

NEW OR OTHERWISE NOTEWORTHY APOCYNACEAE  
OF TROPICAL AMERICA. II<sup>1</sup>

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*Allomarkgrafia* Woodson, gen. nov. Apocynacearum (Echitoideae). Calyx profunde 5-partitus; lacinae subaequales scariaceae margine imbricatae basi intus multiglandulosae. Corolla speciosa infundibuliformis; tubus inferne anguste cylindricus dein circa medium staminiger et late campanulato-dilatatus numquam constrictus; limbi lacinae 5 aequales oblique obovato-reniformes aestivatione dextrorsum convolutae. Stamina 5 omnino inclusa; antherae inter se adglutinatae et stigmati adplicatae anguste oblongo-sagittatae basi obtuse biauriculatae dimidia parte superiore pollinigerae, sporangiis binis omnino fertilibus, pollinibus granulosis; filamenta subcylindrica brevissima saepissime retrorse pilosa. Ovarii carpella gemina basi distincta apice in stylo gracili producta, ovulis multis pluriseriatim superpositis; stigma fusiforme obscure 5-gonum apice obtusum. Nectarii glandulae 5 separatae vel basi plus minusve connatae. Fructus folliculares apocarpi tereti longe acuminati plus minusve falcati; semina numerosa subscaphoidea in longitudinem unisulcata apice bene comosa.—Frutices lactescentes volubiles; folia opposita petiolata subcoriacea integra penninervia, nervis principalibus basi ventro pluriglandulosis. Inflorescentia lateralis alternata multiflora omnino 2-3-chotome divisa, ramis bostrycino-racemosis divaricatis, pedicellis geminis unibracteatis.

*Allomarkgrafia ovalis* (Mgf.) Woodson, n. comb.

*Echites ovalis* Mgf. Notizblatt 9: 79. 1924.

*Echites ovalis* Tafalla, ex Mgf. loc. cit. 1924, nom. nud. in  
synon.

The genus most closely allied to *Allomarkgrafia* is without doubt *Mesechites* Muell.-Arg., a valid group which has been generally ignored and confused with *Echites* P. Br., largely as a result of the efforts of John Miers in the past century. *Allomarkgrafia* has

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a large, infundibuliform corolla, whereas all the known species of *Mesechites* have much smaller, salverform corollas. The construction of the inflorescence is also diverse, that of the former genus being regularly branched with relatively distant, opposite pedicels, whereas that of the latter is characterized by irregular branching and extremely congested, indistinctly distributed pedicels. The foliar glands differ, furthermore, since those of the former are numerous and densely and indefinitely clustered, while those of the latter usually number but two or three and are regularly (either concentrically or radially) placed. A final and very important generic criterion is found in the number and disposition of the calycine squamellae, which are extremely numerous and uniformly distributed in *Allomarkgrafia*, and are only ten to fifteen in number and are placed strictly opposite the calyx-lobes in *Mesechites*.

The genus cannot be included within *Echites* P. Br. because of the obtusely auriculate anthers bearing uniformly fertile sporangia, the indeterminate inflorescence, and the foliar glands at the base of the midrib, which characterize it.

*Allomarkgrafia* has been so named in honor of Dr. Fr. Markgraf of the staff of the Botanical Museum at Berlin-Dahlem.

**Asketanthera** Woodson, gen. nov. Apocynacearum (Echitoideae). Calyx majusculis profunde 5-partitus; lacinae foliaceae plus minusve inaequales margine imbricatae intus basi squama deltoidea instructae. Corolla parva vel magna circa medium vel inferius 5-partita; tubus cylindricus infra medium staminiger; limbi aestivatione dextrorsum convoluti lacinae oblique ovato-lanceolatae. Stamina 5 inclusa; antherae in conum adglutinatae et stigmati adplicatae anguste ellipsoideo-oblongae basi acute bilobatae dimidia parte superiore pollinigerae, sporangiis binis basi in appendiculas rigidas productis, pollinibus granulosis; filamenta subcylindrica perbrevia saepissime pilosa. Ovarii carpella gemina basi distincta apice in stylo gracili producta, ovulis multis pluriseriatim superpositis; stigma fusiforme 5-gonum apice obscure bipartitum. Nectarii glandulae 5 saepissime separatae vel basi paulo connatae. Fructus folliculares apocarpi anguste tereti acuminati plus minusve falcati; semina numerosa sub-

scaphoidea in longitudinem unisulcata apice truncata vel paulo attenuata comosa.—Frutices lactescentes volubiles; folia opposita petiolata membranacea penninervia eglandulosa. Inflorescentia lateralis vel rarius subterminalis alternata bostrycino-racemosa bracteis foliaceis.

*Asketanthera calycosa* (A. Rich.) Woodson, n. comb.

*Echites calycosa* A. Rich. Fl. Cub. Fanerog. 2: 94. 1853.

*Rhodocalyx calycosus* (A. Rich.) Miers, Apoc. So. Am. 140. 1878.

*Echites Rugeliana* Urb. Symb. Ant. 5: 465. 1908.

*Asketanthera dolichopetala* (Urb.) Woodson, n. comb.

*Echites dolichopetala* Urb. Symb. Ant. 7: 335. 1912.

*Asketanthera longiflora* (Ekm. & Helwig) Woodson, n. comb.

*Echites longiflora* Ekm. & Helwig, Ark. f. Bot. 22A<sup>10</sup>: 45. 1929.

*Asketanthera Picardae* (Urb.) Woodson, n. comb.

*Echites Picardae* Urb. Symb. Ant. 5: 466. 1908.

*Asketanthera*, a genus confined to the Greater Antilles, constitutes an extremely conspicuous and natural complexity of four species, as at present understood, each apparently endemic to a particular island or island group. *A. calycosa*, which is to be regarded as the type species, is limited to the island of Cuba, where it is of frequent and wide occurrence. *A. longiflora*, a native of Hispaniola, is more rare, and is noteworthy as bearing perhaps the largest and most beautiful flowers to be found among the Apocynaceae.

From *Echites* P. Br., with which it has its closest affinities both morphologically and geographically, *Asketanthera* differs markedly in the construction of the inflorescence, which is a compound, though frequently much reduced, dichasial cyme in the former, and a simple, bostrychoid raceme in the latter; in the character of the bracts and calyx-lobes, which are scarious and inconspicuous in the former genus, and foliaceous and extremely conspicuous in the latter; and in several more technical details of the repro-

ductive apparatus. The superficial dissimilarity of the genera is striking.

The generic name has been coined from ἀσκητός and ἀνθηρά, with reference to the highly modified stamens.

**Fernaldia** Woodson, gen. nov. Apocynacearum (Echitoideae). Calyx profunde 5-partitus; lacinae aequales vel subaequales margine imbricatae basi intus uniglandulosae. Corolla speciosa infundibuliformis; tubus inferne longe cylindricus supra medium late campanulato-dilatatus numquam constrictus ad basin partis dilatatae staminiger; limbi lacinae oblique obovatae aestivatione dextrorsum convolutae paulo reflexae in paginis ventralibus saepissime dense arachnoideo-villosae. Stamina 5 inclusa; antherae inter se adglutinatae et stigmati adhaerentes sagittatae anguste oblongo-ellipsoideae basi inconspicue obtuseque bilobatae parte dimidia superiore pollinigerae, sporangiis binis basi in appendiculas rigidas conspicue productis, pollinibus granulosis; filamenta brevia cylindrica glabriuscula. Ovarii carpella gemina basi distincta apice in stylo gracili producta, ovulis multis anatropis in utraque loculo pluriseriatim superpositis; stigma fusiforme obscure 5-gonum apice vix bipartitum. Nectarium cupuliforme inaequaliter 4-lobatum. Fructus folliculares apocarpi anguste cylindrici longe acuminati plus minusve falcati; semina numerosa subscaphoidea longitudinaliter unisulcata apice truncata bene comosa.—Frutices lactescentes volubiles; folia opposita petiolata margine integra penninervia eglandulosa. Inflorescentia lateralis rariusve subterminalis multiflora valde racemosa.

**Fernaldia pandurata** (A. DC.) Woodson, n. comb.

*Echites pandurata* A. DC. in DC. Prodr. 8: 458. 1844.

*Amblyanthera* ? *pandurata* (A. DC.) Muell.-Arg. Linnaea 30: 448. 1860.

*Angadenia pandurata* (A. DC.) Miers, Apoc. So. Am. 182. 1878.

*Mandevilla velutina* K. Sch. in Engl. & Prantl, Nat. Pflanzenfam. 4<sup>2</sup>: 171. 1895.

*Mandevilla potosina* T. S. Brandg. Univ. Calif. Publ. Bot. 4: 276. 1912.

*Echites pinguifolia* Standl. Field Mus. Publ. Bot. 8: 35. 1930.

Although the infundibuliform corolla, racemose inflorescence, and bluntly auriculate anthers would appear superficially to ally *Fernaldia* to *Mandevilla* Lindl., it is actually more nearly related to *Echites* P. Br. This affinity is indicated by the eglandular foliage, the fusiform stigma, and the sporangia of the anthers, which are produced into a conspicuous, inwardly protuberant, sterile base.

