** Lindl. in Journ. Linn. Soc. 3 (1859) 60; Miq. Fl. Ind. Bat. 3 (1859) 657; Naves Novis. App. (1882) 236; Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 84 = *Dendrobium aporoides* (Lindl.) Merr.

**ERIA ARMENIACA** Lindl. in Bot. Reg. 27 (1841) Misc. 38, t. 42 = *Eria ornata* (Blume) Lindl.

**ERIA BRACTESCENS** Lindl. var. **LATIPETALA** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 210, 232, *fig. 12*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 88 = *Eria rhodoptera* Reichb. f.

**ERIA COMPRESSA** Blume apud Naves Novis. App. (1882) 236.

*ERIA DASYPUS* Reichb. f. apud Naves Novis. App. (1882) 236.

*ERIA DILLWYNII* Hook. in Bot. Mag. 71 (1845) t. 4163; Lindl. in Bot. Reg. 31 (1845) Misc. 63; F. Kl. in Bot. Zeit. 3 (1845) 550; Paxt. Mag. Bot. 12 (1846) 140; Lindl. in Journ. Linn. Soc. 3 (1859) 55; Naves Novis. App. (1882) 236; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 87 = *Eria bractescens* Lindl.

*ERIA ELMERI* Ames Orch. 1 (1905) 93, 2 (1908) 196, 5 (1915) 149; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 208, 230, fig. 10; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 74 = *Eria ovata* Lindl.

*ERIA ERECTA* Lindl. apud Naves Novis. App. (1882) 236.

*ERIA FLAVESCENS* Lindl. apud Naves Novis. App. (1882) 236; Vidal Rev. Pl. Vasc. Filip. (1886) 268; Ceron Cat. Pl. Herb. Manila (1892) 167.

This species is known only from Java. Vidal's identification of his 1959 was made with expressed doubt.

*ERIA FORMOSANA* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 47, non Rolfe = *Eria copelandii* Leavitt.

*ERIA FORMOSANA* Kränzl. var. *FUSIFORMIS* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 47 = *Eria copelandii* Leavitt var. *fusiformis* Leavitt.

*ERIA GOLDSCHMIDTIANA* Schltr. apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 83.

"Provinz der Philippinen und Süd-Formosa."—Kränzl. The type was from Formosa; the species has not been found in the Philippines.

*ERIA LANICEPS* Reichb. f. apud Naves Novis. App. (1882) 236.

*ERIA LAUCHEANA* Kränzl. in Gard. Chron. III 11 (1892) 809 = *Eria rhodoptera* Reichb. f.

*ERIA MONOSTACHYA* Lindl. apud Naves Novis. App. (1882) 236.

*ERIA MUCRONATA* Lindl. in Bot. Reg. 28 (1842) Misc. 27, in Journ. Linn. Soc. 3 (1859) 59; Miq. Fl. Ind. Bat. 3 (1859) 657; Naves Novis. App. (1882) 236.

*Trichotosia mucronata* Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 157.

The type of this may or may not have been a Philippine plant. However, the collections of twenty years have not produced a specimen referable to it.

*ERIA POLYURA* Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 268, non Lindl. = *Eria ringens* Reichb. f.

*ERIA PROREPENS* Reichb. f. Ota Bot. Hamb. 1 (1878) 54, Xen. Orch. 3 (1878) 31; Naves Novis. App. (1882) 236 = *Phreatia prorepens* Reichb. f.

*ERIA PUSILLA* Lindl. apud Naves Novis. App. (1882) 236.

*ERIA RETUSA* Lindl. apud Naves Novis. App. (1882) 236.

**ERIA RUGOSA** Lindl. Gen. & Sp. Orch. (1830) 66; Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 212, 235; Ames Orch. 5 (1915) 158 = *Eria javanica* (Sw.) Blume.

**ERIA STELLATA** Lindl. in Bot. Reg. 11 (August, 1825) t. 904; Naves Novis. App. (1882) 236; Usteri Beitr. Ken. Philip. Veg. (1905) 128 = *Eria javanica* (Sw.) Blume.

**ERIA VAGANS** Ames Orch. 7 (1922) 106, non Schltr. = *Eria ramosa* Ames.

**ERIA VENTRICOSA** Leavitt var. **BENGUETENSIS** Leavitt in Philip. Journ. Sci. 4 (1909) Bot. 212, 234 = *Eria leavittii* Kränzl.

**ERIA VESTITA** Lindl. in Bot. Reg. 30 (1844) Misc. 76, 31 (1845) sub t. 2 in textu, quoad spec. *Cuming*; Reichb. f. in Walp. Ann. 6 (1861) 274, quoad Philip.; Hook. f. in Bot. Mag. 95 (1869) sub t. 5807, in textu, quoad Philip.; Naves Novis. App. (1882) 236 = *Eria vulpina* Reichb. f.

Lindley originally placed the *Cuming* specimen from Manila under *Eria vestita*, but in 1859 (in Journ. Linn. Soc. 3: 57) he corrected this error and gave the points of difference between the two species.

**ERIA WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 428 = *Eria brachystachya* Reichb. f.

#### 66. BULBOPHYLLUM Thouars

**BULBOPHYLLUM ADENOPETALUM** Lindl. in Bot. Reg. 28 (1842) Misc. 85; Reichb. f. in Walp. Ann. 6 (1861) 255; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. *Cuming*. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 267; Hook. f. Fl. Brit. Ind. 5 (1890) 770, 6 (1890) 188; Ridl. in Journ. Linn. Soc. 32 (1896) 273, Mat. Fl. Mal. Penin. 1 (1907) 75; Ames in Philip. Journ. Sci. 2 (1907) Bot. 333, 7 (1912) Bot. 126, Orch. 2 (1908) 206, 5 (1915) 162.

*Bulbophyllum penicillium* Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. *Cuming*. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 267; Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, non Par. & Reichb. f.

*Bulbophyllum ramosii* Ames in Philip. Journ. Sci. 7 (1912) Bot. 25, 128, Orch. 5 (1915) 186.

*Phyllorchis adenopetala* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Luzon (Apayao, Bontoc, Bataan, Rizal, Laguna, Tayabas), Mindoro, Leyte, Mindanao (Dapitan, Bukidnon). A fairly common species in the Philippines, epiphyte at 500 to 3,000 m altitude. In Malay Peninsula.

**BULBOPHYLLUM AEOLIUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 429, Orch. 5 (1915) 164.

Luzon (Rizal), Leyte, Mindanao (Bukidnon), *Reillo s. n.*, B. S. 38678 *Ramos* & *Edaño*, 15391 *Ramos*, *Wenzel* 0644, 0652, 0671, 0835. Epiphyte, in forest at 600 to about 1,300 m altitude.

**BULBOPHYLLUM AESTIVALE** Ames Orch. 5 (1915) 164.

Leyte, *Wenzel* 0395, 0505, 0506, 0568, 0626. Epiphyte in forest at 500 to 600 m altitude.

**BULBOPHYLLUM ALAGENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 333, 7 (1912) Bot. 126, Orch. 3 (1908) 54, t. 44, fig. I. A, a, 5 (1915) 165.

Luzon (Rizal, Laguna), Mindanao, Leyte, *Serrato s. n.*, B. S. 29736 *Ramos & Edaño*, 16579 *Ramos*, Merrill 5495, Wenzel 0777. Epiphyte in forest at 400 to 500 m altitude.

**BULBOPHYLLUM ALBOROSEUM** Ames Orch. 7 (1922) 147.

Luzon (Benguet), *Ramos & Edaño* 105. Mt. Lusong, epiphyte at 2,000 m altitude.

**BULBOPHYLLUM ALSIOSUM** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1583, Orch. 5 (1915) 165.

Luzon (Rizal), Negros (Oriental Negros), Leyte, *Reillo s. n.*, *Elmer* 9817, Wenzel 0642, 0643, 0666, 0672. Epiphyte in forest at 600 to 1,300 m altitude.

**BULBOPHYLLUM ANTENNIFERUM** (Lindl.) Reichb. f. in Walp. Ann. 6 (1861) 248; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 138, Orch. 5 (1915) 165.

*Cirrhopetalum antenniferum* Lindl. in Bot. Reg. 29 (1843) sub t. 49. *Phyllorchis antennifera* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Leyte, Mindanao (Lanao). *Cuming s. n.*, Wenzel 0791, M. S. Clemens 445.

**BULBOPHYLLUM ARRECTUM** Kränzl. in Fedde Repert. 17 (1921) 384; Ames Sched. Orch. 6 (1923) 82.

Philippines, probably Luzon, *Loher s. n.*

Very close to *Bulbophyllum stellatum* Ames, but material at hand is inadequate to determine its status more definitely.

**BULBOPHYLLUM AURATUM** (Lindl.) Reichb. f. in Walp. Ann. 6 (1861) 261; Naves Novis. App. (1882) 235; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 82; Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 139, Orch. 5 (1915) 165.

*Cirrhopetalum auratum* Lindl. in Bot. Reg. 26 (1840) Misc. 50, 29 (1843) t. 61; G. K. in Bot. Zeit. 2 (1844) 103; Moore Ill. Orch. Pl. (1857) *Cirrhopet.* 5, t. 4; Ridl. in Journ. Linn. Soc. 32 (1896) 284.

*Phyllorchis aurata* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Leyte, Mindanao, Butuan, Agusan, Davao), *Cuming s. n.*, Lyon 139, Wenzel 0200, 0511, B. S. 12128 *Celestino*, Weber 106, 137, Black 8. Epiphyte at 5 to 500 m altitude. In Malay Peninsula.

**BULBOPHYLLUM BATAANENSE** Ames Orch. 1 (1905) 96, 2 (1908) 207, 5 (1915) 166, in Philip. Journ. Sci. 4 (1909) Bot. 599, 7 (1912) Bot. 126.

Luzon (Zambales, Bataan, Laguna), Mindanao (Lanao, Davao), B. S. 3028 *Mrs. Lyon*, 5001, 16576 *Ramos*, F. B. 8995, 9504 *Merritt & Curran*, 796 *Borden*, Whitford 121, 163, Topping 473, Merrill 5182, Black 10.

- BULBOPHYLLUM BLUMEI** (Lindl.) J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 459, Fig.-Atlas (1911) fig. 351; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, Orch. 5 (1915) 167.  
*Ephippium ciliatum* Blume Bijdr. (1825) 309, fig. 65, non *Bulbophyllum ciliatum* Lindl.  
*Cirrhopetalum blumei* Lindl. Gen. & Sp. Orch. (1830) 59, in Bot. Reg. 29 (1843) sub t. 49; Miq. Fl. Ind. Bat. 3 (1859) 654; Ridl. in Journ. Linn. Soc. 32 (1896) 285.  
*Cirrhopetalum maxillare* Lindl. in Bot. Reg. 29 (1843) sub t. 49.  
*Bulbophyllum cheiri* Lindl. in Bot. Reg. 30 (1844) Misc. 44; Reichb. f. in Walp. Ann. 6 (1861) 246; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, Orch. 5 (1915) 169.  
*Sarcopodium cheiri* Lindl. Fol. Orch. Sarcopod. (1853) 4; Moore Ill. Orch. Pl. (1857) Sarcopod. 4.  
*Bulbophyllum maxillare* Reichb. f. in Walp. Ann. 6 (1861) 248; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, Orch. 5 (1915) 181.  
*Bulbophyllum cuspidilingue* Reichb. f. in Walp. Ann. 6 (1861) 264.  
*Phyllorchis blumei* Ktze. Rev. Gen. Pl. 2 (1891) 676.  
*Phyllorchis cheiri* Ktze. Rev. Gen. Pl. 2 (1891) 677.  
*Phyllorchis maxillaris* Ktze. Rev. Gen. Pl. 2 (1891) 677.  
*Bulbophyllum ephippium* Ridl. Mat. Fl. Mal. Penin. 1 (1907) 78.  
Leyte, *Cuming s. n.*, Wenzel 050, 0107, 0736. Epiphyte at 60 m altitude. In Malay Peninsula and Java.
- BULBOPHYLLUM BOLSTERI** Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 139, Orch. 5 (1915) 168.  
*Bulbophyllum chryseum* Ames in Philip. Journ. Sci. 6 (1911) Bot. 54, quoad spec.  
Luzon (Rizal), Mindanao (Lanao, Surigao), *B. S. 3076 Ramos, M. S. Clemens s. n., Bolster 349*. Epiphyte.
- BULBOPHYLLUM BONTOCENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 135, Orch. 5 (1915) 168.  
Luzon (Bontoc, Zambales), *Vanoverbergh 705, 1366, 1382, 3681, F. B. 8135 Curran & Merritt*. Epiphyte at 1,450 to 1,700 m altitude.
- BULBOPHYLLUM BRACCATUM** Reichb. f. in Linnaea 41 (1877) 117; Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, Orch. 5 (1915) 168.  
Philippines, probably Luzon, *Wallis s. n.* Probably conspecific with *Bulbophyllum hortensoides* Ames.
- BULBOPHYLLUM CANLAONENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 136, Orch. 5 (1915) 168.  
Luzon (Benguet), Negros (Oriental Negros), Mindanao (Bukidnon), *B. S. 38717 Ramos & Edaña, 4314 Mearns, Elmer 9936, Merrill 7015*. Epiphyte at 1,300 to 2,300 m altitude.
- BULBOPHYLLUM CATENULATUM** Kränzl. in Fedde Repert. 17 (1921) 382.  
Philippines, probably Luzon, *Loher s. n.*



**BULBOPHYLLUM CHRYSSENDETUM** Ames Orch. 5 (1915) 169.

Leyte, *Wenzel 0219, 0621, 0657*. Dagami and Jaro, epiphyte in forest at 60 to 600 m altitude.

**BULBOPHYLLUM CHRYSSEUM** (Kränzl.) Ames in Philip. Journ. Sci. 6 (1911) Bot. 54, (excl. spec.), 7 (1912) Bot. 127, Orch. 5 (1915) 170; J. J. Sm. in Bull. Jard. Bot. Buitenz. 8 (1912) 23.

*Cirrhopetalum chryseum* Kränzl. in Fedde Repert. 8 (1910) 97.

Luzon (Rizal), Leyte, *Loher s. n., Lyon 152, Wenzel 093, 0138, 0214*. Epiphyte at low altitudes, 60 m in Leyte.

**BULBOPHYLLUM CLEMENSIAE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 129, Orch. 5 (1915) 170.

Mindanao (Lanao), *M. S. Clemens 440*. Camp Keithley, Lake Lanao.

**BULBOPHYLLUM COLUBRIMODUM** Ames Sched. Orch. 6 (1923) 82, fig. 12.

Leyte, *Wenzel 0698*. Epiphyte in forest at 600 m altitude.

**BULBOPHYLLUM COPELANDII** Ames Orch. 1 (1905) 97, 2 (1908) 5, t. 19, 5 (1915) 170, in Philip. Journ. Sci. 7 (1912) Bot. 127.

Luzon (Laguna), Mindanao (Davao), *B. S. 20434 Ramos, Calica s. n., Copeland 1316, Weber 265*.

**BULBOPHYLLUM COSTATUM** Ames Orch. 6 (1920) 299.

Leyte, *Wenzel 0665*. Epiphyte in forest at 600 m altitude.

**BULBOPHYLLUM CUBICUM** Ames Orch. 7 (1922) 83.

Mindanao (Bukidnon), *B. S. 38633 Ramos & Edaña*. Mahilucot River, epiphyte in forest at 1,400 m altitude.

**BULBOPHYLLUM CUMINGII** (Lindl.) Reichb. f. in Walp. Ann. 6 (1861) 261; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 6 (1911) Bot. 55, 7 (1912) Bot. 127, Orch. 5 (1915) 170.

*Cirrhopetalum cumingii* Lindl. in Paxt. Mag. Bot. 8 (1841) 165, in Bot. Reg. 29 (1843) sub t. 49; G. K. in Bot. Zeit. 1 (1843) 791; Moore Ill. Orch. Pl. (1857) *Cirrhopet.* 5; Hook. in Bot. Mag. 83 (1857) t. 4996; Miq. Fl. Ind. Bat. 3 (1859) 653; Veitch Man. Orch. Pl. pt. 3 (1888) 100; Rodigas in Ill. Hort. 39 (1892) 62, in textu.

*Phyllorchis cumingii* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Luzon (Rizal, Laguna, Tayabas), Panay (Capiz), Negros (Occidental Negros), *Cuming s. n., B. S. 13763 Ramos, 31273 Ramos & Edaña, 7334 Celestino, Serrato s. n., F. B. 13070, 13071 Curran, 5227 Danao & Aspillera*. Apparently at low altitudes.

**BULBOPHYLLUM CUNEATUM** Rolfe ex Ames Orch. 1 (1905) 98, 2 (1908) 207, 5 (1915) 127, in Philip. Journ. Sci. 4 (1909) Bot. 674, 7 (1912) Bot. 127.

Luzon (Bataan), *Merrill 3730, B. S. 5183 Topping, R. S. Williams 431*. Mt. Mariveles, at about 1,000 m altitude.

**BULBOPHYLLUM CURRANII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 130, Orch. 5 (1915) 170.

Luzon (Benguet), *F. B. 4953 Curran, Haight 7, Ramos & Edaña 62*. Epiphytic vine at about 3,000 m altitude.

**BULBOPHYLLUM DAGAMENSE** Ames Orch. 5 (1915) 170.

Leyte, *Wenzel 057, 0912*. Dagami and Jaro, epiphyte in forest at 60 to 500 m altitude.

**BULBOPHYLLUM DASYPETALUM** Rolfe ex Ames Orch. 1 (1905) 98, *text cut*, 2 (1908) 207, 5 (1915) 171; Ames in Philip. Journ. Sci. 2 (1907) Bot. 333, 7 (1912) Bot. 127.

Luzon (Bataan), *Merrill 3720*. Mt. Mariveles.

**BULBOPHYLLUM DEAREI** (Hort.) Reichb. f. in Flora 71 (April, 1888) 156; Veitch Man. Orch. Pl. pt. 3 (May or June, 1888) 95; Rolfe in Lindenia 8 (1892) t. 345; Cogn. in Dict. Icon. Orch. (1902) Bulbo. t. 2; Rolfe in Orch. Rev. 13 (1905) 197; Ames in Philip. Journ. Sci. 4 (1909) Bot. 674, 7 (1912) Bot. 127, Orch. 5 (1915) 171, 6 (1920) 174, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 185.

*Sarcopodium dearei* Hort. ex Gard. Chron. II 20 (1883) 108, *fig. 17*; Flor. & Pomol. 22 (1883) 108; Journ. Hort. III 24 (1892) 237; Kew Bull. Add. Ser. 4 (1900) 357.

*Sarcopodium godseffianum* Hort. ex Gard. Chron. III 7 (1890) 800, *nomen*.

*Bulbophyllum godseffianum* Weathers in Gardeners' Mag. 33 (1890) 540, *text cut*.

*Phyllorchis dearei* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Palawan, Mindanao (Lanao), *Weber 7, M. S. Clemens s. n.* Apparently at low altitudes. In Borneo.

**BULBOPHYLLUM DECEPTUM** Ames Orch. 5 (1915) 171.

Leyte, *Wenzel 0148*. Dagami, epiphyte in forest.

**BULBOPHYLLUM DISSOLUTUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 429, Orch. 5 (1915) 172.

Luzon (Laguna), *B. S. 15069 Ramos, Reillo 5*.

**BULBOPHYLLUM DORYPHOROIDE** Ames Orch. 5 (1915) 172.

Luzon (Ifugao), *B. S. 19873 McGregor*. Mt. Polis.

**BULBOPHYLLUM EBRACTEOLATUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 58.

Philippines, probably Luzon, *Loher s. n.* Known only from the original description; no material of this species has been seen.

**BULBOPHYLLUM ELMERI** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 136, Orch. 5 (1915) 173.

Luzon (Benguet), *Elmer 6618*. Baguio.

**BULBOPHYLLUM ELONGATUM** (Blume) Hassk. Cat. Hort. Bogor. (1844) 39; Miq. Fl. Ind. Bat. 3 (1859) 648; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 426, Fig.-Atlas (1911) *fig. 321*; Ames Orch. 5 (1915) 173, non Kränzl.

*Ephippium elongatum* Blume Bijdr. (1825) 309.

*Cirrhopetalum elongatum* Lindl. in Bot. Reg. 29 (1843) sub t. 49; Reichb. f. in Walp. Ann. 6 (1861) 264.

*Bulbophyllum sceptrum* Reichb. f. in Walp. Ann. 6 (1861) 254.

*Phyllorchis elongata* Ktze. Rev. Gen. Pl. 2 (1891) 677.

*Phyllorchis sceptrum* Ktze. Rev. Gen. Pl. 2 (1891) 678.

*Bulbophyllum gigas* Ridl. in Journ. Linn. Soc. 32 (1896) 277, Mat. Fl. Mal. Penin. 1 (1907) 70, fide J. J. Sm.

Mindanao (Cotabato, Bukidnon), *Weber 227*, *B. S. 38616 Ramos & Edaño*. Epiphyte in forest at 100 to 900 m altitude. In Malay Peninsula and Java.

**BULBOPHYLLUM ERRATUM** Ames Orch. 7 (1922) 85.

Mindanao (Bukidnon), *B. S. 38685 Ramos & Edaño*. Mahilucot River, along stream in forest at about 1,400 m altitude.

**BULBOPHYLLUM ESCRITORII** Ames Orch. 5 (1915) 174.

Luzon (Benguet, Tayabas), *Ramos & Edaño 104*, *B. S. 20734 Escritor*, *F. B. 13088 Curran*. Epiphyte up to 2,000 m in Benguet.

**BULBOPHYLLUM EXILE** Ames Orch. 2 (1908) 208, *text cut*, 5 (1915) 175, in Philip. Journ. Sci. 7 (1912) Bot. 127.

Mindanao (Davao), *Copeland 1123*, *R. S. Williams 2563*. Mt. Apo, epiphyte at 3,000 to 3,150 m altitude.

**BULBOPHYLLUM EXQUISITUM** Ames Sched. Orch. 6 (1923) 84.

*Bulbophyllum macgregorii* Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 137, Orch. 5 (1915) 180, non Schltr. (1911).

Luzon (Benguet), *B. S. 8322 McGregor*, *31900 Santos*, *Merrill 6624*, *Haight 1*. Epiphyte in mossy forest at 2,100 to 2,400 m altitude.

**BULBOPHYLLUM FENIXII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 430, Orch. 5 (1915) 175.

Babuyan Islands (Camiguin Island), *B. S. 4138 Fenix*.

**BULBOPHYLLUM FILICOIDES** Ames Sched. Orch. 6 (1923) 84, *fig. 11*.

Mindanao (Agusan), *Elmer 14200*. Epiphyte at 1,500 m altitude.

**BULBOPHYLLUM GIMAGAANENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 130, Orch. 5 (1915) 175.

Luzon (Laguna), Panay (Capiz), Negros (Occidental Negros), Leyte, *Reillo 14*, *B. S. 22885 McGregor*, *35462*, *35518 Martelino & Edaño*, *Whitford 1610*, *Wenzel 0538*, *0541*, *0544*, *0556*, *0613*, *0615*, *0656*. Epiphyte at 100 to 700 m altitude.

**BULBOPHYLLUM GLANDULOSUM** Ames Sched. Orch. 6 (1923) 87, *fig. 12*.

Luzon (Tayabas), *B. S. 28787 Ramos & Edaño*. Epiphyte at 1,000 m altitude.

**BULBOPHYLLUM GNOMONIFERUM** Ames Orch. 2 (1908) 209, *text cut*, 5 (1915) 175, in Philip. Journ. Sci. 7 (1912) Bot. 127.

Mindanao (Davao), *Copeland 1023*. Mt. Apo, epiphyte at 1,500 m altitude.

**BULBOPHYLLUM GOEBELIANUM** Kränzl. in Fedde Repert. 17 (1921) 385.

Philippines, probably Luzon, *Loher s. n.*

Allied to *Bulbophyllum dearei* (Hort.) Reichb. f.

**BULBOPHYLLUM GRACILISCAPUM** Ames & Rolfe in Ames Orch. 5 (1915) 175.

Mindanao (Davao), *Copeland 1127*. Mt. Apo, epiphyte at 2,000 m altitude.

**BULBOPHYLLUM HALCONENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 127, Orch. 3 (1908) 54, t. 44, fig. III. C, c, 5 (1915) 176.

Mindoro, *Merrill 5832*. Mt. Halcon, epiphyte in ridge forest at 1,500 to 2,250 m altitude.

**BULBOPHYLLUM HORTENSOIDES** Ames Orch. 6 (1920) 300.

Leyte, *Wenzel 0649, 0771*. Epiphyte in forest at 600 m altitude.

Probably conspecific with *Bulbophyllum braccatum* Reichb. f.

**BULBOPHYLLUM INVISUM** Ames Orch. 7 (1922) 148.

Luzon (Benguet), *Ramos & Edaño 58*. Mt. Pulogloco, epiphyte in mossy forest at 2,200 m altitude.

**BULBOPHYLLUM JARENSE** Ames Orch. 6 (1920) 301.

Leyte, *Wenzel 0761*. Epiphyte in forest at 500 m altitude.

**BULBOPHYLLUM LANCIFOLIUM** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1583, Orch. 5 (1915) 176.

Negros, Mindanao (Bukidnon, Davao), *F. B. 13662 Curran, Elmer 11352, B. S. 38954 Ramos & Edaño*. Epiphyte at about 2,600 m altitude in Davao.

**BULBOPHYLLUM LANCILABIUM** Ames Orch. 5 (1915) 176.

Luzon (Laguna), *B. S. 20439 Ramos*. Epiphyte at 1,000 m altitude.

**BULBOPHYLLUM LANCIPETALUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 23, 127, Orch. 5 (1915) 177.

Mindanao (Dapitan, Davao), *F. B. 4608 Mearns & Hutchinson, Copeland X*. At 2,000 to 2,400 m altitude.

**BULBOPHYLLUM LASIOGLOSSUM** Rolfe ex Ames Orch. 1 (1905) 100, 2 (1908) 3, 210, t. 18, 5 (1915) 177; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127.

Luzon (Bataan), *F. B. 797 Borden, Whitford s. n., 138, 1094, Copeland s. n.* Epiphyte at about 1,000 m altitude.

**BULBOPHYLLUM LASIOPETALUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 57.

Philippines, probably Luzon, *Loher s. n.*

**BULBOPHYLLUM LEIBERGII** Ames & Rolfe in Ames Orch. 5 (1915) 177.

Luzon (Bataan), *Leiberg 6034, B. S. 702 Foxworthy*. Mt. Mariveles at 900 m altitude.

**BULBOPHYLLUM LEPANTENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 131, Orch. 5 (1915) 178.

Luzon (Bontoc, Lepanto, Benguet), *Vanoverbergh 1133*, *Merrill 4586*, *B. S. 31778 Santos*. Epiphyte at 2,200 to 2,450 m altitude.

**BULBOPHYLLUM LEPTOCAULON** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 59.

Philippines, probably Luzon, *Loher s. n.*

Known only from the original description and the fragment of the type.

**BULBOPHYLLUM LEVANAE** Ames Orch. 5 (1915) 178, Sched. Orch. 6 (1923) 89.

*Bulbophyllum nymphopolitanum* Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 60.

Luzon (Zambales, Sorsogon), Sibuyan, Leyte, *B. S. 4985 Ramos*, *Elmer 12320*, *15836*, *Wenzel 0387*. Epiphyte at 500 m altitude in Leyte.

**BULBOPHYLLUM LEYTENSE** Ames Orch. 5 (1915) 178.

Leyte, Mindanao (Agusan), *Wenzel 098*, *Elmer 13805*. Epiphyte.

**BULBOPHYLLUM LIPENSE** Ames Sched. Orch. 3 (1923) 22.

Mindanao (Bukidnon), *B. S. 38582 Ramos & Edaña*. Epiphyte in damp forest at 1,300 m altitude.

**BULBOPHYLLUM LOHERIANUM** (Kränzl.) Ames comb. nov.

*Cirrhopetalum loherianum* Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 61.

Philippines, probably Luzon, *Loher*.

Known only from the original description and the fragmentary type specimen.

**BULBOPHYLLUM LONGIPETIOLATUM** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1584, Orch. 5 (1915) 180.

Mindanao (Davao), *Elmer 10883*. Todaya, Mt. Apo, epiphyte in humid forest at about 1,300 m altitude.

**BULBOPHYLLUM LUZONENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 141, Orch. 5 (1915) 180, Sched. Orch. 6 (1923) 89.

Luzon (Cagayan, Nueva Vizcaya, Laguna), Leyte, Mindanao (Agusan), *F. B. 16787 Curran*, *B. S. 20100 McGregor*, *16557 Ramos*, *Serrato s. n.*, *Wenzel 084*, *0167*, *0405*, *0765*, *Elmer 13623*, *13908*. Epiphyte, at 120 to 500 m altitude in Leyte.

**BULBOPHYLLUM MACULOSUM** Ames Orch. 5 (1915) 180.

Leyte, *Wenzel 0151*, *0199*. Dagami, epiphyte in forest at 60 m altitude.

**BULBOPHYLLUM MAKOYANUM** Reichb. f. in Gard. Chron. II 11 (1879) 234; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 81; Ames in Philip. Journ. Sci. 6 (1911) Bot. 55, 7 (1912) Bot. 127, Orch. 5 (1915) 181.

*Cirrhopetalum makoyanum* Reichb. f. in Gard. Chron. II 11 (1879) 234; Hook. f. in Bot. Mag. 118 (1892) t. 7259; Ridl. in Journ. Linn. Soc. 32 (1896) 284.

Luzon (Ifugao, Rizal), Polillo, Busuanga, Mindanao (Agusan), *B. S.* 10438, 19990 *McGregor*, 19185 *Reillo*, *Weber* 37, 407 in part. Epiphyte, apparently at low altitudes. In Malay Peninsula.

**BULBOPHYLLUM MARCIDUM** Ames Sched. Orch. 6 (1923) 90, *fig. 12*.

Mindanao (Bukidnon), *B. S.* 38573 *Ramos & Edaña*. Mt. Lipa, epiphyte at 1,630 m altitude.

**BULBOPHYLLUM MARIVELENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 132, Orch. 5 (1915) 181.

Luzon (Bataan), *Merrill* 3738. Mt. Mariveles, epiphyte on exposed ridge at 1,100 m altitude.

**BULBOPHYLLUM MASAGANAPENSE** Ames Orch. 6 (1920) 302.

Luzon (Rizal), Leyte, *B. S.* 29714 *Ramos & Edaña*, 41632, 41639 *Ramos*, *Wenzel* 0681. Epiphyte at 200 to 1,300 m altitude.

**BULBOPHYLLUM MEARNsii** Ames in Philip. Journ. Sci. 8 (1913) Bot. 430, Orch. 5 (1915) 181.

*Bulbophyllum carinatum* Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 140, nec *Naves* nec *Cogn*.

Luzon (Sorsogon), Mindanao (Dapitan), *Elmer* 17039, *F. B.* 4593 *Mearns & Hutchinson*. At 900 m altitude in Mindanao.

**BULBOPHYLLUM MELANOGLOSSUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 60.

Philippines, probably Luzon, *Loher s. n.*

**BULBOPHYLLUM MERRITTii** Ames in Philip. Journ. Sci. 2 (1907) Bot. 334, 7 (1912) Bot. 127, Orch. 5 (1915) 181.

Mindoro, *F. B.* 4338 *Merritt*. Mt. Halcon, at about 500 m altitude.

**BULBOPHYLLUM MINDANAENSE** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1585, Orch. 5 (1915) 181.

Leyte, Mindanao (Davao), *Wenzel* 0295, 0397, 0447, 0743, 0744, 0811, 0815, *Elmer* 11307, 11625, 14160. Epiphyte in humid forest at 500 to 1,300 m altitude.

**BULBOPHYLLUM MINDORENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 334, 7 (1912) Bot. 127, Orch. 3 (1908) 58, *t. 45*, 5 (1915) 182.

Luzon (Camarines), Mindoro, Leyte, *B. S.* 22185 *Ramos*, *Merrill* 5796, *Wenzel* 0758. Epiphyte in damp forest at 500 to 1,000 m altitude.

**BULBOPHYLLUM MONSTRABILE** Ames Orch. 5 (1915) 182.

Leyte, *Wenzel* 0443. Jaro, epiphyte in forest at 500 m altitude.

**BULBOPHYLLUM NEGROSIANUM** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1586, Orch. 5 (1915) 182.

Negros (Oriental Negros), *Elmer* 9821. Cuernos Mountains, epiphyte in mossy woods at about 1,100 m altitude.

**BULBOPHYLLUM ORTHOGLOSSUM** Wendl. & Kränzl. in Gard. Chron. III 19 (1896) 326; Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, Orch. 5 (1915) 183.

"In Sarangani insula det. W. Micholitz, Freder, Sander Verulamensis collecta indefessus."—Kränzlin. Probably Sarangani Island, off the southern end of Mindanao, is intended. Only a single flower and a sketch of the inflorescence have been seen.

**BULBOPHYLLUM OTHONIS** (Ktze.) J. J. Sm. in Bull. Gard. Bot. Buitenz. II 8 (1912) 26; Ames Orch. 5 (1915) 183.

*Cirrhopetalum nutans* Lindl. in Bot. Reg. 25 (1839) Misc. 71, 29 (1843) sub t. 49; Hook. in Bot. Mag. 75 (1849) t. 4418; Miq. Fl. Ind. Bat. 3 (1859) 653.

*Bulbophyllum nutans* Reichb. f. in Walp. Ann. 6 (1861) 260; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 24, 127, non Thou.

*Phyllorchis othonis* Ktze. Rev. Gen. Pl. 2 (1891) 677.

Luzon (Sorsogon), Polillo, Leyte, *Elmer 16933*, *B. S. 9077 Robinson*, *Wenzel 0141, 0192*. Epiphyte, apparently at low altitudes.

**BULBOPHYLLUM PAMPANGENSIS** Ames Sched. Orch. 6 (1923) 92.

Luzon (Pampanga), *Merrill 11214*.

**BULBOPHYLLUM PAPILLIPETALUM** Ames Orch. 7 (1922) 149.

Luzon (Benguet), *Ramos & Edaña 79*. Mt. Boadan, epiphyte, on mossy forest slope at about 2,300 m altitude.

**BULBOPHYLLUM PAUCIFLORUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 132, Orch. 5 (1915) 184.

Luzon (Bontoc), *Vanoverbergh 1381*. Epiphyte at 1,650 m altitude.

**BULBOPHYLLUM PERAMOENUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 430, Orch. 5 (1915) 184.

Mindoro, Mindanao (Zamboanga), *Merrill 5832, 8271*.

**BULBOPHYLLUM PHILIPPINENSE** Ames Orch. 6 (1920) 303.

Leyte, *Wenzel 0659*. Jaro, epiphyte in forest at 500 m altitude.

**BULBOPHYLLUM PLEUROTHALLOIDES** Ames in Philip. Journ. Sci. 2 (1907) Bot. 335, 7 (1912) Bot. 128, Orch. 3 (1908) 55, t. 44, fig. II B, b, 5 (1915) 184.

Mindoro, *Merrill 6128*. Mt. Halcon, epiphyte in mossy forest at 1,500 m altitude.

**BULBOPHYLLUM PLUMATUM** Ames Orch. 5 (1915) 184.

Mindanao (Bukidnon), *B. S. 21479 Escritor*.

**BULBOPHYLLUM PROFUSUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, 137, Orch. 5 (1915) 185.

Luzon (Cagayan, Rizal, Sorsogon), Sibuyan, Leyte, Palawan, Basilan, Mindanao (Agusan, Butuan, Surigao). A not uncommon and widely distributed species. Epiphyte apparently at rather low altitudes.

**BULBOPHYLLUM PUGUAHAANENSE** Ames Orch. 5 (1915) 185.

Leyte, *Wenzel 0128*. Dagami, Puguahaan, epiphyte at 120 m altitude.

**BULBOPHYLLUM REILLOI** Ames in Philip. Journ. Sci. 8 (1913) Bot. 431, Orch. 5 (1915) 186.

Luzon (Laguna), *Reillo 24*.

**BULBOPHYLLUM SANTOSII** Ames Orch. 5 (1915) 186.

Luzon (Laguna, Camarines), Leyte, *B. S.* 20461 Ramos, Santos s. n., Wenzel 0269. Epiphyte, up to 750 m altitude in Leyte.

**BULBOPHYLLUM SAPPHIRINUM** Ames Orch. 5 (1915) 187.

Leyte, Wenzel 092, 0125, 0136, 0231, 0232. Dagami, epiphyte in forest at 60 m altitude.

**BULBOPHYLLUM SAUROCEPHALUM** Reichb. f. in Gard. Chron. II 26 (1886) 262; Rolfe in Orch. Rev. 11 (1903) 190, in textu, 13 (1905) 244; Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, Orch. 5 (1915) 187.

No specimens of this species have been seen.

**BULBOPHYLLUM SEMPITERNUM** Ames Orch. 6 (1920) 304.

Leyte, Wenzel 0260, 0287, 0442, 0472, 0524, 0546, 0555, 0589, 0595, 0607, 0610, 0675, 0751, 0810, 0820, 0841, 0848, 0849, 0873, 0893, 0913. Epiphyte in forest at 500 to 750 m altitude.

**BULBOPHYLLUM SENSILE** Ames Orch. 5 (1915) 188.

Luzon (Bontoc), Vanoverbergh 1134, 2816, 3918. At 1,600 to 1,700 m altitude.