From *Echites*, *Fernaldia* differs in the structure of the inflorescence, which is cymose in the former and racemose in the latter; in the shape of the corolla, which is salverform in the former and infundibuliform in the latter; in the anthers, which are produced into two sharp, basal prongs in the former, and are merely obtusely bilobed in the latter; and in the nectary, which is composed of five essentially equal and separate glands in the former genus, and is a cylindrical, irregularly four-lobed structure in the latter. *Fernaldia* differs from *Urechites* Muell.-Arg., furthermore, since it is without the terminally appendiculate anthers, the chaffy placentae, and the rostrate seeds which distinguish the latter genus. The arachnoid-villous corolla-lobes are without a parallel among the American Echitoideae.

The genus has been named in honor of Prof. Merritt Lyndon Fernald of the Gray Herbarium of Harvard University, who questioned the current generic interpretation of the type species while engaged in a study of the collections of Dr. Edward Palmer in southern Mexico.

**Galactophora** Woodson, gen. nov. Apocynacearum (Echitoideae). Calyx majusculis profunde 5-partitus; lacinae aequales vel subaequales margine imbricatae intus basi esquamuligerae sed saepissime glandulas minutas extra-axillares sparse munitae. Corolla magna speciosa; tubus inferne breviter cylindricus circa medium vel inferius late campanulato-dilatatus numquam constrictus ad basin partis dilatatae staminiger; limbi lacinae 5 aequales oblique obovatae aestivatione dextrorsum convolutae paulo reflexae. Stamina 5 omnino inclusa; antherae inter se plus minusve adglutinatae et stigmati adplicatae oblongo-lanceolatae sagittatae basi acute bilobatae parte dimidia superiore pollinigerae, sporangiis binis basi in appendiculas rigidas conspicue productis, pollini-

bus granulosis; filamenta subcylindrica brevissima pilosa. Ovarii carpella gemina basi distincta apice in stylo capillaceo longe producta, ovulis in utraque loculo pluriseriatim superpositis; stigma fusiforme obscure 5-gonum apice bipartitum. Nectarium cupuliforme apice obscure 5-lobatum. Fructus folliculares apocarpici anguste cylindrici longe acuminati plus minusve falcati; semina numerosa subscaphoidea in longitudinem unisulcata apice truncata ibique bene comosa.—Suffrutices erecti; folia opposita petiolata vel subsessilia saepe amplexicaulia coriacea penninervia eglandulosa. Inflorescentia terminalis bostrycino-racemosa pauciflora.

**Galactophora crassifolia** (Muell.-Arg.) Woodson, n. comb.

*Amblyanthera crassifolia* Muell.-Arg. in Martius, Fl. Bras. 6<sup>1</sup>: 143. 1860.

*Echites crassifolia* Spruce, ex Muell.-Arg. loc. cit. 1860, nom. nud. in synon.

*Rhodocalyx crassifolius* (Muell.-Arg.) Miers, Apoc. So. Am. 139. 1878.

“*Mandevilla crassifolia* Muell.-Arg.” ex K. Sch. in Engl. & Prantl, Nat. Pflanzenfam. 4<sup>2</sup>: 171. 1895, sphalm.

“*Mandevilla crassifolia* (Spruce) K. Schum.” ex Mgf. in Fedde, Rep. 20: 24. 1924, sphalm.

**Galactophora calycina** (Hub.) Woodson, n. comb.

*Dipladenia calycina* Hub. ex Ducke, Archiv. Jard. Bot. Rio Janeiro 3: 247. 1922; Bol. Mus. Goeldi 7: 113. 1913, nom. nud.

**Galactophora Schomburgkiana** Woodson, sp. nov., suffrutescens; caulibus erectis teretibus sat crassis altitudine ignotis junioribus tenue glandulo-puberulis tandem glabratis; foliis oppositis subsessilibus paulo amplexicaulibus coriaceis margine in sicco revolutis late ovatis apice obtusiusculis basi subiter rotundatis et obscure cordatis 4–7 cm. longis 2.5–4.5 cm. latis supra tenuissime puberulis mox glabratis subtus glabris vel junioribus tenuissime puberulis; petiolis 0.1–0.2 cm. longis; inflorescentiis umbellatis paucifloris; pedunculis 3–5 cm. longis ut in caulis vestitis; pedicellis 1.0–1.5 cm. longis glandulo-puberulis et parce aculeolatis;

bracteis squamosis minimis; calycis laciniis ovatis acutiusculis 0.5–0.6 cm. longis scariaceis minutissime puberulis haud aculeolatis; corollae infundibuliformis extus minutissime glanduligerae in longitudinem aculeolato-striatae tubo 5–6 cm. longo basi ca. 0.2 cm. diametro metiente usque  $\frac{1}{2}$  altitudinem anguste cylindrico dein staminigero et campanulato-dilatato ostio ca. 0.75 cm. diametro metiente lobis oblique obovatis ca. 1 cm. longis; genitalibus ignotis; folliculis teretibus sat crassis ca. 14 cm. longis extus dense glandulo-aculeolatis.—BRITISH GUIANA: exact locality and date lacking. *R. Schomburgk s. n.* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph).

Closely allied to *G. crassifolia* and *G. calycina*, but differing from both in the smaller calyx-lobes, which are but 0.5–0.6 cm. long and contrast sharply with those of the two related species which are 1.5–2.0 cm. long. The foliage, moreover, is ovate, whereas that of the allied species is broadly oblong. Because of the peculiar aculeolate emergences of the corolla, *G. Schomburgkiana* is considered to be more nearly related to *G. crassifolia*.

*Galactophora pulchella* Woodson, sp. nov., suffrutescens; caulis erectis teretibus tenuibus altitudine ignotis junioribus minute puberulis tandem glabratis et lenticellas parvas gerentibus; foliis oppositis petiolatis subcoriaceis ovato-oblongis apice obtusiusculis basi subiter rotundatis vix cordatis 3.5–6.0 cm. longis 2.5–4.0 cm. latis supra glabratis subtus minutissime sparseque puberulis; petiolis 0.3–0.5 cm. longis glabris; inflorescentiis bostrycinoracemosis 5–10-floris; pedunculis 3–5 cm. longis ut in caulis vestitis; pedicellis ca. 0.75 cm. longis glabris vel minutissime glandulo-puberulis; bracteis scariaceis lanceolatis 0.15–0.2 cm. longis; calycis laciniis anguste lanceolatis 0.5–0.75 cm. longis scariaceis minute glandulo-puberulis et parce aculeolatis; corollae infundibuliformis glabrae vel paulo papillatae vix aculeolatae tubo 6–8 cm. longo basi ca. 0.2 cm. diametro metiente usque  $\frac{3}{4}$  altitudinem anguste cylindrico dein staminigero et paulo ampliore tubuloso-dilatato ostio ca. 0.4 cm. diametro metiente lobis oblique ovato-oblongis obtusiusculis 1.0–1.25 cm. longis paulo reflexis; antheris anguste lanceolatis 0.5–0.6 cm. longis basi acutissime auriculatis dorso minute puberulo-papillatis; nectario cupuliformi apice 5-lobato ovariis oblongoideis glabris paulo brevioribus; folliculis igno-

tis.—BRAZIL: Cano Pimicheiro, June, 1854. *R. Spruce 3718* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Distinctive because of its narrowly tubular corolla-throat and lanceolate calyx-lobes. It is also the only species of the genus with foliage which is not amplexicaul.

The type specimens of the two species immediately preceding were found in the collection of undetermined Apocynaceae at the Herbarium of the Royal Botanic Gardens, Kew. Both are evidently unicates, as duplicates have been encountered in none of the other European or American herbaria which have been consulted during the course of these studies.

*Galactophora* is a genus apparently without any direct affinity among the genera of its subfamily. Because of its esquamuligerous calyx and infundibuliform corolla, it is thought that *Rhabdadenia* may be considered as closely allied. The two genera, however, are of entirely different habit, *Rhabdadenia* consisting of extensive lianas for the most part, and *Galactophora* of low, suffrutescent undershrubs. The nectaries of the former genus are essentially separate, moreover, whereas those of the latter are completely concreescent. Furthermore, the seminal coma of *Rhabdadenia* is borne upon a slender rostrum, while that of *Galactophora* is sessile. The glandular-aculeolate emergences of the corolla, calyx, and stems of the latter genus are unique in the entire family as at present understood. The provenience of the Latin designation is obvious.

***Mandevilla tubiflora*** (Mart. & Gal.) Woodson, n. comb.

*Echites tubiflora* Mart. & Gal. Bull. Acad. Roy. Brux. **11**: 358. 1844.

*Amblyanthera tubiflora* (Mart. & Gal.) Muell.-Arg. Linnaea **30**: 423. 1860.

*Echites Cobanensis* Donn.-Sm. Bot. Gaz. **40**: 6. 1905.

What is evidently the sole surviving specimen of Galeotti's original collection (no. 1579) has recently been discovered among the undetermined Apocynaceae in the herbarium of the Royal Botanic Gardens, Kew, and discloses the corolla of this species to be typically salverform, with a conspicuous, spreading limb.



Another species, collected upon several occasions by C. G. Pringle and Dr. Edward Palmer in southern Mexico and widely distributed as *Echites tubiflora* Mart. & Gal., is characterized by an almost precisely tubular corolla, with an inconspicuous, erect limb, and appears to constitute a novelty:

**Mandevilla Syrinx** Woodson, sp. nov., suffruticosa volubilis; ramulis gracilibus juventate puberulis tandem glabratibus; foliis oppositis breviter petiolatis membranaceis elliptico-ovatis vel oblongo-lanceolatis plerisque profundiuscule cordatis apice imo in acumen breve constrictis supra hispidulis glabratisve nervo medio basi pluriglandulosis subtus pallidioribus tomentulosis vel rarius laxe pilosis 5–14 cm. longis 1.5–8.0 cm. latis; petiolis 0.5–1.0 cm. longis puberulis; inflorescentiis racemosis lateralibus vel subterminalibus alternatis multifloris; pedunculo foliis subaequante ut in ramulis vestito; pedicellis congestis subsecundis 0.3–0.5 cm. longis; bracteis ovato-lanceolatis linearibusve scariaceis pedicellis subaequantibus; calycis laciniis ovatis vel ovato-lanceolatis acuminatis 0.3–0.5 cm. longis scariaceis extus minute puberulo-papillatis intus basi squamellas multas flagelliformes uniforme munitis; corollae tubiformis dilute flavidulae tubo cylindrico 0.5–0.75 cm. longo basi ca. 0.2 cm. diametro metiente circa medium vel inferius staminifero faucibus paulo ampliatis lobis late ovatis acutiusculis erectis ca. 0.4 cm. longis; antheris anguste oblongo-lanceolatis basi truncate auriculatis 0.4 cm. longis; ovariis late ovoideis dense puberulo-papillatis apice in stylo abrupte contractis 0.2 cm. longis; stigmatibus proprio 0.2 cm. longo apiculis paulo brevioribus; nectarii glandulis oblongoideis plus minusve distinctis ovariis aequantibus vel paulo superantibus; folliculis falcatis glabris haud articulatis 15–25 cm. longis; seminibus ca. 0.1 cm. longis como dilute flavido dimidio brevioribus.—MEXICO: Jalisco: barranca of Tequila, Oct. 8, 1893. *C. G. Pringle 5422* (Mo. Bot. Garden Herbarium, TYPE).

A number of collections of this species has already been made in the Mexican states of Jalisco, Michoacan, Morelos, Guanajuato, and Oaxaca, representing a considerable degree of variation in such characters as the foliar indument and the length and degree of attenuation of the calyx-lobes. Without field observation,

or, at any rate, still more ample specimens, however, it has been decided to forego the creation of a number of intergrading varieties.

The curiously erect limb of the corolla, combined with the strikingly compact, subsecund inflorescence, has suggested as a substantive adjective for the species the name of the familiar wind instrument of the classical Greeks.

**Mandevilla acutiloba** (A. DC.) Woodson, n. comb.

*Echites acutiloba* A. DC. in DC. Prodr. 8: 451. 1844.

*Amblyanthera acutiloba* (A. DC.) Muell.-Arg. Linnaea 30: 426. 1860.

The original specimen of *M. acutiloba* collected by Pavon and now incorporated within the Herbarium Boissier at Geneva is without data concerning locality. A specimen in the United States National Herbarium, collected in the state of Chiapas, Mexico, near Tumbala, by E. W. Nelson (no. 3337), however, coincides well with that of Pavon, and might be assumed to have come from approximately the same general region. In any event, it appears evident that the latter is either Mexican or Central American in origin, since it possesses the hypogynous nectaries equalling or slightly surpassing the ovary, the long-apiculate stigma, and the blunt anther-lobes characteristic of the salverform-flowered Mexican and Central American species of the subgenus *Eumandevilla*. All known South American species of *Eumandevilla* bearing salverform corollas have nectaries surpassed by the ovary, shortly apiculate stigmata, and anthers which are without basal lobes. It is extremely unfortunate that the species is as yet represented by but two specimens among the principal herbaria of both Europe and America.

**Mandevilla Donnell-Smithii** Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracilibus dense puberulis; foliis oppositis petiolatis membranaceis late ovatis vel ovato-oblongis profunde cordatis apice breviter acuminatis 4-10 cm. longis 2-8 cm. latis supra viridibus dense hirtellis nervo medio basi pluriglandulosis subtus pallidioribus tomentosis; petiolis 0.75-3.0 cm. longis tomentulosis; inflorescentiis racemosis lateralibus alternatis

10–25-floris; pedunculo foliis aequante vel paulo superante ut in ramulis vestito; pedicellis secundis plus minusve congestis 0.5–0.75 cm. longis; bracteis scariaceis anguste lanceolatis 0.2–0.5 cm. longis; calycis laciniis scariaceis ovatis vel oblongo-lanceolatis acuminatis 0.2–0.4 cm. longis extus obscure puberulis intus basi pluriglandulosus; corollae salverformis dilute flavidae tubo cylindrico 1.25–1.5 cm. longo basi ca. 0.15 cm. diametro metiente supra medium staminifero faucibus paulo ampliatis lobis oblique obovatis obtusiusculis patentibus 0.25–0.4 cm. longis; antheris ovatis vel late oblongis basi truncate auriculatis 0.4 cm. longis; ovariis ovoideis apice subiter constrictis ca. 0.15 cm. longis glabris; stigmatate proprio ca. 0.1 cm. longo apiculis sterilibus subaequante; nectarii glandulis oblongo-ovoideis plus minusve distinctis ovariis aequantibus vel eadem paulo superantibus; folliculis ignotis.—  
 GUATEMALA: Dept. Santa Rosa: Cerro Gordo, alt. 3500 pp., Aug., 1892. *H. T. Heyde & E. Lux 3993* (Gray Herbarium, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Superficially, *M. Donnell-Smithii* may be distinguished from *M. tubiflora*, with which it is most likely to be confused, by means of its secund inflorescence and somewhat broader foliage. Technical details of the reproductive organs also vary. The species is evidently widespread in Guatemala, where it is a liana of mountain forests, frequenting altitudes of 1000 to 2500 meters.

***Mandevilla platydactyla*** Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracilibus juventate ferrugineo-tomentulosus tandem glabratis maturitate lignosis in longitudinem leviter striatis; foliis oppositis breviter petiolatis membranaceis obovato-oblongis apice abrupte acuminatis basi cuneatis obscure angusteque cordatis plerisque 5–10 cm. longis 2.5–5.0 cm. latis supra minute hispidulis nervo medio basi pluriglandulosus subtus pallidioribus praecipue in nervis venisque dense ferrugineo-tomentosis; petiolis 0.2–0.4 cm. longis ut in pagina ventrali folii vestitis; inflorescentiis racemosis lateralibus alternatis 10–25-floris; pedunculo foliis subaequante ut in ramulis vestito; pedicellis laxis plus minusve reflexis 0.8–1.0 cm. longis; bracteis oblongis acuminatis 0.3–0.6 cm. longis scariaceis sparse pilosis; calycis laciniis majusculis obovato-oblongis breviter acuminatis 0.75–1.0

cm. longis scariaceis (ante exsiccationem plus minusve coloratis?) extus ferrugineo-puberulis intus basi squamellas multas denticiformes munitis; corollae (in sicco aurantiacae) salverformis tubo cylindrico 1.25–1.5 cm. longo basi ca. 0.3 cm. diametro metiente supra medium constricto ibique staminifero faucibus paulo ampliatis lobis oblique ovato-oblongis acutiusculis patentibus 0.4 cm. longis; antheris anguste oblongis basi truncate auriculatis 0.4 cm. longis; ovariiis ovoideis apice abrupte constrictis 0.4–0.5 cm. longis pilosulis; stigmatе proprio ca. 0.1 cm. longo apiculis subaequante; nectarii glandulis ovoideis plus minusve connatis ovariiis subaequantibus; folliculis ignotis.—MEXICO: Hidalgo (?): Tolapa, June, 1842. *F. M. Liebmann 11986* (Herbarium, Botanical Museum of Copenhagen, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

This species is one of the most striking of the Mexican representatives of the subgenus *Eumandevilla*. Because of its salverform corolla with conspicuous, spreading limb, and stamens inserted somewhat above midway within the tube, it is thought to be most closely allied to the series of species centering about *M. tubiflora*, *M. acutiloba*, and *M. Donnell-Smithii*, but differs from all in the showy development of the calyx, the lobes of which are broadly laminate and probably somewhat tinted in the living condition.

**Mandevilla Rosana** (Donn.-Sm.) Woodson, n. comb.

*Echites Rosana* Donn.-Sm. Bot. Gaz. 40: 6. 1905.

At present known only from the type locality in Guatemala, this species differs from *M. acutiloba*, which might be regarded as its nearest congener, in the insertion of the stamens almost exactly midway within the corolla-tube, in the ovate lobes of the corolla, and in the somewhat rounded anther-lobes.