**BULBOPHYLLUM SIBUYANENSE** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1587, Orch. 5 (1915) 189.

Sibuyan, Elmer 12140. Mt. Giting-giting, epiphyte in humid forest at about 400 m altitude.

**BULBOPHYLLUM SIMULACRUM** Ames Orch. 5 (1915) 189.

Leyte, Wenzel s. n., 0268, 0297, 0409, 0692, 0699, 0773, 0786, 0812. Epiphyte in forest at 500 to 750 m altitude.

**BULBOPHYLLUM STELLATUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, 141, Orch. 5 (1915) 190.

Luzon (Bontoc), Vanoverbergh 1360, 3914. Epiphyte at 1,650 to 1,750 m altitude.

**BULBOPHYLLUM STRAMINEUM** Ames Orch. 5 (1915) 190.

Palawan, Merrill 9567, F. B. 21577 Danao. Epiphyte at 75 to 500 m altitude.

**BULBOPHYLLUM SUBAEQUALE** Ames Sched. Orch. 6 (1923) 93.

Luzon (Rizal), *B. S.* 29296 Ramos & Edaña. Epiphyte at 300 m altitude.

**BULBOPHYLLUM SYLLECTUM** Kränzl. in Fedde Repert. 17 (1921) 383.

Philippines, probably Luzon, Loher s. n.

Owing to the scanty material at hand for study, this is maintained as a species, though it is apparently at best hardly more than a variety of *Bulbophyllum luzonense* Ames; the slight differences are presumably the result of cultivation.



**BULBOPHYLLUM TOPPINGII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 432, Orch. 5 (1915) 191.

Luzon (Benguet), *Topping s. n.*, Merrill 7753. Epiphyte at about 1,500 m altitude.

**BULBOPHYLLUM TRIGONOSEPALUM** Kränzl. in Fedde Repert. 17 (1921) 384.

Philippines, probably Luzon, *Loher s. n.*

From the material examined this appears to be a large variety of *Bulbophyllum levanae* Ames.

**BULBOPHYLLUM TRISETUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, 142, Orch. 5 (1915) 191.

Luzon (Benguet), *F. B. 15899 Bacani*. Itogan to Baguio, epiphyte.

**BULBOPHYLLUM VAGANS** Ames & Rolfe in Philip. Journ. Sci. 2 (1907) Bot. 335, 7 (1912) Bot. 128; Ames Orch. 2 (1908) 210, *text cut*, 5 (1915) 191.

Luzon (Benguet, Bataan, Laguna, Camarines), Mindanao (Camiguin Island, Agusan), *F. B. 2205 Meyer, 15739 Curran & Merritt, Merrill s. n.* (cult.), *Whitford 1120, B. S. 14423 Ramos, 1636 Foxworthy, Santos s. n., Elmer 13699, Weber 30*. Vinelike epiphyte at 800 to 1,000 m altitude.

Var. **ANGUSTUM** Ames in Philip. Journ. Sci. 2 (1907) Bot. 210, 7 (1912) Bot. 128.

*Bulbophyllum vagans* Ames & Rolfe var. *linearifolium* Ames Orch. 5 (1915) 191, *nomen*.

Mindoro, Merrill 6218. Mt. Halcon, epiphyte in mossy forest at 210 m altitude.

**BULBOPHYLLUM VANOVERBERGHII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 133, Orch. 5 (1915) 191.

Luzon (Bontoc), *Vanoverbergh 1367*.

**BULBOPHYLLUM WEBERI** Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, 142, Orch. 5 (1915) 192.

*Cirrhopetalum thouarsii* Lindl. in Bot. Reg. 24 (1838) t. 11, non *C. thouarsii* Lindl. Gen. & Sp. Orch. (1830) 58; Hook. in Bot. Mag. 72 (1846) t. 4237 (excl. syn.).

*Bulbophyllum longiflorum* Reichb. f. in Walp. Ann. 6 (1861) 260, *quoad* Philip.; Naves Novis. App. (1880) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, non Thou.

*Bulbophyllum baucoense* Ames Orch. 5 (1915) 166.

Luzon (Bontoc, Rizal), Mindanao (Bukidnon, Davao), *Vanoverbergh 2613, B. S. 19239 Reillo, 22253, 41917 Ramos, Weber 8, 194, 289*. On rocks and in trees at 122 to 1,500 m altitude.

**BULBOPHYLLUM WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 432, Orch. 5 (1915) 192.

Leyte, *Wenzel s. n.*, 0162, 0178. Dagami, epiphyte in forest at about 60 m altitude.

**BULBOPHYLLUM WHITFORDII** Rolfe ex Ames Orch. 1 (1905) 100, 2 (1908) 211, 5 (1915) 192, in Philip. Journ. Sci. 7 (1912) Bot. 128.

Luzon (Bataan), Busuanga, Basilan, Mindanao (Davao), *Whitford 61*, *Weber 403*, s. n., *F. B. 4021 Hutchinson*, *R. S. Williams 2915*. Epiphyte.

**BULBOPHYLLUM ZAMBALENSE** Ames in Philip. Journ. Sci. 7 (1912) Bot. 134, 8 (1913) Bot. 433, Orch. 5 (1915) 192.

Luzon (Zambales), *B. S. 4996 Ramos*.

**BULBOPHYLLUM ZAMBOANGENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 433, Orch. 5 (1915) 192.

Mindanao (Zamboanga), *F. B. 9165 Whitford & Hutchinson*. Epiphyte at 20 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**BULBOPHYLLUM AURECEMUM** Boxall ex Naves Novis. App. (1882) 235, *nomen*.

**BULBOPHYLLUM BALAENICEPS** Reichb. f. in Hamb. Gartenz. 19 (1863) 280, Xen. Orch. 2 (1870) 147, t. 157, fig. 1-6; Naves Novis. App. (1882) 234; Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, Orch. 5 (1915) 165.

This species was described from material in the garden of Consul Schiller. The origin of the plant was unknown and it was doubtfully ascribed to the Philippines by Reichenbach. There seems no evidence that it occurs in the Philippines.

**BULBOPHYLLUM BAUCOENSE** Ames Orch. 5 (1915) 166 = *Bulbophyllum weberi* Ames.

**BULBOPHYLLUM BIFLORUM** Teijsm. & Binn. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM CAREYANUM** Spreng. apud Ames in Philip. Journ. Sci. 7 (1912) Bot. 126.

The type of the species was from Nepal, and there is no evidence to show that it occurs in the Philippines.

**BULBOPHYLLUM CARINATUM** Ames in Philip. Journ. Sci. 7 (1912) Bot. 126, 140, nec Naves nec Cogn. = *Bulbophyllum mearnsii* Ames.

**BULBOPHYLLUM CARINATUM** (Teijsm. & Binn.) Naves Novis. App. (1882) 235.

**BULBOPHYLLUM CHEIRI** Lindl. in Bot. Reg. 30 (1844) Misc. 44; Reichb. f. in Walp. Ann. 6 (1861) 246; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, Orch. 5 (1915) 169 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.

**BULBOPHYLLUM CHRYSSEUM** Ames in Philip. Journ. Sci. 6 (1911) 54, quoad spec. = *Bulbophyllum bolsteri* Ames.

**BULBOPHYLLUM COREYANUM** Spreng. apud Llanos ex Naves & F.-Vill. in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Naves Novis. App. (1882) 235.

**BULBOPHYLLUM CUPREUM** Lindl. in Bot. Reg. 24 (1838) Misc. 95; Reichb. f. in Walp. Ann. 6 (1861) 257; Naves Novis. App. (1882) 235.

Lindley's statements in the original description that this species came from Manila and was collected by Cuming seem doubtful, as no specimens referable to it from the Philippines have been seen.

**BULBOPHYLLUM DAYANUM** Reichb. f. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM DENSUM** Spreng. apud Llanos ex Naves & F.-Vill. in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Naves Novis. App. (1882) 235.

**BULBOPHYLLUM ECHINOCHILUM** Kränzl. in Fedde Repert. 17 (1921) 385; Ames Sched. Orch. 6 (1923) 84.

Kränzlin, l. c., states: "Philippinen. Manila (Loher). Blüthe in kgl. botan. Garten zu München-Nymphenburg in Dezember 1916.

"Durch die Form und Behaarung des Labellums erinnert diese Art sehr stark an *B. Calamaria* Lindl. westafrikanischer Herkunft, \* \* \*."

The record of the Philippine origin of this species is doubted; nothing of its alliance has been seen from the Philippines and its affinities are African, as pointed out by Kränzlin. *Bulbophyllum calamaria* Lindl. has a similar labellum, but its habit is very different.

**BULBOPHYLLUM GODSEFFIANUM** Weathers in Gardeners' Mag. 33 (1890) 540, text cut = *Bulbophyllum dearei* (Hort.) Reichb. f.

**BULBOPHYLLUM HENSCHALLII** Boxall ex Naves Novis. App. (1882) 235, nomen.

**BULBOPHYLLUM LASIANTHUM** Lindl. in Gard. Chron. (1855) 53; Reichb. f. in Walp. Ann. 6 (1861) 255; Naves Novis. App. (1882) 234; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127.

The type of this was Sumatran; the living specimen examined by Lindley, said to have come from Manila, imported by Loddiges, probably came from the Malay Peninsula or Sumatra. No record for this species as Philippine is known other than Lindley's original statement.

**BULBOPHYLLUM LOBBII** Lindl. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM LONGIFLORUM** Reichb. f. in Walp. Ann. 6 (1861) 260, quoad Philip.; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, non Thou. = *Bulbophyllum weberi* Ames.

**BULBOPHYLLUM MACGREGORII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, 137, Orch. 5 (1915) 180, non Schltr. (1911) = *Bulbophyllum exquisitum* Ames.

**BULBOPHYLLUM MACULATUM** Boxall ex Naves Novis. App. (1882) 235, nomen.

**BULBOPHYLLUM MAXILLARE** Reichb. f. in Walp. Ann. 6 (1861) 248; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 127, Orch. 5 (1915) 181 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.

**BULBOPHYLLUM MEDUSAE** (Lindl.) Naves Novis. App. (1882) 235.

**BULBOPHYLLUM MEGALANTHUM** Griff. apud Naves Novis. App. (1882) 235.

**BULBOPHYLLUM MUCRONATUM** Lindl. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM NUTANS** Reichb. f. in Walp. Ann. 6 (1861) 260; Naves Novis. App. (1882) 235; Ames in Philip. Journ. Sci. 7 (1912) Bot. 24, 127, non Thou. = *Bulbophyllum othonis* (Ktze.) J. J. Sm.

**BULBOPHYLLUM NYMPHOPOLITANUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 60 = *Bulbophyllum levanæ* Ames.

**BULBOPHYLLUM ODORATUM** Lindl. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM PENICILLIUM** Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 149, Rev. Pl. Vasc. Filip. (1886) 267; Ames in Philip. Journ. Sci. 7 (1912) Bot. 128, non Par. & Reichb. f. = *Bulbophyllum adenopetalum* Lindl.

**BULBOPHYLLUM PURPUREUM** (Reichb. f.) Naves Novis. App. (1882) 234.

**BULBOPHYLLUM RAMOSII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 25, 128, Orch. 5 (1915) 186 = *Bulbophyllum adenopetalum* Lindl.

**BULBOPHYLLUM REGNELLII** Reichb. f. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM RETICULATUM** Boxall. ex Naves Novis. App. (1882) 234, *nomen*.

**BULBOPHYLLUM TENELLUM** Lindl. apud Naves Novis. App. (1882) 234.

**BULBOPHYLLUM VAGANS** Ames & Rolfe var. **LINEARIFOLIUM** Ames Orch. 5 (1915) 191, *nomen* = *Bulbophyllum vagans* Ames & Rolfe var. *angustum* Ames.

#### 67. OCTARRHENA Thwaites

**OCTARRHENA AMESIANA** Schltr. in Fedde Repert. 9 (1911) 439; Ames Orch. 5 (1915) 192.

*Phreatia parvula* Ames Orch. 2 (1908) 204, non Benth. ex Hook. f.

Mindanao (Davao), *Copeland 1124, 1427, Elmer 10568, 11413, 11457*.

Mt. Apo, epiphyte at about 2,000 m altitude.

**OCTARRHENA CAULESCENS** Ames Orch. 5 (1915) 192.

*Phreatia caulescens* Ames Orch. 2 (1908) 200, *text cut*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 12.

Luzon (Bontoc, Lepanto, Ifugao, Benguet). A fairly common species in the provinces mentioned. Epiphyte in mossy forest at 1,650 to 2,300 m altitude.

**OCTARRHENA ELMERI** Ames Orch. 5 (1915) 192.

*Phreatia elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1581.

Luzon (Camarines), Mindanao (Davao), *B. S. 22184 Ramos, Elmer 10622*. Epiphyte in forest at 2,000 m altitude in Mindanao.

**OCTARRHENA ENSIFOLIA** (Ames) Schltr. in Fedde Repert. 9 (1911) 217; Ames Orch. 5 (1915) 192.

*Phreatia ensifolia* Ames Orch. 2 (1908) 202, *text cut*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 15.

Luzon (Bataan), Negros (Oriental Negros), Mindanao (Agusan), *Whitford 153, Elmer 9733, 13851*. Epiphyte at about 1,250 m altitude in Luzon.

**OCTARRHENA GEMMIFERA** Ames Orch. 5 (1915) 193.

Leyte, Wenzel 0254, 0293, 0404, 0526, 0547, 0592. Jaro, epiphyte at 500 to 700 m altitude.

**68. THELASIS** Blume

**THELASIS CAPITATA** Blume Bijdr. (1825) 386; Lindl. Gen. & Sp. Orch. (1833) 253; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 186 (excl. syn. *Euphroboscis pygmaea* Griff.); Reichb. f. in Bonpl. 5 (1857) 37; Blume Fl. Jav. Orch. (1858) 19 (Orch. Arch. Ind. 20) t. 7, fig. 1; Miq. Fl. Ind. Bat. 3 (1859) 700, Sumatra (1862) 275; Naves Novis. App. (1882) 244; Hook. f. Fl. Brit. Ind. 6 (1890) 86; Ridl. in Trans. Linn. Soc. II 3 (1893) 376, in Journ. Linn. Soc. 32 (1896) 393; Schltr. in Mém. Herb. Boiss. 21 (1900) 69; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 493, Fig.-Atlas (1911) fig. 372; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 199; Ames Orch. 2 (1908) 212, 5 (1915) 194; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 54; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 41; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 190.

*Thelasis capitata* Blume var. *major* Blume Fl. Jav. Orch. (1858) 19 (Orch. Arch. Ind. 20).

*Thelasis ochreatea* Lindl. in Journ. Linn. Soc. 3 (1859) 63; Miq. Fl. Ind. Bat. 3 (1859) 701; Naves Novis. App. (1882) 244; Ridl. in Journ. Linn. Soc. 31 (1896) 303.

*Thelasis elongata* Blume var. *major* Ridl. in Journ. Linn. Soc. 32 (1896) 393, fide Ridl. in Mat. Fl. Mal. Penin. 1. c.

Mindoro, *F. B. 12057 Merritt*. In Malay Peninsula, Sumatra, Java, and Borneo.

**THELASIS CARINATA** Blume Bijdr. (1825) 386; Lindl. Gen. & Sp. Orch. (1833) 253, Mus. Bot. Lugd.-Bat. 2 (1856) 187, Fl. Jav. Orch. (1858) 21 (Orch. Arch. Ind. 24) t. 7, fig. 3; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 497, Fig.-Atlas (1912) fig. 375; Ames in Philip. Journ. Sci. 2 (1907) Bot. 336; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 43; Ames Orch. 5 (1915) 194, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 190.

*Phreatia carinata* Miq. Fl. Ind. Bat. 3 (1859) 655, Sumatra (1862) 274.

*Eria carinata* Reichb. f. in Seem. Fl. Vit. (1868) 301, in obs.

*Thelasis elata* Hook. f. Fl. Brit. Ind. 6 (1890) 87; Ridl. in Trans. Linn. Soc. II 3 (1893) 376; Hook. f. in Hook. Icon. Pl. 22 (1893) t. 2156.

*Oxyanthera elata* Hook. f. in Hook. Icon. Pl. 22 (1893) sub t. 2156; Ridl. in Journ. Linn. Soc. 31 (1896) 303, 32 (1896) 394, Mat. Fl. Mal. Penin. 1 (1907) 200.

*Oxyanthera carinata* Schltr. in Mém. Herb. Boiss. 21 (1900) 76, in Fedde Repert. 10 (1911) 186.

Babuyan Islands (Camiguin Island), Luzon (Bataan, Laguna, Sorsogon), Mindoro, Negros, Leyte, Basilan, Mindanao (Zamboanga, Agusan). A fairly common and widely distributed species in the Philippines. Epi-

phyte, apparently at low altitudes. In Malay Peninsula, Sumatra, Java, Celebes, and Borneo.

**THELASIS MICRANTHA** (Brongn.) J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 495, Fig.-Atlas (1911) *fig. 374*; Ames Orch. 2 (1908) 213, 5 (1915) 194; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 44; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Oxyanthera micrantha* Brongn. in Duperr. Voy. Coquille Phan. (1834) 198, t. 37 B; Schltr. in Mém. Herb. Boiss. 21 (1900) 77; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 200.

*Thelasis contracta* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 187, Fl. Jav. Orch. (1858) 21 (Orch. Arch. Ind. 24) t. 5 B; Miq. Fl. Ind. Bat. 3 (1859) 701.

*Thelasis carinata* Reichb. f. in Trans. Linn. Soc. 30 (1874) 136; Grant. Orch. Burma (1895) 314, non Blume.

*Thelasis decurva* Hook. f. Fl. Brit. Ind. 6 (1890) 87; Ridl. in Trans. Linn. Soc. II 3 (1893) 376; Hook. f. in Hook. Icon. Pl. 22 (1893) t. 2157.

*Oxyanthera decurva* Hook. f. in Hook. Icon. Pl. 22 (1893) sub t. 2157; Ridl. in Journ. Linn. Soc. 31 (1896) 303, 32 (1896) 394.

Luzon (Rizal, Laguna, Tayabas), Leyte, Mindanao (Zamboanga), *B. S. 974, 15393, 23514 Ramos, Reillo s. n., 17083 Robinson, Weber 5, Wenzel 048, R. S. Williams 2421, Elmer 7403*. Epiphyte at 60 to 800 m altitude. In Malay Peninsula, Sumatra, Java, and Borneo.

**THELASIS OBTUSA** Blume Bijdr. (1825) 386; Lindl. Gen. & Sp. Orch. (1833) 253; Blume Mus. Bot. Lugd.-Bat. 2 (1856) 186, Fl. Jav. Orch. (1858) 18 (Orch. Arch. Ind. 20); Schltr. in Mém. Herb. Boiss. 21 (1900) 72; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 492, Fig.-Atlas (1911) *fig. 371*; Ames in Philip. Journ. Sci. 4 (1909) Bot. 675; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 43; Ames Orch. 5 (1915) 194.

Luzon (Bataan), *Leiberg 6046*. Mt. Mariveles, epiphyte at 900 m altitude. In Java.

**THELASIS TRIPTERA** Reichb. f. in Bonpl. 3 (1855) 219, in Walp. Ann. 6 (1864) 923; Naves Novis. App. (1882) 244; Hemsl. Bot. Chal. Exped. 1\* (1885) 248; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 272; Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 249; Rolfe in Journ. Linn. Soc. 36 (1903) 39.

*Thelasis elongata* Blume Mus. Bot. Lugd.-Bat. 2 (1856) 187, Fl. Jav. Orch. (1858) 20 (Orch. Arch. Ind. 23) t. 7, *fig. 2, t. 5 C*; Miq. Fl. Ind. Bat. 3 (1859) 701; Hook. f. Fl. Brit. Ind. 6 (1890) 86; Ridl. in Trans. Linn. Soc. II 3 (1893) 375, in Journ. Linn. Soc. 32 (1896) 393; Schltr. in Mém. Herb. Boiss. 21 (1900) 70; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 494, Fig.-Atlas (1911) *fig. 373*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 199; Ames Orch. 2 (1908) 212, 5 (1915) 194; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 41, *fig. 5, T-X*; Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1913) 908; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 190.

*Thelasis zollingeri* Reichb. f. in Bonpl. 5 (1857) 37.

*Thelasis pygmaea* Hance in Journ. Linn. Soc. 13 (1872) 127, Fl. Hongk. Suppl. (1872) 39, non Lindl.

*Thelasis hongkongensis* Rolfe in Kew Bull. (1896) 199, in Journ. Linn. Soc. 36 (1903) 39; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 257.

Luzon (Bataan, Rizal, Sorsogon), Polillo, Panay (Antique), Leyte, Mindanao (Zamboanga, Cotabato, Agusan, Surigao, Davao), Cagayan Sulu. A fairly common and widely distributed species in the Philippines. Epiphyte at 10 to 1,500 m altitude. In Malay Peninsula, China, Sumatra, Java, Borneo, and the Admiralty Islands.

#### EXCLUDED OR SYNONYMOUS SPECIES

**THELASIS ELONGATA** Blume Mus. Bot. Lugd.-Bat. 2 (1856) 187; Schltr. in Mém. Herb. Boiss. 21 (1900) 70; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 494, Fig.-Atlas (1911) fig. 373; Ames Orch. 2 (1908) 212, 5 (1915) 194; Kränzl. in Engl. Pflanzenreich IV. 50 II. B. 23 (1911) 41, fig. 5, T-X; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 190 = *Thelasis triptera* Reichb. f.

**THELASIS OCHREATA** Lindl. in Journ. Linn. Soc. 3 (1859) 63; Naves Novis. App. (1882) 244 = *Thelasis capitata* Blume.

#### 69. PHREATIA Lindley

**PHREATIA AMESII** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 16; Ames Orch. 5 (1915) 195, 6 (1920) 207.

*Phreatia myosurus* Ames Orch. 2 (1908) 203, quoad spec. (excl. syn.) non Lindl.

Luzon (Bontoc, Bataan, Sorsogon), Panay (Antique), Negros (Oriental Negros), Leyte, Mindanao (Agusan), *Vanoverbergh 707, 1290a, 1477a, 3683, Merrill 3854, Whitford 1361, Leiberg 6061, B. S. 23390 Ramos, 32363 McGregor, Elmer 10354, 13804, Wenzel 0713, 0829*. Epiphyte, at 300 to 1,600 m altitude. In Borneo.

**PHREATIA ARISTULIFERA** Ames Orch. 2 (1908) 199, *text cut*, 5 (1915) 195; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 15.

Luzon (Bontoc, Lepanto, Ifugao, Benguet, Rizal, Tayabas). A reasonably common species in the mountainous regions of Luzon. Epiphyte at 300 to 2,500 m altitude.

**PHREATIA DENSIFLORA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 64; Miq. Fl. Ind. Bat. 3 (1859) 655; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 502, Fig.-Atlas (1912) fig. 380, Orch. Amb. (1905) 117; Ames Orch. 2 (1908) 201, 5 (1915) 195, 6 (1920) 208; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 18; Rolfe in Gibbs in Journ. Linn. Soc. 42 (1914) 152; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Dendrolirium densiflorum* Blume Bijdr. (1825) 350.

*Eria myosurus* Reichb. f. in Bonpl. 5 (1857) 54, non Reichb. f. in Seem. Fl. Vit. (1868) 300.

*Phreatia myosurus* Lindl. in Journ. Linn. Soc. 3 (1859) 61; Miq. Fl. Ind. Bat. 3 (1859) 655; Hook. f. Fl. Brit. Ind. 5 (1890) 810; Ridl.

in Journ. Linn. Soc. 31 (1896) 285, 32 (1896) 307, Mat. Fl. Mal. Penin. 1 (1907) 106; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Eria stachyurus* Reichb. f. in Seem. Fl. Vit. (1868) 301, in obs.

Luzon (Bataan), *Whitford 131, 1156*. Mt. Mariveles, on rocks at about 900 m altitude. In Malay Peninsula, Sumatra, Java, Amboina, and Borneo.

**PHREATIA INFUNDIBULIFORMIS** Ames in Philip. Journ. Sci. 7 (1912) Bot. 20, Orch. 5 (1915) 195.

Mindanao (Dapitan), *F. B. 4611 Mearns & Hutchinson*. Mt. Malindang at 1,900 m altitude.

**PHREATIA LUZONIENSIS** Rolfe ex Ames Orch. 1 (1905) 96, 2 (1908) 202, 5 (1915) 195; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 25; Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1581.

Luzon (Nueva Vizcaya, Bataan, Rizal, Laguna, Tayabas, Sorsogon), Negros (Oriental Negros), Leyte, Mindanao (Zamboanga, Cotabato, Agusan, Davao). A fairly common species of rather wide distribution; epiphyte at 10 to 2,000 m altitude.

**PHREATIA MEARNsii** Ames in Philip. Journ. Sci. 7 (1912) Bot. 21, Orch. 5 (1915) 195.

Luzon (Pampanga), Mindanao (Dapitan, Davao), *F. B. 19313 Curran, 4592 Mearns & Hutchinson, Elmer 10625*. Epiphyte up to 1,900 m altitude in Dapitan.

**PHREATIA NEGROSIANA** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1582, Orch. 5 (1915) 195.

Negros (Oriental Negros), *Elmer 10148*. Cuernos Mountains, epiphyte.

**PHREATIA PROREPENS** Reichb. f. Otia Bot. Hamb. 1 (1878) 54, in textu; Ames in Philip. Journ. Sci. 2 (1907) Bot. 332, 6 (1911) Bot. 53, Orch. 2 (1908) 205, 3 (1908) 52, t. 43, 5 (1915) 195; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 32.

*Eria prorepens* Reichb. f. Otia Bot. Hamb. 1 (1878) 54, Xen. Orch. 3 (1878) 31; Naves Novis. App. (1882) 236.

*Pinalia prorepens* Ktze. Rev. Gen. Pl. 2 (1891) 679.

Luzon (Abra, Kalinga, Bontoc, Ifugao, Benguet, Laguna), Mindoro, Negros, Leyte, Mindanao (Cotabato). A not uncommon species of wide distribution, originally collected on Mt. Mahaitai in Luzon by the Wilkes Expedition in 1838-1842. Epiphyte in mossy forest at 600 to 2,450 m altitude.

**PHREATIA RAMOSII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 22, Orch. 5 (1915) 195.

Luzon (Abra), *B. S. 7140 Ramos*. Epiphyte in forest.

**PHREATIA SECUNDA** (Blume) Lindl. Gen. & Sp. Orch. (1830) 64; Miq. Fl. Ind. Bat. 3 (1859) 656; Naves Novis. App. (1882) 235; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 500, Fig.-Atlas (1912) fig. 378 (excl. syn. *P. microtidis* Lindl.); Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 53; Kränzl. in Engl. Pflanzenreich IV. 50.



**II. B. 23** (1911) 25 (excl. descr. p. p. et syn. *P. microtidis* Lindl.); J. J. Sm. in Winkler in Engl. Bot. Jahrb. 48 (1912) 102; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Dendrolirium secundum* Blume Bijdr. (1825) 350.

*Eria secunda* Reichb. f. in Bonpl. 5 (1857) 54, quoad nom. et syn. sed forsan non quoad spec.

*Phreatia minutiflora* Lindl. in Journ. Linn. Soc. 3 (1859) 62; Miq. Fl. Ind. Bat. 3 (1859) 655; Naves Novis. App. (1882) 235; Hook. f. Fl. Brit. Ind. 5 (1890) 811; Ridl. in Journ. Linn. Soc. 31 (1896) 285, 32 (1896) 307; Kränzl. in Reinecke in Engl. Bot. Jahrb. 25 (1898) 607; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 107; Ames Orch. 2 (1908) 205, 5 (1915) 195, 6 (1920) 208; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 23, fig. 3 C, a-g; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191.

*Eria minutiflora* Reichb. f. in Seem. Fl. Vit. (1868) 301, in obs.

Mindanao (Zamboanga), *Copeland 1658*. San Ramon River, epiphyte at about 200 m altitude. In Malay Peninsula, Sumatra, Java, and Borneo; also stated, by Kränzl., to occur in the Celebes, Pacific Islands, and Samoa.

**PHREATIA SULCATA** (Blume) J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 505, Fig.-Atlas (1912) fig. 383; J. J. Sm. Orch. Amb. (1905) 118; Ames in Philip. Journ. Sci. 2 (1907) Bot. 332, 7 (1912) Bot. 22; Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104 (1911) 55; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 31; Ames Orch. 5 (1915) 195.

*Dendrolirium sulcatum* Blume Bijdr. (1825) 347.

*Eria sulcata* Lindl. Gen. & Sp. Orch. (1830) 69; Miq. Fl. Ind. Bat. 3 (1859) 664.

*Pinalia sulcata* Ktze. Rev. Gen. Pl. 2 (1891) 679.

*Phreatia bracteata* Ames in Philip. Journ. Sci. 4 (1909) Bot. 674, non Schltr.

Luzon (Bontoc, Lepanto, Pampanga, Bataan, Rizal, Tayabas), Mindoro, Leyte, Mindanao (Agusan), Basilan. A fairly common species of wide distribution in the Philippines. Epiphyte in forest at 600 to 2,500 m altitude. In Sumatra and Java.

**PHREATIA VANOVERBERGHII** Ames in Philip. Journ. Sci. 7 (1912) Bot. 22, Orch. 5 (1915) 195.

Luzon (Abra, Kalinga, Bontoc, Ifugao, Benguet), *B. S. 7145 Ramos, Boettcher s. n., Vanoverbergh 1115, 1493, 2571, 19885 McGregor, 31848 Santos*. Epiphyte at 600 to 2,200 m altitude.

**PHREATIA WENZELII** Ames Orch. 5 (1915) 196.

Leyte, *Wenzel 089*. Ormoc, epiphyte in forest at 1,000 m altitude.

**PHREATIA XANTHOLEUCA** Kränzl. in Fedde Repert. 17 (1921) 386.

Philippines, probably Luzon, *Loher s. n.*

This species was described from material which flowered at Nymphenburg, Munich. No material has been seen.

## EXCLUDED OR SYNONYMOUS SPECIES

- PHREATIA BRACTEATA** Ames in Philip. Journ. Sci. 4 (1909) Bot. 674, non Schltr. = *Phreatia sulcata* (Blume) J. J. Sm.
- PHREATIA CAULESCENS** Ames Orch. 2 (1908) 200, *text cut*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 12 = *Octarrhena caulescens* Ames.
- PHREATIA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1581 = *Octarrhena elmeri* Ames.
- PHREATIA ENSIFOLIA** Ames Orch. 2 (1908) 202, *text cut*; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 15 = *Octarrhena ensifolia* (Ames) Schltr.
- PHREATIA LIMENOPHYLAX** Reichb. f. apud Naves Novis. App. (1882) 235.
- PHREATIA MINUTIFLORA** Lindl. in Journ. Linn. Soc. 3 (1859) 62; Naves Novis. App. (1882) 235; Ames Orch. 2 (1908) 205, 5 (1915) 195; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 23 (1911) 23, *fig. 3 C, a-g*; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 191 = *Phreatia secunda* (Blume) Lindl.
- PHREATIA MYOSURUS** Ames Orch. 2 (1908) 203 (excl. syn.), non Lindl. = *Phreatia amesii* Kränzl.
- PHREATIA PARVULA** Ames Orch. 2 (1908) 204, non Benth. ex Hook. f. = *Octarrhena amesiana* Schltr.
- PHREATIA PUSILLA** Lindl. apud Naves Novis. App. (1882) 235.

## 70. ACRIOPSIS Reinwardt

**ACRIOPSIS FLORIBUNDA** Ames Orch. 6 (1920) 306.

Bucas Grande Island, *B. S. 35112 Ramos & Pascasio*.

**ACRIOPSIS INDICA** Wight Icon. 5<sup>1</sup> (1852) 20, *t. 1748, fig. 1*; Reichb. f. in Walp. Ann. 6 (1863) 492; Hook. f. Fl. Brit. Ind. 6 (1890) 79; Grant Orch. Burma (1895) 313; Schltr. in Oesterr. Bot. Zeitschr. 50 (1900) 287; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 539, Fig.-Atlas (1912) *fig. 411*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 188; Ames Orch. 6 (1920) 307.

Luzon (Kalinga), *Boettcher s. n.* At 1,000 m altitude. In Burma, Malay Peninsula, and Java.

**ACRIOPSIS JAVANICA** Reinw. ex Blume Cat. Gew. Buitenz. (1823) 97; Blume Bijdr. (1825) 377, *fig. 71*; Lindl. Gen. & Sp. Orch. (1832) 140; De Vriese Ill. Orch. Ind. Neerl. (1854) *t. 3*; Miq. Fl. Ind. Bat. 3 (1859) 709; Reichb. f. in Walp. Ann. 6 (1863) 492; Hook. f. Fl. Brit. Ind. 6 (1890) 79; Grant Orch. Burma (1895) 313; Ridl. in Journ. Linn. Soc. 32 (1896) 384; Schltr. in Oesterr. Bot. Zeitschr. 50 (1900) 286; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 537, Fig.-Atlas (1912) *fig. 410*; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 187; J. J. Sm. in Nova Guinea 8 (1909) Bot. 119, 8<sup>3</sup> (1912) Bot. 604; Schltr. in Fedde Repert. 10 (1911) 190; Ames Orch. 5 (1915) 197; J. J. Sm. in Philip. Journ. Sci. 12 (1917) Bot. 238.

? *Spathoglottis trivalvis* Wall. Cat. (1831) No. 3742, *nomen*; Lindl. Gen. & Sp. Orch. (1831) 120.

*Acriopsis picta* Lindl. in Bot. Reg. 29 (1843) Misc. 69.

*Acriopsis crispa* Griff. Notul. 3 (1851) 333 and Icon. Pl. Asiat. 3 (1851) t. 318.

*Acriopsis griffithii* Reichb. f. in Bonpl. 2 (1854) 92.

*Acriopsis philippinensis* Ames Orch. 2 (1908) 215, *text cut*.

Luzon (Sorsogon), Leyte, Mindanao (Misamis, Lanao, Davao), *Elmer 16957, Wenzel 0818, 0845, Weber 270, 276, M. S. Clemens s. n., R. F. Black 15, R. S. Williams 2778*. At 400 to 580 m altitude. In Burma, Malay Peninsula, Sumatra, Java, Borneo, Celebes, and New Guinea.

#### EXCLUDED OR SYNONYMOUS SPECIES

ACRIOPSIS PHILIPPINENSIS Ames Orch. 2 (1908) 215, *text cut* = *Acriopsis javanica* Reinw. ex Blume.

#### 71. THECOSTELE Reichenbach f.

THECOSTELE ALATA (Roxb.) Par. & Reichb. f. in Trans. Linn. Soc. 30 (1874) 135, 144, t. 29; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 541, Fig.-Atlas (1912) fig. 412; Rolfe in Orch. Rev. 20 (1912) 237; Ames Orch. 5 (1915) 197, 6 (1920) 215, in Merr in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 193.

*Cymbidium alatum* Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 459.

*Thecostele zollingeri* Reichb. f. in Bonpl. 5 (1857) 37, Xen. Orch. 2 (1868) 133, t. 147; Hook. f. Fl. Brit. Ind. 6 (1890) 19; Grant Orch. Burma (1895) 232; Ridl. in Journ. Linn. Soc. 31 (1896) 299, 32 (1896) 385, Mat. Fl. Mal. Penin. 1 (1907) 190.

*Pholidota elmeri* Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1557.

*Thecostele elmeri* Ames in Philip. Journ. Sci. 8 (1913) Bot. 434.

Leyte, Palawan, *Wenzel 036, 0149, 0215, Elmer 12971*. Epiphyte in forest at 60 to 80 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

THECOSTELE ELMERI Ames in Philip. Journ. Sci. 8 (1913) Bot. 434 = *Thecostele alata* (Roxb.) Par. & Reichb. f.

#### 72. GRAMMATOPHYLLUM Blume

GRAMMATOPHYLLUM SCRIPTUM (Linn.) Blume Rumphia 4 (1848) 48, Mus. Bot. Lugd.-Bat. 1 (1849) 47; Lindl. in Paxt. Flow. Gard. 2 (1852) 159; Reichb. f. in Walp. Ann. 3 (1852) 550, 6 (1863) 629; Miq. Fl. Ind. Bat. 3 (1859) 708; Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 27 (1864) 21; Naves Novis. App. (1882) 245; J. J. Sm. Orch. Amb. (1905) 84, in Nova Guinea 8 (1909) Bot. 103, 12<sup>4</sup> (1916) Bot. 428; Schltr. Orchideen (1914) 356, in Orchis 9 (1915) 105, fig. 15; J. J. Sm. in Philip. Journ. Sci. 12 (1917) Bot. 258, in Merr. Interp. Rumph. Herb. Amb. (1917) 177.

*Epidendrum scriptum* Linn. Sp. Pl. ed. 2 (1763) 1351; Lam. Encycl. 1 (1783) 185.