**Mandevilla scorpioidea** Woodson, sp. nov., suffruticosa volubilis; ramis teretibus gracilibus dense hirtellis; foliis oppositis longiuscule petiolatis membranaceis ovato-oblongis cordatis apice acuminatis 5–12 cm. longis 2.0–5.5 cm. latis supra hispidulis nervo medio basi pluriglandulosis subtus vix pallidioribus leviter puberulis; petiolis 0.5–1.0 cm. longis minute hirtellis; inflores-

centiis racemosis lateralibus alternatis 20–30-floris; pedunculo folia bis terve superante ut in ramis vestito; pedicellis sparsis subsecundis 0.75–1.0 cm. longis; bracteis linearibus 0.5–0.7 cm. longis pilosulis; calycis laciniis ovato-lanceolatis longe acuminatis 0.4–0.5 cm. longis scariaceis extus minute puberulo-papillatis intus pluriglandulosus; corollae (flavidae?) salverformis tubo cylindrico 1.5 cm. longo basi ca. 0.15 cm. diametro metiente circa medium vel inferius staminigero deinde paulo dilatato fauces versus parum attenuato lobis oblique ovatis obtusiusculis patentibus 0.4–0.5 cm. longis; antheris lanceolatis basi rotundiuscule auriculatis 0.4 cm. longis; ovariis ovoideis apice abrupte constrictis ca. 0.1 cm. longis glabris; stigmatate proprio ca. 0.1 cm. longo apiculis ca.  $\frac{1}{3}$  brevioribus; nectarii glandulis oblongoideis distinctis ovariis aequantibus; folliculis ignotis.—MEXICO: Chiapas: Cerro del Boqueron, June, 1914. *C. A. Purpus 7274* (Mo. Bot. Garden Herbarium, TYPE).

A species of very distinct aspect due to the long, subsecund inflorescence. The insertion of the stamens about midway within the corolla-tube appears to indicate a closer relationship to *M. Rosana* than to any other species at present known from Mexico or Central America.

**Mandevilla scutifolia** Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracillimis minute puberulis; foliis oppositis petiolatis membranaceis late ovato-oblongis apice breviter acuminatis mucronulatis basi rotundatis obsolete cordatis 2–5 cm. longis 1.5–3.0 cm. latis supra minute puberulis nervo medio basi pluriglandulosus subtus vix pallidioribus in nervis laxe barbatis; petiolis 1.0–1.25 cm. longis minutissime puberulo-incanis; inflorescentiis racemosis lateralibus alternatis 3–10-floris; pedunculo foliis subaequante dimidia parte inferiore sterili deinde florifero ut in ramulis vestito; pedicellis laxis 0.75–1.0 cm. longis; bracteis ovato-oblongis acuminatis 0.3–0.4 cm. longis scariaceis; calycis laciniis ovatis acutiusculis 0.3 cm. longis scariaceis extus minute denseque puberulis intus basi in marginibus squamellas 3–4 flagelliformes munitis; corollae (gilvae) salverformis tubo gracile cylindrico 1 cm. longo basi ca. 0.1 cm. diametro metiente circa medium staminigero faucibus paulo ampliatis lobis oblique obo-

vato-reniformibus obtusiusculis patentibus 0.5 cm. longis; antheris oblongo-lanceolatis basi truncatis haud auriculatis 0.35 cm. longis; ovariiis oblongo-ovoideis apice gradatim constrictis 0.1 cm. longis omnino glabris; stigmatate proprio 0.2 cm. longo apicula terminalia ca. bis superante; nectarii glandulis ovoideis compressis truncatis plus minusve connatis ovariiis dimidio aequantibus; folliculis ignotis.—PERU: "Andes of Saragosa," date lacking. *W. Lobbs. n.* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

While its affinities are clearly with the other South American species of *Eumandevilla* bearing salverform corollas, the distinct structure of the inflorescence, which might almost be described as subumbellate, as well as the size and shape of the corolla, entitles *M. scutifolia* to a unique position, without any very closely neighboring congeners. The species is known at present only from the type collection.

***Mandevilla riparia* (HBK.) Woodson, n. comb.**

*Echites riparia* HBK. Nov. Gen. 3: 214. 1818.

The generic affinities of this plant, collected in recent years, as originally, in the valley of the Magdalena River of Colombia, are obviously with *Mandevilla* by reason of the glandular foliage, simple, racemose inflorescence, and umbraculiform stigma. It differs from *M. montana* (HBK.) Mgf. chiefly in the longer, more slender corolla-tube with orbicular-ovate lobes, and in the shorter calyx.

***Mandevilla Jamesonii* Woodson, sp. nov., suffruticosa volubilis;** ramulis teretibus crassiusculis juventate minute puberulis mox glabratis; foliis oppositis petiolatis membranaceis late ovato-oblongis apice breviter acuminatis basi rotundatis et obsolete cordatis 3–6 cm. longis 2–4 cm. latis supra subpuberulis glabrat-  
isve nervo medio basi pluriglandulosis subtus pallidioribus mol-  
liter puberulis; petiolis 0.75–1.0 cm. longis laxe pilosulis; in-  
florescentiis racemosis lateralibus vel subterminalibus alternatis  
ca. 6-floris; pedunculo puberulo foliis subaequante; pedicellis  
1.25 cm. longis laxis; bracteis lanceolatis ca. 0.2 cm. longis scari-  
aceis; calycis laciniis lanceolatis acuminatis 0.4–0.5 cm. longis

scariaceis extus puberulis intus basi in marginibus squamellas 4-5 flagelliformes instructis; corollae (ut videtur gilvae) salverformis tubo gracile cylindrico 2 cm. longo basi ca. 0.15 cm. diametro metiente circa medium staminifero et paulo dilatato lobis oblique obovatis dolabriformibusque apice rotundatis patulis tubo subaequantibus; antheris anguste oblongo-lanceolatis 0.5-0.6 cm. longis basi haud auriculatis; ovariis oblongo-ovoideis apice in stylo gradatim constrictis 0.2 cm. longis glabris; stigmatibus proprio ca. 0.25 cm. longo apiculis subaequantibus; nectarii glandulis ovato-quadratis plus minusve connatis ovariis ca. duplo brevioribus; folliculis ignotis.—ECUADOR: "hedges, Loxa," date lacking. *W. Jameson 153* (Herbarium Kew, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Although closely allied to the other South American species of the *montana* plexus of *Eumandevilla*, *M. Jamesonii* is conspicuous because of the magnitude of the flowers and the elaborate corolline limb.

***Mandevilla subsessilis*** (A. DC.) Woodson, n. comb.

*Echites subsessilis* A. DC. in DC. Prodr. 8: 451. 1844.

This is certainly one of the most peculiar species of *Mandevilla*. Its unusually large, broadly obovate, sessile or subsessile, amplexicaul leaves, and clumsy, obovate-reniform calyx-lobes are quite different from those of any other species of the genus known at present. Technical details, however, prove it correctly referable to the group of South American species of *Eumandevilla* centering about *M. montana* (HBK.) Mgf., thus fortunately judging the doubtful data "*Mexico ? Peruvia ?*" upon Pavon's original specimen in the Herbar Boissier. The plant has evidently been collected but once.

***Mandevilla fragilis*** Woodson, sp. nov., suffruticosa volubilis; ramis teretibus gracilissimis juventate minute sparseque puberulis mox glabratis; foliis oppositis petiolatis tenuiter membranaceis anguste oblongo-lanceolatis acuminatis obsolete cordatis 3-7 cm. longis 0.75-1.5 cm. latis supra glabris nervo medio basi pauciglandulosis subtus glaucis; petiolis 0.75-1.25 cm. longis omnino glabris; inflorescentiis racemosis lateralibus alternatis 3-5-floris;

pedunculo glabro foliis paulo brevioribus; pedicellis laxis 0.75–1.0 cm. longis; bracteis minimis scariaceis; calycis laciniis ovato-oblongis acutiusculis 0.1 cm. longis scariaceis extus glabris intus basi in marginibus squamellam flagelliformem instructis; corollae (flavidae plus minusve roseatae ?) fragilis salverformis tubo cylindrico gracilissimo 1.25 cm. longo basi ca. 0.1 cm. diametro metiente circa medium staminifero sed vix dilatato, lobis inaequaliter ovato-oblongis acutiusculis valde patentibus tubo vix aequantibus; antheris anguste oblongis basi truncatis haud auriculatis 0.3 cm. longis; ovarii oblongo-ovoideis ca. 0.05 cm. longis apice in stylo capillaceo gradatim attenuatis omnino glabris; stigmatibus propriis 0.2 cm. longo apicula sterilia ca. bis superante; nectarii glandulis ovoideis ovarii vix aequantibus; folliculis ignotis.—BOLIVIA: exact locality and date lacking. *M. Bang 2271* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

This delicate and exceedingly graceful species is peculiar because of the solitary squamellae alternating with the lobes of the calyx. In its habit, it has no counterpart in the genus as at present understood.

***Mandevilla pycnantha*** (Steud.) Woodson, n. comb.

*Echites densiflora* Pohl, ex Stadelm. *Flora* 24: Beibl. I. 56. 1841, not Blume.

*Echites pycnantha* Steud. *Nom. ed.* 2. 1: 540. 1841.

*Heterothrix pycnantha* (Steud.) Muell.-Arg. in Martius, *Fl. Bras.* 6<sup>1</sup>: 133. 1860.

Apparently only two collections have ever been made of this puzzling species: one bearing flowers only, by Riedel (no. 985) at the Serra da Lapa, southern Brazil, and represented in the herbaria of the Jardin de l'Etat, Brussels, the Royal Botanic Gardens, Kew, the Botanical Museum, Vienna, and the Gray Herbarium of Harvard University, Cambridge; and another, bearing fruit only, by Pohl at the Serra do Pinheiro, in the state of Minas Geraes, Brazil, and represented at Brussels and Vienna only.

Mueller-Argovienensis regarded the plants as constituting a monotypic genus, *Heterothrix*, separating them from *Amblyan-*



*thera* Muell.-Arg., not Blume (antedated by *Mandevilla* Lindl.), upon the supposition of a seminal coma consisting of two distinct series of hairs. When examining the fruiting specimens collected by Pohl, the writer was disappointed to find the follicles nearly empty, with only the tangled masses of the yellow coma twisted and matted among the several mericarps. After rather laborious extraction of numerous strands, some of which were fortunately yet attached to seeds, it has been assumed that the coma of *M. pycnantha* is probably similar to that of all other known Echitoidae in being homogeneous. The observation of Mueller is thought to have been affected by the fragmentary and grossly distorted material available for his study. With its only generic character held in serious question, therefore, the species has been placed provisionally within *Mandevilla* subgen. *Eumandevilla* with the technical criteria of which it appears to coincide in every essential respect.

***Mandevilla cercophylla*** Woodson, sp. nov., suffruticosa vobilis omnino glabra; ramulis subteretibus gracilibus; foliis oppositis longiuscule petiolatis subcoriaceis obovato-oblongis apice abrupte acuminatis subcaudatis basi gradatim angustatis et obsolete auriculatis 3-6 cm. longis 1-3 cm. latis nervo medio basi ventre pauciglandulifero nervis secundariis fere horizontalibus haud arcuatis distantibus prope marginem junctis; petiolo 0.5 cm. longo; inflorescentiis racemosis lateralibus alternatis 8-17-floris; pedunculo flexuoso foliis subaequante; pedicellis laxis 0.75-1.0 cm. longis; bracteis ovatis minimis scariaceis; calycis laciniis ovato-trigonalibus ca. 0.1 cm. longis scariaceis intus basi squamellas multas flagelliformes gerentibus; corollae salverformis colore ignotae tubo cylindrico gracillimo 1.25 cm. longo basi ca. 0.1 cm. diametro metiente circa medium staminifero sed haud distincte dilatato lobis oblique ovato-oblongis acutiusculis (erectis vel vix patentibus ?) 0.5 cm. longis; antheris lanceolatis basi truncatis haud auriculatis 0.45 cm. longis; ovariis oblongo-ovoideis 0.15 cm. longis apice in stylo gracillimo gradatim productis; stigmatate proprio 0.15 cm. longo apiculis terminalibus vix aequante; nectarii glandulis oblongo-ovoideis basi connatis ovariis dimidio aequantibus; folliculis maturis ignotis.—PERU: Casapi, date lacking.

*A. Matthews 1978* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Probably as closely allied to *M. brachyloba* (Muell.-Arg.) K. Sch. as to any other species known at present, because of the short corolla-lobes which are thought to have been erect or essentially so in the living condition. The corolla is without the glandular papillae characteristic of that of *M. brachyloba*, however, and consequently does not blacken upon desiccation as does the corolla of the latter species. The leaves, moreover, are subcoriaceous, caudate-acuminate, obscurely auriculate, and are characterized by horizontal secondary venation, in all quite dissimilar to the foliage of *M. brachyloba*. The plant has evidently been collected but once.

***Mandevilla erecta*** (Vell.) Woodson, n. comb.

*Echites erecta* Vell. Fl. Flum. 113. 1830; Icon. 3: pl. 45. 1827.

*Laseguea erecta* (Vell.) Muell.-Arg. in Martius, Fl. Bras. 6<sup>1</sup>: 135. 1860.

Originally established with two species of dubious distinction, the genus *Laseguea* appears to differ from most other American Echitoideae in the conspicuous, brushy inflorescence, bearing subtubular corollas with small, erect lobes scarcely surpassing the curiously foliaceous bracts and calyx-lobes. The plants referred to *Laseguea* are surely very conspicuous, and have been popular with both collectors and systematists for that reason.

Mueller-Argoviensis was evidently hard put to assure the integrity of the genus *Laseguea* by ascribing to it more precise morphological criteria than those of vegetative habit, and made the observation of a dissimilar seminal coma as he had interpreted in the case of the genus *Heterothrix*. In spite of Mueller's definition of the coma, however, the foliaceous bracts and calyx-lobes and salverform corolla, accompanied by reasonably broad foliage, have remained the real distinction of the genus as popularly conceived.

These features, supposedly distinctive of *Laseguea*, were eventually proved invalid by John Miers, in an unintentional *reductio ad absurdum*, by applying the name to every species,

from Mexico to southern Brazil, which could possibly be so interpreted by the characters of the inflorescence alone. K. Schumann, in Engl. & Prantl, Nat. Pflanzenfam. 4<sup>2</sup>: 171. 1895, may have criticized rather unjustly, therefore, when he wrote: "Auch in dieser Gattung [*Laseguea*] hat Miers viel mehr Arten aufgezählt; ich möchte fast glauben, dass er alle Echitoideae mit grossen Kelchen mehr dem Zufall als einem bestimmten Princip nach unter *Laseguea* und *Rhodocalyx* aufgeteilt hat," for he himself was unable to suggest more definite criteria.

When examined critically, the distinguishing characters of *Laseguea* quickly resolve into a combination of features present in numerous species of *Mandevilla*. The corolla of the former, which is tubular or subtubular with an inconspicuous, erect limb, occurs in almost exact proportions in *M. brachyloba* and *M. cercophylla*, also of South America. As in the former, the exterior of the corolla is densely studded with minute, glandular papillae; but as in the latter, desiccation is not accompanied by blackening.

The conspicuous calyx-lobes and bracts of *Laseguea*, moreover, are equalled or even surpassed in magnitude by those of several species of *Mandevilla*, a particular instance of timely note being *M. platydactyla* newly described in a preceding paragraph of these records. The bracts of several *Mandevillas*, in particular, are even more striking than those of *Laseguea*, as, for example, those of *M. villosa* (Miers) Woodson, *M. bracteata* (HBK.) K. Sch., and *M. javitensis* (HBK.) K. Sch. When considered independently, the essential organs of the flower and foliage are all indistinguishable from those of *Mandevilla* subgen. *Eumandevilla*, to which *Laseguea* with its two valid species is relegated. Abundant fruiting material again has failed to reveal the foundation of Mueller's observation of a double coma.

***Mandevilla Pentlandiana*** (A. DC.) Woodson, n. comb.

*Parsonsia* ? *bracteata* Hook. & Arn. in Hook. Jour. Bot. 1: 287. 1834.

*Laseguea Pentlandiana* A. DC. Ann. Sci. Nat. Bot. III. 1: 262. 1844.

*Laseguea Hookeri* Muell.-Arg. in Martius, Fl. Bras. 6<sup>1</sup>: 136. 1860.

*Laseguea bracteata* (Hook. & Arn.) K. Sch. in Engl. & Prantl, Nat. Pflanzenfam. 4<sup>2</sup>: 171. 1895.

*Laseguea Mandoni* Britton, ex Rusby, Mem. Torrey Bot. Club 4: 220. 1895.

One may question very justly the distinction between *M. Pentlandiana* and *M. erecta*. The former is composed apparently of rather extensive sylvan lianas of Bolivia and northern Argentina, and is characterized by distinctly petiolate, ovate-cordate foliage. On the other hand, *M. erecta* is represented by more or less erect, suffrutescent undershrubs with nearly sessile, orbicular-ovate leaves, apparently being found only on the campos of Paraguay and adjoining Brazil and Uruguay. As a matter of fact, the delimitation of Apocynaceous lianas and undershrubs is not particularly precise, especially among the Echitoideae of southeastern South America; and with additional study and accumulation of specimens, the two species may be found to merge.

The type specimen of *Laseguea Pentlandiana* A. DC. was not found for examination in the Herbar Boissier as indicated by de Candolle, but the original description coincides well with plants examined in the course of these studies. It is interesting to note, furthermore, that according to de Candolle the specimen collected by Pentland upon which the species was based bears the data "*In Bolivia, ad Illimani.*" *Buchtien 250*, occurring in several of the principal herbaria of America and Europe, was also collected in Bolivia, bearing the data "*Cotana am Illimani,*" and may therefore be viewed as virtually a topotype. The earlier specific name of Hooker and Arnott cannot be used in this combination because of the pre-existence of *M. bracteata* (HBK.) K. Sch.

***Mandevilla torosa*** (Jacq.) Woodson, n. comb.

*Echites torosa* Jacq. Enum. Syst. Pl. Carib. 13. 1760.

*Echites torulosa* L. Sp. Pl. ed. 2. 307. 1762.

*Echites torosa* Jacq. var. *Brownei* A. DC. in DC. Prodr. 8: 449. 1844.

*Amblyanthera torosa* (Jacq.) Muell.-Arg. Linnaea 30: 446. 1860.

*Echites Brownei* (A. DC.) Muell.-Arg. loc. cit. 1860.

*Mesechites torulosa* (L.) Miers, Apoc. So. Am. 229. 1878.