- Cymbidium scriptum* Sw. in Schrad. Journ. Bot. 2 (1799) 218, in Kongl. Svensk. Vet.-Akad. Nya Handl. 21 (1800) 237; Willd. Sp. Pl. 4 (1805) 100; Pers. Syn. Pl. 2 (1807) 515.
- Vanda scripta* Spreng. Syst. Veg. 3 (1826) 719.
- Gabertia scripta* Gaudich. in Freyc. Voy. Uranie et Physic. (1829) Bot. 425.
- Grammatophyllum speciosum* Lindl. Gen. & Sp. Orch. (1833) 173, p. p. et quoad syn.; Veitch Man. Orch. Pl. pt. 9 (1893) 33, p. p. non Blume.
- Ophrys cernua* Blanco Fl. Filip. (1837) 639 (as *Ophiris*), ed. 2 (1845) 445, ed. 3, 3 (1879) 35, t. 276, non Linn.
- Grammatophyllum multiflorum* Lindl. in Bot. Reg. 24 (1838) Misc. 46, 25 (1839) t. 65, in Paxt. Mag. 6 (1839) 217, t. & text cut; Edit. in Allg. Berl. Gartenz. 8 (1840) 32; Lindl. in Paxt. Flow. Gard. 2 (1852) 160; Guidon in Journ. Soc. Imp. et Centr. Hort. Par. 4 (1858) 539; Reichb. f. Xen. Orch. 2 (1862) 16, in Walp. Ann. 6 (1863) 629; Naves Novis. App. (1882) 245; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Veitch Man. Orch. Pl. pt. 9 (1893) 32; Ames Orch. 2 (1908) 217, 5 (1915) 198; Schltr. Orchideen (1914) 356, in Orchis 9 (1915) 104; Merr. Sp. Blancoanae (1918) 14.
- Grammatophyllum multiflorum* Lindl. var. *tigrinum* Lindl. in Bot. Reg. 28 (1842) t. 69, in Paxt. Flow. Gard. 2 (1852) 160; Guidon in Journ. Soc. Imp. et Centr. Hort. Par. 4 (1858) 539; Veitch Man. Orch. Pl. pt. 9 (1893) 32; Schltr. in Orchis 9 (1915) 105.
- Grammatophyllum fenizianum* Reichb. f. Xen. Orch. 2 (1862) 16; Naves Novis. App. (1882) 245; Veitch Man. Orch. Pl. pt. 9 (1893) 31; Ames Orch. 5 (1915) 197, in nota.
- Grammatophyllum rumphianum* Miq. Ann. Mus. Bot. Lugd.-Bat. 4 (1869) 219, tt. 8, 9; Rolfe in Orch. Rev. 3 (1895) 208; Hook. f. in Bot. Mag. 122 (1896) t. 7507; Cogn. in Dict. Icon. Orch. (1899) Grammat. t. 1; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 192.
- Grammatophyllum boweri* F. v. Muell. in Wing South. Sci. Rec. (1883).
- Grammatophyllum leopardinum* Reichb. f. in Flora 71 (1888) 151; Rolfe in Orch. Rev. 23 (1915) 7.
- Grammatophyllum measuresianum* Weathers in Gard. & For. 2 (1889) 524; Edit. in Journ. Hort. III 23 (1891) 342, fig. 69; Stein Orchideenb. (1892) 267; Ames Orch. 2 (1908) 216, 5 (1915) 197; Schltr. in Orchis 9 (1915) 108.
- Grammatophyllum seegerianum* Hort. ex Gard. Chron. III 10 (1891) 49, nomen; Stein Orchideenb. (1892) 267; Rolfe in Orch. Rev. 3 (1895) 208, in textu.
- Grammatophyllum fenizianum* Reichb. f. var. *measuresianum* Veitch Man. Orch. Pl. pt. 9 (1893) 32, text cut.
- Grammatophyllum guilelmi-secundi* Kränzl. in Gartenfl. 43 (1894) 114; K. Schum. in Notizbl. Bot. Gart. Berl. 1 (Fl. New-Pomm.) (1898) 105; This.-Dyer in Kew Bull. Add. Ser. 4 (1900) 194;

Kränzl. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. (1901) 250.

*Grammatophyllum scriptum* (Linn.) Blume var. *boweri* Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1913) 951.

Luzon (Cavite, Tayabas, Camarines, Sorsogon), Catanduanes, Mindoro, Leyte, Biliran, Palawan, Lumbucan. A very variable, common, and widely distributed species in the Philippines. Epiphyte, at sea level to 500 m altitude. In Amboina, Ternate, Celebes (fide J. J. Sm.), Borneo, and New Guinea.

**GRAMMATOPHYLLUM SPECIOSUM** Blume Bijdr. (1825) 378, fig. 20; Lindl. Gen. & Sp. Orch. (1833) 173, ex parte; Blume Rumphia 4 (1848) 47, t. 191, Mus. Bot. Lugd.-Bat. 1 (1849) 47; Lindl. in Paxt. Flow. Gard. 2 (1852) 157, 160, t. 69; Reichb. f. in Walp. Ann. 3 (1852) 550, 6 (1863) 628; Guidon in Journ. Soc. Imp. et Centr. Hort. Par. 4 (1858) 539 (excl. syn.); Miq. Fl. Ind. Bat. 3 (1859) 708; Hook. in Bot. Mag. 86 (1860) t. 5157; Van Houtte in Fl. des Serres 13 (1861) 177, t. 1386-7; Reichb. f. Xen. Orch. 2 (1862) 16; Batem. Second Cent. Orch. Pl. (1867) t. 181; Edit. in Gard. Chron. II 10 (1878) 181, 183, fig. 36; Naves Novis. App. (1882) 245; Hook. f. Fl. Brit. Ind. 6 (1890) 18 (excl. syn. scripta et scriptum); Burb. in Gard. Chron. III 7 (1890) 287, 297, fig. 46; Stein Orchideenb. (1892) 267, figs. 86, 87; Ceron Cat. Pl. Herb. Manila (1892) 167; Veitch Man. Orch. Pl. pt. 9 (1893) 33 (excl. syn. scripta et scriptum); Grant Orch. Burma (1895) 263 (excl. syn. scripta et scriptum); Ridl. in Journ. Linn. Soc. 31 (1896) 290, 32 (1896) 335; Rolfe in Orch. Rev. 5 (1897) 268, 23 (1915) 6; Rendle in Journ. Bot. 39 (1901) 175; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 485; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 142 (excl. syn. scripta et scriptum); Edit. in Gard. Chron. III 42 (1907) 168, figs. 69, 70; Schltr. Orchideen (1914) 356, in Orchis 9 (1915) 101; Ames Orch. 5 (1915) 198; W. W. in Gard. Chron. III 64 (1918) 55, in textu; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 192; G. Wilson in Orch. Rev. 29 (1921) 83, 98.

*Grammatophyllum fastuosum* Lindl. in Paxt. Flow. Gard. 2 (1852) 159.

*Pattonia macrantha* Wight Icon. 5<sup>1</sup> (1852) 21, t. 1750.

*Grammatophyllum macranthum* Reichb. f. Xen. Orch. 2 (1862) 16, in Walp. Ann. 6 (1863) 628.

*Grammatophyllum wallisii* Reichb. f. in Linnaea 41 (1876) 107; Rolfe in Orch. Rev. 23 (1915) 7; Ames Orch. 5 (1915) 198.

*Grammatophyllum giganteum* Blume apud Reichb. f. in Linnaea 41 (1876) 107, in textu.

*Grammatophyllum sandermanum* Hort. ex Edit. in Gard. Chron. III 14 (1893) 15, sphalm.

Mindanao (Surigao), *Wallis s. n.*, *de Veyra s. n.* In Burma, Malay Peninsula, Cochin China (fide J. J. Sm.), Sumatra (fide J. J. Sm.), Java, and Borneo.

## EXCLUDED OR SYNONYMOUS SPECIES

- GRAMMATOPHYLLUM FENZLIANUM** Reichb. f. Xen. Orch. 2 (1862) 16; Naves Novis. App. (1882) 245; Veitch Man. Orch. Pl. pt. 9 (1893) 31; Ames Orch. 5 (1915) 197, in nota = *Grammatophyllum scriptum* (Linn.) Blume.
- GRAMMATOPHYLLUM MEASURESIANUM** Weathers in Gard. & For. 2 (1889) 524; Edit. in Journ. Hort. III 23 (1891) 342, fig. 69; Stein Orchideenb. (1892) 267; Ames Orch. 2 (1908) 216, 5 (1915) 197; Schltr. in Orchis 9 (1915) 108 = *Grammatophyllum scriptum* (Linn.) Blume.
- GRAMMATOPHYLLUM MULTIFLORUM** Lindl. in Bot. Reg. 24 (1838) Misc. 46, 25 (1839) t. 65; Lindl. in Paxt. Mag. Bot. 6 (1839) 217, t. & text cut; Edit. in Allg. Berl. Gartenz. 8 (1840) 32; Lindl. in Paxt. Flow. Gard. 2 (1852) 160; Guidon in Journ. Soc. Imp. et Centr. Hort. Par. 4 (1858) 539; Reichb. f. Xen. Orch. 2 (1862) 16, in Walp. Ann. 6 (1863) 629; Naves Novis. App. (1882) 245; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Veitch Man. Orch. Pl. pt. 9 (1893) 32; Ames Orch. 2 (1908) 217, 5 (1915) 198; Schltr. Orchideen (1914) 356; Schltr. in Orchis 9 (1915) 104; Merr. Sp. Blancoanae (1918) 14 = *Grammatophyllum scriptum* (Linn.) Blume.
- GRAMMATOPHYLLUM WALLISII** Reichb. f. in Linnaea 41 (1876) 107; Rolfe in Orch. Rev. 23 (1915) 7; Ames Orch. 5 (1915) 198 = *Grammatophyllum speciosum* Blume.

## 73. DIPODIUM R. Brown

- DIPODIUM PALUDOSUM** (Griff.) Reichb. f. Xen. Orch. 2 (1862) 15, in Walp. Ann. 6 (1863) 648, in Gard. Chron. III 4 (1888) 91; Hook. f. Fl. Brit. Ind. 6 (1890) 19; Warner & Will. Orch. Alb. 9 (1891) t. 422; Hook. f. in Bot. Mag. 122 (1896) t. 7464; Ridl. in Journ. Linn. Soc. 31 (1896) 290, 32 (1896) 339; This.-Dyer in Kew Bull. Add. Ser. 4 (1900) 161; Rendle in Journ. Bot. 39 (1901) 175; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 142; Ames in Philip. Journ. Sci. 6 (1911) Bot. 55, Orch. 5 (1915) 199, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 192.
- Grammatophyllum paludosum* Griff. Notul. 3 (1851) 344.
- Grammatophyllum affine* Griff. Icon. Pl. Asiat. 3 (1851) t. 323.
- Wailesia paludosa* Reichb. f. in Bonpl. 2 (1854) 93.

Sibuyan, Leyte, Mindanao (Surigao), *Elmer 12435*, *Wenzel 0198, 0400, 0418*, *Bolster s. n.*, *B. S. 34800 Ramos & Pascasio*. Epiphyte in forest at 60 to 600 m altitude. In Malay Peninsula and Borneo; also reported from Cochin China.

## EXCLUDED OR SYNONYMOUS SPECIES

- DIPODIUM PICTUM** Reichb. f. apud Naves Novis. App. (1882) 242.
- DIPODIUM PUNCTATUM** R. Br. apud Naves Novis. App. (1882) 242.
- DIPODIUM SQUAMATUM** R. Br. apud Naves Novis. App. (1882) 242.

## 74. CYMBIDIUM Swartz

**CYMBIDIUM ATROPURPUREUM** (Lindl.) Rolfe in Orch. Rev. 11 (1903) 190; Ames Orch. 2 (1908) 218, 5 (1915) 199.

*Cymbidium pendulum* Sw. var. *atropurpureum* Lindl. in Gard. Chron. (1854) 287; Hook. f. in Bot. Mag. 94 (1868) t. 5710.

? *Cymbidium pendulum* Vidal Phan. Cuming. Philip. (1885) 150, p. p., Rev. Pl. Vasc. Filip. (1886) 269, p. p. non Sw.

*Cymbidium finlaysonianum* Lindl. var. *atropurpureum* Veitch Man. Orch. Pl. pt. 9 (1893) 16.

*Cymbidium pendulum* Sw. var. *purpureum* W. Wats. Orchids, ed. 2 (1895) 151, sphalm.

Luzon (Rizal), Leyte, Mindanao (Davao), *Lyon 101, Copeland 648, Black 16, Wenzel 0103.*

**CYMBIDIUM FINLAYSONIANUM** Lindl. in Wall. Cat. (1832) No. 7358, *nomen*, Gen. & Sp. Orch. (1833) 164; Hook. f. Fl. Brit. Ind. 6 (1890) 11; Veitch Man. Orch. Pl. pt. 9 (1893) 16; Rendle in Journ. Bot. 39 (1901) 175; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 481, Fig.-Atlas (1911) fig. 366; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 139; Ames Orch. 2 (1908) 218, 5 (1915) 199; Schltr. in Fedde Repert. 10 (1911) 190; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 192.

*Cymbidium pendulum* Blume Bijdr. (1825) 379; Miq. Fl. Ind. Bat. 3 (1859) 707; Lindl. in Bot. Reg. 26 (1840) t. 25 (excl. syn.); Reichb. f. in Walp. Ann. 6 (1863) 624, quoad spec.; Naves Novis. App. (1882) 245; Vidal Phan. Cuming. Philip. (1885) 150, p. p., Rev. Pl. Vasc. Filip. (1886) 269, p. p.; Warner & Will. Orch. Alb. 10 (1893) t. 437 (excl. syn. in part) non Sw.

*Cymbidium aloifolium* Lindl. in Wall. Cat. (1832) No. 7352, A & B; Naves Novis. App. (1882) 245; Ridl. in Trans. Linn. Soc. II 3 (1893) 368, in Journ. Linn. Soc. 32 (1896) 333; Ames Orch. 1 (1905) 101; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 39, non Sw.

*Cymbidium wallichii* Lindl. Gen. & Sp. Orch. (1833) 165; Miq. Fl. Ind. Bat. 3 (1859) 707; Naves Novis. App. (1882) 245.

*Cymbidium pendulum* Sw. var. *brevilabre* Lindl. in Bot. Reg. 28 (1842) Misc. 60, 30 (1844) t. 24; Paxt. Mag. Bot. 11 (1844) 115; Reichb. f. in Walp. Ann. 6 (1863) 624.

*Cymbidium tricolor* Miq. Choix des Pl. (1864) t. 19.

Luzon (Benguet, Bataan, Rizal, Tayabas), Polillo, Bohol, Palawan, Mindanao (Zamboanga, Surigao), Dinagat. Epiphyte at sea level to 250 m altitude. In Burma (fide Hook. f.), Malay Peninsula, Java, Celebes, and Borneo; also reported from Sumatra and Cochin China.

## EXCLUDED OR SYNONYMOUS SPECIES

**CYMBIDIUM ALOIFOLIUM** Lindl. in Wall. Cat. (1832) No. 7352, A. & B; Naves Novis. App. (1882) 245; Ames Orch. 1 (1905) 101; Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 39, non Sw. = *Cymbidium finlaysonianum* Lindl.

- CYMBIDIUM FINLAYSONIANUM Lindl. var. ATROPURPUREUM Veitch Man. Orch. Pl. pt. 9 (1893) 16 = *Cymbidium atropurpureum* (Lindl.) Rolfe.
- CYMBIDIUM FLAVESCENS Llanos Fragm. Pl. Filip. (1851) 96; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 74; Merr. Sp. Blancoanae (1918) 113 = ? *Oberonia iridifolia* (Roxb.) Lindl.
- CYMBIDIUM HUTTONII Boxall ex Naves Novis. App. (1882) 245, *nomen*.
- CYMBIDIUM IMBRICATUM Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 460 = *Pholidota imbricata* Lindl.
- CYMBIDIUM IRIDIFOLIUM Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 458 = *Oberonia iridifolia* (Roxb.) Lindl.
- CYMBIDIUM PENDULUM Blume Bijdr. (1825) 379; Naves Novis. App. (1882) 245; Vidal Phan. Cuming. Philip. (1885) 150, p. p., Rev. Pl. Vasc. Filip. (1886) 269, p. p., non Sw. = *Cymbidium finlaysonianum* Lindl.
- CYMBIDIUM PENDULUM Vidal Phan. Cuming. Philip. (1885) 150, p. p., Rev. Pl. Vasc. Filip. (1886) 269, p. p., non Sw. = ? *Cymbidium atropurpureum* (Lindl.) Rolfe.
- CYMBIDIUM PENDULUM Sw. var. ATROPURPUREUM Lindl. in Gard. Chron. (1854) 287; Hook. f. in Bot. Mag. 94 (1868) t. 5710 = *Cymbidium atropurpureum* (Lindl.) Rolfe.
- CYMBIDIUM PENDULUM Sw. var. PURPUREUM W. Wats. Orchids, ed. 2 (1895) 151, sphalm = *Cymbidium atropurpureum* (Lindl.) Rolfe.
- CYMBIDIUM WALLICHII Lindl. Gen. & Sp. Orch. (1833) 165; Naves Novis. App. (1882) 245 = *Cymbidium finlaysonianum* Lindl.

## 75. CHAMAEANTHUS Schlechter

## CHAMAEANTHUS WENZELII Ames Orch. 5 (1915) 200.

Luzon (Sorsogon), Leyte, Mindanao (Davao), *Elmer 15767, 16877, Wenzel 0110 A, 0190, Weber 260*. Epiphyte at sea level to 60 m altitude.

## 76. THRIXSPERMUM Loureiro

THRIXSPERMUM ACUMINATISSIMUM (Blume) Reichb. f. Xen. Orch. 2 (1867) 121, in Flora 51 (1868) 53; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 569, Fig.-Atlas (1912) fig. 427; Schltr. in Orchis 5 (1911) 54; Ames Orch. 5 (1915) 201.

*Dendrocolla acuminatissima* Blume Bijdr. (1825) 288.

*Aërides acuminatissimum* Lindl. Gen. & Sp. Orch. (1833) 240; Miq. Fl. Ind. Bat. 3 (1859) 696.

*Sarcochilus acuminatissimus* Reichb. f. in Walp. Ann. 6 (1863) 498.

*Sarcochilus notabilis* Hook. f. Fl. Brit. Ind. 6 (1890) 42, in Hook. Icon. Pl. 22 (1893) t. 2126.

*Thrixspermum notabile* Ridl. in Journ. Linn. Soc. 32 (1896) 379, Mat. Fl. Mal. Penin. 1 (1907) 183.

Luzon (Laguna), Leyte, *Reillo 56, B. S. 16560, 20447, 20455 Ramos, Wenzel 060, 0101, 0163*. Epiphyte at 60 m altitude in Leyte. In Malay Peninsula and Java.



**THRIXSPERMUM AGUSANENSE** Ames Orch. 5 (1915) 201.

Mindanao (Agusan), *Weber 147*. Veruela, Agusan River, epiphyte at 15 m altitude.

**THRIXSPERMUM AMPLEXICAULE** (Blume) Reichb. f. *Xen. Orch.* 2 (1867) 121, in *Flora* 51 (1868) 53; J. J. Sm. *Fl. Buitenz.* 6 (Orch. Jav.) (1905) 573, *Fig.-Atlas* (1912) *fig. 430*, *Orch. Amb.* (1905) 96; *Schltr. in Orchis* 5 (1911) 54; Ames in *Philip. Journ. Sci.* 8 (1913) Bot. 438, *Orch.* 5 (1915) 202; J. J. Sm. in *Philip. Journ. Sci.* 12 (1917) Bot. 259; Ames in *Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No.* (1921) 194.

*Dendrocolla amplexicaulis* Blume *Bijdr.* (1825) 288.

*Aërides amplexicaule* Lindl. *Gen. & Sp. Orch.* (1833) 239; *Miq. Fl. Ind. Bat.* 3 (1859) 696.

*Sarcochilus lilacinus* Griff. *Notul.* 3 (1851) 334, *Icon. Pl. Asiat.* 3 (1851) *t. 320, fig. II*; Reichb. f. in *Walp. Ann.* 6 (1863) 499; Hook. f. *Fl. Brit. Ind.* 6 (1890) 40; *Ridl. in Trans. Linn. Soc. II* 3 (1893) 371; Hook. f. in *Bot. Mag.* 127 (1901) *t. 7754*.

*Orsidice amplexicaulis* Reichb. f. in *Bonpl.* 2 (1954) 93.

*Orsidice lilacina* Reichb. f. in *Bonpl.* 2 (1854) 93.

*Sarcochilus amplexicaulis* Reichb. f. in *Walp. Ann.* 6 (1863) 499; Rolfe in *Journ. Bot.* 23 (1885) 215; *Vidal Phan. Cuming. Philip.* (1885) 150, *Rev. Pl. Vasc. Filip.* (1886) 271.

*Thrixspermum lilacinum* Reichb. f. *Xen. Orch.* 2 (1867) 121, in *Flora* 51 (1868) 53; *Ridl. in Journ. Linn. Soc.* 31 (1896) 298, 32 (1896) 377, *Mat. Fl. Mal. Penin.* 1 (1907) 181.

Luzon (Nueva Vizcaya), Mindanao (Lanao), *Cuming 2056, B. S. 11143* *McGregor, M. S. Clemens 949*. In bogs, twining on grasses.. In Malay Peninsula, Sumatra, Java, Amboina, Celebes, and Banda Islands.

**THRIXSPERMUM BICRISTATUM** Ames Orch. 5 (1915) 202.

Leyte, Mindanao (Agusan), *Wenzel 030, Weber 145*. Epiphyte at 15 to 40 m altitude.

**THRIXSPERMUM ELONGATUM** Ames Orch. 5 (1915) 203.

Luzon (Bataan, Rizal, Laguna, Sorsogon), Polillo, Siquijor, Leyte, Palawan, Mindanao (Butuan, Agusan, Surigao, Davao). A fairly common and fairly widely distributed species. Epiphyte at sea level to 525 m altitude.

**THRIXSPERMUM LINEARIFOLIUM** Ames Orch. 5 (1915) 205.

Mindanao (Dapitan, Bukidnon), *F. B. 4734 Mearns & Hutchinson, B. S. 38499 Ramos & Edaño*. Mt. Malindang and Mt. Lipa. Epiphyte in mossy forest at 1,900 to 2,200 m altitude.

**THRIXSPERMUM QUINQUELOBUM** Ames Orch. 5 (1915) 206.

Luzon (Laguna), *B. S. 10016, 16561, 16562, 20444 Ramos, Reillo 19, Serrato s. n.* Epiphyte in forest.

**THRIXSPERMUM ROBINSONII** Ames Orch. 5 (1915) 207.

Luzon (Bataan, Laguna, Tayabas, Sorsogon), Negros (Occidental Negros), Leyte, Mindanao (Agusan), *Whitford 137, 1508, B. S. 9447, 17096 Robinson, 17313 Robinson & Brown, 16282 Brown, Elmer 13833, 17134, Wenzel 0408*. Epiphyte at 600 to 2,150 m altitude.

**THRIXSPERMUM ROSTRATUM** Ames Orch. 5 (1915) 208.

Panay, *Lyon 159*. Patolan, plant climbing.

**THRIXSPERMUM SUBULATUM** (Blume) Reichb. f. Xen. Orch. 2 (1867) 122, in *Flora* 51 (1868) 53; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 578, Fig.-Atlas (1912) *fig. 434*, Orch. Amb. (1905) 97; Schltr. in *Orchis* 5 (1911) 57; J. J. Sm. in Bull. Jard. Buitenz. II 9 (1913) 102; Ames Orch. 7 (1922) 134.

*Dendrocolla subulata* Blume Bijdr. (1825) 291.

*Aërides subulatum* Lindl. Gen. & Sp. Orch. (1833) 241; Miq. Fl. Ind. Bat. 3 (1859) 698.

*Sarcochilus subulatus* Reichb. f. in Walp. Ann. 6 (1863) 500; Naves Novis. App. (1882) 238.

*Thrixspermum falcilobum* Schltr. in Bull. Herb. Boiss. II 6 (1906) 469; Schltr. in *Orchis* 5 (1911) 57 (fide J. J. Sm. in Bull. Jard. Buitenz. l. c.).

Luzon (Bontoc), *B. S. 37905 Ramos & Edaño*. Mt. Masapilid, epiphyte at 1,000 m altitude. In Sumatra, Java, and Amboina.

**THRIXSPERMUM VANOVERBERGHII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 438, Orch. 5 (1915) 209.

Luzon (Bontoc), *Vanoverbergh 632, 1091, 1531, 1792*. Epiphyte at about 1,400 m altitude.

**THRIXSPERMUM WEBERI** Ames Orch. 7 (1922) 134.

Mindanao (Agusan), *Weber 187, 187X, 187X'*. Cabadbaran, epiphyte in swamp at sea level.

**THRIXSPERMUM WENZELII** Ames Orch. 5 (1915) 209.

Luzon (Laguna, Sorsogon), Leyte, Palawan, Mindanao (Agusan), Basilan. A not uncommon species of fairly wide distribution. Epiphyte at sea level to 60 m altitude.

#### EXCLUDED OR SYNONYMOUS SPECIES

**THRIXSPERMUM MCGREGORII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 337 = *Sarcochilus mcgregorii* Ames.

**THRIXSPERMUM MINDANAENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 436 = *Sarcochilus mindanaensis* Ames.

**THRIXSPERMUM PALLIDUM** Reichb. f. Xen. Orch. 2 (1867) 122; Ames Orch. 2 (1908) 253 = *Sarcochilus pallidus* (Blume) Reichb. f.

**THRIXSPERMUM PHILIPPINENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 437 = *Sarcochilus philippinensis* Ames.

**THRIXSPERMUM UNGUICULATUM** Reichb. f. Xen. Orch. 2 (1867) 122, in *Flora* 51 (1868) 53; Warner & Will. Orch. Alb. 6 (1887) t. 266 = *Sarcochilus pallidus* (Blume) Reichb. f.

#### 77. SARCOCHILUS R. Brown

**SARCOCHILUS APPENDICULATUS** (Blume) J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 564, Fig.-Atlas (1912) *fig. 425*.

*Dendrocolla appendiculata* Blume Bijdr. (1825) 289.

*Aërides pusillum* Lindl. Gen. & Sp. Orch. (1833) 241; Miq. Fl. Ind. Bat. 3 (1859) 697.

*Sarcochilus pusillus* Reichb. f. in Walp. Ann. 6 (1863) 500.

*Grosourdyia appendiculata* Reichb. f. Xen. Orch. 2 (1867) 123; Naves Novis. App. (1882) 239.

*Thrixspernum appendiculatum* Ktze. Rev. Gen. Pl. 2 (1891) 682.

Palawan, *Weber 605*. Alfonso XIII, epiphyte at sea level. In Java.

J. J. Smith, Fl. Buitenz. l. c., states that *Sarcochilus hirtulus* Hook. f. Fl. Brit. Ind. 6 (1890) 39, Hook. f. in Hook. Icon. Pl. 22 (1892) t. 2121: *Aşcochilus hirtulus* Ridl. in Journ. Linn. Soc. 31 (1896) 375, Ridl. Mat. Fl. Mal. Penin. 1 (1907) 178 is perhaps conspecific.

**SARCOCHILUS LEYTENSIS** Ames Orch. 5 (1915) 211.

Leyte, ? Basilan, *Wenzel s. n., 0109*, ? *B. S. 16242 Reillo*. Epiphyte at 60 m altitude.

**SARCOCHILUS LONGICALCARUS** Ames & Rolfe in Ames Orch. 5 (1915) 212.

Luzon (Bontoc, Bulacan, Tayabas, Sorsogon, Camarines), Mindoro, Leyte, Mindanao (Butuan, Davao). A not uncommon species of wide distribution. Epiphyte at sea level to 500 m altitude.

**SARCOCHILUS MCGREGORII** Ames Orch. 5 (1915) 213.

*Thrixspernum mcgregorii* Ames in Philip. Journ. Sci. 2 (1907) Bot. 337.

Mindoro, *McGregor 288*. Balete, Baco River, epiphyte.

**SARCOCHILUS MERRILLII** Ames Orch. 5 (1915) 213.

Mindanao (Surigao), *Merrill 5432*. Baganga, epiphyte at near sea level.

**SARCOCHILUS MINDANAENSIS** Ames Orch. 5 (1915) 214.

*Thrixspernum mindanaense* Ames in Philip. Journ. Sci. 8 (1913) Bot. 436.

Luzon (Sorsogon), Sibuyan, Leyte, Mindanao (Agusan, Davao), *Elmer 12530, 15361* in part, *Wenzel 0110B, 0280, 0366, 0390, Weber 99, 139, 255*. Epiphyte at sea level to 640 m altitude.

**SARCOCHILUS PALAWANENSIS** Ames Orch. 5 (1915) 214.

Palawan, Mindanao (Davao), *Weber 614, Elmer 10515*. Epiphyte at sea level in Palawan.

**SARCOCHILUS PALLIDUS** (Blume) Reichb. f. in Walp. Ann. 6 (1863) 500; Naves Novis. App. (1882) 238; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 559, Fig.-Atlas (1912) fig. 422, Orch. Amb. (1905) 92, in Winkler in Engl. Bot. Jahrb. 48 (1912) 104; Ames Orch. 5 (1915) 215, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 196.

*Dendrocolla pallida* Blume Bijdr. (1825) 290.

*Aërides pallidum* Lindl. Gen. & Sp. Orch. (1833) 241, in Paxt. Flow. Gard. 2 (1839) 143; Miq. Fl. Ind. Bat. 3 (1859) 697, nec Blume nec Roxb.

- Sarcochilus unguiculatus* Lindl. in Bot. Reg. 26 (1840) Misc. 67, 32 (1846) sub t. 19; Edit. in Allg. Berl. Gartenz. 14 (1846) 167; Reichb. f. in Walp. Ann. 6 (1863) 501, in Gard. Chron. II 15 (1881) 562; Naves Novis. App. (1882) 238; Rolfe in Orch. Rev. 2 (1894) 231, 14 (1906) 273, fig. 37; Ridl. in Journ. Linn. Soc. 31 (1896) 298, Mat. Fl. Mal. Penin. 1 (1907) 175; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 196.
- Aërides diurnum* Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 27 (1864) 19.
- Thrixspermum pallidum* Reichb. f. Xen. Orch. 2 (1867) 122, in Flora 51 (1868) 53; Ames Orch. 2 (1908) 253.
- Thrixspermum unguiculatum* Reichb. f. Xen. Orch. 2 (1867) 122, in Flora 51 (1868) 53; Warner & Will. Orch. Alb. 6 (1887) t. 266.
- Phalaenopsis ruckeri* Hort. ex Reichb. f. in Gard. Chron. II 15 (1881) 562, in textu.
- Phalaenopsis ruckeriana* Hort. ex Warner & Will. Orch. Alb. 6 (1887) t. 266, in syn.
- Sarcochilus aureus* Hook. f. Fl. Brit. Ind. 6 (1890) 35, in Ann. Roy. Bot. Gard. Calc. 5 (Cent. Ind. Orch.) (1895) 42, t. 64; Ridl. in Journ. Linn. Soc. 32 (1896) 373.
- Thrixspermum aureum* Ktze. Rev. Gen. Pl. 2 (1891) 682.
- ? *Phalaenopsis fugax* Kränzl. in Gard. Chron. III 14 (1893) 360; Rolfe in Orch. Rev. 13 (1905) 230; cf. infra.
- Sarcochilus unguiculatus* Lindl. var. *aureus* Ridl. Mat. Fl. Mal. Penin. 1 (1907) 175.

Luzon (Cagayan, Benguet, Nueva Vizcaya, Rizal, ? Laguna, Tayabas, Sorsogon), Polillo, Mindoro, Leyte, Mindanao (Zamboanga, Agusan, Butuan, Davao), Basilan. A common and widely distributed species in the Philippines. Epiphyte apparently at low altitudes. In Malay Peninsula, Sumatra, Java, Amboina, Celebes, and Borneo.

J. J. Smith, Fl. Buitenz. 6 and Orch. Amb. II. cc., reduces *Phalaenopsis fugax* Kränzl. to this species, whereas Ridley, Mat. Fl. Mal. Penin. 1 l. c., makes it a synonym of *Sarcochilus caligaris* Ridl. J. J. Smith also considers *Sarcochilus cladostachys* Hook. f. Fl. Brit. Ind. 6 (1890) 35, in Ann. Roy. Bot. Gard. Calc. 5 (1895) 43, t. 65 to be conspecific, but Ridley considers them as distinct species.

**SARCOCHILUS PHILIPPINENSIS** Ames Orch. 5 (1915) 215, non Vidal.

*Thrixspermum philippinense* Ames in Philip. Journ. Sci. 8 (1913) Bot. 437.

Luzon (Apayao, Zambales, Rizal, Laguna, Sorsogon), Polillo, Leyte, Mindanao (Agusan). A fairly common species of wide distribution. Epiphyte occurring, as far as records show, at 3 to 60 m altitude.

**SARCOCHILUS TRIPERCUS** Ames Orch. 7 (1922) 125.

Leyte, *Wenzel 0968*. Tacloban, Tigbao, epiphyte in forest at sea level.

**SARCOCHILUS ZAMBOANGENSIS** Ames Sched. Orch. 5 (1923) 39.

Mindanao (Zamboanga), *Merrill 11640*. Flecha Point, epiphyte in forest at about 10 m altitude.

## EXCLUDED OR SYNONYMOUS SPECIES

**SARCOCHILUS AMPLEXICAULIS** Reichb. f. in Walp. Ann. 6 (1863) 499; Rolfe in Journ. Bot. 23 (1885) 215; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271 = *Thrixspermum amplexicaule* (Blume) Reichb. f.

**SARCOCHILUS CALCEOLUS** Lindl. in Bot. Reg. 32 (1846) t. 19; G. K. in Bot. Zeit. 4 (1846) 798; Paxt. Mag. Bot. 13 (1846) 93; Reichb. f. in Walp. Ann. 1 (1849) 781, 6 (1863) 501; Miq. Fl. Ind. Bat. 3 (1859) 689; Naves Novis. App. (1882) 238; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; Ridl. in Trans. Linn. Soc. II 3 (1893) 371; Ames Orch. 5 (1915) 210, in textu. *Thrixspermum calceolus* Reichb. f. Xen. Orch. 2 (1867) 122, in Flora 51 (1868) 53; Ridl. in Journ. Linn. Soc. 32 (1896) 378, Mat. Fl. Mal. Penin. 1 (1907) 181.

This was originally described as Philippine, but there is every reason to believe that Cuming's specimen came from Singapore, where the species is common and where Cuming also collected botanical material; it has not appeared in any Philippine collections made since Cuming's visit (1836-1840); cf. Ames l. c.

**SARCOCHILUS CENTIPEDA** Naves Novis. App. (1882) 238 (excl. syn.).

**SARCOCHILUS COMPRESSUS** Reichb. f. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS CROCEUS** Lindl. in Bot. Reg. 32 (1846) sub t. 19; Reichb. f. in Walp. Ann. 1 (1849) 781; Miq. Fl. Ind. Bat. 3 (1859) 689; Naves Novis. App. (1882) 238; Ames Orch. 5 (1915) 210, in nota.

This was described from a single leaf and bud sent to Lindley by Messrs. Loddiges. No material from the Philippines referable to this species has been seen.

**SARCOCHILUS FALCATUS** R. Br. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS NEPALENSIS** Spreng. apud Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99.

**SARCOCHILUS OLIVACEUS** Lindl. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS PARVIFLORUS** Lindl. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS PHILIPPINENSIS** Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271 = *Camarotis philippinensis* Lindl.

**SARCOCHILUS RHOPALORRHACHIS** Reichb. f. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS SUBULATUS** Reichb. f. in Walp. Ann. 6 (1863) 500; Naves Novis. App. (1882) 238 = *Thrixspermum subulatum* (Blume) Reichb. f.

**SARCOCHILUS TENUIFOLIUS** (Linn.) Naves Novis. App. (1882) 238.

**SARCOCHILUS TERES** Reichb. f. apud Naves Novis. App. (1882) 238.

**SARCOCHILUS UNGUICULATUS** Lindl. in Bot. Reg. 26 (1840) Misc. 67, 32 (1846) sub t. 19; Edit. in Allg. Berl. Gartenz. 14 (1846) 167; Reichb. f. in Walp. Ann. 6 (1863) 501; Reichb. f. in Gard. Chron.

II 15 (1851) 562; Naves Novis. App. (1882) 238; Rolfe in Orch. Rev. 2 (1894) 231, 14 (1906) 273, *fig. 37*; Ridl. in Journ. Linn. Soc. 31 (1896) 298, Mat. Fl. Mal. Penin. 1 (1907) 175; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 196 = *Sarcochilus pallidus* (Blume) Reichb. f.

**SARCOCHILUS USNEOIDES** Reichb. f. apud Naves Novis. App. (1882) 238.

#### 78. KINGIELLA Rolfe

**KINGIELLA PHILIPPINENSIS** (Ames) Rolfe in Orch. Rev. 25 (1917) 197; Ames Orch. 6 (1920) 307.

*Doritis philippinensis* Ames Orch. 2 (1908) 235, *text cut*, 5 (1915) 215.

Luzon (Cagayan, Bataan, Bulacan, Rizal), Leyte, Palawan, Bancalan, Mindanao (Cotabato, Bukidnon, Agusan, Davao). A common species of wide distribution. Epiphyte at nearly sea level to 500 m altitude.