*Mesechites Brownei* (A. DC.) Miers, loc. cit. 232. 1878.

The affinities of this species were recognized by Mueller, but *Amblyanthera* is a generic name not only antedated by *Mandevilla* Lindl., but invalidated by a previous homonym. The plant is a native of Jamaica where it constitutes a very clear-cut and uniform species and is the only representative of the genus in the Antilles. It is also found in Yucatan, but there becomes rather aggregate and variable, probably through hybridization with the closely related *M. Karwinskii* (Muell.-Arg.) Hemsl. A distribution common to Jamaica and northern Yucatan is not infrequent among the Apocynaceae.

***Mandevilla mexicana*** (Muell.-Arg.) Woodson, n. comb.

*Amblyanthera mexicana* Muell.-Arg. Linnaea 30: 424. 1860.

*Echites mexicana* (Muell.-Arg.) Miers, Apoc. So. Am. 205. 1878.

*Echites Smithii* Greenm. Proc. Am. Acad. 40: 29. 1904.

Closely related to *M. foliosa* (Muell.-Arg.) Hemsl., and differing chiefly in the size and indument of the foliage.

***Mandevilla apocynifolia*** (A. Gray) Woodson, n. comb.

*Echites* (*Amblyanthera* ?) *apocynifolia* A. Gray, Proc. Am. Acad. 22: 435. 1887.

That Dr. Gray suspected the generic affinities of this species is indicated by his dubious, parenthetical reference to the invalid genus *Amblyanthera* Muell.-Arg. *M. apocynifolia*, together with *M. mexicana*, *M. foliosa* (Muell.-Arg.) Hemsl., and *M. Karwinskii* (Muell.-Arg.) Hemsl., constitutes a conspicuous group, probably deserving of sectional rank, which is characterized by an extremely suffrutescent, virtually herbaceous, erect habit. The species of this group intergrade through occasionally twining individuals of *M. Karwinskii* and the typically volubile *M. torosa* to the liana habit characteristic of the bulk of species of the genus.

***Mandevilla equatorialis*** Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracillimis juventate minute puberulis tandem glabratis; foliis oppositis petiolatis rigide membranaceis

ovato-oblongis breviter acuminatis obscure lateque cordatis plerisque 2–5 cm. longis 1.0–1.25 cm. latis supra minute puberulis mox glabratis nervo medio basi pauciglanduliferis subtus pallidioribus et dense tomentellis; petiolis 0.3–0.7 cm. longis puberulis; inflorescentiis racemosis lateralibus vel subterminalibus alternatis 8–14-floris; pedunculo puberulo folia ca. duplo superante; pedicellis laxis 0.4 cm. longis post maturitatem paulo accrescentibus; bracteis lanceolatis 0.2–0.3 cm. longis scariaceis; calycis laciniis lanceolatis acuminatis 0.2 cm. longis scariaceis extus minute puberulo-papillatis intus basi in marginibus squamellas 3–5 flagelliformes gerentibus; corollae (gilvae vel purpurascens ?) infundibuliformis extus minute puberulae tubo proprio cylindrico brevissimo 0.2 cm. longo basi ca. 0.1 cm. diametro metiente ad apicem staminifero deinde angustiuscule conico-dilatato faucibus 0.5–0.7 cm. longis ostio ca. 0.4 cm. diametro metiente lobis oblique ovato-lanceolatis acuminatis 0.3 cm. longis; antheris anguste oblongis basi truncatis haud auriculatis 0.35 cm. longis; ovariis ovoideis ca. 0.1 cm. longis apice in stylo gracili gradatim attenuatis glabris; stigmatibus proprio ca. 0.15 cm. longo apiculis sterilibus vix aequante; nectarium glandulis ovoideo-quadratis truncatis basi connatis ovariis vix dimidio aequantibus; folliculis maturis ignotis.—ECUADOR: vicinity of Tablon de Oña, Sept. 27, 1918. *J. N. Rose, A. Pachano & G. Rose 23029* (U. S. National Herbarium, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Without any particularly manifest affinities. Although details of the reproductive apparatus undoubtedly prove the species coherent with the other South American species of *Eumandevilla*, the proportions of the corolla are reminiscent of those of *M. convolvulacea* (A. DC.) Hemsl. of southern Mexico.

**Mandevilla glandulosa** (R. & P.) Woodson, n. comb.

*Echites glandulosa* R. & P. Fl. Peruv. 2: 19. pl. 135. 1799.

*Prestonia Peruviana* Spreng. Syst. 1: 637. 1825.

*Haemadictyon glandulosum* (R. & P.) A. DC. in DC. Prodr. 8: 427. 1844.

*Odontadenia glandulosa* (R. & P.) K. Sch. in Engl. & Prantl, Nat. Pflanzenfam. 4<sup>2</sup>: 169. 1895.

As far as may be ascertained, the original specimen of *Echites glandulosa* collected by Pavon does not exist. The species was unknown both to A. de Candolle and to Miers except as represented in the excellent illustration accompanying Ruiz's description. Consequently its generic status has been somewhat uncertain.

Recently, Weberbauer (no. 4384 in Hb. Berol.) has encountered in flower, as has also Macbride (no. 3730 in Hb. Field Museum) in fruit, a plant almost precisely similar to that illustrated by Ruiz, and for the first time direct evidence may be utilized in interpreting the vexatious question concerning its generic affinity. K. Schumann was impressed by the fact that the five hypogynous nectaries of Weberbauer's specimen are somewhat concrecent and that the inflorescence is opposite, and thus concluded that it should be included within *Odontadenia* Benth., overlooking the glandular emergences at the base of the midrib upon the ventral surface of the foliage, the obscurely auriculate anthers, and the pentagonal-umbraculiform stigma, which necessitate its inclusion within *Mandevilla* Lindl. subgen. *Eumandevilla*.

The only feature which the species in question does not have in common with the other known species of *Mandevilla* is the opposite disposition of the axillary racemes. That phenomenon should not be regarded as of great importance, however, as the characteristic alternate branching has been observed to become opposite in cases of previous injury, and in many instances dormant or abortive branch buds may be observed opposite the functional branch or inflorescence. Furthermore, opposite branching has been found normally at the lower nodes of virtually all species, and may logically be viewed as a primitive structural feature.

***Mandevilla Bridgesii*** (Muell.-Arg.) Woodson, n. comb.

*Amblyanthera Bridgesii* Muell.-Arg. *Linnaea* 30: 420. 1860.

*Mandevilla Mandoni* Britton, *Bull. Torrey Bot. Club* 25: 496. 1898.

*Mandevilla Bangii* Rusby, *Bull. N. Y. Bot. Gard.* 4: 315. 1907.

A species much collected in Bolivia in recent years. Most closely related to the following:

*Mandevilla laxa* (R. & P.) Woodson, n. comb.

*Echites laxa* R. & P. Fl. Peruv. 2: 19. pl. 134. 1799.

*Mandevilla suaveolens* Lindl. Bot. Reg. 3: 7. pl. 7. 1840.

*Echites suaveolens* (Lindl.) A. DC. in DC. Prodr. 8: 452.  
1844, not Mart. & Gal.

*Amblyanthera suaveolens* (Lindl.) Muell.-Arg. Linnaea 30:  
447. 1860.

*Mandevilla Tweediana* Gadeceau & Stapf, Bull. Soc. Sci.  
Ouest Fr. III. 3: 2. 1913.

Although it has been impossible to locate an authentic specimen of Ruiz's species, there can be little doubt that his illustration and that of Lindley, accompanied in the latter instance by an indubitable description of the familiar plant of horticulture, are essentially conspecific. Unfortunately, *M. suaveolens*, which is displaced by the earlier name, is the type of the genus *Mandevilla* Lindl.

*Mandevilla grata* Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracillimis juventate minute puberulo-papillatis tandem glabratis; foliis oppositis longiuscule petiolatis membranaceis ovato-cordatis apice breviter acuteque acuminatis 7-12 cm. longis 5-9 cm. latis supra juventate minute puberulo-papillatis mox glabratis nervo medio basi pauciglanduliferis subtus vix pallidioribus praecipue in nervis venisque laxe villosulis; petiolis 2.0-3.5 cm. longis glabratis; inflorescentiis racemosis lateralibus alternatis folia vix duplo superantibus 4-12-floris; pedunculo parte circa dimidio inferiore sterili deinde laxe florifero glabro; pedicellis 1.5-2.0 cm. longis; bracteis lanceolatis acuminatis 0.5-1.0 cm. longis subfoliaceis; calycis laciniis oblongo-linearibus acuminatis 1 cm. longis subfoliaceis extus glabris intus basi in marginibus squamellas 3-5 denticulatas gerentibus; corollae (ut videtur albae dilute flavescentis) infundibuliformis tubo proprio cylindrico breviusculo 1 cm. longo basi ca. 0.3 cm. diametro metiente ad apicem staminifero ibique dilatato faucibus tubuloso-conicis tubo proprio aequantibus vel eum paulo superantibus ostio ca. 0.4-0.5 cm. diametro metiente lobis inaequilateraliter ovatis vix dolabriformibus 0.5-0.7 cm. longis patulis; antheris anguste oblongis basi obsolete truncateque auriculatis 0.8-0.9 cm. longis; ovariis oblongoideis ca. 0.2 cm. longis apice in stylo



crassiusculo gradatim attenuatis glabris; stigmatе proprio 0.3 cm. longo apiculis inconspicuis; nectarii glandulis ovoideo-reniformibus truncatis plus minusve connatis ovarii dimidio vix aequantibus; folliculis ignotis.—ARGENTINA: Tucuman: Muñecas, March 5, 1923. *S. Venturi 1769a* (Mo. Bot. Garden Herbarium, TYPE).