#### 79. PHALAEOPSIS Blume

**PHALAEOPSIS AMABILIS** (Linn.) Blume Bijdr. (1825) 294, *fig. 44*; Lindl. Gen. & Sp. Orch. (1833) 213; Bennett Pl. Jav. Rar. (1838) 28, t. 8; Blume Rumphia 4 (1848) 52, *tt. 194, fig. 1, 199A* (excl. citat. Lindl.); Reichb. f. in Bot. Zeit. 10 (1852) 672, in Walp. Ann. 3 (1852) 561 (excl. pars Philip.); Miq. Fl. Ind. Bat. 3 (1859) 690 (excl. citat. Bot. Mag. et pars Philip.), Sumatra (1862) 274; Reichb. f. Xen. Orch. 2 (1862) 5; Duchartre in Journ. Soc. Imp. et Centr. Hort. Par. 8 (1862) 730; Lem. in Ill. Hort. 10 (1863) Misc. 13; Linden & Rodigas in Lindenia 2 (1886) 65, *quoad syn. in part*; Rolfe in Gard. Chron. II 26 (1886) 212, *fig. 43A*; Kerchove in Rev. Hort. Belg. 16 (1890) 25, t. 3; Veitch Man. Orch. Pl. pt. 7 (1891) 22, t.; Stein Orchideenb. (1892) 504, *fig. 153*; Rolfe in l'Orchidoph. 13 (1893) 100; Will. Orch. Grow. Man. ed. 7 (1894) 660, *text cut* (excl. bibliog. in parte et *quoad* Philip.); Ridl. in Journ. Linn. Soc. 31 (1896) 292; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 549, Fig.-Atlas (1912) *fig. 416* (excl. bibliog. in parte et *quoad* Philip.), Orch. Amb. (1905) 92 (excl. citat. Bot. Mag. t. 4297); Ames Orch. 1 (1905) 101, *quoad syn. et descr. (excl. spec.)*, 2 (1908) 224; J. J. Sm. in Nova Guinea 8 (1909) Bot. 119 (excl. Philip.), 8<sup>o</sup> (1912) Bot. 604, 9 (1913) Bot. 100, 12<sup>o</sup> (1916) Bot. 455; Schltr. Orchideen (1914) 543, *fig. 133*; Rolfe in Gibbs in Journ. Linn. Soc. 42 (1914) 157; J. J. Sm. in Philip. Journ. Sci. 12 (1917) Bot. 258, in Merr. Interp. Rumph. Herb. Amb. (1917) 177; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 196.

*Epidendrum amabile* Linn. Sp. Pl. (1753) 953, ed. 2 (1763) 1351; Sw. in Nov. Act. Ups. 6 (1799) 67, in Schrad. Journ. Bot. 2 (1799) 210; Willd. Sp. Pl. 4 (1805) 115; Pers. Syn. Pl. 2 (1807) 518; Spreng. Syst. Veg. 3 (1826) 737.

*Cymbidium amabile* Roxb. Hort. Beng. (1814) 63, *nomen*, Fl. Ind. ed. 2, 3 (1832) 457.

*Phalaenopsis grandiflora* Lindl. in Gard. Chron. (1848) 39, *fig. 1*; Reichb. f. in Walp. Ann. 3 (1852) 561; Moore Ill. Orch. Pl. (1857) Phalaenop. 7; Miq. Fl. Ind. Bat. 3 (1859) 690; Hook. in Bot. Mag. 86 (1860) t. 5184; Groenland in Rev. Hort. 32 (1860) 238, *figs.*

53, 54; Gedney in Floral World (1876) 323; Puydt Orch. (1880) 307, t. 34; Burb. in The Garden 22 (1882) 118; Hemsl. Bot. Chal. Exped. 1 (1885) 199; Warner & Will. Orch. Alb. 6 (1887) t. 277; Rolfe in Gard. Chron. III 5 (1889) 88; Gower in The Garden 35 (1889) 363; Rolfe in l'Orchidoph. 13 (1893) 100; Will. Orch. Grow. Man. ed. 7 (1894) 664.

*Phalaenopsis aphrodite* Lem. in Ill. Hort. 10 (1863) Misc. 14, quoad citat. Rumph., non Reichb. f.

*Phalaenopsis amabilis* Blume var. *grandiflora* Batem. Second Cent. Orch. Pl. (1867) t. 114.

*Phalaenopsis amabilis* Blume var. *rimestadtiana* L. Linden in Lindenia 16 (1902) 35, t. 736; Edit. in Gard. Chron. III 32 (1902) 306, t.; Pauwels in Rev. Hort. Belg. 29 (1903) 88, figs. 22-24; Rolfe in Orch. Rev. 14 (1906) 233, fig. 27, 23 (1915) 254.

*Phalaenopsis rimestadtiana* "Argus" in Orch. Rev. 13 (1905) 260, in textu, nomen; Rolfe in Orch. Rev. 25 (1917) 151, in textu, nomen.

Although the species proper does not occur in the Philippines, it has been deemed advisable to cite a full synonymy and bibliography of it on account of the confusion arising from the inclusion in it, by Lindley and subsequently by others, of Philippine material. The species is represented in the Philippines by variety *aphrodite* (Reichb. f.) Ames and its variations.

Var. **APHRODITE** (Reichb. f.) Ames Orch. 2 (1908) 226, 5 (1915) 216.

*Phalaenopsis amabilis* Lindl. in Bot. Reg. 24 (1838) t. 34 (excl. syn.); Paxt. Mag. Bot. 5 (1838) 20, 162, 7 (1840) 49, text cut, t. (excl. syn.); Maund Botanist 3 (1839?) t. 133 (excl. syn.); Lem. in Fl. des Serres 1 (1845) 85, text cut, t. 36 (excl. syn.); Blanco Fl. Filip. ed. 2 (1845) 592, ed. 3, 3 (1879) 41; Edit. in Allg. Berl. Gartenz. 13 (1845) 389, 15 (1847) 215 (excl. syn. in both); Hook. in Bot. Mag. 73 (1847) t. 4297 (excl. syn. in part); Blume Rumphia 4 (1848) 52, quoad citat. Lindl.; Lindl. in Gard. Chron. (1848) 39, fig. 2; Reichb. f. in Walp. Ann. 1 (1849) 790, 3 (1852) 561, quoad Philip.; Moore Ill. Orch. Pl. (1857) Phalaenop. 6, t. 1 (excl. syn.); Miq. Fl. Ind. Bat. 3 (1859) 690, quoad citat. Bot. Mag. et quoad Philip.; Gedney in Floral World (1876) 323; Reichb. f. in Gard. Chron. II 5 (1876) 654; Burb. in The Garden 22 (1882) 119; Naves Novis. App. (1882) 243; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Linden & Rodigas in Lindenia 2 (1886) 65, t. 79 (excl. syn. in parte); Gower in The Garden 35 (1889) 362, fig. 363; Roebelen in Gard. Chron. III 7 (1890) 459, in textu; Will. Orch. Grow. Man. ed. 7 (1894) 660, quoad bibliog. in parte et quoad Philip.; Merr. in Govt. Lab. Publ. (Philip.) 8 (1903) 57, 174, 27 (1905) 84; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 549, quoad bibliog. in parte et quoad Philip.; Ames Orch. 1 (1905) 101, quoad spec. (excl. syn. et descr.); Merr. Sp. Blancoanae (1918) 115, non Blume.

*Phalaenopsis aphrodite* Reichb. f. in Hamb. Gartenz. 18 (1862) 35, Xen. Orch. 2 (1862) 6; Duchartre in Journ. Soc. Imp. et Centr. Hort. Par. 8 (1862) 730; Lem. in Ill. Hort. 10 (1863) Misc. 14 (excl. citat. Rumph.); Rolfe in Gard. Chron. II 26 (1886) 212,

*fig. 43 B*; Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1889) 211, *fig. 230*; Veitch Man. Orch. Pl. pt. 7 (1891) 24, *t.*; Stein Orchideenb. (1892) 505, *fig. 155*; Rolfe in Orch. Rev. 2 (1894) 209, *fig. 30, 8* (1900) 135, 136, *fig. 20, 13* (1905) 232, *fig. 52, 25* (1917) 151, in textu; Cogn. in Dict. Icon. Orch. (1898) Phalaenop. *t. 1*; Edit. in Sem. Hort. 4 (1900) 392, *fig. 132*; Rolfe in Forbes & Hemsl. in Journ. Linn. Soc. 36 (1903) 34; Matsum. Ind. Pl. Jap. 2 (1905) 257; Ames in Philip. Journ. Sci. 2 (1907) Bot. 336; Schltr. Orchideen (1914) 544 (excl. syn. *sanderiana*); Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 277 (excl. syn. *sanderiana*).

*Phalaenopsis ambigua* Reichb. f. in Hamb. Gartenz. 18 (1862) 35, Xen. Orch. 2 (1862) 6; Duchartre in Journ. Soc. Imp. et Centr. Hort. Par. 8 (1862) 311, 731; Lem. in Ill. Hort. 10 (1863) Misc. 13; Naves Novis. App. (1882) 243; Rolfe in Gard. Chron. II 26 (1886) 212.

*Phalaenopsis amabilis* Blume var. *ambigua* Burb. in The Garden 22 (1882) 119.

Luzon (Ifugao, Rizal, Tayabas, Sorsogon), Samar, Palawan, Bancalan, Mindanao (Zamboanga, Lanao, Cotabato, Davao), Lumbucan. Fairly common and widely distributed in the Philippines. Epiphyte at sea level to 300 m altitude. No attempt has been made to segregate the varieties or forms in the distribution above given. In China and Japan.

The following variations of variety *aphrodite* have been noted and published as species, varieties, subvarieties, or forms, but are of little scientific value, as they are largely based on color and size:

Subvar. **DAYANA** (Hort. ex Warner & Will.) Ames Orch. 2 (1908) 227.

*Phalaenopsis amabilis* Lindl. var. *dayana* Hort. ex Warner & Will. Orch. Alb. 1 (1882) *t. 11*; Gower in The Garden 35 (1889) 363; Will. Orch. Grow. Man. ed. 7 (1894) 661.

*Phalaenopsis aphrodite* Reichb. f. var. *dayana* Veitch Man. Orch. Pl. pt. 7 (1891) 24; Stein Orchideenb. (1892) 505.

Subvar. **ERUBESCENS** (Burb.) Ames Orch. 2 (1908) 227.

*Phalaenopsis amabilis* Lindl. var. *erubescens* Burb. in The Garden 22 (1882) 119.

Subvar. **GLORIOSA** (Reichb. f.) Ames Orch. 2 (1908) 227.

*Phalaenopsis gloriosa* Reichb. f. in Gard. Chron. III 3 (1888) 554; Gower in The Garden 35 (1889) 362, *t. 697*; Will. Orch. Grow. Man. ed. 7 (1894) 664; Rolfe in Orch. Rev. 8 (1900) 136, in textu, 13 (1905) 228.

*Phalaenopsis aphrodite* Reichb. f. var. *gloriosa* Veitch Man. Orch. Pl. pt. 7 (1891) 25; Stein Orchideenb. (1892) 505.

Sulu Archipelago.

Subvar. **SANDERIANA** (Reichb. f.) Ames Orch. 2 (1908) 228.

*Phalaenopsis sanderiana* Reichb. f. in Flora 65 (1882) 466, in Gard. Chron. II 19 (1883) 607, 656, 20 (1883) 110; Burb. in The Garden 24 (1883) 270, *t. 407*; Edit. in l'Orchidoph. 3 (1833) 661; Godefr.-Lebeuf in l'Orchidoph. 5 (1885) 18, *t.*; Linden & Rodigas in Lindenia 1 (1885) 51, *t. 23*; Will. Orch. Grow. Man. ed. 6 (1885) 535, ed. 7 (1894) 670; Rolfe in Gard. Chron. II 26 (1886)



212; Warner & Will. Orch. Alb. 5 (1886) t. 209; Gower in The Garden 35 (1889) 363; Roebelen in Gard. Chron. III 7 (1890) 459, in textu; Stein Orchideenb. (1892) 511; Kränz. in Sander Reichenbachia II 2 (1894) 41, t. 68 (upper fig.); Rolfe in Orch. Rev. 8 (1900) 133, 15 (1907) 185, fig. 22; Cogn. in Dict. Icon. Orch. (1903) Phalaenop. Hybr. t. 2; Rolfe in l'Orchidoph. 13 (1903) 101; G. Wilson in Orch. World 6 (1916) 266.

Forma **ALBA** (Veitch) Ames Orch. 2 (1908) 228.

*Phalaenopsis sanderiana* Reichb. f. subvar. *alba* Veitch Man. Orch. Pl. pt. 7 (1891) 35, text cut.

*Phalaenopsis sanderiana* var. *alba* Stein Orchideenb. (1892) 511; G. Wilson in Orch. World 6 (1916) 266, text cut.

*Phalaenopsis sanderiana* Reichb. f. forma *alba* Will. Orch. Grow. Man. ed. 7 (1894) 670.

Forma **MARMORATA** (Reichb. f.) Ames Orch. 2 (1908) 228.

*Phalaenopsis sanderiana* Reichb. f. var. *marmorata* Reichb. f. in Gard. Chron. II 20 (1883) 812; Rolfe in Gard. Chron. II 26 (1886) 212; Stein Orchideenb. (1892) 511; Will. Orch. Grow. Man. ed. 7 (1894) 670.

*Phalaenopsis sanderiana* Reichb. f. subvar. *marmorata* Veitch Man. Orch. Pl. pt. 7 (1891) 35.

Forma **PUNCTATA** (O'Brien) Ames Orch. 2 (1908) 229.

*Phalaenopsis sanderiana* Reichb. f. var. *punctata* O'Brien in Gard. Chron. III 7 (1890) 78; Stein Orchideenb. (1892) 511; Will. Orch. Grow. Man. ed. 7 (1894) 670.

*Phalaenopsis sanderiana* Reichb. f. subvar. *punctata* Veitch Man. Orch. Pl. pt. 7 (1891) 35.

**PHALAEOPSIS BOXALLII** Reichb. f. in Gard. Chron. II 19 (1883) 274; Rolfe in Gard. Chron. II 26 (1886) 276; Veitch Man. Orch. Pl. pt. 7 (1891) 26; Ames Orch. 5 (1915) 216.

**PHALAEOPSIS EQUESTRIS** (Schauer) Reichb. f. in Linnaea 22 (1849) 864; Lindl. in Paxt. Flow. Gard. 2 (1852) 174; Reichb. f. in Walp. Ann. 3 (1852) 562, 6 (1864) 860; Miq. Fl. Ind. Bat. 3 (1859) 690; Reichb. f. in Hamb. Gartenz. 16 (1860) 116; Duchartre in Journ. Soc. Imp. et Centr. Hort. Par. 6 (1860) 869, 8 (1862) 727; Reichb. f. Xen. Orch. 2 (1862) 4; Naves Novis. App. (1882) 242; Ames Orch. 2 (1908) 229, 5 (1915) 216.

*Stauroglottis equestris* Schauer in Nov. Act. Acad. Nat. Cur. 19 Suppl. 1 (1843) 432.

*Phalaenopsis rosea* Lindl. in Gard. Chron. (1848) 671, text cut; Paxt. Mag. Bot. 16 (1849) 60, 189, text cut; Lindl. in Paxt. Flow. Gard. 2 (1852) 173, t. 72; Reichb. f. in Bot. Zeit. 10 (1852) 673; Moore Ill. Orch. Pl. (1857) Phalaen. 7; Hook. in Bot. Mag. 86 (1860) t. 5212; Lem. in Jard. Fleur. 3 (1853) t. 283, in Ill. Hort. 10 (1863) Misc. 11; Van Houtte in Fl. des Serres 16 (1866) t. 1645; Jennings Orch. (1875) t. 27; Burb. in The Garden 22 (1822) 119 (excl. var.); Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Rolfe in Gard. Chron. II 26 (1886) 276; Warner &

Will. Orch. Alb. 6 (1887) t. 263; Veitch Man. Orch. Pl. pt. 7 (1891) 34; Ames Orch. 1 (1905) 102.

*Phalaenopsis esmeralda* Cogn. in Dict. Icon. Orch. (1898) Phalaen. t. 3, non Reichb. f.

Luzon (Ilocos Norte, Bataan, Rizal, Laguna, Tayabas, Camarines), Panay (Capiz), Bohol, Mindanao (Camiguin Island, Lanao). A common and widely distributed species. Epiphyte at sea level to 300 m altitude.

Var. **LEUCASPIS** Reichb. f. in Gard. Chron. II 15 (1881) 688, in l'Orchidoph. 1 (1881) 50; Ames Orch. 2 (1908) 230.

*Phalaenopsis rosea* Lindl. var. *leucaspis* Rolfe in Gard. Chron. II 26 (1886) 276; Veitch Man. Orch. Pl. pt. 7 (1891) 34.

Var. **LEUCOTANTHE** Reichb. f. in l'Orchidoph. 3 (1883) 490; Ames Orch. 2 (1908) 230.

**PHALAEOPSIS FASCIATA** Reichb. f. in Gard. Chron. II 18 (1882) 134; Rolfe in Orch. Rev. 13 (1905) 225; Ames Orch. 5 (1915) 217.

No material of this species has been seen. Reichenbach gave the origin of the plant as Philippines, imported by Messrs. Hugh Low & Co. The origin seems open to some doubt. Reichenbach states that the species is near *Phalaenopsis lueddemanniana* Reichb. f.

**PHALAEOPSIS FUSCATA** Reichb. f. in Gard. Chron. II 2 (1874) 6; Rolfe in Orch. Rev. 13 (1905) 226; Ames Orch. 5 (1915) 216.

*Phalaenopsis denisiana* Cogn. in Gard. Chron. III 26 (1899) 82; Cogn. in Dict. Icon. Orch. (1899) Phalaenop. t. 6.

The origin of *P. fuscata* is given as the Malay Peninsula, that of *P. denisiana* as the Philippines. No material of this species has been seen.

**PHALAEOPSIS LEUCORRHODA** Reichb. f. in Gard. Chron. II 3 (March, 1875) 301, 366; W. G. Sm. in Floral Mag. 14 (June, 1875) 41, t. 166; Naves Novis. App. (1882) 243; Rolfe in Gard. Chron. II 26 (1886) 212; Veitch Man. Orch. Pl. pt. 7 (1891) 46; Stein Orchideenb. (1892) 507; Will. Orch. Grow. Man. ed. 7 (1894) 667; Rolfe in Orch. Rev. 13 (1905) 232, fig. 54.

This is a supposed natural hybrid between *Phalaenopsis amabilis* (Linn.) Blume var. *aphrodite* (Reichb. f.) Ames and *P. schilleriana* Reichb. f. Its origin is Philippine, but no specimens have been seen.

**PHALAEOPSIS LINDENII** Loher in Journ. des Orch. 6 (1895) 103; Rolfe in Orch. Rev. 13 (1905) 230, 15 (1907) 296; Ames in Philip. Journ. Sci. 4 (1909) Bot. 599, Orch. 5 (1915) 217; G. Wilson in Orch. Rev. 30 (1922) 354.

Luzon (Benguet), *Lyon 39, F. B. 5121 Curran*. Epiphyte.

**PHALAEOPSIS LUEDDEMANNIANA** Reichb. f. in Bot. Zeit. 23 (1865) 146, in Gard. Chron. (1865) 434; Moore in Flor. & Pomol. (1865) 257, t. 254; Lem. in Ill. Hort. 12 (1865) Misc. 31; Edit. in Proc. Roy. Hort. Soc. 5 (1865) 137; Otto in Hamb. Gartenz. 21 (1865) 470; G. B. in Belg. Hort. 15 (1865) 229; Carr. in Rev. Hort. 44 (1872) 390, t.; Rolfe in Gard. Chron. II 26 (1886) 277, in Lindenia 2 (1886) 95, t. 94, 8 (1892) 63, t. 366; Veitch Man. Orch. Pl. pt.

7 (1891) 30, *text cut*; Cogn. in Dict. Icon. Orch. (1899) *Phalaen. t. 9*; Ames Orch. 2 (1908) 230, 5 (1915) 217.

*Phalaenopsis lueddemanii* Boxall ex Naves Novis. App. (1882) 243, sphalm.

Luzon (Apayao, Nueva Vizcaya, Bataan, Bulacan, Laguna, Tayabas, Sorsogon), Polillo, Leyte, Palawan, Mindanao (Bukidnon). A common and widely distributed species, epiphyte at 30 to 60 m altitude.

A number of varieties of this species have been characterized from cultivated specimens.

Var. **DELICATA** Reichb. f. in Gard. Chron. (1865) 434; Burb. in The Garden 22 (1882) 119; Rolfe in Gard. Chron. II 26 (1886) 277, in Lindenia 8 (1892) 63, sub *t. 366*; Ames Orch. 2 (1908) 231.

*Phalaenopsis lueddemanniana* Batem. in Bot. Mag. 91 (1865) *t. 5523*; Van Houtte in Fl. des Serres 16 (1865) 53, *t. 1636*; Batem. Second Cent. Orch. Pl. (1867) *t. 133*, non Reichb. f.

*Phalaenopsis lueddemanniana* subvar. *delicata* Veitch Man. Orch. Pl. pt. 7 (1891) 30.

Var. **HIEROGLYPHICA** Reichb. f. in Gard. Chron. III 2 (1887) 586; Edit. in l'Orchidoph. 9 (1889) 197; Rolfe in Lindenia 8 (1892) 63, sub *t. 366*; Ames Orch. 2 (1908) 231.

*Phalaenopsis lueddemanniana* Reichb. f. subvar. *hieroglyphica* Veitch Man. Orch. Pl. pt. 7 (1891) 31.

Var. **OCHRACEA** Reichb. f. in Gard. Chron. (1865) 438; Carr. in Rev. Hort. 44 (1872) 391, *fig. A*; Burb. in The Garden 22 (1882) 119; Rolfe in Gard. Chron. II 26 (1886) 277, in Lindenia 8 (1892) 63, sub *t. 366*; Ames Orch. 2 (1908) 232.

*Phalaenopsis lueddemanniana* subvar. *ochracea* Veitch Man. Orch. Pl. pt. 7 (1891) 31.

*Lyon 48.*

Var. **PULCHRA** Reichb. f. in Gard. Chron. II 4 (1875) 36; Burb. in The Garden 22 (1882) 119; Rolfe in Gard. Chron. II 26 (1886) 277, in Lindenia 8 (1892) 64, sub *t. 366*; Ames Orch. 2 (1908) 232.

*Phalaenopsis lueddemanniana* Reichb. f. subvar. *pulchra* Veitch Man. Orch. Pl. pt. 7 (1891) 31.

**PHALAEOPSIS MARIAE** Burb. in Warner & Will. Orch. Alb. 2 (1883) *t. 80* et sub *t. 87*; Rolfe in Gard. Chron. II 26 (1886) 277; Hook. f. in Bot. Mag. 113 (1887) *t. 6964*; Veitch Man. Orch. Pl. pt. 7 (1891) 32; Ridl. in Journ. Linn. Soc. 31 (1896) 292; Ames in Philip. Journ. Sci. 8 (1913) Bot. 434, Orch. 5 (1915) 217, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 197.

Luzon (Nueva Vizcaya), Mindanao (Lanao, Cotabato, Bukidnon, Davao), B. S. 11136, 11141 McGregor, 21389 Escritor, M. S. Clemens 626, Weber 220, Loher 6011. Epiphyte up to 700 m altitude in Cotabato. In Borneo.

**PHALAEOPSIS MICHOLITZII** Rolfe in Gard. Chron. III 8 (1890) 187, in Journ. des Orch. 1 (1890) 198, in Orch. Rev. 13 (1905) 229; Ames Orch. 5 (1915) 217.

Without locality indicated, *Micholitz*.

No technical description of this species has been published. From the material at hand it appears scarcely distinct from *Phalaenopsis lueddemaniana* Reichb. f.

**PHALAEOPSIS REICHENBACHIANA** Reichb. f. & Sander in Gard. Chron. II 18 (1882) 586; Rolfe in Orch. Rev. 13 (1905) 226; Ames Orch. 5 (1915) 218.

According to Rolfe (in Orch. Rev. l. c.) Micholitz stated that this species is a native of Mindanao. No material has been seen.

**PHALAEOPSIS SCHILLERIANA** Reichb. f. in Hamb. Gartenz. 16 (1860) 115, 116; Lindl. in Gard. Chron. (1860) 216, (1861) 617, (1862) 95; Duchartre in Journ. Soc. Imp. et Centr. Hort. Par. 7 (1861) 845, 8 (1862) 609, 730, t. 17; Warner Sel. Orch. Pl. I (1861) t. 1; Reichb. f. Xen. Orch. 2 (1862) 1, 5, t. 101; Lem. in Ill. Hort. 10 (1863) Misc. 13, t. 348; Lescuyer in Horticulteur Fr. (1863) 127, t. 11; Van Houtte in Fl. des Serres 15 (1864) 115, tt. 1559-60, 21 (1875) 142, text cut; Batem. in Bot. Mag. 91 (1865) t. 5530, Second Cent. Orch. Pl. (1867) t. 171; Regel in Gartenfl. 17 (1868) 161, t. 581, 36 (1887) 57, fig. 21; Jennings Orch. (1875) t. 15; Edit. in Gard. Chron. II 4 (1875) 169, fig. 34, II 12 (1879) 301, fig. 47 D-F, III 3 (1888) 528, fig. 72; Gedney in Floral World (1876) 321, 323, t.; Puydt Orch. (1880) 309, t. 35; Burb. in The Garden 22 (1882) 118, 119, t. 348, fig. 2; Naves Novis. App. (1882) 243; Edit. in l'Orchidoph. 4 (1884) 279, t. 212; Rodigas in Ill. Hort. 35 (1888) 57, t. 56; Pfitz. in Engl. & Prantl Pflanzenfam. 2, Abt. 6 (1889) 211, fig. 227 C; Rolfe in Lindenia 5 (1889) t. 227; Roebelen in Gard. Chron. III 7 (1890) 459; Veitch Man. Orch. Pl. pt. 7 (1891) 36, text cut; Rivois in Journ. des Orch. 3 (1892) 146; fig. 18; Rolfe in Orch. Rev. 2 (1894) 209, fig. 21, 8 (1900) 134-136, fig. 21, 13 (1905) 232, fig. 53; Grignan in Sem. Hort. 2 (1898) 46, fig. 214; Cogn. in Dict. Icon. Orch. (1899) Phalaen. t. 10; L. Linden in Sem. Hort. 4 (1900) 424, fig. 143; Ames Orch. 2 (1908) 232, 5 (1915) 218.

Luzon (Tayabas), *Lyon 54, Merrill 4018, 4024*. This is one of the most highly prized of the Philippine orchids and is extensively exported. A number of forms have been described from cultivated specimens.

Var. **ADVENA** Reichb. f. in Gard. Chron. II 23 (1885) 174; Edit. in l'Orchidoph. 5 (1885) 200; Ames Orch. 2 (1908) 234.

Var. **IMMACULATA** Reichb. f. in Gard. Chron. II 3 (1875) 429; Rolfe in Gard. Chron. II 26 (1888) 212; Ames Orch. 2 (1908) 234.

*Phalaenopsis schilleriana* Reichb. f. var. *delicata* Dean in Floral Mag. 16 (1877) t. 257.

*Phalaenopsis schilleriana* Reichb. f. subvar. *immaculata* Veitch Man. Orch. Pl. pt. 7 (1891) 37.

Var. **MAJOR** Rolfe in Gard. Chron. II 26 (1886) 212; Ames Orch. 2 (1908) 234.

Var. **PURPUREA** Hort. ex Rolfe in Journ. des Orch. 2 (1892) 358; Garnier in Journ. des Orch. 5 (1894) 9; O'Brien in Gard. Chron. III 15 (1894) 266; Ames Orch. 2 (1908) 234.

Var. **SPLENDENS** Hort. ex Carr. in Rev. Hort. 58 (1886) 396, *t.*; Warner Sel. Orch. Pl. III (?) *t.* 5; Ames Orch. 2 (1908) 234.

Var. **VESTALIS** Reichb. f. in Gard. Chron. II 17 (1882) 330; Edit. in l'Orchidoph. 2 (1882) 291; Rolfe in Gard. Chron. II 26 (1886) 212; Edit. in Gard. Chron. III 3 (1888) 75; Ames Orch. 2 (1908) 235.

*Phalaenopsis schilleriana* Reichb. f. var. *alba* Roebelen in Gard. Chron. III 7 (1890) 459; Rolfe in l'Orchidoph. 13 (1893) 101, in Orch. Rev. 8 (1900) 134, in textu.

*Phalaenopsis schilleriana* Reichb. f. subvar. *vestalis* Veitch Man. Orch. Pl. pt. 7 (1891) 37.

**PHALAEOPSIS SCHILLERIANA-STUARTIANA** Rolfe in Orch. Rev. 8 (1900) 94, 113, *fig.* 18, 13 (1905) 230, *fig.* 50; G. Wilson in Orch. Rev. 30 (1922) 77, *text cut.*

Said to be a natural hybrid of Philippine origin.

**PHALAEOPSIS STUARTIANA** Reichb. f. in Gard. Chron. II 16 (1881) 748, 753, *fig.* 149; Hook. f. in Bot. Mag. 108 (1882) *t.* 6622; Rodigas in Ill. Hort. 31 (1884) 175, *t.* 540; Rolfe in Gard. Chron. II 26 (1886) 212; Warner & Will. Orch. Alb. 5 (1886) *t.* 237; Reichb. f. in Sander Reichenbachia I (1888) 95, *t.* 42; Veitch Man. Orch. Pl. pt. 7 (1891) 39, *t.* (opp. p. 29); Cogn. in Dict. Icon. Orch. (1898) Phalaen. *t.* 2; Ames Orch. 5 (1915) 218.

Philippines, without locality, *Lyon s. n.*

**PHALAEOPSIS VEITCHIANA** Reichb. f. in Gard. Chron. (1872) 935; Burb. in Floral Mag. 15 (1876) *t.* 213; Veitch Man. Orch. Pl. pt. 7 (1898) 47; Ames Orch. 5 (1915) 218; G. Wilson in Orch. Rev. 30 (1922) 346.

#### EXCLUDED OR SYNONYMOUS SPECIES

**PHALAEOPSIS AMABILIS** Lindl. in Bot. Reg. 24 (1838) *t.* 34 (excl. syn.); Paxt. Mag. Bot. 5 (1838) 20, 162, 7 (1840) 49, *text cut* (excl. syn.); Maund Botanist 3 (1839?) *t.* 133 (excl. syn.); Lem. in Fl. des Serres 1 (1845) 85, *text cut*, *t.* 36 (excl. syn.); Blanco Fl. Filip. ed. 2 (1845) 592, ed. 3, 3 (1879) 41; Edit. in Allg. Berl. Gartenz. 13 (1845) 389, 15 (1847) 215 (excl. syn. in both); Hook. in Bot. Mag. 73 (1847) *t.* 4297 (excl. syn. in parte); Blume Rumphia 4 (1848) 52, quoad citat. Lindl.; Lindl. in Gard. Chron. (1848) 39, *fig.* 2; Reichb. f. in Walp. Ann. 1 (1849) 790, 3 (1852) 561, quoad Philip.; Moore Ill. Orch. Pl. (1857) Phalaenop. 6, *t.* 1 (excl. syn.); Miq. Fl. Ind. Bat. 3 (1859) 690, quoad citat. Bot. Mag. et quoad Philip.; Gedney in Floral World (1876) 323; Reichb. f. in Gard. Chron. II 5 (1876) 654; Burb. in The Garden 22 (1882) 119; Naves Novis. App. (1882) 243; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Linden &

- Rodigas in *Lindenia* 2 (1886) 65, *t.* 79 (excl. syn. in parte); Gower in *The Garden* 35 (1889) 362, *fig.* 363; Roebelen in *Gard. Chron.* III 7 (1890) 459, in textu; Will. *Orch. Grow. Man.* ed. 7 (1894) 660, quoad bibliog. in parte et quoad Philip.; Merr. in *Govt. Lab. Publ. (Philip.)* 8 (1903) 57, 174, 27 (1905) 84; J. J. Sm. *Fl. Buitenz.* 6 (*Orch. Jav.*) (1905) 549, quoad bibliog. in parte et quoad Philip.; Ames *Orch.* 1 (1905) 101, quoad spec. (excl. syn. et descr.); Merr. *Sp. Blancoanae* (1918) 115, non Blume = *Phalaenopsis amabilis* Blume var. *aphrodite* (Reichb. f.) Ames.
- PHALAEOPSIS AMBIGUA** Reichb. f. in *Hamb. Gartenz.* 18 (1862) 35, *Xen. Orch.* 2 (1862) 6; Duchartre in *Journ. Soc. Imp. et Centr. Hort. Par.* 2 (1862) 311, 731; Lem. in *Ill. Hort.* 10 (1863) Misc. 13; Naves *Novis. App.* (1882) 243; Rolfe in *Gard. Chron.* II 26 (1886) 212 = *Phalaenopsis amabilis* Blume var. *aphrodite* (Reichb. f.) Ames.
- PHALAEOPSIS APHRODITE** Reichb. f. in *Hamb. Gartenz.* 18 (1862) 35, *Xen. Orch.* 2 (1862) 6; Duchartre in *Journ. Soc. Imp. et Centr. Hort. Par.* 8 (1862) 730; Lem. in *Ill. Hort.* 10 (1863) Misc. 14 (excl. citat. Rumph.); Rolfe in *Gard. Chron.* II 26 (1886) 212, *fig.* 43B; Pfitz. in *Engl. & Prantl Nat. Pflanzenfam.* 2, Abt. 6 (1889) 211, *fig.* 230; Veitch *Man. Orch. Pl. pt.* 7 (1891) 24, *t.*; Stein *Orchideenb.* (1892) 505, *fig.* 155; Rolfe in *Orch. Rev.* 2 (1894) 209, *fig.* 20, 8 (1900) 135, 136, *fig.* 20, 13 (1905) 232, *fig.* 52, 25 (1917) 151, in textu; Cogn. *Dict. Icon. Orch.* (1898) *Phalaenop. t.* 1; Edit. in *Sem. Hort.* 4 (1900) 392, *fig.* 132; Rolfe in *Forbes & Hemsl. in Journ. Linn. Soc.* 36 (1903) 34; Matsum. *Ind. Pl. Jap.* 2 (1905) 257; Ames in *Philip. Journ. Sci.* 2 (1907) Bot. 336; Schltr. *Orchideen* (1914) 544 (excl. syn. *sanderiana*); Schltr. in *Fedde Repert. Beihefte* 4 (*Orch. Sino-Jap. Prodr.*) (1919) 277 (excl. syn. *sanderiana*) = *Phalaenopsis amabilis* Blume var. *aphrodite* (Reichb. f.) Ames.
- PHALAEOPSIS CASTA** Boxall ex Naves *Novis. App.* (1882) 243, *nomen*.  
Boxall probably had in mind *Phalaenopsis casta* Reichb. f., which is now considered a form or variety of *P. leucorrhoda* Reichb. f.
- PHALAEOPSIS CORNU-CERVI** Blume apud Naves *Novis. App.* (1882) 243.
- PHALAEOPSIS DELICIOSA** Reichb. f. apud Naves *Novis. App.* (1882) 243.
- PHALAEOPSIS DENISIANA** Cogn. in *Gard. Chron.* III 26 (1899) 82; Cogn. in *Dict. Icon. Orch.* (1899) *Phalaenop. t.* 6 = *Phalaenopsis fuscata* Reichb. f.
- PHALAEOPSIS DEVRIESIANA** Reichb. f. apud Naves *Novis. App.* (1882) 243.
- PHALAEOPSIS ESMERALDA** Cogn. in *Dict. Icon. Orch.* (1898) *Phalaenop. t.* 3, non Reichb. f. = *Phalaenopsis equestris* (Schauer) Reichb. f.
- PHALAEOPSIS GLORIOSA** Reichb. f. in *Gard. Chron.* III 3 (1888) 554; Gower in *The Garden* 35 (1889) 362, *t.* 697; Will. *Orch. Grow. Man.* ed. 7 (1894) 664; Rolfe in *Orch. Rev.* 8 (1900) 136, in textu,

13 (1905) 228 = *Phalaenopsis amabilis* (Linn.) Blume subvar. *gloriosa* (Reichb. f.) Ames.

PHALAENOPSIS HEBE Reichb. f. apud Naves Novis. App. (1882) 242.

PHALAENOPSIS INTERMEDIA Lindl. apud Naves Novis. App. (1882) 243.

PHALAENOPSIS INTERMEDIA Lindl. var. PORTEI Reichb. f. in Bot. Zeit. 21 (1863) 128; W. G. Sm. in Floral Mag. 14 (1875) t. 162; Naves Novis. App. (1882) 243; Warner Sel. Orch. Pl. II (1865-75) t. 2; Veitch Man. Orch. Pl. pt. 7 (1891) 45; Sander Reichenbachia II 2 (1894) 43, t. 68 (lower fig.).

*Phalaenopsis intermedia* Lindl. var. *brymeriana* Reichb. f. in Gard. Chron. II 5 (1876) 366; Dean in Floral Mag. 16 (1877) t. 263; Veitch Man. Orch. Pl. pt. 7 (1891) 44; Warner & Will. Orch. Alb. 9 (1891) t. 415.

*Phalaenopsis portei* Reichb. f. in Gard. Chron. II 5 (1876) 370, figs. 70, 71; Outram in Gard. Chron. II 15 (1881) 181.

There seems no valid authority for including this in the list of Philippine species.

PHALAENOPSIS LOWII Reichb. f. apud Naves Novis. App. (1882) 243.

PHALAENOPSIS LUEDEMANNIANA Batem. in Bot. Mag. 91 (1865) t. 5523; Van Houtte in Fl. des Serres 16 (1865) 53, t. 1636; Batem. Second Cent. Orch. Pl. (1867) t. 133, non Reichb. f. = *Phalaenopsis lueddemanniana* Reichb. f. var. *delicata* Reichb. f.

PHALAENOPSIS LUDEMANII Boxall ex Naves Novis. App. (1882) 243, sphalm = *Phalaenopsis lueddemanniana* Reichb. f.