*M. grata* finds its closest affinity with the Bolivian *M. Bridgesii*. It is distinct by reason of practically every dimension of the corolla, which is much smaller in general, with proportionally longer proper tube and conspicuously shorter lobes of a different shape and position. The pubescence of the foliage, also, although of the same nature as that of the latter species as distinguished from that of the closely neighboring *M. laxa*, is very much sparser and finer, being scarcely perceptible to the unaided eye. The general shape of the leaves, as well as their venation, together with the long, subfoliaceous calyx-lobes and subtubular corolla, serves to impress one with the congenericity of *Mandevilla* Lindl. and the Candollean *Laseguea*.

***Mandevilla albo-viridis* (Rusby) Woodson, n. comb.**

*Dipladenia alba-viridis* Rusby, Descr. So. Am. Pl. 86. 1920.

There can be little doubt that this plant is congeneric with such species as *M. grata*, *M. Bridgesii*, *M. glandulosa*, and *M. laxa*. The inflorescence of the single specimen constituting the type (*H. H. Smith 1904* in Hb. N. Y. Bot. Garden) is too depauperate to permit thorough examination of the nectaries, which form the sole and all too frequently untrustworthy distinction between *Mandevilla* Lindl. and *Dipladenia* A. DC., but a re-examination of the original dissection, fortunately preserved, discloses that a slip of the needle must have caused an untoward amputation of three of five normal, hypogynous nectaries, thereupon transforming the flower to that of a *Dipladenia*! The occurrence of *M. albo-viridis* in northern Colombia is a considerably boreal extension of the distribution of the typical section of *Eumandevilla*, heretofore confined to Bolivia and adjacent Peru and Argentina.

***Mandevilla subsagittata* (R. & P.) Woodson, n. comb.**

*Echites subsagittata* R. & P. Fl. Peruv. 2: 19. 1799.

*Echites mucronata* R. & S. Syst. 4: 796. 1819.

*Echites Guayaquilensis* Benth. Pl. Hartw. 119. 1839.

*Echites microcalyx* A. DC. in DC. Prodr. 8: 456. 1844.

*Amblyanthera microcalyx* (A. DC.) Muell.-Arg. Linnaea 30: 425. 1860.

This extremely variable and abundant species of Central and northern South America is represented here by only a few of the more familiar names which must be ascribed to it as synonyms. Mueller-Argoviensis was quite aware of the affinities of *E. microcalyx*, which he transferred to his invalid genus *Amblyanthera*, noting in the case of the earlier *E. subsagittata* "est *Amblyantherae* spec. forte ab *A. microcalyce* non diversa" (loc. cit. 453. 1860). A specimen collected by Pavon at Guayaquil and at present deposited in the Herbar Boissier should probably be considered as authentic.

**Mandevilla villosa** (Miers) Woodson, n. comb.

*Laseguea villosa* Miers, Apoc. So. Am. 250. 1878.

*Echites comosa* O. Ktze. Rev. Gen. 2: 414. 1891.

Differing from *M. subsagittata* chiefly in the conspicuous, foliaceous, or petaloid bracts, and for that reason placed within the genus *Laseguea* by Miers.

**Mandevilla Fendleri** (Muell.-Arg.) Woodson, n. comb.

*Amblyanthera Fendleri* Muell.-Arg. Linnaea 30: 417. 1860.

The publication of this species under the pre-empted and antedated name *Amblyanthera* requires a recombination under *Mandevilla*, as also is the case of the immediately following:

**Mandevilla Schlimii** (Muell.-Arg.) Woodson, n. comb.

*Amblyanthera Schlimii* Muell.-Arg. Linnaea 30: 419. 1860.

**Mandevilla symphitocarpa** (G. F. W. Mey.) Woodson, n. comb.

*Echites symphitocarpa* G. F. W. Mey. Prim. Fl. Esseq. 132. 1818.

Differs from *M. scabra* (R. & S.) K. Sch. chiefly in the generally larger floral organs and in the lack of a vegetative indument. Apparently confined to Trinidad and the Guianas.

**Mandevilla Trianae** Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus gracillimis molliter puberulo-hirtellis rarius

glabratis; foliis oppositis breviter petiolatis membranaceis late ovato-lanceolatis apice acutiusculis basi gradatim rotundatis et obsolete cordatis plerisque 6–12 cm. longis 2–4 cm. latis supra minute puberulis glabratisve nervo medio in longitudinem pluriglandulosus subtus puberulis; petiolis 0.3–0.6 cm. longis ut in folio vestitis; inflorescentiis racemosis lateralibus alternatis; pedunculo puberulo folia vix superante 6–10-florifero; pedicellis laxis 0.4–0.6 cm. longis; calycis laciniis lanceolatis acuminatis 0.1–0.2 cm. longis extus minute puberulis intus basi squamellam parvam deltoideam minute denticulatam gerentibus; corollae infundibuliformis tubo proprio breviuscule cylindrico 1.75–2.0 cm. longo basi ca. 0.1 cm. diametro metiente ad apicem staminifero ibique dilatato faucibus conico-cylindricis 1.5–1.75 cm. longis ostio ca. 0.75 cm. diametro metiente lobis oblique obovatis acutiusculis faucibus vix aequantibus evidenter plus minusve patentibus; antheris anguste elliptico-oblongis basi obscure auriculatis 0.4 cm. longis; ovariis oblongoideis 0.15 cm. longis apice plus minusve gradatim attenuatis minute puberulis; stigmatate proprio ca. 0.2 cm. longo apicula terminalia quadruplo superante; nectarii glandulis oblongo-ovoideis distinctis ovariis ca. dimidio brevioribus; folliculis ignotis.—COLOMBIA: Choco: “alt. 150 m., April, 1853.” *J. J. Triana 3409* (Herbarium British Museum, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Evidently allied to *M. Schlimii* because of the tubular or cylindrical corolla-throat, but differing in the larger leaves of a distinct shape, as well as in the dimensions of the flowers. It appears to be a species limited to the northern Pacific Coastal Zone of South America, having been collected by Pittier (no. 520 in U. S. Nat. Hb.) in the state of Cauca, Colombia, and by André (no. 3590 in Hb. Kew.) upon the western slope of the Ecuadorian Andes.

***Mandevilla subpaniculata* Woodson, n. name**

*Echites macrophylla* A. Zahlbr. Ann. K.K. Naturh. Hofmus.

Wien 7: 5. 1892, not HBK.

The most striking feature displayed by this species is the complete lack of the usual nectaries surrounding the ovary. In view of the great variability of this character in both *Mandevilla* Lindl.

and *Dipladenia* A. DC., it has been considered advisable to refer the species to the former rather than to establish a new genus for its inclusion.

*Mandevilla sagittarii* Woodson, sp. nov., suffruticosa volubilis; ramulis teretibus crassiusculis sparse ferrugineo-hispidulis; foliis oppositis longiuscule petiolatis membranaceis late oblongo-ellipticis apice abrupte acuminatis acute subcaudatis basi gradatim attenuatis et obscure cordatis 8–12 cm. longis 4–6 cm. latis supra sparse strigillosis nervo medio in longitudinem pluriglandulosus subtus dense tomentulosus; petiolis 1.5 cm. longis dense pilosulis; inflorescentiis racemosis lateralibus alternatis; pedunculo minute hispidulo 5–15-florifero foliis fere dimidio aequante; pedicellis 0.75 cm. longis post maturitatem parum accrescentibus; bracteis magnis ovatis caudato-acuminatis sessilibus 1.0–1.5 cm. longis laxe pilosulis rubidulo-coloratis; calycis laciniis linearo-lanceolatis acuminatis 0.75 cm. longis extus sparse minuteque pilosulis intus basi squamellam deltoideam apice indistincte denticulatam gerentibus; corollae infundibuliformis (ut dicitur dilute flavidulae) extus pilosulae tubo proprio longiuscule cylindrico paulo ventricoso 2.5 cm. longo basi ca. 0.2 cm. diametro metiente ad apicem staminifero ibique dilatato faucibus late tubulosis paulo inaequilateralibus 3 cm. longis ostio ca. 0.75 cm. diametro metiente lobis oblique lateque obovatis 1.5 cm. longis valde patentibus; antheris oblongo-ellipticis basi anguste obsoleteque auriculatis 0.35 cm. longis; ovariis ovoideis 0.2 cm. longis apice in stylo gracili gradatim angustatis glabris vel minutissime papillatis; stigmatate proprio ca. 0.15 cm. longo apicula sterilia ter superante; nectarii glandulis subquadratis basi connatis ovariis dimidio aequantibus; folliculis obscure moniliformibus 12–15 cm. longis plus minusve falcatis hispidulo-strigillosis; seminibus subscaphiformibus 1 cm. longis como 2 cm. longo aurantiaco.—COLOMBIA: Choco: between La Oveja and Quibdo, April 1–2, 1931. *W. A. Archer 1714* (U. S. National Herbarium, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

Without doubt closely related to *M. hirsuta* (A. Rich.) K. Sch., but differing markedly in the tubular corolla-throat which strongly resembles that of an *Odontadenia*.