PHALAENOPSIS PALLENS (Lindl.) Reichb. f. in Walp. Ann. 6 (1864) 932; Rolfe in Gard. Chron. II 26 (1886) 276, in Orch. Rev. 8 (1900) 327, 13 (1905) 226.

*Trichoglottis pallens* Lindl. in Journ. Hort. Soc. 5 (1850) 34, in Paxt. Flow. Gard. 1 (1850) 15.

*Stauropsis pallens* Reichb. f. in Hamb. Gartenz. 16 (1860) 117, Xen. Orch. 2 (1862) 7; Naves Novis. App. (1882) 243.

For many years this species was ascribed to the Philippines. It does not occur in the Archipelago, and Rolfe, l. c., has shown that the type could not have come from the Philippines.

PHALAENOPSIS PARISHII Reichb. f. apud Naves Novis. App. (1882) 243.

PHALAENOPSIS ROSEA Lindl. in Gard. Chron. (1848) 671, text cut; Paxt. Mag. Bot. 16 (1849) 60, 189, text cut; Lindl. in Paxt. Flow. Gard. 2 (1852) 173, t. 72; Reichb. f. in Bot. Zeit. 10 (1852) 673; Moore Ill. Orch. Pl. (1857) Phalaen. 7; Hook. in Bot. Mag. 86 (1860) t. 5212; Lem. in Jard. Fleur. 3 (1853) t. 283, in Ill. Hort. 10 (1863) Misc. 11; Van Houtte in Fl. des Serres 16 (1866) t. 1645; Jennings Orch. (1875) t. 27; Burb. in The Garden 22 (1882) 119 (excl. var.); Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270; Rolfe in Gard. Chron. II 26 (1886) 276; Warner & Will. Orch. Alb. 6 (1887) t. 268; Veitch Man. Orch. Pl. pt. 7 (1891) 34; Ames Orch. 1 (1905) 102 = *Phalaenopsis equestris* (Schauer) Reichb. f.

**PHALAENOPSIS SANDERIANA** Reichb. f. in *Flora* 65 (1882) 466, in *Gard. Chron.* II 19 (1883) 607, 656, 20 (1883) 110; Burb. in *The Garden* 24 (1883) 270, *t.* 407; Edit. in *l'Orchidoph.* 3 (1883) 661; Godefr.-Lebeuf in *l'Orchidoph.* 5 (1885) 18, *t.*; Linden & Rodigas in *Lindenia* 1 (1885) 51, *t.* 23; Will. *Orch. Grow. Man.* ed. 6 (1885) 535, ed. 7 (1894) 670; Rolfe in *Gard. Chron.* II 26 (1886) 212; Warner & Will. *Orch. Alb.* 5 (1886) *t.* 209; Gower in *The Garden* 35 (1889) 363; Roebelen in *Gard. Chron.* III 7 (1890) 459, in *textu*; Stein *Orchideenb.* (1892) 511; Kränzl. in *Sander Reichenbachia* II 2 (1894) 41, *t.* 68 (upper fig.); Rolfe in *Orch. Rev.* 8 (1900) 133, 15 (1907) 185, *fig.* 22; Cogn. in *Dict. Icon. Orch.* (1903) *Phalaenop. hybr. t.* 2; Rolfe in *l'Orchidoph.* 13 (1903) 101; G. Wilson in *Orch. World* 6 (1916) 266 = *Phalaenopsis amabilis* (Linn.) Blume subvar. *sanderiana* (Reichb. f.) Ames.

**PHALAENOPSIS SUMATRANA** Korth. apud Naves *Novis. App.* (1882) 242.

**PHALAENOPSIS VIOLACEA** Teijsm. & Binn. apud Naves *Novis. App.* (1882) 243.

#### 80. AERIDES Loureiro

**AERIDES AUGUSTIANUM** Rolfe in *Lindenia* 5 (1889) 39, *t.* 210, in *Gard. Chron.* III 7 (1890) 9; Veitch *Man. Orch. Pl.* pt. 7 (1891) 65; Ames *Orch.* 5 (1915) 218.

Discovered in the Philippines by Auguste Linden; no specimen seen.

**AERIDES JARCKIANUM** Schltr. in *Orchis* 9 (1915) 53 *t.* 5, *figs.* 15-21.

Luzon, *Jarck*. No specimen seen. Reported to have been collected near the "Lagune von Manila."

**AERIDES LAWRENCIAE** Reichb. f. in *Gard. Chron.* II 20 (1883) 307, 368, 460; Warner & Will. *Orch. Alb.* 6 (1887) *t.* 270; Gower in *The Garden* 35 (1889) 484, *t.* 702; Veitch *Man. Orch. Pl.* pt. 7 (1891) 71, *text cut*; Kränzl. *Xen. Orch.* 3 (1892) *t.* 252, *fig.* 5; Ames *Orch.* 2 (1908) 249, 5 (1915) 218, in *Philip. Journ. Sci.* 4 (1909) Bot. 600; G. Wilson in *Orch. Rev.* 31 (1923) 19.

Mindanao (Davao), *R. F. Black s. n., Elmer 10787, Lyon Y* (without locality).

Var. **AMESIANUM** Sander ex Kränzl. in *Gard. Chron.* III 10 (1891) 393; Kränzl. *Xen. Orch.* 3 (1892) 94, *t.* 252, *figs.* 1-4, 7-10; Ames *Orch.* 2 (1908) 250; G. Wilson in *Orch. Rev.* 31 (1923) 19, in *textu*.

Var. **SANDERIANUM** (Reichb. f.) Sander ex Kränzl. *Xen. Orch.* 3 (1892) 95, in *textu*, *t.* 252, *fig.* 6 (as var. *sanderiana*); Ames *Orch.* 2 (1908) 250; G. Wilson in *Orch. Rev.* 31 (1923) 19, in *textu*.

*Aërides sanderianum* Reichb. f. in *Gard. Chron.* II 22 (1884) 134; O'Brien in *Gard. Chron.* II 22 (1884) 460.

*Aërides lawrenciae* subvar. *sander's* Veitch *Man. Orch. Pl.* pt. 7 (1891) 72, *text cut*.

**AERIDES ODORATUM** Lour. *Fl. Cochinch* 2 (1790) 525; Sw. in *Kongl. Svensk. Vet.-Akad. Nya Handl.* 21 (1800) 244; Lindl. *Gen. & Sp. Orch.* (1833) 239; Knowles & Westc. *Floral Cab.* 2 (1838) *t.* 75; Hook. in *Bot. Mag.* 71 (1845) *t.* 4139; Regel in *Gartenfl.* 6



(1857) *t.* 272; Naves Novis. App. (1882) 239; Hook. f. Fl. Brit. Ind. 6 (1890) 47; Veitch Man. Orch. Pl. pt. 7 (1891) 76; Grant Orch. Burma (1895) 272; Ridl. in Journ. Linn. Soc. 31 (1896) 294, 32 (1896) 376; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 212, *t.* 282; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 581, Fig.-Atlas (1912) *fig.* 436; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 143; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 179; Ames Orch. 2 (1908) 250, 5 (1915) 218, 6 (1920) 220, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 197.

*Aërides cornutum* Roxb. Hort. Beng. (1814) 63, *nomen*; Roxb. Fl. Ind. ed. 2, 3 (1832) 472; Lindl. in Bot. Reg. 18 (1832) *t.* 1485.

*Aërides virens* Lindl. in Bot. Reg. 29 (1843) Misc. 41, 30 (1844) *t.* 41; Miq. Fl. Ind. Bat. 3 (1859) 695; Naves Novis. App. (1882) 239; Warner & Will. Orch. Alb. 4 (1885) *t.* 160; Veitch Man. Orch. Pl. pt. 7 (1891) 81.

*Aërides suaveolens* Blume Rumphia 4 (1848) 53, *t.* 193, *fig.* 1, Mus. Bot. Lugd.-Bat. 1 (1849) 112, non Roxb.

*Aërides suavissimum* Lindl. in Journ. Hort. Soc. 4 (1849) 264, in Paxt. Flow. Gard. 2 (1851-52) 141, *t.* 66; Hook. f. Fl. Brit. Ind. 6 (1890) 47; Veitch Man. Orch. Pl. pt. 7 (1891) 78, *text cut*; Rolfe in Lindenia 7 (1891) 41, *t.* 307; Ceron Cat. Pl. Herb. Manila (1892) 168.

*Aërides flavidum* Lindl. in Paxt. Flow. Gard. 2 (1851-52) 101.

*Aërides reichenbachii* J. Linden ex Reichb. f. in Koch. & Fintelm. Wochenschr. 1 (1858) 61; Reichb. f. Xen. Orch. 2 (1862) 11, *t.* 104; Naves Novis. App. (1882) 239; J. Linden in Lindenia 1 (1885) 7, *t.* 1.

*Aërides jucundum* Reichb. f. in Hamb. Gartenz. 16 (1860) 281; Morr. in Belg. Hort. 26 (1876) 289.

*Aërides nobile* Warner Sel. Orch. I (1862) *t.* 11; Regel in Gartenfl. 19 (1870) 40; Naves Novis. App. (1882) 239.

*Aërides reichenbachii* Linden var. *cochinchinense* Hort. ex Reichb. f. in Gard. Chron. II 14 (1880) 620.

*Aërides rohanianum* Reichb. f. in Gard. Chron. II 21 (1884) 206; Ames Orch. 5 (1915) 219.

*Aërides wilsonianum* Hort. ex Gard. Chron. II 23 (1885) 705.

*Aërides ballantianum* Reichb. f. in Gard. Chron. II 24 (1885) 198.

Mindoro, *Lyon P.* A very variable and widely distributed species.

Many horticultural varieties have been described and some field varieties, usually based on one of the specific names formerly in use. In India from the Himalayas to Sylhet, in Burma, Malay Peninsula, Cochin China, China, Java, and Borneo.

**AËRIDES QUINQUEVULNERUM** Lindl. Sert. Orch. (1838) *t.* 30; Paxt. Mag. Bot. 6 (1839) 167, 260, 8 (1841) 241, *t.* and *text cut*; Reichb. f. in Walp. Ann. 6 (1864) 899; Naves Novis. App. (1882) 239; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; J. Linden in Lindenia 4 (1888) 15, *t.* 150; Veitch Man. Orch. Pl. pt. 7 (1891) 77; Warner & Will. Orch. Alb. 11 (1897) *t.* 495; Ames Orch. 1 (1905) 104, 2 (1908) 252, 5 (1915) 219; Merr. Sp. Blancoanae (1918) 116.

*Aërides maculatum* Llanos Frag. Fl. Filip. (1851) 93; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 72, t. 409, non Buch.-Ham.

*Aërides fenzlianum* Reichb. f. in Hamb. Gartenz. 16 (1860) 282.

*Aërides thibautianum* Reichb. f. in Gard. Chron. (1866) 101.

Luzon (Bataan, Bulacan, Rizal, Cavite, Laguna, Tayabas). A common species in and about Rizal at relatively low altitude.

Var. **FARMERI** (Boxall) Stein Orchideenb. (1892) 63; Ames Orch. 2 (1908) 253.

*Aërides farmeri* Boxall ex Naves Novis. App. (1882) 239, *nomen*.

*Aërides album* Sander ex Stein Orchideenb. (1892) 63, in syn.

Var. **MARGINATUM** (Reichb. f.) Stein Orchideenb. (1892) 63; Ames Orch. 2 (1908) 253.

*Aërides marginatum* Reichb. f. in Gard. Chron. II 23 (1885) 533, 25 (1886) 170.

Var. **PURPURATUM** Reichb. f. in Gard. Chron. II 16 (1881) 230; Ames Orch. 2 (1908) 253.

Var. **SCHADENBERGIANUM** Stein Orchideenb. (1892) 63; Ames Orch. 2 (1908) 253.

Mindanao, *Schadenberg* (fide Stein).

#### EXCLUDED OR SYNONYMOUS SPECIES

**AËRIDES ALBUM** Sander ex Stein Orchideenb. (1892) 63, in syn.

*Aërides quinquevulnerum* Lindl. var. *farmeri* (Boxall) Stein.

**AËRIDES CYLINDRICUM** Boxall ex Naves Novis. App. (1882) 239, *nomen*.

**AËRIDES DIURNUM** Teijsm. & Binn. in Nat. Tijdschr. Ned. Ind. 27 (1864) 19 = *Sarcochilus pallidus* (Blume) Reichb. f.

**AËRIDES FARMERI** Boxall ex Naves Novis. App. (1882) 239, *nomen* = *Aërides quinquevulnerum* Lindl. var. *farmeri* (Boxall) Stein.

**AËRIDES FENZLIANUM** Reichb. f. in Hamb. Gartenz. 16 (1860) 282 = *Aërides quinquevulnerum* Lindl.

**AËRIDES LARPENTA** Boxall ex Naves Novis. App. (1882) 239, *nomen*.

**AËRIDES MACULATUM** Llanos Frag. Pl. Filip. (1851) 93; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 72, t. 409, non Buch.-Ham. = *Aërides quinquevulnerum* Lindl.

**AËRIDES MARGARITACEUM** Boxall ex Naves Novis. App. (1882) 239, *nomen*.

**AËRIDES MARGINATUM** Reichb. f. in Gard. Chron. II 23 (1885) 533, 25 (1886) 170 = *Aërides quinquevulnerum* Lindl. var. *marginatum* (Reichb. f.) Stein.

**AËRIDES MENDELLII** Boxall ex Naves Novis. App. (1882) 239, *nomen*.

**AËRIDES NOBILE** Warner Sel. Orch. Pl. I (1862) t. 11; Regel in Gartenfl. 19 (1870) 40; Naves Novis. App. (1882) 239 = *Aërides odoratum* Lour.

**AÆRIDES ORTGESIANUM** Reichb. f. in Gard. Chron. II 23 (1885) 501; Ames Orch. 5 (1915) 218.

No specimens from the Philippines have been seen. A near ally, probably a form, of *Aërides quinquevulnerum* Lindl.

**AÆRIDES REICHENBACHII** J. Linden ex Reichb. f. in Koch & Fintelm. Wochenschr. 1 (1858) 61; Naves Novis. App. (1882) 239; J. Linden in Lindenia 1 (1885) t. 1 = *Aërides odoratum* Lour.

**AÆRIDES ROEBELENI** Reichb. f. in Gard. Chron. II 21 (1884) 510; Ames Orch. 5 (1915) 219.

No specimens from the Philippines have been seen. A near ally, probably a form, of *Aërides quinquevulnerum* Lindl.

**AÆRIDES ROHANIANUM** Reichb. f. in Gard. Chron. II 21 (1884) 206; Ames Orch. 5 (1915) 219 = *Aërides odoratum* Lour.

**AÆRIDES SAVAGEANUM** Sander ex Veitch Man. Orch. Pl. pt. 7 (1891) 78; Rolfe in Sander Reichenbachia II 2 (1894) 81, t. 81; O'Brien in Gard. Chron. III 16 (1894) 562; Ames Orch. 5 (1915) 219.

**AÆRIDES SHIBATITIANA** Boxall ex Naves Novis. App. (1882) 239, *nomen*.

Perhaps an error for *Aërides thibautianum* Reichb. f., which is equal to *Aërides quinquevulnerum* Lindl.

**AÆRIDES SPURIUM** Lindl. Gen. & Sp. Orch. (1833) 241 = *Dendrobium spurium* (Blume) J. J. Sm.

**AÆRIDES SUAVISSIMUM** Lindl. in Journ. Hort. Soc. 4 (1849) 264; Ceron Cat. Pl. Herb. Manila (1892) 168 = *Aërides odoratum* Lour.

**AÆRIDES THIBAUTIANUM** Reichb. f. in Gard. Chron. (1866) 101 = *Aërides quinquevulnerum* Lindl.

**AÆRIDES VIRENS** Lindl. in Bot. Reg. 29 (1843) Misc. 41; Naves Novis. App. (1882) 239 = *Aërides odoratum* Lour.

#### 81. RHYNCHOSTYLIS Blume

**RHYNCHOSTYLIS RETUSA** (Linn.) Blume Bijdr. (1825) 286, fig. 49; Reichb. f. in Bonpl. 5 (1857) 40, in Walp. Ann. 6 (1864) 887 (and vars.); Rolfe in Journ. Bot. 23 (1885) 216; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; Hook. f. Fl. Brit. Ind. 6 (1890) 32; Veitch Man. Orch. Pl. pt. 7 (1891) 58, t. (and vars.); Stein Orchideenb. (1892) 536, fig. 164 (and vars. and forms); Grant Orch. Burma (1895) 290 (and vars.); Ridl. in Journ. Linn. Soc. 31 (1896) 294, 32 (1896) 356; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik.-Himal.) (1898) 213, t. 284; Trim. Handb. Fl. Ceyl. 4 (1898) 187; Rolfe in Orch. Rev. 9 (1901) 281, fig. 42 (var. *guttata*); Cogn. in Dict. Icon. Orch. (1902) Rhynchost. t. 1; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 629, Fig.-Atlas (1914) fig. 471; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 143; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 158; Ames Orch. 2 (1908) 255,

- 5 (1915) 219; Merr. Sp. Blancoanae (1918) 117; Ames in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 197.
- Epidendrum retusum* Linn. Sp. Pl. (1753) 953, ed. 2 (1763) 1351; Poir. in Lam. Encycl. Suppl. 1 (1810) 384.
- Aërides retusum* Sw. in Schrad. Journ. Bot. 2 (1799) 233; Willd. Sp. Pl. 4 (1805) 130; Pers. Syn. Pl. 2 (1807) 522; Spreng. Syst. Veg. 3 (1826) 719; Grah. Cat. Pl. Bomb. (1839) 204.
- Limodorum retusum* Sw. in Nov. Act. Ups. 6 (1799) 80.
- Aërides praemorsum* Willd. Sp. Pl. 4 (1805) 130; Spreng. Syst. Veg. 3 (1826) 719; Grah. Cat. Pl. Bomb. (1839) 264.
- Epidendrum indicum* Poir. in Lam. Encycl. Suppl. 1 (1810) 384.
- Aërides undulatum* Sm. in Rees Cyclop. 39 (1819) No. 13.
- Aërides spicatum* D. Don Prodr. Fl. Nepal. (1825) 31.
- Epidendrum hippium* Buch.-Ham. ex D. Don Prod. Fl. Nepal (1825) 32, in syn.
- Rhynchostylis praemorsa* Blume Bijdr. (1825) 286; Hassk. in Hoev. & De Vriese Tijdschr. Nat. Gesch. 9 (1842) 143; Hassk. Pl. Jav. Rar. (1848) 128.
- Sarcanthus guttatus* Lindl. in Bot. Reg. 17 (1831) t. 1443.
- Aërides guttatum* Roxb. Fl. Ind. ed. 2, 3 (1832) 471; Regel in Gartenfl. 12 (1863) 339, t. 415, figs. 8-12; Morr. in Belg. Hort. 26 (1876) 291.
- Saccolabium guttatum* Lindl. in Wall. Cat. (1832) No. 7308, nomen, Gen. & Sp. Orch. (1833) 220; Paxt. Mag. Bot. 2 (1835) 141, 6 (1839) 214, 11 (1844) 211; Lindl. Sert. Orch. (1841) sub t. 47; Hook. in Bot. Mag. 70 (1844) t. 4108; Griff. Notul. 1 (1847) 22, Icon. Pl. Asiat. 1 (1847) tt. 8, 9; Wight Icon. 5<sup>1</sup> (1852) 19, t. 1745-6; Harting. Parad. Vindob. 2 (1848-60) t. 13; De Vriese Ill. Orch. Ind. Neerl. (1854) t. 14; Lindl. in Journ. Linn. Soc. 3 (1859) 32; Miq. Fl. Ind. Bat. 3 (1859) 693; Dalz. & Gibs. Bomb. Fl. (1861) 263; Thw. Enum. Pl. Zeyl. (1864) 303; Drury Handb. Ind. Fl. 3 (1869) 405; Puydt Orch. (1880) 227, text cut; Naves Novis. App. (1882) 241; Godefr.-Lebeuf in l'Orchidoph. 8 (1888) 273, t. (var. *giganteum*), 11 (1891) 11; Meylhand in Journ. des Orch. 2 (1892) 255; Will. Orch. Grow. Man. ed. 7 (1894) 701 and var.); Meylhand in Sem. Hort. 3 (1899) 489.
- Saccolabium praemorsum* Lindl. Gen. & Sp. Orch. (1833) 221; Paxt. Mag. Bot. 4 (1837) 94; Hassk. in Tijdschr. Nat. Gesch. 9 (1842) 143, Pl. Jav. Rar. (1848) 128; Edit. in Fl. des Serres 7 (1851-52) 92, text cut; Miq. Fl. Ind. Bat. 3 (1859) 693; Drury Handb. Ind. Fl. 3 (1869) 405; Meylhand in Journ. des Orch. 2 (1891) 255, in Sem. Hort. 3 (1899) 489, non Hook. f.
- Saccolabium spicatum* Lindl. Gen. & Sp. Orch. (1833) 221.
- Orchis lanigera* Blanco Fl. Filip. (1837) 641, ed. 2 (1845) 446, ed. 3, 3 (1879) 37.
- Saccolabium blumei* Lindl. in Bot. Reg. 27 (1841) Misc. 55; Lindl. Sert. Orch. (1841) t. 47; Miq. Fl. Ind. Bat. 3 (1859) 693; Puydt Orch. (1880) 313, t. 27; Naves Novis. App. (1882) 241; Edit. in Gard. Chron. II 23 (1885) 572, fig. 105; Warner & Will. Orch. Alb. 4 (1885) t. 169; Teran in Ill. Hort. 32 (1885) 125, t. 566; Meylhand in Journ. des Orch. 2 (1891) 254; Will. Orch. Grow.

- Man. ed. 7 (1894) 699, *t.*; E. L. in Sem. Hort. 2 (1898) 376, *fig. 375*; Meylhand in Sem. Hort. 3 (1899) 489, 516.
- Saccolabium macrostachyum* Lindl. Sert. Orch. (1841) sub *t. 47*.
- Saccolabium retusum* Voigt Hort. Sub. Calc. (1845) 630; Van Houtte in Fl. des Serres 14 (1861) *t. 1463-4*; Will. Orch. Grow. Man. ed. 7 (1894) 703.
- Saccolabium rheedii* Wight Icon. 5<sup>1</sup> (1852) 19.
- Saccolabium blumei* Lindl. var. *major* Will. Orch. Grow. Man. (1852) 89, ed. 7 (1894) 699; J. Linden Pescat. 1 (1860) *t. 21*; Lem. in Ill. Hort. 15 (1868) *t. 545*; Meylhand in Journ. des Orch. 2 (1891) 254.
- Rhynchostylis guttata* Reichb. f. in Bonpl. 2 (1854) 93; Rolfe in Orch. Rev. 22 (1914) 281, *fig. 33*.
- Saccolabium gurwalicum* Lindl. in Journ. Linn. Soc. 3 (1859) 32; Reichb. f. in Gard. Chron. II 12 (1879) 102.
- Rhynchostylis gurwalica* Reichb. f. in Walp. Ann. 6 (1864) 888.
- Rhynchostylis retusa* (Linn.) Blume var. *macrostachya* Reichb. f. in Walp. Ann. 6 (1864) 888.
- Saccolabium furcatum* Hort. ex Will. Orch. Grow. Man. ed. 3 (1868) 201, ed. 7 (1894) 700.
- Saccolabium holfordianum* Hort. ex Warner Sel. Orch. Pl. II (1874) *t. 18*.
- Saccolabium littorale* Reichb. f. in Gard. Chron. II 16 (1881) 198; Hook. f. Fl. Brit. Ind. 6 (1890) 33, cf. Ridl. in Journ. Linn. Soc. 32 (1896) 356.
- ? *Saccolabium berkeleyi* Reichb. f. in Gard. Chron. II 19 (1883) 814, Edit. in l'Orchidoph. 3 (1883) 693; Hook. f. Fl. Brit. Ind. 6 (1890) 33; Will. Orch. Grow. Man. ed. 7 (1894) 699.
- Saccolabium heathii* Hort. ex Gard. Chron. II 24 (1885) 369.
- Saccolabium turneri* Will. Orch. Grow. Man. ed. 6 (1885) 568, ed. 7 (1894) 703.
- Saccolabium blumei* Lindl. var. *russellianum* Will. in Warner & Will. Orch. Alb. 5 (1886) *t. 238*; Will. Orch. Grow. Man. ed. 6 (1885) 564, ed. 7 (1894) 699.
- Gastrochilus blumei* Ktze. Rev. Gen. Pl. 2 (1891) 661.
- Gastrochilus gorwalicus* Ktze. Rev. Gen. Pl. 2 (1891) 661.
- Gastrochilus retusus* Ktze. Rev. Gen. Pl. 2 (1891) 661.
- Gastrochilus rheedii* Ktze. Rev. Gen. Pl. 2 (1891) 661.
- Gastrochilus spicatus* Ktze. Rev. Gen. Pl. 2 (1891) 661.
- ? *Rhynchostylis violacea* (Lindl.) Reichb. f. var. *berkeleyi* Stein Orchideenb. (1882) 537.
- Gastrochilus praemorsus* Dur. & Jacks. Ind. Kew. Suppl. 1 (1903) 178, non Ktze.
- Rhynchostylis violacea* Ames Orch. 1 (1905) 105, non Reichb. f.
- Luzon (Bataan, Rizal), *Lyon 13, Whitford 36, Merrill 4190, Sp. Blancoanae 1030, B. S. 13548 Ramos, Weber 10, Reillo 9*. Epiphyte. In India, Ceylon, Burma, Malay Peninsula, Siam, Java, and Borneo.
- A polymorphic species, which has been variously treated either as several distinct species or as one species with several varieties and forms. There are many varieties and forms based on extra-Philippine material

that are not listed in the above synonymy unless as species. Cf. Stein Orchideenb. (1892) 536-537 for some of these variants.

EXCLUDED OR SYNONYMOUS SPECIES

**RHYNCHOSTYLIS VIOLACEA** Ames Orch. 1 (1905) 105 (excl. syn.) non Reichb. f. = *Rhynchostylis retusa* (Linn.) Blume.

**RHYNCHOSTYLIS VIOLACEA** Reichb. f. in Bonpl. 2 (1854) 93; in Walp. Ann. 6 (1864) 888; Van Houtte in Fl. des Serres 17 (1869) 91; Stein Orchideenb. (1892) 537; Ames Orch. 5 (1915) 219 = *Anota violacea* (Lindl.) Schltr.

82. **LUISIA** Gaudichaud

**LUISIA FOXWORTHII** Ames Orch. 2 (1908) 222, *text cut*, 5 (1915) 220.

Luzon (Bataan, Bulacan, Sorsogon), Polillo, *B. S. 1679 Foxworthy, 9257 Robinson, F. B. 7191 Curran, Elmer 16251*. Epiphyte at sea level to 830 m altitude.

**LUISIA RAMOSII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 55, Orch. 5 (1915) 220.

Luzon (Cagayan, Zambales), *B. S. 7970 Ramos, Boettcher s. n.*

**LUISIA TERETIFOLIA** Gaudich. in Freyc. Voy. Uranie et Physic. (1829) Bot. 427, *t. 37*; Blume Rumphia 4 (1848) 50, *t. 194, fig. 3, t. 197 D* (excl. syn. as to *triste*); Blume Mus. Bot. Lugd.-Bat. 1 (1849) 63 (excl. syn. *Epidendrum triste* Forst.); Reichb. f. in Walp. Ann. 3 (1852) 549, 6 (1863) 621 (excl. syn. *Epidendrum triste* Forst.); Lindl. Fol. Orch. Luisia (1853) 2 (excl. syn. *Epidendrum triste* Forst.); Miq. Fl. Ind. Bat. 3 (1859) 685; Naves Novis. App. (1882) 242; Hook. f. Fl. Brit. Ind. 6 (1890) 22; Grant Orch. Burma (1895) 236; Ridl. in Journ. Linn. Soc. 32 (1896) 349; King & Pantl. in Ann. Roy. Bot. Gard. Calc. 8 (Orch. Sik-Himal.) (1898) 203, *t. 271*; Trim. Handb. Fl. Ceyl. 4 (1898) 190; Rolfe in Forbes & Hemsl. in Journ. Linn. Soc. 36 (1903) 33; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 545, Fig.-Atlas (1912) *fig. 413*, Orch. Amb. (1905) 91; Duthie in Ann. Roy. Bot. Gard. Calc. 9 (Orch. North-west. Himal.) (1906) 140; Ames in Philip. Journ. Sci. 8 (1913) Bot. 453, 9 (1914) Bot. 15, Orch. 5 (1915) 220; Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 281.

*Cymbium triste* Roxb. Fl. Ind. ed. 2, 3 (1832) 461 (excl. syn.); Hook. in Bot. Mag. 65 (1838) *t. 3648* (excl. syn. in part); Wight Icon. 3<sup>2</sup> (1849) 10 (excl. *t.*); Griff. Notul. 3 (1851) 340, *quoad Mergui planta*, non Willd.

*Dendrobium teres* Blanco Fl. Filip. (1837) 638, non Roxb.

*Dendrobium teretifolium* Blanco Fl. Filip. ed. 2 (1845) 444, ed. 3, 3 (1879) 34, non R. Br.

*Cymbidium tenuifolium* Wight Icon. 5 (1852) *t. 1689* (excl. text), non Willd.

*Luisia burmanica* Lindl. Fol. Orch. Luisia (1853) 3; Reichb. f. in Walp. Ann. 6 (1863) 621.

*Luisia zeylanica* Lindl. Fol. Orch. Luisia (1853) 3; Reichb. f. Xen. Orch. 1 (1856) 204, in Walp. Ann. 6 (1863) 621; Thw. Enum. Pl. Zeyl. (1864) 302.

*Luisia trichorrhiza* Reichb. f. Xen. Orch. 1 (1856) t. 77, figs. 8-18, non Blume.

*Luisia platyglossa* Reichb. f. in Walp. Ann. 6 (1863) 622, in Trans. Linn. Soc. 30 (1874) 144.

*Luisia tristis* Ktze. Rev. Gen. Pl. 2 (1891) 672 (excl. syn.), non Hook. f.

Luzon (Bontoc, Bulacan, Laguna, Sorsogon), Negros (Oriental Negros), Leyte, Palawan, Mindanao (Camiguin Island, Agusan, Surigao). A fairly common, variable, and widely distributed species. Epiphyte at 70 to 500 m altitude. In India, Ceylon, Burma, Malay Peninsula, Siam, China, Sumatra, Java, Amboina, Moluccas, Borneo (fide Ridley), and also the Marianne Islands and New Caledonia.

**LUISIA VALIDA** Reichb. f. in Bonpl. 10 (1862) 335, in Walp. Ann. 6 (1863) 621; Ames Orch. 5 (1915) 220.

According to Reichenbach (Bonpl. l. c.) of Philippine origin. The description is vague, and it seems probable that the species is conspecific with *Luisia teretifolia* Gaudich.

#### EXCLUDED OR SYNONYMOUS SPECIES

**LUISIA ANTENNIFERA** Blume apud Naves Novis. App. (1882) 242.

**LUISIA BRACHYSTACHYS** Blume apud Naves Novis. App. (1882) 242.

#### 83. ARACHNIS Blume

**ARACHNIS LYONII** Ames Orch. 5 (1915) 221.

Luzon (Isabela), Mindanao (Lanao), *Lyon 126*, *M. S. Clemens s. n.* Terrestrial at 1,000 m altitude in Luzon.

#### 84. VANDOPSIS Pfitzer

**VANDOPSIS LEYTENSIS** Ames Orch. 5 (1915) 222.

Luzon (Rizal, Sorsogon), Leyte, *Lyon s. n.*, *Elmer 16860*, *Wenzel 014*, *0154*, *0172*, *0900 C.* Epiphyte at 60 to 800 m altitude.

**VANDOPSIS LISSOCHILOIDES** (Gaudich.) Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1889) 210, fig. 229; Kerchove Livre des Orch. (1894) 138, fig. 114; J. J. Sm. Orch. Amb. (1905) 102; Ames Orch. 2 (1908) 220, 5 (1915) 223; J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1913) 76 (reprint 6), in Merr. Interp. Rumph. Herb. Amb. (1917) 178.

*Fieldia lissochiloides* Gaudich. in Freyc. Voy. Uranie et Physic. (1829) Bot. 424, t. 36; Blume Rumphia 4 (1848) t. 194, fig. 2; Van Houtte in Fl. des Serres 17 (1869) 91; Reichb. f. Xen. Orch. 2 (1862) 38, in Walp. Ann. 6 (1864) 870.

*Vanda lissochiloides* Lindl. Gen. & Sp. Orch. (1833) 216; Blume Rumphia 4 (1848) 49, Mus. Bot. Lugd.-Bat. 1 (1849) 63; Reichb. f. in Walp. Ann. 1 (1849) 790, 3 (1852) 565; Miq. Fl. Ind. Bat. 3 (1859) 680; Naves Novis. App. (1882) 240.

*Vanda batemanii* Lindl. in Bot. Reg. 32 (1846) t. 59 (as *batemanni*); Paxt. Mag. Bot. 14 (1847) 21; Lindl. in Paxt. Flow. Gard. 2 (1851) 22; S. Ch. in Fl. des Serres 6 (1852) 332; Lindl. Fol. Orch. Vanda (1853) 2; Moore Ill. Orch. Pl. (1857) Vanda 10, t. 1; du Buyss in Fl. des Serres 18 (1870) 161, t. 1921-2.

*Grammatophyllum pantherinum* Herb. Zipp. ex Blume Rumphia 4 (1848) 49, in syn.

*Stauroopsis lissochiloides* Benth. ex Pfitz. Vergl. Morph. Orch. (1882) 14; Veitch Man. Orch. Pl. pt. 7 (1891) 3; Cogn. in Journ. des Orch. 5 (1894) 291, fig. 80; Cogn. Dict. Icon. Orch. (1898) *Stauroopsis* t. 1; G. Wilson in Orch. World 4 (1914) 227.

*Stauroopsis batemanii* Nichols. Dict. Gard. 3 (1886) 493 (as *batemanni*).

Panay, Mindanao (Zamboanga, Bukidnon, Sigaboy Island), *Loher* 6025 (cult. in Manila), *B. S.* 11774 *Robinson*, 21434 *Escritor*, 19345 *Wester*, *Merrill* 8317.

EXCLUDED OR SYNONYMOUS SPECIES

VANDOPSIS KUPPERIANA Kränzl. in Fedde Repert. 17 (1921) 390 = *Staurochilus luzonensis* Ames.

85. RENANTHERA Loureiro

RENANTHERA MONACHICA Ames Orch. 5 (1915) 224.

Luzon (Zambales), *B. S.* 3089 *Curran*.

RENANTHERA STORIEI Reichb. f. in Gard. Chron. II 14 (1880) 296, 16 (1881) 364; Warner & Will. Orch. Alb. 11 (1897) t. 513; Cogn. in Dict. Icon. Orch. (1907) *Renanth.* t. 2; Ames Orch. 2 (1908) 219, 5 (1915) 225; Rolfe in Orch. Rev. 23 (1915) 279, 297, fig. 38; W. T. in The Garden 79 (1915) 445, text cut; G. Wilson in Orch. World 6 (1915) 16.

*Vanda storiei* Storie ex Reichb. f. in Gard. Chron. II 14 (1880) 296, in syn.; Hook. f. in Bot. Mag. 123 (1897) t. 7537.

Luzon (Bataan, Rizal), Bucas Grande, Dinagat, *F. B.* 20110 *Borden*, *Whitford* 1336, *Loher* 6000, *B. S.* 35085, 35228 *Ramos & Pascasio*, *Lyon* 136. Apparently at low altitudes (up to 130 m).

EXCLUDED OR SYNONYMOUS SPECIES

RENANTHERA AMABILIS Boxall ex Naves Novis. App. (1882) 241, *nomen*.

RENANTHERA ARACHNITIS Lindl. apud Naves Novis. App. (1882) 240.

RENANTHERA COCCINEA Lour. apud Naves Novis. App. (1882) 240.

RENANTHERA ELONGATA Ames Orch. 5 (1915) 224, non Lindl.

*Renanthera matutina* Lindl. in Bot. Reg. 29 (1843) t. 41, quoad Philip.; G. K. in Bot. Zeit. 1 (1843) 760, quoad Philip.

*Renanthera micrantha* Blume Rumphia 4 (1848) 60, Mus. Bot. Lugd.-Bat. 1 (1849) 60; Reichb. f. in Walp. Ann. 3 (1852) 566; Miq. Fl. Ind. Bat. 3 (1859) 698; Naves Novis. App. (1882) 240.



Although this species, under the name *Renanthera micrantha*, is reported as being of Philippine origin, no material referable to it has been seen and it seems very doubtful that it occurs in the Islands.

**RENANTHERA HOOKERIANA** Reichb. f. apud Naves Novis. App. (1882) 241.

**RENANTHERA LOWEI** Reichb. f. apud Naves Novis. App. (1882) 241.

**RENANTHERA MATUTINA** Lindl. in Bot. Reg. 29 (1843) t. 41, quoad Philip.; G. K. in Bot. Zeit. 1 (1843) 760, quoad Philip. = *Renanthera elongata* Ames, spec. excl.

**RENANTHERA MICRANTHA** Blume Rumphia 4 (1848) 60, Mus. Bot. Lugd.-Bat. 1 (1849) 60; Reichb. f. in Walp. Ann. 3 (1852) 566; Miq. Fl. Ind. Bat. 3 (1859) 698; Naves Novis. App. (1882) 240 = *Renanthera elongata* Ames, spec. excl.

**RENANTHERA MOLUCCANA** Blume apud Naves Novis. App. (1882) 240.

**RENANTHERA SULINGI** Lindl. apud Naves Novis. App. (1882) 240.

#### 86. **ACAMPE** Lindley

**ACAMPE LOHERIANA** Kränzl. in Fedde Repert. 17 (1921) 386.

*Loher s. n.*

Kränzlin states: "Philippinen. Ohne genaueren Standort."

The genus *Acampe* has not heretofore been reported from the Philippines, and field specimens are much desired to authenticate its habitat there. The material examined is inadequate and it is of garden origin.

#### 87. **VANDA** Jones

**VANDA CLITELLARIA** Reichb. f. in Flora 55 (1872) 277; Ames Orch. 5 (1915) addend. opp. p. 258.

Sulu Archipelago (Mangsi Island), *Wilkes Exped.* (in Gray Herb.).

Very closely allied to *Vanda lamellata* Lindl. and perhaps only a form of it.

**VANDA LAMELLATA** Lindl. in Bot. Reg. 24 (1838) Misc. 66; Paxt. Mag. Bot. 6 (1839) 143; S. Ch. in Fl. des Serres 6 (1851) 332; Lindl. in Paxt. Flow. Gard. 2 (1851) 22, Fol. Orch. Vanda (1853) 9; Moore Ill. Orch. Pl. (1857) Vanda 12; Miq. Fl. Ind. Bat. 3 (1859) 680; Van Houtte in Fl. des Serres 17 (1867-68) 92; Reichb. f. in Walp. Ann. 6 (1864) 869; Naves in Blanco Fl. Filip. ed. 3, Laminas (1877-83) t. 465; Naves Novis. App. (1882) 240; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; Veitch Man. Orch. Pl. pt. 7 (1891) 99; Stein Orchideenb. (1892) 583; Schltr. in Perk. Frag. Fl. Philip. (1904) 43; Ames Orch. 1 (1905) 103, 2 (1908) 240, 5 (1915) 225.

*Vanda cumingii* Lindl. ex Paxt. in Loud. Hort. Brit. Suppl. 3 (1850) 654, *nomen*.

Luzon (Abra, Lepanto, Benguet, Zambales, Bataan, Cavite), Mindoro, Panay (Capiz), Palawan, Comiran. A fairly common species of wide distribution. On rocks or on trees at sea level to 400 m altitude.

- Var. **BOXALLI** Reichb. f. in Gard. Chron. II 13 (1880) 743, 15 (1881) 87, *fig. 18*, 16 (1881) 19, 786; Edit. in The Garden 19 (1881) 574, *t. 287*, in l'Orchidoph. 5 (1885) 129; Warner & Will. Orch. Alb. 8 (1889) *t. 338*; Veitch Man. Orch. Pl. pt. 7 (1891) 100, *text cut*; Stein Orchideenb. (1892) 583; Cogn. in Dict. Icon. Orch. (1898) *Vanda t. 9*; Ames Orch. 2 (1908) 241, 5 (1915) 225.  
*Vanda boxallii* Reichb. f. in Gard. Chron. II 15 (1881) 336; Linden & Rodigas in Lindenia 1 (1885) 69, *t. 32*.  
*Vanda superba* Linden & Rodigas in Lindenia 3 (1887) 83, *t. 136*.  
 Luzon (Zambales), *Merrill s. n.* (cult. in Manila).
- Var. **COBBIANA** (Reichb. f.) Ames Orch. 2 (1908) 241.  
*Vanda boxallii* Reichb. f. var. *cobbiana* Reichb. f. in Gard. Chron. II 16 (1881) 780; Edit. in l'Orchidoph. 1 (1882) 194.
- VANDA LUZONICA** Loher ex Rolfe in Orch. Rev. 23 (1915) 137, 371, *fig. 12*; Edit. in The Garden 79 (1915) 563, *text cut*; Rolfe in Bot. Mag. 143 (1917) *t. 8709*; Ames Orch. 6 (1920) 308.  
*Vanda tricolor* Ames Orch. 2 (1908) 245, 5 (1915) 225, non Lindl.  
 Luzon (Bulacan), *Loher 6006*.
- VANDA ROEBLINGIANA** Rolfe in Kew Bull. (1894) 365; Ames Orch. 2 (1908) 241, 5 (1915) 225; G. Wilson in Orch. Rev. 30 (1922) 96.  
 Luzon (Bontoc, Benguet), *Vanoverbergh 1257, 3939, F. B. 5059 Curran*.  
 Up to 1,600 m altitude in Bontoc. In Malay Peninsula.
- VANDA SANDERIANA** Reichb. f. in Gard. Chron. II 17 (1882) 588; Edit. in l'Orchidoph. 2 (1882) 318, 4 (1884) 109, *t.*, in Gard. Chron. II 20 (1883) 402, 440, 446, *figs. 67, 68, 22* (1884) 236; Warner & Will. Orch. Alb. 3 (1884) *t. 124*; Moore in Gard. Chron. II 21 (1884) 9; Rodigas in Ill. Hort. 31 (1884) 139, *t. 532*; Carr. in Rev. Hort. 57 (1885) 372, *t.*; Hook. f. in Bot. Mag. 114 (1888) *t. 6983*; Sander Reichenbachia I 2 (1890) 29, *t. 62*; Veitch Man. Orch. Pl. pt. 7 (1891) 103, *t.*; Rolfe in Orch. Rev. 4 (1896) 358, frontisp., 19 (1911) 281, *fig. 31*, 23 (1915) 361, frontisp.; Cogn. in Dict. Icon. Orch. (1900) *Vanda t. 12*; Ames Orch. 2 (1908) 242; G. Wilson in Orch. World 2 (1911) 36, *t.*, 5 (1915) 52, 201, *text cuts*, 6 (1916) 97, in Orch. Rev. 29 (1921) 79, *text cut*.  
*Esmeralda sanderiana* Reichb. f. in Gard. Chron. II 17 (1882) 588, in textu; Kerchove Livre des Orch. (1894) 307, 355, *figs. 214, 223*; Will. Orch. Grow. Man. ed. 7 (1894) 398, *text cut*; Ames Orch. 5 (1915) 222.  
*Vanda sanderiana* Reichb. f. var. *labello-viridi* Linden & Rodigas in Lindenia 1 (1885) 85, *t. 40*; Ames Orch. 2 (1908) 244.  
*Vanda sanderiana* Reichb. f. var. *albata* Reichb. f. in Gard. Chron. III 2 (1887) 9; Edit. in l'Orchidoph. 8 (1888) 197; Reichb. f. in Sander Reichenbachia I 2 (1890) 29; Ames Orch. 2 (1908) 244.  
*Esmeralda sanderiana* Reichb. f. var. *labello-viridi* Will. Orch. Grow. Man. ed. 7 (1894) 400.  
*Esmeralda sanderiana* Reichb. f. var. *albata* Will. Orch. Grow. Man. ed. 7 (1894) 400.  
*Vanda sanderiana* Reichb. f. var. *froebeliana* Cogn. in Dict. Icon. Orch. (1903) *Vanda t. 12A*; Ames Orch. 2 (1908) 244.

*Euanthe sanderiana* Schltr. Orchideen (1914) 568, fig. 194; Ames Orch. 6 (1920) 308.

Mindanao (Davao), R. F. Black 20, Loher 6030 (cult. in Manila).

## EXCLUDED OR SYNONYMOUS SPECIES

- VANDA BATEMANII Lindl. in Bot. Reg. 32 (1846) t. 59 (as *batemanni*); Paxt. Mag. Bot. 14 (1847) 21; S. Ch. in Fl. des Serres 6 (1851) 332; Lindl. in Paxt. Flow. Gard. 2 (1851) 22; Lindl. Fol. Orch. Vanda (1853) 2; Moore Ill. Orch. Pl. (1857) Vanda 10, t. 1; du Buyss in Fl. des Serres 18 (1870) 161, t. 1921-2 = *Vandopsis lissochiloides* (Gaudich.) Pfitz.
- VANDA BOXALLII Reichb. f. in Gard. Chron. II 15 (1881) 336; Linden & Rodigas in Lindenia 1 (1885) 69, t. 32 = *Vanda lamellata* Lindl. var. *boxallii* Reichb. f.
- VANDA CRISTATA Lindl. apud Boxall ex Naves Novis. App. (1882) 240; Ceron Cat. Pl. Herb. Manila (1892) 168.
- VANDA CUMINGII Lindl. ex Paxt. in Loud. Hort. Brit. Suppl. 3 (1850) 654, *nomen* = *Vanda lamellata* Lindl.
- VANDA FURVA Lindl. apud Naves Novis. App. (1882) 239.
- VANDA GIGANTEA Lindl. apud Naves Novis. App. (1882) 240.
- VANDA HELVOLA Bl. apud Naves Novis. App. (1882) 240.
- VANDA HINDSII Lindl. apud Naves Novis. App. (1882) 239.
- VANDA INSIGNIS Bl. apud Naves Novis. App. (1882) 239.
- VANDA LIMBATA Bl. apud Naves Novis. App. (1882) 240.
- VANDA LISSOCHILOIDES Lindl. Gen. & Sp. Orch. (1833) 216; Naves Novis. App. (1882) 240 = *Vandopsis lissochiloides* (Gaudich.) Pfitz.
- VANDA ROXBURGHII R. Br. apud Naves Novis. App. (1882) 240.
- VANDA STANGEANA Reichb. f. apud Naves Novis. App. (1882) 240.
- VANDA STORIEI Storie ex Reichb. f. in Gard. Chron. II 14 (1880) 296, in syn.; Hook. f. in Bot. Mag. 123 (1897) t. 7537 = *Renanthera storiei* Reichb. f.
- VANDA SUPERBA Linden & Rodigas in Lindenia 3 (1887) 83, t. 136 = *Vanda lamellata* Lindl. var. *boxallii* Reichb. f.
- VANDA TRICOLOR Ames Orch. 2 (1908) 245, 5 (1915) 225, non Lindl. = *Vanda luzonica* Loher ex Rolfe.
- VANDA UNDULATA Lindl. apud Naves Novis. App. (1882) 240.
- VANDA VIDALII Boxall ex Naves Novis. App. (1882) 240, *nomen*; Ceron Cat. Pl. Herb. Manila (1892) 168.
- VANDA VIOLACEA Lindl. in Bot. Reg. 27 (1841) Misc. 12, 33 (1847) t. 30; Paxt. Mag. Bot. 9 (1842) 119; Van Houtte in Fl. des Serres 17 (1868-69) 92 = *Anota violacea* (Lindl.) Schltr.

## 88. ANGRAECUM Bory

**ANGRAECUM PHILIPPINENSE** Ames in Philip. Journ. Sci. 2 (1907) Bot. 336, 4 (1909) Bot. 597, Orch. 2 (1908) 246, 3 (1908) 69, *t.* 50, 5 (1915) 226.

Luzon (Bontoc, Nueva Vizcaya), Mindoro, *Lyon (Curran) 121, F. B. 10860 Curran, Merrill 5698*. On mountains, in the forest at 850 to 1,400 m altitude.

## 89. SACCOLABIUM Blume

**SACCOLABIUM CONFUSUM** Ames in Philip. Journ. Sci. 8 (1913) Bot. 438, Orch. 5 (1915) 227.

Luzon (Laguna, Sorsogon), Mindanao (Cotabato), *Serrato s. n., Elmer 14713, Weber 221*. Epiphyte, at 700 m altitude in Cotabato.

**SACCOLABIUM ESCRITORII** Ames Orch. 5 (1915) 227.

Luzon (Tayabas), *B. S. 20733 Escritor*.

**SACCOLABIUM LOHERI** Ames Orch. 5 (1915) 228.

Luzon (Zambales), *Loher 6026*.

**SACCOLABIUM LUZONENSE** Ames in Philip. Journ. Sci. 8 (1913) Bot. 435, Orch. 5 (1915) 229.

Luzon (Laguna, Sorsogon), *B. S. 16556 Ramos, Serrato s. n., Elmer 14860, 17076*. Epiphyte.

**SACCOLABIUM SARCOCHILOIDES** Schltr. in Orchis 5 (1911) 61, *t.* 8; Ames Orch. 5 (1915) 230.

*Saccolabium epichysiochilum* Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 63.

*K. W. John (fide Schltr.), Loher s. n.*

**SACCOLABIUM TENELLUM** Ames Orch. 6 (1920) 308, *t.* 99.

Leyte, Mindanao (Surigao), *Wenzel 0988, 01037*. Epiphyte at sea level to 150 m altitude.

**SACCOLABIUM VANOVERBERGHII** Ames Orch. 5 (1915) 230.

Luzon (Bontoc, Lepanto, Ifugao), *Vanoverbergh 955, 1712, 2214, Ramos & Edaño 91, B. S. 19634 McGregor*. Epiphyte in mountain regions at 1,550 to 2,540 m altitude.

## EXCLUDED OR SYNONYMOUS SPECIES

**SACCOLABIUM ASCENDENS** Lindl. apud Naves Novis. App. (1882) 241.

**SACCOLABIUM BIFIDUM** Lindl. in Bot. Reg. 24 (1838) Misc. 3; Paxt. Mag. Bot. 6 (1839) 262; Reichb. f. in Walp. Ann. 6 (1864) 886; Naves Novis. App. (1882) 241 = *Sarcanthus bifidus* (Lindl.) Ames.

**SACCOLABIUM BLUMEI** Lindl. in Bot. Reg. 27 (1841) Misc. 55, Sert. Orch. (1841) *t.* 47; Naves Novis. App. (1882) 241 = *Rhynchostylis retusa* (Linn.) Blume.

**SACCOLABIUM CHIONANTHUM** Lindl. in Journ. Linn. Soc. 3 (1859) 35; Naves Novis. App. (1882) 241; Ames in Philip. Journ. Sci. 4 (1909) Bot. 675 = *Schoenorchis micrantha* Blume.

SACCOLABIUM COMPRESSUM Lindl. in Bot. Reg. 26 (1840) Misc. 9, Sert. Orch. (1840) t. 32; Edit. in Allg. Berl. Gartenz. 8 (1840) 336; Reichb. f. in Walp. Ann. 6 (1864) 883; Naves Novis. App. (1882) 241; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; Ames in Philip. Journ. Sci. 2 (1907) Bot. 336, Orch. 2 (1915) 238.

*Gastrochilus compressus* Ktze. Rev. Gen. Pl. 2 (1891) 661 = *Robiquetia compressa* (Lindl.) Schltr.

SACCOLABIUM DENSIFLORUM Lindl. in Bot. Reg. 24 (1838) Misc. 56, quoad Philip., non Lindl. in Wall. Cat.; Reichb. f. in Walp. Ann. 6 (1864) 885, quoad Philip.; Naves Novis. App. (1882) 241 = *Robiquetia pantherina* (Kränzl.) Ames.

SACCOLABIUM EPICHYSIOSCHILUM Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 63 = *Saccolabium sarcochiloides* Schltr.

SACCOLABIUM GUTTATUM Lindl. in Wall. Cat. (1832) No. 7308, nomen, Gen. & Sp. Orch. (1833) 220; Naves Novis. App. (1882) 241; Ceron Cat. Pl. Herb. Manila (1892) 168 = *Rhynchostylis retusa* (Linn.) Blume.

SACCOLABIUM HANISSONII Boxall ex Naves Novis. App. (1882) 241, nomen.

SACCOLABIUM MACROSTACHYUM Lindl. Sert. Orch. (1841) sub t. 47 = *Rhynchostylis retusa* (Linn.) Blume.

SACCOLABIUM MINIATUM Lindl. in Bot. Reg. 33 (1847) sub t. 26, t. 58; Ames Orch. 2 (1908) 239 (incl. var. *citrinum*) = *Ascocentrum miniatum* (Lindl.) Schltr.

SACCOLABIUM PANTHERINUM Kränzl. in Fedde Repert. 17 (1921) 391 = *Robiquetia pantherina* (Kränzl.) Ames.

SACCOLABIUM PUMILIO Reichb. f. in Walp. Ann. 6 (1864) 886; in Gard. Chron. II 4 (1875) 98; Ames Orch. 5 (1915) 229.

*Saccolabium discolor* Reichb. f. in Otia Bot. Hamb. 1 (1878) 42.

Reichenbach in Gardener's Chronicle (l. c.) states: "I obtained the novelty from Mr. Bull, who introduced the plant from Manila." The species occurs in Sylhet, British India. Manila seems an error. No material from the Philippines referable to this species has been seen.

SACCOLABIUM REFLEXUM Lindl. apud Naves Novis. App. (1882) 241.

SACCOLABIUM SEMICLAUSUM Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 63.

Said to have been sent from the Philippines by Loher. No material has been seen.

SACCOLABIUM TRICHROMUM Reichb. f. apud Naves Novis. App. (1882) 241.

SACCOLABIUM VIOLACEUM Reichb. f. in Bonpl. 2 (1854) 93, in syn.; Warner Sel. Orch. 1 (1862-65) t. 14; Puydt Orch. (1880) 317, t. 39; Naves Novis. App. (1882) 241; Veitch Man. Orch. Pl. pt. 7 (1891) 117; Ceron Cat. Pl. Herb. Manila (1892) 168 = *Anota violacea* (Lindl.) Schltr.

## 90. GASTROCHILUS D. Don

**GASTROCHILUS PHILIPPINENSIS** Ames Orch. 5 (1915) 231.

Luzon (Benguet), *Elmer 6517*, Baguio.

## 91. OMOEA Blume

**OMOEA PHILIPPINENSIS** Ames Orch. 5 (1915) 232.

Luzon (Pampanga, Bataan), *Merrill 4208*, *B. S. 1669 Foxworthy*. Epiphyte in mossy forest at 850 to 1,400 m altitude.

## 92. ASCOCENTRUM Schlechter

**ASCOCENTRUM MINIATUM** (Lindl.) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1913) 975; J. J. Sm. Orch. Jav. Fig.-Atlas (1914) *fig. 483*; Ames Orch. 5 (1915) 233.

*Saccolabium miniatum* Lindl. in Bot. Reg. 33 (1847) sub *t. 26*, *t. 58*; Reichb. f. in Walp. Ann. 1 (1849) 791; Miq. Fl. Ind. Bat. 3 (1859) 692; Veitch Man. Orch. Pl. pt. 7 (1891) 117; C. K. in Journ. Hort. III 24 (1892) 449, *fig. 77*; Rolfe in Orch. Rev. 4 (1896) 178; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 648; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 170; Ames Orch. 2 (1908) 239, non Hook. in Bot. Mag. 88 (1862) *t. 5326*.

*Saccolabium miniatum* Lindl. var. *citrinum* Reichb. f. in Gard. Chron. II 21 (1884) 542; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 170; Ames Orch. 2 (1908) 240.

*Gastrochilus miniatus* Ktze. Rev. Gen. Pl. 2 (1891) 661.

Luzon (Rizal), Mindanao (Lanao, Davao), *B. S. 5649 Ramos, Weber 9, 3020 Mrs. Lyon, Copeland 687*. Epiphyte at 180 to 750 m altitude. In India (fide Rolfe), Malay Peninsula, Siam (fide Ridley), and Java.

## 93. MALLEOLA J. J. Smith and Schlechter

**MALLEOLA CONSTRICTA** Ames Orch. 5 (1915) 234.

Luzon (Sorsogon), Leyte, Mindanao (Lanao, Agusan), *Elmer 13953, 14831, 17199, 17342, Wenzel 055, 062, 0124, 0195, 0882, M. S. Clemens 702*. Epiphyte at 60 to 700 m altitude in Leyte.

**MALLEOLA LYONII** Ames Orch. 5 (1915) 235.

Luzon?, *Lyon s. n.*

## EXCLUDED OR SYNONYMOUS SPECIES

**MALLEOLA MERRILLII** Ames Orch. 5 (1915) 236 = *Robiquetia merrillii* Ames.

## 94. ROBIQUETIA Gaudichaud

**ROBIQUETIA COMPRESSA** (Lindl.) Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1913) 983; Ames Orch. 5 (1915) 237.

*Saccolabium compressum* Lindl. in Bot. Reg. 26 (1840) Misc. 9, Sert. Orch. (1840) *t. 32*; Edit. in Allg. Berl. Gartenz. 8 (1840) 336; Reichb. f. in Walp. Ann. 6 (1864) 883; Naves Novis. App. (1882) 241; Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271; Ames in Philip. Journ. Sci. 2 (1907) Bot. 336; Merr. &

Merritt in Philip. Journ. Sci. 5 (1910) Bot. 341; Ames Orch. 5 (1915) 238.

*Gastrochilus compressus* Ktze. Rev. Gen. Pl. 2 (1891) 661.

Luzon (Camarines, Sorsogon), Mindanao (Dapitan, Davao), B. S. 22081, 23679 Ramos, F. B. 4603 Mearns & Hutchinson, Mearns s. n. At 550 to 3,000 m altitude.

**ROBIQUETIA MERRILLII** Ames Orch. 7 (1922) 123.

*Malleola merrillii* Ames Orch. 5 (1915) 236.

Luzon (Bontoc, Lepanto, Benguet, Bataan, Laguna, Camarines), Mindanao (Agusan), B. S. 5603 Worcester, Merrill 7685, 31999 Santos, 17127 Robinson, 22178 Ramos, Taylor 3, Elmer 13838, F. B. 1596 Borden. Epiphyte at 350 to 3,200 m altitude.

**ROBIQUETIA PANTHERINA** (Kränzl.) Ames Sched. Orch. 6 (1923) 95.

*Cleisostoma spatulatum* Blume apud Naves Novis. App. (1882) 238.

*Saccolabium densiflorum* Lindl. in Bot. Reg. 24 (1838) Misc. 56, quoad Philip., non Lindl. in Wall. Cat.; Reichb. f. in Walp. Ann. 6 (1864) 885, quoad Philip.; Naves Novis. App. (1882) 241.

*Robiquetia spathulata* Ames Orch. 5 (1915) 237, non J. J. Sm.

*Saccolabium pantherinum* Kränzl. in Fedde Repert. 17 (1921) 391.

Leyte, Loher s. n., Wenzel 0180. Epiphyte in forest at 60 m altitude.

**ROBIQUETIA RAMOSII** Ames Orch. 7 (1922) 123.

Catanduanes, Panay (Antique), B. S. 30396 Ramos, 32592 McGregor. Epiphyte at 30 to 300 m altitude.

**ROBIQUETIA VANOVERBERGHII** Ames Orch. 5 (1915) 238.

Luzon (Bontoc, Benguet), Mindanao (Zamboanga), Vanoverbergh 1473, R. S. Williams 1952, F. B. 5056 Curran, Ramos & Edaña 65, 69, 102, Merrill 8075.

#### EXCLUDED OR SYNONYMOUS SPECIES

**ROBIQUETIA SPATHULATA** Ames Orch. 5 (1915) 237, non J. J. Sm. =

*Robiquetia pantherina* (Kränzl.) Ames.

#### 95. SCHOENORCHIS Blume

**SCHOENORCHIS MICRANTHA** Blume Bijdr. (1825) 362; Lindl. Gen. & Sp. Orch. (1833) 243; J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 100 (reprint 30), Orch. Jav. Fig.-Atlas (1914) fig. 453; Ames Orch. 5 (1915) 239, 6 (1920) 224, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 200.

*Saccolabium chionanthum* Lindl. in Journ. Linn. Soc. 3 (1859) 35; Miq. Fl. Ind. Bat. 3 (1859) 692; Naves Novis. App. (1882) 241; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 635; Ames in Philip. Journ. Sci. 4 (1909) Bot. 675.

*Saccolabium perpusillum* Hook. f. Fl. Brit. Ind. 6 (1890) 56, in Hook. Icon. Pl. 22 (1893) t. 2129A; Ridl. in Journ. Linn. Soc. 32 (1896) 358, Mat. Fl. Mal. Penin. 1 (1907) 164.

*Gastrochilus chionanthus* Ktze. Rev. Gen. Pl. 2 (1891) 661.

*Gastrochilus perpusillus* Ktze. Rev. Gen. Pl. 2 (1891) 661.

Luzon (Rizal), Leyte, Palawan, Mindanao (Agusan, Davao), *B. S. 3055, 41637 Ramos, Wenzel 05, 0122, 0378, Weber 319, 603, Copeland 685*. Epiphyte at sea level to 1,300 m altitude. In Malay Peninsula, Sumatra, Java, and Borneo.

**SCHOENORCHIS MINDANAENSIS** Ames Orch. 5 (1915) 240.

Luzon (Sorsogon), Mindanao (Agusan), *Elmer 16669, Weber 155*. Epiphyte at 15 m altitude in Mindanao.

**SCHOENORCHIS PHILIPPINENSIS** Ames Orch. 5 (1915) 241.

Luzon (Nueva Vizcaya), Mindanao (Cotabato, Agusan), *B. S. 20117 McGregor, Weber 212, Elmer 13969*. Epiphyte at 550 to 1,000 m altitude.

**SCHOENORCHIS VANOVERBERGHII** Ames Orch. 5 (1915) 242.

Luzon (Cagayan, Bontoc, Pampanga, Bataan), *F. B. 16781, 19307 Curran, Vanoverbergh 1761, 3644, Whitford 115 p. p.* Epiphyte at 1,700 m altitude in Bontoc.

96. **CAMAROTIS** Lindley

**CAMAROTIS PHILIPPINENSIS** Lindl. in Journ. Linn. Soc. 3 (1859) 37; Miq. Fl. Ind. Bat. 3 (1859) 685; Naves Novis. App. (1882) 242; Ames in Philip. Journ. Sci. 8 (1913) Bot. 438, Orch. 5 (1915) 244. *Sarcochilus philippinensis* Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271.

Luzon (Laguna, Sorsogon), Leyte, *Cuming s. n., B. S. 16582 Ramos, Serrato s. n., Wenzel 04, 0174, Elmer 17225*. Epiphyte in forest.

**CAMAROTIS UTRICULOSA** Ames Orch. 5 (1915) 244.

Luzon, Mindanao (Cotabato), *B. S. 5608 coll.?* (flowered in Manila), *11701 Robinson*.

EXCLUDED OR SYNONYMOUS SPECIES

**CAMAROTIS PURPUREA** Boxall ex Naves Novis. App. (1882) 242, *nomen*.

97. **SARCANTHUS** Lindley

**SARCANTHUS BIFIDUS** (Lindl.) Ames Orch. 5 (1915) 245.

*Saccolabium bifidum* Lindl. in Bot. Reg. 24 (1838) Misc. 3; Paxt. Mag. Bot. 6 (1839) 262; Reichb. f. in Walp. Ann. 6 (1864) 886; Naves Novis. App. (1882) 241.

*Gastrochilus bifidus* Ktze. Rev. Gen. Pl. 2 (1891) 661.

Luzon (Apayao), Mindoro, Leyte, Mindanao (Cotabato, Agusan). A not uncommon species. Epiphyte at 5 to 500 m altitude.

**SARCANTHUS DÉALBATUS** (Lindl.) Reichb. f. in Walp. Ann. 6 (1864) 892; J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 85 (reprint 15); Ames Orch. 5 (1915) 247; Merr. Sp. Blancoanae (1918) 115.

*Cleisostoma dealbatum* Lindl. in Bot. Reg. 29 (1843) Misc. 5.

*Cypripedium lineari-subulatum* Llanos Fragm. Pl. Filip. (1851) 99; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 76; Naves Novis. App. (1882) 244.

Luzon (Bontoc, Bulacan, Rizal, Camarines, Sorsogon), Leyte, Palawan, Bancalan, Mindanao (Lanao). A fairly common and widely distributed species. Epiphyte at sea level to 900 m altitude.



**SARCANTHUS MALLEIFER** J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 90 (reprint 19).

*Cleisostoma sagittata* Blume Bijdr. (1825) 363, fig. 27; Lindl. Gen. & Sp. Orch. (1833) 226; Miq. Fl. Ind. Bat. 3 (1859) 682; Naves Novis. App. (1882) 238.

*Sarcanthus sagittatus* J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 607, Fig.-Atlas (1914) fig. 451; Ames Orch. 5 (1915) 251, non King & Pantl.

Palawan, Weber 601. At Alfonso XIII, epiphyte at sea level.

**SARCANTHUS MICRANTHUS** Ames Orch. 5 (1915) 248.

Luzon (Bataan, Laguna, Tayabas), Leyte, Mindanao (Lanao, Davao), Basilan. A not uncommon species of rather wide distribution. Epiphyte at sea level to 815 m altitude.

**SARCANTHUS PACHYPHYLLUS** Ames Orch. 5 (1915) 250.

Luzon (Albay, Rizal), *Schultze s. n.*, Lyon 65.

**SARCANTHUS RINGENS** (Reichb. f.) J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 93 (reprint 22); Ames Orch. 5 (1915) 251.

*Cleisostoma ringens* Reichb. f. in Gard. Chron. III 4 (1888) 724; Edit. in Kew Bull. (1889) 83.

Reichenbach states: "Ex insulis Philippinis." No specimens of this species have been seen.

**SARCANTHUS STRIOLATUS** Reichb. f. in Gard. Chron. II 18 (1882) 168; Ames in Philip. Journ. Sci. 2 (1907) Bot. 336 (excl. spec.), Orch. 5 (1915) 252.

Reichenbach states that this species was imported from the Philippines by Low. No specimens certainly referable to it have been seen.

**SARCANTHUS WEBERI** Ames Orch. 5 (1915) 252.

Luzon (Bataan), Palawan, Mindanao (Cotabato, Davao), B. S. 5607 Foxworthy, Weber 252, 604, *Schultze s. n.*, F. B. 11825 Whitford. Epiphyte at sea level, from data at hand.

#### EXCLUDED OR SYNONYMOUS SPECIES

**SARCANTHUS CUMINGII** (Reichb. f.) J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 85 (reprint 15).

*Cleisostoma cumingii* Reichb. f. in Allg. Berl. Gartenz. 24 (1856) 218.

The Cuming material on which this species was based may have originated in the Philippines, but no material referable to the description has been seen in the Philippine collections of twenty years.

**SARCANTHUS PUGIONIFORMIS** Reichb. f. in Allg. Berl. Gartenz. 24 (1856) 219.

According to Dr. Rudolf Schlechter, in a letter, this species was in cultivation in Erlangen from material sent from the Philippines by Loher. No other record of its occurrence in the Islands is known.

**SARCANTHUS SAGITTATUS** J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 607, Fig.-Atlas (1914) fig. 451; Ames Orch. 5 (1915) 251, non King & Pantl. = *Sarcanthus malleifer* J. J. Sm.

**SARCANTHUS SECUNDUS** Griff. apud Usteri Beitr. Ken. Philip. Veg. (1905) 128.

Usteri refers a Guimaras specimen here on the basis of an identification made by Schlechter. There is no other evidence to show that this species occurs in the Philippines.

#### 98. ANOTA Schlechter

**ANOTA VIOLACEA** (Lindl.) Schltr. Orchideen (1914) 588.

*Vanda violacea* Lindl. in Bot. Reg. 27 (1841) Misc. 12, 33 (1847) t. 30; Paxt. Mag. Bot. 9 (1842) 119; Van Houtte in Fl. des Serres 17 (1868-69) 92.

*Rhynchostylis violacea* Reichb. f. in Bonpl. 2 (1854) 93, in Walp. Ann. 6 (1864) 888; Van Houtte in Fl. des Serres 17 (1868-69) 91; Stein Orchideenb. (1892) 537; Ames Orch. 5 (1915) 219.

*Saccolabium violaceum* Reichb. f. in Bonpl. 2 (1854) 93, in syn.; Warner Sel. Orch. I (1862-65) t. 14; Puydt Orch. (1880) 317, t. 39; Naves Novis. App. (1882) 241; Veitch Man. Orch. Pl. pt. 7 (1891) 117; Ceron Cat. Pl. Herb. Manila (1892) 168.

Luzon (Nueva Ecija, Rizal), *Lyon 50, Native collector s. n., B. S. 3090 Curran, 21334 Ramos.*

#### 99. POMATOCALPA Breda

**POMATOCALPA BICOLOR** (Lindl.) J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 103 (reprint 33); Ames Orch. 5 (1915) 254.

*Epidendrum lineare* Blanco Fl. Filip. (1837) 644, ed. 2 (1845) 449, ed. 3, 3 (1879) 44, non Linn.

*Cleisostoma bicolor* Lindl. in Paxt. Flow. Gard. 2 (1851-52) 99, fig. 185; Reichb. f. in Walp. Ann. 6 (1864) 889; Naves Novis. App. (1882) 239; Ames Orch. 2 (1908) 236; Merr. Fl. Manila (1912) 167, Sp. Blancoanae (1918) 115.

Luzon (Nueva Vizcaya, Bataan, Rizal, Laguna), Romblon, Negros (Occidental Negros), Bohol, Leyte, Palawan, Busuanga, Mindanao (Agusan, Butuan). A common and widely distributed species. Epiphyte or on rocks at sea level to 500 m altitude.

**POMATOCALPA LATIFOLIUM** (Lindl.) J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 105 (reprint 35), Orch. Jav. Fig.-Atlas (1914) fig. 458; Ames Orch. 5 (1915) 254, in Merr. in Journ. Roy. Asiat. Soc. Straits Branch, Special No. (1921) 202.

*Cleisostoma latifolium* Lindl. in Bot. Reg. 26 (1840) Misc. 60; Reichb. f. in Walp. Ann. 6 (1864) 889; Hook. f. Fl. Brit. Ind. 6 (1890) 71; Ridl. in Trans. Linn. Soc. II 3 (1893) 370, in Journ. Linn. Soc. 32 (1896) 365; J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 612; Ridl. Mat. Fl. Mal. Penin. 1 (1907) 165.

Luzon (Rizal), Palawan, Bancalan, Mindanao (Cotabato, Butuan), *Lyon 23, 151, Reillo s. n., Weber 08, 600, B. S. 11702 Robinson, 12129 Celestino.* Epiphyte apparently at or near sea level. In Malay Peninsula, Sumatra, Java, and Borneo.

**POMATOCALPA MERRILLII** Schltr. in Fedde Repert. Beihefte 1 (Orch. Deutsch-Neu-Guin.) (1913) 988; Ames Orch. 6 (1920) 309.

*Cleisostoma kunstleri* Ames in Philip. Journ. Sci. 6 (1911) Bot. 54, non Hook. f.

*Pomatocalpa kunstleri* Ames Orch. 5 (1915) 254, non J. J. Sm.

Polillo, Negros, *B. S. 10444* McGregor, *F. B. 17409* Curran. Epiphyte at 460 m altitude in Negros.

**POMATOCALPA VITELLINUM** (Reichb. f.) Ames comb. nov.

*Cleisostoma vitellinum* Reichb. f. in Linnaea 41 (1876) 76; J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 112 (reprint 42); Ames Orch. 5 (1915) 253, in textu.

*Cleisostoma expansum* Reichb. f. Otia Bot. Hamb. 1 (1878) 52, Xen. Orch. 3 (1881) 29; Naves Novis. App. (1882) 239; Ames Orch. 2 (1908) 237.

*Cleisostoma densum* Schltr. in Perk. Frag. Fl. Philip. (1904) 43, non Ridl.

*Pomatocalpa expansum* J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 103 (reprint 33); Ames Orch. 5 (1915) 254.

Luzon (Bataan, Bulacan, Rizal), Leyte, Busuanga, Palawan, Mindanao (Agusan, Davao). A common and rather widely distributed species. Epiphyte or in limestone at sea level to 1,000 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**POMATOCALPA EXPANSUM** J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 103 (reprint 33); Ames Orch. 5 (1915) 254 = *Pomatocalpa vitellinum* (Reichb. f.) Ames.

**POMATOCALPA KUNSTLERI** Ames Orch. 5 (1915) 254, non J. J. Sm. = *Pomatocalpa merrillii* Schltr.

**POMATOCALPA ? ROSEUM** J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 106 (reprint 36) = *Trichoglottis rosea* (Lindl.) Ames.

100. **TRICHOGLOTTIS** Reichenbach f.

**TRICHOGLOTTIS ATROPURPUREA** Reichb. f. in Linnaea 41 (1876) 30; Ames Orch. 5 (1915) 254.

Reichenbach (l. c.) states: "Philippinens. insulae." No specimens have been seen.

**TRICHOGLOTTIS BATAANENSIS** Ames Orch. 1 (1905) 105, *text cut*, 5 (1915) 255.

*Cleisostoma subviolaceum* Reichb. f. in Bonpl. 10 (1862) 335; Ames Orch. 5 (1915) 253, in nota, non *Trichoglottis subviolacea* (Llanos) Merr.

*Trichoglottis rigida* Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271, nec Blume nec Naves.

*Trichoglottis subviolacea* Merr. Sp. Blancoanae (1918) 116, quoad planta (excl. syn.).

Luzon (Nueva Vizcaya, Pangasinan, Nueva Ecija, Zambales, Bataan, Rizal, Tayabas), Palawan. A common species, especially in Luzon. Epiphyte at about 200 m altitude.

**TRICHOGLOTTIS BRACHIATA** Ames Orch. 7 (1922) 136.

Biliran, Mindanao (Agusan, Davao), *B. S. 18931 McGregor, Weber 134, Elmer 12021.*

**TRICHOGLOTTIS LATISEPALA** Ames in Philip. Journ. Sci. 4 (1909) Bot. 675, Orch. 5 (1915) 255.

Luzon (Nueva Vizcaya, Rizal, Tayabas), Palawan, Bancalan, Lum-bucan, Mindanao (Zamboanga, Bukidnon, Agusan, Davao). A fairly com-mon species of rather wide distribution. Epiphyte at sea level to 76 m altitude.