**Mandevilla Pavonii** (A. DC.) Woodson, n. comb.

*Echites hirsuta* R. & P. Fl. Peruv. 2: 19. pl. 136. 1799, not A. Rich.

*Prestonia hirsuta* (R. & P.) Spreng. Syst. 1: 637. 1825.

*Echites Pavonii* A. DC. in DC. Prodr. 8: 463. 1844.

The writer has been unable to locate Pavon's original specimen in the Herbarium Boissier as indicated by de Candolle, but feels confident in making the above recombination upon the basis of the original illustration which agrees essentially with two collections recently made in eastern Peru by G. Klug (nos. 1288 & 57 in U. S. Nat. Hb.).

**Mandevilla bogotensis** (HBK.) Woodson, n. comb.

*Echites Bogotensis* HBK. Nov. Gen. 3: 215. pl. 243. 1818.

*Amblyanthera Bogotensis* (HBK.) Muell.-Arg. Linnaea 30: 452. 1860.

*Anartia Bogotensis* (HBK.) Miers, Apoc. So. Am. 82. 1878.

As in *M. subpaniculata*, the nectaries of this species are obsolete. In spite of this anomaly, however, Mueller was fully aware of the generic affinities of the plants, transferring them to his invalid genus *Amblyanthera*. The absence of the gynoeceal nectaries, usually prominent features of the American species of *Echitoideae*, is presumably responsible alone for Miers's transfer of the species to *Anartia* Miers, a dubious segregate of the inclusive genus *Tabernaemontana* L.

**Mandevilla polyantha** K. Sch. in herb., suffruticosa volubilis; ramulis teretibus gracillimis pilosis; foliis oppositis longiuscule petiolatis membranaceis late ellipticis acuminatis obscure angusteque cordatis 7-12 cm. longis 3-6 cm. latis supra nitidulis nervo medio in longitudinem pilosulis et pluriglandulosis subtus pallidioribus praecipue in nervis venisque laxe puberulis; petiolis 1.0-1.5 cm. longis ut in ramulis vestitis; inflorescentiis racemosis lateralibus alternatis; pedunculo glaberrimo 20-35-florifero folia vix duplo superante; pedicellis subsecundis 1 cm. longis post maturitatem longe accrescentibus; bracteis linearibus scariaceis minimis; calycis laciniis late trigonalibus acutiusculis 0.1 cm. longis scariaceis extus dense puberulo-papillatis intus basi squa-

mellam deltoideam denticulatam gerentibus; corollae (virido-flavidulae ?) infundibuliformis extus glabrae tubo cylindrico ventricoso 1.0–1.25 cm. longo basi ca. 0.15 cm. diametro metiente ad apicem staminigero ibique dilatato faucibus conicis parum inaequilateralibus 1 cm. longis ostio ca. 0.5 cm. diametro metiente lobis oblique obovato-reniformibus 0.25 cm. longis valde patentibus; antheris cuneato-ellipticis basi angustissime auriculatis 0.3 cm. longis; ovariis oblongo-ovoideis 0.15 cm. longis omnino glabris; stigmate proprio 0.1 cm. longo apicula terminalia ca. ter superante; nectarii glandulis ovoideo-dentiformibus basi plus minusve connatis ovariis vix aequantibus; folliculis maturis ignotis.—  
 PERU: Loreto: Yurimaguas, Aug., 1902. *E. Ule* 6271 (Herbarium Bot. Gart. Berlin-Dahlem, TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

This interesting species, which more recently has been collected by Killip & Smith (no. 27579 in U. S. Nat. Hb.) in the same general locality as that of the type specimen, recalls to a certain extent the aspect of *M. Moritziana* of Venezuela, but differs in the smaller, more gibbous corolla, the inconspicuous, scarious bracts, and the indument of the vegetative parts. The species was noted as a *nomen nudum* in Engl. Bot. Jahrb. 40: 403. 1908.

***Mandevilla lancifolia*** Woodson, sp. nov., suffruticosa erecta altitudine ignota; ramis subteretibus vel plus minusve alatis juventate dense puberulo-papillatis tandem glabratis cortice griseo-brunneis; foliis oppositis brevissime petiolatis rigide membranaceis anguste linearo-lanceolatis 3–6 cm. longis 0.5–0.75 cm. latis omnino glabris nervo medio ventre in longitudinem inconspicue pauciglandulifero; petiolis 0.1–0.2 cm. longis glabris; inflorescentiis racemosis lateralibus alternatis; pedunculo glabro 1–7-floro foliis dimidio aequante; pedicellis 0.15 cm. longis; bracteis ovatis scariaceis minimis; calycis laciniis ovatis acutiusculis 0.15–0.2 cm. longis scariaceis extus glabris vel minutissime papillatis intus basi squamellam deltoideam profunde laciniatam gerentibus; corollae (ut videtur rubidulo-flavidulae) infundibuliformis tubo proprio gracile cylindrico 1 cm. longo basi ca. 0.1 cm. diametro metiente ad apicem staminigero ibique dilatato faucibus tubulo-conicis 1.5–2.0 cm. longis ostio ca. 0.5 cm. diametro

metiente lobis oblique obovatis obtusiusculis 1.5–2.0 cm. longis patulis; antheris oblongis basi obscure truncateque auriculatis 0.6 cm. longis; ovariis anguste oblongoideis apice in stylo capillaceo gradatim angustatis 0.2 cm. longis omnino glabris; stigmatem proprio 0.2 cm. longo apiculis terminalibus vix manifestis; nectarii glandulis ovoideo-quadratis basi connatis ovariis quadruplo brevioribus; folliculis linearo-cylindricis acuminatis obscure articulatis laevibus 7–10 cm. longis; seminibus subscaphiformibus 0.5 cm. longis como 1.5 cm. longo aurantiaco.—VENEZUELA: Amazonas: Puerto Ayacucho: alt. 100 m., May, 1931. *E. G. Holt & E. R. Blake* 780 (Mo. Bot. Garden Herbarium, TYPE, U. S. National Herbarium, duplicate).

A very distinct and showy species, conspicuous because of its dense, narrow foliage, and bright flowers, which was collected in 1854 by Richard Spruce (no. 3610 Hbb. Kew. & Vindob.) in approximately the same general locality on the upper Orinoco. *M. lancifolia* constitutes a rather unique addition to *Mandevilla* sect. *Eriadenia* Mgf., and appears to have no very definite affinities. From *M. Benthamii* (A. DC.) K. Sch., which it simulates very generally because of its narrow foliage, it may be distinguished by means of the opposite phyllotaxy and the narrower corolla-throat. *M. lancifolia* would also appear to attain a greater height than does the latter species.

***Mandevilla anceps*** Woodson, sp. nov., suffruticosa erecta; ramulis crassiusculis distincte ancipibus juventate dense minuteque puberulis tandem glabratis; foliis oppositis breviuscule petiolatis subcoriaceis late elliptico-oblongis obsolete cordatis apice obtusiusculis 5–8 cm. longis 2–3 cm. latis supra minute puberulo-papillatis mox glabratis nervo medio in longitudinem inconspicue pauciglandulifero subtus pallidioribus dense puberulis; petiolo 0.5 cm. longo minute puberulo; inflorescentiis racemosis laterali-bus alternatis; pedunculo 3–5-floro petiolos paulo superante; pedicellis 0.2–0.3 cm. longis; bracteis ovatis scariaceis minimis; calycis laciniis ovato-lanceolatis acuminatis 0.15 cm. longis scariaceis extus minute puberulo-papillatis intus basi squamellam deltoideam laciniatam gerentibus; corollae (flavidulae?) infundibuliformis extus minute puberulae tubo proprio anguste cy-

lindrico 2.5–3.0 cm. longo basi ca. 0.1 cm. diametro metiente ad apicem staminigero ibique dilatato faucibus conicis 2 cm. longis ostio ca. 1 cm. diametro metiente lobis oblique obovato-reniformibus 1.5 cm. longis valde patentibus; antheris anguste oblongis basi truncate auriculatis 0.5 cm. longis; ovariis oblongo-ovoideis apice abrupte angustatis ca. 0.1 cm. longis dense puberulo-papillatis; stigmatе proprio 0.15 cm. longo apiculis sterilibus terminalibus vix manifestis; nectarii glandulis oblongoideis basi connatis ovariis vix aequantibus; folliculis anguste teretibus paulo articulatis 9 cm. longis minute puberulis; seminibus subscaphiformibus 0.5 cm. longis como 1.5 cm. longo aurantiaco.—BRAZIL: “in montic. Tarurumari fluvii Pacimoni, Feb., 1854.” *R. Spruce 3395* (Herbarium Kew., TYPE, Mo. Bot. Garden Herbarium, photograph and analytical drawings).

In *M. anceps*, the predominantly alate stems of *Mandevilla* sect. *Eriadenia* Mgf. attain their greatest development. The species is also noteworthy as being the only known member of the section with a well-developed vegetative indument.