**TRICHOGLOTTIS MINDANAENSIS** Ames in Philip. Journ. Sci. 8 (1913) Bot. 439, Orch. 5 (1915) 257.

Luzon (Camarines, Sorsogon), Panay (Capiz), Samar, Mindanao (Zam-boanga, Lanao, Agusan, Surigao, Davao). A common species, epiphyte at 60 to 150 m altitude.

**TRICHOGLOTTIS PHILIPPINENSIS** Lindl. in Ann. & Mag. Nat. Hist. 15 (1845) 386; Naves Novis. App. (1882) 243; Vidal Phan. Cuming. Philip. (1885) 150; Usteri Beitr. Ken. Philip. Veg. (1905) 128; Ames Orch. 7 (1922) 137.

*Stauropsis philippinensis* Reichb. f. in Hamb. Gartenz. 16 (1860) 117, Xen. Orch. 2 (1862) 8, in Walp. Ann. 6 (1864) 882; Vidal Rev. Pl. Vasc. Filip. (1886) 270; Ames Orch. 2 (1908) 223, 5 (1915) 224.

Luzon (Bulacan, Rizal, Cavite, Camarines), Negros, Mindanao (Misa-mis, Surigao, Davao). A not uncommon species of fairly wide distribu-tion, at sea level to 300 m altitude.

**TRICHOGLOTTIS ROSEA** (Lindl.) Ames comb. nov.

*Cleisostoma rosea* Lindl. in Bot. Reg. 24 (1838) Misc. 80; Paxt. Mag. Bot. 6 (1839) 189, 12 (1845) 165; Reichb. f. in Walp. Ann. 6 (1864) 888; Naves Novis. App. (1882) 239; Ames Orch. 5 (1915) 253, in nota.

*Trichoglottis flexuosa* Rolfe ex Ames Orch. 1 (1905) 107, 2 (1908) 257, 5 (1915) 255.

*Pomatocalpa ? roseum* J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 106 (reprint 36).

Luzon (Camarines), Panay (Capiz), Bohol, Leyte, Mindanao (Bukidnon, Agusan, Surigao), *Cuming s. n., Loher 6012, 6029, Fortune s. n., Copeland 199, B. S. 38958 Ramos & Edaño, 42085 Edaño, Weber 185, Bolster 230.* Epiphyte at sea level to 1,300 m altitude.

**TRICHOGLOTTIS SOLEREDERI** Kränzl. in Fedde Repert. 8 (1910) 98; Ames Orch. 5 (1915) 257.

Philippines, probably Luzon, *Loher s. n.*

No specimens of this species have been seen. Kränzlin (l. c.) mentions its relationship to *Trichoglottis bataanensis* Ames.

**TRICHOGLOTTIS WENZELII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 440, Orch. 5 (1915) 257.

*Trichoglottis retusa* Ames in Philip. Journ. Sci. 4 (1909) Bot. 676, non Blume.

Leyte, Mindanao (Zamboanga, Agusan, Surigao, Davao), Basilan, *Lyon 127, Wenzel 015, 0176, Merrill 8206, Weber 189, Bolster 225, Black s. n., F. B. 6103 Hutchinson.* Epiphyte at sea level to 60 m altitude.

## EXCLUDED OR SYNONYMOUS SPECIES

TRICHOGLOTTIS BICRURIS Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 64.

Based on a Loher plant which Kränzlin questions as being of Philippine origin. No material seen.

TRICHOGLOTTIS BIMAE Reichb. f. apud Naves Novis. App. (1882) 243.

TRICHOGLOTTIS FLEXUOSA Rolfe ex Ames Orch. 1 (1905) 107, 2 (1908) 257, 5 (1915) 255 = *Trichoglottis rosea* (Lindl.) Ames.

TRICHOGLOTTIS IONOSMA J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 108 (reprint 38) (excl. syn. *Epidendrum lineare* Blanco); Ames Orch. 5 (1915) 255 = *Staurochilus ionosma* (Lindl.) Schltr.

TRICHOGLOTTIS LANCEOLARIA Blume apud Naves Novis. App. (1882) 243.

TRICHOGLOTTIS LUZONENSIS Ames Orch. 5 (1915) 255 = *Staurochilus luzonensis* Ames.

TRICHOGLOTTIS PALLENS Lindl. in Journ. Hort. Soc. 5 (1850) 34, in Paxt. Flow. Gard. 1 (1850) 15 = *Phalaenopsis pallens* (Lindl.) Reichb. f., spec. excl.

TRICHOGLOTTIS PUSILLA Reichb. f. apud Naves Novis. App. (1882) 243.

TRICHOGLOTTIS RETUSA Ames in Philip. Journ. Sci. 4 (1909) Bot. 676, non Blume = *Trichoglottis wenzelii* Ames.

TRICHOGLOTTIS RETUSA Blume apud Naves Novis. App. (1882) 243.

TRICHOGLOTTIS RIGIDA Blume apud Naves in Blanco Fl. Filip. ed. 3, Laminas (1877-83) t. 348; Naves Novis. App. (1882) 243.

TRICHOGLOTTIS RIGIDA Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 271, nec Blume nec Naves = *Trichoglottis bataanensis* Ames.

TRICHOGLOTTIS SUBVIOLACEA (Llanos) Merr. Sp. Blancoanae (1918) 116, quoad syn. (excl. planta).

TRICHOGLOTTIS SUBVIOLACEA Merr. Sp. Blancoanae (1918) 116, quoad planta (excl. syn.) = *Trichoglottis bataanensis* Ames.

## 101. STAUROCHILUS Ridley

STAUROCHILUS IONOSMA (Lindl.) Schltr. in Fedde Repert. Beihefte 4 (Orch. Sino-Jap. Prodr.) (1919) 287 (excl. syn. *Epidendrum lineare* Blanco).

*Cleisostoma ionosmum* Lindl. in Bot. Reg. 33 (1847) t. 41; Paxt. Mag. Bot. 14 (1847) 164; G. K. in Bot. Zeit. 5 (1847) 633; Reichb. f. in Walp. Ann. 1 (1849) 791; Miq. Fl. Ind. Bat. 3 (1859) 682; Naves Novis. App. (1882) 238; Ames Orch. 1 (1905) 103, 2 (1908) 238 (excl. syn. *Epidendrum lineare* Blanco); Merr. in

Philip. Journ. Sci. 1 Suppl. (1906) 39; Hayata Icon. Pl. Formosa 2 (1912) 134, 4 (1914) 96.

*Trichoglottis ionosma* J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 108 (reprint 38) (excl. syn. *Epidendrum lineare* Blanco); Ames Orch. 5 (1915) 255.

Luzon (Bataan, Rizal, Tayabas, Camarines), Mindanao (Agusan), *F. B. 737 Borden, Lyon 60, B. S. 20852 Escritor, 33626 Ramos & Edaña, Elmer 13977*. Epiphyte at 330 to 1,300 m altitude. Possibly in Formosa; cf. Schltr. l. c.

**STAUROCHILUS LUZONENSIS** Ames comb. nov.

*Trichoglottis luzonensis* Ames Orch. 5 (1915) 255.

*Vandopsis kupperiana* Kränzl. in Fedde Repert. 17 (1921) 390.

Luzon (Tayabas), Mindanao (Agusan), *Loher s. n., B. S. 21199 Escritor, Weber 103*. Epiphyte up to about 400 m altitude in Mindanao.

102. **MICROSACCUS** Blume

**MICROSACCUS BREVIFOLIUS** J. J. Sm. in Icon. Bogor. 3 (1906) 63, t. 225, in Bull. Dept. Agr. Ind. Néerl. 13 (1907) 77, in Bull. Jard. Bot. Buitenz. II 26 (1918) 111; Ames Orch. 6 (1920) 309.

Mindanao (Davao), *Wenzel 010003*. Madaum, epiphyte in forest at sea level. In Java.

**MICROSACCUS WENZELII** Ames Orch. 5 (1915) 257.

Leyte, *Wenzel 029, 0159*. Dagami, epiphyte in forest at 60 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**MICROSACCUS JAVENSIS** Blume apud Naves Novis. App. (1882) 244.

103. **TAENIOPHYLLUM** Blume

**TAENIOPHYLLUM COMPACTUM** Ames Orch. 2 (1908) 247, *text cut*, 5 (1915) 258.

*Microtatorchis compacta* Schltr. in Fedde Repert. 10 (1911) 209, in textu.

Luzon (Bontoc, Benguet), Negros, *Vanoverbergh 2821, R. S. Williams 1937, Merrill 7010*. Epiphyte up to 1,700 m altitude in Bontoc.

**TAENIOPHYLLUM COPELANDII** Ames in Philip. Journ. Sci. 8 (1913) Bot. 436, Orch. 5 (1915) 258.

Mindanao (Davao), *Copeland 339*.

**TAENIOPHYLLUM ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1588, Orch. 5 (1915) 258.

Luzon (Sorsogon), Negros (Oriental Negros), *Elmer 10336, 16346*. Epiphyte, apparently in mountain regions.

**TAENIOPHYLLUM LEYTENSE** Ames Orch. 5 (1920) 310.

Leyte, *Wenzel 0998*. Epiphyte at sea level.

**TAENIOPHYLLUM MERRILLII** Ames in Philip. Journ. Sci. 6 (1911) Bot. 56, Orch. 5 (1915) 258.

Luzon (Bataan), *Merrill 3878, Whitford 117*. Epiphyte at 800 m altitude.

**TAENIOPHYLLUM PHILIPPINENSIS** Reichb. f. in *Otia Bot. Hamb.* 1 (1878) 53, *Xen. Orch.* 3 (1881) 29; *Naves Novis. App.* (1882) 237; *Ames Orch.* 2 (1908) 248, 5 (1915) 258.

Luzon (Apayao, Cagayan, Laguna), Leyte, Palawan, Mindanao (Zamboanga). A reasonably common species of wide distribution. Epiphyte at sea level to 130 m altitude.

EXCLUDED OR SYNONYMOUS SPECIES

**TAENIOPHYLLUM ALWISII** Lindl. apud *Naves Novis. App.* (1882) 237.

**TAENIOPHYLLUM HASSELTII** Blume apud *Naves Novis. App.* (1882) 237.

**TAENIOPHYLLUM OBTUSUM** Blume apud *Naves Novis. App.* (1882) 237.

EXCLUDED OR SYNONYMOUS GENERA AND SPECIES

**ADENONCOS VIRENS** Blume apud *Naves Novis. App.* (1882) 244.

**ALISMORCHIS** Thouars = *Calanthe* R. Brown.

**ALISMORCHIS FURCATA** Ktze. *Rev. Gen. Pl.* 2 (1891) 650 = *Calanthe furcata* Batem.

**ALISMORCHIS LYROGLOSSA** Ktze. *Rev. Gen. Pl.* 2 (1891) 650 = *Calanthe lyroglossa* Reichb. f.

**ARETHUSA GLUTINOSA** Blanco *Fl. Filip.* (1837) 641, ed. 2 (1845) 446, ed. 3, 3 (1879) 38, *t. 429bis* = *Geodorum nutans* (Presl) Ames.

**ARUNDINA PENTANDRA** Reichb. f. apud *Naves Novis. App.* (1882) 246.

**ARUNDINA SPECIOSA** Blume apud Rolfe in *Journ. Bot.* 23 (1885) 215; Vidal Phan. *Cuming. Philip.* (1885) 150, *Rev. Pl. Vasc. Filip.* (1886) 269.

The Philippine record of this species was based on *Cuming 2058*, but it is almost certain that Cuming's specimen was from the Malay Peninsula, where the species is common and where Cuming also collected. No representative of the genus has been found in the Philippines.

**ARUNDINA WALLICHII** Reichb. f. apud *Naves Novis. App.* (1882) 246.

**BARTHOLINA PECTINATA** R. Br. apud Llanos ex F.-Vill. & Naves in Blanco *Fl. Filip.* ed. 3, 4<sup>1</sup> (1880) 100.

**BROMHEADIA PALUSTRIS** Lindl. apud Vidal Phan. *Cuming. Philip.* (1885) 150, *Rev. Pl. Vasc. Filip.* (1886) 270.

The Philippine record was based on *Cuming 2054*, so labeled; the specimen was almost certainly from Singapore or the Malay Peninsula.

**CALLISTA Loureiro** = *Dendrobium* Swartz.

**CALLISTA AMETHYSTOGLOSSA** Ktze. *Rev. Gen. Pl.* 2 (1891) 654 = *Dendrobium amethystoglossum* Reichb. f.

**CALLISTA ANOSMA** Ktze. *Rev. Gen. Pl.* 2 (1891) 653 = *Dendrobium anosmum* Lindl.

**CALLISTA BURSIGERA** Ktze. *Rev. Gen. Pl.* 2 (1891) 654 = *Dendrobium secundum* Wall.

- CALLISTA TAURINA Ktze. Rev. Gen. Pl. 2 (1891) 655 = *Dendrobium taurinum* Lindl.
- CEPHALANTHERA ENSIFOLIA Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100, non Spreng.
- CERATOCHILUS BIGLANDULOSUS Blume apud Naves Novis. App. (1882) 244.
- CERATOCHILUS MICRANTHUS Lindl. apud Naves Novis. App. (1882) 244.
- CESTICHIS Pfitzer = *Liparis* L. C. Richard.
- CESTICHIS BENGUETENSIS Ames Orch. 1 (1905) 9, 75, t. 3, fig. I, 1-6, 2 (1908) 132 = *Liparis benguetensis* (Ames) Schltr.
- CESTICHIS CAESPITOSA Ames Orch. 2 (1908) 132, t. = *Liparis caespitosa* (Thou.) Lindl.
- CESTICHIS CLEMENSIAE Ames in Philip. Journ. Sci. 4 (1909) Bot. 666 = *Liparis clemensiae* Ames.
- CESTICHIS COMPRESSA Ames Orch. 1 (1905) 76, text cut, 2 (1908) 134 = *Liparis compressa* (Blume) Lindl.
- CESTICHIS CUMINGII Ames Orch. 1 (1905) 13, in Philip. Journ. Sci. 7 (1912) Bot. 7 = *Liparis cumingii* Ridl.
- CESTICHIS DISTICHA Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1888) 131, quoad Philip.; Ames in Philip. Journ. Sci. 2 (1907) Bot. 320 = *Liparis propinqua* Ames.
- CESTICHIS ELMERI Ames Orch. 1 (1905) 10, 75, t. 3, fig. II, 7-12, 2 (1908) 135 = *Liparis elmeri* (Ames) Schltr.
- CESTICHIS FORBESII Ames Orch. 2 (1908) 135 = *Liparis forbesii* Ridl.
- CESTICHIS FRAGILIS Ames in Philip. Journ. Sci. 8 (1913) Bot. 412 = *Liparis fragilis* Ames.
- CESTICHIS GRACILIS Ames Orch. 2 (1908) 136, text cut, non *Liparis gracilis* Hook. f. = *Liparis amesiana* Schltr.
- CESTICHIS HALCONENSIS Ames in Philip. Journ. Sci. 2 (1907) Bot. 321, Orch. 3 (1908) 63, t. 47 = *Liparis halconensis* Ames.
- CESTICHIS LINEARIFOLIA Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1563 = *Liparis linearifolia* Ames.
- CESTICHIS LONGIPES Ames Orch. 1 (1905) 75 (excl. Luzon specimen), 2 (1908) 137 = *Liparis longipes* Lindl.
- CESTICHIS LYONII Ames in Philip. Journ. Sci. 6 (1911) Bot. 47 = *Liparis lyonii* Ames.
- CESTICHIS MERRILLII Ames Orch. 1 (1905) 11, 75, t. 3, fig. III, 13-18, 2 (1908) 138, in Philip. Journ. Sci. 2 (1907) Bot. 321 = *Liparis merrillii* (Ames) Schltr.
- CESTICHIS NUTANS Ames in Philip. Journ. Sci. 4 (1909) Bot. 597 = *Liparis nutans* Ames.



- CESTICHIS PHILIPPINENSIS Ames Orch. 1 (1905) 7, 75, t. 2, 2 (1908) 138, in Philip. Journ. Sci. 2 (1907) Bot. 321 = *Liparis philippinensis* (Ames) Schltr.
- CESTICHIS TRICHOGLOTTIS Ames Orch. 2 (1908) 139, text cut = *Liparis trichoglottis* (Ames) Schltr.
- CESTICHIS VESTITA Ames Orch. 2 (1908) 139, p. p., non *Liparis vestita* Reichb. f. = *Liparis confusa* J. J. Sm.
- CESTICHIS VESTITA Ames Orch. 2 (1908) 139, p. p., non *Liparis vestita* Reichb. f. = *Liparis parviflora* (Blume) Lindl.
- CHILOPOGON MERRILLII Ames Orch. 5 (1915) 91 = *Appendicula merrillii* Ames.
- CHLOIDIA CONFUSA Ames Orch. 2 (1908) 67, text cut = *Corymborchis confusa* Ames.
- CIRRHOPETALUM Lindley = *Bulbophyllum* Thouars.
- CIRRHOPETALUM ANTENNIFERUM Lindl. in Bot. Reg. 29 (1843) sub t. 49 = *Bulbophyllum antenniferum* (Lindl.) Reichb. f.
- CIRRHOPETALUM AURATUM Lindl. in Bot. Reg. 26 (1840) Misc. 50, 29 (1843) t. 61; G. K. in Bot. Zeit. 2 (1844) 103; Moore Ill. Orch. Pl. (1857) Cirrhopt. 5, t. 4; = *Bulbophyllum auratum* (Lindl.) Reichb. f.
- CIRRHOPETALUM CHRYSSEUM Kränzl. in Fedde Repert. 8 (1910) 97 = *Bulbophyllum chryseum* (Kränzl.) Ames.
- CIRRHOPETALUM CUMINGII Lindl. in Paxt. Mag. Bot. 8 (1841) 165, in Bot. Reg. 29 (1843) sub t. 49; G. K. in Bot. Zeit. 1 (1843) 791; Moore Ill. Orch. Pl. (1857) Cirrhopt. 5; Hook. in Bot. Mag. 83 (1857) t. 4996; Miq. Fl. Ind. Bat. 3 (1859) 653; Veitch Man. Orch. Pl. pt. 3 (1888) 100; Rodigas in Ill. Hort. 39 (1892) 61, in textu = *Bulbophyllum cumingii* (Lindl.) Reichb. f.
- CIRRHOPETALUM LOHERIANUM Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 61 = *Bulbophyllum loherianum* (Kränzl.) Ames.
- CIRRHOPETALUM MAXILLARE Lindl. in Bot. Reg. 29 (1843) sub t. 49 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.
- CIRRHOPETALUM NUTANS Lindl. in Bot. Reg. 25 (1839) Misc. 71, 29 (1843) sub t. 49; Hook. in Bot. Mag. 75 (1849) t. 4418; Miq. Fl. Ind. Bat. 3 (1859) 653 = *Bulbophyllum othonis* (Ktze.) J. J. Sm.
- CIRRHOPETALUM THOUARSII Lindl. in Bot. Reg. 24 (1838) t. 11, non *C. thouarsii* Lindl. Gen. & Sp. Orch. (1830) 58; Hook. in Bot. Mag. 72 (1846) t. 4237 = *Bulbophyllum weberi* Ames.
- CLEISOSTOMA AMABILE Teijsm. & Binn. apud Naves Novis. App. (1882) 238.
- CLEISOSTOMA BICOLOR Lindl. in Paxt. Flow. Gard. 2 (1851-52) 99, fig. 185; Reichb. f. in Walp. Ann. 6 (1864) 889; Naves Novis. App. (1882) 239; Ames Orch. 2 (1908) 236; Merr. Fl. Manila (1912) 167,

Sp. Blancoanae (1918) 115 = *Pomatocalpa bicolor* (Lindl. J. J. Sm.

**CLEISOSTOMA BRACHYSTACHYUM** Kränzl. in Ann. k. k. Nat. Hofmus. Wien 30 (1916) 62.

Based on a *Loher* plant said to have come from the Philippines. Kränzl. states that it is allied to *Cleisostoma rosea* Lindl., which is *Trichoglottis rosea* (Lindl.) Ames. No material of this species has been seen.

**CLEISOSTOMA CHRYSOCHILUM** Kränzl. in Fedde Repert. 8 (1910) 545; Ames Orch. 5 (1915) 253, in nota.

Probably a species of *Pomatocalpa*. Kränzl. (l. c.) refers the species to the alliance of *Cleisostoma bicolor* Lindl., which is *Pomatocalpa bicolor* (Lindl.) J. J. Sm. No specimens have been seen.

**CLEISOSTOMA CUMINGII** Reichb. f. in Allg. Berl. Gartenz. 24 (1856) 218 = *Sarcanthus cumingii* (Reichb. f.) J. J. Sm., spec. dub.

**CLEISOSTOMA DEALBATUM** Lindl. in Bot. Reg. 29 (1843) Misc. 5 = *Sarcanthus dealbatus* (Lindl.) Reichb. f.

**CLEISOSTOMA DENSUM** Schltr. in Perk. Frag. Fl. Philip. (1904) 43, non Ridl. = *Pomatocalpa vitellinum* (Reichb. f.) Ames.

**CLEISOSTOMA EXPANSUM** Reichb. f. Otia Bot. Hamb. 1 (1878) 52, Xen. Orch. 3 (1881) 29; Naves Novis. App. (1882) 239; Ames Orch. 2 (1908) 237 = *Pomatocalpa vitellinum* (Reichb. f.) Ames.

**CLEISOSTOMA GUIBERTII** Lindl. apud Naves Novis. App. (1882) 238.

**CLEISOSTOMA IONOSMUM** Lindl. in Bot. Reg. 33 (1847) t. 41; Paxt. Mag. Bot. 14 (1841) 164; G. K. in Bot. Zeit. 5 (1847) 633; Reichb. f. in Walp. Ann. 1 (1849) 791; Miq. Fl. Ind. Bat. 3 (1859) 682; Naves Novis. App. (1882) 238; Ames Orch. 1 (1905) 103, 2 (1908) 238 (excl. syn. *Epidendrum lineare* Blanco) = *Staurochilus ionosma* (Lindl.) Schltr.

**CLEISOSTOMA KUNSTLERI** Ames in Philip. Journ. Sci. 6 (1911) Bot. 54, non Hook. f. = *Pomatocalpa merrillii* Schltr.

**CLEISOSTOMA LONGIFOLIUM** Teijsm. & Binn. apud Naves Novis. App. (1882) 238.

**CLEISOSTOMA RINGENS** Reichb. f. in Gard. Chron. III 4 (1888) 724; Edit. in Kew Bull. (1889) 83 = *Sarcanthus ringens* (Reichb. f.) J. J. Sm.

**CLEISOSTOMA ROSEA** Lindl. in Bot. Reg. 24 (1838) Misc. 80; Paxt. Mag. Bot. 6 (1839) 189, 12 (1845) 165; Reichb. f. in Walp. Ann. 6 (1864) 888; Naves Novis. App. (1882) 239; Ames Orch. 5 (1915) 253, in nota = *Trichoglottis rosea* (Lindl.) Ames.

**CLEISOSTOMA SAGITTATA** Blume Bijdr. (1825) 363, fig. 27; Naves Novis. App. (1882) 238 = *Sarcanthus malleifer* J. J. Sm.

**CLEISOSTOMA SPATULATUM** Blume apud Naves Novis. App. (1882) 238 = *Robiquetia pantherina* (Kränzl.) Ames.

**CLEISOSTOMA SUAVEOLENS** Blume apud Naves Novis. App. (1882) 238.

- CLEISOSTOMA SUBVIOLACEUM Reichb. f. in Bonpl. 10 (1862) 335; Ames Orch. 5 (1915) 253, in nota, non *Trichoglottis subviolacea* (Llanos) Merr. = *Trichoglottis bataanensis* Ames.
- CLEISOSTOMA TRIDENTATUM Lindl. apud Naves Novis. App. (1882) 238.
- CLEISOSTOMA VITELLINUM Reichb. f. in Linnaea 41 (1876) 76; J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 (1912) 112 (reprint 42); Ames Orch. 5 (1915) 253, in textu = *Pomatocalpa vitellinum* (Reichb. f.) Ames.
- CORYMBIS Thouars = *Corymborchis* Thouars.
- CORYMBIS CONFUSA Schltr. in Engl. Bot. Jahrb. 45 (1911) 395 = *Corymborchis confusa* Ames.
- CORYMBIS DISTICHA Lindl. Fol. Orch. Corymbis (1854) 1, quoad Philip.; Thou. apud Miq. Fl. Ind. Bat. 3 (1859) 736, quoad Philip. = *Corymborchis confusa* Ames.
- CORYMBIS GRACILIS Vidal Rev. Pl. Vasc. Filip. (1886) 272; Ceron Cat. Pl. Herb. Manila (1892) 168, non Blume = *Ceratostylis subulata* Blume.
- CORYMBIS VERATRIFOLIA Reichb. f. apud Naves Novis. App. (1882) 248; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 168.
- Probably referable to *Corymborchis confusa* Ames.
- CORYSANTHES FORNICATA Lindl. apud Naves Novis. App. (1882) 249.
- CORYSANTHES MERRILLII Ames Orch. 1 (1905) 65, text cut = *Corybas merrillii* Ames.
- CORYSANTHES PICTA Lindl. apud Naves Novis. App. (1882) 249.
- CRINONIA ELMERI Ames Orch. 5 (1915) 67, nomen = *Pholidota carnea* (Blume) Lindl.
- CYMBIDIUM FLAVESCENS Llanos Frag. Pl. Filip. (1851) 96; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 74; Merr. Sp. Blancoanae (1918) 113 = ? *Oberonia iridifolia* (Roxb.) Lindl.
- CYPRIPEDIUM as applicable to the Philippine florá = *Cordula* Raf.
- CYPRIPEDIUM ARGUS Reichb. f. in Gard. Chron. (1873) 608, (1874) 710, III 7 (1890) 259; Hook. f. in Bot. Mag. 101 (1875) t. 6175; Naves Novis. App. (1882) 251; Veitch Man. Orch. Pl. pt. 4 (1889) 11; Sander Reichenbachia I 2 (1890) 77, t. 83; Ceron Cat. Pl. Herb. Manila (1892) 169; Kränzl. Orch. Gen. et Sp. 1 (1897) 56 = *Cordula argus* (Reichb. f.) Rolfe.
- CYPRIPEDIUM BARBATUM Lindl. in Bot. Reg. 27 (1841) Misc. 53; Vidal Phan. Cuming. Philip. (1885) 151, Rev. Pl. Vasc. Filip. (1886) 273 = *Cordula barbata* (Lindl.) Rolfe.
- CYPRIPEDIUM BULBOSUM Blanco Fl. Filip. (1837) 637, ed. 2 (1845) 444, ed. 3, 3 (1897) 33; Merr. Sp. Blancoanae (1918) 117, non Linn.

This is indeterminable from the wholly inadequate description. Blanco's specimens may have been a *Liparis* or a *Malaxis*.

- CYPRIPEDIUM CANNARTIANUM Hort. ex L. Linden in *Lindenia* 3 (1887) 93, t. 141 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- CYPRIPEDIUM CILIOLARE Reichb. f. in *Gard. Chron.* II 18 (1882) 488, II 20 (1883) 46; Rodigas in *Ill. Hort.* 31 (1884) 127, t. 530; Veitch *Man. Orch. Pl. pt. 4* (1889) 16; Kränzl. *Orch. Gen. et Sp.* 1 (1897) 64 = *Cordula ciliolaris* (Reichb. f.) Rolfe.
- CYPRIPEDIUM ELLIOTTIANUM O'Brien in *Gard. Chron.* III 4 (1888) 501. Cf. *Paphiopedilum rothschildianum* (Reichb. f.) Stein, spec. excl.
- CYPRIPEDIUM FAIRIEANUM Lindl. apud Naves Novis. App. (1882) 251.
- CYPRIPEDIUM HAYNALDIANUM Reichb. f. *Xen. Orch.* 2 (1874) 222, 3 (1881) 33, t. 212, in *Gard. Chron.* II 7 (1877) 272, 752; Hook. f. in *Bot. Mag.* 103 (1877) t. 6296; Naves Novis. App. (1882) 251; Veitch *Man. Orch. Pl. pt. 4* (1889) 28; Kränzl. *Orch. Gen. et Sp.* 1 (1897) 71 = *Cordula haynaldiana* (Reichb. f.) Rolfe.
- CYPRIPEDIUM HOOKERAE Reichb. f. apud Naves Novis. App. (1882) 251.
- CYPRIPEDIUM JAVANICUM Reinw. apud Naves Novis. App. (1882) 251.
- CYPRIPEDIUM LAEVIGATUM Batem. in *Bot. Mag.* 91 (1865) t. 5508; Dombrain in *Floral Mag.* 5 (1866) t. 298; Morr. in *Belg. Hort.* 17 (1867) 102, t. 6; Van Houtte in *Fl. des Serres* 17 (1869) 83, t. 1760-61; Batem. *Second Cent. Orch. Pl.* (1867) t. 101; Naves Novis. App. (1882) 251; Ceron *Cat. Pl. Herb. Manila* (1892) 169 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- CYPRIPEDIUM LINEARI-SUBULATUM Llanos *Frag. Pl. Filip.* (1851) 99; F.-Vill. & Naves in *Blanco Fl. Filip. ed. 3, 4*<sup>1</sup> (1880) 76; Naves Novis. App. (1882) 244 = *Sarcanthus dealbatus* (Lindl.) Reichb. f.
- CYPRIPEDIUM LOWII Lindl. apud Naves Novis. App. (1882) 251. *Paphiopedilum lowii* Stein apud Ames *Orch.* 2 (1908) 21, 5 (1915) 11, in nota.
- There is no satisfactory evidence that this is Philippine; it was described from Borneo.
- CYPRIPEDIUM MOENSIANUM Hort. ex L. Linden in *Lindenia* 3 (1887) 69, t. 129 = *Cordula argus* (Reichb. f.) Rolfe.
- CYPRIPEDIUM PARDINUM Reichb. f. apud Boxall ex Naves Novis. App. (1882) 251.
- CYPRIPEDIUM PHILIPPINENSE Reichb. f. in *Bonpl.* 10 (1862) 335; Veitch *Man. Orch. Pl. pt. 4* (1889) 42, text cut; Kränzl. *Orch. Gen. et Sp.* 1 (1897) 46; Rolfe in *Orch. Rev.* 22 (1914) 253, fig. 29 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- CYPRIPEDIUM PITCHERIANUM Manda in *Am. Flor.* 3 (1887) 178 = *Cordula argus* (Reichb. f.) Rolfe.
- CYPRIPEDIUM PURPURATUM Lindl. apud Naves Novis. App. (1882) 251.
- CYPRIPEDIUM ROEBBELENII Reichb. f. in *Gard. Chron.* II 20 (1883) 684; Kränzl. *Xen. Orch.* 3 (1893) 113, t. 265, *Orch. Gen. et Sp.* 1 (1897) 47 = *Cordula philippinensis* (Reichb. f.) Rolfe.

- CYPRIPEDIUM SUPERBIENS Reichb. f. apud Naves Novis. App. (1882) 251.
- CYRTOPERA Lindl. = *Eulophia* R. Brown.
- CYRTOPERA AUREA Boxall ex Naves Novis. App. (1882) 242, *nomen*.
- CYRTOPERA ENSIFORMIS Lindl. in Journ. Linn. Soc. 3 (1859) 31; Miq. Fl. Ind. Bat. 3 (1859) 686; Naves Novis. App. (1882) 242 = *Eulophia stricta* (Presl) Ames.
- CYRTOPERA MACULATA Boxall ex Naves Novis. App. (1882) 242, *nomen*.
- CYRTOPERA SQUALIDA Reichb. f. in Bonpl. 5 (1857) 38; Lindl. in Journ. Linn. Soc. 3 (1859) 31; Miq. Fl. Ind. Bat. 3 (1859) 686; Reichb. f. in Walp. Ann. 6 (1863) 668; Naves Novis. App. (1882) 242 = *Eulophia squalida* Lindl.
- CYRTOPODIUM ENSIFORME Vidal Phan. Cuming. Philip. (1885) 80, 150, Rev. Pl. Vasc. Filip. (1886) 270; Schltr. in Perk. Frag. Fl. Philip. (1904) 43 = *Eulophia stricta* (Presl) Ames.
- CYRTOPODIUM SQUALIDUM Vidal Phan. Cuming. Philip. (1885) 150, Rev. Pl. Vasc. Filip. (1886) 270 = *Eulophia squalida* Lindl.
- CYRTOSIA JAVANICA Blume apud Naves Novis. App. (1882) 247.
- DESMOTRICHUM Blume = *Dendrobium* Swartz.
- DESMOTRICHUM FIMBRIATUM Blume apud Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 354, quoad Philip. = *Dendrobium plicatile* Lindl.
- DESMOTRICHUM SCOPA Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 349 = *Dendrobium scopa* Lindl.
- DIENIA Lindl. = *Malaxis* Swartz.
- DIENIA CARINATA Reichb. f. in Bonpl. 3 (1855) 223 = *Malaxis acuminata* D. Don var. *biloba* Ames.
- DIPLOCONCHIUM INOCEPHALUM Schauer in Nov. Act. Nat. Cur. 19 Suppl. 1 (1843) 428, t. 12, fig. A = *Agrostophyllum inocephalum* (Schauer) Ames.
- DISSORHYNCHIUM MURICATUM Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 434, t. 1, fig. A = *Habenaria hystrix* Ames.
- DORITIS as applicable to the Philippine flora = *Kingiella* Rolfe. Cf. Ames Orch. 6 (1920) 307.
- DORITIS PHILIPPINENSIS Ames Orch. 2 (1908) 235, text cut, 5 (1915) 215 = *Kingiella philippinensis* (Ames) Rolfe.
- DOSSINIA MARMORATA Morr. apud Naves Novis. App. (1882) 250.
- ECHIOGLOSSUM JAVANICUM Blume apud Naves Novis. App. (1882) 244.
- EPIDENDRUM AMETHYSTINUM Reichb. f. apud Naves Novis. App. (1882) 237.
- EPIDENDRUM CARINATUM Linn. Sp. Pl. (1753) 953, ed. 2 (1763) 1350 = *Dendrobium carinatum* (Linn.) Willd.

- EPIDENDRUM EQUITANS Blanco Fl. Filip. (1837) 645, ed. 2 (1845) 449, ed. 3, 3 (1879) 44, non *Dendrobium equitans* Kränzl. = *Dendrobium aporoides* (Lindl.) Merr.
- EPIDENDRUM LINEARE Blanco Fl. Filip. (1837) 644, ed. 2 (1845) 449, ed. 3, 3 (1879) 44, non Linn. = *Pomatocalpa bicolor* (Lindl.) J. J. Sm.
- EPIDENDRUM RHABBARBARUM REDOLENS Blanco Fl. Filip. ed. 3, 3 (1879) 45, t. 389 = *Dendrobium anosmum* Lindl.
- EPIDENDRUM RUCKERAE Reichb. f. apud Naves Novis. App. (1882) 237.
- EPIDENDRUM RUIBARBARUM REDOLENS Blanco Fl. Filip. ed. 2 (1845) 593 = *Dendrobium anosmum* Lindl.
- EPIDENDRUM SOPHRONITIS Lindl. apud Naves Novis. App. (1882) 237.
- EPIDENDRUM ? SPATULATUM Llanos in Mém. Real. Acad. Cienc. Madr. 4 (1857) 499; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100.
- EPIDENDRUM VANILLA Blanco Fl. Filip. (1837) 643, non Linn. = *Vanilla ovalis* Blanco.
- EPHIPPIUM CORNUTUM Blume apud Naves Novis. App. (1882) 244.
- EPHIPPIUM LEPIDIUM Blume apud Naves Novis. App. (1882) 244.
- ESMERALDA SANDERIANA Reichb. f. in Gard. Chron. II 17 (1882) 588, in textu; Kerchove Livre des Orch. (1894) 307, 335, figs. 214, 223; Will. Orch. Grow. Man. ed. 7 (1894) 398, text cut; Ames Orch. 5 (1915) 222 = *Vanda sanderiana* Reichb. f.
- EUANTHE Schltr. = *Vanda* Jones.
- EUANTHE SANDERIANA Schltr. Orchideen (1914) 568, fig. 194; Ames Orch. 6 (1920) 308 = *Vanda sanderiana* Reichb. f.
- GASTROCHILUS BIFIDUS Ktze. Rev. Gen. Pl. 2 (1891) 661 = *Sarcanthus bifidus* (Lindl.) Ames.
- GASTROCHILUS COMPRESSUS Ktze. Rev. Gen. Pl. 2 (1891) 661 = *Robiquetia compressa* (Lindl.) Schltr.
- GLOSSASPIS TENTACULATA Spreng. apud Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Naves Novis. App. (1882) 250.
- GONGORA PHILIPPICA Llanos in Mém. Real. Acad. Cienc. Madr. 4 (1857) 498; F.-Vill. in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 100; Merr. Sp. Blancoanae (1918) 117.
- The description is very short and imperfect, and no data are given from which it is possible to determine the proper generic position of the species. It certainly is not *Renanthera coccinea* Lour. to which Naves reduced it. Cf. Merrill l. c.
- GOODYERA R. Br. = *Epipactis* (Hallier) Boehmer.
- GOODYERA DAWSONII Boxall ex Naves Novis. App. (1882) 248, nomen.

- GOODYERA GRANDIS Blume Fl. Jav. Orch. (1858) 36 (Orch. Arch. Ind. 43):  
Naves Novis. App. (1882) 248 = *Epipactis rubicunda* (Blume)  
A. A. Eaton.
- GOODYERA LUZONENSIS Ames Orch. 5 (1915) 26 = *Epipactis luzonensis*  
Ames.
- GOODYERA ORDIANA Boxall ex Naves Novis. App. (1882) 248, *nomen*.
- GOODYERA PARVIFLORA Lindl. apud Naves Novis. App. (1882) 248.
- GOODYERA PHILIPPINENSIS Schltr. in Engl. Bot. Jahrb. 45 (1911) 392;  
Ames Orch. 5 (1915) 27 = *Epipactis philippinensis* Ames.
- GOODYERA PICTA Boxall ex Naves Novis. App. (1882) 248, *nomen*.
- GOODYERA PROCERA Hook. apud Naves Novis. App. (1882) 248.
- GOODYERA RAMOSII Ames in Philip. Journ. Sci. 8 (1913) Bot. 409, Orch.  
5 (1915) 27 = *Epipactis ramosii* Ames.
- GOODYERA REPENS R. Br. apud Naves Novis. App. (1882) 248.
- GOODYERA RUBICUNDA Lindl. in Bot. Reg. 25 (1839) Misc. 61, Gen. &  
Sp. Orch. (1840) 493, in Journ. Linn. Soc. 1 (1857) 184; Miq.  
Fl. Ind. Bat. 3 (1859) 728; Naves Novis. App. (1882) 248;  
J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 121, Fig.-Atlas (1909)  
fig. 88; Ames Orch. 5 (1915) 27 = *Epipactis rubicunda* (Blume)  
A. A. Eaton.
- GOODYERA RUBROVENIA Boxall ex Naves Novis. App. (1882) 248, *nomen*.
- GOODYERA VIRIDIFLORA Blume Fl. Jav. Orch. (1858) 34 (Orch. Arch. Ind.  
41), t. 9c, fig. 2, 12-16; Ames Orch. 5 (1915) 27 = *Epipactis*  
*viridiflora* (Blume) Ames.
- GROSOURDYA APPENDICULATA Reichb. f. Xen. Orch. 2 (1867) 123; Naves  
Novis. App. (1882) 239 = *Sarcophilus appendiculatus* (Blume)  
J. J. Sm.
- GROSOURDYA HYSTRIX Reichb. f. apud Naves Novis. App. (1882) 239.
- GROSOURDYA ZOLLINGERI Reichb. f. apud Naves Novis. App. (1882) 239.
- HAEMARIA MERRILLII Ames in Philip. Journ. Sci. 2 (1907) Bot. 315, Orch.  
3 (1908) 21, t. 30 = *Kuhlhasseltia whiteheadii* (Rendle) Ames.
- HERPYSMA MERRILLII Ames in Philip. Journ. Sci. 2 (1907) Bot. 313 = *Ery-*  
*throides merrillii* Ames.
- HEXAMERIA DISTICHA R. Br. in Benn. Pl. Jav. Rar. (1838) 26, t. 7;  
Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 431 = *Podo-*  
*chilus serphyllifolius* (Blume) Lindl.
- HYLOPHILA RUBRA Ames in Philip. Journ. Sci. 2 (1907) Bot. 315, *nomen*,  
Orch. 2 (1908) 65, *text cut* = *Dicerostylis rubra* (Ames) Schltr.
- IRIDORCHIS Thouars = *Oberonia* Lindley.
- IRIDORCHIS ANCEPS Ktze. Rev. Gen. Pl. 2 (1891) 669 = *Oberonia anceps*  
Lindl.

- IRIDORCHIS APOROPHYLLA** Ktze. Rev. Gen. Pl. 2 (1891) 669 = *Oberonia aporophylla* Reichb. f.
- IRIDORCHIS CYLINDRICA** Ktze. Rev. Gen. Pl. 2 (1891) 669 = *Oberonia cylindrica* (Lindl.).
- IRIDORCHIS THISBE** Ktze. Rev. Gen. Pl. 2 (1891) 669 = *Oberonia thisbe* Reichb. f.
- LEPTORCHIS** Thouars = *Liparis* L. C. Richard.
- LEPTORCHIS FORBESII** Ktze. Rev. Gen. Pl. 2 (1891) 671 = *Liparis forbesii* Lindl.
- LEPTORCHIS PECTINATA** Ktze. Rev. Gen. Pl. 2 (1891) 671 = *Liparis pectinata* Ridl.
- LIMATODES GRACILIS** Lindl. apud Naves Novis. App. (1882) 247.
- LIMATODES GRATA** Miq. apud Naves Novis. App. (1882) 247.
- MICROSTYLIS** Nutt. = *Malaxis* Swartz.
- MICROSTYLIS ALAGENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 318 = *Malaxis alagensis* Ames.
- MICROSTYLIS BINABAYENSIS** Ames in Philip. Journ. Sci. 2 (1907) Bot. 318 = *Malaxis binabayensis* Ames.
- MICROSTYLIS CARINATA** Reichb. f. in Walp. Ann. 6 (1861) 207; Naves Novis. App. (1882) 230; Vidal Phan. Cuming. Philip. (1885) 184, Rev. Pl. Vasc. Filip. (1886) 266; Ridl. in Journ. Linn. Soc. 24 (1888) 338 = *Malaxis acuminata* D. Don var. *biloba* (Lindl.) Ames.
- MICROSTYLIS CONGESTA** Reichb. f. in Walp. Ann. 6 (1861) 206; Naves Novis. App. (1882) 230 = *Malaxis latifolia* Sm.
- MICROSTYLIS DENTATA** Ames in Philip. Journ. Sci. 2 (July, 1907) Bot. 319 = *Malaxis dentata* Ames.
- MICROSTYLIS HUTCHINSONIANA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 319 = *Malaxis hutchinsoniana* Ames.
- MICROSTYLIS MERRILLII** Ames in Philip. Journ. Sci. 2 (1907) Bot. 319 = *Malaxis merrillii* Ames.
- MICROSTYLIS MINDORENSIS** Rendle in Journ. Bot. 34 (1896) 356 = *Malaxis mindorensis* (Rendle) Ames.
- MICROSTYLIS ODORATA** Boxall ex Naves Novis. App. (1882) 230, *nomen*.
- MICROSTYLIS PHILIPPINENSIS** Kränzl. in Orchis 2 (Nov. 1907) 16 = *Malaxis dentata* Ames.
- MICROSTYLIS QUADRIDENTATA** Ames in Philip. Journ. Sci. 2 (1907) Bot. 320 = *Malaxis quadridentata* Ames.
- MICROSTYLIS RHEEDII** Lindl. apud Naves Novis. App. (1882) 230.
- MICROTATORCHIS COMPACTA** Schltr. in Fedde Repert. 10 (1911) 209, in textu = *Taeniophyllum compactum* Ames.
- MONOCHILUS CLANDESTINUM** Miq. apud Naves Novis. App. (1882) 250.
- MONOCHILUS ZOLLINGERI** Reichb. f. apud Naves Novis. App. (1882) 250.



- OPHRYS CERNUA Blanco Fl. Filip. (1837) 639 (as *Ophiris*), ed. 2 (1845) 445, ed. 3, 5 (1879) 35, t. 276, non Linn. = *Grammatophyllum scriptum* (Linn.) Blume.
- ORCHIS LANIGERA Blanco Fl. Filip. (1837) 641, ed. 2 (1845) 446, ed. 3, 3 (1879) 37 = *Rhynchostylis retusa* (Linn.) Blume.
- PANISEA BILAMELLATA Reichb. f. in Walp. Ann. 6 (1861) 240 = *Coelogyne bilamellata* Lindl.
- PAPHIOPEDILUM as applicable to the Philippine flora = *Cordula* Raf.
- PAPHIOPEDILUM ARGUS Stein Orchideenb. (1892) 453; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 40, in Engl. Pflanzenreich IV. 50 (1903) 90; Ames Orch. 1 (1905) 63, 2 (1908) 23 [incl. vars. *moensii* (Hort. ex Veitch) Stein and *nigricans* (Veitch) Hort. ex Stein], 5 (1915) 10 = *Cordula argus* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM BARBATUM Pfitz. in Pringsh. Jahrb. 19 (1888) 159; Ames Orch. 2 (1908) 24, 5 (1915) 10 = *Cordula barbata* (Lindl.) Rolfe.
- PAPHIOPEDILUM CILIOLARE Stein Orchideenb. (1892) 462, fig. 145; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 40, in Engl. Pflanzenreich IV. 50 (1903) 89; Ames Orch. 2 (1908) 23, 5 (1915) 11, in Philip. Journ. Sci. 6 (1911) Bot. 39 = *Cordula ciliolaris* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM ELLIOTTIANUM Stein Orchideenb. (1892) 466. Cf. *Paphiopedilum rothschildianum* (Reichb. f.) Stein, spec. excl.
- PAPHIOPEDILUM HAYNALDIANUM Stein Orchideenb. (1892) 470; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41, in Engl. Pflanzenreich IV. 50 (1903) 66, fig. 31 A-C; Ames Orch. 2 (1908) 22, 5 (1915) 10, in Philip. Journ. Sci. 6 (1911) Bot. 39; Memml. in Orchis 14 (1920) 18 = *Cordula haynaldiana* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM LAEVIGATUM Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1889) 84 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM LOWII Stein apud Ames Orch. 2 (1908) 21, 5 (1915) 11, in nota. Cf. *Cypripedium lowii* Lindl. apud Naves, spec. excl.
- PAPHIOPEDILUM PHILIPPINENSE Stein Orchideenb. (1892) 480; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41, in Engl. Pflanzenreich IV. 50 (1903) 61, fig. 28 A-E; Ames Orch. 2 (1908) 19 (incl. vars.), 5 (1915) 10; Memml. in Orchis 14 (1920) 18 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM ROEBELENI Stein Orchideenb. (1892) 480, 482, in syn.; Pfitz. in Engl. Bot. Jahrb. 19 (1894) 41 (as *röbbeleii*), in Engl. Pflanzenreich IV. 50 (1903) 62 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- PAPHIOPEDILUM ROTHSCHILDIANUM (Reichb. f.) Stein Orchideenb. (1892) 482; Ames Orch. 2 (1908) 18, 5 (1915) 11, in nota.  
*Cypripedium elliotianum* O'Brien in Gard. Chron. III 4 (1888) 501.  
*Paphiopedilum elliotianum* Stein Orchideenb. (1892) 466.  
*Paphiopedilum rothschildianum* Stein var. *elliotianum* Pfitz. in Engl. Pflanzenreich IV. 50 (1903) 59.

There is no satisfactory evidence that this species is Philippine; the type is from Borneo or from Sumatra. *Cypripedium elliottianum* O'Brien is supposed to have come from the Philippines.

PAXTONIA Lindl. = *Spathoglottis* Blume.

PAXTONIA ROSEA Lindl. in Bot. Reg. 24 (1838) Misc. 61, t. 60; Moore Ill. Orch. Pl. (1857) Paxtonia 4, t. 1; Reichb. f. in Walp. Ann. 6 (1862) 456; Naves Novis. App. (1882) 237 = *Spathoglottis plicata* Blume.

PELEXIA ? FALCATA Llanos Fragm. Pl. Filip. (1851) 95; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 73; Merr. Sp. Blancoanae (1918) 117.

This may be a species of *Oberonia*; the description of Llanos is very imperfect.

PERISTYLUS GOODYEROIDES Lindl. Gen. & Sp. Orch. (1835) 299; Ceron Cat. Pl. Herb. Manila (1892) 169; Kränzl. Orch. Gen. et Sp. 1 (1898) 503 (excl. syn. *P. grandis* Blume); J. J. Sm. Fl. Buitenz. 6 (Orch. Jav.) (1905) 32, Fig.-Atlas (1908) fig. 14 = *Habenaria goodyeroides* D. Don.

PERISTYLUS WARBURGIANUS Kränzl. Orch. Gen. et Sp. 1 (1898) 519.

The type, *Warburg 14987*, is from southern Mindanao. The description suggests close affinity with *Habenaria goodyeroides* D. Don.

PHYLLORCHIS Thouars = *Bulbophyllum* Thouars.

PHYLLORCHIS ANTENNIFERA Ktze. Rev. Gen. Pl. 2 (1891) 677 = *Bulbophyllum antenniferum* (Lindl.) Reichb. f.

PHYLLORCHIS AURATA Ktze. Rev. Gen. Pl. 2 (1891) 677 = *Bulbophyllum auratum* (Lindl.) Reichb. f.

PHYLLORCHIS CHEIRI Ktze. Rev. Gen. Pl. 2 (1891) 676 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.

PHYLLORCHIS CUMINGII Ktze. Rev. Gen. Pl. 2 (1891) 677 = *Bulbophyllum cumingii* (Lindl.) Reichb. f.

PHYLLORCHIS MAXILLARIS Ktze. Rev. Gen. Pl. 2 (1891) 677 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.

PHYLLORCHIS OTHONIS Ktze. Rev. Gen. Pl. 2 (1891) 677 = *Bulbophyllum othonis* (Ktze.) J. J. Sm.

PHYSURUS BLUMEI Lindl. apud Naves Novis. App. (1882) 250.

PINALIA Buch.-Ham. = *Eria* Lindley.

PINALIA APORODES Ktze. Rev. Gen. Pl. 2 (1891) 678 = *Dendrobium aporoides* (Lindl.) Merr.

PINALIA BRACHYSTACHYA Ktze. Rev. Gen. Pl. 2 (1891) 678 = *Eria brachystachya* Reichb. f.

PINALIA POLYURA Ktze. Rev. Gen. Pl. 2 (1891) 679 = *Eria polyura* Lindl.

PINALIA PROREPENS Ktze. Rev. Gen. Pl. 2 (1891) 679 = *Phreatia prorepens* Reichb. f.

- PINALIA RETROFLEXA Ktze. Rev. Gen. Pl. 2 (1891) 679 = *Eria retroflexa* Lindl.
- PINALA VULPINA Ktze. Rev. Gen. Pl. 2 (1891) 679 = *Eria vulpina* Reichb. f.
- PLATANThERA L. C. Richard = *Habenaria* Willdenow.
- PLATANThERA AMESIANA Schltr. in Fedde Repert. 9 (1911) 212 = *Habenaria angustata* (Blume) Ktze.
- PLATANThERA ANGUSTATA Lindl. Gen. & Sp. Orch. (1835) 290; Naves Novis. App. (1882) 251 = *Habenaria angustata* (Blume) Ktze.
- PLATANThERA GOODYEROIDES Vidal Phan. Cuming. Philip. (1885) 151 = *Habenaria goodyeroides* D. Don.
- PLATANThERA GRACILIS (Blume) Lindl. apud Naves Novis. App. (1882) 251.
- PLATANThERA HALCONENSIS Schltr. in Fedde Repert. 9 (1911) 212 = *Habenaria halconensis* Ames.
- PLATANThERA HORSFIELDII (Blume) Naves Novis. App. (1882) 251.
- According to J. J. Smith *Peristylus horsfieldii* Blume, upon which Naves based his combination, is a synonym of *Habenaria goodyeroides* D. Don. This conclusion needs further examination before it can be accepted.
- PLATANThERA SUSANNAE Lindl. apud Naves Novis. App. (1882) 251.
- PLATYCLINIS Benth. = *Acoridium* Nees & Meyen p. p. and *Dendrochilum* Blume p. p.
- PLATYCLINIS ARACHNITES Rolfe in Kew Hand-list Orch. (1896) 189, *nomen* = *Dendrochilum arachnites* Reichb. f.
- PLATYCLINIS BISTORTA Wendl. & Kränzl. Xen. Orch. 3 (1900) 169, t. 299, fig. 1 1-5 = *Dendrochilum bistortum* (Wendl. & Kränzl.) J. J. Sm., spec. excl.
- PLATYCLINIS COBBIANA Hemsl. in Gard. Chron. II 16 (1881) 656; Veitch Man. Orch. Pl. pt. 5 (1889) 80 = *Dendrochilum cobbianum* Reichb. f.
- PLATYCLINIS CUCUMERINA Rolfe in Kew Hand-list Orch. (1896) 189, *nomen* = *Dendrochilum cucumerinum* Reichb. f. spec. excl.
- PLATYCLINIS FILIFORMIS Benth. ex Hemsl. in Gard. Chron. II 16 (1881) 656; Veitch Man. Orch. Pl. pt. 5 (1889) 80; Cogn. in Dict. Icon. Orch. (1902) *Platyclinis t. 1* = *Dendrochilum filiforme* Lindl.
- PLATYCLINIS GLUMACEA Benth. in Journ. Linn. Soc. 18 (1881) 295, by inference only; ex Hemsl. in Gard. Chron. II 16 (1881) 656; Vidal Phan. Cuming. Philip. (1885) 148, Rev. Pl. Vasc. Filip. (1886) 267; Pfitz. in Engl. & Prantl Nat. Pflanzenfam. 2, Abt. 6 (1888) 128, fig. 127 B-F; Veitch Man. Orch. Pl. pt. 5 (1889) 81, t.; Cogn. in Dict. Icon. Orch. (1902) *Platyclinis t. 2*; Ames Orch. 1 (1905) 74 = *Dendrochilum glumaceum* Lindl.

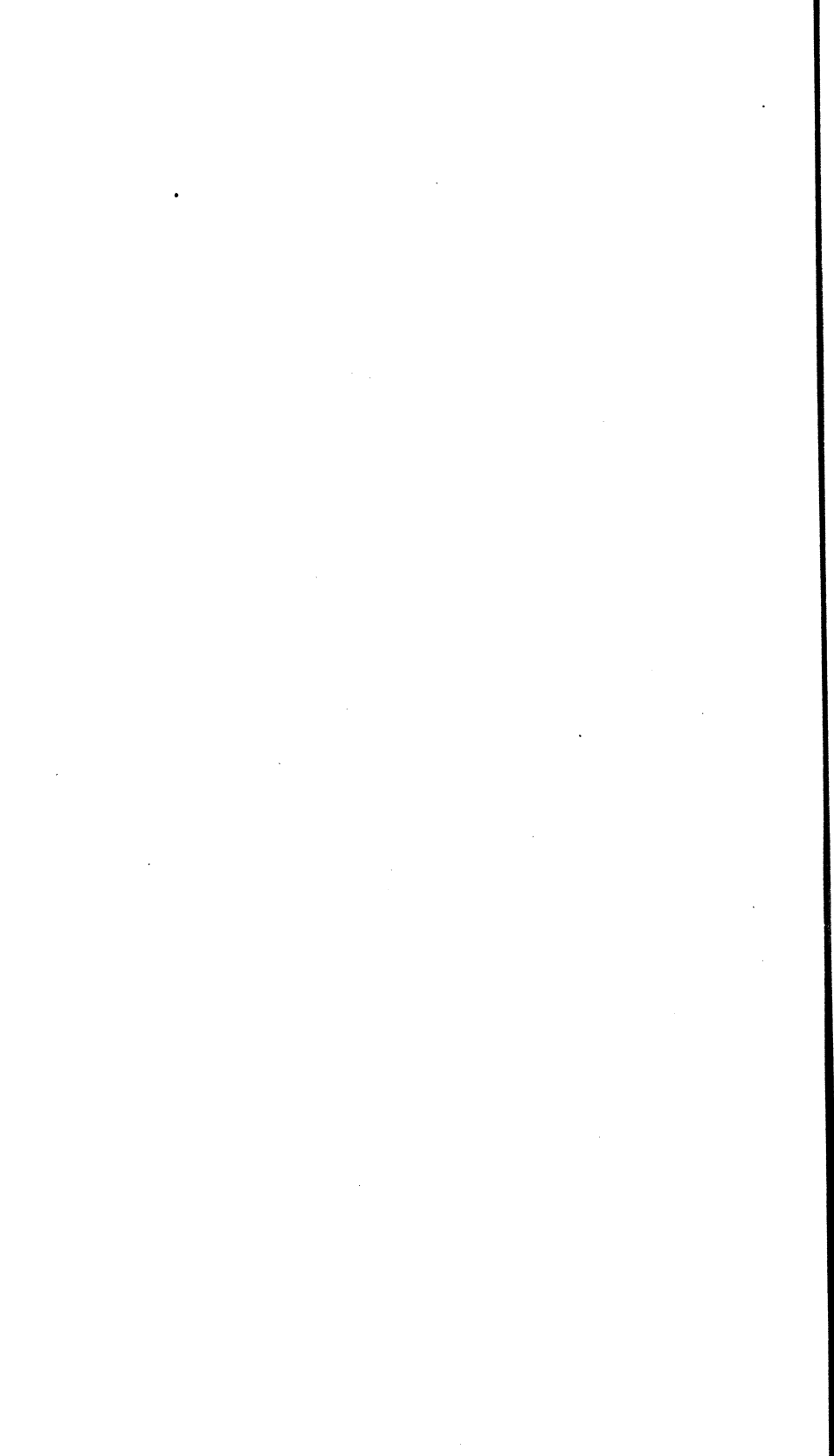
- PLATYCLINIS LATIFOLIA** Hemsl. in Gard. Chron. II 16 (1881) 656; Rendle in Journ. Bot. 34 (1896) 355; Ames Orch. 1 (1905) 74 = *Dendrochilum latifolium* Lindl.
- PLATYCLINIS MICROCHILA** Schltr. in Bull. Herb. Boiss. II 6 (April, 1906) 302 = *Acoridium microchilum* (Schltr.) Ames.
- PLATYCLINIS UNCATA** Rolfe ex Vidal Phan. Cuming. Philip. (1885) 148; Rev. Pl. Vasc. Filip. (1886) 627 = *Dendrochilum uncatum* Reichb. f.
- PLEIONE BILAMELLATA** Ktze. Rev. Gen. Pl. 2 (1891) 680 = *Coelogyne bilamellata* Lindl.
- PLEIONE SPARSA** Ktze. Rev. Gen. Pl. 2 (1891) 680 = *Coelogyne sparsa* Reichb. f.
- POGONIA** A. Jussieu as applicable to the Philippine flora = *Nervilia* Gaudichaud.
- POGONIA CRISPATA** Blume Mus. Bot. Lugd.-Bat. 1 (1849) 32; Naves Novis. App. (1882) 248 = *Nervilia discolor* (Blume) Schltr.
- POGONIA DILATATA** Blume Fl. Jav. Orch. (1858) 127 (Orch. Arch. Ind. 151) t. 10, fig. 4, 1 & 2; Ames Orch. 1 (1905) 66 = *Nervilia dilatata* (Blume) Schltr.
- POGONIA DISCOLOR** Blume Mus. Bot. Lugd.-Bat. 1 (1849) 32; Naves Novis. App. (1882) 248 = *Nervilia discolor* (Blume) Schltr.
- POGONIA FLABELLIFORMIS** Lindl. in Wall. Cat. (1832) No. 7400, nomen, Gen. & Sp. Orch. (1840) 415; Naves Novis. App. (1882) 248 = *Nervilia aragoana* Gaudich.
- POGONIA JULIANA** Wall. apud Naves Novis. App. (1882) 248.
- POGONIA FLICATA** Ames Orch. 2 (1908) 43, non Lindl. = *Nervilia discolor* (Blume) Schltr.
- POGONIA PUDICA** Ames Orch. 2 (1908) 44, text cut = *Nervilia discolor* (Blume) Schltr.
- POGONIA PUNCTATA** Blume apud Naves Novis. App. (1882) 248.
- PTYCHOCHILUS SEPTEMNERVIS** Schauer in Nov. Act. Nat. Cur. 19, Suppl. 1 (1843) 431, t. 12, fig. B = *Tropidia septemnervis* (Schauer) Reichb. f.
- RHAMPHIDIA GRANDIFLORA** Lindl. apud Naves Novis. App. (1882) 248.
- RHAMPHIDIA TENUIS** Lindl. in Journ. Linn. Soc. 1 (1857) 182; Miq. Fl. Ind. Bat. 3 (1859) 730; Naves Novis. App. (1882) 248 = *Hetaeria oblongifolia* Blume.
- SALACISTIS NOVEMBRILIS** Reichb. f. apud Naves Novis. App. (1882) 249.
- SARCOPODIUM ACUMINATUM** Rolfe in Orch. Rev. 18 (August, 1910) 239; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (November, 1910) 329, fig. 32 D, E = *Dendrobium acuminatum* Rolfe.
- SARCOPODIUM CHEIRI** Lindl. Fol. Orch. Sarcopod. (1853) 4; Moore Ill. Orch. Pl. (1857) Sarcopod. 4 = *Bulbophyllum blumei* (Lindl.) J. J. Sm.

- SARCOPODIUM CYMBIDIODES** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (1910) 325, quoad Philip. = *Dendrobium acuminatum* Rolfe.
- SARCOPODIUM LYONII** Rolfe in Orch. Rev. 18 (1910) 240; Ames in Philip. Journ. Sci. 6 (1911) Bot. 53, in Addisonia 8 (1923) 17, t. 265 = *Dendrobium lyonii* Ames.
- SARCOPODIUM STELLA-SILVAE** Loher & Kränzl. in Fedde Repert. 7 (1909) 40; Rolfe in Orch. Rev. 18 (August, 1910) 240; Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21 (November, 1910) 326, fig. 31 A-C; Ames in Philip. Journ. Sci. 8 (1913) Bot. 426 = *Dendrobium stella-silvae* (Loher & Kränzl.) Ames.
- SCHIZMOCERAS** Presl = *Dendrobium* Swartz.
- SCHIZMOCERAS DISTICHA** Presl Rel. Haenk. 1 (1827) 96, t. 13, fig. 2 = *Dendrobium distichum* (Presl) Reichb. f.
- SELENIPEDIUM LAEVIGATUM** May in Rev. Hort. 57 (1885) 301 = *Cordula philippinensis* (Reichb. f.) Rolfe.
- STAUROGLOTTIS EQUESTRIS** Schauer in Nov. Act. Acad. Nat. Cur. 19, Suppl. 1 (1843) 432 = *Phalaenopsis equestris* (Schauer) Reichb. f.
- STAUROPSIS BATEMANII** Nichols. Dict. Gard. 3 (1886) 493 (as *batemanni*) = *Vandopsis lissochiloides* (Gaudich.) Pfitz.
- STAUROPSIS PALLENS** Reichb. f. in Hamb. Gartenz. 16 (1860) 117, Xen. Orch. 2 (1862) 7; Naves Novis. App. (1882) 243 = *Phalaenopsis pallens* (Lindl.) Reichb. f., spec. excl.
- STAUROPSIS PHILIPPINENSIS** Reichb. f. in Hamb. Gartenz. 16 (1860) 117, Xen. Orch. 2 (1862) 8, in Walp. Ann. 6 (1864) 882; Vidal Rev. Pl. Vasc. Filip. (1886) 270; Ames Orch. 2 (1908) 223, 5 (1915) 224 = *Trichoglottis philippinensis* Lindl.
- STAUROPSIS VIOLACEA** Reichb. f. apud Naves Novis. App. (1882) 243.
- STENORHYNCHUS VAGINATUS** Spreng. apud Llanos ex F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 99.
- SYNPTERA SUBVIOLACEA** Llanos Frag. Pl. Filip. (1851) 98; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4<sup>1</sup> (1880) 75.
- TAINIA ELMERI** Ames in Elm. Leaf. Philip. Bot. 5 (1912) 1570 = *Ascotainia elmeri* Ames.
- TAINIA INAMOENA** Kränzl. in Fedde Repert. 17 (1921) 387 = *Ascotainia elmeri* Ames.
- TRICHOTOSIA** Blume = *Eria* Lindley.
- TRICHOTOSIA BINABAYENSIS** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 141 = *Eria binabayensis* Ames.
- TRICHOTOSIA FASTIGIATIFOLIA** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 162 = *Eria fastigatifolia* Ames.
- TRICHOTOSIA HALCONENSIS** Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup> (1911) 149 = *Eria halconensis* Ames.

- TRICHOTOSIA MUCRONATA Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>  
(1911) 157 = *Eria mucronata* Lindl. spec. excl.
- TRICHOTOSIA ODORIFERA Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>  
(1911) 153 = *Eria odorifera* Leavitt.
- TRICHOTOSIA RAMOSII Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>  
(1911) 156 = *Eria ramosii* Leavitt.
- TRICHOTOSIA VULPINA Kränzl. in Engl. Pflanzenreich IV. 50. II. B. 21<sup>2</sup>  
(1911) 141 = *Eria vulpina* Reichb. f.
- TYLOSTYLIS sp. Naves Novis. App. (1882) 247.
- VANIFOLIA ALBIDA Blume apud Naves Novis. App. (1882) 248.
- ZEUXINE sp. Vidal Rev. Pl. Vasc. Filip. (1886) 273 = *Adenostylis strateu-*  
*matica* (Linn.) Ames.
- ZEUXINE LUZONENSIS Ames in Philip. Journ. Sci. 2 (1907) Bot. 314, *nomen*  
= *Adenostylis luzonensis* Ames.
- ZEUXINE PURPURASCENS Blume apud Naves Novis. App. (1882) 249.
- ZEUXINE WHITEHEADII Rendle in Journ. Bot. 34 (1896) 358 = *Kuhlhassel-*  
*tia whiteheadii* (Rendle) Ames.

## ERRATA

- Page 22, line 28, for *Scirpodendron ghaeri* read *Scirpodendron ghaeri*.  
Page 25, line 39, for *Lymnophyton obtusifolium* Miq. read *Lymnophyton obtusifolium* Miq.  
Page 33, line 23, for Brongh. read Brongn.  
Page 41, line 22, for Vizcaya, read Vizcaya),  
Page 71, line 44, for Vor. read Var.  
Page 75, line 31, for **CHAMAERAPHIS MURICATA** (Linn. f.) comb. nov. read **CHAMAERAPHIS SQUARROSA** (Linn. f.) comb. nov.  
Page 84, last line, for Hainan, Indo-China. read Hainan, Indo-China, Celebes, Ternate, Gilolo.  
Page 116, after line 37, insert *Fuirena philippinensis* Gandoger in Bull. Soc. Bot. France 66 (1919) 197.  
Page 132, line 10, for *Lipironia* read *Lepironia*.  
Page 182, after line 6, insert *Schismatoglottis plurivenia* v. A. v. R. in Bull. Jard. Bot. Buitenzorg III 4 (1922) 209.  
Page 187, line 27, for **TYPHONIUM DIVARCATUM** (Linn.) Decne. read **TYPHONIUM DIVARICATUM** (Linn.) Decne.  
Page 198, line 42, for *Tradescantia critata* Linn. read *Tradescantia cristata* Linn.  
Page 201, line 7, for Presl. read Presl  
Page 215, line 36, for (Tag.), read (Tag.,  
Page 277, line 21, for (Ames) Schltr. & Ames. read (Ames) Ames & Schltr.





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# AN ENUMERATION OF PHILIPPINE FLOWERING PLANTS

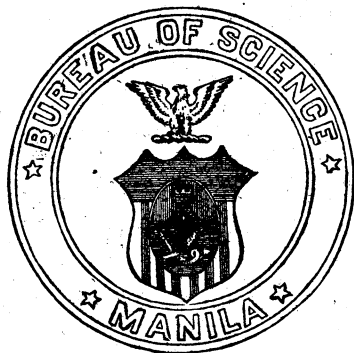
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BY

ELMER D. MERRILL

DIRECTOR AND BOTANIST, BUREAU OF SCIENCE

VOLUME 1, FASCICLE 1



MANILA  
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1922

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**EXPLANATORY NOTE.**

The present enumeration is an attempt to summarize in convenient form for consultation our present knowledge of Philippine flowering plants, and represents a part of the knowledge accumulated by the author during a course of about twenty years' study of the problem. In the work an attempt has been made to account for all binomials accredited to the Philippine flora; to adjust the synonymy when necessary; to include all important references to the Philippine botanical literature and essential references to extra-Philippine literature; to give the habitat, altitudinal range, and Philippine and extra-Philippine distribution of each species; to cite illustrative specimens where expedient or necessary; and to record all available local names for each species.

It is proposed to issue the present work in fascicles, utilizing one volume for the gymnosperms and the monocotyledons and two volumes for the dicotyledons. It is planned to publish full introductory and explanatory matter in a general introduction to be prefixed to volume 1 when the entire enumeration is completed.

**ELMER D. MERRILL.**

MANILA, P. I., *August 25, 1921.*

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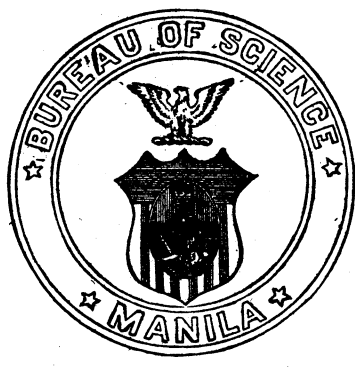
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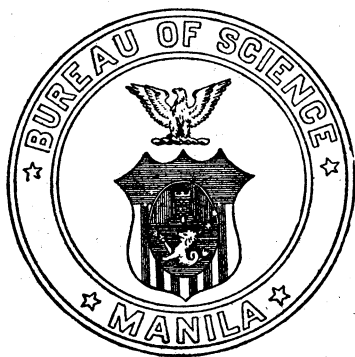
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VOLUME 1, FASCICLE 3



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**EXPLANATORY NOTE**

It was originally intended to issue this work in three volumes, the general introduction to be issued as a part of Volume 1 and the indices to form a part of Volume 3. Owing to the extent of the introduction, the bibliography, and the indices, it has been found best to issue all these data as Volume 4.

**IMPORTANT**

In binding Volumes 2 and 3 discard the title-page issued with fascicle 5 of each of these volumes and substitute therefor the revised title-pages found at the end of Volume 4.

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**MANILA, P. I., *November 1, 1923.***





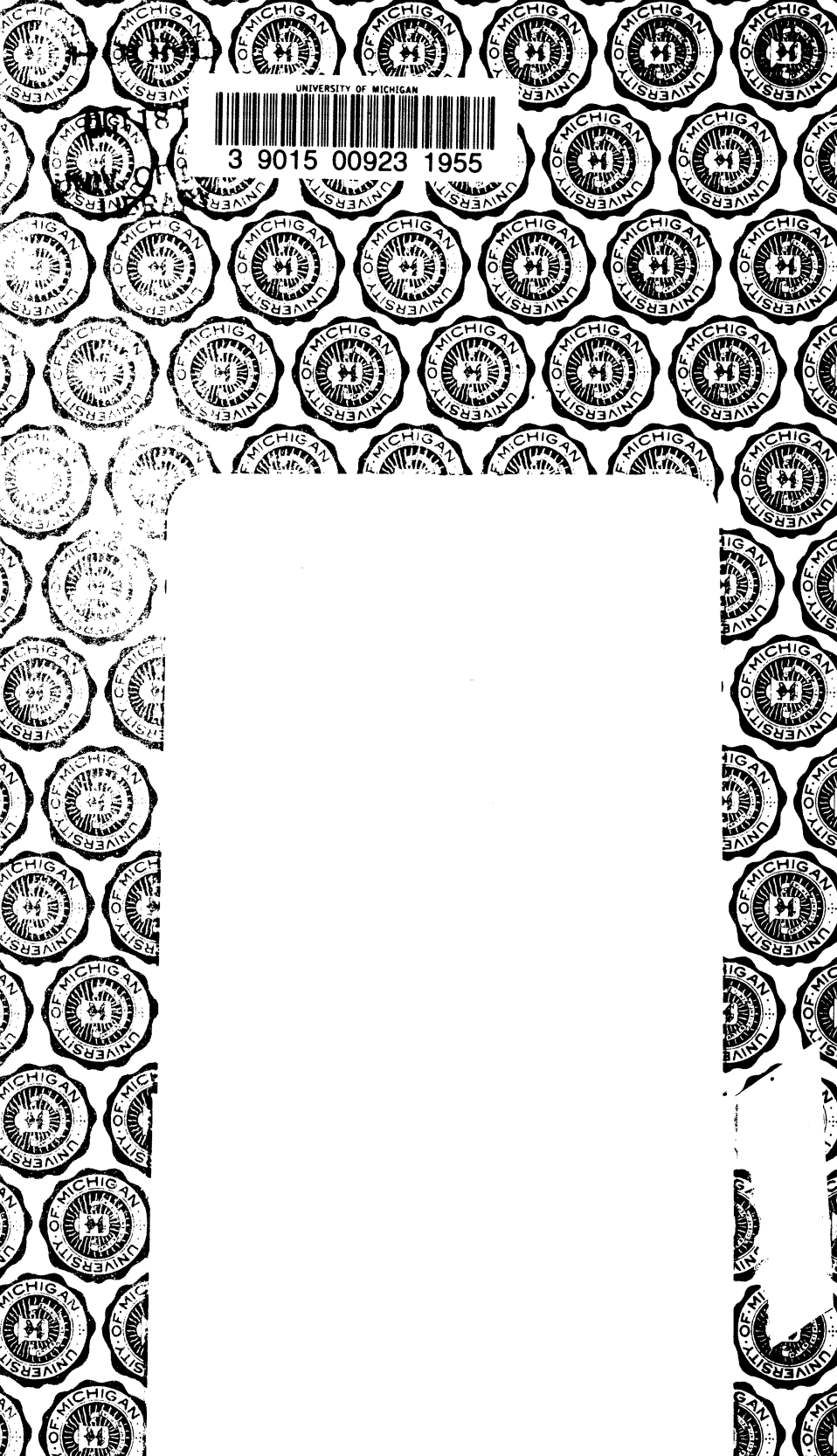


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